



WFSA

The World Forum
on the Future of
Sport Shooting Activities

Proceedings

World Symposium on the Ecologic and Economic Benefits of Hunting



Windhoek, Namibia, 14-17 September 2009
Windhoek Country Club & Resort

WORLD SYMPOSIUM: ECOLOGIC AND ECONOMIC BENEFITS OF HUNTING

**Proceedings of the
Symposium on Hunting activities
Windhoek, Namibia, 14-17 September 2009**

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The WFSA aims to act as a conduit for information and where there are questions pursuant to matters raised here in the accompanying materials, the WFSA encourages interested parties to make contact with the authors.

Acknowledgements

It is with grateful appreciation that we recognize and thank some of those responsible for this successful Symposium. First, we must thank the presenters for their contributions—not just their insightful and professional papers, but also for the years of dedication hard work and success in their chosen fields that gave them the wisdom and experiences that are the foundation of this Symposium. We must also thank the participants for these same reasons; a Symposium is not just about the papers published here, but about the interaction and sharing of information and ideas.

Our heartfelt thanks to the dedicated members of the Steering Committee members who worked many, many days to plan, organize and implement this Symposium, and their organizations, which supported the time and expenses required.

Ted Rowe, WFSA President

Vito Genco, WFSA Executive Secretary Europe

Herbert Keusgen, President FWR and BVS, Germany

Thomas Mason, WFSA Executive Secretary USA

William Moritz, Director of Science Based Conservation, SCI

Richard Patterson, SAAMI Managing Director

Pietro Pietrafesa, ANPAM – WFSA Secretariat

Mauro Silvis, ANPAM Director

Finally, a special “Thank You!” to the wonderful people of Namibia. We can think of no better place to hold this symposium than a country whose land and people offer such great diversity and beauty. Early in its young development, the Republic of Namibia recognized and embraced regulated hunting for the many benefits to its land and people. Today they are reaping the rewards with one of the most peaceful and progressive governments in Africa.

All of this was made possible with the support of our sponsors. The World Forum for the Future of Sport Shooting Activities was the host of the Symposium, but we also thank the following sponsors for their support:



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Foreword

We constantly need to make decisions affecting our economy and our environment, but we do not always have enough clear scientific information to guarantee the best results.

This international symposium is the best way to address this dilemma. An open exchange of information between leading researchers, scientists, biologists, the hunting community and government officials from around the world represents policy-making at its best. The people concerned bring the most current and best information in all of the appropriate disciplines, and they maximize the opportunity to create the best solutions.

As we make decisions that affect our environment and economy, it is important for us to have adequate scientific information to guarantee best results

Hon. Minister Netumbo Nandi-Ndaitwah

*Minister of Environment and Tourism,
Windhoek, Namibia*

The WFSA

The World Forum on the Future of Sport Shooting Activities (WFSA) is a global association of hunting, sport shooting and industry groups. The WFSA was recognized as an official UN NGO in 2002.

The Forum is an educational and scientific association that is the international voice for a hundred million men and women. The issues addressed by the WFSA are of interest not only to its members, but to the larger world community.

The Forum has organized this world symposium entitled The Ecologic and Economic Benefits of Hunting with the primary purpose of exchanging the latest information regarding research, studies, remarks and debate on the role that hunting plays in the ecological and economic health of countries throughout the world

Technical reports, data on environmental and economic impacts, methods of wildlife management and new concepts concerning the role of hunting were all presented.

Status reports were shared on legislative, policy and regulatory efforts, in addition to examples of hunting community actions, agency education and outreach initiatives. Hunting may be a matter of concern to some, but this symposium has clarified how many positive elements hunting has.

The symposium entitled The Ecologic and Economic Benefits of Hunting was created to address these concerns. It brings together a critical mass of scientific expertise and practical experience to assist policymakers as they address questions surrounding the role that hunting can play worldwide.



Good Morning, Mr. Ted Rowe, President of the World Forum on the Future of Sport Shooting Activities, Presenters, Delegates and Distinguished Guests.

On behalf of the President of the Republic of Namibia, His Excellency President Pohamba, I welcome you to our beautiful country, Namibia!

I wish to apologise on behalf of President Pohamba for not being here this morning to welcome you personally – His Excellency is unfortunately attending to urgent affairs of state.

We are impressed with the gathering of distinguished international delegates to focus on issues of such great importance not only to Namibia, but the world, and we support your efforts to highlight the many benefits of regulated sport hunting internationally.

Namibia is a pro-wildlife utilisation country, and our progressive national Constitution is the first in the world to formally enshrine the sustainable utilisation of living natural resources.

Symposium proceedings on the Ecologic and Economic Benefits of Hunting

Message of the President of the Republic of Namibia, His Excellency President Pohamba, Presented by Hon. Minister Willem Konjore

Opening Remarks at The Symposium on the Ecologic and Economic Benefits of Hunting, Delivered on the 15th September 2009

Namibia has been successful in positioning itself as a model for sustainable, fair-chase trophy hunting, and has become one of the most popular trophy hunting destinations in Southern Africa. This is due in part to our political stability and diversity, a well-developed infrastructure, the ease with which hunting rifles may be temporarily imported into Namibia, and the friendliness and warm hospitality of our people. The key component, however, is Namibia's scientifically based land-use and game-management policies, which have created great and healthy populations of game.

This success has been based on devolving rights over wildlife to freehold and communal area land holders. By giving land holders rights to use wildlife and benefit from it, government has provided incentives for conservation. This has resulted in the fact that 80% of wildlife is found outside of protected areas, and wildlife is increasing on communal land. A strong wildlife industry has been created that, linked to tourism, is a major contributor to the national economy. Income and other benefits such as jobs and training linked to wildlife and

tourism in communal area conservancies are contributing to combating poverty.

Recent statistics show that trophy hunting in Namibia steadily generates revenues of around N\$300 million per annum, representing approximately 2.3% of the Gross Domestic Product. To put these values into perspective, note that our hunting industry's revenue grew by 12% annually over the past 10 years. This considerably outpaced the goal of 7% annual growth that was set by "Government in Vision 2030," a white paper on economic development in Namibia.

The Namibian government and organized trophy hunting industry, through NAPHA – the well respected Namibian Professional Hunting Association, continues to focus on the successful conservation of wildlife and wild habitats in Namibia by promoting ethical, selective and fair-chase sustainable trophy hunting.

Our wildlife is a natural resource, which we have proved, if managed properly through game ranching

and utilized sustainably through fee-based trophy hunting, has the potential to develop into one of our country's most valuable renewable assets. We are a nation with a proud hunting heritage, and our trophy-hunting sector is well respected by our government and fellow Namibians as an essential and integral part of Namibia's conservation, tourism, farming and business industries.

We are proud that you chose Namibia to host your symposium, and we hope that what you will learn about our country and our strong support of regulated sport hunting.

I wish you fruitful deliberations over the next three days.

Thank you!

On behalf of His Excellency President Pohamba,

Hon. Minister Willem Konjore



An incredible wealth of information was presented at this Symposium. Besides the sheer volume of information contained in the presentations and discussions, there is the fact that “hunting” exists within many contexts. What is accepted in one area may not be accepted in another. Therefore, local culture must be acknowledged in any decision-making process.

Despite the differences of culture and conditions, there are common themes. Many studies and first-hand experiences clearly demonstrated undeniable proof that regulated hunting is a critical part of science-based wildlife management and it provides incredible widespread economic benefits to rural communities. This economic benefit is one of the most important tools to help end poverty.

Keeping wildlife populations in balance with the ecosystem is the cornerstone of modern scientific management. Presentations proved that regulated hunting is the most effective tool to ensure that species exist in balance with nature. Even more signif-

icant is the role regulated hunting has played in the protection and reintroduction of endangered species.

The hunting experience requires clean and healthy ecosystems. To this end, presentations demonstrated hunting is the highest/best land use. Livestock and farming destroys ecosystems, and photo safaris don't provide the large and diversified distribution of wealth that hunting does. Compound this with eco-tourism's demand for a specific (and limited) type of beauty and the economic impact is even further centralized. What is important to remember is there is a role for all activities and there were great case-studies that provided a model for establishing the right balance.

“managing wildlife is easy...managing people is what is difficult.”

Finally, we have seen the incredible economic benefits of regulated hunting. Hunting is big industry, but unlike most big business it is widely dispersed throughout rural communities. Around the world regulated

Symposium Summary and Recommendation

Executive Summary: The Symposium on the Ecologic and Economic Benefits of Hunting

hunting is a primary funding source. In developing countries we have seen the economic impact of regulated hunting is a critical tool to help end poverty.

Capitalizing on these incredible benefits requires the proper framework. This framework must ensure revenues are distributed to the local community. Since hunting is a relatively labor-intensive activity, many in the local community realize employment opportunities. But the legal frameworks must ensure revenues are focused on wildlife and local communities and not gobbled up by general treasuries. These legal frameworks must also provide a mechanism for biologically-based hunting quotas and enforcement of those quotas.

We have a great story to tell, and a great deal of time in this Symposium was spent talking about how to tell it. In today's world perception is reality. It is not enough to continue DOING what is right, we must also educate the public so they understand. It is perhaps our biggest challenge. As Aldo Leopold, father

of modern science-based wildlife management, said "managing wildlife is easy...managing people is what is difficult." While a minority of extremists opposed to regulated hunting—or any sustainable use of natural resources—are masters at getting media attention, the good news is the public as a whole sees through their misguided agenda. Studies show that throughout the world the vast majority of the public supports regulated hunting. But the message is clear: To succeed in supporting wildlife, ecosystems and economic gains for rural communities we must engage in dialogue with all stakeholders. There must be bottom-up communications in the decision-making process.

We have many challenges. The actions of international NGO's are pushing top-down, unilateral decisions that interfere with regulated hunting and eliminate the great benefits. In the process they are harming wildlife, ecosystems, and communities.

Another challenge is hurdles in transportation of firearms by hunters. If hunters can't travel with their

firearms, they won't hunt and all the benefits disappear. This can result from poor business policies of transportation companies and/or well-intentioned but poorly-reasoned regulations intended to prevent the illicit trade of weapons is a threat to hunting and therefore a threat to wildlife and ecosystems.

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Director of Ceremonies, Mr. Ted Rowe, President of the World Forum on the Future of Sport Shooting, Distinguished guests.

Ladies and Gentlemen,

First and foremost let me thank you for choosing Namibia and Windhoek, in particular, as the venue for your symposium, and for inviting me to share some perspectives on the subject of your symposium; a subject of great interest to Namibia. The theme of your symposium, namely “ecologic and economic benefits of hunting,” is well thought of as it is very important in addressing issues related to conservation and sustainable use of biodiversity, especially as it is taking into account ecologic and economic matters.

Historically, hunting is one of the most important economic activities all over the world, as most, if not all people have looked upon wildlife as the most important sources of food.

Director of ceremonies, esteemed guests,

Namibia has a strong commitment to and long history of conservation and sustainable utilization of our natural resources for the benefit of the current and future generations. We believe that sustainable use of natural resources is the key to successful conservation.

In 1975, the Government devolved conditional user

rights to private farmer owners. This devolution of user rights led to significant increase in wildlife on private land and the expansion of wildlife-based economic activities such as game farming and hunting and the tourism. This was only a small sign of what was to follow.

The success on private land prompted the Government to replicate this model on communal land. The Nature Conservation Amendment Act of 1996 devolved management rights over wildlife and tourism to communities that form conservancies under the Community-Based Natural Resources Management Programme (CBNRM). Conservancies have provided economic benefits to communities through eco-tourism and hunting. Today, of the 57 registered conservancies, 31 have hunting concessions and rely on wildlife utilization for their livelihoods. For example, during the year 2008, conservancies generated 41.9 million Namibian dollars from sustainable National Resources utilization of which 11.8 million was derived from hunting and 8 million from trophy hunting.

Looking at your programme papers, experience from 13 countries in Europe, America and Africa have been shared. Your discussions, I am informed, were based on research made in those countries. It is my hope that Namibian participants have used this opportunity to learn more so that as a nation we can benefit from the information shared. I am saying this because in Namibia we believe in private and public partnership



and that is why the Ministry of Environment Tourism works closely with the private sector and the relevant organisations such as the Namibia Professional Hunters' Association.

Under the CBNRM programme, wildlife populations on state land outside protected area increased significantly. And various species such as black rhino, sable and black-faced impala were re-introduced in their former range. Last year alone the Ministry, supported by our development partners, translocated in excess of 2,000 animals to communal conservancies.

Over the years we have seen the growth of capacity in the conservancies to manage this wildlife, and develop economic activities based on this wildlife. We have seen the creation of jobs and the generation of revenue in areas that had few options other than subsistence farming. We have seen how well local communities

Minister Netumbo Nandi-Ndaitwah Closing Remarks at The Symposium on the Ecologic and Economic Benefits of Hunting

Delivered on the 17th September 2009.

have integrated wildlife management in their other activities and increasingly how such wildlife management is complementing other forms of land use.

The co-existence of people and wildlife is not without a price. With the growth of wildlife populations in conservancies, we have also seen significant increase in the number of incidences of human-wildlife conflict (HWC).

The CBNRM was able to function well because of two factors: firstly, the fact that the programme has a strong community buy in, and secondly, conservancies are deriving economic benefit from the sustainable use of wildlife in their areas. This enable them to off-set some of the damages to property and sometimes to loss of lives as a result of HWC. Against that background the Namibian Government has adopted a national policy on human wildlife conflict management. From 14 -15 September, we had a national conference on the implementation of that policy. The conference was attended by over 350 delegates that included re-

gional governors, traditional chiefs, members of conservancies and other stakeholders. The conference was successful and we believe the strategies agreed upon if implemented, will help us in dealing with issues of human wildlife conflict.

Director of Ceremonies,

Namibia is a semi-arid country with limited agricultural potential. Indications are that with climate change, Namibia is likely to become even drier. It is therefore possible that farmers will shift to game farming as a substitute to livestock farming.

As we make decisions that affect our environment and economy, it is important for us to have adequate scientific information to guarantee best results. Having looked at the agenda of your meeting, I am impressed with the topics covered by the meeting, and the relevance of these topics to the Namibian situation. I am confident that Namibia and other countries that support the principle of sustainable utilisation of natural re-

sources stand to benefit from the outcome of your deliberations. We will appreciate if you can make copies of your presentations and outcomes available to the Ministry.

I wish you all the best with your future endeavours in promoting sport hunting internationally. Though your symposium is ending today, for those who have not done so, may I invite you to visit other parts of Namibia before you go back to your respective countries. Namibia is a land of contrast that one must not miss when the chance comes.

I thank you,

The Hon. Minister Netumbo' Nandi Ndaitwah,

**Minister of Environment and Tourism,
Republic of Namibia**



WFSA President Ted Rowe's Closing Remarks at The Symposium on the Ecologic and Economic Benefits of Hunting

Delivered on the 17th September 2009.

At the close of this symposium, we have determined that:

- Strategies for ensuring the future of wildlife worldwide will include continued scientific data gathering, effective communication strategies and an inclusive decision making framework. It is incumbent on all to demonstrate responsible stewardship of all natural resources.
- Sound scientific information demonstrates the importance of hunting to the future of wildlife.
- The worldwide hunting community including NGO's, hunting tourism and related industries, academics, and individual citizens are eager to contribute sound scientific information, support and perspectives in wildlife management decision-making.
- We will promote the principles of sustainable use, including hunting, as the preferred conservation strategy for wildlife management.
- There is a clear need for consistent and coordinated communication of the ecologic and economic benefits of hunting.

Thank you,

Ted Rowe





Good morning.

I am Torb Lindskog. I am a member of the WFSA Executive Committee and I have been asked not only to summarize what has been said during this symposium, but to make some suggestions and recommendations about where we go from here – a call to action, as it were.

First, the quality of papers has been outstanding. Those of you who presented have not only demonstrated your academic and professional expertise, but have shown unique insights into aspects and issues that I, for one, was not familiar with. Now, learning something new at a symposium is hardly unusual, but this has been an exceptionally educational two days.

I certainly can't review everything that has been said and I don't think I could do justice to much of what was put before us. Anyway, in brief, what are some things that we have learned about the ecological and economic benefits of hunting?

First, that hunting can and does play a vital role in conservation of habitat. In fact, we learned it can be used to literally resurrect or bring back endangered species. The Markhor in Pakistan comes to mind.

Second, the revenues from hunting will enable governments and land owners to maintain ecosystems in their natural, undeveloped form. Hunting is the most friendly, productive possible use of the land. It is also interesting that there really is such a close relationship between the environment and the economy. To protect the land you have to use wisely it – this is truly sustainable use.

*hunting can and does play a vital role
in conservation of habitat.*

I was also impressed by some of the specific examples that we heard: the Namibian Communal Conservancies, the Senegal Mining Project, and the economic benefits of bird hunting in the UK.

Torb Lindskog's Call To Action at The Symposium on the Ecologic and Economic Benefits of Hunting

Delivered on the 17th September 2009.

The title of the symposium might lead someone to think that ecologic and economic benefits are two separate matters, but that is not the case. It is compelling that there is such a close relationship between ecologic and economic benefits.

We have also heard about the problem of the declining numbers of hunters (although I was encouraged by the Swedish and American figures.) We heard about the politicizing of the issue, about the unfortunate combining of anti-hunting and anti-gun politics. We heard about problems in our own camp regarding necessary law enforcement, and lack of regular game censuses.

...revenues from hunting will enable governments and land owners to maintain ecosystems in their natural, undeveloped form. Hunting is the most friendly, productive possible use of the land.

Again, these are just a few highlights of what has been examined for the past two days. But now, what should we do? What is the prescription after the diagnosis? What is our call to action?

I am a businessman and I like to deal in specifics, concrete things we can do, not just should do.

Here is my specific recommendation: the research in the papers we have heard has been invaluable. Sound science can and will supply the intellectual ammunition used in the public policy debates all over the world. We need more of this type of research and we need it disseminated in a wide and efficient manner. This should be our task. To accomplish it I would recommend a concerted, continuing effort between academics, experts, interest groups and trade associations.

Ladies and gentlemen, the report generated by this Symposium will be a tremendous tool that we can use to promote and protect sport hunting throughout the world. Let us use this tool, let us take full advantage of what we have done here over the past two and a half days.

Let me go further, whether through the WFSA or our sister organizations, there should be regular convocations to do what we hope to do here in Windhoek. There should be an ongoing communications, not just one report.

I am not going to apologize for the ambitiousness of this proposal. Too much is at stake; too much needs to be done.

Thank you.



World Symposium on the Ecologic and Economic Benefit of Hunting

Windhoek, Namibia, 14 -17 September 2009
AGENDA

TUESDAY, SEPTEMBER 15 **Symposium Opening**

Opening Remarks

Ted Rowe, President of WFSA

Welcome

*Hon. Minister Rev Willem Konjore,
Minister of Youth National Service, Sport and Culture,
Namibia*

Introduction to Symposium Sessions

Ted Rowe, President of WFSA

SESSION I **Hunting and Habitat** **Ted Rowe (moderator)**

Understanding the Threat to Sustainable Wildlife Management

*Eugene Lapointe, Switzerland
President of IWMC World Conservation Trust, Former
Secretary-General of CITES*

Sustainable Wildlife Use – A Catalyst to Conservation and Development in Namibia's Communal Conservancies

*Chris Weaver, USA
Conservation and development specialist*

Recreational Hunting as a Conservation Tool: Suc- cesses, Failures and Challenges

*Robert W. G. Jenkins, Australia
Consulting biologist*

Principles, Criteria and Indicators of Sustainable Hunt- ing: Outline for its Practical Application

*Peter Lindsey on behalf of Gerhard Damm, South Africa
International Council for Game and Wildlife
Conservation CIC*

Conservation through Sustainable Use: A Torghar Model

*Luc Bellon, Pakistan
Anthropologist, Society for Torghar Environmental
Protection (STEP)*

The Conservation Role of Safari Hunting In Africa: Achievements, Limitations and Necessary Interventions

*Peter A. Lindsey, South Africa
Conservation biologist*

Nature Untamed: The Intersection of Women's Hunting and Environmental Activism in the 21st Century

*Mary Zeiss Stange, USA
Professor of Women's Studies and Religion, Skidmore
College, New York*

Wildlife Management

*Ibrahim Njoya, Cameroon
Consultant, writer*

Waterbird Hunting and Wetland Conservation – a European perspective

*Michel A. Czajkowski, France
Biologist, consultant*

OPEN DISCUSSION SESSION I

SESSION II **Wildlife Management** **William Moritz (moderator)**

Hunting and Sustainable (Bio-conservancy) Develop- ment in a Senegal Mining Project

*William I. Morrill, USA
Project manager, consultant*

The Non-Impact of Hunting on Moose Alces - Alces Movement, Diurnal Activity and Activity Range

Göran Ericsson, Sweden

Professor, Faculty of Forest Science, Swedish University of Agricultural Sciences (SLU)

Driven Grouse Shooting In Britain: A Form Of Upland Management With Wider Conservation Benefits

Nicholas Aebischer, UK

Deputy Director of Research, Head of Geographical Information Systems, and Director of Policy and Public Affairs, Game & Wildlife Conservation Trust

Wami-Mbiki Wildlife Management Area In Tanzania - Challenges and Lessons

Bengt Kvitzau, Denmark

Technical Adviser, Danish Hunters Association, Tanzania.

Evaluation of Bio-Indicators – Measuring and Recording of Trophy Data as Tools in Adaptive Management

Peter Lindsey on behalf of Gerhard Damm, South Africa
Conservation biologist

SESSION ENDS

WEDNESDAY, SEPTEMBER 16

SESSION II (continued)

Hunter Declines in Europe and North America: Causes, Concerns and Proposed Research

Göran Ericsson on behalf of Thomas A. Heberlein, USA
Professor, Faculty of Forest Science, Swedish University of Agricultural Sciences (SLU)

The Unrealized Potential of Conservation Hunting

John Jackson III, USA
Author, Chairman, Conservation Force

The Need For A Paradigm Shift In Global Thinking About Wildlife Management In Africa

Ron Thomson, South Africa
Retired game warden, retired National Parks Board Director, author

OPEN DISCUSSION SESSION II

SESSION III

Economic Impact

Rick Patterson (moderator)

The Importance of Hunting and the Shooting Sports on State, National, and Global Economies

Mark Duda, USA
Executive Director of Responsive Management, Harrisonburg, Virginia

Ecological And Economic Attributes Of Wildlife That Add Value For Society Through Hunting

Graham Child, South Africa .
Freelance Consultant

Expenditures, Economic Impacts and Conservation Contributions of Hunters in the United States

Rob Southwick , USA
President, Southwick Associates, Inc.

Education and Incentives as a means of Mitigating the Challenges of Community Conservation in Zimbabwe

George Pangeti, Zimbabwe
Coordinator for Africa, Safari Club International Foundation Conservation Programs

World Symposium on the Ecologic and Economic Benefit of Hunting

Windhoek, Namibia, 14 -17 September 2009
AGENDA

The Economic and Environmental Impact of Sporting Shooting

*Nicholas Aebischer on behalf of Nic Boyns,
UK Deputy Director of Research, Head of Geographical
Information Systems, and Director of Policy and Public
Affairs, Game & Wildlife Conservation Trust*

Threats to The Economic & Ecological Benefits of Hunting: Challenges that Discourage International Hunters

*Barbara V. Crown, USA
Editor and publisher of The Hunting Report*

The Economics of Hunting in Spain

*Ted Rowe on behalf of Teofilo de Luis Rodriguez, Spain
WFSA President*

OPEN DISCUSSION SESSION III SESSION ENDS

THURSDAY, SEPTEMBER 17

Session III (continued)

Positive and stable attitudes towards hunting (in Sweden): implications for conservation

*Göran Ericsson on behalf of Thomas A. Heberlein, USA
Professor, Faculty of Forest Science, Swedish University
of Agricultural Sciences (SLU)*

The Development of Trophy Hunting as an effective conservation method and lucrative form of land utilization in Namibia

*Marina Lamprecht, Namibia
Owner, Hunters Namibia Safaris*

Closing Session Symposium Conclusion Ted Rowe (moderator)

Symposium summary and recommendation

*Rick Patterson
Chairman of EEBH Steering Committee*

Remarks

*Hon. Minister Netumbo Nandi-Ndaitwah
Minister of Environment and Tourism, Namibia*

Closing Remarks

*Ted Rowe
WFSA President*

Call to action

*Torb Lindskog, Sweden
AFEMS President, Norma Precision AB President*

END OF SYMPOSIUM

Vito Genco, Italy

European Executive Secretary of the WFSA

Dr. Vito Genco has served for more than 20 years as Vice President for International Affairs of the Italian Association of Sporting Guns and Ammunition Manufacturers (ANPAM). He holds in parallel the position of Secretary General of AFEMS, the European Association of Sporting Ammunition Manufacturers, registered under Belgian Law. In 1997 he was appointed Secretary General for Europe of the World Forum on the Future of Sport Shooting Activities (WFSA). The WFSA's approach assists stakeholders to find solutions to problems brought forward for examination by the international community. The WFSA is an NGO in Roster Consultative Status with the Economic and Social Council of the United Nations. While regularly appearing in international conferences at the EU and UN, Vito Genco has been monitoring and evaluating international regulations affecting hunting and sport shooting.

Educated in science, in geochemistry, at the University of Rome, Vito Genco conducted his main career working for a leading Italian chemical group, where he was responsible for many business units, specifically in various types of civilian explosives, propellants, ammunition and

pyrotechnics. His responsibilities have included the positions chief of division, managing director, chief of production and marketing director. His later business responsibilities were directed towards carrying out international strategic plans of development for his company worldwide. This long experience subsequently became the foundation for his appointment in related positions with AFEMS, ANPAM and the WFSA.

Torbjorn Lindskog - Sweden

AFEMS President, Norma Precision AB President

Torbjorn Lindskog, who received an MBA in Economics from the University of Gothenburg, is the President of Norma Precision AB, Amotfors, Sweden. Norma Precision AB is a member of the Swiss RUAG Group of Companies.

He is also the President of AFEMS, the Association of European Manufacturers of Sporting Ammunition, and Honorary Consul of Germany. He has been in the civilian ammunition business for more than a decade and before that was in marketing, working with companies like Sandvik and Electrolux.

Thomas L. Mason, Esq, USA

American Executive Secretary of the WFSA

Educated at J.D. Lewis and Clark Law School, M.S. Portland State University, Portland, Oregon, USA, Thomas Mason is the American Executive Secretary of the WFSA.

He is an attorney by profession and has concentrated his practice on international government relations for nine years. He taught Administration of Justice for ten years and was a member of the Oregon Legislature for 16 years. He has also been a practising criminal lawyer, both prosecuting and defending cases.

William E. Moritz, USA

Director of Science-Based Conservation & Research, SCI Foundation

Since 2007, Dr William Moritz has been the Director of Science-Based Conservation and Research for Safari Club International Foundation. He also acts as Director of the Governmental Affairs Program of Safari Club International from his post in Washington DC. His primary responsibility is to direct the worldwide conservation efforts of the SCI Foundation.

World Symposium on the Ecologic and Economic Benefit of Hunting

Chair Biographies

William Moritz had 14 years of professional wildlife research and management experience with the Michigan Department of Natural Resources, culminating in his role as Chief of the Wildlife Division from 2004-2007 with 140 employees and a 26 million-dollar budget. Specific management responsibilities during his tenure have included gray wolf management, white-tailed deer management and research, and treaty negotiation with Native American peoples. He completed his Bachelor's degree in Fisheries and Wildlife Biology, his Master's in Fish and Wildlife Management, and requirements for Master of Public Affairs, followed by a PhD in Zoology at Southern Illinois University. He has had wide research interests, with very extensive and diverse work experience, including graduate work on sage grouse, small mammals and Canada Geese. In his current role, he supports research on predator-prey dynamics in North America, snow leopard research in Russia, and African lion research in Africa.

Richard Patterson, USA

Managing Director, Sporting Arms and Ammunition Manufacturers' Institute, Inc. (SAAMI)

Rick Patterson is Managing Director of the Sporting Arms and Ammunition Manufacturers' Institute, Inc.

(SAAMI). SAAMI was founded in 1926. It sets the voluntary technical standards for the firearm and ammunition industries for U.S. manufacturers and handles regulatory issues both domestic and international. SAAMI has a long history of support for wildlife management and helped fund the pioneering work of Aldo Leopold, father of modern science-based wildlife management.

Prior to SAAMI, Rick Patterson created the National Shooting Sports Foundation's facility development program and the National Association of Shooting Ranges (NASR). He developed and launched the Facility Development Series of shooting range management publications and videos, the Rangeinfo website, the most comprehensive resource for range operators, and NASR's 5-Star Rating System. He has developed successful partnerships with state and federal environmental and occupational health agencies to provide guidance and resources for range issues such as lead management and employee safety. He has written numerous books and articles and produced several videos related to firearm safety and small business development. In 2004 Rick Patterson was presented with the United States Department of Environmental Protection

Agency's Environmental Quality Award for Promoting and Enhancing Environmental Quality. He is a lifelong hunter, shooter and fisherman and currently serves on the Executive Committee for WFSA and the Board of Trustees for Project Healing Waters Fly Fishing.

Ted Rowe, USA

WFSA President

President of The World Forum on the Future of Sport Shooting Activities, Ted Rowe is also the Chairman of the Manufacturers Advisory Group (MAG). He has been the Director of Government and Industry Relations for Sturm, Ruger & Co., Inc. (USA), President and CEO of SIGARMS Inc., and President of Harrington & Richardson, Inc., (USA).

Ted Rowe has served several terms as Chairman of the Sporting Arms and Ammunition Institute and of the National Shooting Sports Foundation. He is also an attorney and is admitted to practise before the US Federal Courts and the US Supreme Court. He is on the Board of Directors of the Theodore Roosevelt Conservation Partnership.

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Biography

Eugène Lapointe from the age of seven was catching partridges and rabbits to help feed his family, who lived 80 kilometres from civilization. In this rustic setting, he learned that to survive one must use sparingly what nature has to offer. Many years later, as Secretary-General of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), from 1982 to 1990, Mr. Lapointe was implementing on an international level lessons learned from nature in the Canadian wilds. He argued constantly for practical and realistic global natural resource conservation while Secretary General of CITES.

Seeking to continue his work in global conservation, Eugène Lapointe founded the IWMC World Conservation Trust (IWMC) in 1994. IWMC is a world-wide coalition of wildlife managers who believe the most powerful conservation tool is sustainable utilization of terrestrial and marine wildlife resources. As a conservationist, lecturer, jurist and diplomat, Mr. Lapointe has been promoting the sustainable utilization of terrestrial and marine wildlife resources on a world-wide basis. During the last fifteen years, he has lectured in 23 countries.

We live in a peculiar world. Until the age of twelve, I was raised in the Parc des Laurentides in Northeast Canada, where my father was a game warden and gatekeeper, at one of the entrances of the Park. Just outside it, a family of beavers persisted in building a dam on the river providing our drinking water. So we trapped the beavers and got pelts, meat and kidneys.

Why the kidneys? As one can expect, we were totally isolated and more so during winter time, so my mother had in reserve two types of medication: a preventive one and a curative one. The preventive one was the usual gallon of cod liver oil and the curative was known as “beaver magic potion.” After trapping the beavers, I had to string the kidneys and suspend them behind the wooden stove for a couple of weeks so they would dry out. I will not describe the smell in the house during the drying period.



Whatever the sickness – headache, toothache, fever, constipation, diarrhoea, influenza, measles – my mother would dip one of the dried beaver kidneys into boiling water for a few minutes, and then force us to drink it as hot as possible. Interestingly enough, the result was always positive... After one taste of that magic potion, you never wanted to be sick again... so the curative medicine changed category, becoming a preventive one.

We live in a peculiar world.

We do not have to go back very far to discover a time when the benefits of hunting would have been regarded as self-evident. This type of symposium, hosted by the WFSA, which I am privileged and honoured to be a part of, would have seemed very odd just a few generations ago. The concept of encapsulating the benefits of hunting would have seemed unnecessary to hunters and non-hunters alike.

Understanding the Threat to Sustainable Wildlife Management

Eugène Lapointe,
President, IWM World Conservation Trust

For anyone gifted with basic common sense, the benefits of hunting are still very much obvious. Wikipedia Encyclopedia offers some interesting statistics about hunting from the perspective of the developed world:

If hunting and fishing were a corporation, it would rank 10th on the Fortune 500 list. Sportsmen support more jobs than twice the number of workers employed by WalMart. Then there are the tax revenues generated by sportsmen...

I do not believe it necessary to expand. Those are known facts and data, but what is less known perhaps by the public are the development potentials to developing countries offered by hunting and other sustainable use concepts.

At this point, allow me to recall one of the most emotional moments I ever lived in the context of the Convention on International Trade in Endan-

gered Species of Wild Fauna and Flora (CITES). During the CITES COP11 held in Kenya in 2000, the United Kingdom, under the leadership of Minister Elliot Morley, forced the African countries to accept a compromise that prohibited new exports of the accumulated stocks of ivory from three countries – including Namibia – whose elephant population was listed on Appendix II of CITES. After this decision was announced, the delegate from Namibia, the Honourable Tangeni Erkana, Permanent Secretary of the Ministry of Environment and Tourism, made the following vibrant statement (reproduced from notes taken by several colleagues):

Mr. Chairman, we are sitting on a gold mine and dying of starvation. We have a resource called elephant which is abundant and we are refused the possibility of using it. We are refused the possibility of making economic benefits so important for our conservation programs and

Abstract

In our modern world most things have become politicized, and anything political has to be justified. This is certainly so with environmental issues, which have attracted organized groups advocating on every conceivable matter. Activities involving guns capture another set of campaigners, those who associate guns with crime. Hunters and sportsmen relish the interplay with wild nature and the wildlife that inhabits it. The fact that today we do not have to hunt to eat does not make hunting any less moral. Hunting and shooting can improve habitats, species survival and growth, and the development of rural areas.

The dangers of bans on hunting wildlife are evidenced by the case of African ivory. Elephant stocks are particularly healthy in countries that gave local people incentives to conserve elephants by maintaining their domestic ivory markets and stockpiling ivory. By contrast, law enforcement operatives are struggling in their efforts to contain poachers in countries that have tried to institute total bans. Animal rights activists devote their time to stopping things from happening. But in terms of good and bad, the greater virtue lies with the hunter.

the development of our people. It is almost as if the developed countries want us to remain beggars, holding our hands out with the hope of receiving some assistance. We do not need that assistance; we need to be able, in accordance with our culture and traditions, to use our resources, to benefit from them and to access development.

It took me a while to realize the depth of Mr. Erkana's statement. He was in fact referring to an issue much more important than just the sustainable use of elephants; he was exposing the supreme right of a sovereign nation, a right which has been recognized and respected for centuries, to have access to its own resources. Inspired by his wisdom, I often wondered if wealthy countries were not intentionally keeping the less favoured nations in a state of dependence, in order to satisfy their thirst for dominance and to keep it alive through eco-imperialism.

So if the benefits of hunting represent economic advantages for both developing and developed countries alike, if better and more stringent conservation mechanisms can be implemented as a result of inputs by the hunting community, if we are in this win-win situation, where is the problem?

Sadly, in our modern world – peculiar world – it seems that nothing at all is obvious. Most things these days have become politicized, and anything political has to be justified. This is certainly so with environmental issues, which have attracted organized groups advocating on every conceivable issue, from global warming to the utilization of wildlife. Activities involving guns unfortunately capture another set of campaigners, those who associate guns with crime and who press their remedy of disarming law-abiding citizens.

Behind all of this is the desire of many activists to instil their personal values in others. It is not enough for these people to give up eating meat or wearing leather and to refrain from certain sports. They must persuade others to do the same and, failing that, must find a way to force them to fall in line with a carefully crafted strategy, step-by-step... (By contrast, I have never tried to impose my family's belief in the power of beaver kidneys on anyone else.)

Step I

In this black and white world, the news media have been co-opted to spread the word that hunting is bad. Hunters are characterized as exploiters, evil people who are only out for themselves. The activists complain of cruelty, arguing that animals are being mistreated. They claim that species are on the brink of extinction. They say hunting is not "necessary." All of a sudden, hunters are being pilloried.

Understanding the Threat to Sustainable Wildlife Management

Eugène Lapointe,
President, IWMC World Conservation Trust

Step II

The ultimate power in any nation is the government, so when persuasion is not sufficient, the force of law is sought to mandate changes in personal behaviour. This means lobbying governments to introduce a range of hunting restrictions. Famous recent examples are the ban on fox hunting in Britain, on the spring bear hunt in Ontario, Canada, or, if you prefer, the continuing restrictions on importation of hunting trophies in the USA.

Step III

As I know only too well from my time as Secretary General of CITES, international instruments are used as an ultimate authority, to bind together people from different countries, to apply the same limits across national boundaries even in cases where governments have rejected campaigns within their own borders.

How do the activists manage to achieve their ends? I think activists must have been spying on my mother, when we lived in the Canadian wildernesses, because they also have a preventive and a curative medicine.

The preventive medicine

Activists never question the validity of the economic benefits of hunting. They don't enter into a debate because they cannot effectively contradict the arguments, the data and the information provided by our side. So instead, they provide a better economic alternative to hunting. So here comes the preventive medicine: eco-tourism. This is the perennial argument offered by those opposing any kind of harvesting of wild animals... "Wild animals are of more value alive to the human population than dead." This has led to a wide range of what is called "non-consumptive sustainable use": bird watching, whale watching, elephant

watching, shark watching, seal watching, etc.

I even got trapped myself by the economic argument, so I decided to start an eco-tourist operation based on my fetish animal: the beaver, of course.... I was successful with my Beaver Watching operation but only for a couple of hours.

Now I cannot avoid having a crack at eco-tourism. First, the economic advantage of eco-tourism over hunting is a false argument. I will simply say that it takes a very large number of tourists to have the same economic impact at the local level as that of a hunter. Second – and do not misunderstand me – I am not fundamentally opposed to eco-tourism. I support it on three conditions:

- that eco-tourism not be offered as an "alternative" to sustainable use;
- that eco-tourism does not change the cul-



tural and traditional pattern of human beings and the natural behaviour of animals; and

- that it be well controlled and managed.

Let me explain what I mean by this. I love going to national parks and wildlife reserves in Africa, but not in Kenya. I honestly prefer to watch the domestic cows in the mountains of Switzerland rather than the wild animals of Kenya: the cows have a wilder behaviour. But the worst part of it is that as a human being, I find it painful, demeaning, to watch a member of the Massai tribe – one of the world's most famous tribes – begging for a handout, or negotiating the price of having his picture taken. And that is the result of uncontrolled, unregulated eco-tourism.

I do not want to witness the disappearance of the Massai culture or of any traditional community. Every time a culture is lost, it is a

tragedy for humanity, because as it is for animals and plants, cultural extinction is for ever.

The curative medicine

If the preventive medicine does not have the expected effects, that is, preventing the use of wild resources, then activists will rely on the curative medicine: bans.

Like my beaver kidneys potion – a universal panacea – bans are employed to cure every use of wild resources. And it is probably the biggest political threat to the sportsman today. But we should be clear that the ban is put forward for its own reasons – to stop hunting because it is considered to be uncivilized behaviour. It is seen as a disease... a matter of ethics. And, against this stricture, any benefits of hunting are beside the point. Hunting is simply wrong and must be stopped.



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We are told that the impact of a ban on hunting will be beneficial for the propagation of all wildlife, in all cases and all circumstances. With a ban, we are told, wildlife will flourish again and the only thing sacrificed will be the trophies from the wall of the exploiter.

If we look at the reality of bans, the ban on ivory trade has had several negative consequences:

Understanding the Threat to Sustainable Wildlife Management

Eugène Lapointe,
President, IWMC World Conservation Trust

- it stopped important cultural and economic activities,
- it created social hardships, and
- it resulted in environmental degradation.

Is it possible the UK and the European Union countries are sorry or even only concerned about what happened? It would seem not, if we judge by the pressure from Germany (EU) to render the ban permanent at CITES COP15.

The financial imperative for activists to promote and maintain a ban is so strong that they do not mind turning themselves into objects of ridicule. In 1995, to avoid the possibility that elephant populations might increase to a level that could favour the lifting of the ban, the International Fund for Animal Welfare and the Humane Society of the United States came

out with a brilliant idea, one of the most sophisticated conservation schemes that has ever been conceived: contraceptive mechanisms for the endangered elephant.

In any ban, the only ones to derive economic benefits are the illegal operators. As Confucius said, “When trade is outlawed, only outlaws are trading.” Or “When hunting is outlawed, only outlaws go hunting.” The bottom line is that legal and carefully regulated “use” – including hunting – in wildlife is the best way to defeat illegal activities. We all know that.

Indeed, we live in a peculiar world.

How can we compare the economic input of the activists with that of the hunters? We cannot. The professional activist is typically a “pre-venter”. He or she is not a producer of anything. Activists devote their time to stopping things from happening. By protesting or

organizing protests, drafting letters and articles, lobbying politicians, officials and journalists, their effect is to prevent an economic activity from happening. They are an economic cost, in contrast to which most of the people attending this symposium are productive. There is a substantial difference in terms of economic benefit. The increasing shrinkage in exposure to and familiarity with nature in general and hunting in particular affords the animal rights activists their opportunity.

They now preach to and raise money from a thoroughly urbanized audience, painting a picture of nature as a theme park where all of the animals can live in peace together free from the exploitation of wicked hunters. In this picture, nature would be perfect if only men and women could be prevented from interacting with it.

Indeed, this is a peculiar world.



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Part of Mr. Erkana's hidden message to the developed world could easily be paraphrased. He was saying: "You rich countries became wealthy as a result of the utilization of the resources you had at your disposal. To achieve development, you did not receive assistance or aid from other countries; such a mechanism did not exist at that time. Furthermore there were no crazy NGOs to stop you from benefiting from your resources. There is no valid reason why we should not be allowed the same opportunity."

I am particularly grateful for the opportunity to present to this symposium because it allows me to communicate this important message. The actual type of resource-use activity you are involved in does not matter – the activists are coming for YOU and do not fool yourself to the contrary. Their agenda is universal and its final aim is nothing less than the total termination of all use of wild resources, starting with

hunting. Sportsmen are no worse off, or no better off, than other users of wildlife. The fact that you shoot for sport does not make you any more or less a target, even if the caricature is different.

So, we have the history, the culture and the arguments on our side. Yet I have to say in all honesty that we are on the defensive, mainly for having to deal with the order of the day: intolerance that leads to eco-imperialism. Europe and America instruct Japan to alter its diet and tell Southern Africans how they may, or may not, care for their elephant populations. (Even the British Empire did not make Indians convert to Anglicanism and eat fish and chips.)

In this long, complex advocacy system – for this is what it is – the basic driver is obscured and forgotten: the belief by some individuals that utilizing wildlife is always wrong.

We have done admirable work in promoting hunting from a historical perspective; we can defend hunting from an anthropological point of view; we can protect it as a human right; but we must rise to a much greater challenge and present hunting for what it is: a perfect mechanism to assist emerging nations to reach higher levels of development through the wise use of their natural resources.

Biography

Chris Weaver has more than 30 years of applied experience in assisting rural communities to practise sustainable natural resources management. A graduate of the University of Arizona, he holds a BSc in Range Management and an MSc in Rangeland Ecology. With a career that initially started in the southwestern United States, he has spent the last 27 years based in southern Africa, having had long-term postings in Lesotho and Namibia and undertaken short-term assignments in Botswana, Kenya, Malawi, Mozambique, Tanzania, Zambia, and Zimbabwe.

Currently employed by the World Wildlife Fund (WWF), Chris Weaver has served as the Director of the WWF LIFE Project and programmatic activities since 1993. During this time, he has played a facilitative role in assisting Namibian partner organizations (government and NGO) to found, develop and support Namibia's renowned communal conservancy movement, which has since become a nationwide conservation movement encompassing almost 15% of Namibia's surface area (121,000 km²). As strong believers in the conservation contributions of sustainable wildlife utilization, Chris Weaver and his co-authors (Theunis Pieterse, Richard Diggle and Greenwell Matongo) have been instrumental in the introduction of a range of wildlife use options (trophy hunting, local meat harvesting, game cropping and live-game sales) in Namibia's communal conservancies.



Namibian community members reviewing trophy hunting concession tenders
(Photo: Richard W. Diggle)

1.0 Background

Namibia is a large country (823,988 km²) located in southwestern Africa, where it is enclosed between South Africa to the south, Angola to the north, and Botswana to the east (Figure 1). With a population of approximately 2,000,000, Namibia is one of the most sparsely populated countries in sub-Saharan Africa. A mainly arid land, Namibia is surprisingly species-rich. Its vast wilderness areas and diverse ecosystems provide superb habitat for a range of Africa's megafauna, while endemism for both flora and fauna is exceptionally high (Barnard, 1998). As a hunting destination, the country has long been known for its abundant and high-quality plains game, but also boasts free-roaming popula-



tions of Africa's big five (elephant, rhino, lion, leopard and buffalo). In addition, Namibia contains the world's largest cheetah population (L.



Figure 1. Namibia in proximity to surrounding southern Africa countries
(Map courtesy of RAISON).

Sustainable Wildlife Use – A Catalyst to Conservation and Development in Namibia’s Communal Conservancies

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Marker, Dickman A., Wilkinson C., Schumann B., and Fabiano, E., 2007) and a number of desert-adapted species (including Hartmann’s zebra, black-faced impala, oryx, springbok, etc.) that are highly valued by the international sport hunting community.

Since independence in 1990, Namibia has put in place one of the most innovative conservation management programs in Africa, if not the world. In sharp contrast to traditional African colonial wildlife policies, the passage of the 1996 communal area conservancy legislation (Government of Namibia, 1996) has provided incentives and motivation for communal area residents across Namibia to conserve their

wildlife resources. As a consequence, communities who form conservancies⁵ are now managing and sustainably utilizing their wildlife through trophy hunting, various forms of meat harvesting, live game sales and photographic tourism opportunities. The resulting cash and in-kind benefits have fostered a greater appreciation of the value of wildlife and stimulated communities to incorporate wildlife conservation practices into daily livelihood strategies. Concomitantly, poaching of wildlife has decreased and unparalleled recoveries of wildlife across Namibia’s communal areas are occurring. By mid-2009, a total of 55 communal conservancies had formed (Figure 2), covering approximately 12.6 million hectares and engaging more than 230,000 com-

Abstract

In 1996 the Namibia Ministry of Environment and Tourism approved visionary legislation that empowers rural communities with the rights to benefit from wildlife if they form communal conservancies. Enactment of this legislation has inspired the formation of 55 conservancies, encompassing approximately 126,400 km² (15.3% of Namibia), and involving almost one-eighth of Namibia’s citizens in what has become an internationally known national conservation and development program. Rights over wildlife, combined with the rapid generation of benefits (money, meat, and employment) through wildlife utilization, have created strong incentives for rural communities to integrate wildlife and tourism development into their livelihood strategies. The strengthened community awareness of the value and benefits of wildlife has precipitated large-scale recovery of game populations, with such African mega-fauna as numerous plains game species, elephants, lion, and cheetah displaying increased range expansion and population trends.

(continued on page 43)

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² Theunis Petersen is the WWF In Namibia Game Utilization Specialist

³ Richard Diggle is the WWF In Namibia CBNRM Community Business Advisor

⁴ Greenwell Matongo is the Ministry of Environment & Tourism Chief Warden, Coordination Services

⁵ Conservancies are legally-recognized, geographically-defined areas that have been formed by communities who have united to manage and benefit from wildlife and other natural resources.

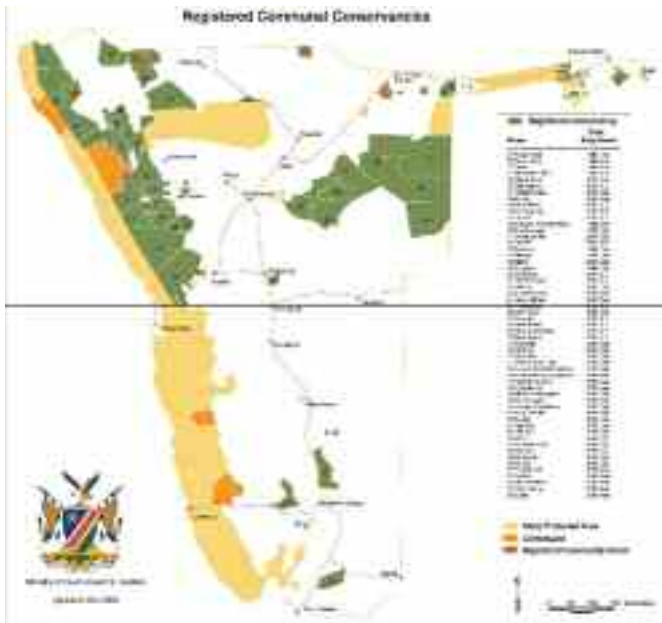


Figure 2. Registered Communal Area Conservancies, State Protected Areas, and Tourism Concessions as of July, 2009 (Map source: Ministry of Environment & Tourism, 2009).

2.0 Communal conservancies and the role of sustainable wildlife use

This paper seeks to illustrate the role that sustainable use of wildlife has played in catalysing and supporting communal conservancies by: 1) explaining the policy and legislative foundation for sustainable use of wildlife in Namibia; 2) demonstrating how rural communities are benefiting from trophy hunting and other forms of sustainable wildlife use; 3) portraying the respondent growth of the hunting sector in communal conservancies over the past 12 years; and 4) highlighting some of the conservation impacts which wildlife utilization has catalysed across Namibia's communal lands. Lastly, the authors raise challenges ahead, as various forms of wildlife utilization continue to expand in the communal area conservancies.

2.1 Policy and legislative foundation for wildlife utilization in Namibia

Wildlife legislation in Namibia is unique in that it devolves conditional use rights over wildlife to private citizens. This visionary concept was pioneered on private lands in Namibia (Immelman, D., 2003) through the 1967 Nature Conservation Ordinance 31, when it was recognized that wildlife was in jeopardy of being lost if landowners could not benefit from the presence of wildlife.

The legislative foundation of wildlife utilization in Namibia was further defined through the Nature Conservation Ordinance Number 4 of 1975, which gave rise to three different categories of wildlife (L. C. Weaver and Pieterse, T., 2008), including:

- a) *specialty-protected game* – globally significant species such as elephant and rhino;

munity members. These figures represent 15.3% of the country's land mass and 12.2% of its population, respectively.

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- b) *protected game* – less common, but rare and valuable species such as roan antelope, sable, eland red, hartebeest, etc.; and
- c) *hunnable game* – common plains game such as kudu, springbok, oryx, and warthog, and common game birds.

This legislation, which remains in power today, also prescribes the circumstances when wildlife and by whom wildlife may be utilized. *Specially-protected* and *protected game* may only be hunted under the virtue of a permit issued by the Ministry of Environment and Tourism (MET), with permit allocations being based upon sustainable off-take quotas. In contrast, conditional rights of ownership to *hunnable game* are given to private farm owners and communal conservancies, who in turn can decide how and when to utilize their *hunnable game*. Use options entail: shoot-for-sell,

shoot for own-use, biltong-meat hunting, culling (mostly restricted to springbok), game capture, and or trophy hunting.

2.1.1 Wildlife utilization on private lands:

The application of Namibia's innovative wildlife utilization policy and legislation on private lands produced startling results, precipitating a widescale recovery of wildlife populations on private lands (43% of the country). Between 1972 and 1992, the aggregate value of wildlife use on private lands rose by approximately 80% in real terms (J.I. Barnes and de Jaguar, J.L.V., 1996), while *hunnable game* numbers on private lands were estimated to have more than doubled from 565,000 to 1,161,000 over the same timeframe (J.I. Barnes and Jones, B., 2009). Studies by Erb (2003) and Humavindu and Barnes (2003) suggest that increases in wildlife numbers and use on private lands have continued unabated, and by 2004

Abstract (continued)

During 2007, the Namibia conservancy movement generated almost US\$5.6 million in benefits for rural community members, with different forms of wildlife utilization being responsible for US\$2.2 million of this amount. Though less than 40% of the total benefits are from wildlife utilization, this paper illustrates why sustainable use of wildlife has been a catalyst to the conservancy movement and remains critically important to the sustainability of Namibia's communal conservancies.

it was believed that 88% of Namibia's wildlife was resident to private lands (J.I. Barnes, O. Nhuleipo, A.C. Baker, P.I. Muteyauli and V. Shigwedha, 2009).

2.1.2 Adaptation of the Wildlife Utilization Policy to communal lands:

Namibia's independence in 1990 transformed

Namibian conservation further, empowering traditional African communities living on Namibia's communal lands (41% of the country) with the rights to benefit from wildlife. The passage of the Communal Conservancy Amendment Act (Government of Republic of Namibia, 1996) was aimed at devolving the same conditional game rights to rural communities who formed communal conservancies as those which had been acquired by the private landowners through the 1967 and 1975 policies and legislation, respectively. In order to qualify for these rights the involved communities are required to form a conservancy that meets the following conditions. They must:

- a) be legally constituted;
- b) have clearly defined physical boundaries that are accepted by neighbouring communities and conservancies;

- c) consist of members defined by the community within the conservancy;
- d) have a representative conservancy committee, having a sound accounting system and effective secretariat; and
- f) have a sustainable game management plan.

Once the above criteria are met, a prospective communal conservancy is required to submit its application to the Ministry of Environment & Tourism (MET), which reviews the submission for completeness. If it is deemed complete, the conservancy is then formally registered through the Government Gazette, providing the conservancy with legal registration and recognition by all ministries of the Government of the Republic of Namibia.

2.2 Community benefits from conservancies and wildlife use

As mentioned previously, thus far a total of 55 communal conservancies have been successfully registered in Namibia. The first four communal conservancies were registered in 1998, with an additional 51 more conservancies forming in a remarkably short 10 years. In addition, there are roughly 20 more conservancies at various stages of development.

A key driver in the conservancy formation process has been the rapidly increasing flow of wildlife-related benefits to participating conservancies and CBNRM stakeholders (communities in forming conservancies or outside conservancies). Over the period 1994-2007 (Figure 3), the total benefits (cash, employment, and in-kind) generated by CBNRM enterprises and conservancies increased from negligible to N\$39,127,982 (US\$5,570,072).

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CBNRM Program Benefits 1994 - 2007

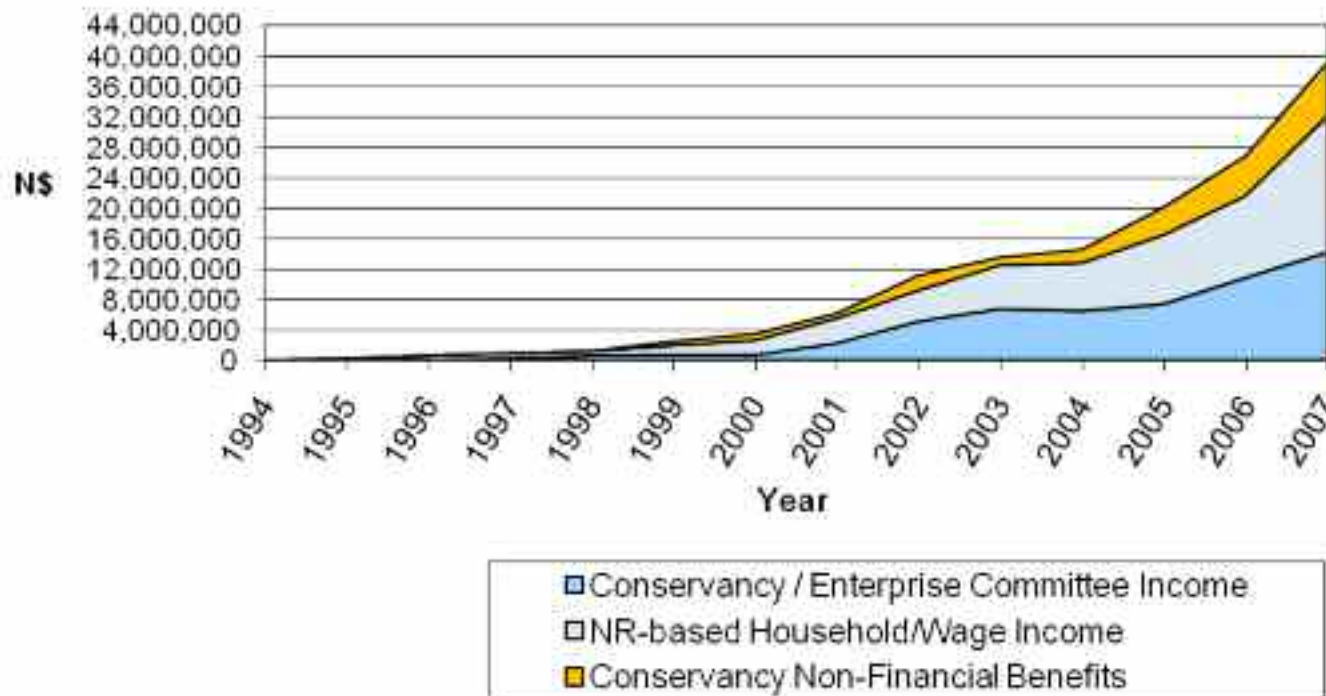


Figure 3. Benefits derived from Namibia's CBNRM Programme and affiliated conservancies from 1994 – 2007 (NACSO, 2008).

Of the 2007 amount, N\$27,648,125 (US\$3,938,479) were direct benefits to communal conservancies, of which N\$20,582,789 (US\$2,932,021) was in the form of cash payments to conservancy committees and employment remuneration to conservancy members; while N\$7,065,336 (US\$1,006,458) was the cash value of in-kind benefits (meat, donations from private sector partners, etc.) received by conservancy members. The remaining N\$11,479,857 (US\$1,630,661) were benefits received from other CBNRM enterprises (tourism, handicrafts production and sale of natural plant products) that took place in emerging conservancies or communal lands where conservancies have yet to form.

2.2.1 Community benefits from sustainable wildlife use:

The formation of communal conservancies has allowed rural communities to benefit from

five forms of wildlife utilization, including:

- Trophy hunting – hunting by clients (normally foreign) who pay for the right to hunt animals and take a trophy home as part of the experience;
- Own-use meat harvesting – self-regulated hunting by the conservancy to provide meat for consumption by conservancy residents, or for local events and special cultural festivals;
- Shoot-and-sale – harvesting of game for the commercial sale of the meat to markets outside of the conservancy;
- Premium hunting – hunting of game within a conservancy whereby the client pays exclusively for the hunting experience, but is not allowed to take any portion of the trophy or meat from the

conservancy; and

- Catch, Keep and Sale – capture of live animals within the conservancy for sale to clients outside the conservancy.

During 2007, the five different forms of wildlife utilization contributed N\$11,817,734 (US\$1,682,479) of the total 2007 conservancy benefits, or about 42.7% of all benefits received by conservancies. During 2008, Namibia's two most valuable community hunting concessions (the Bwabwata Buffalo and Kwandu Concessions⁶) were temporarily closed, resulting in a loss of approximately N\$3,000,000 of hunting benefits to rural communities and the CBNRM Program. Despite this significant loss, the continued expansion and increased productivity of trophy hunting concessions in communal conservancy almost completely offset the Bwabwata losses, producing benefits of \$11,720,805 during 2008. From 1998 to 2008, conservan-

cies and their members received a total of N\$48,623,418 in sustainable use benefits. Trophy hunting was the largest contributor, followed by the value of meat received by conservancy members through trophy-hunted animals and conservancy harvesting of meat through its own-use meat quotas (Table One and Figures 4-6, below).

Aside from monetary and meat benefits, the establishment of conservancies is enabling communities also to receive many social and developmental benefits which previously did not exist. Some of these benefits include:

- Empowerment & Respect – Previously, trophy hunting which took place in communal areas was done through a concession

⁶ The two Bwabwata hunting concessions were temporarily closed during 2008 as a result of MET policy adjustments around the award of concessions in State Protected Areas.

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Table One. Benefits Generated (all figures in Namibian dollars) from Sustainable Use of Wildlife in Communal Conservancies From 2000-2008 (Source: WWF, 2009).

Form of Use	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	Totals
Trophy Hunting	165,900	430,736	644,397	789,855	1,326,619	1,844,907	2,146,368	2,455,472	5,182,560	6,327,938	7,257,206	28,571,958
Meat Value/ In kind	24,000	32,000	171,832	310,016	520,270	738,096	822,504	2,046,774	2,569,981	3,824,410	3,056,050	14,116,383
Salaries	9,500	17,750	44,731	43,288	100,724	164,778	268,418	389,723	469,230	757,119	474,016	2,739,279
Premium Hunting	—	—	—	—	—	—	8,280	25,150	43,600	65,330	132,152	274,512
Catch Keep & Sell	—	—	—	—	132,000	211,748	110,100	195,600	—	283,300	—	932,748
Shoot & Sell	—	—	—	—	—	—	11,064	102,379	504,883	557,630	799,372	1,980,512
Total	199,400	480,486	1,148,343	2,080,063	2,959,529	2,959,529	3,366,735	5,217,104	8,772,260	11,817,734	11,720,805	48,623,418

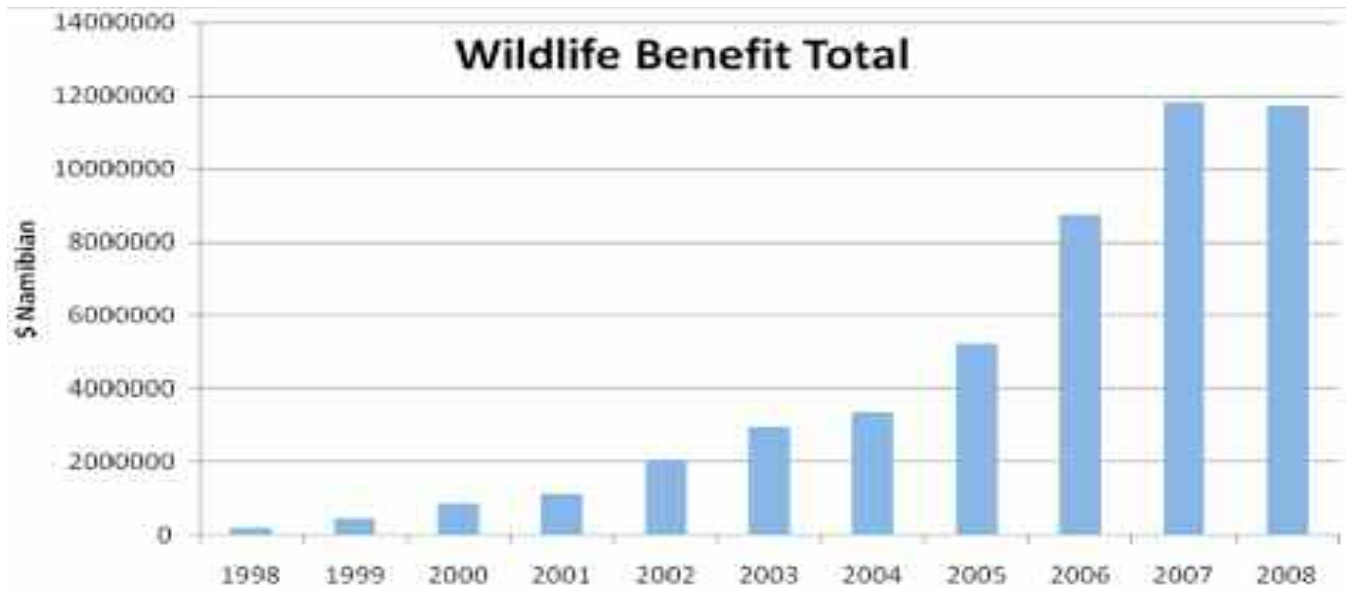


Figure 4. Total annual benefits generated from sustainable wildlife utilization in communal area conservancies from 1998-2008
(Source: WWF Annual Reports, 1998 - 2009)

KGs Meat Distributed To Community Members

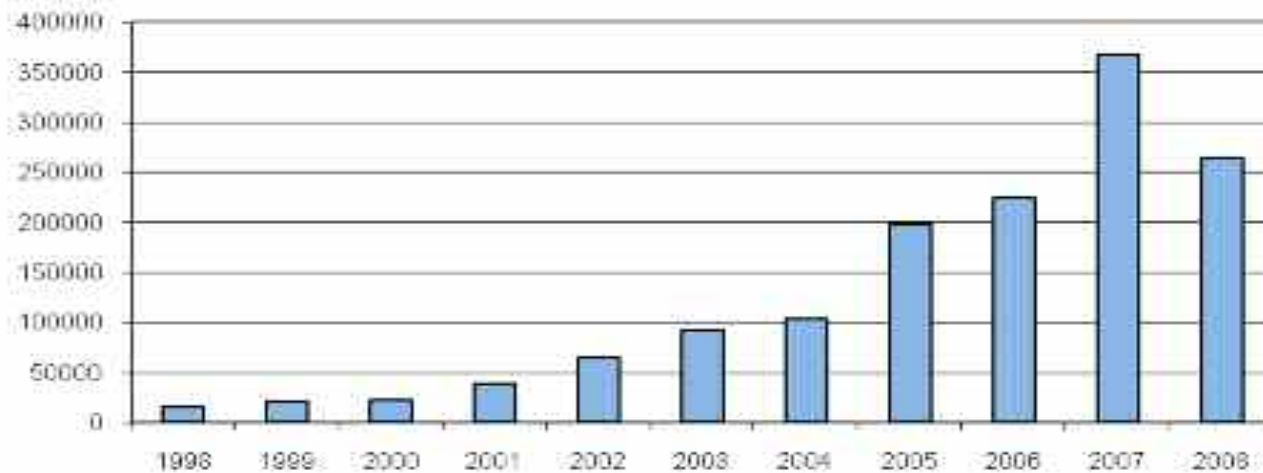


Figure 5. Annual Kgs of meat distributed to community members from trophy hunting and own-use harvesting from 1998-2008
(Source: WWF Annual Reports, 1998 - 2009).

contract between the Namibian government and the safari operator. This approach marginalized the resident community and often resulted in shallow or disrespectful relationships between the operator and community. In contrast, the conservancy legislation has given legitimacy to communal conservancies, thereby providing a legal entity to which safari operators are now accountable. This has greatly empowered community residents and strengthened lines of accountability, while also fostering mutual respect;

- Attitudes Changed Towards Wildlife As A Result of Community Benefits From Wildlife Utilization:
- Trophy hunting concession areas increased from 27 concessions at the end of 2007 to 33 by the end of 2008 (Figure 2, and Table 1, above);

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- Trophy hunting benefits increased (income, meat, and employment) to over N\$7 million, while salaries from members of conservancies directly employed in the trophy hunting sector in such conservancies have grown from over N\$ 700,000 to over N\$ 820,000 during the reporting period. The total benefits from all sustainable use activities exceeded N\$17 million.
- Rural Development – The income received from the different forms of sustainable game use is spent to: pay community staff; cover conservancy operating expenses; and to fund rural development projects (village water supplies, upgrades to schools, assistance to the elderly, etc.) and or pay dividends to conservancy members. This income allows the conservancies to be strong and visible players in the promotion and implementation of rural development activities;

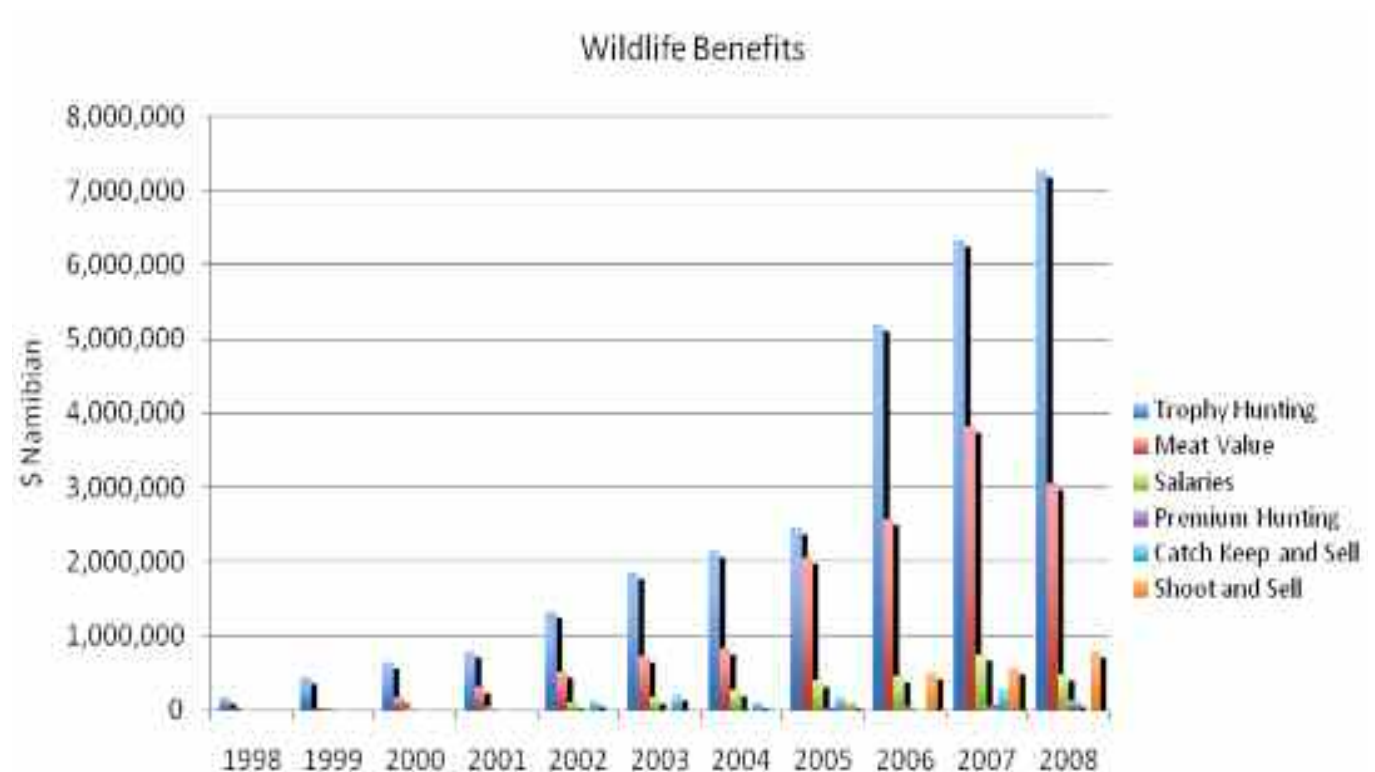


Figure 6. Comparative benefits generated annually by wildlife utilization in communal conservancies through trophy hunting, meat, salaries, premium hunting, catch, keep and sell, and shoot-and-sell harvesting from 1998-2008 (Source: WWF Annual Reports, 1998 - 2009).

- **Enhanced Representation and Governance** – The creation of conservancies must be carried out in a democratic manner, with conservancy committees being elected to represent the needs of their members. Conservancies now encompass almost one eighth (230,000 people) of the Namibian population, assisting conservancy residents to have a stronger voice and identity in their development needs. Similarly, the growing conservancy financial benefits are precipitating increased levels of social accountability within the community on how such benefits are applied and managed, how they are accounted for, and who the broader membership wants to represent them as a voice in developmental matters.
- **Leveraged Wildlife Resources** – The formation of the conservancies has allowed communities to demonstrate they can be

responsible stewards of wildlife. As a result, the MET and affiliated partners (ICEMA Project, WWF LIFE Project, EU Rural Development Project, private sector, etc.) have assisted with the creation of a national game translocation program aimed at bolstering the game populations in conservancies. From commencement of this effort in 1999 through 2008, more than 7,200 head of wildlife, valued at N\$15,841,075 have been introduced into 28 different communal conservancies.

- **Engagement In The Hunting Sector** – The introduction of different forms of wildlife utilization in conservancies has created extensive employment opportunities for community members in the hunting sector. Contractual requirements, combined with the goodwill of many Namibian safari operators, are producing increasing numbers of qualified hunting

staff, hunting guides and professional hunters. This is creating career development opportunities for community members at a professional level that did not previously exist. Similarly, the employment of community staff in the hunting sector capitalizes upon local indigenous knowledge and skills, and provides incentive for this cultural capital to be passed on to future generations.

2.3 Growth of the hunting sector in communal conservancies

A total of 33 communal conservancies now participate in trophy hunting (Figure 7). In addition, four other conservancies in southern Namibia are harvesting game for own-use purposes, but are not yet trophy hunting. Some conservancies have, in some instances, merged their resources with neighbouring conservancies to create viable trophy hunting con-

Trophy Hunting Conservancies and Concessions 1998-2008

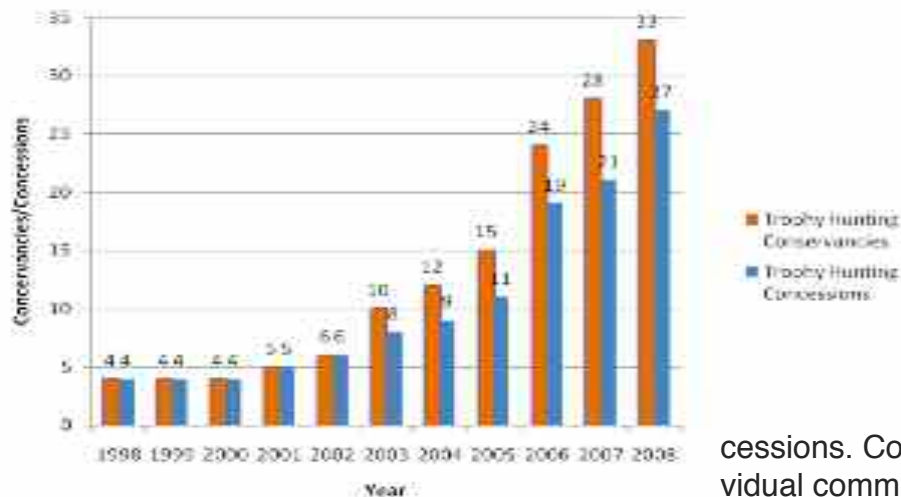


Figure 7. Number of communal area conservancies with trophy hunting concessions (Source: WWF, 2009)



Figure 8. Communal conservancy trophy hunting concessions in relation to Namibia's national parks.

cessions. Consequently, there are now 27 individual community -managed trophy hunting concessions operating through communal conservancies (Figure 7- 8).

The communal conservancy trophy hunting concessions are occurring in a wide diversity of settings, ranging from the rugged, desert environs of the west; to the central savannah grasslands; to the woodlands, riverine and floodplain systems in northeast Namibia. The terrain varies from rugged mountains interlaced with dry riverbeds, to rolling hills, to the flatlands of Nyae Nyae, Kavango and Caprivi. The existence of 31 different species on offer, inclusive of dangerous game and floodplain species, make communal conservancies a diverse and attractive hunting destination for repeated visits by international hunting clientele. These attributes, combined with recovering game populations, are contributing to a rapidly grow-

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ing hunting sector for Namibia.

Conservancies which host trophy hunting concessions presently encompass approximately 79,076 km². This is a dramatic increase from 1997 (Figure 9), when no communal conservancies existed and communities had no rights over wildlife. Importantly, there remains scope for continued development of hunting opportunities, and it is expected that trophy hunting

Area Under Trophy Hunting In Conservancies

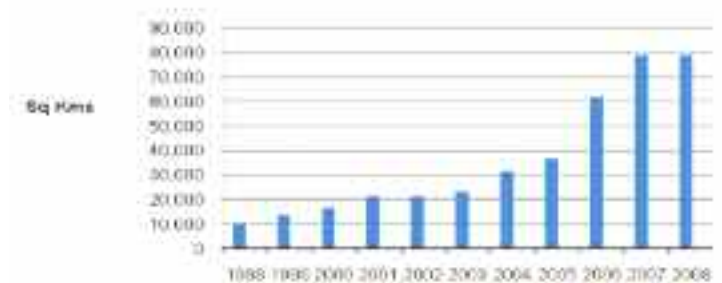


Figure 9. Increased land available to trophy hunting from communal conservancies (1998-2009).

concessions in conservancies will eventually take place on more than 140,000 km².

In addition to the increase in trophy hunting concessions, several communal conservancies have initiated the concept of “Premium Hunting”. This form of hunting is done under the auspices of a qualified conservancy hunting guide, who hosts and guides clients on high-quality natural hunts taking place within the conservancy boundaries. This type of hunt is aimed at hunting clientele who want to experience a high-quality hunt, but do so for the experience of the hunt, rather than the export of a trophy. These hunts are less costly and take place under more rustic conditions than a high-end trophy hunting experience.

Lastly, more than 40 communal conservancies are now able to legally hunt their own game through “own-use” hunting operations. Through this form of hunting, conservancy

members and or staff are able to legally hunt game animals. This form of hunting reinforces strong cultural values around hunting, while concomitantly providing much appreciated meat to conservancy members.

2.4 Conservation impacts

The stream of wildlife benefits flowing to communities through conservancies from trophy hunting and other forms of wildlife utilization has dramatically altered the attitudes of community residents towards wildlife. Where in the past wildlife was only valued as poached meat for the pot, it is now recognized as an important asset that should be managed as part of a conservancy’s livelihood and rural development strategy. Trophy hunting has played a major role in this mindset shift, with competitive and transparent tender processes creating direct links to increasingly greater tangible benefits in terms of finances, employment and

meat. This mindset change has contributed, and continues to contribute, to a number of conservation impacts, including:

- **Reduced Poaching** – Under colonial policies, the only benefit community members received from wildlife was meat from poached game. From a practical viewpoint, there was no incentive for communities not to poach, as wildlife was largely viewed as a detriment to livelihoods, either consuming one’s livestock or crops, or even worse, threatening the lives and welfare of family members. In Namibia’s case, independence was pre-dated by a 23-year struggle for freedom, producing commercialized poaching operations, a proliferation of firearms and a weak conservation framework in the northern communal areas. Consequently, by the onset of independence, wildlife had been heavily poached for an extended time, yielding

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populations which were at historical lows.

- The introduction of trophy hunting has played a strong role in creating community awareness of the value of wildlife. A competitive tender process requires prospective bidders to list the proposed trophy fee for each individual species on offer, thereby rapidly and effectively illustrating the value of game. The respondent community's awareness of the value of trophy animals precipitates strong internal social pressures against poaching, as poaching quickly becomes seen as stealing from the community itself.
- Conservancy Management Plans – The formation of conservancies has precipitated a bottom-up land-use planning and zoning process in many conservancies through which local communities identify core wildlife management zones. Such

plans are often accompanied by the introduction of dedicated wildlife watering points, game introduction plans, and conservancy management and monitoring systems to promote a rapid recovery of wildlife populations. This process actively promotes the long-term establishment and management of wildlife habitat for future generations of people.

- Game Translocations – The formation of conservancies and the recognition of the benefits that can be generated from trophy hunting, other forms of sustainable use, and photographic tourism have created a strong demand for the introduction of wildlife into communal conservancies. In response, the Ministry of Environment & Tourism and a number of partner projects (ICEMA Project, WWF-LIFE Project, EU Rural Development Project, etc.) have inspired a national game transloca-

tion program in support of communal conservancies. From 1999-2008, more than 7,200 head of wildlife (Figure 10) were translocated to communal conservancies, with the value of these translocated animals being estimated at N\$15,841,075. The success of the translocation movement is such that the MET has gained the confidence to introduce rare and valuable species like

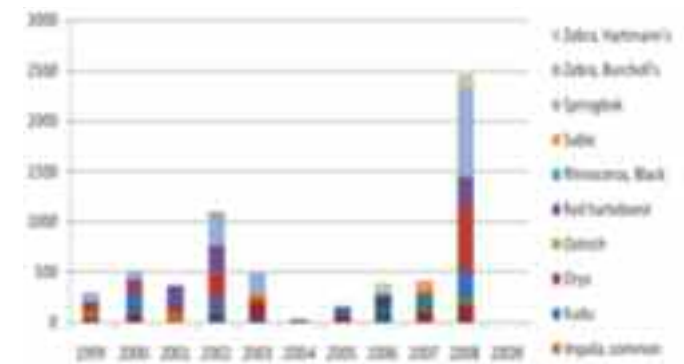


Figure 10. Annual number of game translocated into communal conservancies from 1999-2008 (Source: WWF)

black-faced impala, sable antelope and even black rhino into a number of conservancies.

- Conservation Contributions by Safari Operators – The tender process used for lucrative big-game hunting concessions is designed to promote conservation in-

vestments by the safari operator. This approach strengthens both the linkage between conservation and trophy hunting and the involvement of the operator and conservancy committee in conservation activities.

- Increased Land Under Conservation –

There are now 33 conservancies participating in the management of 27 trophy hunting concessions, while approximately 40 conservancies now have quotas to harvest game through one of the five different harvesting methodologies. Trophy hunting returns are the primary generator of benefits and income to conservancy members in 24 of these conservancies, while joint venture lodges were the major initial sources of conservancy benefits in the remaining nine conservancies. As mentioned earlier, the 33 conservancies operating trophy hunting concessions encompass more than 79,000 km².

- Enhanced Effectiveness of National Parks – It is important to note that 28 of the 33 communal conservancies participating in trophy hunting concessions are immediately adjacent to or in a key

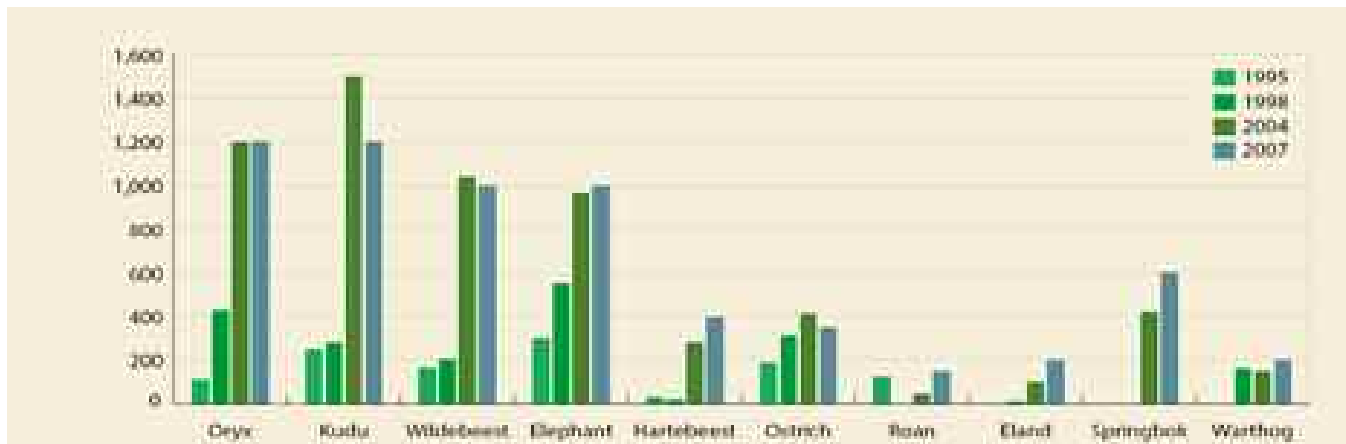


Figure 11. Estimated game populations in Nyae Nyae Conservancy from aerial game censuses (1995, 1998, 2004), water point counts, and local knowledge from 1995-2007 (NACSO, 2007).

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corridor between national parks. The proximity of these conservancies to national parks vastly increases the viability of the parks by establishing wildlife compatible land-uses outside them (Figure 8).

- Recovering Game Populations – The above factors forge a synergetic environment that is conducive to the recovery of wildlife in communal conservancies. As a result, the recovery of wildlife populations across the communal conservancies is taking place at an impressive rate. The Nyae Nyae Conservancy game populations have increased six-fold since being at historical lows in 1995 (Figure 11), while populations in Caprivi have demonstrated strong recoveries since 2001 (Figure 12).

- Recovering carnivore populations – The recovering populations of prey species, combined with the increased community awareness of the tourism and hunting

value of key large predators, have precipitated range expansion and increases in the numbers of carnivores in communal conservancies. Lion popula-

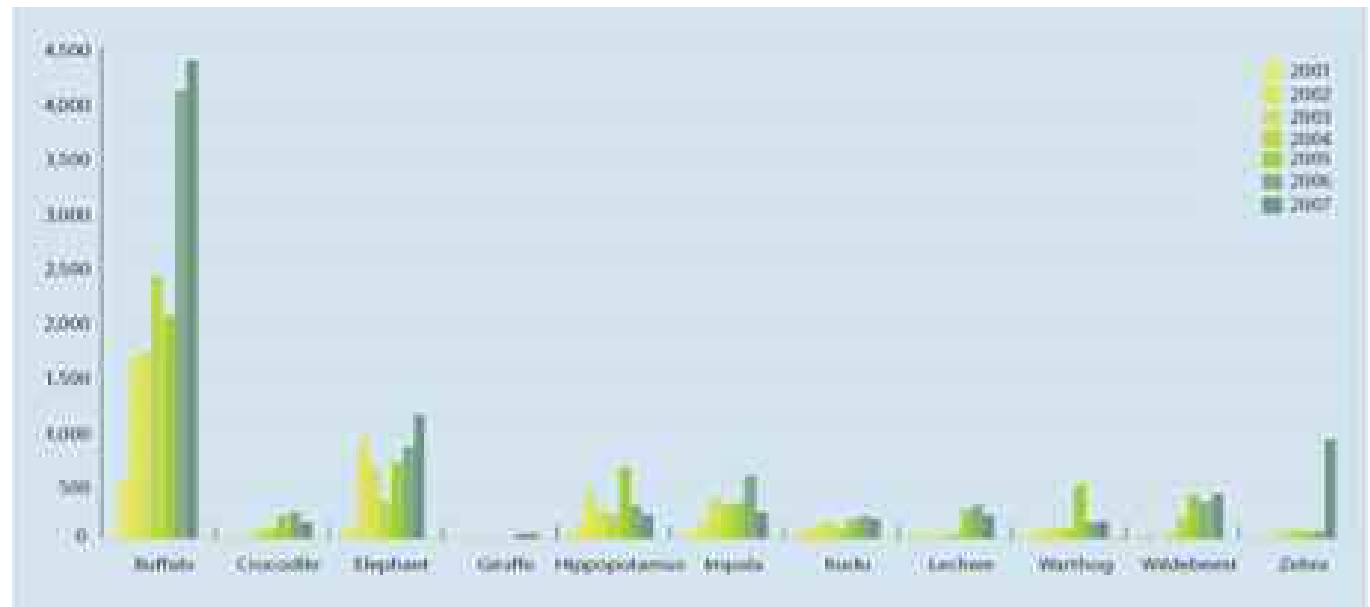


Figure 12. Estimated game populations in seven well-established communal conservancies in East Caprivi from 2001-2007 (NACSO, 2007).

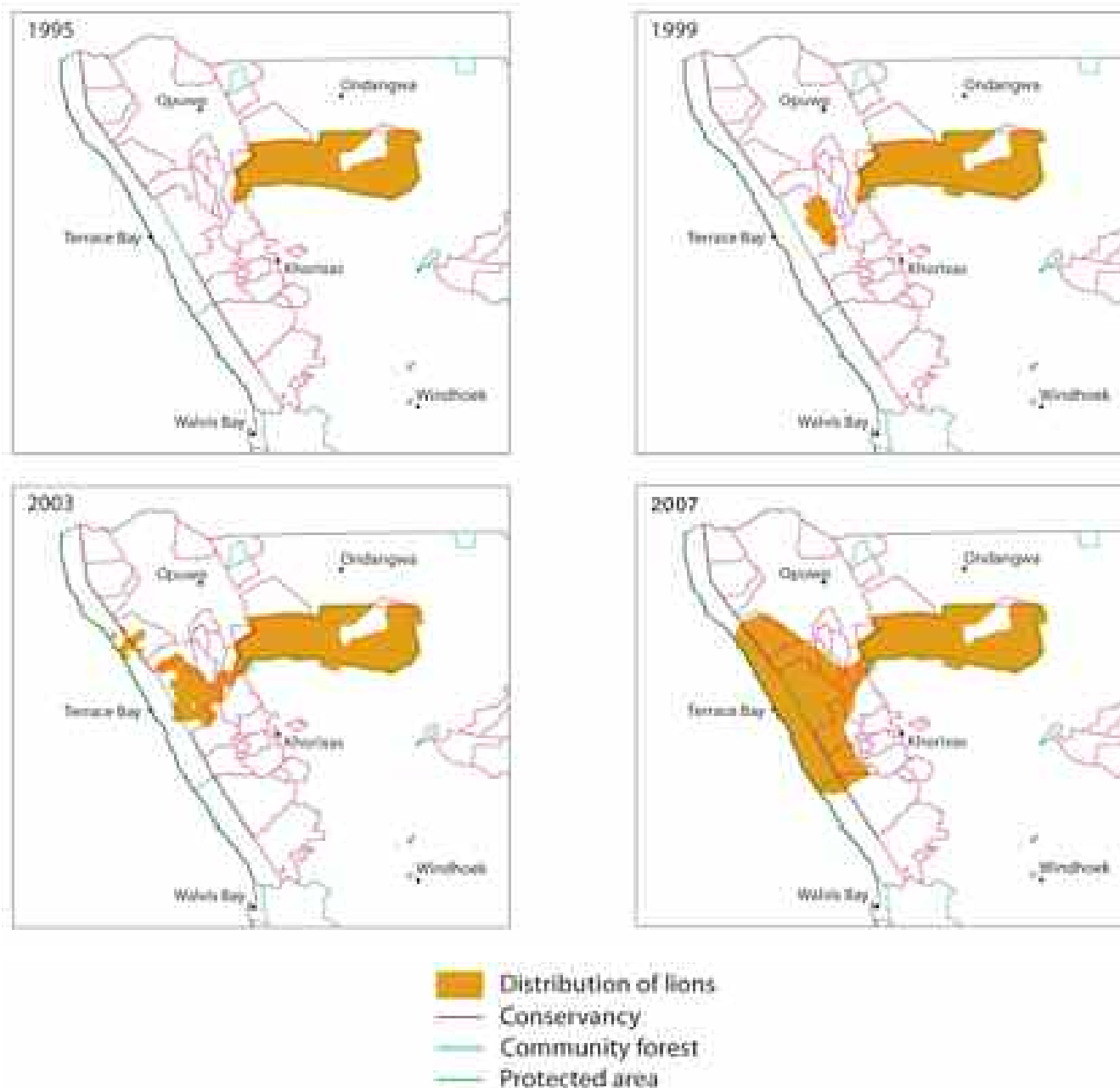


Figure 13. Range expansion of lions in north-western Namibia from 1995-2007 (Source: NACSO, 2008).

tions in northwest Namibia have grown from an estimated 30 in 1995 to approximately 125 in 2007 (F. Stander, 2007), while lion range has expanded dramatically (Figure 13). Though not as easily documented, anecdotal evidence indicates that both the range and density of cheetah in northwest Namibia have also increased markedly since the mid-1990s.

3.0 Challenges ahead

Though trophy hunting and other forms of wildlife use are beginning to prosper in the communal area conservancies, they are in their infancy and massive upside potential remains to be tapped and developed. In this regard, there are a number of challenges facing Namibia's communal area conservancies and their ability to harness the full potential of sustainably using their game resources, including:

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- **Zoning in conservancies** – Conservancies are multi-use areas, supporting non-consumptive tourism, subsistence agriculture (that is, livestock and crop production), settlements, and up to five forms of wildlife utilization. There is a need to increase the effectiveness of spatial and temporal zoning in conservancies to minimize conflict between uses and to allow optimal utilization of conservancy wildlife resources. In particular, zoning between hunting (trophy and own-use) areas and non-consumptive tourism must be developed and the capacity developed in conservancy staff to manage and enforce these compatible use zones;
- **Development of industry** – There is extensive scope for expanding the number of hunting concessions offered by communal conservancies, particularly given

the large number of registered and emerging conservancies that do not have hunting concessions. The average size of the communal area hunting concessions is more than 200,000 hectares, with these concessions being found in some of the wildest and least developed areas of Namibia. There is potential to significantly expand this number, with future concessions also being found in vast, unspoilt, wild tracts of land. Similarly, given the large numbers of game animals found in many of these conservancies, their continued positive growth trends, and the outstanding trophies being harvested, there is room to substantially bolster the off-take quotas in the existing concessions. Last, given the abundance of plains game species (more than 162,000 springbok, 29,500 oryx, and 22,000 Hartmann's zebra in the northwest conservancies alone [NACSO, 2009]), it is

envisioned that sport hunting for non-trophy animals offers substantial opportunities for conservancies to increase their income from hunting;

- **Involvement of the black sector** – Namibia, as with nearly all of Africa, has suffered from a lack of involvement and ownership by black Africans in the hunting industry. Unless this is addressed, it is doubtful there will be long-term governmental support for the industry. Thus, there is a need to foster and promote more black Namibian professional hunters in the industry, and to build the skills and capacity of such individuals to become competitive professional hunters who can champion the industry with governmental policymakers;
- **Anti-hunting lobby** – As with the trophy hunting industry in the rest of the world,



there is a need to continuously educate the public about the conservation and development merits of trophy hunting and to counter emotional and misleading propaganda against the industry by the anti-hunting lobby; and

- **Hunting industry regulation** – The Namibia trophy hunting industry strives to provide professional and ethical services. Nonetheless, there is a need to further strengthen the standards and ethics of the Namibia trophy hunting industry, and to put in place mechanisms through which the Namibia Professional Hunters Association (NAPHA) and conservancies can ensure professional hunters are guiding their clients in accordance with the highest hunting ethics and codes of conduct.

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4.0 Summary

The devolution of wildlife use rights to communities in Namibia has provided a legal basis and incentives for communities to form 55 communal conservancies, covering more than 15% of Namibia's surface area. The respondent, rapid introduction of trophy hunting and other forms of wildlife use into communal conservancies has proved to be a strong catalyst in quickly changing community attitudes towards wildlife by providing much-valued benefits in the form of income, employment and meat. These benefits have in turn empowered and prompted conservancies to reinvest much of the revenue received into conservation support activities, thereby precipitating a rapid recovery of game populations. This positive conservation framework has further leveraged donors and government to expedite the recovery of game populations by investing in game translocation efforts for targeted communal

conservancies. Consequently, game numbers on Namibia's communal lands are recovering at unparalleled rates, providing growing opportunities for further development of rural communities through different forms of wildlife utilization and photographic tourism.

Though consumptive forms of wildlife use contribute less than 50% of Namibia's total annual conservancy benefits, it can be argued that game utilization (trophy hunting, in particular) has been a strong driver in the success of Namibia's communal area conservancy program and its related conservation successes.

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2 Theunis Petersen is the WWF In Namibia Game Utilization Specialist

3 Richard Diggle is the WWF In Namibia CBNRM Community Business Advisor

4 Greenwell Matongo is the Ministry of Environment & Tourism Chief Warden, Coordination Services

5 Conservancies are legally-recognized, geographically-defined areas that have been formed by communities who have united to manage and benefit from wildlife and other natural resources.

6 The two Bwabwata hunting concessions were temporarily closed during 2008 as a result of MET policy adjustments around the award of concessions in State Protected Areas.

Biography

From 1974 to 2000, Robert Jenkins was a wildlife biologist with the Australian National Parks and Wildlife Service. His responsibilities included serving as the CITES Management Authority, formulating policy advice on export and import of wild fauna and flora as well as overseeing the issue of all export and import permits. In this capacity, he participated as an adviser on the Australian Delegation attending the Conference of the Parties to CITES from 1985 to 2000. He became the Oceania Representative on the CITES Animals Committee and was re-elected three times as a Regional Representative to the Committee, and until 2000 served as its Chair.

In July 2000, he became a consulting biologist under the name "Creative Conservation Solutions," collaborating with governments, local communities and the private sector to improve implementation of CITES and structure sustainable use of wildlife management systems as an economic incentive for conservation. Before that, he had nearly ten years collaborating with the IUCN Sustainable Use Initiative to serve as

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Introduction

Recreational hunting has its origins from the times when, in order to survive, humankind needed to hunt wild animals for food, fibre and shelter. Hunting required pitting oneself against the best Nature could bestow on potential prey to enhance its survival. Not surprisingly, its rewards have always been in terms of the thrill of the hunt, the overcoming of adversity, and the evidence of achievement in terms of either produce or trophies. Recreational hunting today is undertaken by millions of people, rich and poor, in virtually all continents, for the same rewards hunting bestowed on our ancestors. The right to hunt is considered an inalienable evolutionary right for many individuals and cultures.

However, hunting has its opponents. There have always been taboos in some cultures and religions about the killing of animals –



abhorrence at getting blood on the hands. But in recent times these views have become mainstream ones in western society. There are segments of the community that simply abhor the killing of wildlife for any reason, particularly in pursuit of recreation or "fun," and campaigns by organizations opposed to hunting wildlife now raise millions of dollars each year, which is dependent on their taking strong political action against hunters, and, more important, being seen to do so.

From a conservation viewpoint, there are instances historically where hunting has caused local extinctions of some species, but these are relatively rare. The major extinctions are due to a failure to kill feral animals, and to loss of habitat, all too often linked with feral animals.

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Modern day, well-regulated recreational hunting has unequivocally proved to be an effective conservation strategy with some species, through conferring an economic value on wildlife and natural habitats, and contributing to the livelihoods and economic development of rural communities which in many areas well-suited to hunting have few options for economic development.

Hunting as a conservation tool

Contemporary human society has a long history of caring for and looking after (conserving) items to which it attributes a high value. Items with no value are considered rubbish, and are discarded. Wildlife conservation is linked with value in the same way. If local people do not value a species highly, they will ignore its demise or hasten it if it has negative value (as in the case of predators). Recreational hunting can break this cycle by increasing the value of

wildlife to levels where it becomes a commercial asset to local people, triggering all those activities we engage in to preserve and maintain assets. The two main ways recreational hunting benefits wildlife conservation are:

- i) Through payments to landowners and rural communities for the rights to hunt, which create incentives to conserve natural habitats, ecosystems and the wildlife species hunted; and,
- ii) Through payments to wildlife agencies that allow them to undertake the management activities needed to sustain wildlife populations and their habitats.

Well-regulated recreational hunting should have minimal impact on the target population because the off-takes should be calculated to be well below maximum sustainable yield, and the hunting is more often than not biased towards

Abstract

Loss of suitable habitat is generally regarded as the most serious factor threatening the conservation of global biodiversity. As national governments strive to achieve economic development, practical conservation strategies are required that enable natural landscapes to compete more effectively with other land uses such as agriculture and urbanization. Ethical and responsible hunting has proved to be an effective tool for managing and conserving populations of wild species on all continents. The involvement of local communities and foreign hunters creates positive incentives for conserving natural habitats and sustainable economic development. The manner in which some multilateral environmental agreements are implemented is becoming increasingly important for the hunting community. Examples are provided of decisions by the Conference of the Parties to CITES. The manner in which these are implemented by contracting governments directly affects, both positively and negatively, the effectiveness of hunting programs as sustainable conservation strategies.

Notwithstanding conservation milestones

(continued on page 65)

Biography (continued)

coordinator for East Asia and the Pacific Regions. During this period, his achievements included the establishment of Regional Sustainable Use Specialist Groups for Australia-New Zealand, East Asia, Pacific Islands and the West Indian Ocean Islands. In 2004 he established Species Management Specialists Inc., an international not-for-profit non-governmental organization advocating and advising on conservation through sustainable use. He has worked with governments and the private sector of over thirty countries on conservation matters, and was awarded an Order of Australia for contributions to international wildlife conservation and sustainable international trade in wildlife.

males. Hence there are no scientific or technical barriers to hunting being sustainable and not detrimental to the survival of the species.

Recreational hunting has always come at a cost to hunters. Today, there are good reasons to ensure payments are used to their best advantage to encourage sustainable management of wildlife resources. Benefits derived by landowners and local communities from hunting activities may be essential for creating a commercial interest in habitat conservation. Revenues from hunting collected by the state engender political support for sustaining hunting as a form of economic development, and for paying that little bit more attention to the conservation of hunted species than would otherwise be the case.

Recreational hunting tends to be in two classes: i) hunting in local areas by nationals, and ii) hunting in distant areas, the latter of which requires a substantial investment in travel and on-site hunting costs. Distant hunting itself can involve national or international hunters. Both types of hunting have contributed, albeit in dif-

ferent ways, to conservation.

Game hunting of birds and deer in the United Kingdom has a long history, but pales into insignificance relative to recreational hunting in North America. In the United States in particular, it reached a level of public participation that is unparalleled anywhere else in the world. As noted by Mahoney (2009), native wildlife in North America is owned by the state. State and provincial governments are the main agencies responsible for the management of wildlife, including game species, and the administration of hunting through the declaration of hunting areas, seasons and licence conditions.

Sharp and Wollscheid (2009) report that a survey undertaken in 2001 by the US Fish and Wildlife Service determined that more than 34 million US citizens fished and 13 million hunted. Revenue gathered through recre-

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ational hunting and fishing that year was a staggering \$US70 billion. It is estimated that, through the payment of licences and fees, hunters contribute 65 percent of the annual costs to government agencies of wildlife management and conservation programs (Mahoney, 2009).

Such a large hunter client base in the United States produced two positive conservation outcomes. First, as the principal recipients of revenues from hunting, state governments devote considerably more resources to managing game species and their habitats to benefit hunters. The Federal Government, through the collection of federal taxes, further supplements state government budgets for wildlife management. Jackson (1996) considers the significant recovery of certain North American game species, such as white-tailed deer (*Odocoileus virginianus*), pronghorn antelope (*Antilocapra americana*), turkey (*Meleagris gallopavo*) and

Canada goose (*Branta canadensis*)] to be a direct consequence of management programs implemented specifically to accommodate recreational hunting, and partly paid for by revenues generated by it.

Not surprisingly, the large numbers of hunters in the United States spawned the formation of various hunting associations. The primary purpose of these has been to lobby governments to ensure the interests of their members are preserved. The increasing political influence of organizations opposed to hunting and the killing of wild animals makes it essential that a strong and informed opposition is in place.

Additional to their advocacy activities, peak hunting organizations such as Safari Club International (SCI), Ducks Unlimited and Conservation Force contribute directly to biodiversity conservation by sponsoring capacity-building projects and field conservation

Abstract (continued)

achieved by hunting programs, uncontrolled hunting has had some profoundly negative results, even to causing extinctions. Challenges remain for the hunting fraternity to further hunting as a conservation tool. The increasing influence of protectionist and animal rights NGOs is emphasized; advocates of sustainable use must combat their activities and achieve greater acceptance within the international community to apply hunting as a tool for conserving other iconic endangered species.

management programs both in the United States and in developing countries. From humble beginnings in 1972, SCI has grown into an international organization with 190 chapters and more than 54,000 members. Through its Foundation, SCI advances its mission through science-based conservation, education and humanitarian services. The number and diversity of field projects funded



by SCIF is growing. Annex 1 summarizes a selection of field projects, completed and in progress, in recent years. One of the more important functions of SCI is its advocacy role through lobbying, litigation and involvement in government affairs, both national and international, in all forums where decisions affecting its members are made. SCI has a long track record of active participation in CITES.

Although smaller and established more recently (in 1997), Conservation Force has similarly started to initiate an impressive range of project activities, through which recreational hunters are contributing directly to *in situ* conservation in several African countries.

Conservation Force field projects

1. Robin Hurt Wildlife Foundation, Tanzania – clients are persuaded to donate 20% or more above their trophy fees to Conservation Force as a tax-deductible contribution. More than two million US dollars have been collected through the scheme. Funds are used for anti-poaching and other activities that benefit communities economically. The Fund has enabled two full-time, fully equipped anti-poaching patrols to be in the field at all times. More than 60 primary and secondary schools have been constructed and it has enabled the operation of 12 medical dispensaries, two of which are mobile.
2. Ranching for Restoration – Texas ranchers contribute 5-20% of the gross price charged for ESA-listed exotic species, barasingha (*Rucervus duvaucelii*), Eld's

deer (*Cervus eldii*), Arabian oryx (*Oryx leucoryx*) and red lechwe (*Kobus leche*) for in situ conservation of the species in their countries of origin.

3. Conservation Force collaborates with professional hunter Jeff Rann to operate the Rann-Force Project in which clients donate US\$10,000 above the cost of their lion safaris to Conservation Force exclusively for conservation of the African lion in Botswana and other countries. Projects funded include the Krueger Lion Study, the Tanzania Man-Eating Project as well as the Lion Aging Guide booklet.

Similar hunting organizations have been established elsewhere in the world. Although most restrict the scope of their charter to addressing the interests of their national constituency (for example, the Sporting Shooters Association of Australia), there are some that

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operate internationally. The International Council for Game and Wildlife Conservation (CIC) was established in 1928 and, more recently, the Federation of Associations for Hunting and Conservation of the European Union (FACE) – these are two such entities, with their headquarters in continental Europe. CIC functions through a series of commissions and working groups. The geographic focus of CIC field projects tends to be Eastern Europe, Russia and Africa.

“Trophy” hunting, undertaken in foreign countries, involves only a small proportion of the world’s hunters, but because of the costs involved, results in significantly greater *per capita* revenue being generated for the host country. This form of hunting can represent a unique opportunity to tailor a specific conservation program based on hunting revenues, as discussed below.

Trophy hunters usually want to retain the whole specimen, or representative parts, as a memento of the hunt. For foreign nationals, this requires those parts (such as skins, skulls, horns and antlers) to be transported, as personal effects, across international borders to the hunter’s country of residence. In order to do this legally, tourist hunters must comply with regulatory requirements of the exporting country and, often, the importing country. The majority of game species involved are common and widespread, but some species are classified internationally as endangered, and are listed in either Appendix I or Appendix II of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES).

Non-commercial exports of trophies of Appendix-I and Appendix-II listed game species generally do not present a problem for the authorities of exporting range states. However,

CITES provides for countries to adopt stricter domestic measures, and these can create real difficulties for hunters wanting to import their trophies. It is not just the hunters who are disadvantaged; stricter domestic measures by importing countries often require the exporting country to devote resources to satisfying the bureaucratic requirements of a foreign administration.

These stricter domestic measures are almost invariably the result of political compromises in response to directed campaigns and lobbying activities by animal rights and animal welfare NGOs philosophically opposed to hunting and any other activity in which wild animals are killed. Stricter domestic measures imposed by importing countries do not contribute to *in situ* conservation of the wild resource, and, if anything, make it more difficult for hunters to engage in trophy hunting internationally.

The North American hunting model described by Mahoney (2009) relies on a robust governance framework that derives from a strong economy, heightened public awareness of conservation issues, active biological research, transparent laws and effective enforcement (Wall and Child, 2009). In many African countries and India, the colonial era resulted in publicly administered hunting programs. Wall and Child (2009) provide plausible explanations why the conservation contribution of publicly administered hunting in former colonies failed to mirror the successes of the North American model. In many developing countries, the economies, governance, accountability mechanisms and state administrations are not able to support, capture or apply revenues derived from licences and taxes to *in*

situ conservation programs. With this background, a different approach to conservation hunting¹ emerged, with the state effectively transferring management and use rights to landowners and rural communities on whose land the wildlife occurs². Child (1995), Kennedy and Kaufman (1999), Wall and Child (2009) and Jones (2009) all provide elegant explanations of the conservation theory and descriptions of the conservation and development achievements of these programs.

Trophy hunting, primarily of African elephant (*Loxodonta africana*) by foreign nationals, who are required to pay high trophy fees, became the principal driver underpinning the economic success of community-based natural resource management schemes in Africa. Under these

community development programs, the African elephant became an economic asset. Crop damage was offset by the overall benefits accruing from the use of elephants.

The African elephant is listed in Appendix I of CITES although national populations of Botswana, Namibia, Zimbabwe and South Africa are included in Appendix II. The international movement of hunting trophies, irrespective of whether the specimens involved are listed in Appendix I, is interpreted under CITES as constituting the transport of personal effects of a hunter. As a consequence, imports of Appendix-I trophies are deemed to be for non-commercial purposes. Recreational trophy hunting of Appendix-I listed species by foreign nationals is, therefore, theoretically not

¹ "Conservation hunting" is a term used by Wall and Child (2009) to describe a hunting program that delivers conservation and rural development benefits

² The devolution of management and use rights to landowners and rural communities originated in and is most widely practised by southern African countries, giving rise to the Communal Areas Management Programme for Indigenous Resources (CAMPFIRE) in Zimbabwe, Administrative Management Design (ADMADE) in Zambia, and Conservancies in Namibia. Variants of these programs have also been implemented in Botswana and the Republic of South Africa.

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constrained by the provisions of CITES.

However, regardless of which Appendix listing applies, individual countries have the ability to voluntarily establish a national export quota for elephants taken as trophy specimens by foreign tourist hunters. Table 3 presents the current annual export quotas for African elephant, established by range states, for taking of elephants for non-commercial purposes by foreign hunters.

Conservation achievements

Conservation of rhinoceros has, and continues to be, problematic in Africa and Asia. The demand for rhinoceros horn in the late 19th and 20th centuries resulted in populations of all species declining precipitously and becoming threatened with extinction. As the numbers dwindled, rhinoceros horn acquired a high value, stimulating extensive poaching and a

Country	Appendix	Export quota
Botswana	II	400 animals
Cameroon	I	80 animals
Namibia	II	90 animals
Tanzania	I	200 animals
Zambia	I	40 animals
Zimbabwe	II	500 animals

Table 3 Annual export quotas for *Loxodonta africana* hunting trophies in 2009, established in accordance with Resolution Conf. 10.10 (Rev. CoP14)

global illegal trade in the commodity. In the late 1800s the southern white rhinoceros (*Ceratotherium simum simum*) was almost extinct, being known from a single population of fewer than 100 individuals in Umfolozi Game Reserve, South Africa. Initially included in Appendix II of CITES when the Convention was concluded in 1973, the subspecies was transferred to Appendix I in 1977.

Contrary to the global trend with other species of rhinoceros, an innovative approach to the management of southern white rhinoceros in South Africa produced positive conservation results. Protection and effective anti-poaching measures led to a population increase, followed by a policy that permitted private ownership of animals, enabling hunting on private lands. Today, southern white rhinoceros number about 17,500, existing mainly in protected areas and private game ranches in South Africa. Populations have also been reintro-

duced to Botswana, Namibia, Swaziland, Zimbabwe and Mozambique.

In recognition of the successful conservation strategy implemented by South Africa, the 9th meeting of the Conference of the Parties to CITES (Fort Lauderdale, 1994) transferred the South African and Swaziland populations of southern white rhinoceros back to Appendix II “for the exclusive purpose of allowing international trade in hunting trophies and live animals to appropriate and acceptable destinations.”

The emergence of commercial trade in hunting trophies of white rhinoceros in South Africa is a problem of particular concern, with the potential to discredit trophy hunting and its growing acceptance as a practical management tool for conserving certain species. South African authorities recently detected an illegal operation to smuggle out rhinoceros horn for

the Asian market disguised as personal hunting trophies. Asian businessmen, posing as tourist hunters, travel to South Africa in a quest to obtain rhinoceros trophies. Horns, subsequently exported as “non-commercial” hunting trophies, in reality are destined to supply the demand for the commodity on the East Asian black market. At this stage, it is uncertain whether the interdictions to date represent opportunistic sales or the start of a trend to use the tourist-hunting provisions of CITES to circumvent the ban on using rhinoceros horn for commercial purposes. The South African authorities have taken appropriate action, using racketeering and conspiracy charges against some of the people involved, and several have been sentenced to lengthy prison terms for poaching and illegal trade in rhinoceros. This example serves as an example of how general criminal law can be used to combat wildlife crime and illegal trade. However, it also represents the extent to which the crimi-

nal element will go to exploit a highly profitable demand for a prohibited commodity. In this respect, it is critically important for the hunting industry to be vigilant.

Frisina and Tareen (2009) describe the origins, development and achievements of a remarkably successful trophy-hunting program, the Torghar Conservation Project (TCP) in Balochistan Province of Pakistan. Initiated in 1985 and administered by local tribal peoples, the principal objective of the TCP was the long-term conservation of Suleiman markhor (*Capra falconeri jerdoni*) and Afghan urial (*Ovis orientalis cycloceros*). Markhor are restricted to the mountainous region of western Pakistan where the species occurs in low numbers. The Afghan urial is more widespread but not abundant. *Capra falconeri* is included in Appendix I of CITES.

Because of the program’s economic depend-

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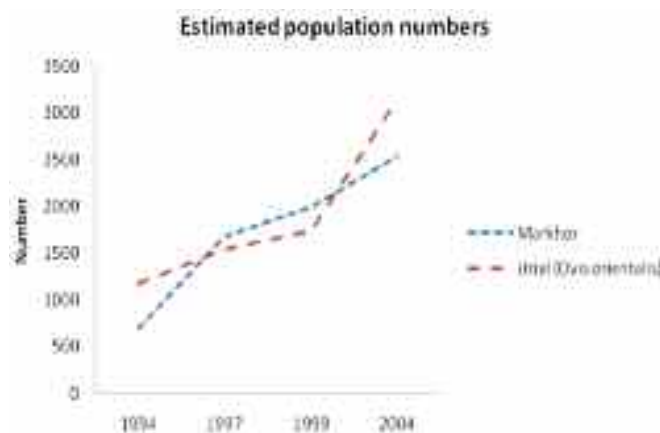


Figure 1 Population trends for *C. falconeri* and *O. orientalis* in the TCP area (after Frisina & Tareen, 2009).

ence on the participation of foreign hunters to sustain itself, in 1997 Pakistan petitioned the 10th meeting of the Conference of the Parties to CITES for a limited annual export quota for hunting trophies. In response, the Parties to CITES adopted Resolution Conference 10.15 on *Establishment of quotas for markhor hunting trophies*, which authorized Pakistan to ex-

port six trophies each year. Limited trophy hunting by foreign nationals under the TCP has resulted in population increases for both species within the Project area (Figure 1), while simultaneously producing economic benefits for local communities. Revenue from the substantial hunting fees has been used to employ and train local game guards. Funds have also been disbursed among local communities to improve health, education, roads and water supplies.

Recreational hunting of markhor in Pakistan proved to be a successful conservation strategy that returned substantial economic benefits to local communities. As a consequence, the 12th meeting of the Conference of the Parties to CITES (Santiago, 2002) amended Resolution Conference 10.15, to increase the annual export quota of markhor hunting trophies for Pakistan from the initial six animals to twelve specimens. Rosser *et al* (2005) pro-

vide a more detailed description of the markhor example as a successful conservation strategy with respect to the application of the precautionary principle.

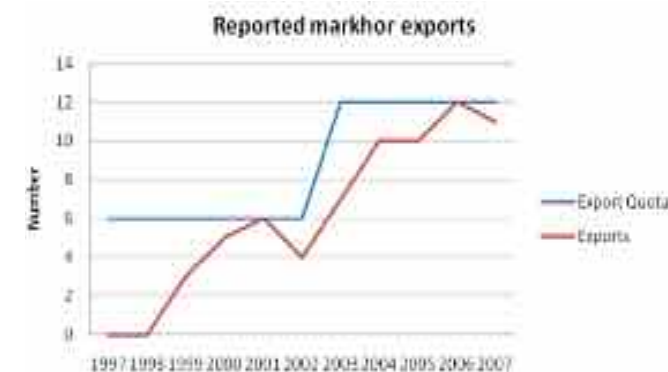


Figure 3 Exports of Appendix-I markhor hunting trophies from Pakistan following implementation of the CITES-approved annual export quota.

Leopards (*Panthera pardus*) have also benefited from recreational hunting. Large numbers of leopards were killed to supply skins to the international fashion industry, which resulted in

the species being classified internationally as “endangered” and included in Appendix I of CITES. However, leopards were also being killed because they were dangerous animals to coexist with, and serious threats to livestock. If the skins could be sold, well and good. The assumption that they were only being killed for trade was incorrect. Hence the Appendix-I listing did little to reverse declining trends in leopard abundance and improve their conservation status. The 4th meeting of the Conference of the Parties to CITES (Gaborone, 1983) implemented a system of national annual export quotas for leopard hunting trophies by means of a series of resolutions.

Despite some early implementation problems, primarily associated with reporting requirements, the system continues to operate to the

present day³. When introduced in 1983, the system was confined to seven Parties but it has increased substantially (Table 2). In adopting the 1983 resolution the Parties to CITES

employed a precautionary approach, by restriction to one trophy per hunter, but this was increased to two trophies per hunter at the 7th Conference of the Parties (Lausanne, 1989).

Country	Annual Export Quota						
	1983	1985	1987	1989	1992	1997	2007
Botswana	80	80	80	100	100	130	130
Central African Republic	—	—	40	40	40	40	40
Ethiopia	—	—	500	500	500	500	500
Kenya	80	80	80	80	80	80	80
Malawi	20	20	20	20	50	50	50
Mozambique	60	60	60	60	60	120	120
Namibia	—	—	—	—	100	250	250
Republic of South Africa	—	—	—	50	75	150	150
United Republic of Tanzania	60	250	250	250	250	500	500
Uganda	—	—	—	—	—	—	28
Zambia	80	300	300	300	300	300	300
Zimbabwe	80	350	500	500	500	500	500

Figure 3 Exports of Appendix-I markhor hunting trophies from Pakistan following implementation of the CITES-approved annual export quota.

³Current national export quotas for leopard are authorized pursuant to Resolution Conference 10.14 (Rev. CoP14) on *Quotas for Leopard Hunting Trophies and Skins for Personal Use*

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Figure 4 Exports of leopard hunting trophies reported by Zimbabwe for the period 1984-2007 relative to the corresponding CITES annual export quota.

Exports of leopard hunting trophies reported by Zimbabwe and Tanzania for the period 1983-2007, relative to annual quotas, indicate a reasonably conservative approach to hunting (Figures 4 and 5). The increasing trend of hunting trophy exports from both countries suggests that tourist hunting is an increasingly important management tool in both countries.



Figure 5 Exports of leopard hunting trophies reported by Tanzania for the period 1984-2007 relative to the corresponding CITES annual export quota.

Southern African wildlife authorities faced similar problems managing conflicts in agriculture linked to increasing numbers of cheetah. On the basis of the experience with leopard, the 8th meeting of the Conference of the Parties (Kyoto, 1992) applied the same approach to management of cheetah (*Acinonyx jubatus*) in Namibia, Botswana and Zimbabwe.

An annual hunting quota was authorized for each country, effectively conferring an economic value on the species, and thereby minimizing numbers killed as pests. In the case of cheetah, in preference to adopting a species-specific resolution (*cf* leopard and markhor), the Parties decided to annotate the Appendix-I listing for the species, which is a different technical approach to the same problem.

Trophy hunting of cheetah in Zimbabwe and Namibia has similarly proved to be an important and successful management tool, with annual trophy exports increasing but remaining well within the conservative export quotas that have been approved for these two countries (Figures 6 and 7).

The 13th meeting of the Conference of the Parties to CITES (Bangkok, 2004) took the bold decisions to approve a small annual hunting quota of five adult males, for the black rhi-



Figure 6 Exports of cheetah hunting trophies reported by Zimbabwe for the period 1992-2007 relative to the corresponding CITES annual export quota.



Figure 7 Exports of cheetah hunting trophies reported by Namibia for the period 1992-2007 relative to the corresponding CITES annual export quota.

noceros (*Diceros bicornis*) in Namibia and South Africa. These two decisions acknowledge unequivocally the important role in which trophy hunting is perceived as providing to the conservation of a critically endangered species, and represent a marked change from an earlier decision. In 1992 a Zimbabwe proposal, based on foreign hunters darting black

rhinoceros, was rejected. This innovative proposal envisaged hunters being photographed *in situ* with the immobilized animal, and then removing the horn as the trophy to be later attached to an appropriate fibreglass mould and exported to the client's country of residence.

Australia and New Zealand possess unique

faunas, which, unlike those elsewhere in the world, do not feature large ungulates or other megafauna favoured as game species. As a consequence, various acclimatization societies, established in the 18th century, introduced "game" species for traditional hunting and shooting activities. Rabbit (*Oryctolagus cuniculus*), hare (*Lepus capensis*), European fox (*Vulpes vulpes*), red deer (*Cervus elaphus*), fallow deer (*Dama dama*), sambar (*Cervus unicolour*), rusa deer (*Cervus timorensis*), hog deer (*Axis porcinus*) and chital (*Axis axis*) were all released for recreational hunting and persist today. Numerous other exotic species including domestic cats (*Felis catus*), pigs (*Sus scrofa*), camels (*Camelus dromedarius*), goats (*Capra hircus*) donkeys (*Equus asinus*), horses (*Equus caballus*), Asian water buffalo (*Bubalus bubalis*) and banteng cattle (*Bos banteng*) have established feral populations in Australia as a result of domesticated livestock being liberated either accidentally or

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intentionally. The European fox, rabbits and cats thrived in their new environment, and constitute Australia's major environmental pest species, responsible directly and indirectly for the extinction of a raft of small native mammal species.

Like Australia, New Zealand does not possess a large mammal fauna that attracts hunting activities. During the 1800s attempts were made to introduce a diverse array of exotic species. Red and fallow deer, chamois (*Rupicapra rupicapra*), Himalayan tahr (*Hemitragus jemlahicus*), wild pigs and several other species of deer have become established in mountainous regions of the South Island. In addition, NZ has feral populations of Australian wallabies and possums, which are major environmental problems.

Recreational hunting in Australia and New Zealand targets native waterfowl, but is otherwise focused on introduced species, which are

generally considered environmental problems and risks to the conservation of native biodiversity. Hunting organizations frequently claim their focus on feral animals assists conservation through reducing populations, but it is often not clear whether enough animals are taken to compensate for natural recruitment. There is also the added complication of hunters wishing to ensure that good trophy quality animals remain available and are not extirpated, regardless of the conservation problems they may be causing. Striking compromises between the objectives of government conservation agencies and those of hunters, where each respects the values and perceptions of the other, is the obvious way forward.

When feral animal numbers in Australia reach what are essentially plague proportions, control programs are implemented with helicopter shooting and aerial baiting with 1080 and ar-

senic poisons for foxes and feral cats. To preserve Australian beef exports to the United States, large numbers of wild pig, Asian water buffalo and, to a lesser extent banteng (*Bos banteng*), were exterminated in the 1980s under the government-administered Brucellosis and Tuberculosis Eradication Campaign (BTEC). With the reduction of buffalo numbers, badly degraded wetlands in northern Australia recovered dramatically. In Indonesia, wild populations of banteng are virtually extinct. The decision was made not to exterminate banteng, but rather to manage a wild herd, which trophy hunters could access with permit fees and meat going largely to the traditional Aboriginal landowners. The Australian population of banteng remains reduced but healthy and thriving. It supports a small-scale but successful safari-hunting operation.

In the late 1980s in the Northern Territory of Australia, an out-sourcing program was intro-

duced which allowed recreational hunters from one of the local hunting associations to further reduce the remaining numbers of wild pigs and buffaloes on conservation estate, where previous aerial shooting had already reduced populations to levels where aerial shooting was no longer cost-effective. A similar outsourcing scheme commenced in New South Wales in 2002 under the *aegis* of the Game Council of NSW. The *Game and Feral Animals Control Act 2002* established the Game Council NSW as a statutory authority reporting directly to the NSW Minister for Primary Industries. A major objective of the Game Council of NSW is to harness the efforts of licensed, accredited hunters to assist in the reduction of some of the nation's worst environmental pests: pigs, goats, foxes and rabbits. With the establishment of the Game Council, some key developments have followed: i) a NSW Game Hunting Licence System; ii) production of the Hunter Education Handbook; and iii) declaration of 180 state forests and two

Crown Land areas for hunting by holders of a NSW Game Hunting Licence. The Game Council is re-establishing a role for hunters in NSW, after the State went through a period in which hunters' rights were simply ignored.

During the 1970s and 1980s waterfowl hunting was a popular recreation in Australia. The numbers of shooters, many of whom were members of local gun clubs and or national hunting associations, stimulated State and Territory wildlife agencies to protect and manage wetland areas specifically to accommodate the interests of recreational hunters. State agencies invested in research and management to ensure that hunting seasons were regulated. The political incentive to acquire and manage wetlands for waterfowl conservation resulted in Australia being well placed to nominate many wetland sites for inclusion in the list of internationally important wetlands under the RAMSAR Convention.

However, in the 1990s, several large protectionist and animal welfare organizations waged a campaign in the media that saw duck hunting sequentially banned in Western Australia, New South Wales and Queensland, on the basis of animal welfare concerns. As a consequence, research and management activities ceased, numerous small rural communities that derived substantial revenue during waterfowl open seasons incurred economic losses, farmers who maintained wetlands for hunting converted them to rice production, habitat loss thus accelerated, and ducks are now relegated to agricultural pests that can be shot and poisoned all year round. Peak hunting organizations such as Field and Game continue to campaign actively against such lunacy, but it seems the urban majority in Australia just do not understand nature.

With the exception of freshwater fish and game birds, all introduced animals in New

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Zealand are subject to the provisions of the *Wild Animals Control Act*, administered by the Department of Conservation (DOC). Freshwater fish and certain introduced birds are classed as game species and are managed through a national network of Fish and Game Commissions. All other introduced species are pests and subject to eradication or population control.

In addition to domestic hunting, New Zealand is a popular destination for foreign hunters who visit the country each year to secure trophies, and it is now an exporter of game meats. Lengthy negotiations between hunter organizations and DOC resulted in the establishment of two new advisory bodies to find compromises between the obvious economic and conservation conflicts involved.

Conservation failures

Conservation achievements can be attributed to recreational hunting, but hunting wild animals in the modern era, whether for food, profit, persecution or pleasure has had less than glamorous beginnings. The bison (*Bison bison*) presents perhaps the most notable example of a species brought to the brink of extinction by “recreational” and commercial hunting, with countless millions of animals slaughtered during the 1800s when the western plains in North America were opened up by a network of railroads. The dodo (*Raphus cucullatus*), Steller’s sea cow (*Hydrodamalis gigas*), and the great auk (*Pinguinus impennis*) are all examples of species hunted to extinction by sailors in their quest for fresh protein. Although not strictly analogous to recreational hunting, these examples are often cited by op-

ponents to justify their arguments against a positive correlation between hunting and wildlife conservation. Auks and Dodo were simply killed and eaten. There was no hunting, because they did not try to escape.

Hunting of migratory birds is an important traditional activity in the Mediterranean Region, and includes subsistence hunters and trappers, hunt managers, gamekeepers and foreign tourist hunters. Large numbers of migratory birds are killed as they move through the Region each year. While many are killed in southern Europe, large numbers are shot or trapped in North Africa and the Middle East, notably Lebanon, Syria and Egypt.

Hunting of migratory birds in the Mediterranean Third Countries (MTC) Region⁴ is not sustainable. Tucker *et al* (1994) identify this

⁴Mediterranean Third Countries refers to North African and Middle East countries bordering the Mediterranean Sea. Sub-regional focal points for the project were: Lebanon, Jordan, Algeria, Egypt, Morocco, Syria, Palestine and Tunisia



hunting as a major factor contributing to the decline of many bird species breeding in Europe. Much of it is illegal under existing national legislation, with widespread use of illegal trapping devices and poisons, shooting out of season and in prohibited areas, and killing of protected species. Management of hunting in this region has been characterized by generally poor legal regulation and law enforcement, lack of resources and capacity among government and non-governmental organizations concerned with hunting and the conservation of migratory birds, poorly developed communication and information sharing systems.

Concerned that many of the species killed are internationally threatened species or listed on Annex 1 of the EU “Birds Directive,” the Euro-

pean Union funded a capacity building project for sustainable hunting of migratory birds in MTCs. The Guidelines⁵ and Code of Practice⁶ are tailored to suit the socio-economic conditions and needs of the MTCs. They are based on a series of National Hunting Reports and regional reviews, developed as part of the BirdLife International Sustainable Hunting Project⁷. Both documents are the result of extensive consultation and review at a workshop attended by representatives from national governments, conservation and hunter groups, thereby enabling contributions by all relevant stakeholders in order to derive a common set of guidelines for the MTC Region.

The emergence of “canned” hunts in South Africa in the 1990s received widespread pub-

⁵*Guidelines for Moving Towards Sustainable Hunting of Migratory Birds in MTC Countries.* (Oct 2006), 49pp.

⁶*Code of Practice for Responsible Hunting of Migratory Birds in MTC Countries.* (Sept 2006), 4pp

⁷Building Capacity for Sustainable Hunting of Migratory Birds in Mediterranean Third Countries. Project funded by the European Union (Project Ref: LIFE 04 TCY/INT/000054).

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licity and condemnation in western society. Particularly appalling images of enclosed animals being shot by so-called “trophy” hunters from behind the safety of a steel fence were broadcast into the living rooms of families around the world. Government wildlife agencies, and various non-governmental organizations, including accredited hunting organizations, were quick to condemn the practice. Fortunately, to the best knowledge of the author, the practice of selling “canned” hunts has since been outlawed and is no longer available. Although this example relates to the ethics of hunting and is not directly relevant to conservation, it did influence public opinion and the manner in which the general public perceives hunting of wild animals. Opponents to conservation hunting will continue to cite the phenomenon as an example of what can go wrong when hunting is privatized.

In 1997 the Government of Venezuela sought

the approval of the 10th meeting of the Conference of the Parties to CITES for an innovative sustainable use program it had formulated for the jaguar (*Panthera onca*) in response to increasing numbers of problem animals being killed by cattle ranchers to reduce stock losses. The Government sought to introduce a trophy-hunting program. Venezuela requested annual export quotas for hunting trophies of zero in 1997, 1998 and 1999 and of 20-30 thereafter. Despite this inherently cautious approach, the proposal (which was supported by the CITES Secretariat) was withdrawn, without any discussion, in the face of mounting opposition by NGOs based primarily in the United States.

This regrettable outcome did little to improve the conservation prospects for the jaguar. The management problems that Venezuela was attempting to address are by no means unique to Venezuela. Indeed, the jaguar is persecuted throughout its range wherever the species

conflicts with cattle ranching and other forms of livestock management. The inability, or reluctance, of hunting organizations to campaign in support of the Venezuelan initiative and effectively counter the lobbying activities of anti-use NGOs represented a conservation failure.

The demise of the tiger (*Panthera tigris*) represents a failure by the international community to counter the emotive political arguments in favour of protection-only approaches to conservation, even if they demonstrably do not work. All extant subspecies of tiger have been included in Appendix I of CITES since 1977 when the Amur tiger (*Panthera tigris altaica*) was transferred from Appendix II. At that time the global population of the species numbered in the tens of thousands. Sadly, despite the Appendix-I listing and the expenditure of tens of millions of dollars by well-intentioned governments and NGOs, global numbers of tigers in the wild have dwindled to less than 3,000 in-

dividuals today, with every likelihood of the decline continuing.

Communities sharing habitat with tigers frequently lose livestock and or family members, yet they receive no obvious benefit. The international community, stimulated by western NGOs, is the principal advocate for conservation through total protection. Western-based conservation and animal welfare organizations (for example, the World Wildlife Fund-WWF, the International Fund for Animal Welfare-IFAW, the Wildlife Conservation Society-WCS) have disbursed vast amounts of public funds on ideologically tailored field projects in tiger range states, and have assumed a high profile in the tiger debate to the extent that these organizations, and not the range state governments, drive the agenda and direction of conservation effort.

Yet the approach has been an unmitigated fail-

ure. Furthermore, unless new approaches are adopted, it will continue to fail until the numbers of tigers in the wild can be counted on one hand. Successive meetings of the Conference of the Parties to CITES have refused to countenance the lessons learned from the management of leopards and cheetahs in Africa and adapt those models to tigers. Approved recreational tourist hunters, who would pay a premium licence fee for the privilege, could remove specific problem animals, and there are many ways to ensure local people and not the many intermediaries are the primary beneficiaries. Poachers provide a service to these communities at present, because reducing the numbers of tigers increases the probability that people and livestock will survive. The failure of hunting organizations to become engaged in the debate on tiger conservation has clearly not helped.

Future challenges

Notwithstanding the contributions that recreational hunting makes to wildlife conservation, opposition to recreational hunting and the ethical and moral arguments against killing wild animals will continue. The hunting fraternity, particularly their various representative organizations, cannot afford to become complacent. Non-governmental organizations championing animal rights and humane treatment of animals, especially those located in industrialized western countries, are increasing in number and political influence. Some of the larger organizations have the financial capacity to manipulate the media in ways that can seriously jeopardize successful conservation programs employing recreational hunting as a management tool. Through forging new and strengthening existing alliances with range state governments, hunter organizations must continue to demonstrate conservation successes

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that have been achieved through the use of ethically conducted recreational hunting.

The mountainous western provinces of China are home for a variety of wild sheep and ungulates much sought after by trophy hunters, but this is all relatively new and tenuous. NGOs opposed to hunting, such as IFAW, have established offices in China and are stimulating public awareness on issues dear to them. Younger Chinese, in turn, want answers from the Central Government about why native animals are killed and why foreigners are hunting in China. Policies concerning hunting are being formed and reviewed with scant contribution from hunting organizations.

There is little doubt that the tiger will become extinct in the wild during the present century unless new and innovative approaches to its conservation and management are adopted as a matter of urgency. The Javan tiger (*Panthera*

tigris sondaica), Bali tiger (*Panthera tigris balica*) and Caspian tiger (*Panthera tigris virgata*) became extinct in the 20th century.

Conclusions

In the 1800s and earlier, civil society had not embraced the concept of “wildlife conservation.” At that time natural habitats were more extensive and wildlife was considerably more abundant. As a consequence, natural habitats were cleared for agriculture and urban development with little regard for the long-term impact these conversions would have on biodiversity. Similarly, recreational hunting was practised with little regard for the sustainability of off-takes and overall impact the activity would have on populations of “game” species. By the mid to late 1900s all this had changed, thereby requiring those wishing to pursue hunting to adopt a more responsible approach to their sport.

Although implicated in some conservation failures in the past, recreational hunting, when practised lawfully and ethically, has proved to be an extremely useful management tool, capable of delivering real and pragmatic conservation benefits. Furthermore, in many remote and inhospitable locations where suitable infrastructure for ecotourism is lacking, recreational tourist hunting provides governments with what is often the only pragmatic management strategy for conserving some species. When practised in partnership with local communities and landholders, tourist hunting provides an important source of income that can contribute to local livelihoods and culturally compatible economic development. Hunting creates economic incentives through its ability to confer an economic value on natural habitats. Hunting presents a viable land-use alternative to agriculture in marginal land that is often unsustainable. However, the role hunting plays in conservation is poorly understood by



the public at large, and consequently it is vulnerable to being misrepresented. For this reason hunters need to be far more proactive publicly and politically in defending their rights and interests.

The conservation gains that have been achieved in North America and some African countries serve as models for adaptation and application to other species in other parts of the world whose conservation would benefit from managed recreational hunting. However, it should be noted that neither model is superior to its counterpart, and caution should be exercised in selecting which legislative and administrative system to apply. Experience has shown that management systems imposed on culturally different societies rarely achieve the desired results. If recreational hunting is to be used as a management tool for conservation, it is important that the legal and administrative systems are compatible

with the cultural and socio-economic characteristics of the country in which they are implemented.

In places such as Australia and New Zealand, where recreational hunting is directed primarily to exotic and feral species, management requires a different approach. The presence of large numbers of exotic and feral species has a profoundly negative impact on the maintenance and conservation of natural habitats and native biodiversity. Under these circumstances, government agencies should adopt management regimes to ensure that hunters do not harvest populations of these species as a sustainable resource.

Finally, the numerous hunting associations that have become established in the past fifty years to advocate the interests of the hunting fraternity must assume a greater self-regulatory responsibility for their memberships. Vigi-

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lance will be required to detect and condemn the unethical and illegal actions of a small minority. Although few in number and occurring infrequently, these incidents tarnish the reputation of recreational hunting as an effective management tool for conserving certain species. Invariably, they will be used by not only animal rights and animal welfare organizations but also mainstream conservation groups to justifiably criticize trophy hunting as a legitimate recreational pursuit that is capable of delivering conservation gains. All hunters and hunting organizations should ensure that the integrity of recreational hunting is not compromised by the actions of a few; being mindful that public, and hence political, opinion is influenced by perceptions rather than reality.

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Annex 1

Summary of Projects (Current and Completed) Funded through the SCI Foundation		
Region	Project Description and Location	Duration
North America	• Woodland Caribou Predator-Prey Project (Newfoundland, Canada) - Study predator-prey dynamics between caribou, black bears, coyotes, lynx and bald eagle to better understand the decline in caribou and influence of predators on caribou recruitment.	2008-13
	• White-tailed Deer Predator-Prey Project (Michigan, USA) - Study predator-prey dynamics between white-tailed deer, black bears, wolves and coyotes to understand the decline in fawn survival and influence of predators on deer recruitment.	2008-11?
	• Moose Predator-Prey Project (Wyoming, USA) - Study relationship between moose, brown bears and other predators to understand the decline in calf survival and influence of predators on moose recruitment.	2009-11?
	• Influence of Natural & Artificial Water Sources on Mule Deer (East Mojave Desert, California, USA) - Research importance of water (natural and man-made sources) to mule deer and other wildlife in the desert environment to determine if water is a limiting factor and whether supplemental water will increase deer productivity.	2007-12?
	• Restoration of Wood Bison Populations (Alaska, USA) - Reintroduce wood bison to its historic range in Alaska. Facilitate the recovery of at least one self-sustaining, disease free wood bison population in Alaska.	1998-13
Africa	• National Lion Population Survey (Mozambique) - Estimate lion abundance to support development of and actions prescribed in the Mozambique national lion conservation and management strategy.	2008-09
	• African Wildlife Consultative Forum (Botswana, Zambia, South Africa, Mauritius, Tanzania, Mozambique, Namibia) - Annual meeting to enhance communication between the Eastern and Southern African countries, professional hunting community, and sustainable use NGOs. Participants obtain updates on current management and conservation issues and assist each other in solutions to common problems. Issues discussed include new African wildlife research results, trans-boundary wildlife management, and relevant international issues e.g. CITES and CBD.	Annually 2002-08
	• Lion Aging Study (Zambia) - Investigate relationship between the definitive age and the physical characteristic of a lion using tooth cementum ring and tooth x-ray analysis to determine age of the animal to improve the accuracy of visual age-determinations in the field. The data will also assist in understanding what proportion of harvested lions fall into adult, sub-adult and juvenile age classes, and thus better able to regulate and monitor the age-structure of a population, improve lion harvest strategies.	2007-09
Asia	• Snow Leopard Survey (Russia) Estimating snow leopard abundance in a 300 sq km area in Southern Siberia, (thought to be the north-western limit of their range). Trail cameras are being used for mark/recapture techniques. Prey abundance is also being monitored.	2007-10
	• Argali Sheep (Russia and adjacent States) - Field surveys, DNA testing and morphometrics of argali sheep to properly classify and estimate abundance and geographical distribution of subspecies within the territory of the former Soviet Union and adjacent countries. Results may influence future status changes of subspecies on the ESA and CITES Appendices.	2002-09
	• Saiga Antelope (Russia and adjacent States) Grassland vegetation surveys and saiga food habits and distribution researched to help scientists explain key factors contributing to decline of the species.	2007-09

Biography

From 1997 to 2003 Gerhard Damm was President of Safari Club International's African chapter. He has hunted in many countries throughout the world. Over two 2-year periods between 2000 and 2006 he was on the Executive Committee of the Professional Hunters' Association of South Africa. He has also been a member of the board of Conservation Force (USA) since 2003. Since 2006, he has been a member of the board of Rowland Ward Publications (South Africa). He serves on the International Council for Game & Wildlife Conservation (CIC), is Coordinator Commission Exhibitions & Trophies, Vice President of the Tropical Game Commission, and Vice President of the Sustainable Use Commission.

Gerhard Damm is the author of the book *The Conservation Game – Saving Africa's Biodiversity* (2002). He received a Certificate of Achievement from Conservation Force (USA) in 2004, and a Wildlife Utilization Award from PHASA (South Africa) in 2006. He is currently Editor for the 28th Edition of Rowland Ward's *Big Game Animals of the World* (Vol. II, Rest of the World.) Since 2003 he has edited and published African Indaba, a non-profit e-newsletter, six times per year. He is undertaking a revision of the CIC Trophy Scoring System, and is working on the Sustainable Hunting Tourism Project of the CIC.

2. Introduction

The frequency, intensity and quality of social contacts and interchange of thoughts and views with the non-hunting sector on local, national and global level influence the opinions hunters and nonhunters hold of each other. Prejudices on both sides can only be assuaged by way of regular contact and unbiased communication.

The elected representatives of the hunting associations and the community of hunters overall exert considerable influence in determining how hunting is practised. They are also, to a certain extent, able to influence hunting legislation. They have the opportunity to shape the public image of hunters with regard to everyday hunting practice, at events and in the media. Moreover, they are role models for the hunting community. It is therefore essential that they display a high level of

knowledge in terms of wildlife ecology, hunting economy and the societal configuration in which hunting takes its place.

This concept paper shows how to achieve this high level of knowledge within the ecological, economic and societal aspects of hunting, how these three sustainability pillars are linked to other sectors, and where cooperation for best-possible outcomes is essential. The development of this globally applicable model has been based on the original work by Martin Forstner, Friedrich Reimoser, Wolfgang Lexer, Felix Heckl and Josef Hackl in the revised and extended edition of *Sustainable Hunting Principles, Criteria and Indicators* (2006), originally developed for the Austrian hunting system, the projects of Conservation Force in Africa, and on the Sustainable Hunting Tourism Initiative of the CIC.

The proposals of this concept paper can be

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adapted to assess hunting activities per hunting area in a regional, respectively multiregional context, as well as on a specific species basis or a combination of both. They are not limited to game species and hunting activities, but include the interaction of game and non-game wildlife species. Interfaces with other land use options such as photographic tourism, pastoral and agricultural activities, or wildlife research activities are investigated only in terms of direct interaction and potential use protocols, regarding potential interaction and or willingness of partners to interact.

3. The purpose of principles, criteria and indicators for sustainable recreational hunting

Rationale: The integration of hunters into society is a fundamental prerequisite for the broad acceptance and understanding of hunting. The relationship between hunters and overall soci-

ety is important for the future framework within which hunting will take place.

In circumstances where the risk of converting natural landscapes to other purposes is high, the encouragement of the sustainable use of renewable wildlife resources as a function of “incentive- driven conservation” can provide clearly visible incentives and revenue. It is a fact that sustainable hunting is one of the principal reasons to keep many millions of hectares of land under conservation management. These areas are considerably larger than the world's protected area system. The sustainable extractive¹ use through recreational hunting in general and through sustainable trophy hunting tourism in particular could be the basis for a hunter-generated multi-mil-

¹The word “extractive” is used in order to clarify that there are extractive and non-extractive uses of renewable natural resources. Both use options are consumptive; non-consumptive use does not exist.

Abstract

The CIC elaborated a matrix of principles, criteria, and guidelines showing the ecological, economic, and socio-cultural characteristics of hunting and its cooperation potential and links to other sectors of society. By assessing trophy hunting along accepted principles, criteria and indicators its sustainability, the conservation of the hunted species and its economic benefits can be clearly demonstrated. It is a simple method of measuring the impact of hunting activities with a structured evaluation system. It provides practical suggestions for decision-makers and increases the understanding of the importance of recreational hunting as one cornerstone of biodiversity conservation.

The paper shows a detailed matrix for each sector (ecology, economy, socio-cultural) explaining the principles with criteria and sub-criteria. It shows the interfaces and incorporates a grading system allowing hunting operators and interested hunters to self-assess a hunting area. This helps create an inexpensive and efficient basis for a possible expansion into a peer-driven certification system of policies, approaches, and methods that most

(continued on page 89)

lion Euro contribution towards national conservation strategies, having the objective of reducing their dependence on donor or tax-payer subsidies. Through incentive-driven conservation and “conservation hunting,” habitats and ecosystems will be maintained and the genetic diversity of species will be enhanced, thus providing a pro-bono service to society.

We need to document principles, criteria and indicators for best practices in sustainable hunting and the hunters’ contribution towards the conservation of the hunted species. This will enable hunters to know the impact of hunting on the resource and to have base-line information for adaptive management decisions. As a secondary benefit, it will enable hunters to build a good relationship with society. The documentation and assessment process will incorporate the objectives of the Ecosystem Approach and the Addis Ababa Principles and

Guidelines for the Sustainable Use of Biodiversity. It will serve as a basis for focused cooperation between local hunting companies, NGOs and international hunting associations and conservation NGOs to refine and monitor the sustainability of recreational hunting. The partners will construct a dynamic platform of economic, societal and ecological aspects, open for improvement, updating and adaptation, allowing a cost-efficient and user-friendly self-assessment for hunting company operators and hunting area and concession owners and managers. The process leading to this platform will provide opportunities to comment, to criticize and to encourage multiple forms of user feedback.

The hunting management unit (concession area, safari hunting operation, hunting block, game management unit, hunting lease area, etc.) is the local unit of reference for the assessment. In principle, a consolidation into

larger assessment units could make sense in certain cases, especially if adjoining units are managed by the same authority or hunting company, or in areas which are ecologically homogeneous from a game species population perspective. This wider view is of particular importance as a monitoring instrument to be able to detect changes in the quality of sustainability and thus the development trends for large-scale, contiguous wildlife habitats and wide-ranging wildlife species such as the wild sheep of Asia, bear species and the African elephant. In terms of time, the assessment in the module refers to the calendar year. Some indicators may, however, require looking at other reference periods further back to increase the knowledge base. There are a number of basic principles applicable to sustainable hunting. Since hunting has many traditions and comes in many local forms throughout the four main hunting regions (North America, Central Asia, Europe and

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Africa), these basic principles are by nature very general. Using the principles and their underlying rationale, workshops with the stakeholders in the regions must expand and adapt the proposed basic principles, taking into account the local circumstances.

Sectors of civil society also often consider hunting as detrimental to conservation objectives and as morally unacceptable. Hunting is also and increasingly a source of conflict with other forms of natural resource use such as tourism, forestry, agricultural and pastoral use systems. Consequently, a platform of mutual understanding based on irrefutable facts is of fundamental importance for a comprehensive, reasoned and solution-oriented societal dialogue. The proposed assessment system will provide the factual basis for this understanding, since it:

- allows the evaluation of ecological, eco-

nomic and socio-cultural aspects in an objective and transparent way

- by focusing on the conservation and or restoration of wildlife species, their genetic diversity, life cycles and population dynamics, and on the ecosystems which they inhabit
- by considering the capability of hunting activities to yield economic benefits for conservation projects and local communities and to cooperate with other forms of land use
- by considering the traditional connection of rural people and wildlife, the public interest in hunting, the principles of animal welfare, as well as the hunters' aspirations concerning opportunities to hunt and the morphology of hunting trophies
- assists the general public in understanding the links between hunting and conser-

Abstract (continued)

effectively and efficiently facilitate a triple bottom line approach. The method also highlights critical areas, especially those where potential progress depends on the cooperation of multiple stakeholders, thus clarifying responsibilities and outlining structures and processes for success. In its ultimate consequence, a resulting work on hunting and sustainable hunting tourism will assist in the adequate presentation of best practices in trophy hunting.

vation, and assists hunters in recognizing the necessity of fair, legal and environmentally sound hunting practices

- provides a simple method of measuring the impact of hunting activities with a structured evaluation system for different eco-regions

4. Principles, criteria and indicators

- *Principle*

A basic generalization accepted as true which can be used as a basis for reasoning or conduct

- *Criterion*

A reference point against which other things can be evaluated

- *Indicator*

Scores or values derived from a series of observed facts describing the stages from sustainable to non-sustainable conditions

The conservation and the improvement of game habitats, game species diversity, and of the genetic diversity of game species make up the underlying rationale for developing and applying principles, criteria and indicators in sustainable hunting.

The proposed Principles, Criteria and Indicators need to be workshopped by experts from a variety of fields and subsequently evaluated through field tests in selected international hunting areas representing a broad spectrum of eco-zones of the regions under consideration. The process must be highly participatory and must collect, review and evaluate input from stakeholders and experts from the three pillars of sustainability.

The primary unit used for the PCI assessment of sustainable hunting is the hunting management unit (hunting concession, hunting block, game management unit, hunting lease area, etc.) although game demographics in terms of game populations extending from these primary units into non-hunting areas such as photographic and agricultural and pastoral areas as well as into formally protected areas need to be included. The description of the assessment unit includes specific details such as

exact geographic location, ownership and legal circumstances, natural conditions, management and monitoring methods as well as use regimes of areas bordering the assessment unit.

Certain criteria may be distinctly region-specific and need to be adapted, reduced or expanded as local conditions dictate. The process needs to allow for supplementing the principles with further criteria and sub-criteria to ensure practicability and conclusive results.

This methodical approach will provide transparent data and allow adaptation to specific regional conditions as well as continuous increase in sophistication. This initiative will result in clear principles, criteria and sub-criteria, with assigned indicators and realistic grading values. The module is initially based on voluntary stakeholder involvement. In its final consequence it could lead to a peer-driven

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certification system and a “White Book on Hunting & Sustainable Hunting Tourism.”

5. Grading of criteria and sub-criteria

The assessment framework consists of the three sectors of sustainability (Ecology, Economy, Society) subdivided in this proposal into a proposed framework of 9 principles, 16 criteria and 63 subcriteria.

This proposed subdivision (see Annex 1 to 3) is provisional and needs to be examined for completeness and conclusiveness. It has to be noted that the sector of hunting behind escape-proof fences has not been included at this stage. The complete set of principles and criteria, with the respective assessment indicators, needs to cover the high fence sector, especially with regard to its perceived or real conservation relevance and its perception by the public. Game ranching and hunting behind

high fences may have such conservation relevance and also provide an ethical hunting experience under certain conditions. The establishment of a set of relevant parameters and integration of those into the three pillars of sustainability will occur in a participatory process.

Table 1 shows that scores between +4 and –4 points per indicator are given at the level of the sub-criteria. The minus scores (–1 to –4) indicate that sustainability principles are violated to a greater or lesser extent. Determined principles, criteria or sub-criteria may be assigned with minimum values, which could be elevated to “knock-out” standards, which in case of noncompliance make a hunting practice automatically non-sustainable. Furthermore, regional conditions may require a reduction or variability of the maximum point score when certain criteria are not applicable or are only partially applicable for a particular

area. The underlying conditions for awarding scores within the varying percentage levels of sustainability have not yet been determined at this stage. This needs also to be done in a participatory process.

The results of the three sectors are analysed individually. This will facilitate the examination of individual strengths and weaknesses and a transparent assessment process as well as the reconstruction of results and the opportunity to address deficiencies.

The grading process of policies, approaches and actions that most effectively and efficiently show an economic, social and ecological triple bottom line will adequately portray best practices in trophy hunting in connection with

- the ability of the state, the communities and hunting operators to benefit from wild natural resources

Ecology	1 very good	2 good	3 average	4 bad	5 very bad	Minimum Points	Maximum Points
	sustainable			not sustainable			
	76 % to 100 %	51 % to 75 %	25 % to 50 %	0 to 24 %	minus value		

Economy	1 very good	2 good	3 average	4 bad	5 very bad	Minimum Points	Maximum Points
	sustainable			not sustainable			
	76 % to 100 %	51 % to 75 %	25 % to 50 %	0 to 24 %	—minus value		

Societal	1 very good	2 good	3 average	4 bad	5 very bad	Minimum Points	Maximum Points
	sustainable			not sustainable			
	76 % to 100 %	51 % to 75 %	25 % to 50 %	0 to 24 %	—minus value		

Table 1: Evaluation scheme sample according to Forstner, et al. (Vienna, 2001)

- minimum administrative interference and highly developed self-regulatory systems established between stakeholders such as hunting operators, landowners and local communities
- the existence of legal and physical means of landowners to control access to wildlife resources
- the elimination of perverse incentives and excessive precautionary controls
- the capability of applying appropriate adaptive management structures and processes with effective controls
- the public accountability of stakeholders
- the existence of competing land-use alternatives

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The PCI method will highlight critical areas where potential progress depends on the co-operation of multiple stakeholders, thus clarifying responsibilities at present often blurred; outlining structures and processes for success.

6. System development

This concept paper attempts to enlarge the scope of the original authors from Austria and Central Europe to areas in Africa and Asia, where transparent evaluation systems and accessible data on the sustainability of hunting do not currently exist. Many examples illustrate this point, including the present discussion on the status of the African lion and its classification in CITES, the case of cheetah and black-faced impala in Namibia, the status of elephant trophy hunting, generally declining trophy quality of *Syncerus caffer*, the precarious state of argali *Ovis ammon* subspecies

in Central Asia, re-opening of hunting in China against strong public opposition, and so on.

An alliance of international and national hunting organizations needs to workshop the proposals of this paper for completeness and conclusiveness in partnership with professional and amateur hunters, scientists (the African Lion Working Group, the Caprinae Specialist Group, the Antelope Specialist Group, the Deer Specialist Group), interest associations (such as the Wildlife Ranching Association of South Africa, Texas Deer Association and others), with wildlife managers, private, communal and public landowners, representatives of non-governmental conservation organizations and wildlife management authorities. The provisions on the sustainable use of natural resources as contained in international agreements, initiatives and processes (CBD, CITES, IUCN, Addis Ababa Guidelines on the Use of Natural Re-

sources among others) as well as in national implementation strategies (national wildlife acts, CBNRM programs, etc.) must be incorporated in the process. In terms of methodology the concept paper must be cross-checked with international standards for the construction of criteria and indicator systems.

Case histories of best and worst practices from regions where hunting is practised and also from those regions where hunting is not permitted will complement the project work and permit drawing conclusions from these case studies. A comprehensive global hunting database, with game population data, harvest data, biometric trophy recordings, distribution maps, economic analysis and legislation will be the planned end result. This database can be used by resource economists, conservation biologists, wildlife managers, hunting operators and hunting associations.

This participatory process started with a small team within the CIC. The team must now be gradually enlarged with contributors from the parties mentioned above to arrive at an unbiased assessment framework, which is transparent and comprehensive. After or even during the consultative process, preliminary versions could be used for field testing in selected areas, before a final version would be published.

The CIC, as a multinational association with state, organizational, expert and individual members, is in a position to drive and lead this course of action.

7. Ecological principles and criteria

The objectives of sustainable trophy hunting are directed towards the preservation and improvement of game habitat, the conservation of the genetic diversity of game species and

the conservation of the diversity of non-game species. In terms of this assessment, only those factors are assessed, which the hunter and the hunting operator can influence. The factors outside the influence of the hunters and operators are mentioned.

7.1.1. Principle I

Rationale: Hunting is understood comprehensively as a holistic experience with understanding of the environment, the methods of the hunt and the system. There is a desire to conserve and sustainably use game and not only to shoot and kill a trophy animal.

Recreational trophy hunting shall ensure the conservation and sustainable use of the targeted game species within its habitat, the preservation of its genetic diversity and of other game and non-game species and their habitat within the assessment area.

7.1.2. Criterion I

The game population and demography of the assessment area represent the optimum situation for the habitat.

Sub Criterion 1

The game population, its reproductive and life cycles and also its demography within the assessment area are known and the development is monitored by hunting operators, field scientists and national authorities

Sub Criterion 2

Consideration is given to the abundance and reproductive biology of non-game species

Sub Criterion 3

Hunting operators, scientists and the national authorities are interchanging data and are co-operating regarding game data within the assessment area

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Sub Criterion 4

The optimum game population and its delimiting factors within the assessment area are known

Sub Criterion 5

In case of sub-optimal game populations, management plans to reach optimal population structure and numbers are in place

Sub Criterion 6

The game management plan and the annual quota per species take into account natural regulatory mechanisms

Sub Criterion 7

The game management plan and the annual quota monitor external factors like poaching, catastrophic events, human encroachment, habitat fragmentation, etc., and adapt the plan in case such events have a material influence on game demography

Sub Criterion 8

Important migration routes, wildlife corridors and their limiting factors are known and mapped

Sub Criterion 9

The assessment area is mapped and game species concentrations are indicated on the map

7.1.3. Criterion II

The game population and demography of the assessment area are not negatively influenced by trophy hunting. There are no hunting-related limitations to the conservation of the natural genetic variability of the hunted game.

Sub Criterion 10

The hunting operator has a published species-specific hunting strategy in place and all professional hunters and guides are aware of and adhere to this strategy

Sub Criterion 11

The hunting strategy minimizes disturbances in the life cycle of targeted game species and non-target species

Sub Criterion 12

The hunting of prime males in a herd or pride or rutting situation is avoided

Sub Criterion 13

Game targeted in trophy hunting is selected according to determined species-specific sociobiological parameters and not on traditional anthropocentric aspects of trophies

Sub Criterion 14

A defined policy exists relating to the morphology of hunting trophies (age, appearance, body, horn or antler configuration, ivory weight, mane size, etc.) in the hunting guidelines

²See chart, Annex 1

Sub Criterion 15

Hunting clients are advised before arrival about the hunting operator's hunting strategy and management plan and receive pertinent documentation

7.1.4. Principle II

Rationale: In order to be biologically sustainable, hunting is dependent on supportive policies, laws and regulations

Recreational hunting in general and trophy hunting in particular are governed by a framework of multilateral environmental agreements (MEA) as well as national and regional laws and policies, which substantially determine the conservation relevance of hunting.

7.1.5. Criterion III

Hunting is subject to wildlife management guidelines in general and trophy hunting guidelines in particular

Sub Criterion 16

Wildlife management guidelines of the State (Wildlife Management Authority) exist

Sub Criterion 17

Wildlife management guidelines of the State (Wildlife Management Authority) are enforced

Sub Criterion 18

Wildlife management guidelines of the State (Wildlife Management Authority) are in line with international MEAs

7.1.6. Criterion IV

Trophy hunting and game conservation depend on supportive national legislation of range countries and countries of residence of the hunters as well as on the freedom of international movement of goods (trophies and hunting equipment) and persons (hunters)

Sub Criterion 19

National legislation gives incentives for use of hunting-generated funds within the assessment areas

Sub Criterion 20

International agreements (CITES) and national policies (i.e., ESA in the USA) permit movement of hunting trophies

Sub Criterion 21

Hunters can move without hindrance to and from the assessment area

7.1.7. Principle III

Rationale: The activation and combination of all intellectual resources, the monitoring of actions and their consequences and the adaptation of process guarantee best possible outcomes

The success of "Incentive-Driven-Conserva-

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tion” relies on adaptive management processes based on science and practical experience, as well as on traditional and local knowledge.

7.1.8. Criterion V

Trophy hunting monitors, records and evaluates hunt and trophy data as the basis of an adaptive management process

Sub Criterion 22

Trophy hunting strategies which are season- and area-specific are in place

Sub Criterion 23

All hunted game is recorded (trophy and/or body morphology, age, date and exact location of kill, additional observations, etc.) in an electronic database

Sub Criterion 24

Where applicable, a tooth or set of teeth of

each hunted game animal, and of each game animal encountered dead from other influences, is submitted to a qualified laboratory for age assessment

Sub Criterion 25

Field aging methods (for example horn annuli in *Caprinae*; nose colouration, body shape, mane shape, leg markings in a lion, etc.) are applied and tested, and results are documented

Sub Criterion 26

Where indicated, DNA of game animal samples are collected and tested

Sub Criterion 27

Hunters agree to the use of morphological data and photographs of their hunted game in management programs

Sub Criterion 28

Whenever possible, the causes of death for all game animals found dead, except those hunted legally, are investigated, established and noted in the database

Sub Criterion 29

Sanctions for killing underage game exist and are applied

8. Economic Principles & Criteria³

The objectives of sustainable trophy hunting are directed towards transparent and equitable cooperation with other resource users, landowners and those who manage the resource. Resource use must not only create a tangible economic benefit for the stakeholders, in particular the rural communities, but also lead to reinvestment into the conservation of wildlife and habitat.

³See chart, Annex 2

8.1.1. Principle IV

Rationale: Land use options of economic or local importance, such as livestock husbandry, subsistence agriculture, photo-tourism, infrastructure construction, etc., must be considered in the hunting strategy to ensure optimal economic returns for all.

Recreational and trophy hunting is practised in harmony with other land use options.

8.1.2. Criterion VI

Business plans to secure and or improve the profitability of recreational and trophy hunting exist and are documented

Sub Criterion 30

The hunting operator has a strategy for marketing trophy hunting at realistic market prices

Sub Criterion 31

Trophy fees for game include an amount which is dedicated to game conservation, specific research projects and anti-poaching; the application of the funds is documented

Sub Criterion 32

A legal framework exists for the adjudication of ecologically and economically sustainable concession-hunting area leases.

Sub Criterion 33

Quality control for hunting services rendered and trophies obtained exist and are documented over a time scale

8.1.3. Criterion VII

Regulatory frameworks and direct interaction between hunting operators and those who practise other land-use options (agriculture, photo-tourism, etc.) exist and are documented

Sub Criterion 34

Hunting strategies incorporate the interests of other land use options to secure optimal ecological and economic outcomes for the resource and all stakeholders

Sub Criterion 35

Communication and established protocols on interactions between hunting operators and other resource users exist and are documented and monitored in a participatory way

Sub Criterion 36

Hunting-related disturbances of wildlife in view of non-extractive use options are minimized

8.1.4. Principle V

Rationale: Strong community support is fundamental to successful game conservation programs. Rural populations living with and next to wild game need to be able to identify tangible economic benefits in exchange for in-

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creased tolerance for the presence of game or a reduction in livestock

Recreational and trophy hunting shall ensure a flow of sustainable economic benefits for rural populations living in the wildlife areas.

8.1.5. Criterion VIII

Proper mechanisms are in place to ensure minimum game caused-damage to humans, livestock and habitat

Sub Criterion 37

Protocols on monitoring, prevention and mitigation in human-wildlife conflict situations exist

Sub Criterion 38

Programs exist which educate agriculturists and pastoralists to value wild game instead of regarding game as unmitigated and an expensive nuisance

Sub Criterion 39

Incentive models for prevention of human and livestock damage and or compensation models, if damage occurs, both exist and are documented

Sub Criterion 40

Training models exist, which educate local rural people and pastoralists in habitat restoration and preservation

Sub Criterion 41

Plans exist and are documented to adequately share the trophy fees amongst local communities, hunting operators, and the national, district and local authorities in charge of game conservation

Sub Criterion 42

Where applicable and feasible during the hunting season, the hunting operator regularly supplies the local communities with game meat

for distribution according to a mutually agreed protocol

8.1.6. Principle V

Rationale: To obtain the highest possible economic benefit from trophy hunting, international and national regulations must ensure the freedom of movement of hunting trophies, hunting arms and persons

Trophy hunting and sustainable hunting tourism depend on a global market and the free international movement of persons and goods

8.1.7. Criterion IX

CITES regulations allow the free international movement of hunting trophies

Sub Criterion 43

Stricter domestic measures of importing countries do not impede trophy hunting of endemic

species of third countries

Sub Criterion 44

Where applicable, game species are classified in IUCN Categories and CITES Appendices and uplisting is done only as a last resort

8.1.8. Criterion X

National hunting and conservation regulations allow the strictly controlled hunting of area-specific quotas of trophy game species

Sub Criterion 45

The state concerned has legislation in place which add incentive to the conservation hunting of game

8.1.9. Criterion XI

Air travel to and from hunting destinations is unobstructed and the transport of hunting arms and hunting trophies is guaranteed

Sub Criterion 46

Airlines have a user-friendly policy on transporting hunters, trophies and firearms

Sub Criterion 47

National regulations for importing/exporting trophies and hunting weapons are user-friendly

9. Societal Principles & Criteria⁴

Sustainable trophy hunting respects traditions and customs of local communities and cooperates at grass roots level with their representatives. On a wider scale, hunters recognize their obligations and responsibility for the habitat and the wildlife within, and provide transparent and factual information to all interested parties.

9.1.1. Principle VI

Rationale: Due regard must be given to the interests and opinion of the local population to fairly balance diverging interests. Rural people will forego alternative land-use options, if wildlife conservation accrues equal or higher benefits for their community and for the individual within the community.

Sustainable hunting considers the local rural population's interest in maintaining traditions and customs

9.1.2. Criterion XII

International trophy hunting assists in rural poverty relief and the social advancement of local communities

Sub Criterion 48

Hunter-induced disturbances on agricultural and herding activities are minimized

⁴See chart, Annex 3

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Sub Criterion 49

Trophy hunting contributes to securing jobs and creates employment for local people

Sub Criterion 50

The local rural population is integrated as professional hunters, managerial staff, guides, interpreters, camp assistants, anti-poaching control, etc.

Sub Criterion 51

Local rural communities have documented rights to participate in the selection of hunting service providers and adequate processes are in place

Sub Criterion 52

Opportunities for local and or subsistence hunters to practise their craft and traditions are created and or maintained

9.1.3. Criterion XIII

Hunting operators and hunting associations maintain information channels with private, public and community stakeholders and scientific institutions (national and international)

Sub Criterion 53

Hunting operators provide the public with factual and transparent data and the respective structures are in place

Sub Criterion 54

Cooperation and communication structures with local and district authorities are in place

Sub Criterion 55

Transparency exists at all levels of local and national governance

9.1.4. Criterion XIV

Hunting operators provide training and education facilities for local communities

Sub Criterion 56

Wildlife education programs for the rural population are in place and documented

Sub Criterion 57

Specific training programs for rural people exist (GIS mapping, wildlife census, recovery of biological material from the field, report writing, etc.)

9.1.5. Principle VII

Rationale: *Public acceptance of hunting increases if hunters show societal responsibility in all aspects of hunting*

Hunting ethics involve an awareness of the responsibilities of hunters *vis à vis* game animals and nature as well as *vis à vis* society

9.1.6. Criterion XV

Sustainable and ethical hunting give central importance to the well-being of the environ-

ment and accept the principles of animal welfare and adhere to all relevant legal provisions

Sub Criterion 58

Hunting laws and environmental legislation are observed

Sub Criterion 59

Hunting practices cause only the unavoidable minimum in stress and pain for game and other species

Sub Criterion 60

International hunting associations are constantly evaluating the rules and norms of ethical or Fair Chase hunting against new knowledge

Sub Criterion 61

Hunting operators have systems to continuously receive up-to-date information on best available knowledge and translate that knowl-

edge into hunting practice

Sub Criterion 62

Programs for hunter training are in place and hunter training is documented

Sub Criterion 63

Social contact and interchange of thoughts and views with the non-hunting sector are in place and the frequency, intensity and quality is documented

10. References

Forstner M., Reimoser F., Lexer W., Heckl F. and Hackl J., *Sustainable Hunting – Principles, Criteria and Indicators*, 2006 revised and extended edition, Umweltbundesamt GmbH, Spittelauer Lände 5, 1090 Vienna, Austria REP-0115, ISBN 3-85457-913-6

The following is the raw data for unformatted tables. Formatted tables were unavailable at the time this document was compiled.

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Annex 1 Table 2: PCI Ecology Score Card

Principle # Criterion

Sub- Criterion Score

Description Applicability Max Min

Recreational trophy hunting shall ensure the conservation and sustainable use of the targeted game species within its habitat, the preservation of its genetic diversity and of other game and non-game species and their habitat within the assessment area.

The game population and demography of the assessment area represent the optimum situation for the habitat.

1 The game population, its reproductive and life cycles as well as its demography within the assessment area are known and the development is monitored by the hunting operator, sci-

entists and the national authorities

2 Consideration is given to the abundance and reproductive biology of non-game species

3 Hunting operators, scientists and the national authorities are interchanging data and are cooperating regarding lion data within the assessment area

4 The optimum game species populations and its delimiting factors within the assessment area are known

5 In case of sub-optimal game populations, management plans to reach optimal population structure and numbers are in place

6 The game management plan and the annual quota take into account natural regulatory mechanisms

7 The game management plan and the annual quota monitor external factors such as poaching, catastrophic events, human encroachment, habitat fragmentation, etc. and adapt the plan in case of such events have material influence on game species' demography

8 Important migration routes, wildlife corridors and their limiting factors are known and mapped

9 The assessment area is mapped and game species' concentrations are indicated on the map

II

The game population and demography of the assessment area is not negatively influenced by trophy hunting. There are no hunting-related limitations to the conservation of the natural genetic variability of the target species.

10 The hunting operator has a published hunting strategy in place and all professional hunters and guides are aware of and adhere to this strategy

11 The hunting strategy minimizes disturbances in the life cycle of game and non-game species

12 The hunting of males in a herd or rutting situation is avoided

13 Game targeted in trophy hunting is selected according to determined species-specific socio-biological parameters and not on traditional anthropocentric aspects of trophies

14 A defined policy exists relating to the aesthetics of hunting trophies (age, horn or antler formation, ivory, appearance like mane, body, etc.) in the hunting guidelines.

15 Hunting clients are advised before arrival about the hunting operator's hunting strategy and management plan and receive pertinent documentation

II Recreational hunting in general and trophy hunting in particular are governed by a framework of multilateral environmental agreements (MEA) as well as national and regional laws and policies, which significantly determine the conservation relevance of trophy hunting

III Hunting is subject to wildlife management guidelines in general and trophy hunting guidelines in particular

16 Wildlife management guidelines of the State (Wildlife Authority) exist

17 Wildlife management guidelines of the State (Wildlife Authority) are enforced

18 Wildlife management guidelines of the State (Wildlife Authority) are in line with international MEAs

IV Trophy hunting and game conservation depend on supportive national legislation and the freedom of international movement of goods (trophies and hunting equipment) and persons (hunters)

19 National legislation gives incentives for use of hunting-generated funds in assessment areas

20 International agreements (CITES) and national policies (that is, ESA in USA) permit movement of hunting trophies

21 Hunters can move without hindrance to and from assessment area

III

Principles, Criteria and Indicators of Sustainable Hunting: Outline for its Practical Application

Gerhard R. Damm, International Council for Game and Wildlife Conservation CIC,
Budapest, Hungary; Coordinator Commission Exhibitions & Trophies

The success of Incentive-Driven-Conservation relies on adaptive management processes based on science, practical experience as well as on traditional and local knowledge	each hunted game animal, and of each game animal encountered dead from other influences, is submitted to a qualified laboratory for age assessment	29 Sanctions for killing trophy animals below a certain age exist and are applied
V	25 Field aging methods (for example horn annuli in Caprinae; nose colouration, body shape, mane shape, leg markings in lion, etc.) are applied, tested and results are documented	Total Sum Score Ecology sum sum
Selective trophy hunting records, monitors and evaluates hunt data as basis of an adaptive management process	26 Where indicated, game animal samples of DNA are collected and tested	Annex 2 - Table 3: PCI Economy Score Card
22 Trophy hunting strategies which are season- and area-specific are in place	27 Hunters agree to the use of morphological data and photographs of their hunted game in management programs	# Principle # Criterion
23 All hunted game is recorded (trophy and or body morphology, age, date and exact location of kill, additional observations, etc.) in an electronic database	28 Whenever possible, the causes of death for all game animals found dead, except those hunted legally, are investigated, established and noted in the database	Sub-Criterion Score
24 Where applicable, a tooth or set of teeth of		# Description Applicability Max Min
		IV
		Recreational and trophy hunting is practised in harmony with other land-use options
		VI

Business plans to secure and or improve the profitability of recreational and trophy hunting exist and are documented

30 The hunting operator has a strategy for marketing trophy hunting at realistic market prices

31 Trophy fees for game include an amount which is dedicated to game conservation, specific research projects and anti-poaching. The application of the funds is documented

32 A legal framework exists for the adjudication of ecologically and economically sustainable concession-hunting area leases

33 Quality control for hunting services rendered and trophies obtained exist and are documented over a time scale

VII

Regulatory frameworks and direct interaction between hunting operators and those who practise other land-use options (agriculture, photo-tourism, etc.) exist and are documented

34 Hunting strategies incorporate the interests of other land-use options to secure optimal ecological and economical outcomes for all

35 Communication & established protocols on interactions between safari operators and other resource users exist, are documented & monitored in a participatory way

36 Hunting-related disturbances of wildlife in view of non-extractive use options are minimized

V

Recreational and trophy hunting shall ensure a flow of sustainable economic benefits for rural

populations living in the wildlife areas

VIII

Proper mechanisms are in place to ensure minimum damage to humans and livestock

37 Protocols exist on monitoring, prevention and or mitigation in human-wildlife conflict situations

38 Programs exist which educate agriculturists and pastoralists to value wild game instead of regarding game as an unmitigated and expensive nuisance

39 Incentive models to prevent human-livestock damage and or compensation models, if damage occurs, exist and are documented

40 Training models exist which educate local rural people and pastoralists in habitat restoration

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tion and preservation

41 Plans exist and are documented to adequately share the trophy fees amongst local communities, hunting operators, and the national, district and local authorities in charge of game conservation

42 Where applicable and feasible during the hunting season, the hunting operator regularly supplies the local communities with game meat for distribution according to a mutually agreed protocol

VI

Trophy hunting and sustainable hunting tourism depend on a global market and the free international movement of persons and goods

IX

CITES regulations allow free international movement of hunting trophies

43 Stricter Domestic Measures of importing countries do not impede trophy hunting

44 Where applicable, game species are classified in IUCN Categories and CITES Appendices and uplisting is done only as a last resort.

X

National hunting and conservation regulations allow the strictly controlled hunting of area-specific quotas of trophy game species

45 The respective State has legislation in place which adds incentive to the conservation hunting of game

XI

Air travel to and from hunting destinations is unobstructed and the transport of hunting arms and hunting trophies is guaranteed

46 Airlines have a user-friendly policy on transporting hunters, trophies and firearms

47 National regulations for importing and exporting trophies and hunting arms are user-friendly

Total Sum Score Economy sum sum

21

Annex 3 - Table 4: PCI Socio-Cultural Score Card

Principle # Criterion

Sub-Criterion Score

Description Applicability Max Min

VI

Sustainable hunting considers the local rural population's interest in maintaining traditions and customs

XII

International trophy hunting assists in rural poverty relief and the social advancement of local communities

48 Hunter-induced disturbances on agricultural and herding activities are minimized

49 Trophy hunting contributes to securing jobs and creates employment for local people

50 The local rural population is integrated as professional hunters, managerial staff, guides,

interpreters, camp assistants, anti-poaching control, etc.

51 Local rural communities have documented rights to participate in the selection of hunting service providers and adequate processes are in place

52 Opportunities for local and or subsistence hunters to practise their craft and traditions are created and or maintained

XIII

Hunting operators and hunting associations maintain information channels with private, public and community stakeholders and scientific institutions (national and international)

53 Hunting operators provide the public with factual and transparent data and the respective structures are in place

54 Cooperation & communication structures with local and district authorities are in place

55 Transparency at all levels of local & national governance exists

XIV

Hunting operators provide training and education facilities for local communities

56 Wildlife education programs for the rural population are in place and documented

57 Specific training programs for rural people exist (GIS mapping, wildlife census, recovery of biological material from the field, report writing, etc.)

VII

Hunting ethics involve an awareness of the re-

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sponsibilities of hunters *vis-à-vis* animals and nature as well as *vis-à-vis* society

XV

Sustainable and ethical hunting give central importance to the well-being of the environment and accept the principles of animal welfare and adhere to all relevant legal provisions

58 Hunting laws and environmental legislation are observed

59 Hunting practices cause only the unavoidable minimum in stress and pain for game and other species

60 International hunting associations are constantly evaluating the rules and norms of ethical and fair chase hunting against new knowledge

61 Hunting operators have systems to continuously receive up-to-date information on best available knowledge and translate that knowledge into hunting practice

62 Programs for hunter training are in place and hunter training is documented

63 Social contact and interchange of thoughts and views with the non-hunting sector is in place and its frequency, intensity and quality is documented

Total Sum Score Socio Cultural sum sum



Biography

Luc Bellon has worked in Pakistan since 1997, specializing in research in the Balochistan province. He was involved in the Torghar conservation project with Sadar Naseer Tareen from 2001 to 2004, during which time he conducted his PhD field study. He also published a book on the project (*A Treasure in my Backyard: Suleiman Markhor. Ownership and Sustainable use of Natural Resources in North Balochistan, Pakistan, SUSG-CAsia, Quetta, 2008*), which describes in detail the intricacies of such a conservation program, and outlines its remarkable success.

From 2005 to 2007, he worked as Monitoring and Evaluation Manager for the international non-profit NGO ACTED, the Agency for Technical Cooperation and Development, which supports vulnerable populations worldwide. He became its country Director during the year 2008-2009. Throughout his career, he has conducted numerous consultancies for UN agencies, governmental and non-governmental organizations.

The Project Overview

The Torghar Project is one of the most successful conservation programs of Pakistan, and is cited as an example worldwide.

Naseer Tareen is a documentary film maker who accidentally became a conservationist. In 1984, while roaming around the province trying desperately to find the once abundant endemic wildlife, he realized that many of the species were threatened and sometimes totally extinct. Following the war in Afghanistan, a tremendous influx of weapons had flooded the province. With cheap ammunition and automatic weapons of war, the hunters were de-

pleting their areas of valuable resources. Naseer Tareen was further struck by the Wildlife Department's helplessness in conserving endangered species in the tribal areas of Balochistan. Hence, he decided to initiate a program to save the remaining species of wild goat – the Suleiman Markhor (*Capra falconeri jerdoni*) – and wild sheep – the Afghan Urial (*Ovis orientalis cycloceros*).

Sustainable use

The main principle of the project is the sustainable use of natural resources. This concept, defined by the International Union for Conservation of Nature (IUCN)¹ declares that the

¹The International Union for Conservation of Nature was founded in 1948 and brings together 79 states, 112 government agencies, 760 NGOs, 37 affiliates, and some 10,000 scientists and experts from 181 countries in a unique worldwide partnership. Its mission is to influence, encourage and assist societies throughout the world to conserve the integrity and diversity of nature and to ensure that any use of natural resources is equitable and ecologically sustainable. Within the framework of global conventions IUCN has helped over 75 countries to prepare and implement national conservation and biodiversity strategies. IUCN has approximately 1,000 staff, most of whom are located in its 42 regional and country offices while 100 work at its Headquarters in Gland, Switzerland. For more details, see <http://www.iucn.org>.

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best way to conserve a resource is not to ban its access, but rather to allow its carefully controlled use. Its main assumption is that using the resource also gives it an increased value, thereby creating a strong incentive for the human population to conserve it. This initiates

a process by which benefits can still be drawn from the resource while allowing its full growth.

The concept of sustainable use initially faced opposition by many conservation organizations, as it meant killing some of the animals which were meant to be saved. Yet, sustainable use is now recognized worldwide as one of the most efficient means to save biodiversity. In the Case of the Torghar, the natural resources are two species of wild goat and wild sheep. The users are trophy hunters harvesting a limited number of animals each year. Through regulated trophy hunting, the project was to achieve substantial resources and create incentive for the local population to protect their animals.

The Torghar habitat

The conservancy area is situated in Torghar ("the black mountain"), in the north of

Abstract

This paper summarizes the achievements of the Torghar Conservation Project, initiated and developed by Sardar Naseer A. Tareen, Chairman, Sustainable Use Specialist Group–Central Asia (SUSG-CASia) and CEO Society for Torghar Environmental Protection (STEP). The Sustainable Use Specialist Group for Central Asia (SUSG CASia) is one of the several decentralized networks of regional SUSGs that function under the auspices of IUCN's Species Survival Commission (SSC). The overarching goal of the SUSG-Casia is sustainable management of the natural resources to improve the living conditions of rural poor communities who depend on these resources for subsistence and conserving biodiversity.

Balochistan is one of the most important wildlife regions in Pakistan, and contains a large number of species not found elsewhere in the country. Torghar (Black Mountain) is situated in the Qilla Saifullah District of Balochistan. It is inhabited by threatened species such as Straight-horned Markhor (*Capra falconeri jerdoni*) and Afghan Urial (*Ovis orientalis cycloceros*). As a result of poverty,

(continued on page 113)



Balochistan. The largest province of Pakistan, Balochistan occupies 43% of the national territory. It is also the least populated (less than 5% of the total population) and the least developed. More than 70% of Pakistan's varieties of endemic wildlife are concentrated there.

Torghar forms the northernmost part of the Toba Kakar Range. It is approximately 90 km long and 25 km wide, with an altitude ranging from 1,500 to 3,300 metres, and is mostly made of rugged sandstone. In the early 1980s,

when the program started, nearly all species of wildlife were on the decline, sometimes close to extinction. Amongst those most threatened are Markhor and Urinals.

The climate is semi-arid. The summer temperatures range from 21°C to 32°C. The winter lasts for about seven months (October to April) with temperatures reaching -10°C². The average annual rainfall ranges between 125 and 500 mm, with most of it concentrated in winter from the western depressions. A considerable part of winter precipitation comes as snowfall. The rainfall is less than potential evapotranspiration³.

The area is characterized by steppe vegetation. The forest type varies from dry temperate to alpine steppe. Major tree species include

Wild Pistachio (*Pistacia khinjuk*), Juniper (*Juniperus macropoda*) and Wild Ash (*Fraxinus xanthoxiloides*). The area is also rich in herbs and shrubs, mainly used as medicine and fodder, some of which are also critically endangered. Animal, bird and reptile species are diverse. In the case of birds, it is an important breeding ground for species like Chakur, See-see Partridge, Imperial Sand Grouse and many songbirds. Finally, Torghar contains one of the largest concentrations of fossilized marine life and petrified wood in the province.

Today, the Torghar Mountains are the last stronghold for the Suleiman Markhor and the Afghan Urial, both of which are listed as a threatened species in the IUCN Red Data Book⁴.

²Khan, F. K. (1993). *A Geography of Pakistan: Environment, People and Economy*. Karachi, Oxford University Press. p. 42.

³Government of Pakistan (1990). *Atlas of Pakistan*. Rawalpindi, Survey of Pakistan, GoP. p. 55.

⁴See <http://www.redlist.org> for more details.

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- The Suleiman / straight-horned Markhor (*Capra falconeri jerdoni*). There are five sub-species of Markhors, recognizable by the shape of their horn. Four of them are found in Pakistan. The Suleiman or straight-horned is the rarest, and presently found only in a limited area which includes the mountains of western Pakistan (Takatu, Toba Kakar and Suleiman Ranges) and some of Afghanistan. It is listed as “endangered” under the US Endangered Species Act (ESA)⁵ and is included in Appendix I of the Convention on International Trade in Endangered

Species (CITES)⁶ of Wild Fauna and Flora.

- The Afghan Urial (*Ovis vignei cycloceros*). There are at least four sub-species of urial (wild sheep) in Pakistan. The Afghan Urial is more widespread but not abundant (Roberts, 1977). It once occupied vast territory from central Balochistan through Afghanistan to Tajikistan in Central Asia. Drastically reduced in number, it is now restricted to a few shrunken habitats.

Abstract (continued)

population pressure, and military arms availability, their populations were in decline by the early 1980s when TCP (then STEP – Society for Torghar Environmental Protection) initiated a project for conservation of Markhor and Urial. In 2005, SUSG-Central Asia in collaboration with STEP undertook further steps through a GEF funded project. This paper explains how STEP and SUSG increased the ungulates' population, reduced poverty, enhanced commitment to conservation, ensured decentralized governance, and provided alternative agro-livestock technology to reduce dependence on land for subsistence.

⁵<http://www.fws.gov/endangered/>

⁶CITES (the Convention on International Trade in Endangered Species of wild fauna and flora) is an international agreement to which States (countries) adhere voluntarily. Its aim is to ensure that international trade in specimens of wild animals and plants does not threaten their survival. CITES was drafted as a result of a resolution adopted in 1963 at a meeting of members of IUCN (The World Conservation Union). The text of the Convention (available at <http://www.cites.org/eng/disc/text.shtml>) was finally agreed at a meeting of representatives of 80 countries in Washington DC, United States of America, on 3 March 1973. Governments that have agreed to be bound by the Convention ('joined' CITES) are known as Parties. Although CITES is legally binding on the Parties – in other words they have to implement the Convention – it does not take the place of national laws. Rather it provides a framework to be respected by each Party, which has to adopt its own domestic legislation to ensure that CITES is implemented at the national level. For more details, see www.cites.org.

The population

Torghar is inhabited by 4000 Pashtun people. The Pashtuns are the world's largest tribal group, of whom an estimated 24 million live in Pakistan, and 14 million in Afghanistan. The Pashtuns of Torghar are members of the Kakar tribe. More specifically, they are all Jalalzai – a branch of the Kakar – and are further divided into different sub-groups, each being divided into smaller branches. The population living in the project area ranges from 2,000 to 4,000. The people are, for the most part, semi-nomadic pastoralists tending large herds of sheep and goats. In some areas where limited cultivable land and perennial

water are available, people have small agricultural fields and orchards, the latter including apples, almonds, apricots and mulberries. Some of the families have become permanently settled, using stone masonry houses as shelter. Agricultural products are limited but provide for both local and market consumption. Wild pistachios, resin from various wild trees, and medicinal plants are also collected by the people to supplement their income.

Torghar is situated in an area which was, until recently, constitutionally defined as a Provincially Administered Tribal Area (PATA). In Pakistan, this unique status of “tribal areas” – whether provincially or federally administered

– gives the concerned territories some autonomy from the state institutions. In fact, it establishes a mixed governance between the Provincial and Federal administration on one hand, and the local tribal institutions on the other (Bellon, 2002)⁷. The main consequence for Torghar is that government extension and development support is almost non-existent, health care and education facilities are lacking, many basic necessities are either unavailable or exorbitantly priced, communication links are poor and people do not have access to credit or banking services

⁷Within these Tribal Areas, a further division is made between ‘A’ and ‘B’ zones, the latter – under which Torghar falls – being jointly administered by government institutions and local tribal elites. This status is a direct inheritance of the colonial administrative system (Bruce, 1900, pp.125-146). In short, it implies marginality regarding the executive (law and order is maintained by a local militia known as ‘Levies Force’) as well as legal powers (specific laws and fiscal rights). The people in the PATA have, as other citizens of the country, the right to vote, access to “normal” judiciary institutions and laws, but are also ruled by the Civil Procedure (Special Provisions) Ordinance I of 1968, the Criminal Law (Special Provisions) Ordinance II, 1968, the Provincially Administered Tribal Areas Civil Procedure (Special Provisions) Regulation I, 1975 and the Provincially Administered Tribal Areas Civil Procedure (Special Provisions) Regulation II 1975. The purpose of these special laws was to create judicial forums for the settlements of disputes while denying people access to the ordinary courts of the land (Ali and Rehman 2001 p.54).

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Trophy hunting and conservation

The idea of conservation in Torghar emerged in 1984. Alarmed by the threat to endangered species, Naseer Tareen asked Mr. David Ferguson of the International Affairs Office of US Fish & Wildlife Service for help. He later sent a team composed of biologists including the late Dr. Barth O'Gara of Montana University and Dr. Richard Mitchell of the US Fish & Wildlife Service. They suggested a community-managed conservation program based on sustainable use and trophy hunting. In 1985, the Torghar Conservation Program (TCP) was initiated. Hunting on the mountain was banned, and the local hunters were hired as game guards, while only trophy hunters would be allowed with their firearms provided they had purchased a hunt-

ing permit. The program was initiated in 1986, and registered as a Non Governmental Organization (NGO) named the Society for Torghar Environmental Protection (STEP) in 1994.

The idea of a sustainable harvest applies well to Markhor and Urial, as their main characteristics are: relatively long life span, relatively high reproductive rate for a species of such body size, polygamous mating system, relatively high survival of adult-age classes, relatively low susceptibility to predators, and adaptation to rugged and fluctuating conditions (e.g., unusual cold or blizzards in winter, drought in summer [Schaller, 1980]). These suggest that the Markhor and Urial populations are relatively tolerant to conservative harvest rates and have the capacity to rebound from overharvest. In such species there is normally an

"excess of males whose loss has little effect on population levels" (Schaller, 1977, p. 134)⁸.

Legalizing trophy hunting

In 1986 TCP applied to the Government of Balochistan (GoB) for Urial hunting permits. These permits being mainly destined to go to foreign hunters, TCP suggested raising the fees from the original 750 rupees (equivalent to less than US\$100 at that time) to US\$1,000. TCP's main argument for doing so was to curtail the well-known trafficking of local permits being ceded to foreign hunters without any official permission, and also to create awareness about the economic value and importance of wildlife. The suggestion to create a specific permit destined for export would

⁸Although it is difficult to assign an operational definition to the term "healthy population," it is normally associated with a population that is: (1) large enough to be minimally threatened by random demographic and genetic processes; (2) at or near carrying capacity or with a high rate of increase; and (3) widespread enough or close enough to other populations to be buffered from drastic environmental fluctuations and catastrophes. It is likewise difficult to assign an operational definition to "healthy habitat," but the term is normally associated with a habitat that; (1) allows a wildlife population to achieve its maximum population size and or growth rate; and (2) has suffered little or no degradation.

enable a check on this practice. Yet, the request was rejected by the then GoB Minister of Forest & Wildlife. Between 1987 and 1989, in the absence of government permits, hunts were conducted through “tribal permits”; that is, a letter signed by the tribal chief (Nawab) certifying that the trophy animal had been hunted in “his” area. At that time, permits were not needed to export trophies to Europe; also, the US-FWS agreed to make an exception, by accepting the validity of the Nawab’s letter.

It was only in 1989, when the Province’s Chief Minister ordered a survey of the Torghar animal population, that the procedure for official permits was re-established, and 10 Urial permits were issued to TCP for the first time. In legal terms, wildlife is a provincial subject and issuing hunting permits is the prerogative of the Provincial Government. But an export permit can only be granted by the Federal Government through its Scientific Management Authority, called the National Council for Conservation of Wildlife (NCCW)⁹. Upon request

of TCP, the GoB demanded that the NCCW issue export permits against the permits granted by the provincial government. After years of meetings and discussions, NCCW finally agreed, in 1998, to issue export permits for Urial trophies. The hunting of Markhor remained banned until 1997, during a Conference of Parties of CITES, held in Zimbabwe. There, the Government of Pakistan, supported by SUSG-CASia¹⁰ petitioned for allowing a limited quota of Markhor trophies to Pakistan, basing its claim on the success of Torghar.

⁹In Pakistan, the first step towards legislation to protect biodiversity was introduced in 1968 with establishment of the Wildlife Enquiry Committee (WEC). This committee drafted conservation legislation which was later adopted through various provincial acts and ordinances. A national Council for Conservation of Wildlife (NCCW) was established in 1974 within the Ministry of Food, Agriculture and Livestock. The NCCW has an advisory board and is responsible for coordinating, formulation and implementing wildlife policies at the federal and provincial levels, coordinating activities with international agencies and promoting conservation generally. The first piece of legislation to consider environment as a whole was the Environmental Protection Ordinance 1983. The National Conservation Strategy (NCS) marked a further shift away from simple regulation and protection measures towards a holistic view of environmental concerns.

¹⁰SUSG (www.iucn.org/themes/ssc/susg) is part of the Species Survival Commission (SSC) of The World Conservation Union (IUCN). SUSG is further divided into sixteen Regional Groups, of which the SUSG for Central Asia (Afghanistan, Iran, Kazakhstan, Kyrgyzstan, Pakistan, Tajikistan, Turkmenistan, and Uzbekistan) with its secretariat in Quetta, Pakistan, was established in February 1996, after receiving \$27,000 from NORAD through the SUI (Sustainable Use Initiative) secretariat in Washington DC. Mr. Naeem Ashraf, a biologist and field scientist, was hired as project manager. The aim of SUSG-Central Asia is to enhance the likelihood of sustainability in uses of wild-living natural resources. It operates through a network of experts and volunteers by directing best practices and sector learning to the IUCN, and the resource managers, government policymakers, involved communities, and the public generally. A number of initiatives are undertaken jointly by SUSG and STEP in Torghar.

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CITES eventually granted Pakistan six permits for hunted Markhor trophies. Out of these, NCCW of the federal government granted two permits to Torghar and the rest to NWFP and Northern Areas. In 2003, the quotas were increased from six to 12 Markhor hunting per-

mits, of which four were allotted to Torghar.

Transforming income into benefits

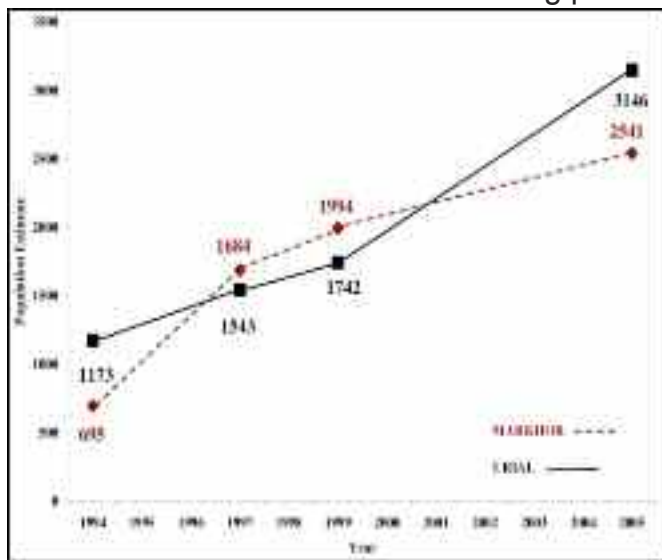
Trophy hunting has been the main key to the program's success. The revenue collected through trophy hunts enabled the STEP to be entirely self-funded. More important, it has brought substantial ecological and economic benefits to the mountain.

The first notable achievement is that the ungulate population has incessantly increased for the past 24 years, making this program one of the most successful of its kind in Pakistan. As shown in the graph, from mere remnants the Markhor and Urial populations are now respectively exceeding 2,500 and 3,000.

In parallel, the total amount of funds collected from selling the hunting permits since 1986 amounts to almost two million US dollars.

While 20% has been given to the government, most of the remaining was transformed into direct benefits for the mountain inhabitants. These include:

- **Awareness:** the local population, and especially the young generation, now understand the cause-and-effect relationships in natural ecosystems;
- **Game guards:** STEP is now employing 90 game guards from the mountain, receiving monthly salaries. This is one of the few stable incomes available to them;
- **Medical assistance and emergency relief:** STEP covers the health and medical expenses of all the inhabitants, when needed. It also provides the basic necessities in times of emergency, such as the six-year drought which hit the north of Balochistan in the late 1990s and early 2000;

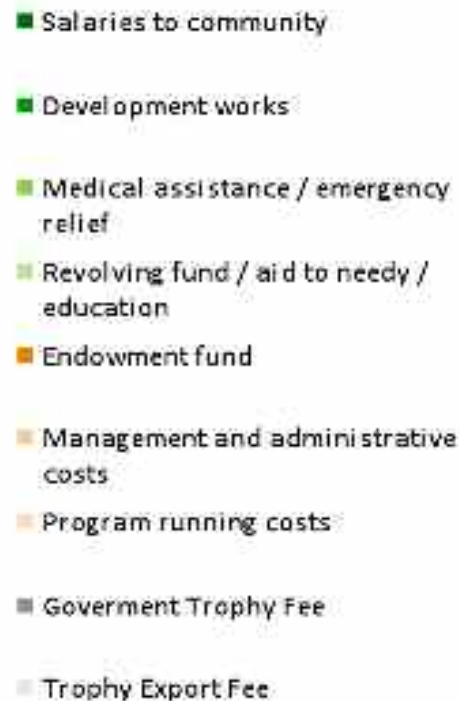


Data from Johnson (1997), Frisina et al. (1998), Frisina (2000), Shaflique (2006)

- **Help to needy:** a revolving fund enables the population to gain access to interest-free credit when facing exceptional hardship. Donations are extended to the neediest, and scholarships are occasionally given to encourage school attendance;
- **Water management:** with the joint support of UNDP and SUSG-Casia, STEP has developed water tanks, wells, storage dams and water channels;
- **Livestock management:** STEP has conducted training and sensitization campaigns to maintain fewer but healthier livestock;
- **Improved agriculture:** there is assistance in the development of agricultural fields and provision of sapling trees for orchards.

The pie chart below exemplifies how the funds are channeled. The data have been taken

from the STEP's expenditures during the year 2008-2009.



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By managing to transform the revenues collected from trophy hunting into substantial benefits to the concerned population, STEP has changed the mountain inhabitants into active stakeholders. Not only is the conservation of the ungulate population correlated with their increased value, but the redistribution of the income generated has enabled a sustainable approach to conservation. Yet, this successful and seemingly simple program has had to overcome tremendous obstacles throughout the years.

Conclusion: main difficulties and moving forward

STEP has been faced with barriers linked to two major factors: the tribes and the government.

The tribes

The Pashtuns of Torghar have always been hunters. The Afghan war flooded the area with automatic military weapons and ammunition, which contributed to the fast decline of wildlife. Hunting is not just a sport, but also a way of gaining respect and forging client relationships with more powerful people. The ban on hunting has been difficult to implement, and would not have been possible without the active support of the tribal chief. Throughout the implementation of the project, one predicament has continuously been encountered: what to do in cases of poaching? This remained a thorny problem to tackle for different reasons. One was the difficulty of establishing proof of the poaching: the only material evidence is footprints or parts of the animal killed. Another was to find the basis of punishment and to determine who would implement it. Also, the problem of denouncing a fellow tribesman to outside authorities and the mixing of personal grudges in accusations has

remained a factor of great tensions. On the whole, each case of poaching was treated separately with as many solutions as there were cases. It is noteworthy that despite the absence of a system, poaching has been drastically reduced. The regulation relies, once again, on a loose and constant monitoring as well as the multiplicity of interests at work making poaching more of a disadvantage than an asset. An intricate network of active forces and relationships is at work in this regulatory process. The fact is all the more remarkable that illegal hunting in national parks by influential people of the country is not uncommon.

This process shows that sustainability is not an outcome, but a process which involves constant negotiation with the different stakeholders. From this experience, STEP takes it as a general rule that any conservation program cannot take place without the active participation of the concerned population.

The government

As has been shown, both species were protected at the provincial level, which made legal hunting impossible. In 1988, the Federal government banned game hunting in Pakistan for six years. International involvement from IUCN and NGOs successfully pressured the provincial government. In 1992, CITES shifted the Markhor from Appendix II (which allowed trade) to Appendix I. Intense international lobbying made the government of Pakistan attend the 10th Conference of CITES in 1997, and it successfully petitioned for an annual quota of six Markhors, to be taken from community conservation areas. Today, the government still struggles with accepting the value of hunting. Despite acknowledging the success of the program, it has been reluctant to test the principles with other species. In the end, it has been in many ways more difficult to convince the government agencies than the local populations about the added value of trophy hunting.

In 1977, Schaller estimated a range-wide population of 2,000 for Suleiman Markhor. Today, this number has been overstepped in Torghar alone. The mountain boasts the largest populations of Suleiman Markhor in the world, and one of the largest Afghan Urial populations. The program's success is mainly owed to the acceptance of sustainable use of natural resources (trophy hunting in this case) which has required extensive lobbying over the years. The local population's involvement has been crucial and necessary. It has required constant discussions, which are still going on today. The sustainability of the program relies on this permanent state of negotiation. Sustainability is a process, not an outcome (Bellon, 2008). Thanks to hunters continuously coming to this remote area, despite its reputation of being insecure, the program is self-sufficient.

Considering that Pakistan is likely to be the worst affected country of Asia with regard to

climate change, all efforts to conserve biodiversity are precious. The achievements of STEP are worth noticing, and its founding principles are worthy of replication elsewhere. STEP is now setting up similar programs in several other areas of Balochistan (Chaghi, Noshki, Wadh) for species such as reptiles, ungulates, black bears and waterfowl.

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Conservation through Sustainable Use: the Torghar Model

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Biography

Peter Lindsey was born in Zimbabwe. After working in the South East Lowveld and Matetsi areas of Zimbabwe as an apprentice with a safari hunting operator for two years, he gained his Master's and PhD degrees in Zoology at the Mammal Research Institute, University of Pretoria. His PhD study assessed the potential for conserving African wild dogs and other predators outside of protected areas in South Africa and Zimbabwe. Following the PhD, he conducted a post-doctoral study on predator conservation in the Laikipia District of Kenya for two years before returning to Zimbabwe in early 2005. He then worked in Savé Valley Conservancy for three years, conducting field research on a variety of topics, with a focus on the illegal bushmeat trade flourishing there during conditions of economic decline and political instability.

A member of the IUCN Afrotheria, Canid and Southern African Sustainable Use specialist groups, Peter Lindsey has research expertise that includes *inter alia*: the trophy hunting industry in Africa; conservation impacts and drivers of the bushmeat trade; wildlife-based land uses and game ranching; human-wildlife conflict and predator conservation. He currently works as an ecological consultant, based out of South Africa, working on a variety of projects typically addressing issues relating to hunting, sustainable use and bushmeat. Recent projects have included work in Botswana, Mozambique, Namibia, South Africa and Zimbabwe.



Introduction

Over-hunting by explorers and settlers to Africa led to widespread population declines of large-bodied species and the extinction of animals such as quagga *Equus quagga* and blue buck *Hippotragus leucophaeus*. However, over time, recognition among hunters of the need to protect waning game populations led to the proclamation of a number of Africa's most famous protected areas (Adams, 2004). Tourist safari hunting developed as an industry in Kenya with visits to the country by wealthy Americans and Europeans, guided on safari by pioneer farmers (Adams, 2004; Booth, 2005). Similar industries later developed in several southern African nations.

Today, safari hunting is a major industry in Africa, generating at least US\$200 million per annum, and attracting a minimum of 18,500 tourists to the continent annually (Lindsey *et*

al, 2007). Safari hunting industries are particularly prominent in southern Africa, with South Africa accounting for by far the largest portion of the industry, followed by Namibia, Tanzania and Zimbabwe (Lindsey *et al*, 2007). In South Africa and Namibia, the large majority of hunting safaris are relatively short (5-10 days) and involve antelope species, or 'plains game'. However, a great diversity of species is hunted in Namibia and South Africa, and the two nations are the only places where both black *Diceros bicornis* and white rhinoceros *Ceratotherium simum* can be hunted legally as trophies. In Tanzania, Zimbabwe and Zambia a significant proportion of hunts involve large, 'dangerous' game, including buffalo *Syncerus caffer*, elephants *Loxodonta africana*, lions *Panthera leo* and leopards *Panthera pardus*. Safari hunting also occurs in Ethiopia and a number of nations in Central and West African nations, notably Benin, Burkina Faso, Cameroon and Central African Republic. Sa-

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fari operators outside of the well-travelled SADC destinations attract hunting tourists with rare and geographically restricted 'flagship' species such as Mountain nyala *Tragelaphus buxtoni*, Lord Derby eland *Taurotragus derbianus*, Bongo *Tragelaphus euryceros*, or subspecies and races of more widespread species such as 'sing-sing' waterbuck *Kobus ellipsiprymnus*, 'harnessed' bushbuck *Tragelaphus scriptus* and 'western' kudu *Tragelaphus strepsiceros cottoni* (Lindsey *et al*, 2006).

Safari hunting is conducted over vast areas in Africa, and consequently has the potential to have a significant impact, be it positive or negative, on wildlife conservation and on rural livelihoods on the continent. Safari hunting is a contentious topic, and the merits of the industry as a tool in conservation and rural development are debated. Views concerning safari hunting are typically polarized. Hunters are adamant that safari hunting plays a crucial role

in conservation in Africa. Some pragmatic conservation organizations accept the importance of sustainable consumptive utilization of wildlife, and consider safari hunting to be an important means of generating financial incentives for conservation. However, animal rights and animal welfare organizations are strongly opposed to safari hunting. Between the extremes of the hunting industry and the animal rights fraternity lies an important middle ground, comprising conservation organizations, scientists, some national governments and much of the general public, as yet undecided on the acceptability and importance of safari hunting as a tool for conservation and rural development. This uncertainty is exacerbated by lack of reliable data on the impacts of safari hunting, and confusion between the impacts of legal safari hunting and illegal 'trophy' poaching of animals such as elephants *Loxodonta africana* and rhinoceroses, and unsustainable hunting of wildlife for bushmeat in

Abstract

In Africa, hunting plays a crucial role in conservation by providing financial incentives for the conservation of wildlife and habitats in the context of increasing human populations and competition for land. Hunting provides incentives for the retention of existing wildlife areas, and the development of wildlife-based land uses on private and increasingly communal land. It also facilitates the ecological rehabilitation of existing and new wildlife areas. By providing incentives for reintroductions, safari hunting has been directly responsible for the recovery of several threatened species. However, there are several problems associated with safari hunting, which compromise the conservation value of the industry, tarnish its reputation, or both. Key problems occurring in some areas include, *inter alia*, failure to devolve sufficient revenues to communities, inappropriate leasing systems resulting in abuse of hunting areas, inappropriate quotas, over-shooting of quotas, genetic manipulation of trophy animals, and persecution of predators perceived to compete with hunters for prey. Partly as a result of these problems, the

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Box 1: Protectionism in Kenya versus sustainable use in southern Africa

Potential risks associated with adopting protectionist wildlife policies are illustrated by comparing the experiences of Kenya with those of southern Africa. Most southern African nations have pursued a policy of promoting conservation through a combination of protection in national parks, with sustainable use in semi-protected areas, and freedom for landowners to utilize wildlife on private land. Varying degrees of user-rights have been devolved to land owners (and in some cases communities) in southern Africa, with the effect that they have been able to effectively harness the financial value of wildlife. The result of these policies has been the conversion of vast areas of land from livestock to game ranches and conservancies, and subsequent increases in the abundance, diversity and distribution of wildlife outside of protected areas (Bond *et al*, 2004). By contrast, in Kenya, consumptive wildlife utilization was banned in 1977 and ownership of wildlife is retained by the state. As a result, there are no incentives for people to conserve wildlife, and populations have declined by 60-70% as a result of habitat destruction and the bushmeat trade (Norton-Griffiths, 2008). Wildlife-based land uses cannot compete with alternative options in Kenya; wildlife populations are declining by 3% per year and natural habitat is being lost to cultivation at rate greater than 8% per year (Norton-Griffiths, 2008).

parts of the tropics. In this paper, I review the positive and negative issues associated with safari hunting as a tool for conservation and rural development, and provide suggestions on the way forward to improve contributions of the industry.

Positive contributions of the safari hunting industry

Low ecological and environmental impacts

Safari hunting typically involves the off-take of small (2-5%) proportions of the male component of populations and, consequently, generally has little or no impact on population trajectories (Lindsey *et al*, 2007). Hunting tourists pay considerably more for their experience than photographic tourists, with the effect that returns can be achieved from much lower volumes of people (Chardonnet, 1995; Mayaka *et al*, 2004). As a result, the environ-

mental impacts through fossil fuel use for transport and habitat conversion for infrastructure development are small and markedly lower than for photographic tourism.

Economic and financial incentives for the retention of land for conservation

The most important conservation role of safari hunting in Africa is through the provision of monetary incentives for the preservation or rehabilitation of natural habitats for wildlife conservation. The importance of safari hunting revenues in creating incentives for conservation is illustrated starkly by comparing southern African experiences with those in Kenya, where safari hunting was banned in 1977 (Leader-Williams & Hutton, 2005) (Box 1).

- i) Enabling retention of existing wildlife areas

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Most sub-Saharan African nations have set aside vast wildlife estates for conservation, which include national parks and multiple use zones with lower protection status. Generating economic returns from protected area networks is crucial for governments to justify their continued existence under conditions of rapid human population growth and increasing competition for land. Photographic tourism represents an important means for generating revenues from some of Africa's best known protected areas. However, despite rapid growth in the ecotourism industry there are not enough photographic tourists to generate revenues from all protected areas (Lindsey *et al*, 2007). Most African nations do not yet attract significant numbers of tourists to wildlife areas, and even in the most visited nations, profitable photographic tourism operations are typically limited to a handful of protected areas (Weaver, 1999; Baldus, 2005). In Kenya, for example, only 5% of rangelands containing

wildlife are used successfully for photographic tourism (Norton-Griffiths, 2008). Furthermore, successful photographic tourism is typically limited to areas with high densities of viewable wildlife and spectacular scenery and is dependent on well-developed tourism infrastructure (Barnes, 2001). Photographic tourism is also highly sensitive to political instability, and does not flourish in African countries experiencing internal strife (Lindsey *et al*, 2007). As a result of these factors, income-generating options other than photographic tourism are generally required for most African wildlife areas. Safari hunting represents one such option, and is currently the only practical and viable means of generating revenues from most wildlife areas in Africa. Safari hunting can be conducted in areas lacking developed tourism infrastructure, and in areas lacking high densities of wildlife or spectacular scenery. Furthermore, safari hunting is resilient to political instability, and hunting tourists tend to keep

Abstract (continued)

hunting industry suffers from weak public, and in some cases, political support. A concerted effort is required from industry stakeholders to critically assess the conservation role of hunting, highlight achievements, identify and acknowledge problems, and to develop coordinated and inclusive solutions. Failure to address problems will result in continued questioning of the value and acceptability of hunting as a conservation tool.

coming long after the majority of photographic tourists cease to visit. Safari hunting is conducted over an area of approximately 1.4 million square kilometres in Africa, exceeding by 22% the area encompassed by fully protected national parks (Lindsey *et al*, 2007). In Botswana, Zimbabwe, Zambia and Tanzania, for example, safari hunting provides the primary (typically the only) source of income for a series of huge state-owned blocks which act as important buffers for national parks.

ii) Incentives for the development of new wildlife areas

Legislative changes during the 1960s and 1970s granted landowners in Namibia, South Africa and Zimbabwe the right to utilize wildlife occurring on their property consumptively (Bond *et al*, 2004). Instantly, wildlife became a valuable commodity and game ranching emerged as a land use over vast areas. Game ranches now cover approximately 91,000 km² in Namibia (extrapolated from Krug, 2001), and 100,000 to 200,000 km² in South Africa (NAMC, 2006), and covered 27,000 km² in Zimbabwe prior to land reform (Bond *et al*, 2004). Safari hunting was the primary driver for the shift to game ranching, and provided the entry point for most landowners into wildlife-based land uses (Bond *et al*, 2004; Lindsey *et al*, 2009). Because of the low required off-takes, safari hunting could be conducted on small populations of wildlife,

permitting the derivation of income during the early stages of game ranch development, without compromising growth in wildlife populations. Potential returns from safari hunting encouraged the reintroduction of a variety of wildlife species on private land, and greatly facilitated the recovery of formerly endangered species such as black wildebeest *Connochaetes gnu*, bontebok *Damaliscus dorcas*, Cape mountain zebra *Equus zebra* and white rhinoceros (Flack, 2003).

iii) Incentives for wildlife-based land uses on communal land

Recent legislative changes in Namibia granted to communities on communal land similar user rights over wildlife to those enjoyed by private landowners (Weaver & Skyer, 2008). By early 2007, 50 conservancies had been established, covering 119,000 km² of land in which wildlife populations are recovering rapidly through a

combination of reduced poaching and active reintroductions (Jones & Weaver, 2008). As with game ranching, safari hunting provided a crucial entry point for communities into wildlife-based land uses and is a key land use in most conservancies (Weaver & Petersen, 2008). Hunting tourists are generally not averse to paying for safaris on land occupied by people and livestock, and lacking high densities of viewable wildlife (Lindsey *et al*, 2006). Consequently, safari hunting is a key component of many community-based natural resource management (CBNRM) programs. For example, in Botswana, safari hunting generates 72% of revenues for CBNRM programs (Mbaiwa, 2008).

iv) Incentives for the rehabilitation of existing wildlife areas

The ability of safari hunting to generate income from small wildlife populations in remote

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and degraded areas means that the industry can play a pivotal role in the rehabilitation of degraded wildlife areas. For example, in Mozambique wildlife populations in protected areas and Coutada hunting blocks were devastated for bushmeat during and shortly after the civil war (Hatton, 2001). Safari hunting of remnant wildlife populations occurring in Coutada hunting concessions provided funding for anti-poaching, wildlife reintroductions and the development of wildlife infrastructure (such as water points, and in some cases, fencing) (Lindsey, unpublished data). In Coutada 9, for example, more than 4,000 gin traps have been removed by hunting operators during the last eight years (B. Duckworth, Mokore Safaris, pers. comm.).

Incentives for controlling illegal bushmeat hunting

The illegal bushmeat trade represents a se-

vere threat to wildlife populations in Africa. Widespread local extinctions are predicted for a number of large-bodied species in Central and West Africa as a result of excessive illegal off-takes of bushmeat (Wilkie & Carpenter, 1999; Fa *et al*, 2000). Less is understood about the impacts of the bushmeat trade in southern and East Africa, though indications are that the conservation threat posed by poaching is severe. Safari hunting provides the funds and incentive to control bushmeat poaching and results in the effective protection of wildlife populations in some areas, which may otherwise be eradicated. For example, in Savé Valley Conservancy in Zimbabwe, hunting operators removed about 74,000 poachers' snares during 2001-2008 (Lindsey *et al*, 2009).

Low leakage of revenues

Safari hunting suffers lower offshore leakage

of revenues than the photographic tourism industry. For example, in Botswana approximately 73% of photo-tourism revenues are leaked from overseas, compared to 24.8% of safari hunting income (Barnes, 1998). Lower leakage is partly due to the fact that hunting operators in several (especially southern African) countries are based in the countries in which they hunt, whereas tourism operators are often based in Europe or the US.

Problems associated with the hunting industry

Despite the positive contributions, there are a number of problems which limit the role of safari hunting in contributing to conservation and rural development.

Inadequate benefit flow to communities

In many areas, an inadequate proportion of

Box 2: The importance of research – Botswana

During late 2008, the government of Botswana expressed an intention to prohibit safari hunting in several Controlled Hunting Areas (CHAs) adjacent to national parks in the north of the country, following expiry of current leases (KCS, 2009). This decision follows the moratorium on lion hunting, first imposed in 2002. Both decisions appear to have been motivated by the assumption that safari hunting imposes negative ecological impacts, despite limited supporting evidence. The decision to limit safari hunting has potentially serious implications for a variety of reasons: a) approximately 74% of Botswana's wildlife estate is dependent on income from consumptive wildlife utilization and if such a land use were to be precluded, the competitiveness of wildlife-based land uses over livestock farming would be jeopardized (Barnes, 2001); b) safari hunting provides about 72% of income for CBNRM programs in Botswana and limiting such income could substantially reduce incentives for communities to conserve wildlife; c) most land currently used for safari hunting is unsuitable for ecotourism by virtue of lacking necessary infrastructure or the requisite high densities of wildlife or spectacular scenery; d) a decision by Botswana, historically a staunch supporter of sustainable use, to curtail safari hunting could

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the revenue from safari hunting is returned to communities living in or near hunting areas, reducing the extent to which incentives are created for local people to protect wildlife. Reasons for this inequity include: inadequate legislation enforcing community involvement, failure of national governments to devolve wildlife ownership to communities, the lack of skills among communities required for them to run hunting operations or negotiate improved terms with operators; and in some cases, under-declaration of hunting earnings by operators (Lewis and Alpert, 1997; Murombedzi, 1999; Mayaka *et al*, 2004; Mbwaia, 2004; Child, 2005; Lindsey *et al*, 2007).

Inadequate monitoring and overhunting

In most areas used for safari hunting, minimal investment is made in counting wildlife populations, and quotas are often established based on educated guesses. Given pressure from

hunting operators, and the desire to maximize returns from hunting blocks, there is the risk that quotas will be higher than wildlife populations can sustain. There is evidence for some species that quotas are too high. Caro *et al* (1998) suggested that quotas for some species with patchy or limited distributions in Tanzania (for example, sitatunga *Tragelaphus spekei*, puku *Kobus vardoni*, kudu *Tragelaphus* spp.) are too high. Similarly, Packer *et al*, 2009, suggest that excessive trophy quotas for lions *Panthera leo* have contributed to recent population declines for that species in Tanzania. In addition to the potential for detrimental impacts on wildlife populations, failure to monitor wildlife populations and establish quotas accurately may also result in over-reaction by wildlife authorities to address perceptions of over-hunting, as occurred recently in Botswana (Box 2).

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The use of potentially unsustainable hunting techniques

In some countries (notably South Africa and Zimbabwe), predators (particularly leopards *Panthera pardus*) are sometimes hunted with packs of hounds. Such hunting methods are extremely effective and considerably increase success rates. Counting species such as leopards is difficult, and so establishing appropriate hunting quotas is challenging. When quotas are too high, success rates associated with traditional hunting methods such as tracking on foot and hunting with baits tend to fall rapidly, thus introducing a negative feedback mechanism which provides some regulation of off-takes. However, the use of hounds introduces the risk that leopards could be seriously overhunted, causing population declines or even local extinction. Owing to the phenomenon of infanticide, whereby cubs are killed by incoming males following the removal of a ter-

ritorial male, species such as leopards and lions are particularly susceptible to excessive trophy off-takes (Packer *et al*, 2009).

Problems associated with the allocation of hunting quotas

In some countries, there are problems associated with the process of allocating hunting quotas. These problems include corruption, nepotism, and the allocation of too-short leases which discourage operators from managing hunting areas sustainably, and underpricing of hunting blocks, resulting in loss of potential revenues to state wildlife agencies (Nshala, 1999; Mayaka *et al*, 2004; Baldus & Cauldwell, 2004; Lindsey *et al*, 2007). In Tanzania, a number of hunting blocks have been subdivided and the original quotas retained, with the effect that hunting quotas may be too high. The lease of hunting areas often comes with the requirement that operators contribute

to management, such as through anti-poaching, infrastructure development and water provision. However, these conditions are often not enforced and so hunting areas do not always receive the management they require (ZAWA, 1999; Baldus & Cauldwell, 2004).

Inadequate regulation of hunting operators

There is generally a lack of adequate regulation of the activities of hunting operators in Africa, undermining conservation and social benefits from safari hunting. Lack of regulation is partly due to logistical constraints associated with controlling the activities of operators in remote hunting concessions, but also due to inadequate regulatory structures and mechanisms. In cases where hunting operators are known to have contravened hunting regulations, there is often a lack of means to administer effective disciplinary action.

Box 2 (continued)

undermine the solidarity of southern African nations at international forums such as CITES and encourage support for anti-hunting proposals by nations from outside the region. These developments in Botswana clearly illustrate the importance of research to assess the positive and negative impacts of safari hunting so that policy is guided by facts rather than conjecture.

Corruption

Corruption adversely affects safari hunting in parts of Africa, as it does a variety of other industries. Corruption within the hunting industry takes a variety of forms, from the payment of bribes to government officials for preferential allocation of hunting blocks, to bribing of government scouts to turn a blind eye to over-shooting or hunting of animals not on quota (Lewis & Jackson, 2005; Lindsey *et al*, 2007).

The effect of corruption is to reduce income for state wildlife agencies, and to enable the continuation of practices damaging to wildlife populations, or reduce financial returns to communities.

Problems associated with safari hunting on private land

Safari hunting on private land is associated with a number of practices which significantly reduce the conservation value of game ranching. Such practices include, inter alia: a) the fragmentation of natural habitat through the proliferation of game fencing erected to contain trophy animals; b) over-stocking of trophy species to maximize returns from hunting, which causes ecological degradation; c) the reintroduction of exotic or extra-limital species to increase the diversity of trophies; d) hybridization of closely related species and genetic manipulation of various species to create

new trophy varieties; and e) persecution of predators to protect trophy animals (Hamman *et al*, 2003; Lindsey *et al*, 2006).

Exploitation of CITES trophy export quotas for illicit trade in rhinoceros horn

Recently, it has become apparent that people from various Asian countries have been paying for rhinoceros trophy hunts in South Africa to obtain export permits for rhinoceros horn. The permits are then used to provide a bogus legal conduit for the export of horns from animals that have been poached in South Africa and neighbouring countries (TRAFFIC, 2008).

Inadequate participation by black Africans

The African safari hunting industry is dominated by people of European descent, primarily nationals of southern African countries, and in some cases, people from Europe or

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North America. There is inadequate participation by black Africans, which undermines the broader social contribution of the industry and weakens political support for safari hunting and wildlife-based land uses.

Unethical hunting practices

A number of unethical hunting practices occur in parts of Africa. These include, *inter alia*: 'canned lion hunting' where lions are hunted in small fenced enclosures with no chance of escape; 'put and take' hunting, where trophy animals are released on to a property immediately prior to a hunt with no time to acclimatize; the use of packs of hounds to hunt predators such as leopards; shooting from vehicles; and, shooting beside waterholes. While such practices do not necessarily have a negative conservation impact, they have the effect of undermining social and political support for safari hunting.

Potential interventions to improve the role of safari hunting

A variety of interventions are required to address problems associated with safari hunting and to improve the contribution of the industry to conservation and rural development.

Interventions by the hunting industry

Investment in research and monitoring

A major investment in research into safari hunting in Africa is required to accurately document the roles played by the industry in each country concerning conservation and rural development. Research is equally important to identify problems and shortcomings associated with the industry and to suggest suitable interventions. At present, lack of consensus on the acceptability of safari hunting as a conservation tool is driven largely by a lack of aware-

ness and understanding of the important contributions of the industry.

Pro-active efforts to address known problems

I believe that the safari hunting industry would achieve broader acceptance, and be considered a more legitimate conservation tool, if industry stakeholders were to be seen to acknowledge and pro-actively address some of the problems associated with the industry.

The development of uniform best practice guidelines

The development of uniform best practice guidelines and adoption of those guidelines by all African countries in which safari hunting is practised would be likely to substantially reduce the prevalence of unethical and unsustainable hunting practices. A workshop held in Windhoek in September 2007 was designed to

initiate the process of developing best practice guidelines for safari hunting in SADC nations, though, since then, the process stalled.

Greater collaboration between African hunting associations and international hunting clubs

A notable proportion of African hunting safaris are sold at the conventions of international hunting clubs. Such clubs have the potential to play an important role in regulating the safari hunting industry by limiting or enhancing the marketing opportunities of hunting operators depending on their performance. Through liaison with national hunting associations, hunting clubs could exclude hunting operators known to have contravened hunting regulations, or to have refused to abide by best practice codes in Africa. Equally, hunting operators recognized by national hunting associations as having made important contributions to conservation and rural development in their

country could be rewarded by hunting clubs with preferential placement of marketing booths at their conventions.

Provision of recognition for 'good' hunting operators

Hunting clients generally like to think that their safari contributes to wildlife conservation and benefits local people, and are generally not willing to hunt under circumstances in which conservation objectives are compromised (Lindsey *et al*, 2006). However, in reality, most hunting clients are unable to select among hunting operators on the basis of their contribution to conservation and or to local communities. The development of some kind of system to provide recognition to hunting outfitters who operate in a manner conducive to conservation could harness market preference for 'environmentally friendly' hunting and potentially drive positive change in the industry

(Lindsey *et al*, 2007b).

Interventions required by governments

Improve and augment national legislation

Effective regulation of the hunting industry is inhibited in some African nations by the lack of clearly defined legislation. A review of national laws is required to ensure that there is a degree of standardization among African countries (related to agreed best practices) and to ensure that sufficient detail exists to prevent avoidable problems.

Improve the process of allocating hunting concessions

The process of allocating hunting concessions needs to be improved in some countries, such that leases are granted following transparent

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public auctions. Leases for hunting concessions should be sufficiently long (at least five, but ideally ten or more) years with stringent conditions related to adherence to quotas, contribution to anti-poaching and wildlife management, and on communal land, provision of benefits to communities.

Introducing monitoring programs

A proportion of the returns from leasing of hunting areas should be reinvested by state-wildlife agencies in monitoring of wildlife populations. Where resources permit, wildlife populations could be monitored with the use of aerial censuses or strip counts. Alternatively, simple and cost effective indices such as monitoring of trophy quality, hunting success rates and catch effort could be introduced to allow adaptive management of quotas and early warning of over-harvesting.

Devolve user rights over wildlife to local communities

Devolution of user rights over wildlife is required to enable communities to extract greater benefit from wildlife occurring on their land and to negotiate directly with hunting operators to achieve improved returns from safari hunting. The most successful CBNRM programs are generally those in which user rights over wildlife have been devolved furthest (Child, 2008). Maximizing returns from hunting to local communities would increase incentives for the conservation of wildlife.

Increase regulatory powers of national hunting associations

National hunting associations (such as the Professional Hunting Association of South Africa [PHASA], the Namibian Professional Hunting Association [NAPHA] or the Zim-

babwe Professional Hunters and Guides Association) should be granted more power to regulate the behaviour of hunting operators. Ideally, membership of hunting associations should be mandatory for hunting operators, and such associations be granted the power to expel operators who do not comply with national legislation or, following their development, best practice guidelines.

Coordinate quota availability and pricing structures

The coordination of quota supply and pricing structures among different African nations could be used to prevent excessive safari hunting off-takes, and to elevate hunting revenues. For example, if all African nations that sell lion hunts were to collectively reduce lion quotas and establish common minimum pricing structures, greater returns could be generated from the removal of fewer lions.



Conclusions

Safari hunting provides incentives for the conservation of vast tracts of wild lands in Africa and is often the only practicable means of generating income from wildlife in many areas. However, the safari hunting industry is beset by a number of problems which undermine its contributions to conservation and rural development. These problems, combined with well funded opposition from animal rights groups, in addition to uncertainty among governments over the acceptability of the industry as a conservation tool, mean that the long term future of safari hunting in Africa is not certain. Despite the problems, I believe that safari hunting has a net positive impact on conservation in Africa by creating incentives for the protection of wildlife and wild lands. Consequently, intervention is urgently required to illustrate the crucial importance of safari hunting, to address problems and to improve the public

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image of the industry to ensure that it continues to play a vital conservation role in future.

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Biography

Mary Zeiss Stange, PhD, is Professor of Women's Studies and Religion at Skidmore College, in Saratoga Springs, New York, USA. She is the author of *Woman the Hunter* (Boston: Beacon Press, 1997), co-author of *Gun Women: Firearms and Feminism in Contemporary America* (New York: New York University Press, 2000), and editor of *Heart Shots: Women Write about Hunting* (2003) and the "Sisters of the hunt" series of reprints of women's hunting writing (2004-2005), both from Stackpole Books. Her *Hard Grass: Life on the Crazy Woman Bison Ranch* is to be published in 2010 by the University of New Mexico Press.

Mary Zeiss Stange has been widely published in both the scholarly and academic press on hunting, women's and environmental issues. She is currently the General Editor of the *Multimedia Encyclopedia of Women in Today's World* (SAGE Publications, 2011). She is also a hunter and, with husband Doug, owner of the Crazy Woman Bison Ranch in south-eastern Montana.

Is it possible to be both mean and green? This question may be a good place to start, when it comes to considering what women hunters have to add to the environmental debate. In the remarks that follow, I will focus first – and primarily – on trends in North American culture and environmentalism. I will then turn my attention to some related developments on the African environmental scene.

One of the saddest and, in the end, potentially most destructive divisions that has occurred among people who care about the environment is the communications gap that has developed between hunter-conservationists on the one hand, and non-hunting environmentalists on the other. These people agree on many, indeed most, of the fundamental environmental issues of our time: global warming and habitat loss; human encroachment on wildlife; increasing numbers of threatened and endangered species, and appallingly accelerated extinction

rates for both flora and fauna; the poisoning of our oceans and waterways; the corporate plundering of non-renewable resources; an environment growing ever more toxic from industrial pollution and agricultural waste.

That one group comes to their environmental awareness through hunting and the other through what are deceptively called "non-consumptive uses" of nature should at best be a coincidence. But it has somehow evolved into a barrier to communication. The "hook-and-bullet" crowd traditionally excoriates the "enviros" for their naiveté; in their turn, preservationists question the morality of "killing for sport." We should have learned by now that nobody wins arguments like these. And the biggest loser of all is the natural world around us.

Up until fairly recently in American history, women were largely excluded from the environ-



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mental conversation. That has changed, and women – particularly women who hunt – may have a special, indeed a crucial, role to play in advancing the environmental dialogue beyond its conventional “mean-*versus*-green” script. Years of researching the ideas and motivations of female hunters have convinced me that as a group women think through the meaning of their outdoor life in ways that help lend deeper and potentially more coherent meaning to the phrase “hunter-environmentalist.” These women are, intentionally or not, rewriting the story we humans like to tell about ourselves.

It begins with the fact that we are a predator species. The mirror tells us so, of course. We have canine teeth designed for tearing into meat. We have eyes in the front of our heads, well-developed distance vision and excellent depth perception, all crucial for stalking and capturing prey. We see a rainbow of colours. We have hands designed to grasp, and while our

fingernails are poor excuses for claws, these same hands can make tools, from slingshots to bows and arrows to semi-automatic rifles, that more than compensate for our lack of talons.

Yet, being a predator means far more than anything a mirror shows. It means always being open to possibility, being fully attuned to your surroundings, paying attention with all five senses. It means being keen-eyed and quick-witted, stealthy and smart, confident and capable and courageous. It means knowing how to be patient and when to pounce. It means inhabiting the moment, and trusting your own instinct.

What might it mean, more especially, for a woman? Despite millennia of patriarchal conditioning, women still know what it takes to be a predator. We always have. Perhaps that is why, today, among American hunters the only constituency that is holding steady, and may

Abstract

Female hunters today are shattering one of Western culture's oldest and most firmly entrenched ideas: that women are essentially passive, nonviolent nurturers. They are, thereby, also helping to rewrite the script of environmentalism in the 21st Century. But the growth of female hunting raises questions: how exactly does nature relate to nurture? What might hunting – for sport as well as for sustenance – have to do with being green? Can one be a predator and a steward at the same time? And, as a predator species, do we have any other choice?

These questions take on an added poignancy in the African context where, on the one hand, environmental depredation has taken an especially heavy toll on women and children, while on the other, women have risen to the forefront of the environmental movement – witness, for example, Kenyan Wangari Maathai's 2004 Nobel Peace Prize. At the grassroots level stretching from Love Canal in

(continued on page 141)



even be growing somewhat, is female; there are between two and three million American women hunting today. The research I've done on women hunters suggests that, for them, hunting has everything to do with female strength, and perhaps with something you could call – although many of them wouldn't – real "power feminism." Surely, being a hunter means living in the world honestly and without any illusions about our incapacity for doing

harm. It also means letting much more wilderness back into our lives.

In other words, women's hunting recalls everything that women conventionally are not supposed to do or to be. Reconnecting with our predator roots means breaking the gender rules that cast Man in the role of Hunter – the active, culture-creating force in the world – and Woman in the role of passive, nurturing Nature Girl. This accords with the story Western culture likes to tell about itself. It goes back, so they say, to the Stone Age, and by now several generations of us have been introduced to it via high-school biology texts. It is summed up in a picture, a series of figures that begins with a familiar enough ape, something like an orangutan, knuckle-walking along in profile. Next in the sequence, a hairy Australopethecine, vaguely suggesting a "missing link", slouches toward upright posture. Next comes a slope-foreheaded Neanderthal, fully

erect and clutching a stone axe, but obviously too dim-witted to make it in this complex world. Finally, triumphantly, Homo Sapiens, tall, handsome, and gripping a flint-tipped spear, strides confidently off the textbook page. He apparently is heading off to hunt, while his mate presumably stays in camp, keeping the home-fire burning, tending offspring, gathering roots and berries and, eventually, in her evolutionary spare time, developing horticulture.

This, of course, is a picture that reflects less the biological or anthropological evidence than the 20th century American cultural mindset that assumed – against the historical evidence, some of it indeed quite recent – that hunting was appropriately a male preoccupation, and that it related to a whole slew of other appropriately male activities. Men were questers, women nesters. Man the Hunter still ventured forth into the asphalt jungle, to bring home the bacon to his faithful mate, who, even

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if she was now humming "I am Woman, Hear Me Roar" as she did it, would lovingly prepare that bacon with a nice side salad of greens from her garden.¹

Then, for a variety of social and economic reasons, American women began to hunt in significant numbers.² Today they make up roughly ten percent of all hunters. These women derive as much satisfaction and hunt for approximately the same reasons as men do. However, I have found that they differ from male hunters in one perhaps surprising, and I suspect quite significant, way. It has to do with how women approach their capacity for violence.

Over the course of several years, whenever the opportunity arose, I have asked hunters I know (some very well, others only slightly) whether they consider hunting to involve violence or aggression. Men invariably have danced around the implications of the question: no, they have in one way or another contended, hunting only looks like violence to people who do not understand it. True, it involves killing (and nine out of ten men will quote Ortega y Gasset on "killing in order to have hunted" at this point in the conversation). But the hunter does not intend harm to the animal, and intention is what counts. If one doesn't intend violence, these men assert, then one's actions aren't really violent, even if

Abstract (continued)

New York to the Greenbelt movement in sub-Saharan Africa, women have become major leaders in environmental activism worldwide. The divide between hunter-conservationist and green-environmentalist that characterized the 20th-century debate is less pronounced among women as a group. They, therefore, offer new, constructive models for envisioning environmental preservation.

they look that way. When I have responded, "Tell that to the last deer you knocked down with a Nosler Partition to the heart," they have generally looked like *they* were the ones caught in the headlights.

¹On the complex relationship of the cultural ideals of "Man the Hunter" and "Woman the Gatherer," and for a cultural overview of women and hunting, see Mary Zeiss Stange, *Woman the Hunter* (Boston: Beacon Press, 1997). Additionally, among relatively recent works that treat American hunting history and culture, those that do the best job of addressing the intersection of gender and environmental issues include John F. Reiger, *American Sportsmen and the Origins of Conservation*, Third Edition, Revised and Expanded (Corvallis: Oregon State University Press, 2001); Daniel Justin Herman, *Hunting and the American Imagination* (Washington and London: Smithsonian Institution Press, 2001); David Petersen, *Heartsblood: Hunting, Spirituality, and Wildness in America* (Washington, D.C.: Island Press/Shearwater Books, 2000); and Jan E. Dizard, *Mortal Stakes: Hunters and Hunting in Contemporary America* (Amherst and Boston: University of Massachusetts, Press, 2003).

²For a brief summary discussion of the history of American women's hunting over roughly the past century, see Mary Zeiss Stange, Editor, *Heart Shots: Women Write about Hunting* (Mechanicsburg, PA: Stackpole Books, 2003), "Introduction."

Women have just as invariably approached my question differently. Yes, they have immediately responded, of course hunting involves an act of violence: how else can one characterize what it means to be on the receiving end of an arrow or a bullet? My informed hunch is that because women in our society are not supposed to be truly capable of violence, they are more willing, even in some ways more able, than men to confront their responsibility for it, when it comes to an activity like hunting. Largely unencumbered by the violence-related baggage every American male cannot help but carry around, women can more openly confront the violent implications of “killing for sport.” This places female hunters in a unique position, I think, when it comes to communicating about values and ethics with nonhunting environmentalists.

Hunting, after all, is a bloody business. It reminds us that we kill in order to live; we live by virtue of the deaths of other beings, sentient and non-sentient. As the poet and environmental activist Gary Snyder has remarked, even a parsnip is a miracle of creation, and, “If we do eat meat, it is the life, the bounce, the swish, of a great alert being with keen ears and lovely eyes, with foursquare feet and a huge beating heart that we eat, let us not deceive ourselves.” And, let’s also not deceive ourselves that by opting out of meat-eating we can ignore the blood that is still, inevitably, on our collective hands. Mechanized farming is lethal to animals and their habitat, and a farmer harvesting a field of soybeans wreaks more carnage in a single sunny afternoon than the average hunter could accomplish in an entire lifetime.

This, of course, is where hunting and environmentalism intersect: in a concern for the impact of our actions, indeed of our very existence, on the world around us. And this is where women’s hunting becomes especially significant. Women, after all, know about blood, and about the tissue-thin boundary between life and death. It’s no accident that the Greek goddess of the hunt, Artemis (whom the Romans called Diana), was also the goddess of childbirth. This mythic figure embodied what every hunter, and more especially every woman, knows instinctively: that life and death literally feed off one another, and that a thread of violence is deeply interwoven in the fabric of our green earth.³

What hunting brings to the environmental equation, then, is a sense of realism all too frequently lacking in what might be called

³On this theme, see my *Woman the Hunter*, Chapter 5, “Artemis: She Who Slays.”

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American popular environmentalism, that tendency to want to preserve nature as a wonderful place to visit, so long as it remains “untrammelled by man,” to invoke the US Department of the Interior's official definition of “wilderness” areas – but of course one would not want to live there. What women's hunting more especially offers is an opportunity to explore different, more complex and more constructive, ways of talking about how we relate to the non-human environment.

Up until fairly recently, like the so-called hunting “fraternity,” the American environmental movement was pretty thoroughly male-dominated, in terms of its leading political activists and more especially its main theorists. That has changed over the past generation or so, and quite literally this change has been from the ground up. As the awarding of the 2004 Nobel Peace Prize to Kenyan Wangari Maathai reminded us, at the grassroots level of activism stretching from

Love Canal in New York to the Greenbelt movement in sub-Saharan Africa, women – for a variety of very good reasons, many of them having to do with practical issues of hearth and home – have become major leaders in environmental activism worldwide. At the same time, across an array of academic disciplines, something called ecofeminism, that line of reasoning connecting male abuse of women to human abuse of non-human nature, has established itself as on the cutting edge of environmental theory and practice.

Female hunters and environmental activists, and there are many women who are both, thus have a key role to play in the dialogue we as a society desperately need to commence, about what it means to live, in this ever more imperilled natural world, as very human animals. The simple fact that the hand that rocks the cradle can also wield a .30-06 should tell us something, and not just about the shifting de-

mographics of hunting or about the changing circumstances of women's lives. Women's hunting forces us, men and women, hunters and nonhunters alike, to rethink our relationship to and responsibility for the non-human world in some fresh, provocative, and constructive ways.

What, more specifically, do women bring to the environmental conversation? – a no-nonsense attitude, for one thing. Just as women are more straightforward when it comes to admitting that hunting does involve a violent component, they are generally more in touch with the messier and often more hazardous aspects of day-to-day living. Most women, despite the women's liberation movement, continue to do the bulk of household work and to be primarily responsible for cleaning up after other people, as nurses, home health aids, nannies, housekeepers, chambermaids and so on. They are also more at risk of birth defects and a variety

of cancers, owing to toxins in the environment. For them, the question of working for a cleaner, more livable environment is a matter of solving concrete problems, not framing abstract arguments.

Women are used to having to get things done, and generally to doing more with less. We know how to multi-task, which frequently means cutting through conceptual thickets that too often block meaningful action. To paraphrase law professor and feminist activist Catharine MacKinnon: any time you hear someone say something is good in theory but not in practice, you know you've got a lousy theory on your hands.

In this sense, female hunters and environmental activists can literally bring men, and environmental theory, down to earth. Scan virtually every major anthology of environmental writing published in the past, say, thirty years and,

aside from those books specifically devoted to ecofeminism, you will find that male authors outnumber females roughly ten to one. One might well ask, what were the women doing while these men were framing their often elaborate environmental theories? Some women were out there at the grassroots, raising hell as well as public consciousness about life-and-death environmental concerns. Others were literally heading for the hills, getting in touch with their predator selves, and coming back with new understandings of what power, and ethical responsibility to the environment, really mean for us human animals. And not a few women were doing both of these things.

These women are impatient with any theorizing about "Man and Nature" that persists in ignoring their own experience-based perspectives. And they are, frankly, fed up with macho infighting over who knows nonhuman nature better and cares about it more, the

hunter or the green environmentalist.

Indeed – and this may be the most important reason why female hunters and environmentalists could ultimately change the face of global environmentalism – these women find it pretty easy to be green, in both theory and practice. At the same time, they are not hesitant to talk about the thornier side of the life-death cycle in which we all participate. When a woman hunter explains that she hunts because that way she is confident about the additive-free meat she is feeding her family, nonhunting environmentalists concerned about factory farms and feedlots are forced to see hunting differently. When she talks about taking her children hunting because they learn more about nature that way than by watching television, and because it provides better exercise than playing computer games, other mothers see her hunting in a different light. When she patiently explains that, as much as

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it can hurt to see an animal die and to know you are the cause, a well-placed bullet is infinitely more humane and ethically defensible than what happens to animals, as well as to (the mostly female) human workers in meat-processing facilities, then persons concerned about the abuses of the meat industry must see our human stake in hunting differently.⁴

Now, how might some of these ideas translate more specifically to the African context? I have already mentioned the work of Wangari Maathai, whose Green Belt reforestation movement has been hailed by environmentalists as a model of female-originated grass-roots community activism. Writing recently in a

US feminist publication, philosopher Emily Grosholz hails Maathai's project as a prime example of "double vision," the wedding of environmental theory "from above" with practical activism "from below." Grosholz writes:

Traditional societies have produced important (though not infallible) knowledge about how people can live sustainably in certain environments; and the domestic environments that have been and largely remain the domain of womenfolk are likewise a source of practical knowledge and human wisdom. We would be well-advised to stop disparaging and forgetting this collective wisdom, and instead

to give it a leading role in the drama of our present global crisis . . .⁵

The genius of Maathai's Green Belt Movement is that it draws upon the energies of women, and a growing number of men working alongside them, to work in some instances to preserve, in others to restore, the native habitat that traditionally has served as the source of their well-being. In the post-colonial context, that habitat becomes, as well, a source of power, in multiple senses: physical, spiritual, psychological, and economic. As Maathai told an interviewer in 2004: "[W]hen we talk about empowerment, it is almost like restoring the original self-confidence, the capacity of people

⁴For a representative sampling of such comments by female hunters, see Mary Zeiss Stange and Carol K. Oyster, *Gun Women: Firearms and Feminism in Contemporary America* (New York: New York University Press, 2000), Chapter 4, "Babies and Bullets in the Same Conversation," and particularly pp. 172-186. And for a thought-provoking, and reasonably comprehensive, comparison between hunting-foraging and various forms of agricultural food production and processing, see Michael Pollan, *The Omnivore's Dilemma* (New York: Penguin Press, 2006).

⁵Emily R. Grosholz, "Women Doing Science," *Women's Review of Books* Vol. 26, Issue 4 (July/August 2009), 23. She is deriving the idea of "double vision" from philosopher of science Sandra Harding's *Sciences from Below: Feminisms, Postcolonialities, and Modernities* (Durham and London: Duke University Press, 2008).



to take care of what is their own, to not be observers but to become active participants in the restoration of the environment.”⁶

When she began her work, Maathai’s focus was simply on biodiversity. However, she quickly discovered that human cultural diversity was at stake as well. Culture, she remarks, “is intimately linked with environmental conservation.” And those biologically rich habitats that are today at greatest risk from the pressures of globalization, privatization, and “the piracy of biological materials” are, simultaneously, the resources through which communities preserve their cultural heritage.⁷

Maathai tells a story, to bring her point home. “Before the arrival of the Europeans, Mount

Kenya was called Kirinyaga, or ‘Place of Brightness,’ by the people who lived in its shadow.” The Kikuyu people believed God dwelt on the mountain. But the Christian missionaries who came hand-in-hand with imperial interests told them otherwise: God lived in heaven; the purpose of the natural world was to be exploited by men.

The people believed this and were persuaded to consider their relationship with the mountain and, indeed, nature itself as primitive, worthless, and an obstacle to development and progress in an age of modernity and advances in science and technology. This did not happen only, of course, to the people who lived around Mount Kenya.⁸

⁶Rachel Cernansky, “The Tree Ambassador,” interview with Wangari Maathai, *Satya Magazine* (July 7, 2004). <http://greenbeltmovement.org/a.php?id=10>

⁷Wangari Maathai, *The Challenge for Africa* (New York: Pantheon Books, 2009), 174.

⁸Maathai, *The Challenge for Africa*, 173.

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Hence, as she frames it, “the challenge for Africa” is to create mechanisms for returning the land as near as possible to its original uses (taking into account that travel and tourism are now key components of the African economy), and for returning the control of the land to its original inhabitants.

The question, in our immediate context, is what role hunting might play in the process of restoring authentic relationships between people and their land, and more particularly, then, what role women play in that process. The issue is sensitive on multiple levels, beginning of course with the legacy of colonialism, and the ways in which imperial interests conscientiously used the regulation of hunt-

ing to alienate native peoples from their ancestral lands.⁹ Accounts of that process vary, depending upon just who is telling the story. For activists like Maathai, hunting played a relatively small role in pre-colonial African societies, and such hunting, and attendant meat-eating, as did occur was highly specific and ritualized.¹⁰ American environmental activists Brent Haglund and Thomas Still relate a somewhat different story. They quote Fred Nelson, a community wildlife management specialist based in Tanzania, to the effect that “Laws against hunting by natives . . . precluded the exploitation of what had been for literally millions of years a critical source of food for African communities.”¹¹ But whether wild game was an occasional delicacy or a staple

of life – and, depending upon context, the historical truth was probably usually somewhere in between – the essential purpose of the regulation of hunting was clear, and (to this Maathai would agree) it was brutally effective: to alienate the people from their land.

That this was accomplished in the name of “conservation” adds irony to insult. As cultural geographer James Ryan points out in a penetrating study of the pictorial and or symbolic construction of imperial rule, “early preservationists were rarely anti-hunting but simply advocates of restricted access of game to proper ‘sportsmen’,” that is, to white hunters.¹² Haglund and Still correctly remark that the regulation of hunting coupled with the establish-

⁹On the role the regulation of hunting played in imperialist expansion, two especially good sources are John M. MacKenzie, *The Empire of Nature: Hunting, Conservation, and British Imperialism* (Manchester and New York: Manchester University Press, 1988); and Valerie Pakenham, *Out in the Noonday Sun: Edwardians in the Tropics* (New York: Random House, 1985), Chapter 7.

¹⁰Cernansky, “The Tree Ambassador”.

¹¹Brent M. Haglund and Thomas W. Still, *Hands-On Environmentalism* (San Francisco: Encounter Books, 2005), 106.

¹²James R. Ryan, *Picturing Empire: Photography and the Visualization of the British Empire* (London: Reaktion Books, 1997), 138. Ryan's discussion is heavily dependent upon MacKenzie.

ment of wildlife preserves amounted to a “perverse preservation ethic that was neither biologically nor politically sustainable. . . . To native Africans, effectively segregated from a land that had been their own, the colonial notion of ‘game conservation’ came to mean that wild animals could stray from reserves, trample crops, kill livestock and menace humans without penalty.”¹³ And those wild animals were no longer perceived as having any intrinsic value in themselves.

As to the impact of this cultural transformation on women? First and foremost, of course, be-

cause women are the primary caretakers of the land, they bore the brunt of this alienation more directly and profoundly. And, farming and animal husbandry aside, many of these women were intimately involved in hunting as well. As a generation of anthropological investigations have increasingly borne out, women’s involvement in hunting, in Africa as in North America and elsewhere, can no longer be undervalued, let alone ignored.¹⁴

The forms of women’s participation in the hunt vary with time and place, of course. A relevant case from Namibia, and one very much to the

point of this paper, is that of the Ju/’hoansi, a Kalahari San group. In a fascinating study published in 2001, researchers Megan Bieseles and Steve Barclay observe that much earlier work on this society was skewed by the patriarchal bias of conventional anthropology. They write:

Much of the earlier San literature emphasized that women’s roles in regard to hunting were mostly ritual ones. The prevailing point of view was that hunting proscriptions involving women in these societies, emphasizing the need not to damage men’s hunting prospects, were

¹³Haglund and Still, 106.

¹⁴See Frances Dahlberg, Ed., *Woman the Gatherer* (New Haven: Yale University Press, 1981), several essays in which address women’s hunting, including the ground-breaking research by Agnes Estioko-Griffin and P. Bion Griffin, “Woman the Hunter: The Agta”. Other key critiques of the advancement of the idea of “man the hunter” at the conceptual expense of his hunting-mate “woman the gatherer” include Michelle Z. Rosaldo, “The Use and Abuse of Anthropology: Reflections on Feminism and Cross-cultural Understanding,” *Signs* 5:3 (1980), 389-417; Tim Ingold, *The Appropriation of Nature: Essays on Human Ecology and Social Relations* (Iowa City: University of Iowa Press, 1987); Joan M. Gero and Margaret Conkey, Eds., *Engendering Archaeology: Women and Prehistory* (Oxford: Basil Blackwell, 1991); Susan Kent, Ed., *Farmers as Hunters: The Implications of Sedentism* (Cambridge: Cambridge University Press, 1989); Louis Liebenberg, “The Art of Tracking, the Origin of Science (Cape Town: David Phillip, 1990); and Megan Bieseles and Steve Barclay, “Ju/’hoan Women’s Tracking Knowledge and Its Contribution to Their Husbands’ Hunting Success,” *African Study Monographs*, Suppl. 26: March, 2001, 67-84. The bibliography in the Bieseles and Barclay article presents a fairly exhaustive catalogue of the growing body of anthropological literature on women’s involvement in various aspects of hunting, worldwide.

Nature Untamed: The Intersection of Women's Hunting and Environmental Activism in the 21st Century

Mary Zeiss Stange,
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of primary importance. Less often, the positive effects of female ritual participation were brought out.

Bieseles and Barclay recount several studies which suggested that ritualized hunting appears to be a part of female coming-of-age ceremonies. This leads them to observe that "Many clues in different Khoisan societies, in fact, link the power of the newly adult women to the health of the land and to abundance of hunted and gathered food."¹⁵

However, while women's ritual and symbolic function in predominantly male hunting is clearly of key importance for these Kalahari hunter-foragers, their role does not stop there. In the winter of 1995, Bieseles and Barclay ac-

companied several husband and wife teams, hunting in the bush. In each instance, the wife's role as tracker was crucial to the eventual success of the hunt. Bieseles and Barclay attributed their successful collaboration to the fact that wives and husbands can communicate very effectively, particularly when it comes to non-verbal communication. But the wife, of course, has to know what she is communicating. They cite an earlier field study of Ju/'hoansi cooperative hunting that determined, via a tracking exercise, that "Wives of excellent hunters identified and drew information from tracks of important food animals, whereas wives of non-hunters commented on mouse tracks and toad tracks, and missed many economically important ones."¹⁶ They go on to detail how, through the ritual gift-giving of

arrows to hunters' wives, those wives – presumably the ones who know better to track a kudu than a mouse – gain both possession of, and the ability to distribute, the meat of animals killed with those arrows.

There may be no better metaphor of a people's intimate bond to the land than that embodied by the process of tracking: picking through grasses blade by blade, sensing granules of soil kicked aside, fingering fresh spoor, sighting random droplets of blood or bits of hair, knowing a landscape so well that one can pick up on the minutest alteration in its character – as well as knowing which animals effect such alterations, where their tracks will lead and how they will behave. That this is primarily women's work provides them with a powerful

¹⁵Bieseles and Barclay, "Ju/'hoan Women's Tracking. . .", 75. For a related example from the Western tradition, symbolically linking female adolescence to hunting and fertility, see Stange, *Woman the Hunter*, 144-148.

¹⁶"Ju/'hoan Women's Tracking. . .", 76. The field study to which they are referring was conducted in the mid-1970s by Alison Brooks and Aron Crowell, and the results were communicated to Bieseles and Barclay in a personal communication in 2000.



ecological incentive to preserve their natural environment.

This relationship to the land also provides them with an economic incentive to work in the land's best interests. Maathai realistically points out that, "While some of the political and social problems in...Africa in general are legacies of colonialism," those problems that are still being worked out – the historical favouring of one group over another, the unequal distribution of resources, and so on – nonetheless do not excuse the failure of Africans to take control of their own economic and ecological future.¹⁷ The potential role that hunting might play in this future is, by and large, off Maathai's radar screen, in large part, it appears, because of her dual concerns for the negative environmental consequences attending the trade in bushmeat on the one

hand, and on the other the need to focus on creating sustainable jobs for the growing majority of Africans who are city-dwellers.¹⁸

However, I think she would agree with those Western environmentalists who argue that sustainable hunting, well-regulated and administered by Africans working in cooperative fashion, can – I would argue, indeed must – be a part of returning the land to its original function and meaning. Haglund and Still provide an excellent example of such a community-based hunting venture in their chapter, "It Takes a Village to Raise a Rhino", which details the ways in which wildlife conservancies in several countries, including Zimbabwe, Zambia, Botswana, South Africa and Namibia, have successfully used tourism, in the form of both wildlife viewing and safari hunting, to bring back large game populations. . .in the case of the black rhino,

¹⁷Maathai, *The Challenge for Africa*, 189.

¹⁸See the Chernansky interview, and *The Challenge for Africa*, Chapter 11, "Land Ownership: Whose Land Is It, Anyway?"

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quite literally from the brink of extinction. They argue quite effectively that such locally-based programs, which channel income directly back into the community, have a far better chance of successfully managing wildlife than the traditional top-down, command-and-control model of state-regulated hunting.¹⁹ Recalling the idea of “double vision” introduced earlier in this paper, one could say such community-based conservation follows the logic of women's environmental work: get the practice right, and the theory will follow.

And, as Maathai has noted about her own Green Belt Movement, such cooperative grassroots projects tend both to draw on women's traditional leadership functions, and to foster egalitarianism: much like those husband and wife hunting teams of the Kalahari.

Indeed, as proponents of community-based environmental stewardship on both sides of the Atlantic can testify, there is a powerful lesson to be learned in this regard from traditional hunter-foragers. American environmentalist Bill McKibben sums it up this way:

It's easy to be a selfish jerk when you're one in 300 million; it's harder (though certainly not impossible) to be a selfish jerk if you live in a community, if you understand that these are the people with whom you will spend your life. Biological anthropologists have noted that our species spent 99 percent of his history in small hunter-gatherer bands, “the perfect setting for the emergence of cooperation ...”²⁰

Cooperative models abound in the growing literature about grassroots environmental organizing, not only in North America and Africa but, indeed, worldwide. A constant theme in this literature is the prominent role played by women. I would conclude by suggesting that in the 21st century, women hunters – in the various ways they work in concert with men – stand to be key players when it comes to blazing new trails toward environmental recovery and sustainability.

¹⁹*Hands-On Environmentalism*, 104-117.

²⁰Bill McKibben, *Deep Economy: The Wealth of Communities and the Durable Future* (New York: Henry Holt and Company, 2007), 125. McKibben is quoting Robert Sapolsky, “A Natural History of Place,” *Harper's*, April, 2006.



Introduction

Cameroon is a small African country located in the Gulf of Guinea. With a surface area of

Biography

Professor Ibrahim Njoya is a prominent lecturer, researcher and consultant. He obtained his GCE Advanced Level in 1976. He is Chair President of numerous associations and Managing Director of First Trust Engineering Bureau d'Etudes. He has held many positions in the Ministry of Tourism and in the Ministry of Environment and Forestry in Cameroon, Central Africa.

In charge of the Garoua Wildlife College for four years, Ibrahim Njoya was also the Scientific Authority for Cameroon at CITES. He is presently in charge of studies in the Ministry of Forestry and Wildlife. In his 28 years of active service he has gathered considerable field experience which is now being shared with younger generations through his writing.

475,000 sq km, it covers only 1.6 % of the continent. Yet, in terms of biodiversity, it ranks fifth in Africa, behind South Africa, the Democratic Republic of Congo, Madagascar and Tanzania, with over 9,000 vegetable species, 250 mammal species, 920 bird species, 210 reptiles, 552 fish species, 1,500 butterflies ... and a high degree of endemism.

Cameroon has a population of over 18,000,000 inhabitants, made up of 280 different ethnic groups with over 480 languages and a wide socio-cultural diversity. For all these reasons and many more, this country is referred to as "Africa in miniature". It is a highly contrasted Central African country (with forests and savannah, marine and coastal areas, valleys and mountains). It harbours the highest mountain in West and Central Africa, Mount Cameroon (an active volcano of about 13,451 feet). The slopes of that mountain are among the rainiest places of the world (9,000

mm of annual rainfall). Cameroon is also home to arid zones in the far north (200 mm of annual rainfall). Agriculture offers many cultural possibilities yet to be implemented.

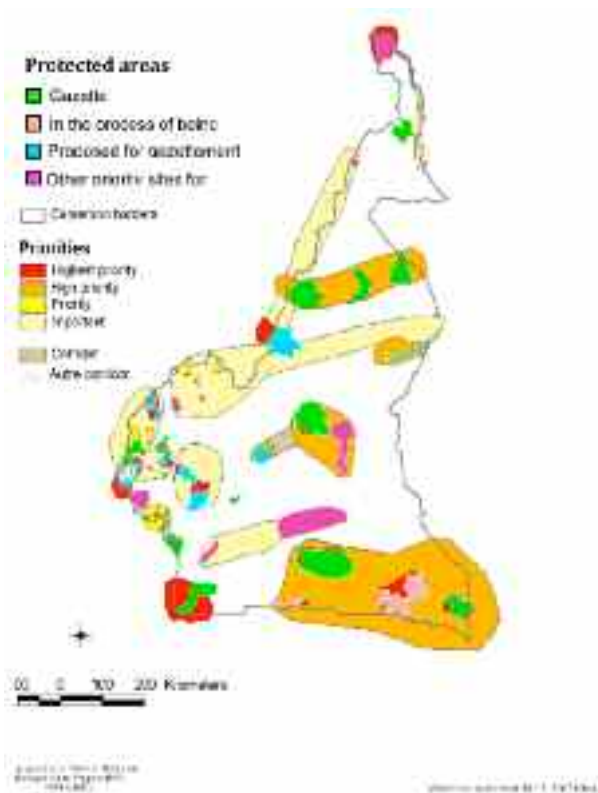
The sustainable use of this unique richness is a challenge for all the stakeholders, in this Central Africa country which is a part of the Congo Basin (the world's second largest evergreen tropical forest behind the Amazonia). This challenge concerns weak institutional organization, poor law enforcement and control systems, insufficient material and human resources among others. In addition to these is the political instability witnessed in some states within the sub region, with many firearms circulating in a total illegality, thus, making wildlife protection a difficult task to achieve.

1. Protected areas of Cameroon

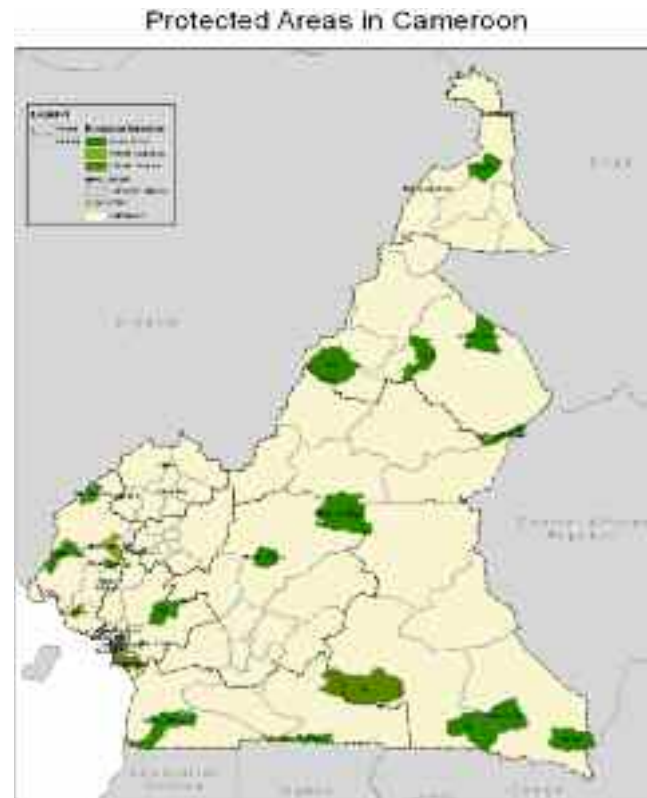
Wildlife Management in Cameroon

Ibrahim Soaré Njoya,
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1.1 – Biological vision of Cameroon



1.2 – Creation and evolution of protected areas

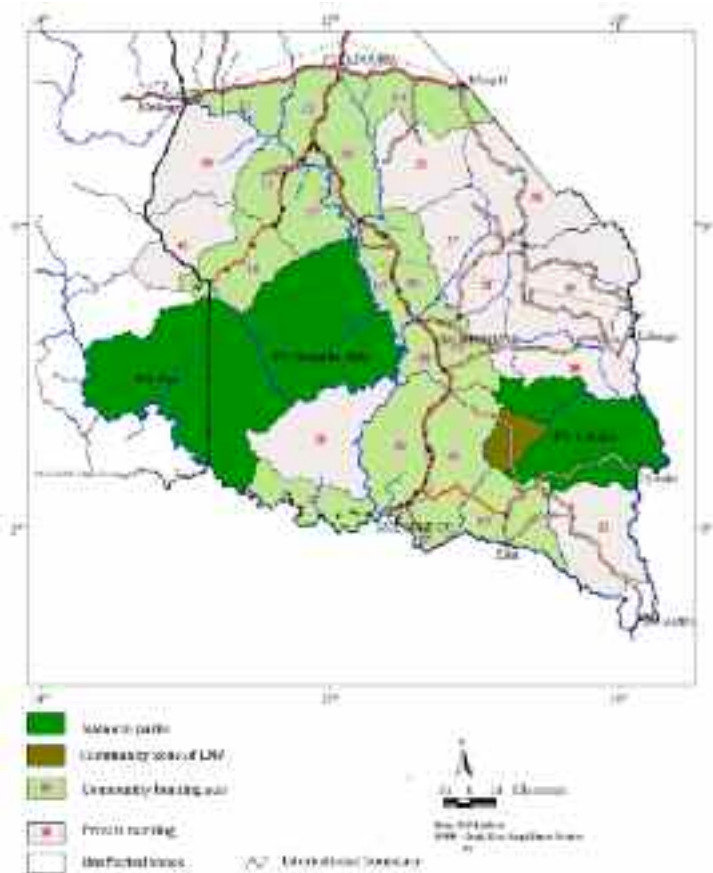


Abstract

Cameroon in Central Africa covers only 1.6 % of the surface area of the African continent, but is often referred to as Africa in miniature. In terms of biodiversity, Cameroon occupies the fifth position in Africa behind South Africa, the Democratic Republic of Congo, Madagascar, and Tanzania, with over 9,000 vegetable species, 250 mammal species, 920 bird species, 210 reptiles, 552 fish species, and 1500 butterflies with a high degree of endemism. Sustainable use of this richness is challenging, with weak institutional organization and poor law enforcement systems.

As concerns wildlife utilization, more than 50 species are hunted annually through a system of quota hunting (traditional) for the benefit of the local population, together with modern trophy hunting for guided international participants. Quotas are set every year and shared among the different hunting zones. Hunters benefit endangered species by controlling predators. Hunting has to

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Map of national parks, hunting zones and community hunting zones in the south-east of Cameroon

Cameroon lays emphasis on *in situ* protection of its wildlife resources. To this end, its objective is to cover at least 30% of the national territory with protected areas.

All of these protected areas cover a total surface of 4,500,000 hectares.

Since the early sixties (the years of

Cameroon's political independence), many protected areas have been created. Today, the country harbours 16 national parks, six wildlife

reserves, three zoological gardens, 47 hunting zones, 20 community hunting zones and two co-management hunting zones.

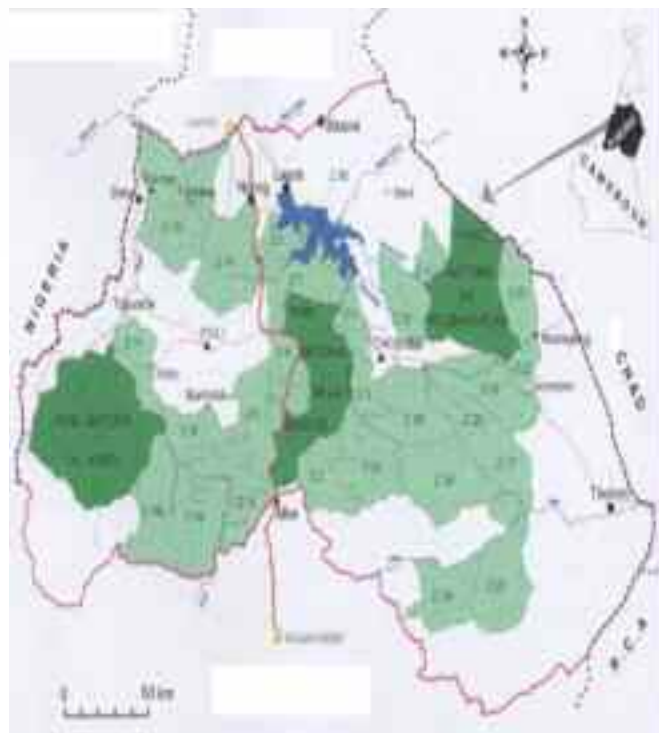
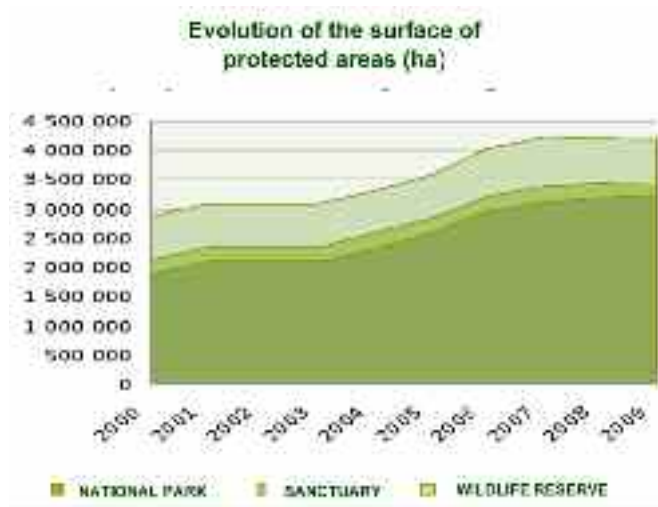


Table 1: Evolution of protected areas in Cameroon

Year	National Park	Sanctuary	Wildlife Reserve
2000	1883477	253360,14	739665
2001	2101331	253360,14	739665
2002	2101331	253360,14	739665
2003	2101331	253360,14	739665
2004	2330783	253360,14	729665
2005	2596844	253360,14	729665
2006	2968852	254366,17	797264
2007	3125090	254374,51	839453,76
2008	3186208	256318,51	771854,76
2009	3248807	167854,51	771854,76

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1.3 – Classification of animals according to their status of protection

In Cameroon, wildlife is divided into three classes of protection according to the vulnerability of the species. These are named A, B and C. Class A animals are totally protected; Class B animals are partially protected while Class C animals are not protected. A few examples are shown in the table below.

Class A	Class B	Class C
Elephant (tusk weighing less than 5 kg)	Elephant (tusk weighing over 5 kg)	Mammals, reptiles and batrachians, except those of A and B classes. Those species are partially protected, and their capture or hunting is regulated to maintain the dynamism of their population. The young of these three animal classes, as well as their eggs, have the same protection status as class A. Porcupine and Atherurus sp. are examples of this class.
Lion	Harbeeste	
Panther	African buffalo	
Caracal	Duiker (two species)	
Giraffe	Kob	
Gorilla	Defassa waterbuck	
Chimpanzee	Eland	
Cheetah	Spotted hyena	
Yellow backed duiker	African buffalo	
Black rhinoceros	Roan antelope	

Table N° 2: Few examples of class A, B and C animals.

Abstract (continued)

be controlled to ensure a regular census and the perpetuation of wildlife. Poaching, poor law enforcement systems and lack of regular census of animal population are also a threat to sustainable hunting, together with mining and grazing in hunting zones. Training and sensitization should be organized for stakeholders.



Extent of each animal class

1.4 – Classification of animals according to their hunting status

Animals in Cameroon are also classified into three hunting groups, namely I, II and III. Animals of group I have big game status (and are taken by holders of big game hunting permits); group II animals are medium game, and group III are found on small game permits. Few examples are shown in the table below.

Animal species		
Group I	Group II	Group III
Eland	Hartebeest	All class C animals belong to this group. They include all small mammals and other non-protected birds and reptiles.
Bongo	Kob	
African buffalo	Giant forest hog	
Hippopotamus	Bush pig	
Roan antelope	African civet	
Sitatunga	Yellowbacked duiker	
Bush buck	Bay duiker	
Defassa Waterbuck	Peter's and Harvey's duiker	
Topi	Spotted hyena	
Elephant (tusk weight over 5 kg)	Wart hog	

Table 3: The three game groups in Cameroon

2. Policy of quotas

More than 50 species are hunted yearly through a system of hunting quotas which can be traditional (for the benefit of the local population) or modern (sport hunting for international hunters). Every year, a ministerial order sets a quota of animals to be hunted during the hunting season. This quota is shared among the different professional hunters and village community groups. Table 4 gives an overview of the 2009 hunting season quotas. During this year, 4,002 animals belonging to 33 species were planned to be taken.

It is worth mentioning that details of the realization, that is the number of animals actually killed in 2009, are not yet available because at the time of writing the hunting season has just ended and the processing of the figures is under way.

	Types of hunting zones			Animal number		
	Professional	Community	Co-management	Savannah	Forest	Community
Savannah area	28	0	2	3,144	0	0
Forest area	19	20	0	0	540	318
Totals	47	20	2	3,144	540	318

Table 4: Hunting plan for 2009

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Type of sport permit		Maximum number of animals of different groups to be hunted		
		Group I	Group II	Group III
Big game		2	4	0
Medium game		0	4	4
Small game	Ground game	0	0	20/Year
	Winged game*	5/Week		

Table 5: Quotas of animals to be taken by holders of sport hunting permits.

* Among winged game, only the grey parrot is concerned with the CITES annual quota of 12,000. But since the emergence of bird flu some five years ago, the over 2,000 capturers in the country are jobless and no single bird has been exported from the country. Any female killed accounts for two units and is charged consequently.

3: Protection of threatened species

Class A animals should in no way be killed during sport hunting. This is because ac-

cording to the legislator, these animals are threatened with extinction. Some studies clearly show that national parks (administration-owned bodies) are not as well protected as hunting zones which are privately owned business corporates. This is due to poor law enforcement and to the low number of ecoguards who in addition are poorly equipped. In contrast, the law is effectively implemented in the private hunting zones because of the permanent presence of the ecoguards. This helps to ensure effective



A hunter with a beautiful Bongo trophy

protection of threatened species.

On the other hand, hunters benefit endangered species by shooting their predators and by avoiding the killing of the very young in the species. This act has however to be controlled through regular census meant to ensure the perpetuation of wildlife.

4. Reintroduction

In Cameroon, there is no reliably valuable experience to be presented now. All the attempts are much localized, mainly dedicated for scientific purposes and not for economic reasons.

5. Biological forecasting

In spite of the tremendous collective and individual efforts made at international and national levels, it is difficult to state whether world biodiversity is increasing, steady or decreasing. However, the general trend worldwide reveals a qualitative and quantitative loss of biodiversity. This loss has two major causes: natural (with climate changes) and anthropic. Many studies have focused on this issue. We can act on man's behaviour to alter the situation, but one would ask: in what proportion? The loss of biodiversity seems to be unavoidable.



Poaching threatens our wildlife



Legal & illegal trade of tusks & habitat destruction are two major causes of elephant population decline in Africa.



An elephant cut in the steel cable



The origin of the deserts of the Sahara and Siberia is not drought, but volcanism. This phenomenon is the source of many gases (including carbons, sulphates and phosphates) responsible for the destruction of many plant species which the animals feed on. Consequently, they also disappear.

On the other hand, looking at the steps of the transformation process into the different types of savannas and then into the forest, one would say that nature does tend to reconstitute itself after destruction. However, the rate of reconstitution is very low.

6. The way forward

The future cannot be determined by man only. Even if the whole of mankind was killed or had not been created, biodiversity will still disappear. This does not mean that we should neglect the role played by human beings on the degradation of the biodiversity. In Cameroon,

the situation is considered as a case study and it entails the following:

- Lack of respect for rules and regulations;
- Territories hired to private companies are often violated in total impunity. There are professional guides complaining of different offences committed in their areas;
- In ten or twenty years' time, it will be very difficult to find a forest exploiter willing to operate in Cameroon, as the forests are getting poorer because of the illegal exploitation. As a consequence, those who pay taxes find it difficult to balance their accounts since primary forests are scarce nowadays. In the east of Cameroon, for example, many exploiters are now carrying on activity in the same plot for the second or third time; the quality of the products is low and cannot

sustain international markets.

- There are lots of forest clearances for agriculture, pasture, industrialization and road construction purposes, just to name a few causes. Under such conditions how can biodiversity persist?
- Many firearms are circulating across national borders in the forest zone. They are used by poachers to kill animals illegally wherever they are found, be they in national parks, wildlife reserves or sanctuaries. Many of the poachers come from neighbouring countries (Central Africa Republic, Congo, Nigeria and Chad). This cross-border poaching has far-reaching consequences on the survival of animal species. Totally protected animals including gorillas and chimpanzees are killed with no respect for sex, age, season and territory. Birds like grey parrots



are systematically harvested for their heads and feathers which are very expensive in southeast Asia. This explains why it is difficult to mitigate the situation without international cooperation.

One of the root causes of illegal killing of animals is rampant poverty. In the recent past, we talked of the alternative sources of proteins as a solution to poaching. This can be a partial solution but it is not always effective. For example, a duiker is sold for 600 CFA Francs (€1) in the remote areas where there is no other source of protein. An alternative source of protein proposed, namely, chicken, is sold for 2000 CFA Francs (€3.5). And in addition to this, people will use the arguments of taste and feeding habits to resist introduction of other options. It is also easier to go and harvest animals in the wild instead of taking one and a half months or more to breed a chicken.

If we intend to sustain hunting, we should fight poaching and the destruction of wildlife habitat by every legal means.

7. Perception

Another consideration is the perception of conservation issues by the locals and political decision makers. When the local populations consider conservation as an approach made externally from the Africa perspective, and believe that wildlife is a God-given asset that nobody has the right to prevent them from enjoying, things become more difficult. Biodiversity is the top priority in western countries, and it is not the same in third world countries, particularly in Africa. It is consequently everybody's duty to work towards filling the gap of understanding between the west and African countries.

If one considers political decision makers, the analysis looks similar. The tendency is very

common to compare the input of conservation of nature with conservation of the resources from underground, such as oil, gold and diamonds. This type of comparison leaves conservationists voiceless because they do not yield the same sort of products. In the long run, conservation is more profitable than other products which are not renewable.

Much of the time, the vision of politicians revolves around the short term, and on the satisfaction of the basic needs of populations.

Conclusion

In spite of good organization based on a realistic strategy of creation and management of protected areas and on the policy of quotas which promotes wise use of the available resources, many shortcomings do exist and there is an urgent need to overcome them. These include poaching, poor control and law-

enforcement systems, lack of regular census of animal populations, mining activities and grazing in the hunting zones.

The best way to sustain biodiversity is to develop it. The battle is not lost in advance, and one should reconsider the initial vision of conservation. Can we expect to save biodiversity in Africa under the context of abject poverty and political instability resulting in firearms trafficking, many of which are used by criminals in the field to kill animals? When the basic survival requirements are not met, don't biodiversity issues seem demagogic? In my opinion, poverty alleviation and political stability can help mitigate biodiversity lost as a result of the actions of man. But natural causes such as global warming will still remain as a challenge to mankind and require collective efforts from all the nations across the world.

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Biography

Michel Alexandre Czajkowski graduated from the University of Lyon in geography and ecology and did his post-graduate work at the University of Paris, under the title of Evaluation and Dynamics of Natural Habitats (1979). He has been an urban planning consultant and was manager of the French bird-ring-ing database of the National Natural History Museum in Paris, from 1979 to 1993. He has been a consultant on Migratory Birds of the Western Palearctic (OMPO) in Paris, from 1996 until the present.

An active member of several ornithological and nature conservation societies, he has had special involvement in Eastern European countries and the Federation of Russia. Since June, 2009, he has been a member of the Group of Experts on Birds and their Hunting (GEOC) set up by the French Ministry of Ecology, Energy, Sustainable Development and Land Use. His qualifications cover the biological studies of Palearctic waterbirds and mountain birds, bird migration studies and bird ringing, in wetlands and damaged-habitat ecological remediation, management and conservation in Eastern France. He has a thorough knowledge of the Mediterranean Basin, North Africa and the Middle-East.



Hunting is a natural activity. It enabled the survival of the original humans and it has contributed to the development of our civilization. It is a form of consumption of renewable natural resources, and it is embedded in cultures and rural traditions. Hunting is an important social and cultural activity currently practised in Europe by seven million people whose motivation is nowadays more linked to leisure than to consumption, but also to a very strong primitive need of self-assertiveness in their relation to nature.

Waterbird hunting is practised in those regions where these species are found, mainly on the coastlines (tidal flats, estuaries, deltas) and along major river floodplains and inland wetlands. This kind of bird hunting is very popular because it involves a large number of migratory species, some of which are abundant. It has developed notably in the regions located along the major migratory flyways of these birds.

Throughout Europe, over the centuries and according to local circumstances, this has led to hunting practices being carefully adapted to the various species, as well as to improved wetland management techniques ensuring the maintenance of their longstanding carrying capacity for waterbirds.

More recently, there has been a massive increase in human population and its impact on natural habitats, particularly since the 19th century, through widespread drainage of wetlands for agricultural purposes. As a result, there has been increasing awareness that these habitats need to be preserved in order to maintain biodiversity and hunting.

This awareness first arose before the emergence of the concept of ecology (as defined by Haeckel in 1866) and of environmental so-called nature protection organizations and became really widespread after World War II

Waterbird Hunting and Wetland Conservation – a European perspective

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Biologist, OMPO (Migratory Birds of the Western Palearctic)

when territory planning was forced to bring agriculture into the industrial era (consolidation, generalized use of chemical fertilizers and pesticides), the aim being to ensure food resources for the population.

The imperative to act for the conservation of wild bird habitats and wetlands has led hunters to be willing to improve their knowledge of these migratory birds and their ecological requirements, particularly with regard to habitats.

The increasing awareness led hunters:

- to conceive national structures, then international organizations, such as CIC (the International Council for Game and Wildlife Conservation), "Il Nibbio" European Foundation, FACE (the Federation of Associations for Hunting and Conser-

vation of the EU) and OMPO (Migratory Birds of the Western Palearctic)

- to contribute to the creation of state-owned research institutes devoted to the study of migratory birds (such as the Ringing Centre for the migrations of mammals and birds at the National Museum of Natural History, Paris, the study of game species and regulation of hunting [the French National Hunting Agency] in France, and the Istituto Nazionale per la Fauna Selvatica in Italy)
- to participate in the development of international organizations such as IWRB (the International Waterfowl Research Bureau), and the European Committee for Bird Ringing (EURING), *by financing*:
 - missions designed to make waterbird censuses and inventory of wetlands

Abstract

Hunting has always been an integral part of the cultures and traditions of European rural society. Today, there are over seven million hunters in Europe, a substantial proportion of whom hunt waterfowl (mainly ducks and geese) more or less regularly. It is generally accepted that sustainably managed hunting can contribute to the conservation of biodiversity, the preservation of rural life and local economies. This is explicitly recognized in the *European Charter on Hunting and Biodiversity* (Council of Europe, 2008), promoting principles and guidelines intended to ensure that hunting in Europe is practised in a sustainable manner, avoiding negative impacts on biodiversity while making a positive contribution to the conservation of species and habitats and the needs of society.

Although it is less well documented than in the US (such as through the work of Ducks Unlimited), waterfowl hunters in Europe are also contributing directly and indirectly to the conservation,

(continued on page 165)



of international importance in the Mediterranean, the Middle-East, Africa

- scientific processing of accumulated data with the provision of statisticians and the publication of the results, the latest being Waterbird Population Estimates 4 by Wetlands International
- studies of waterbird migrations after analysis of ringing data
- to initiate study groups within Wetlands International such as the Waterbird Harvest Specialist Group, the Woodcock and Snipe Specialist Group, the Goose Specialist Group and the Duck Specialist Group
- to support networks, such as OMPO, the International Snipe Hunters Club, the Na-

Symposium proceedings on the Ecologic and Economic Benefits of Hunting

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tional Woodcock Hunters Club, the Greek Hunters Confederation, the Goose, Swan and Duck Study Group of Northern Eurasia, monitoring the scale of the Western Palearctic waterbird populations and their habitats

- by establishing on a national level study groups for wetlands and waterbirds
- by creating a foundation for the conservation and management of wetlands
- by getting involved in the development of EU directives 79/409/EEC on the conservation of wild birds (Birds) and 92/43/EEC on the conservation of natural habitats, wild fauna and flora (Habitats) and international agreements, such as the Ramsar Convention (1971) and AEWA (1995)

- by forging relationships with the European Commission, IUCN and BirdLife International about the Sustainable Hunting Initiative for the elaboration of the European Charter on Hunting and Biodiversity (Council of Europe and Bern Convention, 2007) and about the Guide to Sustainable Hunting under the Birds Directive (European Commission, 2008)

For what results?

Despite all these efforts there is internationally a sharp decline in biodiversity, many species of migratory waterbirds shifting from a favourable to an unfavorable conservation status, or worse. The alteration, conversion and loss of wetlands are in almost all cases the major reasons for this decline in Europe. Nevertheless, public opinion very often blames hunting, and especially waterbird hunting. The reason for this is that it physically involves

Abstract (continued)

management, and restoration of many wetland areas. In its *Communication COM (95) 189 final* to the Council and the European Parliament on *Wise Use and Conservation of Wetlands*, the European Commission states: “Rightly, hunting associations are becoming an important driving force for wetland conservation,” and, further, that “The principle of using the waterfowl resource in a sustainable way can substantially contribute to wetland conservation.” This paper illustrates this concept through 23 well documented case studies from France, recently collected and published by the *Fédération Nationale des Chasseurs (FNC)*.

death, but the concept of death is largely repressed by our modern society which has lost its rural roots and forgotten its relationship with nature.

Killing an animal is badly perceived by at least part of public opinion, which is influenced by stereotypes about nature conveyed by the



mass media and widely relayed by the education system. Hunters are partly responsible for the way things are because some of them have been less than exemplary, both in the attitude that they sometimes take towards non-hunters and other nature users, and in some excesses in hunting practices, linked to insufficient knowledge of species and regulations, particularly in the context of tourism hunting.

In addition, the positive role of hunting for the conservation of biodiversity, rural livelihoods, local economies and nature conservation is

not easily explained to ordinary people. This deficiency in the way of communicating the positive impact of their activity is often perceived as outdated. Hunters need to show perfect mastery in the practice of their craft. Then need to demonstrate both considerable effort and an irreproachable consciousness of what they do.

In the European Union, the directives “Birds” and “Habitats” recognize the role of sustainable hunting while fixing the limits related to huntable species. It is generally accepted that

sustainably managed hunting can contribute to the conservation of biodiversity, the preservation of rural lifestyles and to local economies. This is explicitly recognized in the European Charter on Hunting and Biodiversity (Council of Europe, 2007), promoting principles and guidelines intended to ensure that hunting in Europe is practised in a sustainable manner, while avoiding negative impacts on biodiversity and making a positive contribution to the conservation of species and habitats and the broader needs of society.

Waterbird Hunting and Wetland Conservation – a European perspective

Michel Alexandre Czajkowski,
Biologist, OMPO (Migratory Birds of the Western Palearctic)

To ensure the opportunities for sustainable hunting, hunters have to continue their efforts in the following directions.

In favour of the species they harvest:

- by the development of scientific research efforts to acquire a sure knowledge of the conservation status of Palearctic migratory waterbirds species and their habitats in their distribution range
- by strengthening the network of scientific partners using reliable protocols to obtain the annual abundance index of the breeding species and to estimate their success
- by better understanding their behaviour on the migration routes and the flyways
- by recording their annual harvest to as-

sess the impact of hunting on the various species, and to monitor the age ratio for assessment of population levels and understanding of the annual fluctuations in numbers observed on wintering sites

Such efforts may illustrate a better control of the harvest, which is the basis of self-management of hunting as is the case in North America.

Similarly, they need to continue their efforts...

In habitats accommodating both huntable and non-huntable species:

- by acting for the conservation of the most important sites and habitats through the regulatory tools created by the European directives and other international agreements as OMPO does (for example, transboundary wetlands in Eastern Eu-

rope have guaranteed the protection of the most vulnerable and richest areas and habitats), and implement international management plans favouring biodiversity

- by studying the productivity of wetlands and waterbird population-regulation factors
- by suggesting management solutions that have been proved, claiming unique expertise
- by developing scientific data-processing to improve the impact of these studies on other stakeholders in nature conservation and on policymakers



In contemporary society:

Hunters need to improve the image of hunting among the general public and in the scientific community, showing that the hunter is not a predator but a qualified stakeholder in nature conservation...

- who is consciously involved in the safeguard and even enrichment of biodiversity by his management of the environment, by his economic and financial role, and his philosophy
- who is a moderate and controlled user of natural resources and presents no danger to public safety

To achieve this, more specifically, there is a need for hunters

- to develop their training and their involve-

ment in monitoring networks (breeding bird counts, breeding success, harvests) and also improve their knowledge on species biology, in order

- to be acquainted with the principles and techniques of game and habitat management
- to show they care for wildlife and its habitat, especially wetlands
- to show that they hunt game with respect for ethics; and
- they are aware of and comply with laws and rules related to game and the rights and obligations of other stakeholders in the rural world; and that
- they have a genuine dialogue with other nature stakeholders in mutual respect and on the necessary basis of cooperation

Waterbird Hunting and Wetland Conservation – a European perspective

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Biography

William Morrill, PhD, CWB, was brought up hunting and fishing in southern Texas, USA. He received two degrees in Wildlife and Fisheries Management and his PhD is Ecological Planning with emphasis on resource economics. From 1978 until 1993, Dr. Morrill and his company, Wildlife Management, Inc., developed and managed hunting and fishing operations in Mexico and the Southern United States.

From 1993 until 1998 he was the Conservation Director for Club International based in Washington DC. He was involved in development of conservation through hunting in five continents, this work including involvement with international treaties and conventions. From 1999 to 2001, Bill Morrill led the Mule Deer Foundation, increasing membership and budget and fulfilling its conservation mission. From 2001 to 2005 he was chosen to act as lead science adviser by the Ely Bureau of Land Management Ely District for the 13-million-acre ecological restoration process. In 2005, he began working as a project manager for the consulting firm of SRK, Consulting. In 2008, he began to develop biodiversity and sustainable development programs for interested mining development clients.

The mining and metals industry extracts the earth's resources worldwide. The environmental and social impacts from that extraction, particularly in developing countries, have been an important concern, both nationally and globally. In response to concern over the possible inadequate assessment (and management) of those impacts, international lending institutions sought to develop a set of environmental and social policies and guidelines that would be globally applicable.

In 2002, the World Bank Group's International Finance Corporation (IFC) led other lending institutions in drafting a set of "Equator Principles", standards for assessing and managing environmental and social risk through requirements in project financing (The Equator Principles/FAQ 2008). The Equator Principle Financial Institutions adopted the Equator Principles in order to ensure that the projects they finance are developed in a manner that is

socially responsible and reflects sound environmental management practices. Principles have been developed in a way that addresses projects that could encounter social and environmental issues which are both complex and challenging, particularly with respect to projects in emerging markets.

The Equator Principles in brief

Principle 1: Review and Categorization: Projects are classified relative to their social or environmental impacts, in Category A (significant impacts), Category B (limited impacts) and Category C (minimal or no impacts).

Principle 2: Social and Environmental Assessment: For all medium or high risk projects (Category A and B projects), sponsors complete an Environmental Assessment, the preparation of which must meet certain requirements and satisfactorily address key environmental and social issues.



Hunting and Sustainable (Bio-conservancy) Development in a Senegal Mining Project

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Principle 3: Applicable Social and Environmental Standards.

Other Principles include 4: Action Plan and Management System; **Principle 5:** Consultation and Disclosure; **Principle 7:** Independent Review, **Principle 8:** Covenants: Incorporation of covenants linked to compliance; **Principle 9:** Independent Monitoring and Reporting Over the life of the loan; and **Principle 10:** EPFI Annual Reporting.

Establishing these principles resulted in increased environmental and social responsibility for lending in the financial industry. It gave rise to the International Finance Corporation's Performance Standards for Environmental and Social Sustainability for evaluating international funding applications (IFC.org). Directly applicable to the environment and social impact assessments are: Performance Standard 1, requiring Social and Environmental Assess-

ment and Management Systems; Performance Standard 6 which requires Biodiversity Conservation and Sustainable Resource Management, and Performance Standard 7 which requires procedures relating to Indigenous Peoples.

These lending requirements have given rise to a process known as the international Environmental and Social Impact Assessment (ESIA). The ESIA is completed in conjunction with the host country-required environmental and impact assessment and management requirements. Simply put, the ESIA process involves scoping of both the environment and stakeholder attitudes, requirements under host country laws and regulations, collection of a baseline of information on all resources and conditions, and after considering the impacts to the various resources, a management plan is developed to mitigate or offset the impacts. This process varies in accordance with the en-

Abstract

In Senegal, a company has chosen to expand its mining concession area. Many international lending institutions require adherence to the internationally established principles and guidelines created to benefit local communities and biodiversity. Companies are required to develop impact assessments (and mitigation plans) for both environmental and social resources. These requirements are briefly described in terms of the opportunity for sustainable development. Several mining operations that have developed sustainable utilization operations are also described.

SRK Consulting, an international consulting firm, on behalf of its client is evaluating impacts from and developing management for the mine concession and surrounding areas and will provide recommendations on a sustainable utilization program involving wildlife and communities. The development of a nationally approved, community-involved sustainable use program (to include

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vironmental conditions and cultural differences. A critical aspect of the management plan is the addressing of the concerns and welfare of the communities and stakeholders. This can include compensation for losses and relocation, and, potentially, to developing sustainable use programs for the residents in proximity to the mine site.

At its core, the ESIA process, wherever and however it is applied, generally remains true to the original concept. The concept of an “international ESIA” has evolved to address those interests and concerns not adequately covered by the host country permitting process.

Others involved have also acted on concern for better management by working collaboratively to emphasize appropriate approaches to impact assessment and management for the extractive industries when dealing with the environment and affected stakeholders. The

Council on Mining and Metals (ICMM) is a CEO-led organization representing many of the world's leading mining and metals companies as well as regional, national and commodity associations (refs). ICMM Toolkits have been developed for such purposes as community development, mine closure and mining and biodiversity (ESMAP et al, 2005; ICMM, 2006; IUCN & ICMM, 2008).

Extractive industry corporations themselves have increasingly developed “Corporate Responsibility” policies that demonstrate an organized and institutionalized commitment to communities and the environment. Barrick Gold Corporation (Barrick.com) and Rio Tinto (riotinto.com) are among the major companies that have well developed corporate responsibility policies. Examples of corporate responsibility include considering sustainable development, contributing to biodiversity and integrated approaches to land use planning,

and also to implementing effective and transparent engagement and communication with stakeholders.

SRK Consulting, Inc (SRK) is an international consulting firm that assists in mine Feasibility Studies (including the ESIA process) and management plans. SRK considers that the principal components of an internationally accepted ESIA process are to: 1) understand the environmental, social and stakeholder issues and concerns of the proposed project; 2) determine the policy, legislation and regulation requirements arising from relevant local, national, international and corporate bodies; 3) develop and seek agreement with stakeholders on terms of references for baseline studies and the remainder of the ESIA process; 4) obtain a project description and alternatives considered (site layouts, designs to appropriate level of detail); 5) understand the engineering and project design constraints and issues; 6)

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describe the bio-physical and socio-economic environmental baseline; 7) using the project description, baseline information and results of any predictive modelling, assess the significance of identified biophysical and socio-economic impacts (positive, negative and cumulative) and identify possible mitigation measures; 8) analyse alternatives with respect to possible impacts; 9) use the above to develop a social and environmental management and monitoring system that specifies how the mitigation measures for significant impacts are to be implemented, managed and monitored (depending on stakeholder requirements this may also include health and safety, emergency preparedness, human resources and other aspects); and 10) compile a draft ESIA Report which is disclosed for stakeholder comment before finalizing.

This approach results in the SRK project team adopting an approach to each international

ESIA that is tailored to the specific requirements of individual clients and projects. It is, in short, a very detailed assessment of existing resources and community conditions, as well as the impacts and management of those impacts.

In Senegal, a company has chosen SRK to assist in their proposed mining concession expansion. The concession area, as well as the areas adjacent to it, is populated by several communities, whose subsistence depends upon agriculture and supplemental protein from terrestrial wildlife. Agriculture is both for household use, family plots handed down by inheritance, and for commercial operations, such as cotton farming. Commercial operations with the exception of cotton (which has been on the decline in recent years) are sparse. Artisanal mining for gold occurs usually in proximity to drainage sediment deposits. Bush meat, although illegal, is sought in the area by boys and young men armed with slingshots and aided by small dogs.

Abstract (continued)

tourist hunting as an option) will be an integral portion in the bio-conservancy consideration. In addition, using game ranching principles, SRK will evaluate developing a limited-use area within the concession by re-introducing endemic free-ranging big game species.

Firearms are illegal to possess, but little can escape the communities and their efficient hunting of monkeys, birds and small mammals. On the concession itself, there is no running water and only one impoundment to provide any source of aquatic protein. This reservoir is under the control of another mining company on a nearby concession, and while a source of biodiversity elements, it is not a resource readily available for use by the communities.

SRK is collecting detailed baseline data on the environment and communities. This baseline information will then be used in conjunction with the final mine design and closure plan to



assess impacts and create a management plan. The collection of baseline information includes soils, water (surface and ground water), flora, fauna, agriculture and forest products (including medicinal plants), air quality, noise, transportation and health and safety. Another element of SRK's involvement is the development of potential sustainable utilization components of the management plan. Activities that are under consideration are improved agricultural enterprises, aquaculture enterprises using newly formed water impoundments, organized forest products, and development and utilization of wildlife resources.

The concession site itself is not the only area evaluated by the ESIA process. All impacts are considered, including those on areas surrounding the proposed concession site. One such area adjacent to the concession was traditionally known for its large-mammals wildlife populations. It has been depleted of wildlife

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populations and is relatively unorganized from a natural resource management standpoint, either by the communities or the government. There is little protection for resources, and limited government control. It is this area that hosts the greatest opportunity for a sustainable utilization program involving wildlife.

All aspects of sustainable utilization of wildlife will be considered for recommendations, including general tourism, tourist hunting of wildlife and other wildlife utilization. To realize sustainable utilization of wildlife resources, the existing legislation must be compatible, the government must be supportive and local communities must be cooperative. Each of these components is being examined by SRK.

While current options under evaluation include incorporating the principles and practices of game ranching and farming (practised both in North America and Africa to provide large-

mammal breeding opportunities within the concession, it is the adjacent areas that may offer the greatest potential for wildlife utilization and community development through the development of a bio-conservancy.

Every country is viewed specifically for such bio-conservancy developments. In Senegal, there are two land designations that may be useful in creating community based bio-conservancy areas. The first is the Zone d'Interet Cynegetique (ZIC). ZICs are created by decree and may be managed by the Senegal Forestry Service or private firms under concessions. There are a number of these in Senegal. Generally, these harbour the last remaining reserves of large fauna available for hunting (legally) in Senegal. Private companies lease hunting rights in the ZIC from the Government and, in addition, implement management improvements as a condition of leasing the concession. Several private hunting

camps are active within the ZIC. Some are successful; some are less so.

Additionally, there are Areas of Hunting Interest (AHI) which are part of the Senegal national domain and are designated for game management and hunting as well as being of scientific interest of major economic value. Tourism and hunting are cultivated in these areas without competition from other uses. AHIs are established through decree by the President of the Republic based on the recommendations of the Minister for Water Resources, Forestry and Hunting.

AHIs hold the most promise for Community Development Bio-conservation through cooperation between government, communities and mining companies, and any success will likely depend upon the establishment of an NGO cooperative. The communities will need to cooperate to develop wildlife habitat and

populations for sustainable use programs, such as wildlife viewing and tourist hunting.

This is the situation under consideration for a mine site in Senegal.

Conclusion:

- Mining of minerals will occur in the future.
- International Funding Institutions will require that detailed baseline information on both the environment and social situation should be collected and impacts predicted, mitigated and managed.
- The mining industry has proved a commitment to Social Responsibility including working closely with communities and towards sustainable development.
- There is support within the industry for

community development to the point that a toolkit outlining successful and proved techniques has been created.

- All wildlife has value and can be a significant biodiversity component of a sustainable development program if it provides incentive for its existence (not discussed, but an assumption for successful sustainable development programs).
- Sustainable development includes working with the communities and host government on a myriad of possible approaches including tourists attracted by wildlife.

Two of the approaches that are under consideration on one mining feasibility study are:

1. Establishment of a game ranch-like

situation within the concession itself, using the concession area as a “safe haven” for production of appropriate game species and possible use for re-introduction of previously endemic wildlife breeding stock;

2. More involved (and with possible greater potential) is creating bio-conservancy on existing community lands adjacent to the concession by working with communities and establishing an Area of Hunting Interest, managed by the communities after initial support from the company itself. This bio-conservancy would not be limited to wildlife or hunting, but would include utilization of forest products and other sustainable utilization opportunities, although hunting by tourists is recognized as an option.

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Potential challenges to management include:

- Inability to obtain cooperation of various community leaders;
- Government resistance;
- Poaching from neighbouring countries;
- Initial lack of incentives (such as benefits).

In summary, mining enterprises offer substantial opportunities to mitigate impacts and provide opportunities for community development through developing sustainable use options. One such opportunity, with the option of hunting by tourists, is being explored in Senegal.

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Biography

Professor Göran Ericsson holds a chair in wildlife tourism focusing on natural resource use and the human user groups at the Swedish University of Agricultural Sciences (SLU). He received his MSc in Biology, Economy & Business Administration from Uppsala University in 1994, his doctorate in Animal Ecology in 1999 at SLU, his associate professorship in 2002, and he became a tenured full faculty professor in 2007. He has been very widely published in the literature and teaches and speaks nationally and internationally.

His main research areas are human dimensions of natural resource use, attitudes towards hunting and large carnivores including WTP studies, human impact on animal behaviour, population dynamics including migration of moose in the boreal and sub-arctic landscape, browsing and interaction between plants and large herbivores. Professor Ericsson is currently the leader of a large thematic program, "Wildlife and Forestry", and deputy leader of the program "Adaptive Management of Fish and Wildlife Populations". He currently supervises six post-doctoral students and four PhD candidates.

Currently, we see an increasing interest in understanding the effects of hunting (for example, Ingold, 2005). Disturbance from hunting activity may trigger animal behaviours that may be reflected by decreased reproductive rates or increased mortality due to modified behaviours increasing susceptibility to another predator (Abrams and Matsuda, 1993). When prey express predator-specific vigilance in response to the most abundant predator (Lima, 1992) and human harvest dominates prey mortality (for example, moose in Sweden, regarding which hunting is 81-91% of all mortality [Ericsson and Wallin, 2001]), the impact of human activity is of particular interest. The situation may be similar for ungulates throughout Europe, where humans have been the main cause of ungulate mortality in the past several decades as large predator populations have approached extinction (for example, Milner *et al*, 2006).

Ungulates are known to react to human activity and infrastructures (for example, Vistnes and Nellemann, 2001). Hunting has been shown to affect ungulate flight distance and use of space and may also act as a trigger for habitat shifts (Millsaugh *et al*, 2000). Ungulates may respond by moving towards refuges at the onset of or during the hunting season (Millsaugh *et al*, 2000).

Moose hunting is connected to privately owned land or land under long term lease in Sweden. Hunting intensity is relatively constant on most hunting grounds and is concentrated during the first week of the moose hunting season (Thelander, 1992). In contrast, small game hunting is less organized and thus can fluctuate heavily in different areas. Because the mountain region is government land, possession of a hunting card enables any authorized hunter to utilize a certain hunting area. In mountain areas, small game



The Non-Impact of Hunting on Moose *Alces*

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tourism is common. Thus, wildlife on popular mountain hunting grounds is likely to be heavily disturbed during the hunting season.

The use of dogs is common in all hunting and small game is commonly hunted with pointing, flushing, driving, or baying dogs, whereas large game, such as moose and deer, is hunted mainly with baying dogs. Besides the hunter directly interacting with the baying dog, several hunters are placed in stationary positions around the hunting grounds to shoot moose as it leaves the area (Thelander, 1992). Commonly, Scandinavians hunt moose in a team associated with a certain hunting area, and they hunt in this area year after year. The regional government assigns licences to each team with respect to acreage covered.

We explored moose movement behaviour in three populations defined as Low Alpine, Inland and Coastal, which differ in terms of

human density, accessibility (that is, roads density), and the intensity of small game and moose hunting. We also assessed activity-related responses among adult male, solitary adult female and female moose with offspring.

Methods

Moose ($n=64$) were immobilized from helicopter using a dart gun and were equipped with a GPS Plus collar (Sandegren *et al.*, 1987; Vectoronic Aerospace, 2007) (Fig 1). We delineated three moose populations based on human density and accessibility, Coastal moose population ($63^{\circ} 43' N$ $19^{\circ} 41' E$, Inland moose population ($64^{\circ} 29' N$ $19^{\circ} 42' E$) and the Low Alpine area ($66^{\circ} 52' N$ $19^{\circ} 21' E$, WGS84) with boreal and mountainous forest partly above the tree line.

The Coastal and Inland regions receive similar mean hunting pressure of $16.2 \pm (3.8 \text{ SD})$

Abstract

Studies on moose (*Alces alces*) have suggested that interactions with humans may trigger anti-predator behaviours. We, thus, hypothesized that disturbances from small and big game hunting may have negative effects on moose movements, diurnal activity, and activity range. Using location data from 64 moose equipped with GPS collars from three North Scandinavian populations (Low Alpine, Inland, Coastal) with different human density and spatial accessibility, we evaluated the impact of hunting on moose activity rhythms. On average, female moose in the low human population density (Low Alpine) area ($< 0.5/\text{km}^2$) displayed significantly lower movement rates during moose hunting season, but variation in movement rates among individuals was higher compared with female moose in regions with denser human populations ($6\text{-}24/\text{km}^2$). We found no evidence that reproductive status influenced female moose sensitivity to disturbance. As expected, females used

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[man hours/km²] and $15.9 \pm (7.1 \text{ SD})$ [man hours/km²] compared to $2.7 \pm (0.9 \text{ SD})$ [man hours/km²] in the Low Alpine area.

For each moose, we calculated the distance in metres [m] from the previous position and the rate of movement [m/h]. We further subdivided moose positions into the six periods with respect to differences in hunting activity with the first period being the only one without any kind

of hunting activity or hunting dog training (Table 1).

We used the repeated measure analysis with moose individuals as a random factor to overcome the lack of independence. Each individual served as its own control when repeated measures were used. The level of significance was $p < 0.05$.

Population	COASTAL	INLAND	LOW ALPINE
# Moose studied	20	25	18
# Sex [f/m]	20/0	25/0	8/10
# ♀ without offspring	3/20	6/25	2/8
Moose density [km ²] ^a	0.8	1.1	0.3
Data collection	9th Aug - 16th Oct 2004	9th Aug - 16th Oct 2005	9th Aug - 16th Oct 2005

Table 1. Study animals and study areas for the Coastal, Inland and Low Alpine moose population in Västerbotten, Sweden.

Results & discussion

Using mean movement rate [m/h] as the dependent variable, we detected that female moose in the Coastal and Inland areas altered their movement among the periods of different hunting activity (Coastal: $df = 5$, $F\text{-value} = 2.6$, $p = 0.03$; Inland: $df = 5$, $F\text{-value} = 7.9$, $p < 0.0001$), but not Low Alpine moose (females: $df = 5$, $F\text{-value} = 0.9$, $p = 0.5$; males: $df = 5$, $F\text{-value} = 2.0$, $p = 0.09$). However, the coefficients of variation (CV) among periods of different hunting intensity showed alteration in mean movement pattern for each moose population and gender (Coastal female moose: $df = 5$, $F\text{-value} = 2.8$, $p = 0.02$; Inland female moose: $df = 5$, $F\text{-value} = 5.6$, $p = 0.0002$; Low Alpine Female moose: $df = 5$, $F\text{-value} = 33.2$, $p = 0.02$; and Low Alpine male moose: $df = 5$, $F\text{-value} = 33.6$, $p = 0.003$). Female moose in each population showed a relative increase in CV during moose hunting with a drop during the ten-day

The Non-Impact of Hunting on Moose *Alces*

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hunting break, but male moose CV gradually increased, reaching the highest levels during and after the temporary hunting break.

Because moose altered their movement during periods of different hunting activity, we tested whether these differences were associated with a shift in activity pattern, reflected by the coefficients of variation (CV). Splitting the dataset into rate of movement during day- and night-time showed that female and male moose in the Low Alpine region had significantly higher CV during the day (females: $df = 5$, $F\text{-value} = 29.5$, $p < 0.0001$; males: $df = 5$, $F\text{-value} = 11.2$, $p = 0.004$). In contrast, we found no difference for female moose in the Coastal and Inland regions in pattern of activity during a 24-hour period. Differences in movement rate in the three populations and gender were best described by a model including the factors of day-night-time and differences among time periods. Coastal and Inland female

moose movement activity was affected by day- and night-time and changes among time periods. Subsequent analysis showed more significant alterations in CV during day-time than night-time among the time periods (Coastal daytime: $df = 5$, $F\text{-value} = 5.7$, $p < 0.0001$; Inland daytime: $df = 5$, $F\text{-value} = 8.6$, $p < 0.0001$). Movement of male moose in the Low Alpine region was affected by changes among time periods, with significant changes during day-time (daytime: $df = 5$, $F\text{-value} = 3.8$, $p = 0.006$). Both day- and night-time activity dif-

Abstract (continued)

smaller activity ranges and were less active nocturnally than males.

The high within-group variation suggests that current hunting disturbance levels do not alter moose population behaviour in general. Our data indicate that alterations in movement were related to rutting activity, not disturbance induced by hunting. In line with behavioral theory our study suggests that some individuals were more sensitive than the general population to hunting disturbance.

Activity	Period
No hunting activity	9th – 15th Aug
Training pointing bird dogs	16th – 22nd Aug
Start of both small game hunt + training of baying moose dog	25th – 31st Aug
Start of moose hunt with baying dogs	5(6)th– 11(12)th Sept
Temporary break moose rutting season	26th Sept – 2nd Oct
Moose hunt resumes	10th – 16th Oct

Table 2. Periods with varying hunting activity in the Coastal, Inland and Low Alpine moose population in Västerbotten, Sweden, 9th Aug–16th Oct 2004–2005.



ferred among populations and genders with female moose in Coastal and Inland areas opposed to Low Alpine female moose (Night-time: $df = 3$, $F\text{-value} = 19.0$, $p < 0.0001$; Daytime: $df = 3$, $F\text{-value} = 18.8$, $p < 0.0001$.)

In conclusion, our study suggests that human hunting activity has no discernible impact on moose movements on any of the study areas. Why? We suggest that the intensity of hunting activity in our study areas may be too low to have any measurable effect on the population level. Furthermore, even if animals in all populations altered their movement rate during the periods of hunting activity, these changes were not necessarily associated with increased movement, nocturnal activity or range area with respect to hunting activity as predicted. Instead, these patterns likely correspond to concerns of rutting and foraging, rather than to higher hunting intensity.

Our results confirmed that the overall impact of hunting on moose movement is insignificant, as described for Swedish Coastal moose (Ericsson and Wallin, 1996). While the 1996 work with coarse, low-resolution study documented differences in nocturnal movement associated with hunting intensity, we were unable to detect such an association. Furthermore, we could not corroborate findings of, for example, Ruth et al (2003), suggesting that the opening of the hunting season functions as a trigger in ungulates to cause a shift in the time at which they move onto private land or National Parks, that is, land on which hunting is not allowed.

Contrary to our expectations, females showed less perturbation, and were not more active than male moose. This was true for female moose in Coastal and Inland regions with high human activity. Females in these two populations responded similarly, but their responses

The Non-Impact of Hunting on Moose *Alces*

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differed from those of female moose in the Low Alpine region with lower human activity. Opposing our expectations, movement rates of these females varied more greatly during the moose hunting period than during the small game hunt and thus may indicate perturbation due to increased hunting activity, with most females ranged in regions of greater accessibility that may be associated with higher human activity. A high density of human infrastructures may alter disturbance levels in more than one dimension; for instance, hunter density decreases with distance from roads and slopes (Stedman *et al*, 2004). Although male moose moved to a greater extent, and were more active during night-time than female moose, this behaviour did not seem to be correlated with differences in hunting intensity but was associated with movement activity increasing in the rutting season (Cederlund and Sand, 1994). The variation among the periods suggests individual moose were influenced

more by rutting activity that coincided with hunting than by direct impact of hunting activity. In contrast, peaks in CV of movement activity during periods of both small and big game hunting activity suggest that some female moose are more easily disturbed.

We were unable to detect whether reproductive status of female moose influences their sensitivity towards disturbance on the population level. The heavily skewed ratio of only 15-25% of the females being non-reproductive in each population may hamper our abilities to find any differences in behaviour. However, Ericsson and Wallin (1996) found that reproductive status affected female movement prior to hunting, but not during hunting. Unfortunately, because of our limited sample size we were unable to re-analyse this aspect and we recommend further analyses with more non-reproductive females included. These being the cornerstone in each population, the impact of

disturbances on females and the effect of reproductive status need to come into focus. Mirrored in population-specific variation in fecundity, females living in harsher and more seasonal environments seem to experience higher reproductive cost. In Scandinavia, female moose accompanied by offspring experience the highest survival rates as a result of hunter selectivity, whereas male moose and barren females prior to and past prime age face the highest risk of mortality during hunting season (Ericsson, 2001). However, Phillips and Allredge (2000) found that human disturbances affect reproductive success negatively, and despite the high turnover in the Swedish moose population and ability to re-learn predator-specific avoidance behaviour (Berger *et al*, 2001), the effect of human activity on females with and without offspring requires more research.

Although hunting activity did not affect moose



Figure 1. Map of Sweden. From east to west: the solid circle represents female moose in the Coastal area, the dashed circle indicates female moose in the Inland area, and the punctured circle points out female and male moose, respectively, in the Low Alpine area, Sweden, County Västerbotten.

on a population level, high within-group variation pinpointed the need for individual-based analyses. Moreover, it suggests more complex relationships among individual condition, prior

experiences, habitat and area parameters and disturbance stimuli.

We conclude that the studies of impact of both human hunting and human non-hunting activity should focus on areas where increased human-wildlife interactions are frequent.

Acknowledgements

The authors acknowledge the Wildlife and Forestry, EU/Interregional IIIA project Moose in Midscandinavia, the Project of Moose Management in Västerbotten, the Program of Adaptive Management of Fish and Wildlife, the Swedish Association for Hunting and Wildlife Management and the Swedish Environmental Protection Agency for financial support. The project was carried out in accordance with Swedish laws concerning animal research ethics and was approved by the Animal Care Committee for Northern Sweden in Umeå.

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Biography

Nicholas Aebischer originally studied pure mathematics and statistics at the University of Lausanne, Switzerland, while maintaining a strong interest in ornithology and birdwatching. That interest led him to postgraduate and then postdoctoral work on seabird population dynamics, population modelling and the problems of estimating vital rates from individually marked birds at the University of Durham, UK. In 1987 he joined the research team of the former Game Conservancy Trust, now the Game & Wildlife Conservation Trust, as a biometrician analysing 20 years of data on the Grey Partridge and the cereal ecosystem.

Nicholas Aebischer is now Deputy Director of Research at the Trust, where his responsibilities include applied ecological research into wildlife management requirements, especially regarding the recovery of declining farmland birds, maintenance and analysis of long-term datasets of game bags and partridge data, and quality control across the range of Trust research. He is a member of IUCN/SSC Sustainable Use Specialist Group and Partridge, Quail and Francolin Specialist Group.

Introduction

Above altitudes of 250-300 m, the uplands of Great Britain are dominated by moorland, a type of habitat where dwarf shrubs, particularly heather *Calluna vulgaris*, are prevalent. The distribution of moorland corresponds well to that of areas of blanket bog receiving over 100 cm of precipitation a year, or where the soil is acidic but peat is shallow (Thompson *et al*, 1995). Following the end of the last glaciation, this land was originally covered in forest. Neolithic man began a process of woodland clearance to grow crops or graze livestock that was largely complete by the 5th century AD in England and by the 15th century in Scotland and Wales (Atherden, 1992). The Little Ice Age (1550-1850 AD) made farming more difficult. Crop abandonment and changes in grazing pressure coupled with nutrient leaching, waterlogging and acidification led to the development of a grass and dwarf shrub community

that is one of the most distinctive habitats in Europe. Internationally, the United Kingdom holds 75% of the world's upland heather moorland, the rest being in Ireland, coastal Norway and in limited areas elsewhere (Gimingham *et al*, 1979). Its restricted range has led to its being listed on Annex 1 of the European Union's Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora, placing an obligation on member states to protect it.

Although the flora of heather moorland is relatively poor (Ratcliffe & Thompson, 1988), the animal assemblages are remarkably diverse and often of international importance (Thompson *et al*, 1995). Heather moorland is home to the Red Grouse *Lagopus lagopus scoticus*, an endemic race of gamebird that began to attract the attention of sportsmen by the end of the 18th century. Access to the uplands was facilitated by the development of the rail net-



Driven Grouse Shooting In Britain: A Form Of Upland Management With Wider Conservation Benefits

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work in the 1840s, leading to increasingly intensive management of Red Grouse for shooting (Eden, 1979). By the end of the 19th century, heather burning, originally used to improve grazing, became a management tool for improving Red Grouse habitat by creating a mosaic of different-age stands. On productive moors, “walked-up” shooting was replaced by driven shooting, whereby grouse were driven over guns in a line of permanent butts. This pattern of shooting has become the norm, and has been the tradition of grouse shooting ever since (Tapper, 1992). Typically, grouse moor owners employ private gamekeepers to reduce numbers of predators, maintain grouse habitat (mainly through controlled heather burning) and organize the shooting (Stuart-Wortley, 1894). A recent study calculated that grouse moors employed the equivalent of

3,900 full-time jobs and provided 5,700 shooting days per year (PACEC, 2006). In economic terms, driven grouse shooting is a major source of income for an upland estate, generating an average income of £116,000 per estate in north-east England in 2002, for instance (Sotherton *et al*, 2009). In the absence of shooting, the only other potential land uses for moorland are grazing by sheep or cattle, or commercial afforestation.

To what extent does management for grouse contribute to maintaining heather moorland? A survey of 229 randomly chosen moors in Scotland used remote sensing to compare the change in heather cover from the 1940s to the 1980s on moors continuously managed for grouse and ones where management for grouse had ceased (Robertson *et al*, 2001). It

Abstract

The upland heather moors of Britain are home to the Red Grouse, an endemic race of gamebird that has traditionally been intensively managed for driven shooting. Typically, grouse moors employ gamekeepers to reduce predator densities, maintain grouse habitat (mainly through controlled heather burning), and organize the shooting, which is a major source of income for the estate. On moors without shooting, the land has been either heavily grazed by sheep or even afforested. Upland moors also host breeding waders such as Curlew, Golden Plover, Lapwing, Snipe, and Dunlin, whose numbers are declining. Parts of the uplands have been designated as EU Special Protection Areas because of their wader abundance, and 79% of such areas are managed as grouse moors. Indeed, there are 2-5 times as many breeding waders on moors with grouse management than on ones without. Much of this difference can be explained by predation control: an eight-year experiment

(continued on page 189)

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found that the extent of heather cover was initially similar, at 51% and 53% of land area respectively. It dropped by a fifth between

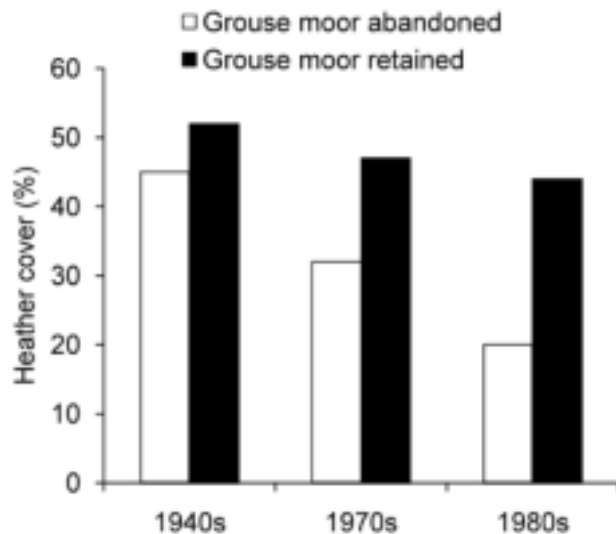


Figure 1. Changes in the percentage of heather cover on 229 Scottish moors in the 1940s, 1970s and 1980s, measured using remote sensing, on moors continuously managed for grouse and ones where management for grouse ceased (source: Robertson *et al*, 2001).

the 1940s and 1980s where management for grouse remained active, but by almost a half where it had ceased (Fig. 1). The main causes of heather loss were increased grazing pressure from sheep and deer combined with afforestation, both a consequence of government agricultural and forestry policy (Barr, 1997). The grouse interest therefore appeared to provide an incentive for conserving heather moorland despite other economic pressures.

The Red Grouse shares its moorland habitat with an assemblage of other bird species that is outstanding for its richness, abundance and genetic diversity (Thompson *et al*, 1995). Heather moorland holds internationally important numbers of breeding waders, of which Eurasian Curlew *Numenius arquata*, Golden Plover *Pluvialis apricaria*, Northern Lapwing *Vanellus vanellus*, Common Snipe *Gallinago gallinago* and Dunlin *Calidris*

alpina are the most widespread; outside northern Scotland, Dunlin is the least common (Gibbons *et al*, 1993). These are all species of conservation concern, either at the European level (Curlew, Lapwing, Snipe, Dunlin) or British level (Golden Plover), because of population declines (Eaton *et al*, 2009). Indeed, parts of the uplands where waders are abundant have been designated as EU Special Protection Areas (SPAs) under Council Directive 79/409/EEC on the Conservation of Wild Birds. Sites thus designated form part of the Natura 2000 network of protected sites subject to the precautionary principle, namely that activities can be permitted only if they have no adverse effect on the reasons for designation, unless there are imperative reasons of overriding public interest. Member states should also endeavour to encourage the management of landscape features to support the Natura 2000 network. It is generally UK policy that areas

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classified as SPAs are first notified as Sites of Special Scientific Interest (SSSIs) as this provides the legal underpinning for SPAs in domestic legislation.

In this paper, we examine what relationship, if any, exists between management for grouse and wader abundance by cross-referencing survey data from the national, regional, SPA and SSSI levels with data on the distribution of UK sporting interests held by the Game & Wildlife Conservation Trust (GWCT). The GWCT has also investigated the consequences for waders of predator control, one of the central planks of grouse management. We describe here the outcome of a recently concluded eight-year field experiment that is the only study to date of a potential mechanism linking management for grouse and the population dynamics of wader species of conservation concern.

Methods

Distribution of moorland

In England, the Department for Environment, Food and Rural Affairs has explicitly defined the area of moorland by drawing a “Moorland Line” delimiting upland areas where farmers are eligible for Least Favoured Area subsidies under the Moorland (Livestock Extensification) Regulations 1995 (Statutory Instrument 1995 No. 904). This is not the case in Wales or Scotland. Instead, the distribution of moorland was defined using Land Cover Map of Great Britain (Barr et al, 1993), which provides a national snapshot of the British countryside from 1988 to 1990 from satellite imagery and detailed field observations, at a 1x1-km square level.

Abstract (continued)

that manipulated predator levels on four moors found that wader breeding success tripled and the annual rate of change in numbers of breeding pairs went from -28% to +38% with predator control compared to no predator control.

Driven grouse shooting thus provides an economic incentive for a type of management whose benefits extend beyond Red Grouse to other species of conservation concern.

Grouse bags

The GWCT has been collating game bag records from over 1200 shoots throughout the UK since 1961 (Tapper, 1992). This database, known as the National Gamebag Census (NGC), holds data on numbers of Red Grouse shot (“bags”) for some 500 moors in England, Scotland and Wales, together with the area of moorland involved and estate maps. The bag data were standardized to unit area by dividing

the number of grouse shot by the area of moorland, then averaged by year to reveal the trend in annual grouse bags over time. We examined temporal changes in bags in the four major regions of Britain containing upland moorland: the north of England (from the Wash to the Scottish border), the Scottish mainland, Wales and the south-west of England (west of a line from the Isle of Wight to the Bristol Channel).

Bird distributions

The British Trust for Ornithology (BTO) has twice organized a survey of the distribution of all breeding bird species across the whole of the British Isles: in 1968-72 (The Atlas of Breeding Birds in Britain and Ireland, Sharrock, 1976) and in 1988-1991 (The New Atlas of Breeding Birds in Britain and Ireland: 1988-1991, Gibbons *et al*, 1992), at the 10x10-km level. For a given species, a comparison of the

distribution maps from the two surveys gives a quantitative assessment of how its distribution has changed during the intervening 20-year period. We made use of atlas data for Red Grouse, Curlew, Golden Plover, Lapwing, Snipe and Dunlin to look at changes in the same four regions as for the grouse bags (north of England, Scottish mainland, Wales and south-west England).

Bird abundance

There are relatively few extensive counts of the number of breeding wader territories in the uplands. An important early study is that by Tharme *et al*, (2001), who surveyed heather moorland in the Scottish Highlands in 1995 and in the north of England in 1996. On each of 122 estates, they mapped the territories of breeding Red Grouse, Curlew, Golden Plover, Lapwing and Snipe in 1-6 1x1-km squares, on two visits one month apart, using constant ef-

fort per unit area; density estimates were obtained after pooling information from the two visits (Brown & Shepherd, 1993). The estates themselves were classified into grouse moors and other moors, according to the presence of a full-time equivalent moorland gamekeeper.

More recently the statutory government conservation agency for England, Natural England, commissioned the first complete bird survey to be carried out on the 17 constituent SSSIs of the largest upland SPA in the UK, the North Pennine Moors SPA (Shepherd, 2008). This SPA is one of those designated for upland waders. Scattered areas around the periphery of the SPA were surveyed for breeding waders in 2005, and all moorland areas within the SPA were surveyed in 2006-07. As above, surveys were based on two visits one month apart, using constant effort per unit area, combined to produce estimates of breeding density (Brown & Shepherd, 1993). We totalled the

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densities of Curlew, Golden Plover, Lapwing, Snipe and Dunlin to give an overall measure of wader abundance on each SSSI.

Land managed as grouse moors

The locations and areas of land managed for grouse are not recorded by the UK government nor by the devolved administrations in Scotland or Wales. Instead, the GWCT has developed its own database from a variety of sources. Internally, it has drawn on the National Gamebag Census, on the knowledge of its GWCT advisory team and that of its upland research teams. It has supplemented these sources through collaborative work with the Countryside Alliance, the National Gamekeepers Organisation, the Scottish Gamekeepers Association and the Moorland Association. Shoot and estate boundaries are held as maps in a Geographical Information System, Mapinfo v9 (Mapinfo Corporation, Inc., Troy).

SPA and SSSI locations

The boundaries of sites designated as SPAs and SSSIs are documented and made publicly available by a statutory government body, the Joint Nature Conservation Committee. These boundaries were imported into the GWCT's Geographical Information System. Major upland SPAs (area over 200 km²) in England and Wales were overlaid with the boundaries of grouse moors in order to evaluate the degree of coincidence between SPA designation and grouse moor management.

SSSIs in the North Pennine Moors SPA, for which detailed bird abundance data were available (see above), fell into four blocks that differed in latitude, altitude, rainfall, watershed and average wader density. The first northernmost block (five SSSIs: Geltsdale, Whitfield, Allendale, Hexhamshire, Muggleswick) was separated from the rest of the SPA by the

Wear valley, the second block (six SSSIs: Moorhouse, Appleby Fells, Upper Teesdale, Lune Forest, Bollihope, Cotherstone) was south of the Wear Valley and surrounded the Tees Valley, the third block (four SSSIs: Mallerstang, Bowes Moor, Arkengarthdale, Lovely Seat) was further south again and straddled the Swale Valley, while the fourth southernmost block (two SSSIs: East and West Nidderdale) was separated from the rest by the Ure Valley. Within each block, the SSSIs were overlaid with the boundaries of grouse moors in order to assess the relationship between overall wader abundance and the percentage of each SSSI managed for grouse after accounting for differences between blocks.

Experimental evaluation of predation control

The GWCT's Upland Predation Experiment (Fletcher *et al*, in press) aimed to test whether

predator removal by moorland gamekeepers (through killing foxes, crows and small mustelids) improved the breeding success and abundance of moorland birds. Based at Otterburn in northern England, the experiment comprised two pairs of two plots; each plot was about 1,200 hectares and separated from any other by at least five kilometres. Plots in the first pair were switch-over plots, whereby predator control was undertaken from 2001 to 2004 on one of the plots chosen at random, then from 2005 to 2008 on the other plot. Plots in the second pair were long-term plots, whereby one chosen at random was subject to predator control throughout the study period and the other had no predator control at all. Grazing and burning pressure were standardized across plots to prevent any confusion between the effects of predator control and those of other forms of management. The number of territories of Red Grouse, Curlew, Golden Plover, Lapwing and Snipe were recorded

each spring from 2000 to 2008 using the Brown & Shepherd (1993) method, confirmed from later visits that monitored breeding success. Breeding success was measured as the percentage of pairs that successfully fledged young, based on counts with dogs for grouse, and on behavioural observations of adults and direct observations of broods for waders. No information on breeding success was collected for Snipe because the species is so cryptic. Trends in breeding abundance were examined by considering the annual change from one year to the next for species that breed when one year old (Red Grouse, Golden Plover, Lapwing, Snipe) and change from one year to three years later for Curlew, which breeds mainly at age three.

Results

Regional changes in grouse bags and upland wader distribution

In the north of England, grouse bags varied considerably from year to year, but have held up well overall, indicative of relatively little long-term change in stocks of Red Grouse on moors managed for grouse (Fig. 2a). The number of shoots returning grouse bags to the NGC fell by 33% between 1961 and 2002 (Table 1), suggesting some loss of grouse moor management, but much is still retained. In mainland Scotland, where average bag sizes are smaller owing to lower grouse densities and more walked-up shooting, grouse bags declined after the 1970s to around half what they were in earlier years (Fig. 2b). The number of shoots returning grouse bags fell by 43% over 40 years (Table 1), suggesting a greater rate of grouse moor loss in Scotland

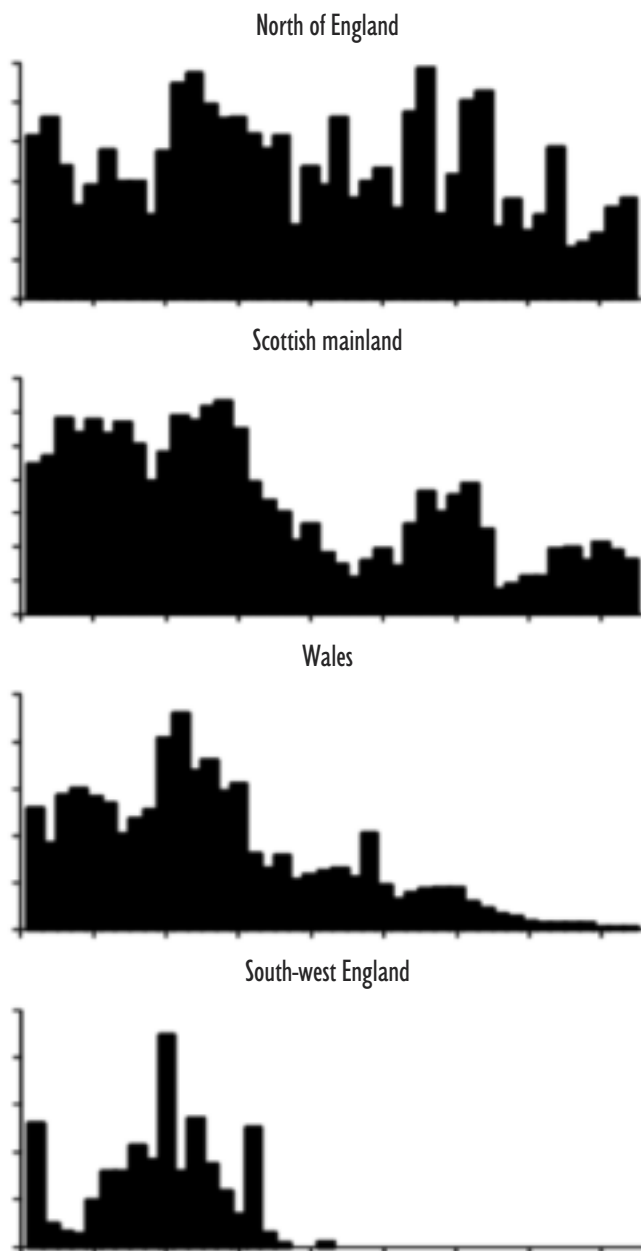


Figure 2. Average annual grouse bags in the north of England, mainland Scotland, Wales and south-west England from 1960 to 2002 (source: GWCT National Gamebag Census).

than in northern England, although management is still widespread. In Wales, grouse bags have declined to close to zero in recent years (Fig. 2c), while the number of shoots returning grouse bags fell by 75% (Table 1). Grouse shooting with its accompanying management is on the verge of disappearing. In south-west England, grouse shooting has stopped completely (Fig. 2d), with no shoots returning grouse bags since 1981 (Table 1).

The pattern of change in the distribution of Red Grouse and waders between 1970 and 1990 shows a remarkably close match to the fate of grouse moor management in the four regions (Table 1). Although range contraction has occurred in all regions, the extent for all species except Snipe is least where grouse moor management is widespread (average across waders is 16%), and worsens for all species as the extent of grouse moor management diminishes. Where grouse moor man-

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	North of England	Scottish mainland	Wales	South-west England
Grouse moor management				
Status	Retained	Slow decline	Nearly gone	Gone in 1980s
NGC loss (%)*	-33	-43	-75	-100
Species range change (%)				
Red Grouse	-13	-15	-36	-66
Curlew	-13	-17	-35	-49
Golden Plover	-15	-21	-35	-50
Lapwing	-8	-17	-29	-44
Snipe	-37	-20	-52	-53
Dunlin	-6	-10	-20	-75

Table 1. Status of grouse moor management (based on Fig. 2), and changes in distributional range of Red Grouse, Curlew, Golden Plover, Lapwing, Snipe and Dunlin between 1970 and 1990 (from Gibbons et al, 1993), for the four main upland regions in the UK.

* Percentage change in number of estates returning grouse bags in 2002 relative to 1961

SPA	Reason for designation			Area (km2)	Managed for grouse
	Species	Pairs	% of GB population		
North Pennine Moors	Curlew	3,930	3.3	1,472	86%
	Golden Plover	1,400	6.2		
	Dunlin	330	3.6		
	Hen Harrier	11	2.3		
	Peregrine	15	1.3		
	Merlin	136	10.5		
North York Moors	Golden Plover	526	2.3	441	85%
	Merlin	40	3.1		
South Pennines	Golden Plover	752	3.3	662	61%
	Dunlin	140	1.5		
	Short-eared Owl	25	2.5		
	Peregrine	16	1.4		
	Merlin	77	5.9		
Welsh upland SPAs	Hen Harrier	24	4.8	741	0%
	Peregrine	33	2.8		
	Merlin	28	2.1		
	Red Kite	15	9.4		

Table 2. UK SPAs designated on upland moorland, with the reason for designation, area, and percentage managed for grouse.

agement has completely disappeared in south-west England, in 20 years waders have lost approximately half their 1970 range.

SPA designation and extent of grouse moor management

All four major groups of moorland SPAs designated in the UK were designated partly or wholly because of their relative importance for raptors (Table 2; Short-eared Owl *Asio flammeus*, Hen Harrier *Circus cyaneus*, Peregrine *Falco peregrinus*, Merlin *Falco columbarius*, Red Kite *Milvus milvus*). Three were also designated because of their numbers of breeding waders: the North Pennine Moors, North York Moors and South Pennines. Golden Plover appears on all three designations, Dunlin on two, and Curlew on one. Overall, 79% of the land area of those designated because of their wader abundance was managed for grouse (range 61-86%), whereas the Welsh SPAs,

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designated solely for raptors, contained no land managed for grouse (Table 2).

Upland wader abundance and grouse moor management

Unsurprisingly, the density of Red Grouse breeding on grouse moors in the Scottish Highlands and northern England was double that on other moors in the same regions, at 9.0 ± 0.9 versus 4.6 ± 0.9 pairs per km^2 (Tharme *et al*, 2001). The density of breeding Curlew territories followed the same pattern and those of Golden Plover and Lapwing showed an even more marked five-fold difference (Figure 3). Only for Snipe was there no detectable difference in breeding density.

In the Shepherd (2008) survey of the North Pennine Moors SPA, 16,000 pairs of the five wader species were recorded, of which 34% were Curlew, 26% Golden Plover, 28% Lap-

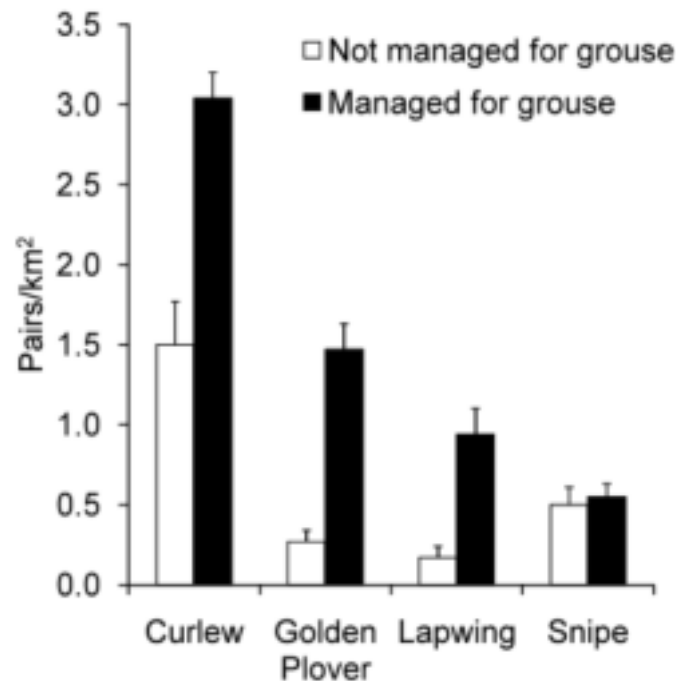


Figure 3. Density of breeding pairs of Curlew, Golden Plover, Lapwing and Snipe on 122 upland estates in the Scottish Highlands and the north of England in 1995-1996, in relation to whether the moor was managed for grouse or not (source: Tharme *et al*, 2001).

wing, 11% Snipe and 1% Dunlin. The average wader densities varied between SSSI blocks, generally becoming lower with more southerly latitudes, higher rainfall and lower altitude. Within each block, wader density on SSSIs increased with the percentage of land managed for grouse (Fig. 4), except for the southernmost block where there was practically no difference in the percentages of grouse moor. Within block, the highest wader densities corresponded to SSSIs where at least 85% of land was managed for grouse, the lowest where under 60% was managed for grouse.

Upland waders and predator control

The Upland Predation Experiment found that the breeding success not only of Red Grouse, but also of Curlew, Golden Plover and Lapwing improved approximately threefold with predator control, from an average of 23% of pairs fledging young without predator control

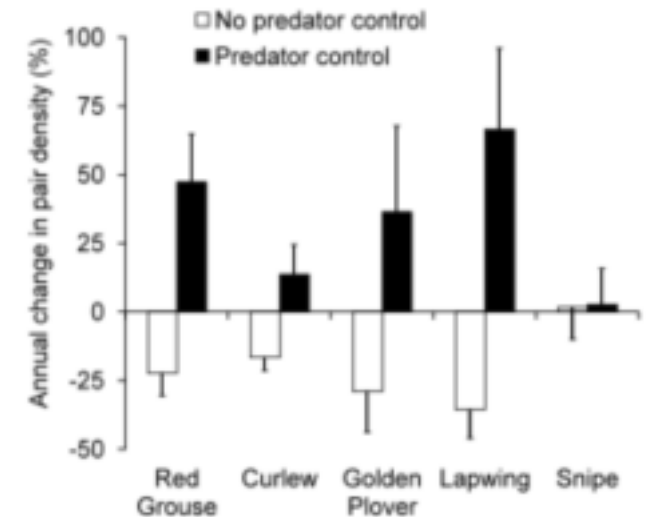
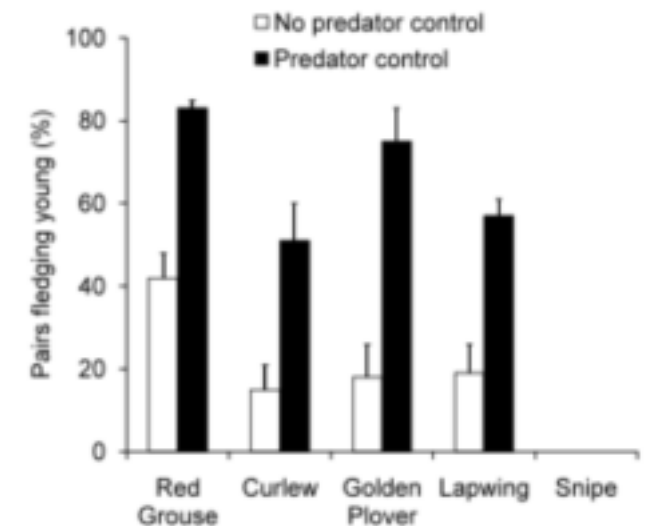
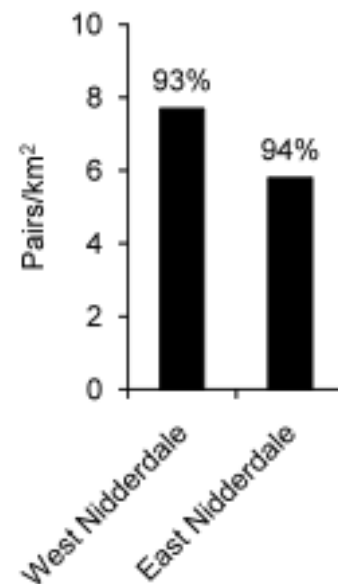
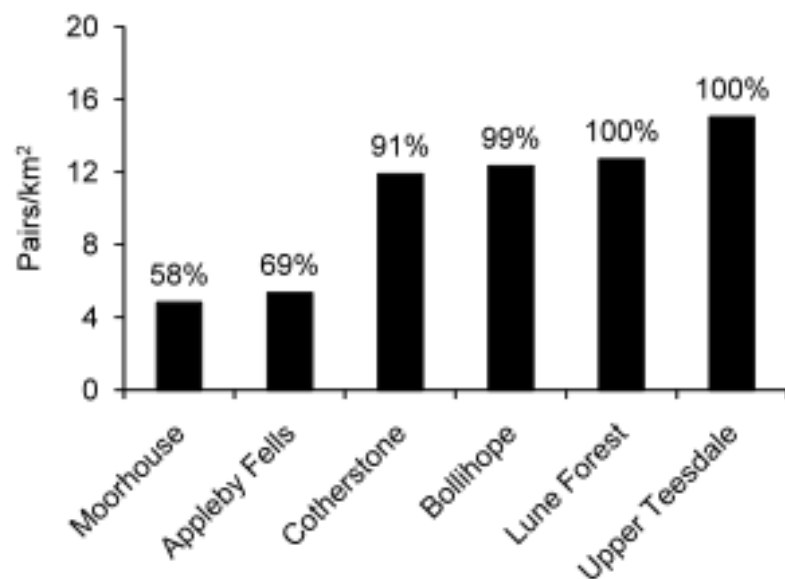
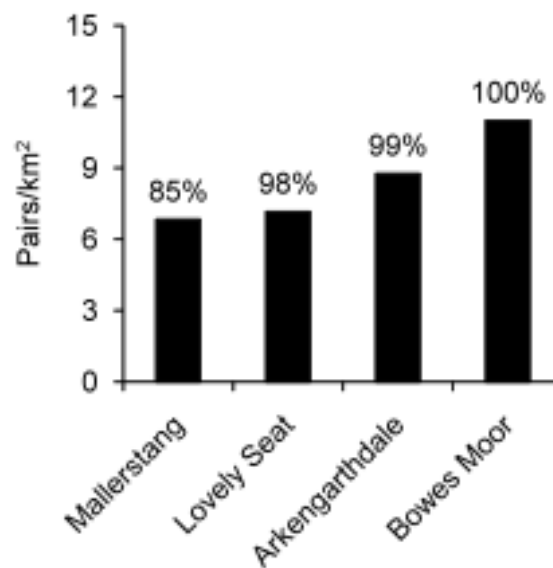
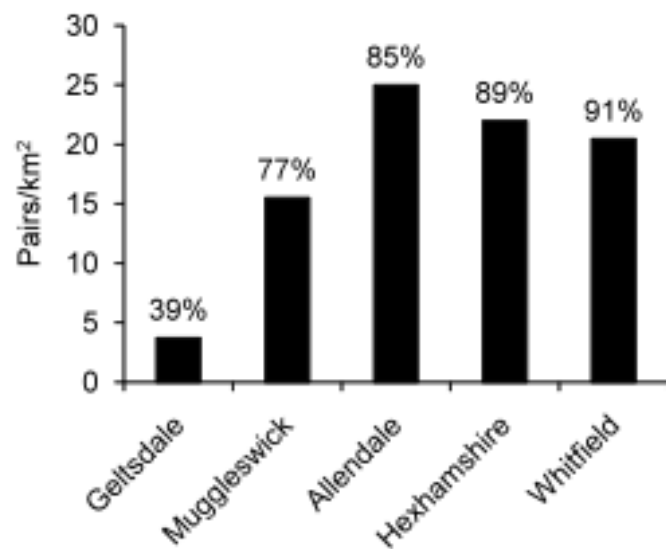


Figure 4. Density of breeding waders (Curlew, Golden Plover, Lapwing, Snipe and Dunlin) on 17 SSSIs within the North Pennine Moors SPA in 2005-2007 (source: Shepherd, 2008). The SSSIs fall into four latitudinal blocks that differs with respect to altitude, rainfall and overall wader density. Within each block the SSSIs have been ordered by increasing percentage of area managed for grouse (given above each bar).

Figure 5. Average annual breeding success (percentage of pairs that successfully fledged young) and change in breeding abundance for Red Grouse, Curlew, Golden Plover, Lapwing and Snipe with and without predator control during the Upland Predation Experiment in 2000-2008 (source: Fletcher et al, in press). No data on breeding success are available for Snipe.

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to 64% of pairs fledging young with predator control (Figure 5a).

When considering changes in the abundance of breeding birds, there were marked differences for Red Grouse, but also for Curlew, Golden Plover and Lapwing, according to treatment (Figure 5b). All four species declined in the absence of predator control and increased with predator control. Numbers of the three wader species declined by an average of 28% per annum without predator control, and increased by 37% with it. There was no difference for Snipe, whose numbers remained the same from year to year regardless of treatment.

Discussion

Driven shooting of Red Grouse and the accompanying traditional management of the moorland environment by private gamekeepers is a form of land use that has continued for over 150 years. Predation control has been an integral part of this management, and, indeed, for much of the first 100 years, was ruthlessly conducted against all predators including raptors. The excesses of this period have gradually been curbed by legislation; for instance, the Protection of Animals Act (1911) banned the use of poisons for controlling raptors, and the Protection of Birds Act (1954) afforded full legal protection to all raptor species except Sparrowhawk *Accipiter nisus*, which was protected in 1961. The conflict between grouse moor management and hen harriers, whose impact on grouse productivity can drive a grouse shoot out of business (Thirgood *et al*, 2000a), remains one of the thorniest conser-

vation issues in the uplands (Etheridge *et al*, 1997; Thirgood *et al*, 2000b). Nevertheless, numbers of raptors in the UK are currently at or near the highest levels recorded over the last 100 years (Baker *et al*, 2006). In contrast, upland waders are species of growing conservation concern because of their declining UK breeding populations (Eaton *et al*, 2009). Setting aside the issue of raptors, we have sought to evaluate the implications, if any, of grouse moor management for the distribution and abundance of Curlew, Golden Plover, Lapwing, Snipe and Dunlin.

At a regional scale, the extent to which ranges of Curlew, Golden Plover, Lapwing and Dunlin in particular had contracted was closely correlated with the changing fortunes of grouse shooting (Table 1). Range contraction was least where grouse shooting was retained, and greatest where it had disappeared completely. Similarly, the inclusion of waders as reason for

the designation of SPAs was also associated with the extent of moorland management for grouse (Table 2). In terms of wader abundance, Curlew, Golden Plover and Lapwing were found to be two to five times more abundant on moorland managed for grouse than on other moorland (Fig. 3), and again, there were definite associations between wader abundance and the extent of moorland management for grouse (Fig. 4).

In these analyses, it is difficult to judge whether the link is causal or the result of unrelated reasons with similar consequences for shooting and waders. However, grouse shooting, when productive, is often the primary source of income or the main attraction of ownership on many upland estates (McGilvray, 1996). It is apparently rare for a productive grouse moor to be converted to some other form of land use, implying that decisions to alter management appear to follow declines in

grouse numbers (Robertson et al, 2001). In addition, the Upland Predation Experiment provides a direct causal link between predator control, which is an integral part of traditional grouse management, and the breeding success and change in numbers of breeding pairs of Curlew, Golden Plover and Lapwing (Fig. 5). Parr (1992) documents a case where high predation led to exceptionally poor breeding success of Golden Plover in a local population that went extinct. Similarly, increased predation was responsible for reduced Lapwing young production on improved grassland relative to unimproved pastures adjacent to moorland, leading to reductions in Lapwing breeding densities (Baines, 1990). Moreover, Whittingham (1996) found a high density of Golden Plover nests on areas where heather had been burnt within the last five years. A positive effect of burning on densities of Red Grouse and Golden Plover was also detected by Tharme et al (2001). This suggests that

other aspects of grouse moor management may be beneficial to upland waders, in addition to predator control.

In the evidence reviewed here, Snipe is the species that revealed itself to be the least responsive to the extent of grouse moor management or to the changes in predation pressure brought about by experimentally manipulating numbers of predators. Because Snipe are so cryptic and inconspicuous, it is possible that predation is not a major cause of nesting failure relative to other factors. A doubling of sheep numbers in the uplands between 1980 and 1990 may have increased nest trampling rates (Fuller & Gough, 1999), breeding Snipe seem particularly sensitive to the agricultural improvement of pastures next to moorland (Baines, 1988), and moorland drainage during the 1970s and 1980s may have reduced suitable habitat as well (Coulson *et al*, 1990).

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In conclusion, there is little doubt that grouse shooting provides an economic incentive for a type of management whose benefits demonstrably extend beyond grouse to the persistence of heather moorland, a valuable habitat in its own right, and to at least four upland wader species that are of UK and European conservation concern.

Acknowledgements

We thank all the contributors to the GWCT's National Gamebag Census for providing data on grouse bags and shoot locations, and the Countryside Alliance, the National Gamekeepers Organisation, the Scottish Gamekeepers Association and the Moorland Association for help in determining the extent of grouse moor management. We are grateful to the World Forum on the Future of Sport Shooting Activities and to the organizers of this Symposium for their kind support.

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Biography

Bengt Kvitzau grew up in a typical middle class urban environment in Denmark and Australia, but quickly acquired a taste for the outdoors, enjoying fishing and bird watching. From the age of 16 he became an active hunter and has hunted in Europe, Africa and North America. At the age of 48, he added bow hunting to his list of activities. His engagement with the outdoors led to a career in forestry and he worked within both the private and the public sector primarily in Denmark, Scotland and South Africa, mostly involved in extension activities and commercial forestry.

From 1999 onwards Bengt Kvitzau has worked extensively with community-based natural resource management in Eastern Europe, Asia and Africa. From 2007 he used the experience gained in this work by joining the Danish Hunters' Association to manage program activities in Tanzania. He has made a point of working closely with people on the ground, to make the first priority sustainable utilization of natural resources, both wildlife and other.

Introduction to Wami-Mbiki Wildlife Management Area

Wami-Mbiki Society (WMS) Wildlife Management Area (WMA) consist of 24 villages that have ceded 2400 km² to a “core wilderness area”, retaining 500 km² as a livelihood zone and 1000 km² as buffer zone, notably forest reserve and grazing land. The 24 member villages surrounding the WMA have a total population of 65,000 people increased from approximately 54,000 in 1997. The Area is situated 150 km due west of Dar Es Salaam north of the Dar Es Salaam-Morogoro highway in Morogoro and Coast Regions of The United Republic of Tanzania. The WMA is a watershed for the Wami River, which runs from west to east through the northern third of the area, joined by many minor and seasonal rivers, including the Lukigula River from the north and the Ngerengere River that makes up the southern boundary. The area is interspersed

with rocky hillsides of thin soil cover and valleys with deep clay or alluvial soils. Altitudes vary between 350 and 400 metres with some high spots of 500 metres. Precipitation within the WMA averages 800 mm per annum. The vegetation inside the WMA consists of 57% woodlands, 29% wooded grasslands, 11% grasslands and 3% gallery forest (Robertson, 1999; WMS, 2006).

The present Area of WMS was identified as early as 1995, in a joint effort between local elders and resident hunters, although at that time unknown as a WMA. Unsustainable use of natural resources was threatening the future of the area, and thus the livelihoods of the surrounding communities, which made the villages initiate a process that resulted in a Community Based Organization (CBO) of 24 villages. The mission of the CBO was later to be formulated as:



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To sustainably manage the WMA, free of conflict, to maximise an equitable benefit sharing. This includes social services, education and economic benefits to its village members, derived from revenues from joint venture investments, business developments and income generating activities (WMS, 2006).

In a wider perspective Wami-Mbiki also constitutes part of important wildlife corridors between the Selous Game Reserve and Sadaani National Park and also to Mikumi National Park and the Masai Steppe as shown in a recent study of Wildlife Corridors in Tanzania (TAWIRI, 2009). What is little known is that the corridor, leading from Selous to Wami and on to Mikumi National Park and back to Selous,

was used by the Nyassa Wildebeest as an annual migration route, which effectively had stopped already by 1985. Today there are no Wildebeest in Wami.

WMAs were first mentioned in the 1998 Wildlife Policy of Tanzania as a new form of protected area where local communities “will have full mandate of managing and benefiting from their conservation efforts.” The purpose of WMAs was to enable local communities to benefit from wildlife, thus providing the incentives to conserve wildlife on their village lands.

The legal basis for WMAs was later provided for with the WMA Regulations of 2002 (revised 2005) and initiated with a pilot phase comprising 16 pilot WMAs (GoT, 2002, MNRT, 1998). During the pilot phase local communities, gov-

Abstract

Wami-Mbiki Society (WMS) Wildlife Management Area (WMA) consists of 24 villages that have ceded 2,400 km² to a “core wilderness area”, retaining 500 km² as a livelihood zone and 1,000 km² as a buffer zone, notably forest reserve and grazing land. The 24 member villages surrounding the WMA have formed a Community Based Organization (CBO), with the mission “To sustainably manage the WMA, free of conflict, to maximize an equitable benefit sharing. This includes social services, education, and economic benefits to its village members, derived from revenues from joint venture investments, business developments, and income generating activities.” To achieve its mission the WMS WMA has chosen to set the Core Area aside for joint ventures with private sector partners in photographic tourism, hunting tourism, and forestry. The natural resources within the WMA represent considerable value, which under current regulations can be managed for community development.

(continued on page 205)

¹Technical Adviser

²Junior Project Adviser

ernment agencies and NGO facilitators have worked to develop WMAs in these pilot sites as a way of pursuing the Wildlife Policy's objectives (Nelson *et al*, 2006). Wami-Mbiki was one of these 16 areas proposed as a pilot WMA. Many challenges have had to be overcome before WMS could obtain status as an Authorized Association (AA), which is the requirement to become a WMA. Obtaining AA status includes the development of a constitution, a general management plan and land use plans for all the zones under the member villages. The AA process was seriously affected by the claim of The Tanzanian People's Defence Force (TPDF) to nearly two thirds of the area for military training. The land dispute with the TPDF was resolved in favour of the villages as a result of intervention by the President's Office. The land dispute, combined with boundary conflicts in a number of villages and a complicated process of preparing land use plans with maps for each member village, sub-

stantially delayed the progress of obtaining AA status for Wami-Mbiki WMA.

WMS was finally granted AA status in January 2007 followed by user rights on April 2nd, 2007 for resident hunting, tourism hunting, photographic tourism and forestry by the Director of Wildlife in accordance with the general management plan of WMS WMA (WMS, 2006).

WMS since 1997 has received support from the Danish Hunters Association (DHA) with funding from DANIDA. Support has focused on data collection for development of Land Use Plans (LUP), business plans and the legal establishment of the society, including formalizing a constitution, a general management plan, bylaws, community education and capacity building, protection of the natural resources as well as operational and technical expenses for WMS.

WMS as a democratic institution and a business

Rights, roles, duties and responsibilities of village members, elected representatives and organs within WMS are defined in the Constitution of WMS (WMS, 2006b). Following the constitution each member village, through a village assembly, has elected two representatives to sit on the WMS council for five-year terms. The council represents the highest decision-making organ within WMS. The role of the council is to receive and review budgets, work plans and audit reports as well as communicate all relevant information to member villages through meeting minutes and newsletters. In legal matters, WMS is represented by a Board of Trustees (BoT), whose primary role is to advise the council and act on its behalf if needed. The BoT is in all matters responsible to the Council and is elected by the Council. The Chairman and Secretary of WMS act as

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the Secretariat for the BoT.

From the council, 12 members are elected proportionally from the three districts to sit in an executive committee, whose responsibility is the day-to-day management of WMS, including preparation and follow-up on budgets, work plans and progress reports. The chairman, vice-chairman, treasurer and secretary are elected from the Executive Committee. The latter four members make up the Central Committee. Specifically the elected Secretary is executor of all meetings including setting agendas, organizing society files, contracts and minutes. The Treasurer is custodian of financial records of the society, ensuring all procedures in financial matters are followed as per the constitution. WMS can choose to hire a professionally staffed secretariat for the administration and day-to-day management of the WMA acting on behalf of the executive committee. WMS has currently employed an

administrator, accountant, cashier and two community liaison officers.

Although WMS is still striving to learn how to live up to the standards of its own constitution, the constitution is the backbone of the society. It is the main document prescribing procedures and responsibilities of WMS against which elected leaders can be held accountable toward the society. Recently this has resulted in the members of the Council removing the Chairman for not having followed the guidelines for representation of the WMS.

WMS has chosen a strategy for the WMA where revenue is generated from joint ventures with private sector partners. The ability of the WMA to generate revenue is outlined in the allocated User Rights for activities relating to forestry, photographic tourism (Non-Consumptive), hunting tourism (Consumptive) and resident hunting. WMS seems most likely to

Abstract (continued)

WMAs were first mentioned in the 1998 Wildlife Policy of Tanzania as a new form of protected area where local communities “will have full mandate of managing and benefiting from their conservation efforts.” The purpose of WMAs was to enable local communities to benefit from wildlife, thus providing the incentives to conserve wildlife on their village lands. The WMS was formally recognized as an AA (Authorized Association) in December 2006 with GMP and User Rights approved in March-April 2007. There are, though, many challenges organizationally, legally, and economically before the full potential of the area can be managed for the benefit of the member communities.

achieve its mission of income generation and support to poverty reduction through joint ventures with private partners. However, there are drawbacks to this strategy, as forest-based income and employment are particularly important to the poor, because of ease of access

and very low thresholds of capital and skill needed to enter and engage in most of them. The establishment of the WMA and the joint ventures in tourism will to a large extent exclude access by the communities to the core area *per se*, and hence also to natural resources which have formerly been available (although to some extent not legally, but *de facto* available) and seen as a free resource. The term joint ventures also implies co-management rather than CBNRM in a pure form. However, WMS if functional as a democratic CBO should be able to compensate its members from the revenues generated by tourism etc. Surely the net economic revenue that can be generated and captured from the Wami-Mbiki WMA and transformed into community development is a key measure for sustainability in the long run as pressure increases on the natural resources (WMS, 2006; Scovsbo and Campbell 2007; Nelson et al, 2006).

Challenges

The challenges facing the Wami-Mbiki WMA and other WMAs in Tanzania are manifold, ranging from making the local leadership accountable toward the society they represent rather than the local elite, to resource protection and to negotiations with government and national agencies over benefit-sharing schemes. Illegal and unsustainable utilization is an issue and challenge to the WMA process in itself, but will not be elaborated in this paper, which instead will address the legal framework, accountability and the role of hunting in creating revenue for the communities.

The legal framework

While the WMA regulations of 2002 and 2005 did vest more legal rights with communities, they did so in a very complicated and restrictive manner.

The regulations are fairly complicated and demanding, also when compared to other areas of natural resource legislation. An example is given in Table 1 below comparing wildlife with forestry. Communities desiring management rights for wildlife have to form a CBO with all that follows, while community management rights under joint forestry management or participatory forestry management can be based directly upon existing village institutions. For both forestry and wildlife, however, the state retains control through approval (and monitoring) of management plans. Likewise, any investments and agreements that CBOs make with private partners can only come into force after Environmental Impact Assessments (EIAs) and final approval and signing of contracts by the Director of the Wildlife Division. The authority to grant hunting blocks remains an exclusive right of the Director of Wildlife. (GoT, 2002; Stolla, 2005). There is, though, a provision in the 2005 Regulations (55.c) giving

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a Consortium of AAs the right to representation on the Block Allocation Committee, which is advisory to the Director. In the draft of the Wildlife Act of 2009, which has been passed in Parliament but not yet released, there is no specific mention of this.

Concerning the revenue generation, 100% of income from forest products can be retained at

village level when a Participatory Forest Management scheme has been adopted, while a benefit sharing scheme between government and the community has not yet been formalized for Wildlife. For Non-Consumptive Utilization new regulations are still not available, but most likely concession fees will be paid in their entirety to the communities, whereas conservation and activity fees predicted at US\$25 per

day will be split between communities (65%) and Government Districts (35%) and not as was envisaged in the 1998 Wildlife Policy. For Tourist Hunting within WMS no scheme has been finalized.

The reality facing the WMA process seems to have been that Wildlife Division up until 2008 was not truly committed to seeing the WMA implementation, and some donor organizations have mentioned the lack of political will on the part of the government (Nelson *et al*, 2006). WMS has itself experienced doubts raised about issued user rights, making the persistence of these questionable. The existing GMP of WMS has been under criticism with changes proposed, leading to a management structure similar to that of national parks including entrance gates and casual day-visitors. While one issue is that suggested interventions may affect investment willingness of private investors, another issue is the pro-

	Wildlife	Forestry
Management Authority	Community based organization	Village Natural Resource Committee of the Village Council
Benefit Sharing	Revenue divided between CBO and government proportions not formally defined to date	Villages retain 100% of revenue earned. Government royalties still to be paid.
Utilization Rights	<ul style="list-style-type: none"> • User rights limited to 3-year terms • CBO has no control over hunting block allocations 	Utilization of all forest products according to village management plans and by-laws

Table 1: Village rights to natural resources

Source: Adapted from Nelson et al (2006)



posed changing of the GMP without consulting and involving the WMS council in the process. Security of rights and benefits is a key issue and in the absence thereof, communities are not likely to invest their time and resources in the WMA process. It is to be hoped these doubts are now in the past. On February 15th, 2009, the Government of Tanzania publicly endorsed the WMAs as a way forward in securing wildlife outside the protected areas through a notice in public newspapers. The policies of the WMA are also being tested as a way forward in the managing of wetland areas.

One justification for WMAs to be managed under a CBO rather than existing village institutions may be that WMAs are usually larger spatial entities than the village land they are

situated on, hence the need for several villages to come together. However, the complexity of the WMA Regulations has resulted in communities without external facilitation making very little progress in achieving AA status (Nelson *et al*, 2006).

While WMS member villages generally still seem in favour of the WMA solution, it is worth noting that without AA status, the surrounding communities would not have had any formal user rights to this former “open area”. Other villages wishing to establish a WMA may have to put existing village land at stake. Limited ownership and complicated processes may very well result in lower economic benefits and corresponding low levels of community commitment.

It remains important that local communities are provided with the legislation to become and be at least proprietors of the wildlife and its habitat. As proprietors the communities are in a much stronger position to negotiate with the private sector (Hulme & Murphree, 2006, pp. 295). Still, the private sector remains an important stakeholder, as private companies can provide skills and capital, and can initiate the business process alongside the communities.

The wildlife policy of 1998 expresses a desire to devolve user rights of wildlife and resources to local communities. The WMA regulations are a step in the right direction, but cannot be said to have fully achieved this policy goal. The regulations have predominantly transferred management responsibilities and not actual user rights to the CBOs and member communities. With the Wildlife Act of 2009 and the derived Regulations it is hoped that the goal comes closer.

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Democratic structures and accountability

“Creating a CBO and entrusting it with management of important and valuable resources at the village level is inherently one of the most challenging elements of the WMA process, and one of the most likely areas where the process may fail.” (Nelson *et al*, 2006). To assume that Wami-Mbiki as a CBO automatically will become an accountable institution is somehow naïve. It is not likely to happen unless a functional environment is in place to actually make leaders accountable to those whom they are supposed to represent.

For the management and institutional framework to function there need to be elements of: 1) an ability to delegate and monitor management tasks; 2) smooth channels for communication within the society, and 3) the creation of opportunities for reflection, analysis and mak-

ing decisions (Oltheten, 1995). Unfortunately, clear guidelines for all procedures require a substantial amount of paperwork, which to some extent is contradictory to the culture of most CBOs.

The capacity to undertake management tasks should largely depend on those responsible being able and willing to execute work plans and budgets while retaining some flexibility in the execution of these. The act of making decisions and the procurement of work plans should be done in a participatory way, if needed by external facilitation (Oltheten, 1995). It is important that work plans and budgets are seen as prepared in a participatory way and are planned from the bottom up. WMS has not yet achieved this and has to a large extent been elite governed. There are, however, signs that accountability towards the members is becoming an issue of increasing importance. The results of the Council elec-

tions in 2008 and following attempts to derail the democratic procedures have caused an increased interest in affairs and involvement on behalf of communities and representatives and the removal by the Council of office holders.

Beside the actual delegation and execution of management tasks, the WMS needs to monitor all activities and produce progress reports, to enable transparency and evaluation of activities. The WMS secretariat should currently be producing a range of reports, those covering patrols, maintenance, meeting minutes, financial reports, including budget *versus* expenditures and expenditure report, vehicle logs, and so on. Without monitoring of activities, WMS is not able to measure performance and document the use of funds and resources. All documents controlling WMS and relevant news must reach WMS member villages, enabling village councils and assemblies to dis-

cuss these in meetings. Reporting is largely useless unless information actually trickles into the respective member villages.

Council meetings do provide one venue where WMA issues can be discussed by representatives of member villages, if information is available for perusal beforehand as outlined in the constitution. However, even so, the council still only comprises a small part of the community. While the elected council members are meant to represent their village as a whole, villages are not homogeneous, but are different in relation to wealth, influence, dependency, gender balance, etc. Chances are that representatives will favour some groups or individuals, thus marginalizing others. One such issue is the concerns of the Masai and Mang'ati, which have not been seen as part of the resident population, yet as pastoralists they have used the area for grazing over generations. The concern is not only if and how much the com-

munity benefits, but also the sharing of benefits within the community.

While distribution of information is by no means a guarantee of fairness, it does, however, increase the likelihood of transparency and hence accountability. Regular posting of a WMS newsletter on village notice boards, with a visualization of activities, expenditures and results, seems an obvious and straightforward solution, and has been found to be an effective way of communicating with members (Oltheten, 1995).

During the recent years of facilitating WMS it has proved a shortcoming that effort and working relations have mostly focused on the central leadership of WMS, a tendency which likely stems from the sheer size and spatial extent of the WMS WMA. Leadership positions and rights must be associated with some minimal level of responsibility; however, this is only

likely to happen if the community as a whole has access to information. CBNRM is no guarantee of success, if at the local level inefficient rule enforcement allows free-riders within or outside the society to mismanage or engage in inequitable distribution of costs and benefits. This will lead to a breakdown of management rules and subsequent marginalization of groups, with demise of social principles. CBNRM is not a stand-alone solution to poverty, resource degradation and bad governance. Rather it is a development process and constant power struggle. An informed public debate based on the results of sound monitoring is, in all likelihood, the key to the long-term success of CBNRM (Treue and Nathan, 2007).

The role of hunting in the WMA context

When discussing the role of hunting in creating economic benefits to the member communities of the WMA, it should be noted that

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hunting is nothing new to this area. As mentioned in the beginning of the paper one of the reasons for the establishment of the Wami-Mbiki WMA was a realization among local hunters that the area was suffering from unsustainable hunting practices and rampant poaching. The proximity to large urban areas such as Dar Es Salaam and Morogoro make it an ideal area for resident hunters and meat poachers alike.

Hunting in Tanzania is conducted as Resident and Tourist Hunting governed by the Wildlife Conservation Act currently under revision and the related Regulations. Whether Tourist Hunting or Resident Hunting, it is all governed by a licensing system. Certain species can be hunted by all but many species are only available on a Tourist Licence. Quotas for these species are issued to Hunting Blocks allocated to approved tourist hunting companies and licences issued to the visiting hunter. Resident

licences are issued to “Open Areas” and “Game Controlled Areas”, where blocks are not allocated to a hunting operator. The resident licences when compared to the meat value are very cheap; a buffalo licence is sold at TSHS 40,000 or about \$US32 compared to \$US1,900 for a Tourist Licence. Issuing of resident licences depends on the legal ownership of an adequate firearm, thus limiting the number of legal applicants and to a certain degree making them available to the local elite only.

What is often overlooked in the discussions is the unregulated (and illegal) hunting for bushmeat. A recent survey (Traffic, 2008) has pointed out that the value of bushmeat to rural populations constitutes as much as 15% to 40% of the household income in EA and up to 30% of the animal protein consumed. Game is as such a vital resource for the rural poor, often taken for granted as a free commodity. Excluding individuals from utilizing this through

the establishment of the WMA is not without problems, if tangible benefits cannot be shown to the communities as a whole. This stage has so far not been reached in Wami although the populations of most game species today can tolerate controlled harvesting through Tourist Hunting. So far the issue has been postponed by the Wildlife Division because of different concerns relating to the area, censuses etc., but it is of the utmost importance to attain the block allocation as to diversify the economic activities of the WMS. If community ownership to the agreements is to be attained, then the CBOs need influence on block allocations. The decisions should be made through mutual consent with the WD.

In connection with the development of a business plan for Wami the total revenue from the tourist hunting would in the long term exceed \$US200,000 per year. This is approximately the same as predicted from the non-consump-

tive utilization. With the new legislation under way it will be very important how the benefit sharing scheme is structured and how it will be managed. Currently in Open Areas the revenue accrued by the communities is less than 10% of the total revenue. With the transfers of management responsibilities to the WMS this will not nearly cover costs of management, when a minimum of 50% of the gross revenues is to be returned to the communities in accordance with the WMA Regulations. The break-even turnover for the activities of the WMS is currently approximately \$US240,000, if the CBO is to be self-sustained with the current level of activities. The potential for tourism hunting to be a contributor to sustainable management is certainly present. The tools to make it happen are political will and good management, both of which are a challenge, but certainly not impossible to attain.

In the former the governance issues relating to

the management of wildlife have not been reflected. It is an issue on its own, but in a Tanzanian context some of the necessary improvements seen from our point of view are:

- A better and more viable licensing system is required for resident hunting, which is more easily controlled and which at least reflects the meat value of the species;
- Hunter education is needed on legislation, sustainable wildlife management and handling of firearms if resident hunting is to be a viable management option in the future;
- Better prosecution of wildlife offences is required, possibly through a network of specialized prosecutors attached to the Wildlife Division. A recent survey of all poaching cases since 2000 relating to the Wami-Mbiki WMA gave very depressing results in-

deed. Of a total of 132 cases, 44 were closed from lack of evidence, 22 cases had disappeared altogether and in the 24 cases the judgements actually handed down were in contradiction to legislation.

- Transparency is needed on behalf of authorities towards communities concerning the revenues accrued on community lands and WMAs and the sharing of these. The AA approval can be seen as a contract between the Government and the communities about the custodianship of the resources on their land and should as such not be unilaterally changeable. Although there are improvements in sight, there are still great differences in the way protected areas are treated and the revenue accrues to the communities. Compared to Tanzania National Parks (TANAPA) and Ngorongoro (NCA) Conservation Area which retain 85% of the

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gross revenue, the WMAs will probably only retain 65% to 75% of the total revenue accrued. They are obliged to use 50% of this on community development compared to the less than 2% contributed from the other TANAPA and NCA, but with the same management obligations – why the difference?

- Political agreements are necessary concerning the WMAs, which are long lasting and which will make investment in these a viable option also seen from the private sector.

Lessons learned

The existing literature on CBNRM generally warns about making generalizations and advocating generalized approaches. However, some of the lessons are as follows:

- Avoid creating a project psychology through a concept of open-ended budgets. Prepare and establish a mentality of business management, operating within budget controls set by fixed budget limits, set by incoming fund limitations, based on revenues which are generated from internal economic activities and business partnerships.
- It takes time to build democratic structures and local institutions will only gradually evolve. Village councils have been evolving in Tanzania for over 30 years now and still remain weak in many cases (Nelson *et al*, 2006; Hulme & Murphree, 2006). While success may be achieved faster with external facilitation, there are certainly still limits to the speed with which the process will proceed. Success will also require a certain level of patience by all parties involved – donor agencies especially.

A recurrent problem is that policies can and will change relatively often, whereas people usually do not.

- While reporting for monitoring is highly necessary to enable transparency and accountability, monitoring without information trickling into all levels of the community becomes superfluous and irrelevant. Emphasis must at all times be on installing procedures which ensure a constant flow of information into all levels of the community to increase the chance that elected representatives become downwards-accountable. Communities must hold the information and the authority to control free-riding by punishing violation of principles and regulations. Community leaders must be downwards-accountable to the people they represent.
- The CBO constitution must ensure that



rights, roles and responsibilities are clearly defined. The challenge is to have a constitution within the government legislation, as concise as possible, but still maintaining a minimum amount of detail on all aspects.

- CBNRM is a constant power struggle between the CBO and government agencies as well as within the CBO itself. The sustainable use of resources which is likely to make a WMA generate revenue for poverty reduction and community development may also serve to tear the whole setup apart as various power factions fight to grab the larger share, resulting in inequitable sharing, inefficient management and unsustainable use. The challenges are to have the policy, rules and attitudes in place that enable communities to assume a strengthened role in management decisions. Not only the

leaders of the community but the community as a whole must function in a democratic process.

- Integrating conservation and development objectives never has been easy, but for CBNRM to work, it is essential that the legal and technical tools are in place and that state and community are working together, although this degree in collaboration may vary. Although state involvement is essential to support community management, the present rights vested with the CBOs for the management of wildlife in the WMA are still too limited, complex and insecure.

CBNRM aims at promoting sustainable development through local empowerment and building accountability of individuals, groups and communities. To achieve local empowerment and accountability, local capabilities need to

be strengthened with regard to information and organization as well as access to and control over benefits. Benefits from the WMAs in Tanzania should be guaranteed, through good tenure systems and legislation. CBNRM should be seen as a process rather than a specific outcome and in that CBNRM should serve to achieve poverty reduction, natural resource conservation and good governance (Oltheten, 1995; Treue and Nathan, 2007).

The chance of WMS WMA succeeding in its mission will not depend on the technical inputs concerning the management of natural resources as much as it will depend on enforcement and improvement of the legal framework in combination with building democratic structures within WMS itself. These factors remain the major constraints for unleashing the potentials of the WMAs as a tool for poverty reduction, as well as conservation through consumptive and non-consumptive use of wildlife and other natural resources. It is

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not an easy process, but the alternative to reaching the goal is a daunting prospect. Tanzania over the last 10-15 years has lost more than half its wildlife outside the protected areas. This trend must be curbed if hunting is to survive as both an income-generating and a recreational activity.

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Biography

From 1997 to 2003 Gerhard Damm was President of Safari Club International's African chapter. He has hunted in many countries throughout the world. Over two 2-year periods between 2000 and 2006 he was on the Executive Committee of the Professional Hunters' Association of South Africa. He has also been a member of the board of Conservation Force (USA) since 2003. Since 2006, he has been a member of the board of Rowland Ward Publications (South Africa). He serves on the International Council for Game & Wildlife Conservation (CIC), is Coordinator Commission Exhibitions & Trophies, Vice President of the Tropical Game Commission, and Vice President of the Sustainable Use Commission.

Gerhard Damm is the author of the book *The Conservation Game – Saving Africa's Biodiversity* (2002). He received a Certificate of Achievement from Conservation Force (USA) in 2004, and a Wildlife Utilization Award from PHASA (South Africa) in 2006. He is currently Editor for the 28th Edition of Rowland Ward's *Big Game Animals of the World* (Vol. II, Rest of the World.) Since 2003 he has edited and published African Indaba, a non-profit e-newsletter, six times per year. He is undertaking a revision of the CIC Trophy Scoring System, and is working on the Sustainable Hunting Tourism Project of the CIC.

History of trophy hunting and trophy recording

Trophy hunting and hunting in foreign lands is not an invention of the 19th or 20th century. A couple of thousand years before Christ, Mesopotamian kings had hunting scenes cut into stone. In the fourth century B.C., the Greek historian Xenophon described the first hunting trips to foreign lands in his book *Ky-negeticos*. Long before them, our ice age ancestors in southwestern Europe created amazingly beautiful cave paintings of hunting scenes. Archeologists found ancient canine teeth of deer, appreciated since time immemorial, as well as antlers and horns worked into adornments without utilitarian purpose. These are the earliest surviving hunting trophies. Ancient and not so ancient cultures around the world conserved parts of the hunted game or created renditions of hunting scenes. There was more to our ancestors' relationship with

animals than simply killing and eating them. Yes, in these bygone days hunting was essential for survival, but it already contained recreational and cultural aspects and implications. It already embodied a concept which has been named only in the 20th century: trophy hunting.

The societies where hunting was the basic right of every able bodied man began to disappear in Europe with the demise of the Roman Empire. In other parts of the world, they survived longer, but most of them eventually succumbed to the expansionist European powers. In the long period to the end of the 18th century, royalty, nobility and military reserved the lion's share of hunting to the exclusion of other social groups.

In the emerging national states of Europe, hunting rights were tied to land ownership. Game belonged to the landowner. Only some hunter-gatherer societies in Africa and in the

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Americas considered game animals a common good until the people of the emerging United States of America took the route of placing game under the custody of the state. The American Constitution mandates that all wildlife is held in trust by the government for the citizens. The revolutionary American spirit vested the right to hunt freely into each citizen – with initially disastrous results, as history has shown.

From the feudal times in Europe we inherited a precious legacy of artistic achievements related to hunting in music, theatre, art and crafted objects from that period, but also a legacy of excesses and debauchery. The 19th century brought the end of these aristocratic hunting privileges. The new bourgeois class discovered hunting as a recreational pastime. Game became *res nullius*. The results were just as disastrous as in the young United States.

The colonialist expansion spread the European concept of recreational hunting to every corner of the globe. They did not call it recreational hunting yet – but nevertheless it was done for recreation. Hunting trophies from around the world became a focus of interest for those who had remained at home. At the same time the expanding agriculture of colonial settlers saw wild game as competition to livestock and civilization. The settlers focused on eradicating game – again with disastrous results.

Some pioneering individuals and organizations started to compile measurements of hunting trophies and recorded the exact places where these trophies were taken. This recording went hand in glove with writing and publishing stories about the pursuit of wild game in faraway lands. Mr. Rowland Ward in London was at the forefront and established the still famous Book with records of big game in 1892.

Abstract

Trophy hunting and trophy recording have a history going back tens of thousands of years. During the past few years, increasingly negative comments in connection with trophy hunting and a generally negative public perception of the trophy hunter have surfaced frequently. This paper highlights the urgent need for a critical analysis of trophy hunting and trophy recording systems. Trophy hunting in general, and sustainable global hunting tourism and resident recreational hunting in particular, need to find broad acceptance with non-hunters. These activities will face serious problems if they fail to establish themselves as conservation tools, if they are perceived as uncivilized and immoral, and if they are seen as biologically wrong.

Trophy hunting has societal, economic, and ecological implications within the matrix of sustainability. The measurable quality of antlers, horns and skulls can be used to judge the status of game populations, and the accurate collection of data is of considerable importance. Modern trophy evaluating systems must be judged on their biological relevance, comparability, practicability, objectivity, and

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The idea of recording and exhibiting hunting trophies took hold in the first International Hunting Exhibition in Vienna in 1910. The foundation of the Conseil International de la Chasse (CIC) followed in 1930, and then there was the subsequent establishment of the CIC trophy scoring formulae which found their first practical test at the International Hunting Exhibition in Berlin in 1937. In the United States, Theodore Roosevelt had founded the Boone & Crockett Club in 1887 and pioneered the first “Fair Chase Statement”. His highly committed successors established the foundation of the Boone & Crockett Trophy Scoring System in 1930, with Fair Chase as an integral and inseparable part of record keeping. These efforts evolved in the 1950s and subsequent years into what I consider today the gold standard of trophy recording. Unfortunately for the rest of the world, our American friends pursued an isolationist policy and limited themselves to North American trophies only,

although Roosevelt and many of his friends from the Club were assiduously hunting on other continents too.

The original classics of Rowland Ward, CIC and Boone & Crockett were what we nowadays call database and reference works to assess which regions had the potential to produce extraordinary trophies. The intention of these early endeavours centred on creating a basis for comparative analysis to highlight the achievements of the newly fashionable wildlife management philosophy. Rowland Ward, for example, is frequently mentioned in the Catalogues of Ungulate Animals of the British Museum for Natural History.

Now, in the 21st century, the focus of these systems shifts towards tracking the success of conservation policies as a vitally important baseline to judge the success of wildlife management programs.

Much later, in 1977, the American internationalists arrived on the scene. I suspect that the members of the original group wanted to see their names, photos and hunting achievements in a book. Since

Rowland Ward did not offer the service of photographic renditions of the hunters; they created their own record book. The rapid growth of Safari Club International was driven by the founder, C. J. McElroy, the typical American ambition for growth, and by the increasing accessibility of hunting in the remotest corners of the world. Safari Club International, its proprietary SCI Record Book and an ever-expanding SCI Awards Program grew in leaps and bounds in the years to follow.

Boone & Crockett emphasized from the early beginnings in the second and third decade of the past century that a thorough and keen understanding of species biology and proper

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habitat management is necessary to ensure the future of all species. This philosophy was mirrored later in Europe with the first meeting of the International Union of Game and Wildlife Biologists during the International Hunting Exhibition of 1954 in Düsseldorf.

The trophy recordings of the CIC were listings of above average trophies which were brought to the international exhibitions by their owners or in collections of the exhibiting nations. The scores and photos were published in the exhibition catalogues. These international exhibitions were the only occasions where CIC measuring commissions collected painstakingly exact figures of mostly extraordinary trophies. The so-called *ad hoc* trophy commissions were added much later, and sometimes they did not live up to the original high standards.

In the 21st century hunting in general and trophy

hunting in particular are almost purely recreational. This particular aspect is nothing extraordinary when seen in the context of other human activities. Personal wellbeing and recreation form an increasingly important part of human life. This recreational aspect was most likely a welcome trigger for the anti-hunting animal rights organizations to manipulate the emotions of the public. Some media abetted these efforts and spread the notion that the recreational aspect of hunting is uncivilized and decadent, morally wrong, as though conducted to take pleasure in killing, and biologically wrong as an act of killing the strongest and the best. And totally and utterly wrong, if the objective of hunting is collecting a trophy. This is all a most simplistic baseline view, conveniently taken out of context. However, this simplistic reduction had and still has serious consequences for hunting in general and trophy hunting in particular. “Rich globetrotting hunters decimate endangered wildlife” is a headline which we see

Abstract (continued)

social acceptance. Two examples – the African Buffalo and the European Red Deer – provide information on how trophy recording systems may actually be detrimental to sustainability and genetic diversity. A “World Forum on Trophy Hunting” should show to the world that best practices in hunting and the recording of hunting trophies are key components of sustainable wildlife conservation.

repeated *ad nauseam*. Trophy hunting never fails to raise a murky cloud of social envy. The sentiment is reinforced by claiming that those who kill these animals are doing it purely to satisfy their killer instinct.

Walls in the homes of hunters the world over are adorned with hunting trophies. Some of them are notable specimens, others are intriguingly abnormal, and most will have no merits in terms of size or points whatsoever. Why are they there? It is illogical when viewed

from any other standpoint but the hunter's wish to honour the game and the experience, although exceptions to the rule exist. The game animal is given an after-life by the hunter's desire to remember an experience which is individually valuable and important. This is certainly legitimate. The hunter does just this by keeping what is commonly called a trophy, be it the preserved skin, horns, antlers or other tangible items, even a photograph.

The tasteful display of a trophy is a reminder of the hunt and of intensely lived moments. It is a way of extending the appreciation of the experience and the appreciation of the animal. This also means that every animal taken is a trophy, irrespective of points and score.

A trophy is all the more valuable to the hunter if the difficulties associated with the hunt are exceptional, or if the animal has grown to maturity by having survived both nature's limita-

tions and many hunting seasons. The pursuit of such an animal limits the hunter's chances, since there are few of them, and it tests the hunter's skills by the natural restriction on uncommon, individual animals.

Mature males display extraordinary characteristics in horns, tusks, overall body size, mane, etc. These characteristics develop with age and they are usually directly connected with breeding success. Animals in their prime breeding period of life show impressive trophies. But it is the animals crossing the line to the post-reproductive stage which show the really outstanding trophies. Virtually all males with the most impressive trophies are often already well past their prime, and will have spread their genes during many breeding seasons.

Advancing age eventually becomes an exclusionary factor from breeding activity. The re-

moval of a few mature males from an animal population with a healthy demographic structure falls largely within the compensatory mortality range. The killing of trophy animals from a certain age upwards has no detrimental effects on the genetic make-up and the viability of a specific population. Anti-trophy demagogues always concentrate their arguments on the killing of the best trophy-bearing males. They forget that females contribute 50% of the genes determining the characteristics of the offspring. The ultimate potential of a trophy animal is determined by the genes of dam and sire. But in wild animal populations the genetic make-up is usually overridden by environmental factors.

The popular myth that trophy hunting for big horns contributes towards degeneration of the species' characteristics originates probably from a Canadian study on a small population of Rocky Mountain Bighorn sheep. This partic-

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ular study is often used for opinionated hypothetical conjecture of dangers arising through trophy hunting. One just has to consult the Boone & Crockett Books to find some irrefutable facts and real data – no computer modelling, no assumed factors and no complicated statistical analyses – just plain facts and figures.

Take for example the listings for Bighorn Sheep in the Boone & Crockett Record Book of North American Game. It took ten decades (1880 – 1980) to achieve 47% of the top 100 Bighorn trophies. It took only two decades (1980 – 2000) to enter the other 53%. The conclusion: big-horned bighorn rams are becoming more numerous, not less so. They are certainly not going bald.

The statement that trophy standards are improving applies also to a wide variety of African game animals. The African elephant is

one possible exception. The poaching pandemic during the third quarter of the past century was responsible for the near total elimination of big tuskers. The African Buffalo is another exception, as we will see later. But in general, the good old days for trophy hunting African game are now. The Mountain Nyala of Ethiopia is one good example. But there are some other aspects to trophy hunting. For the non-hunter, the main reasons to view trophy hunting with circumspection are most likely originating from there. I suggest that these aspects have their roots in the competitive twist which led to the exaggerated importance placed on measuring trophies for the wrong reasons and in the singular objective of some hunters to obtain trophies of record status.

Another cause may be the term sport hunting. This expression entered the hunting world from America. Unfortunately the term is increasingly subjected to deliberate misinterpre-

tation. Anti-hunters in particular, but also hunters, mainly those from Europe, fall prey to this misinterpretation. Where do the terms sport hunting and sportsmen as synonyms for hunters come from? My research points towards Theodore Roosevelt's Fair Chase movement at the end of the 19th century. Roosevelt intended to distinguish the real hunter from the market hunter. Commercial market hunters had indiscriminately killed game for economic reasons to the point of eradication in the American West. To Roosevelt, the terms sportsmen and sport hunting meant fair play, style, dash and above all moderation. He and his hunting friends introduced the first bag limits and the first National Parks. Roosevelt, the ubiquitous hunter-conservationist, certainly never had the intention that hunting was to become a sporting contest for the largest or longest trophy.

Almost a century later, towards the end of the

1970s, a strong notion of contest and competition was unfortunately introduced into trophy hunting by an international American hunting association. The result was probably foreseeable. A record book with relatively low entry limits, an ever-growing number of so-called slams, inner circles, and gold and diamond awards fostered a growing competition amongst hunters to collect the most, or the biggest, or most of the biggest trophies. A quick glance at the websites of hunting booking agents and safari companies will confirm that even professionals succumbed to this development. This trend diminished the importance of the subject, the trophy animal, and of the principal original reason why a person hunts. This development gave rise to widespread anti-trophy-hunting feelings, and not only in anti-hunting circles.

Some of these programs back-seated the recognition of the biological and aesthetic merits

of the game animal which lived through many dangers to grow to be the coveted trophy. They failed to recognize the intricacies of conservation management necessary for trophy animals to grow. They diminished the holistic experience of a hunt by pinning ultimate success solely on a kill which qualified for the records.

Hunters travelled the world with the record book in their suitcase, the tape measure in the pocket and a “shopping list” with animals and specific trophy sizes in the wallet. Unfortunately, a good number of professional hunters and guides are abetting this “record temptation”. This very trend led to the shooting of canned animals, to genetic manipulation, as in the case of the red deer, and to high-fenced killing grounds. In its ultimate consequence, this development led to the present situation, where the terms hunting trophy, trophy hunting and trophy hunter have become four-letter words. The outdoor experience and the chal-

lenge of the pursuit are reduced to a shopping trip. The complexities of conservation management are suddenly unnecessary ballast.

The CIC Formula System did not perform much better than others. On occasion it has been hijacked by commercial interests, especially in some countries in Eastern Europe. Distinctive flaws, such as peculiar beauty points and penalty points, given or subtracted on a very subjective basis and a lack of morphobiometric components, and growing from historic developments, have not been addressed when new science appeared. Fortunately the CIC members recognized the necessity of a comprehensive review. A task force of highly experienced hunters, wildlife experts and internationally recognized scientists cooperated to adapt the CIC system to the requirements of conservation biology. The CIC is conscious of the fact that the measurable quality of antlers, horns and skulls can be used to judge the status of game popula-

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tions and the accurate collection of data is important. At the same time, the CIC recognizes that the influence selective hunting may have on the population dynamics of the species introduces a certain bias in data sourced from hunts.

All scoring systems have to battle the rather disturbing implications of the growing perversity of shooting preserves, which use semi-domesticated game animals, bred and raised under questionable circumstances and traded across borders. The seemingly uncontrollable situation makes a mockery of the trophy recordings, boasting of so-called world records which have been obtained in feed lots and by use of the veterinarian's syringe.

The richness of a country's biodiversity finds expression in a specific formation of trophies; it would be a loss for hunting, and a mockery of its traditions, if this uniqueness is abandoned for short-sighted anthropocentric trophy ideals,

economic gain and egotistical showmanship satisfied through unscrupulous breeders.

Trophy hunting and trophy recording today and in the future

The hunting of game for trophies needs to be anchored within a system of formal and informal rules. The formal rules are specified by the laws of the land where a hunt takes place, in international agreements which govern the conservation of the wild species and finally the laws of the land where the hunting trophy is eventually to find a home. The informal rules are contained within voluntary codes of conduct, like the Fair Chase Statement of the Boone & Crockett Club or the Code of Conduct of Rowland Ward's Guild of Field Sportsmen. More so, however, in individual objectives of a very personal nature and defined individually by hunters in and off the field.

Trophy hunting has societal, economic and ecological implications; all of them are important within the matrix of sustainability. The measurable quality of antlers, horns and skulls can be used to judge the status of wildlife populations. Consequently, the accurate collection of data is very important. Much insight can be derived from the data – in order not to use the much abused word records again – of hunted animals. Naturally those who look at these data need to consider the potential bias of data sourced from hunts. Hunters typically select a non-random subset of the population. The hunter's anthropocentric objective during the hunt – that is, his or her view of how a desirable trophy should look – and the resulting selection of the animal for a variety of trophy characteristics, may exert some selection pressure on animals bearing larger trophies of a distinct form or shape. The result of this could be that such animals are more likely to be shot at a younger age, if their trophies

match these perceptions. At the same time, the natural selection pressure exists to be large or heavy in order to ensure breeding success and survival.

These are some bias factors which need to be understood and which require the introduction of corrective measures for the appropriate interpretation of hunting data. Trophy evaluating systems usually divide game species into certain trophy categories sometimes based in taxonomy, sometimes on phenotypes and sometimes rather arbitrarily. Trophy categories are important and should be based on real and consistently identified phenotypical differences and on a determined geographical range. Of course, in nature hybrids or intergrades may occur where ranges meet and biased record book entries may be the result. Record-keeping entities consequently need to cooperate with biologists and scientists of the range states and international organizations to

maintain physical and geographical range descriptions at the latest knowledge level. Under these conditions, trophy categories become complementary to taxonomy and assist in observing the long-term interactions of wildlife species with the environment and anthropogenic influences such as hunting. In combination with recognized principles, criteria and indicators of sustainable hunting, trophy categories are one tool to create economic incentives for rural people living with wildlife and additional knowledge for the conservation and management of wild game. The CIC is at the forefront of this work.

Change and adaptation to changed conditions are embedded within evolution. Trophy scoring systems are no exception. Some systems are venerable and have been established for many years, and they have been subject to change before; others have been developed more recently. All need to recognize that

change does not throw traditions overboard, but rather rejuvenates systems and adapts them to an ever-growing pool of scientific knowledge. A. B. Bubenik and V. Geist bemoaned biologically incomplete formulae and their lack of objectivity in the late 1980s. The innovative Conservation Hunting model, originally developed in Canada, may give additional food for thought.

At the core of Conservation Hunting are the three-way reciprocal benefits wherein: (1) hunters reap profound emotional and experiential benefits; (2) hosting communities find value, both tangible and intangible, in the process of supporting Conservation Hunting for wild game species; and (3) ecosystem robustness and sustainability are usually enhanced by adding value resulting in higher conservation priority given to the habitats of game and non-game species (Foote & Wenzel, 2007). Trophy hunting is one form of Con-

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servation Hunting.

Modern trophy evaluating systems must therefore fulfil five basic requirements

- Biological relevance
- Comparability
- Practicability
- Objectivity
- Social acceptance

Biological Relevance in trophy scoring method design is the underlying scientific base for any existing, new or revised method. This system cornerstone provides complete and up-to-date socio-biological and morphometrical information on the hunted species.

Comparability means that the individual parameters of a trophy are objectively measured, recorded and analysed. Meaningful comparisons can then be made on specific trophy morphology attributes and on the entire three-dimensional aspect of the trophy on one hand, as well as on population, zoo-geographical and management unit levels on the other hand.

Practicability is related to ease of system application in practice, including how, where and by whom trophies are measured, how and where trophy data are stored, how these data are managed and in which form the data are accessible for hunters and scientists. Another requirement of practicability is the repeatability of measuring results.

Objectivity embeds easily repeatable linear, volume and or mass measurements which exclude subjective individual perception.

Social acceptance, long a foster child in this context, becomes important, last not least because of a trend vividly expressed by articles in Nature and Newsweek earlier this year. In these two publications, trophy hunting came under attack as fostering undesirable evolutionary consequences in wildlife populations. Another popular opinion accuses hunters of “breeding” wildlife with a unique focus on “breeding and shooting” mega-trophies. Hunters need to engage in focused public relations work and offer positive proof that sustainable trophy hunting provides services and benefits for society at large.

Trophy scoring systems have historically placed little emphasis on the age of the trophy animal. Yet in order to promote sustainable management practices and conservation as part of the hunters’ ecological responsibility, information on the age of individuals is of great importance for studies on diverse aspects of

the biology of mammalian species. This would include population models with life expectancy and mortality rates, influences on mating patterns, offtake quotas and in extreme cases, where necessary, also of the hunting moratorium as a last resort. Age-related trophy scoring formulae will substantially strengthen a positive perception of sustainable trophy hunting. The Boone & Crockett Club, CIC and Rowland Ward are all contemplating or have already instituted at least supplementary information on age, re-designing scoring methods to put more emphasis on age.

Hunters have to admit that elements of “trophy craziness” exist now and will most likely continue to. There will always be people who view the trophy as a victory over the animal or over other hunters. There are people who need the “world record” deer on their walls and who confuse hunting trophies with decoration; who become so obsessed with collecting trophies that

neither the hunting experience nor Fair Chase is of any consequence. As long as the egotistical antics of some are purely a matter of human vanity inside the boundaries of law, we might be tempted to shrug them off. We come across similar samples of vanity and competition every day in our lives – in business, family, recreation, sport and practically any human activity. Yet we need to contemplate that such behaviour may threaten to destroy the hunter’s image. We need to establish the real meaning of trophy hunting and reaffirm our credibility as hunter-conservationists.

The games we play reflect the kind of people we are. The way we hunt, the manner in which we record our hunting experiences and the way we portray ourselves will determine the light in which we are seen by the non-hunting world. Hunters are but a small minority. If the majority perceives, rightly or wrongly, that hunting is undesirable for whatever reasons, it will soon be

on the red list of highly endangered activities.

Capturing economic return from hunting through the entrepreneurial spirit helps to preserve and produce hunting opportunities. Top economic returns are often related to excellent conservation management and all that flies, crawls or walks within these habitats. Top economic returns are also directly related to the trophy quality of the animals in a particular area. Mature trophy class animals do not grow on trees. They are the product of sound conservation management. This applies globally and it applies to private, communal and state landowners. If the wildlife of an area is managed to produce top class trophies in mature and post prime game animals, the outcome is added conservation value in general. This is a direct benefit for society.

Around the world, a variety of private, communal or public wildlife ownership schemes combined with appropriate conservation measures

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provide economic returns through hunting, and beat those of conventional agriculture, enhancing biodiversity conservation. However, we must not overlook the thin red line which separates good game management from intensive animal husbandry. The lack of differentiation between sustainable hunting and other activities often also called “hunting” creates another focal point of unfavourable public sentiments towards hunting *per se*. It is, therefore, necessary to clearly differentiate and segregate. Implicit in the idea of the trophy is that the game pursued is a wild animal and that other hunters have not been completely restricted from its pursuit. Also implicit in the trophy concept is that the animal is the natural product of the land.

Some “hunting entrepreneurs” take shortcuts and produce high-scoring trophies through hybridization, artificial insemination and intensive breeding, veterinary treatment and high fenced killing grounds to maximize economic return.

Their conservation contribution is zero. This unfortunate development has proliferated in New Zealand, North America and Europe, and some Southern African game ranchers have already started on this slippery slope.

The Boone & Crockett Club does not permit record book entries of any game animal from escape-proof fenced properties. CIC measures trophies from the open range as well as those taken behind a fence, but those from fenced enclosures must be identified. Rowland Ward accepts trophies hunted behind fences, with the exception of lion taken in South Africa or Namibia. SCI created subcategories of “estate-taken animals”. In 2005 SCI introduced a High Fence Policy, but this policy is – according to the SCI website – limited to game from the North American continent. The policy has a sound basis and valid points, but why is it limited to North America?

Irrespective of these policies, fair chase and ethical hunting are not necessarily determined by the existence of a fence surrounding the property. The high fence does not preclude Fair Chase as much as the open range does not guarantee that Fair Chase is exercised. Hunting inside a fence can be as rewarding, challenging and sometimes as frustrating as beyond the fence in the wilderness.

More than a decade ago, I was a less important part of a select group of hunters, amongst them Anthony Dyer, the last president of the East African Professional Hunters’ Association and Volker Grellmann, past president of NAPHA, as well as the president, president-elect and CEO of Safari Club International in office at that time. We battled and debated for the good part of a day to arrive at a definition of fair chase for hunting in Africa. Finally the participants put their signature under this definition:



Fair chase is defined as pursuit of a free ranging animal or enclosed ranging animal possessed of the natural behavioral inclination to escape from the hunter and be fully free to do so. A sport hunted animal should exist as a naturally interacting individual of a wild sustainable population, located in an area that meets both the spatial (territory and home range) and temporal (food, breeding and basic needs) requirements of the population of which that individual is a member. Sport hunted animals should, wherever possible, be sustained within an ecologically functional system.

Our statement from the 1990s could still be refined and made more precise, but it was a beginning.

Unfortunately, the SCI signatories could not prevent the fact that SCI withdrew all support for

this document barely a fortnight later. I suggest that we could have avoided quite a few of the problems which have cropped up during the last decade – and not only in Africa – if this simple position paper crafted by an international group of knowledgeable hunters had received more attention (although I found some traces of it in SCI's High Fence Policy published a couple of years ago).

The protectionist school of thought amongst conservationists advocates the prohibition of all wildlife trade and markets, hunting included. This school is purely focused on ecological aspects and does not take socio-economic factors into consideration. Their line of thought is paralleled by an equally narrow focus in hunting circles: the selection of trophies based on highly anthropocentric “ideals” and trophy scoring systems, which disregard morphobiometric facts and cross the line from a scientifically focused database to the admittedly attractive celebration of human

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vanity. Neither camp does wildlife a service.

The African Buffalo

Today the average hunter of the African buffalo selects a bull according to such anthropocentric ideals influenced by record books. This led in recent years to the disturbing fact of an increasing number of buffalo bulls being killed before they enter the breeding cycle. Studies have shown this to be the combined result of high quotas and of trophy scoring systems favouring younger animals. Maintaining a high market value for buffalo hunting relies upon the provision of high quality trophies. If the quality concept is distorted and ecologically compromised, the long-term survival of the species and its genetic diversity may be jeopardized, the hunting experience of future hunter generations may be diminished and the economic future of those who make a living through hunting is less than secure.

The growing concern that buffalo quotas have been set too high could be overcome by relying less on a defined figure, and instead tying the quota to a minimum age bracket. The other factor, inadequate scoring systems and the consequentially influenced perception of the hunter of a good buffalo trophy, might prove to be more difficult to overcome.

SCI and Rowland Ward provide the two major buffalo scoring systems in use today. The RW system ranks buffalo according to the greatest outside spread of the horns, and notes additional measurements such as width of boss, greatest inside spread, and the length of the longest horn alongside the outer curve. SCI takes a tip-to-tip measurement along the curve of the horns which includes the depth of the curl plus the width of both bosses; the greatest outside spread is measured but not included in the score.

The SCI system is biased towards younger animals which have yet to reach or just reached their prime. Field studies have shown that the highest scoring bulls according to SCI have not yet participated in the breeding process or are just at the beginning of their reproductive cycle. On a time scale, this bias will threaten the sustainability of mature trophy populations. The proposed new RW and CIC methods put even more emphasis on older animals, and seem to be supportive of more sustainable off-takes in the long term.

The Zimbabwean Winston Taylor looked at the relationship between age and trophy size. He analysed 91 individual buffalo collected in one hunting season in northern Zimbabwe. The average age of the sampled buffalo was 8 years; 3% of the buffalo were truly immature, at about 5 years; 76% were between 6 and 8 years old; 16% were in the 9 and 10 year class and a mere 5% of the hunted animals were 11 years

or older. The average Rowland Ward score stood at almost 37 inches, whilst the average SCI score was just over 96 inches. The respective minimums for record book entries are 42 and 100. Only 4 of the 91 samples were eligible for entry for Rowland Ward, whilst an astounding 34 reached the SCI minimum.

The score to age relationship in a comparative analysis between Rowland Ward and SCI provides interesting insights. The results indicate that RW scores decrease minimally with age, whilst SCI trophy scores do decline significantly when the bulls get older than 8 years.

- Conclusion number one: the SCI scoring system favours the trophy attributes of younger animals and bulls that score well on the SCI scale are likely to be young, if not immature.
- Conclusion number 2: hunters have a

preconception of an ideal buffalo trophy. The popularity of the SCI scoring system therefore preconditions hunters to regard immature or barely mature buffalo trophies as desirable.

- Conclusion number 3: the high offtake of 6-8 year-olds shows a trend which may put sustainable buffalo trophy hunting at risk.

We need to emphasize that maximum yield quotas cannot form the basis of trophy quality management in buffalo populations. Wildlife managers and professional hunters must co-operate to set region-specific age-related quotas to sustain trophy quality in the long term. This means that trophy hunting should concentrate on end-of-prime or post-prime bulls, preferably from bachelor groups.

Hunting and trophy selection are not exact sci-

ences. The pressures of hunting involve limited time frames, fussy clients, the vagaries of buffalo and a good dose of luck. The clients' nationality has a bearing on the trophy ambitions – European clients, especially German and Austrian, tend to prefer “character” trophies, usually older animals or those with non-typical horns. American clients, who comprise the majority of the safari clientele, are hunting bulls for their trophy size using SCI parameters.

This is compounded in all nationalities by the clients' thinking: “If I don't take it now, the next hunter will”.

The buffalo question has been debated in Africa for several years now, and the CIC and RW scoring systems have notified the hunting community of imminent changes; SCI has not shown such an inclination so far. Yet with goodwill from all involved, and together with

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buffalo experts from range countries, guidelines for sustainable trophy buffalo hunting and a more adequate scoring method could be developed quickly.

What is needed is the will for change.

European Red Deer

In Europe, the Red Deer occupies centre stage with many hunters. Trophies of exceptional stags were the pride and joy of the aristocracy from the Middle Ages. The trend continued into the 19th and 20th centuries.

Many contemporary scientists link the number and quality of tines and the crown formation on red deer antlers to a combination of genetics, nutrition and social status. Hunting selection based on anthropocentric ideals in antler scoring formulae may throw the genetic diversity of a deer population out of balance. The

existing CIC red deer formula and the record-keeping of trophies display one or more of the following serious flaws:

- they are too complicated;
- they have not evolved with deer-specific socio-biological and morphometrical research results on antler formation;
- they concentrate on subjective anthropocentric ideals;
- they do not address the danger of sub-specific extinction through single-minded hybridization focused on high-scoring antlers;
- they do not provide checks and balances to exclude “trophies” from artificially bred, domesticated or genetically manipulated animals.

A critical point is the apparent intensive breeding with semen straws of “extraordinary deer specimens” traded around the globe between New Zealand, the United States and Europe, and the indignity of hormone treatments, close confinement and a caged transport to the execution grounds. It is not inconceivable that even free-roaming red deer could be gradually diminished to unrecognizable hybrids disinherited from former distinct sub-specific bloodlines. All this is just for one reason: to produce ever more monstrous “record trophies”.

The CIC with access to databases containing around 100,000 red deer trophies has created a task force to revise the recognized shortfalls, introduce current science and create a user-friendly data management system for hunters and researchers.



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The way forward

Trophy hunting is an important tool in conservation, but it is not conservation in itself. As a conservation tool, trophy hunting should provide measurable social, economic and ecological benefits. Hunting is the least intrusive form of ecotourism and substantial revenue can be obtained from the rather low numbers of hunters and the game taken by them. The removal of a controlled number of individual animals does not harm the respective populations. Marco Festa-Bianchet, a wildlife biologist at the University of Sherbrook-Canada and chairman of the IUCN Caprinae Specialist Group, said in an article published by the New Scientist in January, 2007: "The underlying theme is the enormous amount of money that [hunters] are willing to spend. That can be an enormous force for conservation".

There is room for reasoned dialogue and all

should heed Teddy Roosevelt's advice: "In any moment of decision the best thing you can do is the right thing, the next best thing is the wrong thing, and the worst thing you can do is nothing."

True to Roosevelt's words the trophy recording authorities in CIC, Rowland Ward, Boone & Crockett, Wild Sheep Foundation, Dallas Safari Club, SCI and others need to understand that the time has come for what I audaciously call a "World Forum on Trophy Hunting". An international hunters' alliance would be far more effective than any one organization on its own. We need international cooperation also with the scientific community and require a sympathetic regulatory framework from governments of the range countries, the importing countries and also from Multilateral Environmental Agreements to safeguard the future of the game and wild places.

To ensure the future of our passion we must establish globally acceptable "Best Practice Standards and Principles, Criteria and Indicators" for hunting in general and trophy hunting in particular. The CIC initiated and leads an objective-oriented process to explain, define and propagate trophy hunting and the scientifically-based recording of hunting trophies as key components of wildlife conservation, conservation hunting, global sustainable hunting tourism and resident recreational hunting. This could form the basis for a broad-based inter-association cooperation of international hunting associations. Transparent and close cooperation will produce positive outcomes for hunters and wildlife.

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Biography

John J. Jackson, III, JD, is an attorney at law, speaker and author. An expert on conservation hunting and permitting, he is President of Conservation Force, author of World Conservation Force Bulletin, Past President of Safari Club International and Chairman of its Governmental, Conservation and Legal Committees. He is President of the Commission on Sustainable Use and Vice-President of the Tropical Game Commission of CIC, and a board member of the International Foundation for the Conservation of Wildlife. He is also a member of IUCN Sustainable Use, Antelope and Deer Specialist Groups, and CITES Observer serving on a number of working groups.

His awards include: President's Award, Guide and Outfitters Association of British Columbia (2008); The Conservationist of the Year Award, Namibian Professional Hunters Association (2007); The Ox of Okavango Award, Africa Professional Hunters Association (2006); Recognition Award, Grand Slam/OVIS (2005); Conklin Conservation Commendation, Conklin Foundation (2004); Excellence in Advocacy of Our Hunting Heritage Award, Foundation for North American Wild Sheep (2003); Recognition Award, International Professional Hunters Association; Wildlife Utilization Award, Professional Hunters Association of South Africa (1995); Special Recognition Award, Safari Club International (1994); Outstanding Member of the Year Award, Safari Club International (1992).



In the early 1970s, one international convention and one national law were passed that have proved to be significant barriers to conservation strategies based upon sustainable use. The convention is CITES, the Convention on International Trade in Endangered Species of Wild Fauna and Flora. It governs international trade of animals and plants threatened by trade. The national law is the Endangered Species Act (ESA) of the United States, 7 U.S.C. § 136, 16 U.S.C. § 1531 et seq. The administration of both by the U.S. Fisheries & Wildlife Service is particularly important because America is the largest safari hunting market.

This paper will briefly describe both CITES and the ESA, then describe known examples where those protective measures obstruct rather than serve sustainable use, particularly *conservation hunting* because of the way CITES and the ESA are administered. Both

are protective measures greatly influenced by politics. The U.S. administration of both is generally the source of the problem. Although CITES is an international convention, the U.S. has its own regulations implementing CITES for trophy imports into the U.S.

CITES governs the international trade of animals that the Parties list¹. Those listed on Appendix II only require an export permit from the country of origin. Those on Appendix I require both an import and an export permit. Commercial trade in Appendix I species is prohibited. Hunting trophies are not treated as commercial because the hunter's purpose is personal, not for profit. It is licensed, highly regulated trade that is an expense to the tourist hunter that provides substantial funding for the range country's conservation infrastructure. CITES has long had an interpretative resolution permitting trophy trade of Appendix I

¹CITES and CITES Secretariat websites: <http://www.cites.org> and <http://www.cites.org/eng/disc/sec/index.shtml>

The Unrealized Potential of Conservation Hunting

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species, Resolution 2.11 (Rev.)². The 177 country parties to CITES have also adopted various resolutions and decisions making recommendations to the Parties supportive of sustainable trade of trophies. Unfortunately, the U.S. does not honour those remedial measures.

To issue an export permit, the exporting country's authorities must make a biological *non-detriment* determination that the trade is not detrimental to the survival of that species. In the case of Appendix I listed species, the importing nation must also issue an import permit. The importing country must also make a determination that the "purpose" of the import is not detrimental. That is where most problems arise. Consequently, the Parties have

adopted a number of measures to overcome those problems.

The Parties revised Resolution 2.11 to further facilitate hunting trophy trade at the 9th Conference of the Parties (CoP). It provides that ordinarily the biological non-detriment findings of the exporting nations should be accepted rather than judgementally reexamined by the importing country. That CoP also adopted Resolution 9.21 to make it clear that quotas adopted by the Parties as a body at a CoP should be accepted as the required non-detriment finding for both the biological export and importing countries. Such a quota should eliminate the need for any further non-detriment finding.

Abstract

The potential value of sustainable use is heightened when the use is the licensed, regulated hunting of a game species as part of a conservation strategy, that is, through strategic *conservation hunting*. Game animals have a survival advantage when that status is put to work for their perpetuation.

Unfortunately, the Convention on International Trade in Endangered Species of Wild Flora and Fauna, the Endangered Species Act, and politics all too often prove to be insurmountable obstacles. Examples include the cheetah, black-faced impala, and black rhino here in Namibia, the lion in Botswana, argali in China, polar bear in the Arctic, and the markhor in Pakistan. It is time for responsibility and accountability.

CITES has adopted species-specific quotas for leopard³, cheetah⁴, markhor in Pakistan⁵ and black rhino⁶ to facilitate the trade in hunting trophies of those species. It has done little good because the USF&WS has not honoured the quotas even when the species is not also listed

²The interpretation and application of quotas for species included on Appendix I, Resolution Conf. 9.21 (Rev. CoP13) 1994

³Quotas for leopard hunting trophies and skins for personal use, Resolution Conf. 10.14 (Rev. CoP14) and (Doc. 10.84) 1997

⁴Quotas for trade in specimens of cheetah, Doc. 8.22 (Rev.) 1992

⁵Establishment of quotas for markhor hunting trophies, Resolution Conf. 10.15 (Rev. CoP14) 1997

⁶Establishment of export quotas for black rhinoceros hunting trophies, Resolution Conf. 13.5 (Rev. CoP14) 2004



Photo by Dirk Heinrich

as endangered. It has insisted upon making its own biological non-detriment finding. For example, it took years to establish import of leopard trophies from Mozambique even though there was a CoP leopard quota for that country and the leopard there were never thought to be at risk according to CITES records.

CITES has also downlisted some species alto-

gether or with an annotation that the downlisting from Appendix I to II is only for trophy trade. The Canadian wood bison was downlisted for that purpose. Both African elephant and white rhino in some range nations have been conditionally downlisted with an annotation that it is only for trophy trade and all other trade is still on Appendix I. That includes the elephant in Botswana, Zimbabwe, Namibia and RSA. It is eminently clear that the Parties have endeavoured to overcome the U.S. CITES import practices. Downlisting to Appendix II for trophies only (limiting annotations in CITES jargon) eliminates the need for an import permit for hunting trophies. This strategy has worked in the past to overcome the importing impasse in the U.S., such as for RSA, Namibia and Zimbabwe elephant. We expect elephant downlisting proposals at the next CITES CoP in March 2010 for Tanzania, Zambia and Mozambique, who are fed up with

U.S. import permitting practices for their elephant. It has not worked when the species is also listed as “endangered” on the United States’ own Endangered Species Act, which will be discussed below.

In August 2007, the USF&WS adopted its own administrative CITES regulations in derogation of most of those CITES Resolutions intended to facilitate trade: 50 CFR Parts 10, 13, 17, and 23; *Revision of Regulations for the Convention on International Trade in Endangered Species of Wild Fauna and Flora* (CITES); Final Rule (August 23, 2007)⁷. The codification formalizes the USF&WS position and practices that are contrary to the Resolutions aimed at facilitating tourist trophy trade. Those new regulations exclude trophy parts crafted into utilitarian items from trophy treatment; require the Service to make its own biological and management non-detriment finding before

⁷Quotas for leopard hunting trophies and skins for personal use, Resolution Conf. 10.14 (Rev. CoP14), (Doc. 10.84) 1997

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issuing an import permit rather than accepting the findings of the export authorities; and declare that the U.S. will not honour quotas established by the Parties as non-detriment findings, despite that being the very purpose of the quota system.

I must add that the USF&WS Division of Law Enforcement is extremely autocratic and unforgiving in import inspections. Millions of dollars' worth of trophies are detained, seized and involuntarily forfeited for the smallest unintended clerical errors, even though the legal take and authenticity of the trophy is undisputed.

Under CITES, Parties to the Convention are entitled to have stricter domestic measures. The Endangered Species Act of the United States is such a measure. The USF&WS more

restrictively administers the ESA than the USF&WS administers CITES.

The ESA lists species worldwide⁸. Species are listed as "threatened" or "endangered". Most of the mammals listed under the ESA are foreign. The rub is that such listings do not provide the benefits for foreign species that they do for U.S. domestic species. It seems to be easy to list a foreign species when there are few cost considerations. Normally the species are listed over the foreign range nation's objections, and in some cases simply because the species status is not known or its status is not documented to the satisfaction of the USF&WS.

Import of hunting trophies of species listed as threatened is statutorily protected from import

restriction in all but one instance, a special rule governing argali. Species listed as endangered can be imported when the agency finds that it enhances the survival or recovery of the species, but the Service has made that finding in only one instance: it permits import of bontebok hunting trophies from the Republic of South Africa that are taken on ranches registered in RSA's bontebok conservation program. Recently, the USF&WS failed to adopt a policy that would have permitted import of trophies in select cases as a conservation tool for endangered species when it was found to be a net benefit to the survival of the species⁹ and part of the foreign nation's conservation strategy for the species. The agency claims the effort was killed by the Bush Administration at the highest level.

The decision not to adopt the more up-to-date policy was made because concern for political fallout from activist constituents was greater

⁸Endangered Species Act, 16 U.S.C. § 1531 et seq.

⁹Draft Policy for Enhancement-of-Survival Permits for Foreign Species Listed Under the Endangered Species Act, 68 F.R. 49512, August 18, 2003



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than the interest of the species and the expert advice of the agency. The species that could benefit and the management authorities in foreign countries and indigenous peoples do not vote in the United States.

In historical perspective, the African leopard was the first problem of significance. It was not importable into the U.S. until a successful cam-

paign downlisted sub-Saharan leopard from “endangered” to “threatened” under the ESA.

When the African elephant was uplisted to CITES Appendix I, the USF&WS would not issue the required import permits. Worse, it treated the processing of the import permit application as a “low priority.” Suit had to be filed to establish importation of elephant from Namibia, RSA and Tanzania. The USF&WS end-rounded that success under CITES by adopting a special regulation under the ESA (it is “threatened” under the ESA) that requires proof of *enhancement* as if it were listed as endangered. This has to be treated as politically driven because the taking of so few adult males is not biologically significant. South Africa, Botswana, Namibia and Zimbabwe have found it advantageous to have their elephant downlisted to Appendix II for trophy purposes, but Tanzania, with the second largest elephant population, has periodic import prob-

lems in the United States. Tanzania, Mozambique and Zambia have prepared downlisting proposals with a trophy annotation to surmount that U.S. import problem at CoP 15 in March, 2010. The USF&WS would not allow importation of elephant from Mozambique even though the quota allocation was limited to two elephant per year in a renowned community development project.

At CoP 8 in 1992, Namibia was given a trophy quota of 250 per annum for its cheetah to help facilitate trophy trade with the express idea it would help create tolerance by the local people. 95% of the cheetah live on private lands and are dependent upon the goodwill of those landowners. It was a conservation strategy supported by the World Conservation Union (IUCN) Cat Specialist Group. The icing on that conservation cake was that the hunting community took an active part in implementing the conservation strategy. Dr. James Teer was en-

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gaged to meet with the USF&WS, and then travel to Namibia to establish an agreement that would further enhance the survival of cheetah. An “enhancement agreement” was struck in which more than 100 private landholders agreed to treat cheetah as a game species rather than vermin, charge as much for their take as for lion and leopard, and ensure the tourist hunter contributed an extra \$1,000 dedicated exclusively for cheetah conservation (potentially \$250,000 per year). There was no capital fund like it or equal to it in the world. The hunting community also contributed to the cost of the completion of a National Strategic Action Plan that was completed by the Vice Chair of the IUCN Cat Specialist Group and remains the state-of-the-art example to this day.

Tens of thousands of dollars were poured into cheetah conservation in Namibia. The creation of a predator committee of NGOs and

government and the appointment of a Predator Coordinator in the Wildlife Department all arose from the effort. The effort and effect would take volumes to describe. Though promised over and over again, the USF&WS denied the import permits and even denied an ESA downlisting petition. At one point, the Service made a positive CITES non-detriment determination required for CITES Appendix I species (independently of the CoP-established quota), but because of political policy it never could make the “enhancement” finding required by the ESA. The USF&WS authorities finally admitted its practices and policy were not in the best interest of the species, but they could not get the political approval from above to change the longstanding practice of not finding “enhancement” under the ESA. After more than 10 years, the program has folded, and only remnants of the effort remain. The \$1,000 donations turned into written pledges conditional upon and to be paid only upon im-

port approval instead of upon take, and even the leadership of the Namibia Professional Hunting Association (NAPHA) abandoned the effort. When the Bush Administration was unwilling to pay the political price of approval, the USF&WS literally asked that the pending permits be voluntarily withdrawn. When they were not, the Director in February 2009 denied the initial import permit applications that had been pending since 1994 – 15 years. That was the final nail in the coffin.

Namibia has the largest and best-managed cheetah population in the world. Even the Cheetah Conservation Fund supported the limited hunting. That country still has a robust population but the potential of the conservation hunting and all associated benefits has failed to be realized. The ESA listing could have been utilized as a positive tool in the way intended by its authors. Instead, as administered, it is a barrier. No one is being held re-



sponsible or accountable for what happened in this instance.

The markhor in the Torghar Hills Conservation Project in Pakistan is another example. It is a world-renowned, award-winning program that has restored those markhor from 200 to more than 2,000 through conservation hunting. At CITES CoP 10, the Parties created a quota for

the markhor to facilitate the export-import of the trophies. The Pakistan authorities stated at that CoP that denial of the quota would deny the species the “single most effective conservation tool at our disposal.” The problem has been that population is a straight-horned Suleiman markhor that the USF&WS has listed as “endangered.” The IUCN and Project Leader filed a downlisting petition in 1999 with the USF&WS which made an initial (90-day) finding that the downlisting may be warranted. The Service published with that finding that “[a]llowing a limited number of U.S. hunters from this population could provide a significant increase in funds available for conservation and would provide a nexus to encourage continuation and expansion of the project into other areas.”¹⁰ The Service has not completed that downlisting, and, worse, the species has

been denied the automatic 5-year review due all listed species because it is supposed to be under review already. Recently, a suit has been filed to compel that downlisting after the necessary 60-day notice of intent to sue was sent. Instead of downlisting the species, the Service has raised the defence that after six years the statute of limitations prevents any legal action. The downlisting petition may have to be filed again.

Applications for import permits have also been filed but they have not been processed. Response to a Freedom of Information Act request has indicated that the USF&WS had not made a CITES Appendix I non-detriment finding, much less an enhancement finding necessary under the ESA. Permit applications have been filed since at least 2000, but none have

¹⁰Draft Policy for Enhancement-of-Survival Permits for Foreign Species Listed Under the Endangered Species Act, 68 F.R. 49512, August 18, 2003

¹¹Final Listing Priority Guidance, 63 F.R. 891, May 8, 1998

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seen the light of day.

The loss of potential is more quantifiable in this case than in many others. In some years the project has not been able to market its nominal CITES quota, which it could if U.S. hunters could import their trophies. Even more telling is the difference in price of the markhor hunts from areas where markhor trophies are importable. In 2007, after more than a decade of effort, the hunting community was able to get approved import of a few flare-horned markhor from Pakistan. Those were listed on Appendix I, but not the ESA. The approval still took years because the USF&WS would not honour the quota set by the Parties at a CoP. Instead, it had to make its own finding and insisted upon making a biological non-detriment finding instead of the simpler finding required by CITES for trade in Appendix I trophies that

the purpose of the import was not detrimental. In fact, it initially denied the import permit application. When approved after administrative appeals, the price of the trophies climbed from \$45,000 to \$150,000 per hunt. The next year, three hunts were sold to U.S. hunters at a total price of \$450,000. That is more than three times the price that Torghar area markhor continue to sell for at \$45,000 per hunt.

The USF&WS has published that “[s]ince the Service cannot develop recovery plans for foreign species, priorities...must by necessity take into account the conservation programs of other countries....”¹¹ In that same Federal Register Notice which stated that an ESA listing “may have potential conservation detriment for some species” and “[c]ertainly, the United States should endeavor, when possible, to recognize the conservation programs of

foreign countries when based on sound science....with regard to foreign game species, fees from trophy hunters can, in some cases, provide economic incentives for landowners to maintain healthy population of game animals...[A] large percentage of international hunters are Americans who might invest in the hunting program if the species...import was permitted.” Politically, the Service has not been able to do what it knows is right and the hunting community has been ill-advised not to make an issue of it.

Despite openly coming to realize the downside of listing foreign species on the ESA and the political inability to administer the ESA responsibly, the USF&WS continues to list foreign species. The threatened listing of all polar bear in the world is the most recent example.¹² In this instance, the listing triggered a provision under the Marine Mammal Protection Act of the U.S. that prohibits import of all ESA listed

¹²Endangered and Threatened Wildlife and Plants; Special Rule for the Polar Bear; Interim Final Rule, 73 F.R. 28306, May 15, 2008



marine mammals (the bear is classified as a marine mammal). The Service acknowledged the conservation benefits of the hunting in Canada, yet listed the bear over the objection of Canada, Nunavut and the Northwest Territories. It responded to the concern expressed by the select independent Peer Review Group it assembled that listing might obstruct the import of trophies by acknowledging the success

of the program, but that under the ESA it could not take that into account or even consider “the efficacy of the listing” towards the bear’s conservation. The Agency listed the bear knowing it would obstruct the conservation strategy and would not provide benefits. The furore of the moment prevailed.

Lest it be thought the U.S. is the only offender, let me cite a sample of others. Australia will not allow the taking and export of giant saltwater man-eating crocodile. They have recovered to the point that their numbers exceed management objectives and tens of thousands are taken for commercial trade, but some authorities dislike tourist hunting regardless of its potential conservation benefits. That same country will not permit importation of black bear from North America, which are listed on

Appendix II of CITES, even though it is the largest bear population in the world and well-documented to be increasing.

The EU has its own stricter domestic measures and continues to deny the importation of grizzly bear trophies from British Columbia, the best, most intensively managed bear in Canada. TRAFFIC, Europe, has completed a study comparing the EU’s treatment of importation of those bear with others the EU scientific review group has reviewed.¹³ Its finding is that British Columbia has not been treated consistently. Although British Columbia has the largest and most intensely managed bear population of any reviewed, only British Columbia’s bear imports are banned. The EU’s Scientific Review Group “considered that the overall management in British Columbia is

¹³Bear Necessities, Amelie Knapp, A TRAFFIC Europe Report, 2006

¹⁴Establishment of export quotas for black rhinoceros hunting trophies, Resolution Conf. 13.5 (Rev. CoP14) 2004

¹⁵Endangered Species Act, 16 U.S.C. § 1531 et seq.

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very good.” The other three countries approved did not even have management plans for their bear (Bulgaria, Russia and Slovakia). The lobbying of protectionists and animal rights groups seems to be the cause.

The USF&WS listed China’s argali as endangered over China’s objections because it would not accept the authority’s population estimates without a nationwide survey independently verified. In short, they were listed not because of their known status, but because the USF&WS would not accept what they were told. Today, China’s hunting is closed to tourists by its own act, wholly eliminating that conservation revenue and incentive.

In Botswana, tourist hunting has been marginalized by degrees for over a decade. Lion hunting has been totally eliminated even though the quota was only one animal per concession and the wild lion population is the

second largest in the world. The political leadership totally rejected a conservation strategy wherein hunters were to donate a sum of \$10,000 above their hunt costs and licences that was to be expended exclusively on lion conservation in Botswana. It was half a million dollars a year with matching sums from leading sportsmen’s conservation organizations. The problem is political.

Of course, this past year Kenya’s President wholly rejected tourist hunting again. This is regrettable as it would benefit both the wildlife and people of that nation.

Let us look finally at the black rhino. More than two decades ago the USF&WS had to be sued to permit the U.S. import of white rhino on Appendix I of CITES. Revenue from those imports has helped fund and add incentive to the white rhino. It has also been one additional incentive for the restoration of black rhino. CITES has a

trophy quota for black rhino in both RSA and Namibia.¹⁴ The population of black rhino is now greater than the white rhino was when imports were established. Unfortunately, unlike the white rhino, the black rhino is listed as “endangered” on the Endangered Species List of the United States.¹⁵ The revenue generated through tourist hunting of those markhor that are importable pales in comparison to the half-million U.S. dollars or more that each black rhino could fetch. Because of politics, the Agency will not find enhancement to grant import permits under any condition or price (conservation revenue). The unrealized conservation potential of conservation hunting of black rhino is boundless. It remains to be seen what the current U.S. Administration will do for the indigenous people, conservation stakeholders and listed game species around the world. So much ground has already been lost – so many opportunities.

Biography

Ron Thomson joined the Federal Department of National Parks in what was then the Federation of Rhodesia and Nyasaland, aged 20, in 1959. Southern Rhodesia is now known as Zimbabwe. Over 24 years he rose through the ranks from Cadet Game Ranger to the Provincial Game Warden-in-charge of Hwange National Park game reserves. He studied Field Ecology at the University of Rhodesia and was accepted as a Member of the Institute of Biology (London), serving for more than 20 years as a Chartered Biologist for the European Union. He never relinquished his position as a national park administrator. He was later the Director of the Bophuthatswana National Parks Board in South Africa and he worked as a professional hunter in South Africa's Great Karoo for three years. Altogether he has spent 31 years in various official wildlife management positions in Africa, and with 50 years of experience working for wildlife he has much practical experience in wildlife management.

Author of six books and numerous magazine articles about wildlife and its management, he is a lifelong big game hunter. He has accumulated many awards from African and international hunting organizations in recognition of his contribution towards creating a better informed public and unwavering support for hunting as an essential wildlife management tool.

As of November 11th this year, I have spent 50 years working for Africa's wildlife at the coal-face. I progressed through the ranks of Africa's national park systems as an ordinary game ranger. During my field service I qualified as an ecologist, became a Member of the Institute of Biology (London) and held the position of Chartered Biologist for the European Union for more than 20 years. However, I never relinquished my position as a hands-on wildlife manager and field officer. My most senior position was that of Director of the Bophuthatswana National Parks and Wildlife Management Board in South Africa. My most cherished position was that of Provincial Game Warden-in-charge of Hwange National Park, one of Africa's biggest and most prestigious game reserves, in what is now Zimbabwe.

Big game hunting is my passion and I have great experience in it and in game capture. I pioneered black rhino capture in Rhodesia and

led that country's black rhino capture team for seven years, catching and translocating 140 black rhinos during this period. I have captured and moved 30 hippos and other species, too.

I am essentially a national park man. My deepest concerns are for the maintenance and the proper management of Africa's national parks and for the maintenance and the proper management of the wild animals that live in them.

I am also an African. I love this continent.

My long career in national parks was, however, constructed on an improbable foundation. I now know that Africa's national parks cannot survive if they continue to be managed according to First World principles. During the colonial era, approved international criteria for the management of national parks was foisted on Africa. These First World principles and practices worked then but they don't work now, in



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post-colonial times. The massive commercial poaching of wild animals that followed on the heels of the de-colonization process right down the face of Africa is a manifestation of this fact.

There is a better way, an African way, which takes into account the realities of Africa.

Poaching on the scale in which it is occurring in Africa today is a uniquely African phenomenon. Ideally it requires an African solution, and one that, above all else, will work. Finally, the solution must be sustainable and wholly financed by Africa.

Such a solution is the theme of this paper, which can only be an introduction. I would further refer those interested to my book, *Managing Our Wildlife Heritage*, in which the merits of the African Wildlife Initiative Programme (AWIP) are described.

Over the last twenty-five years I have watched the prospects for wildlife in Africa sliding inexorably down the drain. The main reason for this to the present is the successful consequences of persistent animal rights propaganda, but there is an even bigger danger looming. It is the burgeoning growth of Africa's human populations. Africa's rural human populations are doubling their numbers every twenty years. What does this mean?

In the 1950s there was enough land to satisfy the subsistence agricultural needs of Africa's rural people. By the year 2000, however, there were five families living off the same piece of land that had supported one family in 1955. This land, in 2000, could not support even this number of people. By 2020 there will be ten families living off this same piece of land, and twenty families in 2040.

The effects on Africa's wildlife of this human

Abstract

First World wildlife management practices worked well in Africa during the colonial period. They do not work now. The commercial poaching pandemic that swept through Africa in the wake of decolonization is manifestation of that fact. The poaching of elephants and rhinos for their tusks and horns has been reduced, but not stopped, by CITES international trade bans. Poaching is now centred round taking animals illegally for meat by the grass roots of Africa's rural societies. It is uncontrollable by CITES. Poverty is the principal proximate cause of Africa's commercial poaching. The black market and corruption are the ultimate causes.

In any syndrome with proximate and ultimate causes the only way to solve the problem is to remove its proximate cause. When that has been achieved the ultimate causes become of no consequence. To stop commercial poaching in Africa, therefore, poverty must be removed from the equation. The CITES trade bans tackle only the

(continued on page 249)

population explosion have already been devastating. By the year 2050 the battle to save Africa's wildlife will either have been won or it will have been lost. The outcome is in the hands of the planet's responsible citizens but few such people realize the danger. It is consequently vital to spell out what is happening and what realistically can be done about it.

Poverty has increased concomitantly with the human population explosion. Too many poverty-stricken rural people represent the spectre that will destroy Africa's wildlife in the longer term. Nothing else is more important. In the face of the growing human population pressure and the growing *per capita* poverty factor, insisting dogmatically that Africa must adhere to international criteria and standards for the management of its national parks is tantamount to sticking our collective heads in the sand.

With nothing to lose and everything to gain,

those poverty-stricken human communities that live on the boundaries of Africa's national parks are becoming ever more dependent on poaching wild animals for survival. This is clearly not going to get better. It is going to get progressively worse. And it will not be long before Africa's national parks are mere empty shells.

During the 1970s and 1980s elephants and black rhinos were heavily poached in East Africa for their tusks and horns. This was the pinnacle period of the commercial rhino horn and ivory poaching era. The accredited animal rightist NGOs at CITES convinced the world that this poaching was solely caused by:

- (1) The greed of the poachers;
- (2) Corruption in government circles; and
- (3) The existence of an international black market for ivory and rhino horn.

Consequently, CITES declared the elephant to be an endangered species in 1989. An international ivory trade ban then came into force. Yet the elephant was not then, and never has been, an endangered species. The CITES declaration was unfortunate. The so-called endangered status of the elephant caught the public's imagination and after 1989 an enormous world-wide resistance built up to elephant culling and hunting. Wildlife authorities were told by their political masters to stop all elephant population reduction management. Elephant populations thereafter doubled their numbers every ten years. They very quickly and grossly exceeded the carrying capacities of their habitats. This continues with no sign that population reduction management will ever be reinstated.

The most important consequence of too many elephants in a national park is destruction of the park's biological diversity. Maintaining the

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biological diversity of a park is, or should be, the wildlife authority's primary goal. So this state of affairs has badly affected responsible wildlife management in Africa.

Society's wildlife management priorities are:

- (1) The protection and wise use of the soil – for without soil no plants can grow;
- (2) The protection and wise use of plants – because without plants there can be no animals; and
- (3) The protection and wise use of animals.

The animals are thus ranked last in the management priority hierarchy. This does not mean they are unimportant. It just means they are less important than the soil and the plants that make their existence possible. Those who believe that consideration of the animals must

come first in a national park are putting the cart before the horse. When animal populations exceed the sustainable carrying capacities of their habitats they cause irreparable damage to plant communities. The more sensitive plants quickly become locally extinct. This sets off a chain reaction. The animals associated with those plants then also become locally extinct and this extinction process continues as a chronic progression over time.

Habitat damage removes protective plant cover. This exposes the soil to erosion, ever more severely, by the sun, wind and rain. Massive amounts of soil are lost during every rainstorm. Eventually, if no remedial action is taken, the whole ecosystem will collapse. This is how deserts are made.

Management, in this context, is the action that man takes to establish and to maintain a state of dynamic equilibrium between the soil, the

Abstract (continued)

ultimate causes of poaching and cannot stop commercial poaching. The world needs to reassess its approach to solving Africa's commercial poaching problem or risk substantial loss of Africa's *wild* wildlife within decades. A solution is offered. It is called "The African Wildlife Initiative Programme." Hunting is a major part of it.

plants and the animals. This activity creates a stable ecosystem on which sustainable tourism can be constructed. If the ecosystem is not healthy and stable, any and all tourism ventures will collapse when the ecosystem collapses. It is important for governments, society and tourism operators to understand this.

Consider these facts:

Botswana's elephant population now numbers 200,000. According to my calculations it should never have exceeded 7,500. Hwange National Park's elephants in Zimbabwe now number be-



tween 30,000 and 60,000. They should never have been allowed to exceed 2,500. Kruger National Park in South Africa is now carrying 16,000 elephants. The sustainable elephant carrying capacity of Kruger's habitats was about 4,000 when the habitats were healthy. The detrimental effect that these excessive elephant populations have already had on their sanctuary habitats is huge. The long-term negative effects they will have on the biological diversities of their sanctuaries are incalculable.

This is the kind of danger to our wildlife heritage that eventuates when we do not challenge the activities of animal rightists in society. Evil prevails wherever good men do nothing. Many faulty and several false assertions were emotionally bulldozed through the CITES ivory trade ban debates in 1989 by the animal rights NGOs. The arguments they offered were incomplete and the real reasons for the poaching were neither identified nor understood.

I will now have to change my tack.

Everybody now knows that when an AIDS patient dies it is a common disease, like pneumonia, TB or malaria that actually kills him. Yet there are many good medicines available that can cure these diseases. These medicines do not work on a dying AIDS patient, however, because the patient's HIV infection has by then destroyed his immune system. HIV is the underlying or proximate cause of every AIDS patient's death. The common disease that eventually kills him is referred to as the ultimate cause of his death. The only way to save a dying AIDS patient's life is to first remove the proximate cause of his illness. Only when the HIV infection has gone can medical science save him.

Commercial poaching in Africa has a similar aetiology. There are both proximate and ultimate reasons why rural people poach wild animals. As with AIDS, the most important of

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these causes are the proximate ones.

There are several proximate causes for commercial poaching in Africa. The most important one, by far, is poverty. The people of Africa do not poach because they are greedy. They poach in order to survive. They poach because the average annual income of rural families living in the remote areas of Africa is less than \$US10.00 per year

The existence of serious corruption in some of the governments and in some of the civil service communities of Africa, in addition to the existence of an international black market, are the combined ultimate causes of commercial poaching.

The solutions to the AIDS problem and to the commercial poaching problem are exactly the same. Remove the proximate causes and the ultimate ones become of no consequence.

Unfortunately the entire focus of the 1989 CITES ivory trade ban has been to eliminate only the ultimate causes of the poaching. During the debates no consideration at all was given to the proximate causes. They were neither recognized nor were they mentioned throughout the nine days of debate.

The international ivory trade ban will not stop commercial poaching. It cannot stop the poaching because it is directed at the wrong part of the syndrome.

The nature of commercial poaching has changed. The poaching of elephants and of rhinos for their ivory and their horn has declined because of international trade bans but commercial poaching has not stopped. It has another face. It has been replaced with poaching for meat that is now rife and increasing across the length and breadth of the continent. One thing remains the same. Poaching for meat is

driven by exactly the same proximate reasons that caused the poaching of elephants and rhinos. And poaching for meat poses an even greater threat to Africa's wildlife.

Every kind of wild animal is now being killed for its meat, including elephants and rhinos. Poaching for meat is not controllable by international treaty. It is in fact totally uncontrollable because it begins and ends within the grass roots of rural society. It also enjoys the avid support of Africa's starving rural people.

The proposed African Wildlife Initiative Programme concentrates on removing the proximate causes of all commercial poaching. It recognizes that poaching emanates from and is supported by the people who live right on the national park boundaries. It accepts that poverty is the principal driving force behind the poaching and it sets out to reverse this state of affairs. Its plan is to integrate the needs of the

local poacher communities with the needs of the national park. Its purpose is to stop commercial poaching by permanently relieving poverty within those rural communities that surround Africa's national parks.

Hunting is the cornerstone of the solution.

AWIP proposes that Africa's national parks should be run as successful business enterprises by a business organization. Government would function as a sleeping partner in the deal. It would, nevertheless, continue to oversee the mandate it has from the nation to ensure that the national parks are managed in the most appropriate manner.

AWIP's management proposals cannot be explained in any detail here. Suffice it to say that the habitats in Africa's national parks would be maintained in a healthy condition by ensuring no animal population ever exceeds the sus-

tainable carrying capacity of its habitat. This would require a hands-on wildlife management program that would see the annual increments of prolific species populations being reduced to prescribed numbers every year. The animals earmarked for reduction would be removed by hunting, by capture and translocation, or by culling.

Male animals on the culling quotas would be taken off by hunters under the supervision of qualified game rangers. The first fee the hunters would pay would be a community levy. The park manager would deposit these levy fees straight into a community bank account that he would control.

Every year the park manager would draw up a price or value list that would include every species of animal in the national park. An elephant might be valued on the list at \$US5,000, a buffalo at \$US2,000. A black rhino would be

perhaps \$US50,000, and a vulture \$US100. Even animals that are never hunted would appear on the list.

The list would be presented to the local community leaders at the beginning of every calendar year. They would be told that the animal fees, as they appeared on the list, would be paid to the community at the end of every year for every animal that had been killed by a legitimate hunter. This would be the carrot of a carrot-and-stick arrangement.

If the poachers in their ranks continued to kill animals in the park, however, a penalty would be imposed. The penalty would be twice the listed value of any and every animal poached in the park. This amount would be removed from the community levy payment at the end of the year. This would be the stick.

IF the people cooperated with the park admin-

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istration the community as a whole would earn \$US5,000 for every elephant that was legitimately killed by hunters. On the other side of the same coin, for every elephant that was poached they would lose 2 x \$US5,000 (= \$US10,000) in punitive penalties. This criterion would apply to every other species on the annual value list.

Other sources of poverty-relief moneys and other benefits are outlined in AWIP proposals, but a population of 5,000 elephants will sustainably produce 75 hutable bulls a year. The sustainable value of elephants alone to the community, therefore, would be \$US375,000 per annum. Other species would add yet more moneys to the annual community levy fund. Collectively this money would represent the most important contribution to the relief of the people's poverty.

These figures must be weighed against the

fact that poachers – the men who pull the triggers – receive only about \$US30 for every pair of elephant tusks they sell into the black market. It cannot compete with AWIP. The people would soon realize that it would be in their own best interests to work not in support of the black market, but in cooperation with the national park authorities. The black market would become of no consequence. Without the local people's support it would wither away.

The biggest advantage would be that the community itself would never allow the poachers within its midst to continuing operating. The people would become the national park's greatest custodians.

The most consummate aspect of this whole arrangement is that the wild animals of Africa's national parks will themselves be paying for their own salvation. The community levy payments would also be annually sustainable be-

cause they will be derived from a renewable resource. Commercial poaching in Africa's national parks, therefore, can be stopped permanently without anyone having to pay a cent towards the accomplishment.

This snippet is just the tip of the AWIP iceberg. Those who read the full AWIP proposal can understand just why this approach is necessary and how the AWIP objectives can be achieved. There is really no other practicable alternative if Africa's wildlife is to be saved for posterity. To implement the AWIP program, however, will require a societal paradigm shift of immense proportions. Social inertia consequently may be the final nail that is driven into Africa's wildlife coffin. I hope this will not be the case. Whether Africa's wildlife will survive the 21st Century or not will depend upon what people like us do about getting the AWIP program, or something similar, applied. There is not much time left for us to save Africa's wildlife.

Biography

Ron Thomson joined the Federal Department of National Parks in what was then the Federation of Rhodesia and Nyasaland, aged 20, in 1959. Southern Rhodesia is now known as Zimbabwe. Over 24 years he rose through the ranks from Cadet Game Ranger to the Provincial Game Warden-in-charge of Hwange National Park game reserves. He studied Field Ecology at the University of Rhodesia and was accepted as a Member of the Institute of Biology (London), serving for more than 20 years as a Chartered Biologist for the European Union. He never relinquished his position as a national park administrator. He was later the Director of the Bophuthatswana National Parks Board in South Africa and he worked as a professional hunter in South Africa's Great Karoo for three years. Altogether he has spent 31 years in various official wildlife management positions in Africa, and with 50 years of experience working for wildlife he has much practical experience in wildlife management.

Author of six books and numerous magazine articles about wildlife and its management, he is a lifelong big game hunter. He has accumulated many awards from African and international hunting organizations in recognition of his contribution towards creating a better informed public and unwavering support for hunting as an essential wildlife management tool.



The following set of circumstances and events has led to the present undesirable state of affairs at the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES).

1. The International Union for the Conservation of Nature and Natural Resources (The IUCN) came into being in 1948. Its purpose was to oversee man's sustainable use of renewable natural resources, both domesticated and wild.
2. The World Wildlife Fund (WWF) was created in 1961. Its purpose was to raise funds to safeguard endangered species and vulnerable ecosystems.
3. CITES was born in 1975. Its purpose was to regulate the international trade in endangered and vulnerable species of fauna and flora.

4. In 1980 the IUCN published its mission statement: The World Conservation Strategy (WCS). The three objectives of what the WCS calls "living resource conservation" are:

- *To maintain essential ecological processes and life support systems;*
- *To preserve genetic diversity; and*
- *To ensure the sustainable utilisation of species and ecosystems (notably fish and other wildlife, forests and grazing lands) which support millions of rural communities as well as major industries.*

The WCS presented a plan of action to world society that would ensure the proper, sustainable and wise-use management of the soil, and of both domesticated and wild plants and animals. It represented, therefore, inter alia, a blueprint for the survival of mankind on planet earth.

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The WCS strategy was embraced by all those responsible sovereign states that were members of the IUCN in 1980 and they obligated themselves to world society by agreeing to model their National Conservation Strategies (NCSs) on the WCS template. The objectives of the WCS, therefore, became the objectives of these NCSs, too.

The WCS was revised in 1991 – and reworded – but its principles did not change. It was also renamed: “Caring for the Earth – A Strategy for Sustainable Living”.

The IUCN, WWF, CITES and the WCS represent the four cornerstones of the foundation on which the modern international wildlife management edifice has been constructed. Nobody who considers himself to be a responsible and reasonable person should be able to find fault with the fundamental objectives of any of these structures. The problems with

which these stanchions are now faced lies in the manner of their evolution since inception. Some of them – especially some national WWF offices – have gone astray. And CITES has allowed itself to be greatly corrupted by animal rights NGOs because of its inappropriate accreditation rules.

The WWF taught many opportunist people in society that it is relatively easy to raise funds from the world’s general public for charismatic wildlife projects. They also discovered it is easier to raise these funds if the public’s emotions could be stirred up. This gave rise to the animal rights movement that now competes most heavily with WWF for available public funds. In many situations the animal rightist NGOs now out-compete WWF in the fund raising stakes. In order to survive financially, many (but not all) national WWF offices have fallen into the animal rightists’ fold. WWF-UK is a good example of this.

Abstract

Animal rights groups have certainly increased in power over the last years, spending very large sums of money in lobbying at national and international levels. This paper observes the development of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), and demonstrates that its origins lie firmly in the concept of sustainable use. This fact, however, has been grossly distorted by modern trends in the running of CITES.

Now, it has become too easy for animal rights influence without scientific backing to extend to decisionmakers. CITES has the brief to regulate trade in wildlife and wildlife products. It has become increasingly evident that the animal rights movement wishes to use CITES not for regulation but to stop the trade altogether. This is very damaging to wildlife, and is, consequently, unacceptable. A change to CITES accreditation rules is called for.



Animal 'rights' should not be confused with animal 'welfare'. They are not the same thing. Animal rights-ism began, essentially, as a confidence industry. It is now the biggest confidence industry the world has ever known.

The International Fund for Animal Welfare is said to command a convoluted annual income of more than \$US200 million. The annual income of the Humane Society of the United States is in excess of \$US95 million. Despite what may be called misleading titles, both these NGOs are fully animal rightist in their ideological orientation.

After the promulgation of the WCS in 1980 the IUCN was bombarded with applications for membership by animal rights NGOs, which wanted to change the WCS from within. Realizing that these NGOs did not share the IUCN's commitment to the WCS, the IUCN brought in a new membership rule in 1986: ap-

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plicants for membership were required to endorse their support for the WCS. This caused animal rights NGOs such as Greenpeace and Beauty-without-Cruelty to withdraw their applications. The IUCN thus beat back the beast at the very gates of its citadel.

CITES, in an attempt to encourage the participation of as many well-meaning organizations as possible, has allowed wildlife NGOs of every persuasion to be accredited to the organization. Accredited NGOs are allowed to participate fully in every facet of the workings of CITES but they do not command a vote. Votes are allotted only to the member sovereign states of the convention, one vote to each member. These state members are called 'parties' to the convention or 'signatories'. Animal rights NGOs, consequently, are highly active in trying to influence gullible non-range delegates – during conferences of the parties – to vote in a manner that the NGOs prescribe.

CITES now has in excess of 170 sovereign state members. At every conference of the parties, however, there are many more NGO delegates present than there are signatory delegates. And many if not most of these NGO delegates are animal rightists.

Important debates last for days. In 1989, when the African elephant was declared an 'endangered species' at CITES, the debate lasted nine whole days and the greater part of many of nine nights, too. The animal rights NGOs were active everywhere and they wined and dined delegates from all over the world to lobby for their voting support on the elephant issue. In the end, despite a strong plea against it from the IUCN, the conference voted in favour of placing the African elephant on the CITES Appendix I list. This effectively declared the African elephant to be an 'endangered species' – which it never has been. It also introduced the international ivory trade ban.

To achieve this objective the delegates broke the rules of CITES which the then Secretary General, Eugène Lapointe, warned them against. As a consequence of this warning, a press that had been well primed by the animal rights NGOs at CITES crucified Lapointe for "exceeding his authority". The animal rights NGOs called for Lapointe's dismissal. Shortly after that he was in fact sacked, but he had done nothing wrong. Such is the power of the animal rights activist NGOs at CITES.

At least two official delegates at CITES in 1989 had planned not to go to CITES that year because there was nothing on the agenda that concerned them. They were, however, approached by an animal rights organization that offered to pay their airfares, their hotel accommodations, their food and bar bills, their telephone bills – everything – just so long as they came to CITES and voted in the manner that the NGO prescribed. One delegate said the

NGO had even paid his ladies-of-the-night bill. Both these delegates attended CITES that year. They spent a free two-week-long holiday in a foreign country and they both voted as was required of them by their NGO benefactor.

The United States government in the mid-1980s investigated similar and equally serious corruption allegations at CITES. Nothing, however, could be proved. Many delegates had spoken about such shenanigans but none were, apparently, prepared to give a statement.

What is an animal rightist? How do we identify an animal rightist?

The easiest way to identify an animal rightist is to ask him or her about their support for the third of the WCS's living resource conservation objectives – to wit: “to ensure the sustainable utilisation of species and ecosystems (notably fish and other wildlife, forests and grazing

lands) which support millions of rural communities as well as major industries.” If he or she says no, then he or she is an animal rightist.

Animal rightists say that animals should have the same rights as humans. At CoP 14 they openly lamented that fact, saying that since more than 90% of people eat meat or wear products derived from animals, it should be clear that animals have not been granted equal rights with people. They believe that man has no right to use any animal for his own benefit.

The most dangerous of people are the academic fellow-travellers of the animal rights movement. Some are senior university professors, who, always starved of research funding, accept huge annual sponsorships from animal rights NGOs and undertake ‘research’ on their behalf. The NGO sponsor thereby gains considerable credibility in the eyes of the public because of the pro-animal rights public utter-

ances such academics make on television and in the written media.

He who pays the piper calls the tune.

The question needs to be asked: Why should animal rightists want to be associated with CITES, the purpose of which is to regulate the trade in wild animals and in wild animal products? The answer is transparently clear. They become accredited to CITES in order to stop the trade.

CITES is, therefore, corrupt. It has been corrupted by its own accreditation rules that allow the participation of animal rights oriented NGOs whose purpose in life is to stop man's use of wild animals, including trade. Yet, knowing this, CITES continues to allow these nefarious people to continually throw spanners into the workings of the convention. CITES is now, unequivocally, the most important weapon in the animal rights arsenal.

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The delegates at CITES continuously waste a huge amount of time trying to placate and to make sense of the spoiling objections raised by accredited animal rights NGOs. And more often than not the end result of a debate is a compromise between what the range-states really want to implement and what the animal rights NGOs do not want to happen. This state of affairs is not good enough for an important wildlife management organ like CITES; and member states repeatedly become exasperated as a result. Yet it is their own fault. It is the member states themselves who allowed this sad state of affairs to become established, and who then allow it to continue.

CITES would achieve infinitely more noteworthy objectives if its accredited NGOs all approved of the organization's function – which is to regulate trade in wildlife and wildlife products. Its purpose is not to stop such trade – which is the objective that the animal rightist

NGOs at CITES constantly strive to achieve. It is proposed, therefore, that WFSA should become instrumental in getting the signatories to the convention to agree to change the CITES NGO accreditation rules. Essentially all that is needed is for the CITES signatories to prescribe that NGOs who wish to accredit themselves to CITES should endorse their support for the IUCN's WCS. This ploy worked for the IUCN when animal rights NGOs wished to similarly corrupt that organization from within. There is no reason why it should not work for CITES, too.

It is further proposed that WFSA should point out to each of the CITES member states that allowing animal rights NGOs to operate with impunity within their own national boundaries undermines their own National Conservation Strategies – the objectives of which are the same as those of the World Conservation Strategy. Animal rightist NGOs at the national level

constantly undermine national government endeavours to achieve their own sustainable-use NCS objectives. Animal rights NGOs need to be emasculated at the national level, consequently, just as much as they need to be marginalized at the international level at CITES.

Animal rightists should not be allowed to negatively influence the course of wildlife trade-regulation events at CITES, just because fair play and democratic principle demand that everybody should be allowed to voice their opinions. For exactly the same reasons, paedophiles are not allowed to voice their opinions in our parliaments when legislation is being considered to protect our children from sexual abuse. These two issues are comparable.

Biography

Peter Flack was born in South Africa. He received a law degree from the University of Cape Town, and a DCLS from the University of Cambridge. In 1983 he was admitted to the New York Bar as an Attorney and Counsellor at Law. From his high school days he has been involved in the shooting sports. He also completed military training, initially reaching the rank of Second Lieutenant, and then that of Major in the SA Defence Force. His working life has involved directorships of numerous companies, including in mining and banking.

He is a member of the Rowland Guild of Field Sportsmen, the Wildlife Ranching Association of South Africa, and a life member of the East Cape Game Management Association, the Okavango Wildlife Society, Safari Club International, the Endangered Wildlife Trust, and the KwaZulu-Natal Hunters & Game Conservation Society. He is also a Trustee of WWF South Africa.

Fortunately, I am not a diplomat, a politician or someone beholden to any corporation who may be embarrassed by my comments on this important issue, because it is difficult to speak in a forthright manner about almost anything affecting Africa. The reasons for this are, at one and the same time, both simple and complex and can be summed up by three letters, namely, IST. People who criticize things African are usually labelled with one or other word ending in IST – colonialist, imperialist, socialist, communist – or the worst word of all, “racist”. And, once having been labelled in Africa, it means that no one has to take seriously anything you say because, you see, you are an IST of one kind or another. And race plays such an important role in almost everything affecting Africa that, in dealing with African issues, people tend not to be forthright but beat about the bush in case they may offend someone. However, although my skin is white and I speak English, I am an African, an

eleventh generation African, and I speak from my position as an African.

By way of introduction, I am a lawyer by training, a businessman by profession, a conservationist out of conviction and a passionate hunter and game rancher. During my 61 years on the African continent, I have run businesses in nine African countries and hunted in 15. In other words, out of the 36 countries that make up Sub-Saharan Africa, where 99.9% of all hunting on the African continent takes place, I have travelled widely in over half of them. I do not mean to imply by this that I am an expert. In fact, I am extremely wary of anyone called an expert. After all, an “ex” is a has-been and a “spert” is merely a drip under pressure. In addition, if Africa does not confuse you, then I would like to suggest that, in all likelihood, you may not be properly informed about the Dark Continent. Similarly, if you do not love Africa and hate it at one and



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the same time, then I would also like to suggest that you may not have spent sufficient time nor visited enough places.

Over the last five years I have completed the editing of two major books on hunting in Africa. The first, *African Hunter 11*, I edited in conjunction with Craig Boddington. It took over six years to produce, is over 650 pages in length, was published in 2004 and covered every country in Africa where there was hunting. The second book, *Safari Guide*, is 330 pages in length, was published in 2007 and provided detailed, up-to-date information on hunting in the 11 most popular hunting countries, namely, Benin, Botswana, Cameroon, the Central African Republic, Ethiopia, Mozambique, Namibia, South Africa, Tanzania, Zambia and Zimbabwe. Of these eleven countries, hunting is under some form of threat in all but two, namely, Benin and Namibia, but is under serious threat in four, namely, Botswana, the Cen-

tral African Republic, Tanzania and Zimbabwe.

Against this background, I would like to make some general comments first and then deal with a number of these 11 countries more specifically. Allow me to begin by making the bald statement that, for the last 50 years, African governments have failed their countries, failed their people and failed themselves. All the countries I have visited share basically similar characteristics. First, there is an almost total lack of competent, hardworking, honest and motivating leadership. In one World Bank, IMF and United Nations report after the other, African leader after African leader has been exposed for corruption, theft, nepotism and incompetence on a grand scale. As Chinua Achebe, a Nigerian author, wrote, "There is nothing basically wrong with the Nigerian character. There's nothing wrong with the Nigerian land or climate or water or air or anything else. The Nigerian problem is the unwillingness or

Abstract

Very grave problems confront Africa's wildlife. This paper looks across the 36 countries that comprise Sub-Saharan Africa, where almost all hunting on the African continent takes place. Of the eleven most popular hunting countries, hunting is under threat in all except two and under serious threat in four. The first and biggest area of concern in general is the quality and nature of politics and leadership in the region. Many abuses of power occur, economic and other. Much African infrastructure including air travel is in decline. Various governments are guilty of poor decision-making which does not incorporate good conservation. Because poor rural people are living in such poor conditions, poaching has been an expanding problem. Hunting and photographic safaris as an income source have an increasing attractiveness, but corruption in the management of game numbers and bans on hunting, delivered on no conservation grounds, have led to failure to make the best of opportunities.

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Photo by Emma Cresswell

inability of its leaders to rise to the responsibility, to the challenge of personal example which are the hallmarks of true leadership.” The exceptions to this rule in Africa can be counted on the fingers of one hand.

Certainly, it would not appear as if any of them have read Roosevelt’s words at the entrance to the American Natural History Museum in New York, and I quote, “The nation behaves well if it treats the natural resources as assets which it must turn over to the next generation increased and not impaired in value.”

Secondly, by any measure of development, Africa has gone backwards and rapidly so over the last half century. A mere 30 years after independence, Africa was facing de-industrialization. The only segment of industry that continued to attract investment in Africa was mining and oil and, as another Nigerian writer, the late Ken Saro-Wiwa said, “Of all the

countries who had black gold, Nigeria was the only one that had succeeded in doing absolutely nothing with it.” And here we are talking of some \$280 billion.

Despite huge amounts of aid, food production per capita has fallen in Africa, the only region in the world where this has happened. Debt has mushroomed and as Martin Meredith pointed out in his work, *The State of Africa - A History of 50 years of Independence*:

The impact on ordinary life was calamitous. Hospitals and clinics ran short of medicines and equipment; schools lacked textbooks; factories closed through lack of raw materials or spare parts for machinery; shops were plagued by shortages; electricity supplies were erratic; telephone systems broke down; unemployment soared; living standards plummeted. The African

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child death rate is two thirds greater than in South Asia, three times higher than in Latin America and 25 times higher than in the developed world. In about one third of African countries, less than half of the child population received primary education. In only six countries are more than 20% of the age group attending secondary school.

The then President of the World Bank described things this way:

The development of many Sub-Sahara African countries has been quite unnecessarily constrained by their political systems. Africans can and must tackle this issue..... too many African countries have failed to produce political and economic systems in which development can flourish..... Many of Africa's political leaders have been more con-

cerned about retaining power than about the long-term development interests of their people.

The truth of this statement is amply demonstrated by the fact that, by 1990, not a single African head of state had allowed himself to be voted out of office in over three decades. Of some 150 heads of state who had ruled African states, only six had voluntarily relinquished power and then after occupying their positions for over twenty years in each case. Since 1990, only seven others have joined this select group of whom two, of course, are Nelson Mandela and Thabo Mbeki.

While most African leaders have sat in the capitals of their countries with their snouts firmly buried in the trough, the infrastructure of their countries has collapsed around them. Working off the age old principles of, first, I'm all right, Jack, and, second, the devil take the hindmost,

Abstract (continued)

Despite many severe problems related to conservation and legislation, some of which are specifically described in the paper, among the various African countries there are also a few examples of good management and these are included. The paper calls for support of conservation measures including managed hunting that will deliver direct benefits to inhabitants at local level, and argues this is the key to success.

most of them have squandered their countries' assets, treated their central banks as if they were their personal cheque accounts and been far more concerned with overseas travel and shopping than anything else. Today, most of these leaders are effectively only the mayors of the capital cities. The road, rail and port systems have failed or are failing through lack of maintenance and investment. International flights to and from these countries have become ever less frequent. As the communication

systems have broken down, news from outlying rural areas has become increasingly scarce and unreliable. Effective veterinary, hospital and teaching services to these areas have broken down and the people are, more and more, left to their own devices and desires.

Whenever I have gone into the backwaters of Africa during my many hunts I have found the same thing – empty schools because the teachers have not been paid; empty clinics because the nursing staff have not been paid; full police stations because the policemen have guns and pay themselves by extorting bribes from their fellow citizens.

The rural people can neither deliver their products to market nor obtain supplies of fresh meat and produce in return as the necessary infrastructure has collapsed. They have gone back to subsistence farming and, in areas where the tsetse fly is rife, as they cannot buy

meat or keep domestic livestock; they have resorted to poaching for protein. Along the coast and lake shorelines, poaching is reduced as people's protein needs are often supplied by fish, but, as population densities in these areas are high for this very reason, habitat destruction is also the greatest. Similarly, as fewer and fewer agricultural products reach the towns, the ever increasing populations there provide a ready market for commercially poached bushmeat which commands a higher price than the equally scarce beef.

As the famous author Paul Theroux wrote in his book *Dark Star Safari*, published in 2003, after travelling from Cairo to Cape Town using only public transport, "The strong impression I had was not that the places I knew were worse off but that they had not changed at all. After 40 years of experimentation with various ideologies and industries they were back to farming by hand and pounding maize into

flour, living on porridge and beans. Nothing was new except that there were many more people, grubbier buildings, more litter, fewer trees, more poachers, less game."

Giorgio Grasselli, in his award winning book *African Sunsets*, published in 2005, writes about the time he worked for ten years in north central CAR, in the area bordering the Bangoran River that belonged to the Northern Region Development Program (known in French as PDRN). At that time, everywhere else in CAR wildlife was increasingly under threat, while this area represented an extreme exception in that wild animals were actually increasing in number.

A cornerstone of the program adopted by the PDRN in the region was similar to the CAMP-FIRE project originally developed in Zimbabwe. People of the villages in the selected area were made the sole beneficiaries of the

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resources of the area, and hence it was in their interests to collaborate in protecting and increasing these resources.

Grasselli wrote that, “Initially, it worked very well. After five years the project had produced more than satisfactory results, demonstrating to the most sceptical that the goal could be achieved ... It has shown Central Africans how they need to operate in order to achieve these results....” Consequently, it may be that the PDRN will withdraw in the not-too-distant future, completely handing over responsibility to the Central Africans to continue on their own, together with the buildings, the mechanical and other equipment as well as the logistical facilities. When, and if, that happens, I fear that will bring total collapse on this expensive but exciting and positive experiment.

Two years ago I hunted in the same area that Grasselli described. His worst fears have been

realized and the area is the palest shadow of its former self. After 21 days of hard hunting, I saw a grand total of three giant eland herds containing only one shootable bull. A friend who accompanied me managed to shoot a mediocre bull on the nineteenth day while I went home empty-handed.

In the month after I left, on the borders of the concession in which I hunted, the poachers ambushed a white Land Cruiser, similar to that driven by the two-man, regional anti-poaching squad and shot and killed the driver, a French camp manager called Daniel Breyton, as well as a woman on the back of the truck, and wounded three others. No steps have been taken to apprehend the poachers responsible for the murders.

It is simply not possible for this level of poaching impunity to exist without the connivance of major political figures in both the Central African

Republic and its neighbour, Sudan, as this is where almost all the poachers come from.

These failures of leadership and government have had a number of unintended consequences. For example, filling this vacuum there has been extensive foreign funding of Islam in many countries bordering the Sahara which has led to the establishment of chains of mosques throughout the region (even in very small hamlets). This, in turn, has created a form of parallel government and, for example, although I had permission from the national government in Chad to hunt throughout the country, I nevertheless had to secure permission from the Imam of the local mosque in each area where I hunted before I could do so. On the other hand, police and government officials demand bribes quite openly and, in fact, feel free to threaten those who do not pay them. For example, the regional director of wildlife in south eastern Cameroon arrived in



our hunting camp, announced he was going on holiday and needed money. He explained in words of one syllable that, if we did not pay him the equivalent of \$800, none of our trophies would be granted export permits. Commercial bushmeat poachers conduct their activities with complete impunity as, in many instances; they are supplied with arms and ammunition by the local police and, within days of being caught and handed over to the police, are back poaching with the same firearms. In southeastern Cameroon my guide was attacked by a poacher with a machete in front of a policeman. He shot the poacher in self defence and was subsequently arrested and charged with murder. A little while later, his camp was burned down, including his vehicles. To date, no one has been prosecuted for these crimes. It is no wonder, then, that four hunting camps in Cameroon have been attacked and robbed over the last three years. In a nutshell, there is neither law nor order in

Cameroon, one of the two main hunting countries in West Africa.

Cameroon is probably best known in Europe for the performance of its national soccer team at the World Cup. However, Cameroon competes even more effectively for another trophy. Transparency International has awarded Cameroon the trophy for the most corrupt country in the world three times in the last 11 years and, for almost 30 years, the President, Paul Biya, has ruled an oil rich country while allowing very little of the money to be spent on infrastructure let alone the conservation of its wildlife.

In Tanzania, Edmund Severre, the head of the Tanzanian Game Department, in a widely disseminated e-mail, was accused of corruption on a grand scale in the allocation of hunting concessions. Most of these concessions have been handed out as political favours, sometimes to people who do not even know where

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they are. In one of the worst cases of which I am personally aware, the concession holder sits in Dar-es Salaam, never visits the concession and not only sells the same quota to a number of different safari outfitters at a huge profit but allows commercial bushmeat poachers to plunder it in the off-season using night shooting teams and cold trucks to maximize the game off-take. It goes without saying that this once fabulous concession, where Ruark and Selby hunted, is on the verge of extinction.

Mr. Severre's response to these accusations was to increase the fees paid for such concessions by a factor of six as well as to increase the trophy fees sometimes threefold. Although he has since been removed from office and made the head of the once famous Mweka Wildlife College, and concession fees have been increased a little, the main burden has been passed on to hunters in the form of dramatically increased trophy fees, in most cases

now higher than even the Tanzanian government originally proposed.

A similar policy has recently been adopted by the Ethiopian government. Owing to their own incompetence, they have not increased trophy fees since 1995 but decided to make up for it in one fell swoop and, in March of this year, increased trophy fees threefold in some cases and government charges by \$200 per day. In other words, the trophy fees for animals such as a mountain nyala and Menelik's bushbuck increased to \$15,000 and \$6,000 respectively. Although these increases have since been temporarily withdrawn, given the now typical lack of consultation on these matters we can safely assume that it will only be a matter of time before they are reinstated. Since this announcement, I have heard of three hunt bookings being cancelled in Ethiopia as it adds some \$18,200 to a typical mountain nyala hunt which now costs some \$75,000.

In Zambia, hunting has been used as a political football for years. Who will ever forget the year at the Safari Club International convention in Reno when, while the Zambian government delegation were there promoting hunting in their country, the selfsame government cancelled hunting without notice or warning to anyone. Although hunting was subsequently reopened many years later (during which time many famous concessions were poached almost into extinction), after a substantially free, fair and open tender process, a number of the shysters who lost out have since contrived to make a comeback and secure concessions. They do nothing to conserve the game in their concessions but sit on their backsides in Lusaka and, effectively, collect a toll from anyone wishing to hunt on the concession which toll, of course, is borne only by the visiting hunter as the locals continue to poach unhindered.

In 2007, hunting was officially opened on private land in the southeast of Gabon after a hiatus of over 20 years. After a highly successful first season, government officials stepped in and demanded that all the trophy fees be paid to government, that only local citizens could act as professional hunters and that locals be allowed to hunt on the private land. No further hunting has been conducted in Gabon.

Zimbabwe is almost too painful to talk about. Almost all of the game ranches have been expropriated. Consider the case of one of my friends, a veterinary surgeon. He had developed his cattle and game ranch from virgin bush. He built his home with his own two hands, including making his own bricks. His pride and joy was a herd of 120 sable antelope which he had carefully built up over twenty years. Within twelve months of his being illegally forced off his land, not one animal was left and, today, the land lies fallow.

The borehole pumps and piping have been ripped up, the fences have been pulled down and the house stripped of all its fixtures and fittings and of anything that resembled wood.

Within the once famous national parks, wardens and game rangers have been conducting commercial bushmeat poaching operations on a large scale and I have been told, personally, by the owner of a major safari outfitter that almost every big elephant that has been taken in recent times in that country has been shot within a national park, although the requisite forms have been changed to indicate a neighbouring area.

In my own country, South Africa, for the last 50 years, the game ranching industry has increased off a negligible base to over 9000 game ranches, covering nearly 17 million hectares (42 million acres) of land under game. This is nearly three times the 6.4 million hectares of land covered by all provincial and

national parks put together. From a situation in 1960 where the blue buck and quagga were all already extinct and four other species, bontebok, Cape mountain zebra, white rhinoceros and black wildebeest, were following hot on their heels, our country now has more game than at any time in living memory. What is more, those animals that have been hunted most assiduously, have recovered best and, today, there are over 12,000 white rhinoceroses and 24,000 black wildebeest whereas Cape mountain zebra, which are protected, barely number a little over a thousand and bontebok, which have only been huntable for ten years or so, number less than 5,000.

Van Schalkwyk, the minister for the Department of the Environment and Tourism, who allegedly sacrificed his own political party on the altar of his personal ambition in order to secure a cabinet seat for himself, has compounded the problem and recently passed a

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law which, amongst other things, not only makes a black wildebeest a threatened or protected species but requires that they not be kept on the same property as blue wildebeest, basing this decision on a so-called departmental expert who has no, and I repeat no, scientific evidence to support his contention that these two species interbreed. I have had herds of both species on my game ranch in the Eastern Cape for nearly 20 years, and in that entire time there has not been the vaguest hint of any form of interbreeding whatsoever. Nevertheless, written permission, subject to the payment of a fee, of course, is now required in advance before any black wildebeest may be shot. In my own case it took 17 telephone calls to a variety of semi-literate women, over a period of three weeks, before I could obtain this permission. It is no wonder, therefore, that game ranchers have already started culling their black wildebeest herds in substantial numbers.

This must be seen against the background of South Africa today. As Tim Cohen, senior journalist for Business Day, South Africa's premier business newspaper, wrote in April of this year:

"The dropping of charges against ANC President Jacob Zuma.....demarcates the moment the South African dream ended..... The hard truth is we live in a quasi-totalitarian state.... Single-party dominant states share characteristics with single-person dominant states, otherwise known as dictatorships..... Rule number one is that one set of laws applies to ordinary people and another to higher echelons of the political class or the dictator himself. I think this is part of the reason why ordinary people, and particularly business, cleave to parties in single party dominant governments, even though they know in their hearts what they are doing is wrong. They do it

because the proposition made to them is so obvious and plain: work for us and the set of laws applicable to us will apply to you too. Otherwise, you are subject to the laws applicable to, well, the subjects.

Some years ago I irritated a fellow dinner guest who was the then CEO of a major African photographic safari company. In his anger, he blurted out that when Ian Khama became president of Botswana he would close all hunting in the country. I was not sure whether to believe him or not but, since then, Khama has become president, has gone on record as saying that he hates hunting, has already banned the hunting of certain species, including lions despite scientific evidence showing that lion numbers in hunting concessions are healthy, and is requiring hunting companies to conduct expensive environmental impact assessments to show that hunting is



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a better land usage than photographic safaris if they want to retain their concessions. I know at least one American-owned, major safari outfitting company, which has been in the country for many years, that will not attempt to renew its concession in Botswana next year. This situation could endure for at least another seven years during which time hunting in Botswana will remain under severe threat.

Not all the threats to the future of hunting in Africa are home grown. The US Department of the Interior, Fish and Wildlife Service seems to play a particularly destructive role which is very difficult for Africans to understand. For example, although admitting in writing that sport hunting could have a positive effect on elephant conservation, it has refused to allow sport hunted ivory to be imported from Mozambique. The reason given is that Mozambique has failed to establish a satisfactory management program for elephant

throughout the country. As John Jackson of Conservation Force has stated, "This unprecedented requirement has no regulatory basis" and the minuscule elephant quota in Mozambique of only 12 animals indicates the extreme resistance of this department towards the importation of trophies from any new area. Jackson goes on to add that this attitude is checking international wildlife conservation and is an embarrassment to the US around the world. A similar final denial for exactly the same reason was made in respect of sport-hunted elephant trophies from Cameroon from 1998 and onwards. According to Jackson, these denials reflect an attitude and unlawful policy, not science.

Similarly, in February this year, the Department made a final administrative decision to deny the importation of Namibian cheetah despite the fact that only a few years ago the Assistant Secretary of the Interior represented

that these imports were a sure thing and an easy call. As was pointed out in African Indaba, these cheetah were taken on a CITES quota from the best managed cheetah population in the world and the Department's ruling puts an end to a 17-year effort by the world conservation community, including the Cat Specialist Group of the IUCN, to allow the importation of cheetah trophies into the United States from Namibia. In my opinion, this Department has become one of the single greatest threats militating against the conservation of wildlife in Africa. Americans represent the largest group of foreign hunters to Africa, and, by prohibiting them from importing particular trophies, the Department is denying African communities the very thing that they need to conserve the animals in question. To insist on doing so, despite the fact that the opposite course of conduct has been recommended by bodies with impeccable conservation reputations such as CITES and IUCN, not only flies

in the face of science but indicates a level of ill will towards Africa, hunting and its wildlife that is impossible to understand.

Not content with this, however, in recent times the Department changed the requirements for the importation of trophies from Africa into the United States without discussing it with or consulting African countries or in any way trying to understand whether or not African countries were capable of abiding by these unilateral requirements. Shipments of hundreds of trophies were delayed and some destroyed as a result.

In amongst all this doom and gloom, there are four small rays of light. The brightest ray is emitted by Namibia and is best summed up by the statement from Dr Kalumbi Shangula, the permanent secretary for the ministry of the environment and tourism. He said in a recent speech:

The ministry sees trophy hunting as an effective way of harvesting wildlife populations in a sustainable manner and removing animals that are too old to reproduce from wildlife populations whilst providing the maximum revenue from the wildlife resource. Trophy hunting can play a beneficial role in Namibia's rural areas as a means of creating employment, empowering formerly disadvantaged Namibians, contributing to the management and control of human/wildlife conflicts and providing meat for distribution to traditional authorities and rural communities.

Chief Joseph Mayuni, chairman of the Mayuni Conservancy, made a presentation on community-based wildlife management in Strasbourg recently. He said that conservancies in Namibia are dual tools for reducing poverty and preserving natural resources and wildlife

in rural areas. He added that the community-based natural resources management program has led to communities appreciating and conserving their natural resources because they derive benefits from them including the reduction of unemployment and poverty by managing and maintaining their wildlife.

Namibia is one of the few countries in Africa where there seems to be a clear understanding of the conclusion reached by the Fourth World Conservation Congress of the International Union for the Conservation of Nature in October, 2008, namely that "Sustainable hunting tourism is not the only solution to the conservation of species, but it has to be considered as one of the most successful and economically viable approaches to the long-term preservation of the animal population."

Personally, I have been most impressed with both the levels of overt cooperation between

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the Namibian government and the hunting industry but, more specifically, with the manner in which the Namibian government actively promotes and markets hunting in that country. That these efforts have been successful can be seen in the doubling of the numbers of overseas hunters travelling to Namibia each year from a little over 3,000 ten years ago to nearly 7,000 last year.

The second ray of light is Uganda. Hunting was closed there in 1979, the year that the evil, corrupt, incompetent crook, Idi Dada Amin, was expelled from the country and sent into exile in Saudi Arabia by the Tanzanian army. It was tentatively reopened in 2002 by the Uganda Wildlife Authority. After taking six years to evaluate progress (which does seem an inordinate amount of time), a second concession was granted in the country last year and, this year, the number of concessions granted was almost tripled

although only the original two have been awarded animal quotas which can be hunted. Unfortunately, corruption has already made its presence felt and, not only are cabinet ministers climbing onto the bandwagon and demanding concessions for themselves, but the original concession holder, who has done a sterling job, now runs the risk of losing at least half of his concession to someone dubious who has previously been caught poaching in a national park.

Third, this year Ghana issued hunting licences to the first group of overseas trophy hunters in living memory, including the author. In addition, legislation is currently before parliament which would seek to create game ranching in the country on similar lines to that which exists in South Africa. The Wildlife Division of the Forestry Commission has produced a briefing document

on Collaborative Resource Management in response to the explosive growth in commercial bushmeat poaching which it estimates to be worth between \$200 and \$300 million per annum. The report concedes that the trade in wildlife as bushmeat is now an integral part of Ghanaian culture and it is not realistic, feasible or desirable to stop people using wildlife. It goes on to add, however:

People will manage wildlife and other resources when they are provided sufficient incentive to do so. This incentive is primarily an economic one and direct financial benefit provides one of the strongest incentives for farmers. People who live with and are responsible for the management of natural resources must be the primary beneficiaries of that management effort..... If farmers realize financial



benefits from natural resources they will look after them.

Finally, of all the other countries, Mozambique gives me the most hope. In 1998 the government of Mozambique entered into an agreement with SGDRN and established a partnership between the public and private sector in terms of which the government retained ownership of the land and wildlife resources while granting exclusive rights to manage and develop the reserve to SGDRN. Anabela Rodrigues and her team have established a strategic plan for the 42,000 square kilometre reserve based on photographic and hunting tourism as the major sources of revenue. They have divided the reserve into 17 management areas and allocated them under long-term contracts to the private sector to develop mutual partnerships for biodiversity conservation and sustainable use. They have

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demonstrated conclusively that hunting and photographic safaris are not mutually exclusive, in contrast to the attitude adopted by Botswana, but can and should exist, the one complementing the other.

I have loved with a passion the years of hunting that I have had in Africa. They have shaped and guided my life and I very much want them to continue but there will only be a future for hunting in Africa if those who live closest to wildlife can see direct economic benefits from the conservation of game. If not, the opposite will come true. Anyone or anything which ensures that such benefits reach the peasant in the bush (as opposed to the man in the street) should be encouraged. Anyone or anything which proposes that any such benefits be directed towards or by any African central government authority should be discouraged with all the force and effort that we hunters can muster

and not only behind the scenes where most of us have worked in the past but up front and via carefully thought-out, well financed, public relations strategies.

In conclusion, I would like to state the words of a great man I have quoted earlier, Theodore Roosevelt:

Game laws should be drawn primarily in the interests of the whole people, keeping steadily in mind certain facts that ought to be self evident to everyone above the intellectual level of those well-meaning persons who apparently think that all shooting is wrong and that man could continue to exist if all wild animals were allowed to increase unchecked.... As in most other matters, it is only the happy mean which is healthy and rational. There should be certain sanctuaries

and nurseries where game can live and breed absolutely unmolested; and elsewhere the laws should so far as possible provide for the continued existence of the game in sufficient numbers to allow a reasonable amount of hunting on fair terms to any hardy and vigorous man fond of the sport, and yet not in sufficient numbers to jeopardize the interests of the actual settler, the tiller of the soil, the man whose well-being should be the prime object to be kept in mind by every statesman. Game butchery is as objectionable as any other form of wanton cruelty or barbarity; but to protest against all hunting of game is a sign of softness of head, not of soundness of heart.

Biography

Mark Duda holds a Master's degree from Yale University in natural resource policy and planning. He is Executive Director of Responsive Management, a public opinion and attitude survey research firm specializing in natural resource and outdoor recreation issues. He has directed more than 500 quantitative surveys and hundreds of focus groups on hunting and sport shooting participation, recruitment and retention. Most recently, Responsive Management partnered with the National Shooting Sports Foundation (NSSF) to produce one of the largest and most comprehensive studies ever conducted on hunting and sport shooting participation in the U.S.: *The Future of Hunting and the Shooting Sports: Research-Based Recruitment and Retention Strategies*. This large-scale project focuses on developing actionable, research-based hunter and sport shooter recruitment and retention strategies and became the impetus for *Task Force 20/20*, currently the largest recruitment and retention effort under way in the U.S.

Mark Duda founded Responsive Management in 1990 and has been conducting textbook-standard research for over 20 years. His work has been featured in many of the nation's top media, including *Newsweek*, *The Washington Times*, *The Wall Street Journal*, *The New York Times*, *CNN*, and on the front pages of *The Washington Post* and *USA Today*.

There are many reasons hunting and sport shooting participation is important to the global economy. In America alone, 12.5 million Americans 16 years and older hunted in 2006 (U.S. Fish and Wildlife Service, U.S. Census Bureau, 2007), and almost 19 million participate in the shooting sports in any given year (National Sporting Goods Association, 2008). This large constituency infuses billions of dollars into the economy each year, and sportsmen's money is integral to game management, species protection, habitat conservation and the U.S. economy as a whole. With an overall US\$66 billion impact on the nation's economy (Southwick Associates, 2007), hunting and the shooting sports provide more than just a boost to the sportsman's quality of life, they support economic needs of millions of people in the United States.

A closer look at one sportsman's expenditures illustrates the wide economic impact of hunting

and demonstrates the far-reaching effect of recreational spending in the United States. Mr. R from a small town in rural Virginia is planning for the hunting season. He has been hunting almost every year since he was in his early teens on land behind his family's farm, where he has had a tree stand for over 15 years. This year, he plans to replace his tree stand with a newer, safer model. In anticipation, Mr. R makes his first trip to a local outfitter 30 miles away, where he purchases a ThermoLogic hunting jacket, a few hand warmers, a bottle of scent killer, and a buck-rut grunt call, and also prices several tree stand models he is considering. A week before the start of hunting season, Mr. R returns to the local outfitter and purchases the Ameristep Team Realtree Skyscraper Ladder Stand, Thinsulate thermal gloves, deer attractant, gun cleaning supplies, and a box of standard 150-grain jacketed cartridges for his Remington 600 Mohawk .308 to prepare for his weekend hunting trip.



The Importance of Hunting and the Shooting Sports on State, National and Global Economies*

Mark Damian Duda,¹ Martin Jones,² Andrea Criscione,³ Amanda Ritchie,⁴
Responsive Management, Harrisonburg, VA, USA

Mr. R's purchases generate profit for the local retail stores, as well as the product manufacturers and suppliers headquartered in Pennsylvania, Michigan and Nebraska. However, Mr. R's money extends far beyond his purchases at the local outfitter; it helps companies buy supplies and pay employees, and funds manufacturing and delivery. Including what Mr. R spends on these various trips to the local outfitter and what he spends at the local service station on snacks and fuel, Mr. R's expenditures quickly add up. Multiply these expenditures by 12.5 million hunters and 19 million sport shooters in the United States, and the major economic boost by sportsmen is clear. The money spent on hunting trips res-

onates nationally, from oilfield workers in the west to wheat growers in the plains, in addition to all of their employees and suppliers everywhere (Southwick Associates, 2002). The ripple effect of sportsmen's money has a substantial impact on community economic development, game management and wildlife and habitat conservation.

Hunters boost national and local economies in the United States

According to recent research (Southwick Associates, 2007), U.S. hunters spend US\$24.7 billion in retail sales and generate US\$9.2 billion in local, state, and federal tax revenue. In

Abstract

There are many reasons hunting and sport shooting participation is important to the global economy. In America alone, 12.5 million Americans of 16 years and older hunted in 2006 (USFWS-U.S. Census 2007), and almost 19 million participate in the shooting sports in any given year (NSGA 2007). This large constituency infuses billions of dollars into the economy each year and sportsmen's money is integral to game management, species protection, habitat conservation, and the U.S. economy as a whole.

Responsive Management has completed extensive research to estimate expenditures related to the economic impact of hunting and sport shooting in several individual states and nationally. This paper will present research from the *National Survey on Fishing, Hunting, and Wildlife-Associated Recreation*, Responsive Management's own extensive research, and several international studies on hunting and shooting sports expenditures and the impact these activities have on individual state, national, and global economies.

* The authors would like to thank Rob Southwick of Southwick Associates for providing economic information for this paper (see Southwick Associates, 2002, 2007).

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fact, sales in hunting and the shooting sports industry appear to be faring better in the declining U.S. economy than any other sport. According to a recently released report on the sporting goods market (National Sporting Goods Association, 2009), hunting and

firearms equipment sales experienced the greatest percentage increase among equipment categories with sales exceeding US\$1 billion, with a rise from US\$3.9 billion in 2007 to US\$4.6 billion in 2008. Although the overall sales of sporting footwear, clothing and equipment fell 1% in 2008, the sale of hunting and firearms equipment increased by 16% (National Sporting Goods Association, 2009).

In addition to sales and tax revenue, hunters' expenditures contribute to US\$20.9 billion in salaries, wages and business owners' incomes; support 592,944 jobs nationwide; and have an overall US\$66 billion economic impact in the United States (Southwick Associates, 2007). This *total multiplier effect* explains the total economic activity resulting from sportsmen's expenditures. The best way to explain this number is to reverse it. If people no longer spent on hunting and fishing and did not spend this money elsewhere, state and

U.S. economies would shrink by the amounts reported in the total multiplier effect. The impact on salaries, wages and income includes the total pay cheques and business profits earned as a result of sportsmen's expenditures. These go to employees and companies that directly support sportsmen and to people such as the accountant in Chicago whose client supplied food to restaurants that served sportsmen in Florida.

Table 1 presents the economic contributions from hunting, which includes the direct expenditures and the ripple effect through the economy of those direct expenditures. The estimates show that the hunting industry produces almost US\$5 billion in federal taxes annually (Southwick Associates, 2007).

The Importance of Hunting and the Shooting Sports on State, National and Global Economies*

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State	Jobs	Retail Sales (US\$)	Total Multiplier Effect (US\$)	Salaries, Wages, and Income (US\$)	State and Local Taxes (US\$)	Federal Taxes (US\$)
Alabama	17,487	\$846,607,925.00	\$1,388,634,035.00	\$426,934,839.00	\$82,708,487.00	\$95,576,324.00
Alaska	2,020	\$132,314,335.00	\$188,610,428.00	\$59,643,699.00	\$13,593,169.00	\$12,635,474.00
Arizona	4,788	\$325,858,039.00	\$554,551,807.00	\$173,497,561.00	\$30,995,547.00	\$37,692,546.00
Arkansas	17,823	\$877,430,173.00	\$1,376,253,610.00	\$391,642,245.00	\$99,246,297.00	\$99,550,595.00
California	13,774	\$926,577,638.00	\$1,645,120,235.00	\$533,749,531.00	\$123,535,170.00	\$124,988,347.00
Colorado	9,258	\$464,044,078.00	\$817,261,886.00	\$297,081,040.00	\$51,568,940.00	\$68,404,422.00
Connecticut	1,144	\$70,104,010.00	\$114,601,486.00	\$39,177,572.00	\$8,049,224.00	\$10,980,062.00
Delaware	880	\$63,837,799.00	\$87,026,594.00	\$29,855,196.00	\$5,775,237.00	\$6,556,529.00
Florida	10,313	\$402,478,561.00	\$702,684,027.00	\$251,851,225.00	\$43,599,095.00	\$58,193,793.00
Georgia	14,714	\$679,541,843.00	\$1,128,226,211.00	\$367,110,061.00	\$82,118,364.00	\$86,762,722.00
Hawaii	517	\$29,533,971.00	\$39,676,045.00	\$13,539,833.00	\$2,548,882.00	\$2,792,950.00
Idaho	5,713	\$284,030,006.00	\$441,053,831.00	\$159,210,324.00	\$33,442,787.00	\$32,319,322.00
Illinois	8,421	\$388,881,335.00	\$693,475,942.00	\$236,920,109.00	\$49,093,240.00	\$57,675,177.00
Indiana	5,132	\$265,048,066.00	\$436,644,153.00	\$138,573,361.00	\$30,248,922.00	\$32,601,862.00
Iowa	6,231	\$299,398,609.00	\$469,829,900.00	\$150,787,736.00	\$32,376,135.00	\$33,847,420.00
Kansas	5,864	\$270,981,258.00	\$464,436,938.00	\$142,771,519.00	\$29,695,037.00	\$32,210,464.00
Kentucky	8,400	\$439,471,631.00	\$694,427,486.00	\$205,826,351.00	\$52,596,675.00	\$48,438,294.00
Louisiana	13,084	\$594,435,590.00	\$975,249,784.00	\$306,067,276.00	\$62,248,488.00	\$62,343,675.00
Maine	4,509	\$280,831,620.00	\$367,315,113.00	\$113,845,092.00	\$30,418,808.00	\$26,408,402.00
Maryland	4,450	\$257,316,836.00	\$424,917,873.00	\$153,019,503.00	\$32,890,971.00	\$35,324,190.00

Table I. Economic Contributions of Hunting to the U.S. Economy

State	Jobs	Retail Sales (US\$)	Total Multiplier Effect (US\$)	Salaries, Wages, and Income (US\$)	State and Local Taxes (US\$)	Federal Taxes (US\$)
Massachusetts	1,284	\$71,125,154.00	\$121,140,373.00	\$45,196,577.00	\$8,148,282.00	\$11,336,689.00
Michigan	19,560	\$1,334,000,075.00	\$2,296,402,842.00	\$690,135,969.00	\$153,506,053.00	\$161,443,647.00
Minnesota	11,911	\$637,270,173.00	\$1,099,730,694	\$353,609,923.00	\$75,882,194.00	\$86,158,974.00
Mississippi	12,094	\$562,674,243.00	\$863,586,448.00	\$238,776,899.00	\$65,771,581.00	\$52,887,207.00
Missouri	24,505	\$1,227,087,240.00	\$2,085,985,187.00	\$628,068,032.00	\$147,006,353.00	\$149,834,435.00
Montana	7,005	\$405,817,077.00	\$608,276,252.00	\$161,217,991.00	\$31,547,133.00	\$37,975,030.00
Nebraska	5,163	\$259,231,163.00	\$417,304,662.00	\$139,695,653.00	\$31,515,062.00	\$29,706,444.00
Nevada	1,854	\$145,208,313.00	\$223,547,853.00	\$65,886,230.00	\$11,717,320.00	\$15,183,041.00
New Hampshire	1,546	\$82,889,961.00	\$132,378,626.00	\$47,988,010.00	\$8,600,731.00	\$12,114,358.00
New Jersey	2,746	\$193,411,974.00	\$325,384,572.00	\$109,864,454.00	\$19,568,592.00	\$28,099,285.00
New Mexico	3,740	\$183,607,572.00	\$300,648,082.00	\$97,056,936.00	\$20,259,416.00	\$19,692,331.00
New York	11,438	\$788,091,714.00	\$1,340,205,905.00	\$448,518,078.00	\$112,542,656.00	\$111,636,896.00
North Carolina	8,851	\$511,546,347.00	\$856,474,235.00	\$251,130,695.00	\$48,743,257.00	\$58,037,991.00
North Dakota	2,996	\$132,694,072.00	\$211,087,266.00	\$61,290,560.00	\$11,581,923.00	\$13,411,694.00
Ohio	13,762	\$859,321,607.00	\$1,488,555,466.00	\$437,681,782.00	\$90,731,302.00	\$94,813,442.00
Oklahoma	9,871	\$492,065,447.00	\$843,349,642.00	\$251,611,907.00	\$49,499,185.00	\$53,637,675.00
Oregon	8,913	\$505,874,654.00	\$827,488,316.00	\$259,238,784.00	\$54,601,132.00	\$61,151,103.00
Pennsylvania	28,041	\$1,734,082,321.00	\$3,029,151,411.00	\$932,666,740.00	\$214,118,683.00	\$228,704,030.00
Rhode Island	187	\$10,232,988.00	\$12,765,911.00	\$4,333,917.00	\$937,197.00	\$1,070,504.00
South Carolina	7,238	\$288,011,510.00	\$440,130,049.00	\$151,444,817.00	\$32,239,827.00	\$32,934,599.00

Table I. Economic Contributions of Hunting to the U.S. Economy (continued)

State	Jobs	Retail Sales (US\$)	Total Multiplier Effect (US\$)	Salaries, Wages, and Income (US\$)	State and Local Taxes (US\$)	Federal Taxes (US\$)
South Dakota	4,514	\$196,063,154.00	\$303,570,715.00	\$99,907,412.00	\$19,981,361.00	\$21,773,429.00
Tennessee	10,126	\$588,423,673.00	\$1,076,653,687.00	\$308,755,396.00	\$49,034,965.00	\$66,784,875.00
Texas	46,917	\$2,334,329,825.00	\$4,117,303,334.00	\$1,339,454,869.00	\$262,226,970.00	\$310,097,641.00
Utah	6,487	\$293,808,223.00	\$523,147,903.00	\$163,059,713.00	\$31,107,631.00	\$34,094,522.00
Vermont	2,414	\$190,714,942.00	\$269,390,116.00	\$81,347,118.00	\$14,225,738.00	\$18,111,667.00
Virginia	9,376	\$528,578,198.00	\$880,166,592.00	\$287,465,157.00	\$53,304,750.00	\$67,988,705.00
Washington	5,595	\$394,021,171.00	\$628,263,974.00	\$195,712,308.00	\$35,202,901.00	\$46,410,817.00
West Virginia	6,337	\$302,413,973.00	\$453,467,141.00	\$133,145,185.00	\$29,666,372.00	\$31,616,573.00
Wisconsin	25,298	\$1,394,050,097.00	\$2,197,983,821.00	\$604,107,185.00	\$197,141,707.00	\$153,773,668.00
Wyoming	3,071	\$146,801,378.00	\$225,131,920.00	\$77,061,651.00	\$13,361,942.00	\$17,403,175.00
United States**	592,944	\$24,692,171,564.00	\$66,013,310,496.00	\$20,939,838,614.00	\$4,178,957,748.00	\$4,951,442,274.00

Table 1. Economic Contributions of Hunting to the U.S. Economy (continued)

Source: Southwick Associates, 2007.

Note. The sum of the states is less than the U.S. total. The difference comes from an expenditure that, after it leaves the state economy, continues to grow and have further impacts at the regional and national levels. A simple sum of state totals underestimates the impact of expenditures at the regional and national levels.

In the United States, hunting equipment and land leases and ownership constitute large portions of expenditures, but special equipment also accounts for a substantial portion. It is interesting to note that licences, stamps, tags and permits make up a small percentage of ex-

penditures (Figures 1 and 2), despite the fact that many sportsmen complain that they are too costly (U.S. Fish and Wildlife Service, U.S. Census Bureau, 2007).

Hunters' Expenditures by Type of Expenditure (in billions)

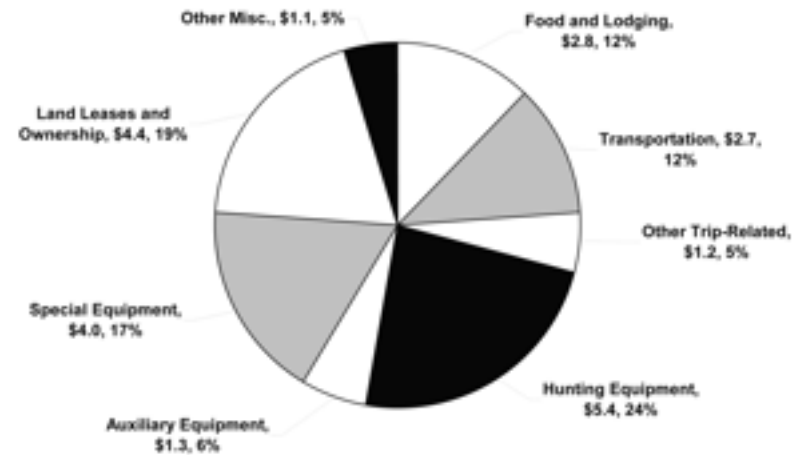


Figure 1. Hunters' Detailed Expenditures by Type of Expenditure

Source: U.S. Fish and Wildlife Service/U.S. Census Bureau, 2007.

Note: Amounts are shown in US\$.

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The mean for annual hunting expenditures by hunters is US\$1,884 per spender (97% of hunters spend on something in any given year) (U.S. Fish and Wildlife Service, U.S. Census Bureau, 2007). Spending totals

Licenses, stamps, tags, and permits as portion of total hunting expenditures.

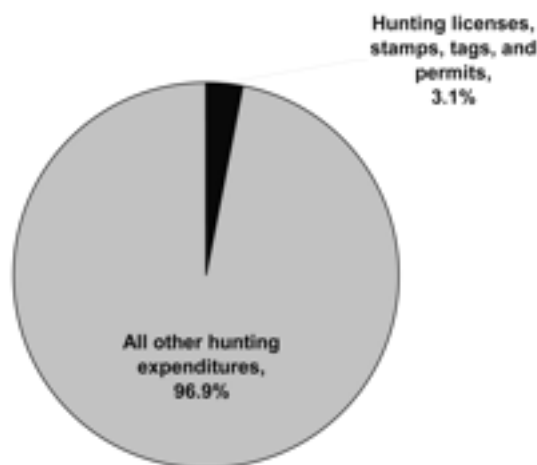


Figure 2. Portion of Total Hunting Expenditures Composed of Licences, Stamps, Tags and Permits

Source: U.S. Fish and Wildlife Service/U.S. Census Bureau, 2007.

over US\$10 billion annually going into the cost of equipment and firearms; over US\$6 billion is spent on food, lodging, transportation and other trip-related costs; and roughly US\$5.8 billion is for land leases, licence and stamp fees, and membership dues (Table 2).

	Amount (in thousands (US\$))	Average Per Hunter (US\$)	Number of Spenders (thousand)	Percent of Hunters	Average per Spender (US\$)
TOTAL ALL ITEMS	\$22,893,156.00	\$1,830.00	12,153	97	\$1,884.00
Food	\$2,177,229.00	\$174.00	9,533	76	\$228.00
Lodging	\$614,016.00	\$49.00	1,599	13	\$384.00
Public transportation	\$214,387.00	\$17.00	401	3	\$535.00
Private transportation	\$2,482,537.00	\$198.00	9,982	80	\$249.00
Guide fees, pack trip or package fees	\$416,529.00	\$33.00	557	4	\$748.00
Public land use fees	\$47,268.00	\$4.00	564	5	\$84.00
Private land use fees	\$396,810.00	\$32.00	711	6	\$558.00
Equipment rental	\$80,729.00	\$6.00	313	2	\$258.00
Boating costs (launching, mooring, storage, maintenance, insurance, pumpout fees, fuel)	\$102,255.00	\$8.00	459	4	\$223.00

Table 2. Hunting Expenditures in 2006 (of Hunters Age 16 and Older)

Source: U.S. Fish and Wildlife Service/U.S. Census Bureau, 2007.

	Amount (in thousands) (US\$)	Average Per Hunter (US\$)	Number of Spenders (thousand)	Percent of Hunters	Average per Spender (US\$)
Heating and cooking fuel	\$146,853.00	\$12.00	2,132	17	\$69.00
Rifles	\$1,119,900.00	\$90.00	1,625	13	\$689.00
Shotguns	\$765,423.00	\$61.00	1,320	11	\$580.00
Muzzleloaders, primitive firearms	\$184,157.00	\$15.00	531	4	\$347.00
Pistols, handguns	\$382,805.00	\$31.00	636	5	\$602.00
Archery equipment	\$674,117.00	\$54.00	1,940	16	\$348.00
Telescopic sights	\$404,866.00	\$32.00	1,471	12	\$275.00
Decoys and game calls	\$187,141.00	\$15.00	2,074	17	\$90.00
Ammunition	\$696,451.00	\$56.00	7,995	64	\$87.00
Hand loading equipment	\$140,072.00	\$11.00	929	7	\$151.00
Hunting dogs and associated costs	\$493,659.00	\$39.00	780	6	\$633.00
Other equipment	\$317,765.00	\$25.00	2,312	18	\$137.00
Camping equipment	\$141,920.00	\$11.00	538	4	\$264.00
Binoculars, field glasses, telescopes, etc.	\$203,606.00	\$16.00	968	8	\$210.00
Special hunting clothing, rubber boots, waders	\$459,823.00	\$37.00	2,743	22	\$168.00
Processing and taxidermy costs	\$485,153.00	\$39.00	1,496	12	\$324.00
Other auxiliary equipment	\$39,714.00	\$3.00	290	2	\$137.00

Table 2. Hunting Expenditures in 2006 (of Hunters Age 16 and Older) (continued)

Source: U.S. Fish and Wildlife Service/U.S. Census Bureau, 2007.

	Amount (in thousands) (US\$)	Average Per Hunter (US\$)	Number of Spenders (thousand)	Percent of Hunters	Average per Spender (US\$)
Special equipment (e.g., boats, campers, cabins, trail bikes)	\$4,034,928.00	\$323.00	505	4	\$7,993.00
Magazines, books	\$83,524.00	\$7.00	1,767	14	\$47.00
Membership dues and contributions	\$269,660.00	\$22.00	1,707	14	\$158.00
Land leasing and ownership	\$4,387,354.00	\$351.00	1,606	13	\$2,732.00
Licenses	\$619,511.00	\$50.00	9,506	76	\$65.00
Federal duck stamps	\$22,934.00	\$2.00	1,529	12	\$15.00
Other stamps, tags, and permits	\$100,058.00	\$8.00	2,689	21	\$37.00

Table 2. Hunting Expenditures in 2006 (of Hunters Age 16 and Older) (continued)

Source: U.S. Fish and Wildlife Service/U.S. Census Bureau, 2007.

Hunting and shooting sport expenditures also have a substantial impact on state and local economies. A state-by-state breakdown of expenditures is shown in Table 3. In Texas, the highest ranked state for hunting expenditures, hunters infuse the state's economy with more than US\$2.2 billion annually; similarly, Pennsylvania boasts more than US\$1.6 billion in hunting expenditures annually. Although the total spent on hunting in Rhode Island is significantly less than it is in other states, the overall economy in this small state, with approximately 14,000 resident and nonresident hunters, is strengthened by over

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US\$10.2 million in hunting expenditures per year (U.S. Fish and Wildlife Service, U.S. Census Bureau, 2007).

As the U.S. economy weakens, evidence suggests that hunting is a pastime that some are embracing precisely because of the weakening economic environment. According to a report released by Fox News in December 2008, hunters agree that “Hunting is making a comeback. More

people are grabbing their guns and heading for the woods, and it’s mostly *because* of the recession” (Cupp, 2008). Rising costs for traditional travel and vacation are prompting many to stick close to home and, more important, close to nature. “In a time when people are trying to pinch pennies, hunting is a recreational bargain. It’s ridiculously inexpensive. You will pay as much for one day with the family at a professional baseball game as you will in a whole hunting

season,” says a spokesman for the Missouri Department of Conservation (Cupp, 2008). High fuel costs and soaring food prices also give hunters a pragmatic reason for returning to the woods – hunting provides relatively inexpensive and readily available protein. Although it remains to be seen what impact the economic recession will have on the hunting and sport shooting industry, sportsmen remain an economic force to be reckoned with in the United States.

State where spending took place	Total expenditures (in thousands) (US\$)	Total trip related (in thousands) (US\$)	Food and lodging (in thousands) (US\$)	Transportation (in thousands) (US\$)	Other trip costs (in thousands) (US\$)	Total equipment (in thousands) (US\$)	Fishing equipment (in thousands) (US\$)	Auxiliary equipment (in thousands) (US\$)	Special equipment (in thousands) (US\$)	Expenditures for other items (in thousands) (US\$)
Alabama	\$699,532.00	\$417,279.00	\$126,363.00	\$101,414.00	\$189,502.00	\$221,832.00	\$139,540.00	* \$11,462	* \$70,830	\$60,421.00
Alaska	\$516,749.00	\$362,019.00	\$132,056.00	\$99,945.00	\$130,018.00	\$135,237.00	\$39,504.00	\$7,063.00	* \$88,671	\$19,492.00
Arizona	\$802,405.00	\$245,741.00	\$80,144.00	\$67,026.00	\$98,570.00	\$547,205.00	\$33,529.00	\$6,164.00	* \$507,512	\$9,460.00
Arkansas	\$420,571.00	\$272,160.00	\$106,389.00	\$84,709.00	\$81,062.00	\$127,228.00	\$66,454.00	* \$8,058	* \$52,717	\$21,183.00
California	\$2,420,503.00	\$1,203,244.00	\$410,279.00	\$291,465.00	\$501,500.00	\$1,140,587.00	\$326,982.00	\$90,940.00	* \$722,665	\$76,672.00
Colorado	\$542,937.00	\$300,324.00	\$125,067.00	\$111,885.00	\$63,373.00	\$224,118.00	\$52,838.00	\$10,974.00	* \$160,306	\$18,494.00

Table 3. State-by-State Hunting Expenditures in 2006 (of Hunters Age 16 and Older)

*Based on small sample size; NA = not applicable because sample size too small to report data. Source: U.S. Fish and Wildlife Service/U.S. Census Bureau, 2007.

State where spending took place	Total expenditures (in thousands) (US\$)	Total trip related (in thousands) (US\$)	Food and lodging (in thousands) (US\$)	Transportation (in thousands) (US\$)	Other trip costs (in thousands) (US\$)	Total equipment (in thousands) (US\$)	Fishing equipment (in thousands) (US\$)	Auxiliary equipment (in thousands) (US\$)	Special equipment (in thousands) (US\$)	Expenditures for other items (in thousands) (US\$)
Connecticut	\$243,552.00	\$130,742.00	\$37,910.00	\$30,819.00	\$62,013.00	\$102,988.00	\$49,268.00	\$12,677.00	* \$41,044	\$9,821.00
Delaware	\$96,775.00	\$48,536.00	\$17,785.00	\$12,477.00	\$18,274.00	\$39,246.00	\$14,181.00	\$6,568.00	* \$18,497	\$8,994.00
Florida	\$4,308,583.00	\$1,973,985.00	\$680,147.00	\$419,711.00	\$874,127.00	\$1,944,798.00	\$523,433.00	\$37,035.00	\$1,384,330.00	\$389,800.00
Georgia	\$1,020,411.00	\$370,743.00	\$152,886.00	\$100,416.00	\$117,441.00	\$459,927.00	\$134,972.00	\$24,435.00	* \$300,519	\$189,741.00
Hawaii	\$110,516.00	\$72,728.00	\$24,600.00	\$18,480.00	\$29,648.00	\$36,849.00	\$27,297.00	\$6,850.00	NA	\$939.00
Idaho	\$282,972.00	\$173,993.00	\$75,877.00	\$58,256.00	\$39,860.00	\$90,425.00	\$38,885.00	* \$5,943	NA	\$18,554.00
Illinois	\$774,319.00	\$279,732.00	\$94,413.00	\$92,326.00	\$92,994.00	\$455,317.00	\$136,349.00	\$25,255.00	* \$293,714	\$39,269.00
Indiana	\$627,167.00	\$242,624.00	\$67,201.00	\$67,546.00	\$107,877.00	\$316,108.00	\$110,784.00	\$17,648.00	* \$187,676	\$68,435.00
Iowa	\$322,648.00	\$140,617.00	\$46,271.00	\$40,607.00	\$53,740.00	\$163,104.00	\$59,311.00	\$13,215.00	* \$90,578	\$18,927.00
Kansas	\$242,444.00	\$127,996.00	\$40,561.00	\$54,627.00	\$32,808.00	\$108,983.00	\$44,817.00	\$6,371.00	* \$57,794	\$5,465.00
Kentucky	\$855,417.00	\$237,430.00	\$96,607.00	\$67,266.00	\$73,557.00	\$596,587.00	\$125,828.00	* \$9,659	NA	\$21,400.00
Louisiana	\$1,006,136.00	\$337,363.00	\$96,927.00	\$87,043.00	\$153,393.00	\$424,564.00	\$122,194.00	* \$7,633	* \$294,738	\$244,208.00
Maine	\$257,124.00	\$118,002.00	\$51,735.00	\$39,653.00	\$26,613.00	\$115,792.00	\$27,679.00	\$3,653.00	* \$84,460	\$23,330.00
Maryland	\$568,211.00	\$292,638.00	\$88,459.00	\$59,475.00	\$144,703.00	\$253,571.00	\$97,600.00	\$6,691.00	* \$149,280	\$22,003.00
Massachusetts	\$769,631.00	\$297,312.00	\$85,723.00	\$56,248.00	\$155,341.00	\$397,049.00	\$98,524.00	\$14,957.00	\$283,568.00	\$75,269.00
Michigan	\$1,671,114.00	\$584,030.00	\$210,052.00	\$180,363.00	\$193,615.00	\$720,637.00	\$190,066.00	* \$13,532	* \$517,039	\$366,446.00
Minnesota	\$2,725,366.00	\$859,657.00	\$350,889.00	\$299,240.00	\$209,528.00	\$1,220,074.00	\$218,400.00	\$26,485.00	\$975,188.00	\$645,635.00

Table 3. State-by-State Hunting Expenditures in 2006 (of Hunters Age 16 and Older) (continued)

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Mississippi	\$240,332.00	\$105,618.00	\$38,357.00	\$33,464.00	\$33,798.00	\$120,138.00	\$50,651.00	* \$4,797	NA	\$14,576.00
Missouri	\$1,093,206.00	\$457,963.00	\$187,138.00	\$135,593.00	\$135,232.00	\$517,239.00	\$134,910.00	\$18,514.00	* \$363,815	\$118,003.00
Montana	\$226,349.00	\$149,800.00	\$58,092.00	\$61,516.00	\$30,192.00	\$59,938.00	\$23,765.00	\$3,186.00	\$32,987.00	\$16,610.00
Nebraska	\$181,280.00	\$60,992.00	\$24,365.00	\$22,042.00	\$14,584.00	\$83,777.00	\$32,130.00	\$4,978.00	* \$46,669	\$36,511.00
Nevada	\$144,634.00	\$61,390.00	\$26,342.00	\$23,476.00	\$11,572.00	\$65,190.00	\$26,863.00	\$2,708.00	NA	\$18,054.00
New Hampshire	\$172,413.00	\$88,581.00	\$35,674.00	\$28,613.00	\$24,293.00	\$62,892.00	\$21,588.00	\$6,559.00	* \$34,744	\$20,940.00
New Jersey	\$752,273.00	\$471,178.00	\$88,650.00	\$74,589.00	\$307,939.00	\$253,729.00	\$128,299.00	\$14,311.00	* \$111,118	\$27,366.00
New Mexico	\$301,101.00	\$128,413.00	\$51,059.00	\$48,588.00	\$28,766.00	\$80,729.00	\$29,216.00	\$7,293.00	* \$44,220	\$91,958.00
New York	\$925,701.00	\$584,644.00	\$197,876.00	\$143,792.00	\$242,976.00	\$269,704.00	\$180,746.00	\$18,774.00	* \$70,185	\$71,354.00
North Carolina	\$1,124,274.00	\$692,977.00	\$281,279.00	\$169,492.00	\$242,206.00	\$311,489.00	\$166,816.00	\$28,474.00	* \$116,198	\$119,809.00
North Dakota	\$93,729.00	\$39,076.00	\$14,367.00	\$18,762.00	\$5,948.00	\$52,346.00	\$15,745.00	* \$1,007	NA	\$2,306.00
Ohio	\$1,062,036.00	\$558,793.00	\$198,886.00	\$125,429.00	\$234,478.00	\$461,692.00	\$147,939.00	\$21,790.00	* \$291,963	\$41,552.00
Oklahoma	\$501,786.00	\$301,408.00	\$108,505.00	\$106,687.00	\$86,216.00	\$169,020.00	\$87,604.00	\$5,849.00	* \$75,566	\$31,358.00
Oregon	\$496,941.00	\$258,474.00	\$102,998.00	\$98,698.00	\$56,779.00	\$199,319.00	\$101,008.00	\$19,364.00	* \$78,947	\$39,149.00
Pennsylvania	\$1,291,211.00	\$298,610.00	\$113,989.00	\$107,453.00	\$77,168.00	\$896,076.00	\$153,021.00	\$37,226.00	* \$705,829	\$96,526.00
Rhode Island	\$153,694.00	\$78,900.00	\$20,276.00	\$9,561.00	\$49,063.00	\$68,950.00	\$18,458.00	\$7,346.00	* \$43,146	\$5,845.00
South Carolina	\$1,404,133.00	\$525,937.00	\$194,829.00	\$115,546.00	\$215,562.00	\$725,624.00	\$176,118.00	* \$28,664	* \$520,842	\$152,572.00

Table 3. State-by-State Hunting Expenditures in 2006 (of Hunters Age 16 and Older) (continued)

*Based on small sample size; NA = not applicable because sample size too small to report data. Source: U.S. Fish and Wildlife Service/U.S. Census Bureau, 2007.

State where spending took place	Total expenditures (in thousands) (US\$)	Total trip related (in thousands) (US\$)	Food and lodging (in thousands) (US\$)	Transportation (in thousands) (US\$)	Other trip costs (in thousands) (US\$)	Total equipment (in thousands) (US\$)	Fishing equipment (in thousands) (US\$)	Auxiliary equipment (in thousands) (US\$)	Special equipment (in thousands) (US\$)	Expenditures for other items (in thousands) (US\$)
South Dakota	\$131,089.00	\$58,624.00	\$25,821.00	\$21,408.00	\$11,395.00	\$38,564.00	\$20,215.00	* \$1,698	NA	\$33,900.00
Tennessee	\$599,683.00	\$290,424.00	\$101,063.00	\$90,676.00	\$98,685.00	\$280,692.00	\$90,631.00	\$11,076.00	* \$178,985	\$28,568.00
Texas	\$3,237,212.00	\$1,563,994.00	\$448,390.00	\$480,681.00	\$634,924.00	\$1,363,877.00	\$496,454.00	\$47,487.00	NA	\$309,341.00
Utah	\$371,087.00	\$183,859.00	\$65,081.00	\$63,356.00	\$55,421.00	\$174,560.00	\$54,025.00	\$15,828.00	* \$104,708	\$12,667.00
Vermont	\$63,749.00	\$40,535.00	\$17,916.00	\$9,858.00	\$12,762.00	\$18,907.00	\$8,023.00	* \$1,591	NA	\$4,306.00
Virginia	\$733,777.00	\$395,264.00	\$122,771.00	\$72,448.00	\$200,045.00	\$318,616.00	\$95,681.00	\$14,978.00	* \$207,957	\$19,897.00
Washington	\$904,796.00	\$354,880.00	\$117,878.00	\$120,130.00	\$116,873.00	\$485,945.00	\$139,299.00	\$35,378.00	\$311,267.00	\$63,971.00
West Virginia	\$333,454.00	\$153,525.00	\$63,284.00	\$57,739.00	\$32,503.00	\$154,149.00	\$38,504.00	\$21,775.00	NA	\$25,780.00
Wisconsin	\$1,647,035.00	\$747,312.00	\$351,744.00	\$225,688.00	\$169,879.00	\$623,420.00	\$152,350.00	\$8,795.00	\$462,275.00	\$276,303.00
Wyoming	\$521,479.00	\$110,604.00	\$44,488.00	\$50,939.00	\$15,178.00	\$97,185.00	\$17,480.00	* \$3,037	* \$76,668	\$313,690.00

Table 3. State-by-State Hunting Expenditures in 2006 (of Hunters Age 16 and Older) (continued)

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Hunters fund game management and wildlife conservation efforts

Hunting is valuable not only for the money it adds to the U.S. economy, but also for reduc-

ing economic losses associated with overpopulation, such as human-wildlife conflicts, livestock and agricultural damage, and disease. Increasing urbanization results in a growing public demand to control wildlife damage. The

North American Model of Wildlife Conservation uses hunting and trapping to regulate and stabilize wildlife populations. Although some of the damage caused by wildlife, especially household damage, is attributed to species that are

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considered non-game and cannot be hunted, hunting can still be used effectively to control certain nuisance and overpopulated species.

The cost of human-wildlife conflicts exceeds billions of dollars annually. Damage caused by reported and unreported deer-vehicle collisions is estimated at US\$1.6 billion annually (Conover, 2002). The cost of bird-aircraft collisions, which has become an issue of increasing concern in the United States since U.S. Airways Flight 1549 landed in New York's Hudson River in January 2009, can be huge. Estimates in the 1990s showed that the costs for bird-aircraft collisions exceeded US\$300 million (Conover, 2002), and even more important, one incident of this magnitude can result in a devastating loss of human life. The total cost of wildlife damage to metropolitan households is estimated at over US\$8.3 billion (Conover, 2002). In total, research offers a conservative estimate of the total cost of

wildlife damage in the United States – US\$22 billion annually (Table 4) (Conover, 2002). According to the U.S. Department of Agriculture (2006), wildlife damage resulted in crop and livestock losses totalling more than US\$944 million in 2001. In Ontario, Canada, the cost of wildlife damage to crops and livestock has in-

Problem	Losses (US\$ billion)
Damage from deer-automobile collisions	1.6
Damage from bird-aircraft collisions	0.3
Damage to agricultural producers	4.5
Damage to the timber industry	
Southeast	1.2
Northeast	1.6
Northwest	0.6
Damage to metropolitan households	8.3
Damage to rural households	4.2
Economic losses from human injuries, fatalities, and illnesses which result from wildlife-related incidents	Unknown, but estimated in the billions
TOTAL LOSSES	22.3

Table 4. Annual Wildlife Damage Losses Occurring in the U.S.
Source: Conover, 2002.

creased more than 20% since 1998, putting the average annual cost of agricultural damage at approximately US\$41 million (Mussel & Schmidt, 2009).

Research suggests that wildlife damage would increase by a staggering 221% if hunting and trapping ceased in the United States (IAFWA, 2005). Hunting remains one of the most cost-effective methods for controlling wildlife populations. For example, the state of Connecticut took extra measures to curb collisions between deer and motor vehicles in the state by allowing special hunts. Residents report that the hunts have been successful in controlling deer populations and reducing damage. Conversely, the state does not currently allow bear hunting, but populations continue to move in from neighbouring states. As the bear population increases, biologists report that nuisance complaints have increased about 300%, and agency costs in time and money have also in-

creased significantly (IAFWA, 2005). In the state of Utah, the Division of Wildlife Resources reports spending US\$1.5 million on wildlife complaints, US\$1.1 million on livestock and crop depredation, and US\$0.4 million on nuisance wildlife annually, and says that the state would not be capable of addressing wildlife damage or satisfying legal mandates without hunting and trapping (IAFWA, 2005). Used as a wildlife management tool, hunting helps to maintain healthy wildlife populations and reduces the costs associated with wildlife damage and agricultural losses.

Hunters also remain the top contributors to wildlife conservation efforts. Through a combination of excise taxes applied to hunting gear and equipment, hunting licence sales totals and private donations, hunters invest more than US\$1.3 billion in wildlife conservation. Funding obtained through excise taxes applied to hunting gear accounts for US\$280 million of

these total funds, and hunting licence sales total approximately US\$725 million nationwide, both of which remain primary funding sources for most state fish and wildlife agencies. Hunters' donations to over 10,000 private groups and organizations, totalling more than US\$300 million annually, account for the remainder of the billions of dollars contributed to wildlife conservation efforts each year (Southwick Associates, 2007). This money supports state and national game management, wildlife and habitat conservation, and conservation education programs. Additionally, the federal Duck Stamp serves as a vital tool for waterfowl and wetland conservation in the United States. With US\$0.98 in every dollar going toward conservation efforts, the Duck Stamp has generated more than US\$750 million since its implementation in 1934 and has helped in the purchase or lease of more than 5.3 million acres of waterfowl habitat in the United States.

Global implications of hunting

The economic impact of hunting and the shooting sports is felt not only in the United States but throughout the world. As Steve Sanetti, president of the Sporting Arms and Ammunition Manufacturers' Institute, explained before the United Nations (Sanetti, 2009):

The economic impact of hunting supports more than wildlife conservation Economic stimulus from hunting is visible globally, from small towns in rural America to small villages in African countries where a dependable, yearly food and revenue stream is vitally important. When wildlife is considered as a valuable commodity to protect and conserve, it works to prevent the illegal taking of game and the eventual devastation of species and their habitat.

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According to the Federation of Associations for Hunting and Conservation of the EU (FACE), there are seven million hunters in Europe (Federation of Associations for Hunting and Conservation of the EU, 2008) who contribute an estimated €16 billion to European economies (Kenward & Sharp, 2008). Recent research conducted in the United Kingdom found that 480,000 people take to the fields to shoot live quarry. These shooters spend £2 billion each year on goods and services, supporting the equivalent of 70,000 full-time jobs and contributing approximately £250 million a year to conservation (Public and Corporate Economic Consultants, 2006).

In developing nations, sustainable hunting tourism attracts valuable revenue from tourists. Trophy hunting attracts tourists to numerous countries with many remote areas and few conventional tourism attractions. Nations that advertise their natural resources as hunting and sport

shooting opportunities attract international tourists and money, which is funnelled into local communities in the form of wages from guide and hospitality services as well as into statewide infrastructure development. Additionally, profits from hunting and shooting tourism are often used on site to reinforce the sustainability of the park or reserve. As an example, in Zimbabwe hunters spend millions of dollars on trophy hunting fees and guides, and the meat, skins and bones from their kills are often contributed to local villages (Swan, 2003). In 1994, trophy hunting in Zambia exceeded US\$1.29 million and contributed approximately 15-20% of the average household income in several districts in Zimbabwe (Butler, 1995). Recent research indicates that more than 18,500 trophy hunters each year generate a minimum gross revenue of US\$201 million in the 23 countries in sub-Saharan Africa that allow trophy hunting. For example, trophy hunting generates revenue of US\$100 million per year in South Africa, US\$28.5 million in

Country	Number of Clients /Year	Client Nationalities (%)	Revenues /Year (\$US million)	Animals Shot /Year	Jobs from Hunting
South Africa	8,530	USA 57 Spain 8 Germany 5	100	53,885	5,000-6,000
Namibia	5,363	Germany 35 USA 21 Austria 8	28.5	22,462	2,125
Tanzania	1,654	USA 45 Spain 15 France 9	27.6	7,034	4,328
Botswana	350	USA 80 EU 12	20	2,500	1,000
Zimbabwe	1,874	USA 57 Germany 9 Spain 6	16	11,318	unknown

Table 5. Highest Revenues for African Trophy Hunting

Source: Linsey, Roulet & Romanach, 2007.

Namibia, US\$27.6 million in Tanzania, and US\$20 million in Botswana (see Table 5; Lindsey, Roulet, & Romanach, 2007). Similarly, the Eurasian tourist hunting market is estimated at



€40-60 million per year (Hofer, 2002).

Hunting tourism has become an invaluable, consistent source of revenue for developing nations. It provides thousands of stable jobs for local residents, funds sustainable parks

and wildlife management strategies, and supports overall economic development in local communities. Hunting tourism is vital to the economies of developing nations because it results in high revenues from low volumes of hunters and, perhaps more important, the bulk of revenues accrued through hunting tourism remain in the country (Linsey, Roulet & Romanach, 2007).

Conclusion

In the United States and internationally, hunting and sport shooting remains a major economic player. In the United States, the economic contributions of hunting and fishing are substantial. Sportsmen help to redistribute money from the wealthier urban and suburban areas to rural areas (note that although rural residents hunt at a greater rate than do urban and suburban residents, there are more sportsmen from urban and suburban areas

than from rural areas because of the sheer size of the urban population in the United States). Similarly, hunting in developing nations redistributes money to rural villages and helps boost economic development in local communities. Hunting also provides a financial return from lands left in their natural state. In the past, people have opposed conservation initiatives on the basis that fish and wildlife – and therefore hunting – come at the expense of economic prosperity. When managed as recreational resources, the benefits of hunting are undeniable: expenditures from hunting increase state and national revenue, provide jobs for millions in both developed and developing nations, and contribute to the conservation and preservation of our world's natural resources and habitats.

The Importance of Hunting and the Shooting Sports on State, National and Global Economies*

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Biography

Graham Child, OLM, PhD, has devoted his working life (1958 to 2009) to research in the fields of wildlife biology, economics, tourism and institutional development, and to managing wildlife, national parks and equivalent reserves at local, national and international levels. Almost from the beginning he has been involved in the administration of hunting and has championed it in Africa and abroad.

He joined the Rhodesian Game Department in 1959, and advised the Botswana Government on wildlife issues, on behalf of the UN Food and Agriculture Organization, from 1965 to 1971, before becoming Director of National Parks and Wild Life Management in Zimbabwe until 1986. By this time Zimbabwe was acknowledged internationally as being at the forefront of wildlife and protected area management. Dr Child then became an international consultant advising governments from the Arctic to the tropics on all continents except Antarctica, but primarily in the Middle East, until 2006. Since then he has been an adviser to students and young African professionals advancing their careers relating to wild resource research and management.

Introduction

Hunting is an age-old occupation of humankind and deeply engrained in our psyche. Our hunting and gathering ancestors were probably more effective carnivores than herbivores as although we can digest a large proportion of animal parts we are more selective in the parts of plants we can absorb as food. This is because we lack a rumen or similar device to enable the symbiotic relationship with microorganisms that allows efficient herbivores to use a wide diversity of plant parts effectively, especially those dominated by cellulose. Recreational hunting, particularly trophy hunting, is simply a modern, stylized manifestation of the tradition practised by our early forbearers.

People's reliance on animals for food led to scarcities as the number of people increased and the immediate availability of the animals in the wild declined. This led to two major devel-

opments, the domestication of selected species of animals and plants, and the emergence of institutions to preserve and ration the increasingly scarce resource represented by huntable quarry. Competition has existed between the two development strategies with one or other locally dominant ever since they emerged as defined human objectives, and this competition for space has intensified to the present peak with growing human numbers and their increasing demands on the environment.

The domestication of selected animals aimed to make them more readily available as societies grew, becoming more sedentary and more complex. It gave rise to many conservation problems with which we are all familiar. Species were kept outside their native habitats, often in high numbers, and the behaviour of species and the ratio of species occurring together as a fauna were disturbed. This disrupted the ability



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of local terrestrial environments to support their attendant animals sustainably which had resulted from millennia of co-evolution between the animals and available habitats. With the increasing dominance of domestic animals and plants there was a growing scarcity of wild animals; institutions emerged to preserve them, mainly for hunting, although many sympatric species also benefited.

When human population densities were low and societies were hunter gathers, the quarry was an open access common property and anyone wishing and able to use it was entitled to do so. This sort of situation prevailed, for example, in Saxon Britain until 1066 when the Normans conquered the Saxons and, as the ruling elite, took the hunting rights for themselves, in a characteristic that ruling classes have exhibited, in one form or another and sometimes using brutal draconian legislation, in many parts of the world. The reservation of

cheap hunting by the ruling class remained enforceable while poor rural populations remained sparse and subservient to top-down imposed legislation and until the opportunity costs of supporting wild populations for the elite to hunt became exorbitant.

The early institutional arrangements for conserving hunting have changed rapidly and have been driven by socio-economic factors that have had little to do with the biological nature of the huntable resource. Changes have affected both those that hunt and those that provide hunting as hereditary social classes have given way to economic classes in most societies. With the shift in the characteristics of hunters much institutionalized behaviour associated with hunting, including the dress, which served to prolong and share the satisfaction from each kill, has disappeared and been replaced by trophy quality and trophy rooms. Similarly, the growth, education and

Abstract

Wildlife has special economic and ecological attributes that allow it a comparative advantage over conventional domestic stock husbandry as a form of land use, especially in areas that are marginal for conventional agriculture. Increasing the return per unit area or unit of standing ungulate biomass enhances rural productivity which is environmentally friendly by reducing the ecological energy required to give the same yield. Wild animals will realize this potential, however, only if there is an enabling institutional framework in place, guiding their use in favour of the landholders on whose land the animals occur.

This paper describes the core attributes that enable wild animals to out-perform their domesticated counterparts, and outlines the institutional arrangements that need to be in place for the potential to be realized. It also highlights the importance of trophy hunting as a marketing technique for using wildlife to enhance environmentally friendly land use and combat poverty in some of the most disadvantaged regions in most African countries.

democratization of rural populations have resulted in land hunger and a growing awareness among those able to offer hunting of the costs and benefits of doing so.

It is necessary to adapt to these socio-economic changes to maintain hunting. The biological properties of the quarry also need to be understood and harnessed correctly to enhance the durability of hunting as an environmentally-friendly land use. Unfortunately institutions to regulate hunting entered an evolutionary *cul de sac* from about the time of the Norman conquest of Britain until the mid-twentieth century, when southern Africa began to break free from the weak position from which to champion hunting in which we found ourselves in an increasingly land hungry world.

People are often surprised when attention is drawn to the fact that the neglect and abuse of wild fauna was a direct result of the flawed,

centralized preservationist legislation introduced in most countries to protect wild animals. As Child (1995) has argued, Eurocentric colonial game laws were arrogant and insensitive to the needs of people, did not acknowledge that wildlife and people shared the same habitats, and were expected to be effective irrespective of whether they were acceptable, equitable, enforceable, or even sensible. Furthermore, they were often contradictory. They acknowledged that game had a value and hunting was a legitimate pastime, but failed to accept that this added a commercial value which the law tried to deny in the misguided belief that removing the commercial value of game and game derivatives would curtail poaching and the illegal trade that often drives it.

With people, especially landholders, marginalized from wildlife on their land and largely ignoring its potential value, decisionmakers did the same and eliminated wild animals in the

name of national progress. Programs to eliminate wild animals in conflict with agriculture, such as tsetse and foot-and-mouth disease (FMD) control, described below, were often applauded. They relieved farmers of the opportunity costs attached to their legal obligation to conserve the animals imposed on them, without compensation, by the governing elite. The net result was that ostensibly priceless wild animals became worthless, ownerless objects that decisionmakers at all levels could ignore, but the general public was expected to respect and conserve. Unfortunately, remnants persist to this day, including deep-rooted conceptual dogma, from this highly flawed protectionist legislation that denied people with wildlife on their land adequate incentives to retain it. The laws also acted to artificially isolate game and other high profile animals from the ecosystems of which they are an integrated part and to undervalue them by prohibiting most trade in wild animals or their derivatives.

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This present paper outlines the biological and socio-economic properties underlying a modern hunting industry. It indicates how they have been integrated and applied to make hunting a more socio-economically and environmentally desirable land use in much of arid and semi-arid southern Africa. The importance of meat and management hunting in the control of wild populations, so as to avoid overuse of available habitats, is deliberately ignored in the discussion, although often essential to the conservation of the veld to safeguard tourism, including hunting.

Game ranching as a land use option

When game ranching was first proposed in Zimbabwe as a serious land use option in 1959 it was believed that wildlife was a better meat producer than domestic stock because of its biological attributes. It was thought that a spectrum of wild animals with their varied

feeding patterns adapted to local conditions and their resilience to local diseases would produce more meat and generate more income than domestic stock. This did not materialize, except temporally while overpopulations of easily harvested species like impala were being reduced to more sustainable levels.

Twenty-five years of meticulous records from Buffalo Range suggest that wildlife may produce slightly more meat (perhaps 15%) per unit area than cattle, but that this is more than offset by the higher price of beef and the ease of marketing it (Child, 1988). While the cost of raising game is low, the cost of harvesting and marketing it is relatively high, and together the two prices more or less equate with the cost of raising and marketing beef through established marketing channels. As a consequence, domestic stock, bred for the purposes for some 5,000 years, has a financial edge over game when it comes to producing meat com-

mercially, although this did not extend to the relative long term ecological sustainability of game and cattle production (Taylor, 1974; Taylor and Walker, 1978; Child, 1988).

The financial disparity between cattle and game is accentuated by preferential state subsidization of the domestic meat industry. Government subsidization of extensive beef and mutton production has been common in southern Africa where wildlife has benefited little from the type of Government support enjoyed by livestock and where it has often been sacrificed in favour of livestock.

Artificial prejudices against wildlife

The most overt of these measures to eliminate game in favour of domestic animals have been those to control tsetse and FMD, undertaken by the veterinary authorities in most countries in southern Africa. They have involved large

bureaucratic organizations, many miles of hugely expensive game cordon fences, other costly environmentally destructive measures and the direct or indirect killing of many thousands of game animals, often without achieving their stated objective of eliminating tsetse or FMD. They were carried out in good faith but on questionable scientific evidence, often in areas that were ecologically sub-marginal for sustainable livestock production, where the economic merits of livestock have diminished still further in response to the global decline in the real terms of trade for red meat since the 1970s (Child, 1995).

Landholders' neglect or abuse of the wildlife on their land has been more widespread and probably more devastating to the fauna than the area-specific government game elimination programs. Benign neglect on its own, whereby landholders simply ignored the interests of wildlife in their farming programs, has

often been sufficient to ensure a marked decline in wild populations. Habitat manipulation for agricultural purposes, where it does not take wildlife interests into account, has been even more deleterious to indigenous fauna. Wildlife has been overtly abused by communal and commercial farmers alike and governments have been reluctant to intervene for political reasons. In fact, governments have legitimized such abuse through the issue of permits, allowing them on the pretext of protecting landholder interests.

With public attitudes largely neutral towards wild animals, except as curiosities in a few parks and reserves, and the legislation that was supposed to protect them acting in reverse, it is unsurprising that wildlife went into rapid decline in southern Africa after World War II. This was a period of rapid development with new technologies, born of great optimism and a belief in materialism leading to

development which equated with the taming of the wilderness. Game ranching to produce meat had been tried and had largely failed. It was left to recreational hunting to save wildlife from the brink of disaster.

Ecological advantages of trophy hunting

The most obvious ecological advantage of trophy hunting as a land use is that it tends to rely on quarry that are native to the area where it is hunted. Having evolved with the environment, these animals are inherently better adapted to local conditions and more resistant to diseases than exotic domestic animals. As a consequence they are usually cheaper to produce than the domestic species with which they have been replaced. Nevertheless, it is important to bear in mind that many of the ecological and behavioural adaptations between wild animals and their environments

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that evolved together over time have been seriously disrupted by man's use of the land and are no longer natural.

Changes to the habitats in an area may have both short term and longer term positive and negative effects on the numbers of different species in the fauna. Some changes are totally detrimental to certain species and lead to their disappearance; others may suit some species temporarily and their numbers first increase before declining. Yet other habitat changes may actually favour some species. Bush encroachment arising from incorrect veld burning or overgrazing by domestic stock illustrates this phenomenon, which may vary with site conditions and the precise treatment to which sites are subjected. Often it leads to the rapid elimination of sensitive grazers like tsessebe, roan and sable; causes a temporary increase in mixed feeders like impala and buffalo, and a longer lasting increase in predomi-

nantly browsers such as kudu, giraffe and elephant. These changes may, in turn, lead to shifts in the behaviour of the fauna as a whole as the relative number of the different species alters.

Faunal behaviour may also be altered directly through agricultural practices like fencing or the provision of water out of season, which modify the seasonal movement patterns of the game animals. Frequently the opportunistic relationships between animals and the availability of their forage in arid and semi-arid natural ecosystems are regulated by the variability of rainfall incidence which acts on both the availability of the forage and open water or moisture-producing plants for the animals that eat the forage. Disruption or standardization of the animals' movement patterns then interferes with their opportunistic nomadic behaviour which once favoured the harmonization of optimum animal numbers with the ability of the

range to support them over time.

As modern man evolved from his hunting antecedents and animal scarcities emerged it is not surprising that the early institutions regulating hunting mimicked the outcome of natural situations. For hundreds of years sport hunting has focused on well-grown males, which is seldom detrimental and often beneficial to wild populations. With the possible exception of "solitary" antelope like Sharp's grysbok where field data (Child, 1968) indicate that populations consist of equal numbers of males and females, most wild populations have a surplus of males for breeding purposes. This is manifested by a proportion of the males associating in bachelor herds or a preponderance of females. The loss of some males or ecological separation of the sexes raises the reproductive potential per unit of the breeding population in its most favoured portions of the range. This is just what beef or mutton farmers do to



enhance their herds or improve their turnover. In wild populations it is brought about by inherent behavioural characteristics which may start before or soon after birth, and it continues into maturity and happens irrespective of any hunting, which, at worst, may accelerate the effects of the natural behaviour a little.

Species with a fidelity to an established home range require a dispersal phase by which a proportion of the animals, usually well-grown sub-adults or young adults, leave the parental range in an attempt to colonize other suitable habitats. These dispersing individuals, of which the majority do not find suitable areas and perish, are predominantly males. Other males are killed in fighting among themselves for a breeding territory or a harem. Fights associated with the rut may lead to a marked differential mortality favouring pregnant females. They take place at the beginning of the critical dry season and, in

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poor years in particular, have considerable survival value for gregarious species like impala, suggesting that this shedding of males is an important selective attribute of the gregarious habit (Child, 1968). In a number of species like tsessebe and sable, actively breeding males behave conspicuously or in some other way that makes them more vulnerable to predators, thus affording the females and juveniles a measure of protection from predation.

Besides protecting the breeding females and young, the removal of males provides the units with more space and food and hence a better chance of living through the critical dry season. In other species like white rhino a surplus of females seems to be a psychological imperative for breeding. A pair of rhino will often not breed until there is at least one additional female in the group. Irrespective of the underlying biological mechanism at play,

the innate behaviour of most populations indicates that a preponderance of females, the result of an accelerated loss of males, is normal. This is just what trophy hunting achieves and why it is often biologically beneficial to hunted populations.

Even the argument that it is unwise to hunt prime males while they are in the breeding mode often does not hold, provided there are sexually mature males associating in bachelor groups, or territorial males without harems, to replace them. If a breeding male holding a territory and having a harem of females with which he is mating is removed, the chances are it will have no effect on the reproductive performance of the herd. Their behaviour towards predators and other males of their species, which often replace them as the breeding bull, shows that they are highly dispensable. The only thing that shooting a breeding bull is likely to do is to

hasten the natural turnover of bulls actually involved in breeding, which is unlikely to hurt the reproductive performance of the herd and may increase desirable genetic variability in the group.

The worst that may happen if there is too much hunting of prime males is a reduction in the future availability of marketable trophies and hence in the profitability of hunting over the next few years. How long this will be depends on the quarry. In the case of impala where horn tip wear is high and horn growth is slow after the age of two years, it is unlikely to exceed a season. Against this, the shooting of too many bull elephants in the Zambezi valley in the early 1960s, in an ill-conceived attempt to replace culling by recreational hunting for reduction of population density, led to the removal of most trophy bulls and necessitated suspending bull hunting for 13 years.

Beside the effect of trophy hunting on individual populations, it is useful to consider its effects on the ecology and the structure of the fauna in a hunting area. While this may depend to some extent on how the hunting is packaged, a number of generalizations are possible. First, because hunters seek a variety of species, hunting is likely to lead to the conservation of as wide a variety of huntable species as is desirable in terms of the biological and policy constraints for the land in question. It encourages the maintenance of well-preserved habitats, as many species have particular habitat requirements that are best preserved in situ. It also promotes conservation of greater biological diversity, as many non-target species benefit from management in favour of the often more dominant quarry species.

Economic attributes of trophy hunting

A number of enterprising ranchers in Zimbabwe began switching into recreational hunting in the mid 1960s, as they perceived that the rather simplistic notion of replacing a few domestic species with a spectrum of wild species to produce more meat was failing. The shift gave the industry the profitability it needed and mini safaris soon grew into full-blown safaris as Zimbabwean outfitters gained confidence in the quality of the product they were able to offer on the highly competitive international hunting market. The model that emerged, based initially on hunting and then a combination of hunting and non-hunting tourism, enabled wildlife-based enterprises to survive and prosper against competition from livestock, on private and communal land, to the advantage of wildlife, the environment and people on the land.

Game ranching and related uses of wildlife are now among the fastest growing land use options in much of southern Africa and beyond. This includes South Africa, the most developed country on the continent, and it is due to the economic characteristics of the spectacular indigenous large mammal fauna, which give the region a comparative economic advantage over most of the world. The socio-economic characteristics of wildlife in general and African wildlife in particular equip it to be one of the most financially rewarding land use options available, especially on land that is in any way marginal for agriculture. Whereas 40 years ago many farmers prompted by prevailing veterinary dogma maintained they could not ranch “in a zoo.” Many now accept ranching cannot survive outside the “zoo” or have abandoned livestock ranching to become pure “zoo keepers.” In reality, with growing land hunger farmers globally must intensify their production systems in the face of declining

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real agricultural commodity prices and deteriorating productivity from generations of land abuse. Wildlife, with its diversity and particular economic characteristics, offers those in semi-arid areas the best options for doing so.

Two elements are needed for wildlife-dependent enterprises to succeed. These are proprietorship and price, the two big Ps which determine whether wildlife will be actively preserved on productive land outside parks and reserves (Child and Chitsika, 2000; Child, 2000). The first limits access to and rights over the resources and determines who may use them, and without it there can be no price against which to judge the significance of conserving wildlife. Together they provide a dominant incentive to either conserve or dispense with wildlife. Those using it responsibly need confidence that their investment in developing and managing wildlife is safe and can yield a worthwhile profit that in turn depends on the

price it realizes on legitimate markets. The importance of the two Ps is illustrated by how quickly the decline in wildlife was halted and reversed in Namibia and Zimbabwe once proprietorship over the rights to use and profit from it was given to landholders and wildlife was no longer undervalued by the law.

Unlike domestic stock, wildlife has a charismatic value in addition to its utilitarian value. Besides providing meat and byproducts like milk and hides or wool, it attracts hunters and tourists who pay well for the related services which add economic tiers to the utilitarian values commonly generated by domestic animals. Unlike a conventional meat-producing enterprise which depends on the natural production of forage and hence on rainfall, over which farmers have no control, these services depend on human energy and initiative over which producers have considerable control. They are much more elastic and can be varied

at will to provide more expensive services or greater traffic of visitors and hence more income from the land, without attempting to extract more of the finite energy from the natural environment.

The last has important economic implications in arid and semi-arid areas where rainfall is highly variable. A service-driven tourism or hunting enterprise based on a spectrum of wild animals at relatively low densities to maintain the quality of the environment is hardly affected by whether seasons are good or bad. Against this, meat producers who have come to depend on ever higher stocking rates, especially as the global terms of trade for red meat have declined; must often destock in poor seasons when prices are low, only to have to restock when seasons improve and prices are high. This renders a pure meat producing system economically and ecologically hazardous where annual precipitation is low and variable,

in Zimbabwe below an average of about 760mm per year (Child and Child, 1986). Below this rainfall it is simply not possible to maintain the profitability and sustainability of an extensive beef enterprise, and similar thresholds apply in all arid and semiarid lands.

Wildlife also has the advantage in being geographically heterogeneous compared with domestic livestock which has become globally homogeneous. This diversity gives many remote and often disadvantaged parts of the world a comparative economic advantage over competitors marketing hunting and tourism, because people want to see and hunt different animals in their natural environments. The advantage is, however, being undermined by the continued translocation of species to foreign lands where some such as Asian sheep and goats and Indian blackbuck are now more common than in their native environment. In some cases this is encouraged by domestic

game laws that do not cover exotic game. These laws persuade landholders to introduce rare, exotic species which they can use as they wish to generate income, but discourage them from raising local indigenous species whose use is prescribed by the legislation. The process may have conservation merit for individual species, but it carries a broader danger in that it adds to the erosion of the inherent charismatic values of wildlife as a whole.

Every time wild animals are caught, handled and transported somewhere people's perception of their wildness is reduced, as they see a little more of their charismatic value and ability to compete with other uses of the land eaten away. This detracts from the conservation of nature, sustainable environmental productivity and the alleviation of rural poverty. It is thus important to balance the conservation value of handling wild animals against its neutralizing effect on the appeal of animals perceived from

their being wild – the balance between the glamorous attraction and novelty of the intrepid game ranger catching dangerous wild animals and the mundane routine of the farmer handling his livestock, be it cows or kudu.

Trophy hunting has a number of advantages over other commercial uses of wildlife. The impact on the environment and the cost of providing visitor infrastructure are both low as hunters come in low numbers and tolerate, even enjoy, living hard and travelling rough in four-wheel drive vehicles on primitive tracks. As they are seeking individual high-quality trophies they are tolerant of considerably lower numbers of animals in less attractive settings than non-hunting game viewing or photographs tourists. Finally, they are prepared to pay better for their exclusive personal services and the right to hunt selected trophy species than non-hunting tourists are prepared to pay

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for more general services. In effect, trophy hunters can be viewed as low-bulk, high-value clients, while other wildlife based tourists are high-bulk, low-value clients.

Institutions for sustainable trophy hunting

For trophy hunting to be sustainable it must satisfy a number of criteria. First and foremost, there must be an institutionalized management capacity to provide:

- i) competent biological management ensuring that the rate of off-take from the hunted segments of wild populations is within their biological capacity to maintain the off-take over time; and
- ii) regulatory measures that effectively ensure that this level of off-take is not exceeded.

These basic requirements mean that the purveyors of the hunting are the most important element to satisfy if the hunting is to be sustainable. They are primarily the landholders with wildlife on their land, and to a lesser extent the governments from whom the primary producers may need to look for support in regulating externalities. Whether the landholders are private individuals with freehold title, communities sharing the rights to resources or the state with social obligations to its citizens, decisions have to be made as to whether hunting is a desirable land use option.

Cultural and aesthetic considerations play a part in the decision in all three categories of land, especially in rich, developed countries, but experience teaches that in developing countries on private and communally held land, in particular, they are subservient to relatively short-term financial considerations including job creation. Here hunting must

generate sufficient profits and or employment opportunities to out-compete other uses of the land. On state land, particularly in parks and reserves in rich, developed countries with a predominantly urban population and a service driven economy, longer term economic and political considerations may supersede these financial factors.

We have noted that the two Ps are paramount in persuading individuals on the land to select wildlife, particularly hunting, as a land-use option. Hunters should consequently endeavour to hunt only where the people on the land have meaningful jurisdiction over the management and use of “their” wildlife and receive a fair proportion of the revenue and other benefits earned by hunting. If enough hunters demand to know that their hunting is organized to satisfy the two Ps, before purchasing it they will use their market strength towards ensuring hunting is more sustainable. This would be a



powerful force in support of hunting, better environmental conservation and rural poverty alleviation, because in an appropriate institutional setting trophy hunting, in particular, can be such an ecologically and economically efficient way of using wild resources.

Conclusions

Hunting is under continuing threat from a large body of public opinion that is nominally opposed to it, although the opposition often arises from ignorance and misinformation. A simplistic belief that killing animals is bad has arisen from an anthropomorphic view of individual animals rather than whole populations, and is probably a product of our personal experiences with a few well fed and much loved pets. It has led to the western notions of successful conservation focusing on a few charismatic animals rather than the health of the populations and ecosystems of which they are

a tiny, transient and often disposable fraction.

To counter this and much related, misinformed propaganda, hunters need to be properly informed about their sport so they can project it in a positive light. Besides knowing its positive merits for conserving nature and the environment, how it can alleviate poverty and how it can be organized and conducted to make it economically desirable and socio-politically acceptable, they should recognize its negative properties so that these can be acknowledged and avoided. The sport requires to be accurately portrayed to the public at large, especially to decisionmakers and trendsetters in all walks of life. Hunters also need to organize themselves to act in concert in recognizing their social obligations at home and in the field, and should conduct themselves with decorum so as to earn respect and create a creditable recognition of their sport among the public with whom they mix.

Ecological and Economic Attributes of Wildlife that Add Value through Hunting

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Biography

Rob Southwick received his economics education from the University of Florida College of Business. He then worked as an economist for the Sport Fishing Institute in Washington DC. In 1990, he formed Southwick Associates, specializing in economics and business statistics relating to fish, wildlife, outdoor recreation and natural resources. Current clients include half of all state fish and wildlife agencies, the Association of Fish and Wildlife Agencies, the National Shooting Sports Foundation, and many others. Southwick Associates is based in Florida, and is supported by experienced staff and research associates all over the country.

Recent projects of the group include economic impact studies for Alaska, Florida, Iowa, North Carolina and South Carolina; helping Florida, Tennessee and Iowa scientifically identify new license prices, and assisting Montana, Nevada, South Carolina, Tennessee and other states with scientific strategies to boost hunting licence sales. Southwick Associates is also a primary provider of sales and business intelligence data to the hunting and sportfishing industries. With hundreds of completed projects relating to the economics, marketing and statistics of fish and wildlife, Rob Southwick has a unique perspective on the business aspects of fish and wildlife.

Introduction

Hunting is one of the greatest of America's traditional pastimes with a history that reaches back to the founding of our country and beyond. Every year millions of hunters from all walks of life take to the fields, forests and marshlands not just in pursuit of game but also to enjoy the entire outdoor experience.

But hunting is much more than just a way to connect with the outdoors. Spending a pleasurable day in the field usually involves at least some expense for travel, equipment and supplies. When multiplied by America's 12.5 million hunters, their money employs millions of people in industries ranging from hunting gear manufacturing to travel and hospitality to retail sales all across the country. Because hunters are found in every state, their expenditure has a substantial impact on state and especially local economies.



While many recognize the recreational and economic benefits of hunting, its significant conservation benefits often go unnoticed. For each hunting gear item purchased in the U.S., a portion of the money is returned to state fish and wildlife agencies for conservation efforts. America's record of restoring many species of fish and wildlife and protecting natural habitat can be largely credited to the billions of dollars generated by sportsmen and women.

Through the Federal Aid in Wildlife Restoration Act, passed in 1937 at the request of the hunting and shooting sports industries, special excise taxes on hunting gear have contributed billions of dollars for wildlife conservation. In 2006, \$233 million were provided to state wildlife agencies as a result of this excise tax. Added to this is nearly \$612 million in hunting licence sales plus approximately \$313 million in private donations by hunters to conservation efforts. In total, hunters provided nearly \$1.2

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billion for conservation in 2006.

Hunting and the shooting sports are truly an economic engine and conservation powerhouse.

How the economic engine operates

We will use an example to demonstrate how hunting benefits the economy. Mr. Jack Stannard owns and operates a wholesale electric supply company. Hunting is not a part of his company's business, but it is a passionate part of his life. During the off-season, Jack may purchase a new rifle or special hunting clothes. During hunting season, he devotes his non-working days to hunting. Before heading into the woods, he may stop to buy fuel for his truck, pick up sandwiches and drinks and purchase a box of rifle cartridges.

Although Jack certainly isn't thinking of this, his expenditures are rippling through the local and

national economy, much like the spreading ripples of a stone tossed in a lake. His day in the woods helps support salaries and wages in many businesses. While such a small individual amount on a particular day might not seem like much, when multiplied by some 12.5 million hunters nationwide over the course of a year, the economic effect is enormous.

If enough money is spent – as in the case of hunting – businesses benefiting from the rippling cycle will add employees, whose wages and salaries, when spent, will support still more jobs and benefit additional businesses. Taxes will be generated, too. Economic multipliers, while subtle, can be powerful.

That's why and how the \$24.7 billion spent in 2006 by America's 12.5 million hunters had an overall \$66.7 billion economic impact supporting almost 600,000 jobs nationwide (Table 2). These aren't just jobs as hunting guides or in

Abstract

To maintain support for conservation, societies must place a positive value on wildlife – especially the human communities in closest contact with wildlife. Once it is known, wildlife management agencies and hunters' representatives need to communicate the economic importance of wildlife and hunting. In 2007, wildlife agencies in the United States teamed together to measure and report on the economics of hunting. Southwick Associates conducted this research. This project examined and reported the total expenditures (\$24.7 billion*) made by the 14 million hunters in the United States, and the resulting economic impacts. The amount spent for 43 specific hunting equipment and travel-related items is reported, as are the jobs (593,000), tax revenues (\$9.2 billion), income (\$21 billion) and total economic impact (\$66 billion) that resulted from hunters' expenditures. The total funds provided by hunters for conservation are also reported.

These results are now used in the USA to maintain support for hunting, especially from people who otherwise may not be supportive of hunting. The paper focuses on results and applications.

* All monetary figures in this paper are in US dollars.

Figure 1: US Hunting Facts

- ✓ If hunting were ranked as a “corporation” with \$24.9 billion in sales, it would fall in the top 20 percent of the Fortune 500 list of America’s largest companies, slightly ahead of such global giants as General Dynamics and Coca-Cola (2006 Fortune 500 list).
- ✓ More Americans go hunting than play softball or tennis (National Sporting Goods Association).
- ✓ Women hunt, too. Roughly nine percent of all hunters (more than 1.1 million) are female (U.S. Fish and Wildlife Service).

sporting-goods retail, but include telephone linemen to truck drivers whose wages are supported in part by the money spent on hunting.

The remarkably simple act of Jack’s weekend hunting trip truly is an economic driving force in this nation’s economy.

	Hunting, All Types	Deer Hunting	Migratory Bird Hunting	Upland Game Hunting
Food, drink & refreshments	\$2,177,229,448.00	\$1,238,688,686.00	\$203,010,979.00	\$279,444,587.00
Accommodation (motels, cabins, lodges, camping grounds, etc.)	\$614,015,621.00	\$283,343,065.00	\$57,212,786.00	\$110,202,033.00
Commercial air transportation	\$159,592,842.00	\$23,740,447.00	\$5,714,626.00	\$23,597,424.00
Other commercial transportation (bus, train, etc.)	\$54,794,000.00	\$16,795,450.00	\$5,906,607.00	\$13,064,542.00
Transportation by private vehicle (fuel, etc.)	\$2,482,537,455.00	\$1,301,558,376.00	\$251,100,075.00	\$342,145,255.00
Boat fuel	\$56,941,232.00	\$16,626,122.00	\$25,262,445.00	\$73,729,496.00
Guide fees, pack trip or package fees	\$416,529,307.00	\$164,312,545.00	\$11,447,968.00	\$6,166,315.00
Public land use or access fees	\$47,268,114.00	\$20,724,470.00	\$65,150,704.00	\$30,486,703.00
Private land use or access fees (except land leasing)	\$395,696,905.00	\$218,354,347.00	\$12,392,133.00	\$1,157,267.00
Boat launching fees	\$7,815,356.00	\$2,909,674.00	\$23,824,260.00	\$3,939,125.00
Boat mooring, storage, maintenance, insurance, etc.	\$37,497,943.00	\$8,752,102.00	\$3,185,807.00	\$291,467.00
Equipment rental (boats, camping equipment, etc.)	\$80,729,349.00	\$27,156,779.00	\$16,710,692.00	\$983,546.00
Heating & cooking fuel	\$146,853,019.00	\$96,951,204.00	\$6,727,612.00	\$11,152,430.00
Rifles	\$1,119,900,422.00	\$635,915,304.00	\$37,929,905.00	\$45,105,659.00
Shotguns	\$764,933,615.00	\$166,428,017.00	\$328,976,363.00	\$135,621,601.00
Muzzleloaders & other primitive firearms	\$183,571,628.00	\$148,313,062.00	\$505,371.00	\$1,249,471.00
Handguns	\$382,621,361.00	\$105,340,730.00	\$56,624,225.00	\$17,978,099.00
Bows, arrows & archery equipment	\$671,176,425.00	\$492,747,648.00	\$8,708,098.00	\$5,658,039.00
Telescopic sights	\$402,804,818.00	\$203,755,220.00	\$11,208,418.00	\$7,176,730.00
Decoys & game calls	\$178,683,338.00	\$52,261,516.00	\$82,250,106.00	\$5,140,269.00
Ammunition	\$693,249,814.00	\$266,678,173.00	\$151,490,175.00	\$73,665,212.00
Handloading equipment & components	\$139,291,957.00	\$58,010,943.00	\$9,494,344.00	\$11,384,861.00

Table 1. Expenditures by Category, US Hunting, 2006

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Tom Allen, co-author

	Hunting, All Types	Deer Hunting	Migratory Bird Hunting	Upland Game Hunting
Hunting dogs & associated costs	\$493,490,673.00	\$57,941,267.00	\$146,633,817.00	\$146,381,071.00
Other hunting equipment (cases, knives, etc.)	\$315,224,246.00	\$153,315,561.00	\$38,150,265.00	\$9,927,866.00
Camping equipment	\$243,174,136.00	\$76,153,070.00	\$4,043,006.00	\$1,522,283.00
Binoculars, field glasses, telescopes, etc.	\$213,555,555.00	\$117,633,531.00	\$14,634,924.00	\$2,615,084.00
Special hunting clothes: rain gear, boots, etc.	\$516,500,133.00	\$267,955,146.00	\$58,610,340.00	\$19,381,685.00
Processing & taxidermy costs	\$486,305,565.00	\$316,498,057.00	\$21,520,751.00	\$14,461,235.00
Books and magazines devoted to hunting	\$116,590,912.00	\$41,068,724.00	\$74,497,895.00	\$16,657,414.00
Dues or contributions	\$312,583,744.00	\$122,002,018.00	\$2,290.00	\$28,060,974.00
Other support items (snow equipment, repairs, etc.)	\$62,098,289.00	\$22,180,815.00	\$10,790,677.00	\$2,975,497.00
Bass boat	\$7,084,686.00	\$ -	\$74,444,922.00	\$19,406,064.00
Other motor boat	\$82,834,713.00	\$ -	\$3,237,262.00	\$4,529,585.00
Canoe or other non-motor boat	\$16,442,158.00	\$ -	\$ -	\$ -
Boat motor, trailer, hitch, or accessories	\$30,609,443.00	\$2,322,854.00	\$22,941,806.00	\$ -
Pick-up, camper, van, travel tent trailer, RV, etc.)	\$3,670,278,809.00	\$915,186,743.00	\$6,752,124.00	\$ -
Cabin	\$529,606,148.00	\$413,743,133.00	\$4,373,473.00	\$50,977.00
Off-road vehicle: motorcycles, ATVs, etc.	\$1,731,412,704.00	\$899,031,456.00	\$112,398,667.00	\$94,590,277.00
Other special equipment (ice chests, airplanes, etc.)	\$160,022,243.00	\$23,999,477.00	\$24,119,686.00	\$7,377.00
Licences, tags, permits and other similar fees	\$611,485,152.00	\$367,653,199.00	\$54,450,891.00	\$73,324,086.00
Land owned primarily for hunting, 2006 expenses & payments	\$3,130,126,270.00	\$2,099,031,895.00	\$462,123,171.00	\$319,174,032.00
Land leased primarily for hunting, 2006 expenses & payments	\$749,012,019.00	\$484,265,308.00	\$148,641,629.00	\$27,772,601.00
TOTAL	\$24,692,171,564.00	\$11,929,346,131.00	\$2,657,201,294.00	\$1,980,178,239.00

Table 1. Expenditures by Category, US Hunting, 2006 (continued)

Table 2. Economic Impacts of Hunting in the U.S.

US Hunting Economics at a Glance:

- ✓ 12.5 million hunters
- ✓ \$24.9 billion retail sales
- ✓ \$66.7 billion in overall economic output
- ✓ \$21.1 billion salaries and wages
- ✓ 597,000 jobs
- ✓ \$4.2 billion in state and local taxes
- ✓ \$5 billion in federal taxes

Conservation

America's hunters are in many ways one of our nation's most powerful conservation forces. Our 12.5 million hunters invest hundreds of millions of dollars every year in wildlife conservation and management, substantially more than any other group. Much of this comes from hunting licence



sales, which totalled almost \$612 million nationwide for 2006 and are a primary funding source for most state fish and wildlife agencies.¹

Every time a manufacturer sells a hunting-related product, and every time an imported hunting-related product lands on a U.S. dock, a percentage of its sale price is paid to the U.S. government as an excise tax. One hundred percent of these funds are directed to wildlife restoration and hunting management. Special federal excise taxes and import duties on hunting gear – taxes that were originally requested by hunters themselves – added up to another \$233 million in 2006 under the long-running Wildlife Restoration Act, and reached \$336 million in 2009. That money is apportioned to the states and is similarly critical in supporting state wildlife programs.²

Adding in the \$313m in private donations in the forms of annual dues and contributions (Table 1), nearly \$1.2 billion is directly invested every year by hunters to preserve, protect and increase not just wildlife but also the healthy environment that makes their sport possible and benefits all species of U.S. wildlife. Across much of the country, hunters' money is the primary funding source for protecting and improving wildlife habitat, public access and conservation education.

How the economic estimates were produced

About every five years, at the request of state fish and wildlife agencies, the U.S. Fish and Wildlife Service contracts with the U.S. Bureau of the Census to conduct a national survey of anglers, hunters and wildlife viewers. This sur-

¹ <http://wsfrprograms.fws.gov/Subpages/LicenseInfo/LicenseIndex.htm>

² http://wsfrprograms.fws.gov/Subpages/GrantPrograms/WR/WR_Funding.htm

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vey is known as the 2006 National Survey of Fishing, Hunting and Wildlife-Associated Recreation.³ The methodology has been consistent since 1991, allowing for comparisons across the years. The survey produces statistically reliable results for each state. At the end of each four-month period (trimester) in 2006, each survey respondent was asked about his or her expenditures for each activity as well as days of activity, targeted species and more. More information and results can be downloaded directly from <http://wsfrprograms.fws.gov/Subpages/NationalSurvey/NatSurveyIndex.htm>.

Through funding from the Association of Fish and Wildlife Agencies, Southwick Associates was retained to examine the expenditure data and quantify economic impact estimates. Ex-

penditure profiles were developed for each of the 50 states of the U.S. Only expenditures directly attributable to hunting were included. For example, a truck that may be used for hunting but was primarily purchased to provide transportation to and from work or other uses is not considered a part of this study. Items purchased for hunting and fishing such as a boat or jacket were divided among the two activities based on the respondent's total annual days of hunting and fishing. The expenditure profiles were then analysed using regional economic impact multipliers provided by Minnesota IMPLAN Group (MIG, Inc.).⁴ The model, known as IMPLAN, is widely used in the United States and was originally developed by the U.S. Forest Service for use in government planning activities. The results are presented in this report.

Conclusion

Hunting, and the powerful economic effects it creates, would not be possible without wildlife. Those same game animals and birds would not exist without suitable habitat, which makes clean and healthy forests, fields and marshlands essential to the bottom line. Wildlife and healthy habitat would not exist if communities do not place positive values on both. There is, to be sure, a moral imperative to being "green" and fostering conservation stewardship. But thanks to the massive economic activity of America's hunters, there are dollars-and-cents reasons, too. Good habitat is good business.

³ U.S. Fish and Wildlife Service, *Sportfish and Wildlife Restoration Program, Division of Federal Assistance*. Arlington, VA.

⁴ Minnesota IMPLAN Group, Inc. 1725 Tower Drive West, Suite 140, Stillwater, MN 55082. Info@implan.com. www.Implan.com

Biography

From 1981 to 1996 George Pangeti was head of administration in the Department of National Parks and Wildlife Management, Zimbabwe. His responsibilities included formulating policies to transform the livelihoods of local communities through benefits from the conservation and management of natural resources, especially wildlife. He was instrumental in advising the Zimbabwe Government to review its laws to allow for the creation of the Communal Areas Management Program for Indigenous Resources (CAMPFIRE) in 1989. As a member of the Southern African Sustainable Use Specialist Group (SASUSG) of IUCN- SSC he has worked on CBNRM programs as adviser to some southern African Countries, operating through field visits and workshops.

In 2002 he became coordinator of the African Program of Safari Club International Foundation (SCIF). In this position he has successfully created the African Wildlife Consultative Forum (AWCF) which brings together senior government officials, safari operators, community representatives and Non-Governmental Organizations to discuss issues of sustainable wildlife management, sport hunting and benefit flow. This grouping is also a lobby to the CITES forum in support of sustainable use, especially sport hunting, and trade

(continued on page 316)

Introduction: history of conservation and sport hunting in Zimbabwe

The history of formalized conservation dates back more than one hundred years with the setting up of the first national park in the United States of America (Child, 1977). Before then all continents had practised some conservation of one form or another through setting aside protected areas for religious or cultural activities or as exclusive hunting preserves for the communities. The indigenous inhabitants in Zimbabwe were well adapted to the environment in which they lived. Cultural norms and standards supported a harmonious environment with their natural surroundings (Moyo, O'Keefe & Sill, 1993). Hunting was regulated in many forms such as setting up of royal hunting forests and observation of taboos. The totem system (*mutupo*) prohibited the hunting of certain animal species by certain groups (Manyanga, 2001). There was also

the prohibition of killing animals with young on the hoof while other groups did not kill female animals for meat. Forests were and are still protected as burial sites, sources of medicines or hunting grounds. There are numerous accounts of how pre-colonial societies in southern Africa controlled large hunting territories which needed permission from the leaders if outsiders wanted to hunt (see Wagner, 1980). Such permission which came in the form of hunting concessions was granted to the early hunters, missionaries and traders who arrived on the Zimbabwean plateau during the pre-colonial period. The Ndebele ethnic group in western Zimbabwe for example set aside a hunting sanctuary near present Hwange National Park. The hunting grounds still exist to date in Tsholotsho and Maitengwe Rural District Councils now under the Campfire Programme (see Child, 2003).

During the pre-colonial period in Zimbabwe



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George Pangeti,

Safari Club International Foundation Conservation Programs Coordinator for Africa

such hunting reserves were administered by the traditional leaders such as chiefs and headmen. Where hunting did not take place, the areas were preserved for cultural rituals such as places of rain making ceremonies or burial grounds of the royals. In all cases these areas had to be preserved in their natural state. It is evident that conservation and proper use of wildlife had an appeal to the communities. The communities were willing to preserve their heritage for future generations because they knew it was beneficial to human welfare. Integral in passing on this legacy was a local knowledge-based education that was passed on by the elders to their community.

Zimbabwe was settled in 1890 by Colonial settlers who were looking for gold but hunted for their sustenance. The late Cecil John Rhodes settled in Matebeleland and set up his winter home in what is now Matobo National Park, and in Manicaland he set up a summer home

in what is now Nyanga National Park. These two areas form the first modern protected areas in Zimbabwe. A series of land distribution legislation beginning with the land Apportionment Act of 1930 created many protected areas under various categories (Moyo, 1986; Palmer, 1977). By 1980 Zimbabwe had devoted 13% of its total land area to conservation in the form of National Parks and protected areas covering 4, 965,300 hectares (Child, 1977). Most of the land is suited for outdoor recreation in both non-consumptive and consumptive tourism. The Estate comprises six land use categories which offer protection to representative samples of Zimbabwe's fauna and flora. Each land category is administered in terms of the appropriate section of the Parks and Wildlife Act of 1975 (now Parks and Wildlife Act Chapter 20:14), the regulations following from it (including the various amendments) and the specific Park Management Plans. The six

Abstract

Zimbabwe has allocated over 13 percent of its land to wildlife conservation and management. Local indigenous communities had value systems benefiting conservation, but colonialism denied locals access to their former traditional hunting areas. Conflict arose when wildlife from newly created protected areas strayed into areas of human habitation no longer benefiting from wildlife. Incentives for living with wildlife had been removed. In areas where wildlife was replaced with domestic stock, conflicts arose as a result of predation. Wildlife authorities sought to create tolerance, with nature conservation treated as a form of land use similar to any other agricultural commodity. People living with wildlife became the guarantors of its survival in their communities through incentives to look after it. Incentives were developed in many forms, including the provision of protein to communities, and sale of wildlife products as curios. Safari hunting brought the greatest amount of income to land owners.

New legislation ensured hunting is sustainable and economically viable. Challenges remain, including conflict between humans and wildlife, but Zimbabwe

. (continued on page 317)

Biography (continued)

in wildlife products. George Pangeti has represented Zimbabwe as adviser to the Zimbabwean Delegation to CITES Conferences of Parties from 1982 to 1997 and has represented SCIF as adviser to CITES Conferences and Standing Committee meetings from 2003 to 2007.

categories are National Parks (11), Safari Areas (16), Botanic Reserves and Gardens (2), Sanctuaries (4), and Recreational Parks (7). All except Safari Areas do not allow for consumptive tourism activities such as hunting. Hunting activities have been able to generate revenues for the wildlife authorities since inception as national parks not generate large enough numbers of tourists to generate sufficient revenues to sustain the parks and Wildlife Management Authority

Currently the Authority receives more than 85% of its budget from hunting operations, but

these lands lend themselves to uses other than hunting (NPWLA internal reports, 2008). The Policy for Safari Areas is that there are no settlements permitted except for Parks and Wildlife Authority staff and they should be managed with similar aims as those of other land categories such as National Parks. The major activities currently are hunting and cropping of wildlife such as crocodile egg collection.

Communities, animals and hunting

While recognizing their right to hunt animals, pre-colonial societies in southern Africa generally did not claim ownership of wildlife (see Campbell, 1995). However, their association with animals was one of close affinity. With the advent of colonialism there was a shift in that the locals were denied access to their former traditional hunting areas which were turned into protected areas (Environmental Consult-

ants, 1990). This historical fact has been a major source of conflict between local communities and wildlife management authorities. In order to resolve the conflict situations that had been created, the Parks and Wildlife Management Department and other stakeholders developed programs that sought to create harmony between local communities and wildlife management authorities. Such initiatives in Zimbabwe include the widely cited Communal Areas Management Programme for Indigenous Resources (CAMPFIRE) (see Environmental Consultants, 1990; Barrow & Murphree, 2001; Jones & Murphree, 2001; Murombedzi, 2003). This initiative encouraged tolerance on the part of both the private land owner and the communal people to coexist with animals that had previously been considered a threat to their livelihoods. Nature conservation, especially in areas where it was set aside for this exclusive use, was treated as a form of land use similar to the production of

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any other agricultural commodity. However, the parameters set had to be sensitive to the ecological, economic and cultural needs of the people concerned. The people who live with wildlife thus became the guarantors of the survival of wildlife in their communities because they came to have incentives to look after it (see Environmental Consultants, 1990). In fact, there is a growing consensus among wildlife managers that community participation in the conservation of wildlife is the preferred wildlife management system for much of Africa (see Adams & Hulme, 2001; Jones & Murphree, 2001).

The incentives to look after the environment and especially wildlife by the local communities were realized in various ways. In some instances they came in the distribution of meat to the communities. In other cases wildlife products were distributed to communities to make curios that were then sold to tourists and

urban dwellers. The hunting industry, especially safari hunting, brought the greatest amount of income to land owners. These incentives were made possible by the provisions created by the Parks and Wildlife Act of 1975 as amended in 1982. An important provision in the amended Act enabled local communities to have Appropriate Authority status ensuring that the hunting on communal lands was sustainable and economically viable. An education program was also initiated to educate communities on the environmental benefits of wildlife conservation and the socio-economic benefits that come through hunting. This was done in the form of workshops, outreach programs, drama, print and electronic media.

Causes of conflict

In accepting that there is a relationship between natural resources conservation and benefits to communities, it should be recog-

Abstract (continued)

is introducing more direct financial benefits from hunting to local communities. There is also the negative influence of international organizations that do not support hunting. This paper highlights successes in wildlife management through enabling legislation and the sharing of benefits. It also highlights the challenges that need to be addressed if hunting is to be sustained in Zimbabwe. Suggestions are given on how hunting can enhance wildlife conservation in the southern Africa region.

nized that there are also many challenges faced by wildlife practitioners. The major ones are conflicts between humans and wildlife that may result in habitat loss as communities get fewer and fewer benefits from wildlife. Zimbabwe is dealing with these challenges through human wildlife conflict resolution initiatives and introducing more direct financial benefits from hunting to local communities. There is also the negative influence of some interna-



tional organizations that do not support hunting, which is being dealt with by the Southern African Development Community (SADC) countries of which Zimbabwe is a member.

Further conflicts arose when the wildlife from the newly created protected areas strayed into areas of human habitation, posing a threat to humans and their livelihoods (Environmental Consultants, 1990). In Zimbabwe there have been many instances when wildlife that strayed from protected areas caused loss of lives and destruction of crops. In areas where wildlife was replaced with domestic stock, conflicts arose as a result of predation of domestic stock by wildlife. Such occurrences create explosive situations as the animals are a real threat to farmers' livelihoods.

Before its colonization Zimbabwe was sparsely populated and consequently gave room for a diversity of flora and fauna, leading

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to high productivity of animals. There was plenty of space, food and water for the wildlife, which was managed according to traditional systems. The early European settlers, however, brought with them sophisticated methods of exploitation, and the setting up of protected areas that excluded the local populations from benefiting from the wildlife created conflict with the local inhabitants. The protected area system that excluded local inhabitants was not sustainable as the local populations increased in numbers and started competing for land with wildlife. They needed more fields and increased domestic livestock numbers. On the other hand, the overprotection of wildlife in protected areas meant an increase in numbers which resulted in out migration to the human settlements and community agricultural lands.

The wildlife was thus competing for grazing with domestic stock, which resulted in further conflict.

Case studies: community conservation programs as a conflict mitigation strategy

International bodies such as IUCN and several state parties in southern Africa have embraced CBNRM programs as one of the effective ways of managing conflicts over wildlife resources. The concept has also become a major rallying point by many governments on rural development and poverty alleviation. In many instances community participation has become a mandatory requirement in grant applications for wildlife projects. Southern Africa has taken the lead in this regard as all countries with substantial wildlife populations have CBNRM projects.

The Zimbabwean approach

The Communal Areas Management Programme for Indigenous Resources (CAMPFIRE) was conceived by a number of biologists

and wildlife administrators in Zimbabwe as a means to reconcile human settlement and natural resources management such as wildlife. It revolves around the concept that wildlife, especially mega fauna, is a rich natural resource, and that rural communities must derive benefit from it if they are to tolerate its existence on their lands. In particular, communities must generate income with which to improve their livelihoods. This must be accompanied by an education program that should enable rural people to change their attitudes towards wildlife and help to ensure that offtakes are sustainable and environmental protection reduces degradation. At inception all revenues from CAMPFIRE came from sport hunting. The CAMPFIRE program was initiated as an entrepreneurial approach to community natural resources management (CBNRM). It had to meet the ecological, economic and social needs of the communities without depleting the wildlife populations. Initially, sport hunting was mar-

keted by communal concession holder Safari Operators on behalf of Local Rural Communities. The funds generated would be paid to Rural District Councils who used it as cash dividends or funded community projects. Benefits were thus created at three levels:

- a) For the individual villager who received cash meat and some temporary employment,
- b) For the community through funding of community projects such as schools, clinics, bridges, grinding mills and equipment such as vehicles and tractors and
- c) For the nation through increased economic activity in communal lands which reduces disease and poverty, as well as the generation of foreign currency brought by foreign hunters.

The CAMPFIRE concept was published in 1986 by the then Department of National Parks and Wildlife Management (DNPWLM). Because the government did not have enough resources to implement the strategy, it asked for assistance from the non-governmental sector, and in 1987 the CAMPFIRE Collaborative Group (CCG) was formed by the World Wide Fund for Nature (WWF), the Center for Applied Social Sciences (CASS) at the University of Zimbabwe, Zimbabwe Trust (ZimTrust) and DNPWLM. The CAMPFIRE Association was the leading agency and chaired CCG meetings. Later the Ministry of Local Government and Rural Development (MLGRUD) joined to facilitate the granting of Appropriate Authority (AA) status to the Rural District Councils (RDCs) under their administration allowing them to negotiate commercial safari leases directly with the private sector. The CCG coordinated the CAMPFIRE program and educated communities on its implementation.

Several Rural District Councils have signed on to take part in the CAMPFIRE program but the greatest benefits have gone to those communal areas that are sparsely populated because of the presence of tsetse fly and are not suitable for livestock production. They are also characterized by low rainfall and poor soils that make these lands unsuitable for conventional agriculture or intensive cattle or small livestock production, but very suitable for wildlife conservation.

As mentioned earlier, colonial protectionist policies introduced at colonization disintegrated the relationship that existed between wildlife and the people, and thus rendered wildlife valueless. Wildlife was therefore perceived as pests which should be eradicated. CAMPFIRE enabled a reconciliation between human needs and animal requirements. It identified potential benefits to rural communities derived from wildlife, and simultaneously

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offered sustainable management of wildlife populations that communities live with. Further, the program also ensures that benefits are biased directly towards those communities that do live with wildlife. It thereby creates an incentive for rural people to adopt wildlife management as a supplement to conventional rural agriculture. Thus benefits go to those who pay financial and social costs of living amongst wildlife.

The Namibian approach

Facing the same CBNRM challenges as those experienced in Zimbabwe, Namibia adopted the same community benefit strategies but in a different format. The Namibian program is institutionally strong with national legislation giving full rights to communities and strong government coordination supported by environmental non-governmental organizations. In Namibia CBNRM initiatives were started in the

1980s with the formation of the Integrated Rural Development and Nature Conservation (IRDNC). It was a program aimed at combating poaching and giving benefits to local communities. In 1993 Namibia launched the Living in a Finite Environment (LIFE) program which was administered by WWF-US with financial support from USAID and the Namibian government (Jones, 1997). The Namibian government consolidated its CBNRM program by launching and legislating for the Communal Area Conservancies in September, 1998. The conservancies have the same legal rights as were previously enjoyed by the private farms. In order to resolve the compensation issue as a result of crop destruction by wildlife, loss of domestic livestock from predation by wildlife or injury or loss of human life, Namibia has introduced an innovative community self insurance scheme.

The Zambian approach

In Zambia efforts to involve local communities in environmental conservation projects started with the Luangwa Integrated Development Project (LIRDPA) and the Administrative Management Design (ADMADE) for Game Management Areas. The Zambian ADMADE initiative is unique in that it was initiated and implemented by government with little donor support. ADMADE sets a regional model of a self-financing CBNRM project. On the other hand the LIRDPA project was financed by Norwegian Aid Agency (NORAD). The objectives of the two projects were those as outlined for Zimbabwe and Namibia to reduce poaching and give incentives through participation by local communities in wildlife conservation. ADMADE and LIRDPA were administered under the National Parks and Wildlife Act which was replaced by the Zambia Wildlife Bill of 1998. This Bill established the Zambia Wildlife Au-



thority (ZAWA). The new authority reduced the powers of traditional leaders and created Village Area Groups (VAGs), Area Development Committees and Community Resource Boards. The impact of this arrangement is yet to be seen but seems to create institutions that will effectively participate in conservation at a local level.

Threats to community conservation programs

The success of the community conservation programs like CAMPFIRE depended on its ability to empower communities to make their own choices, especially direct involvement in decisionmaking over the distribution of benefits or determination of animal off-take quotas. The people have to make choices whether to convert land to wildlife management or to conventional pastoral agriculture. Comparisons between wildlife management through CAMP-

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FIRE and conventional agriculture have been made in Zimbabwe (Child, 1988; Jansen *et al*, 1992; Dean, 1990). Early economic research in Zimbabwe suggested that, per hectare, in low rainfall and arid marginal lands wildlife production was more viable than domestic livestock (Child, 1988). This was followed by a viability assessment in the 1990s (Jansen *et al*, 1992) which confirmed that wildlife was generally more profitable than cattle production systems. Wildlife had superior profits despite cattle subsidies that included veterinary inputs and marketing which have state assistance. It has been shown that cattle can generate income from only meat, milk, leather and live sales. With increase in numbers, productivity of domestic livestock declines as the environment is degraded. With wildlife the values are not measured so much in products such as meat, hides and skin but are largely centred on recreational pursuits such as sport hunting. Sport hunters pay more in daily rates

and trophy fees as compared to the values of live sales or meat for animals consumed by the people. Some animals such as lions and leopards have little value to the communities unless they are sport hunted because they do not provide the protein that is so much in demand but rather kill livestock and at times are a danger to the communities as they become man-eaters. In sport hunting, meat is therefore a byproduct rather than a primary commodity. Second, trophy hunting does not depend on increase in numbers of animals but on sustainable offtakes that are regulated by off-take quotas which are scientifically determined. With wildlife, financial viability depends on the diversity and quality of wildlife species. The other revenue stream comes from the unique African wilderness and cultural experience of the sport hunter.

Although communities have set aside land for wildlife they still need cattle for cultural and

other traditional reasons. This is why in tsetse fly infested areas as soon as the tsetse fly has been eradicated villagers bring in cattle. In addition to providing protein, cattle have other traditional functions. For example, they are a sign of wealth and can be used as commodities to purchase goods and services. Cattle are used by many southern African indigenous communities to pay bridal lobola. They also provide meat for gatherings at funerals of the elderly, or at marriage ceremonies. Thus a community benefiting economically from community conservation projects will still need to keep some livestock to fulfil some of the above-noted social mandates.

As a result of the successes in wildlife conservation and management outlined here, Zimbabwe and several southern African countries were able to create substantial wildlife resources outside the Parks and Wildlife Estate. The 1975 Parks and Wildlife Act allowed for

private landholders, who were primarily white settlers, to use most of the wildlife species on their property provided this did not lead to abuse. They were, however, prohibited from using endangered species such as rhinoceros and cheetah. After the attainment of independence in 1980 the law was amended in 1982 to give the same benefit provisions to the communal lands. The rationale behind this philosophy is that landholder communities as primary stakeholders are better placed than anyone else to conserve their wildlife and without their cooperation no amount of legal protection will ensure its survival.

The law was amended to include communal people who were having many conflicts with the wildlife agencies over wildlife. The communities were competing with wildlife for space, food and water, which were previously abundant. Human settlements were sparse and so were the wildlife populations. There was also

little knowledge about wildlife management and mechanisms to mitigate human-wildlife conflicts. As protection measures improved in the Parks and Wildlife Estate animal populations became overabundant and resulted in migration outwards to human settlements. On the other hand, in settled areas as the human population increased more land was taken for settlements, pastoral agriculture and domestic livestock production. In some instances game corridors were blocked by human settlements and crop fields. These activities resulted in much conflict between the communities and wildlife. Early attempts to resolve human-wildlife conflicts were less effective. Several authorities were set up such as the Game Department, The National Parks Department, The Veterinary Department, The Rural District Council and the police. At times the army was called to assist in problem animal control. In almost all cases lethal control was perceived as the solution. This was dangerous to life and

did not solve the problem. There was no educational input to educate people on the dynamics of living with wildlife, and neither was there consultation with the communities as stakeholders to find out what their preferences were.

The local communities looked upon protected areas and game corridors as land that is vacant and into which communities should be allowed to carry out their agricultural activities such as cropping and livestock production for their personal gain. The gain of outsiders seeking an outdoor experience was seen as an intrusion into the community-held lands. As early as the 1960s, Zimbabwe authorities attempted to come up with instruments to mitigate human-wildlife conflicts, with limited success until after the 1982 legal reform allowing for communities to participate in decision-making in terms of their natural resources and benefit from their wildlife. Prior to 1980, at-

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tempts were made to create buffer zones between protected areas and community settlements. Other initiatives include the provision of cheap meat from excess animal populations. Proceeds were given to Rural District Councils to fund community projects. These initiatives were not successful in most cases. The 1982 law reform also abolished the need for Government hunting permits on communal land and allowed landholders, including the Parks Authority, to charge for hunting or any other related activities permissible on their land or from any other use of resources, such as timber logging. This shift in policy encouraged communities to create business enterprises through hunting and thus increase rural productivity. At this point there was an incentive created to protect wildlife and use it wisely. Central Government only intervenes when there is evidence of abuse. The government still issued permits for hunting quotas, sale of live animals or any durable parts of animals in-

cluding skin, claw, tusk and horn, as a monitoring mechanism and to detect any abuses. The permit requirement is also necessary to comply with international obligations such as The Convention on International Trade in Endangered Species of Flora and Fauna (CITES).

Conclusion

The key to sustainable management and utilization of wildlife resources in southern Africa is through the involvement of local communities at all stages of the planning and implementation phases. Community participation should not simply bring benefits from tailored projects, but should seek to involve the relevant communities in the decisionmaking process and implementation of the conservation project. Communities need to be empowered to be able to make decisions through skills training and creating the democratic

space for divergent views to be heard. The case studies from Zimbabwe, Zambia and Namibia provide a platform to develop CBNRM projects in southern Africa. However, CBNRM projects should not be a case of one size fitting all. Rather, each country needs to take into consideration its own unique history and circumstances to come up with a workable program of community-based natural resource management.

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Introduction

The environmental, economic and social benefits of shooting have long been recognized, but the evidence has often been fragmented or out of date. While target and clay shooting's suc-

Biography

Nic Boyns has a Bachelor of Arts degree from Cambridge University, England. He is Assistant Director of PACEC, a Cambridge University spin-out economic consultancy, and has worked in the company as its senior statistician for eighteen years.

He has overseen the analysis of more than 100,000 responses to over 350 surveys, and has developed an input-output model for estimating local, regional and national economic impact. In particular he led the analysis for the economic impact studies of hunting with dogs in England, salmon farming and the prawn industry in Scotland, and under-grazing in the East of England.

cess was reflected in the hauls of medals won at Olympic and Commonwealth Games, live quarry shooting has quietly flourished with few attempts to measure its impact or importance.

By live quarry shooting we mean the pursuit of those species of birds and mammals which can be legally shot during the appropriate seasons for pest control or to provide food. Any reference to shooting in this paper automatically implies live quarry shooting.

The Cobham Consultants' report – *Countryside Sports: Their Economic Significance* – was first published in 1983, and gives little more than an outdated snapshot of some aspects of country shooting. To remedy this, at the request of the organizations involved in 'shoot summit' meetings, the British Association for Shooting and Conservation brought together, in 2004, the Countryside Alliance, and the Country Land and Business Association,

supported by the Game Conservancy Trust, to initiate a study.

They agreed that a comprehensive, statistically sound assessment of the environmental and economic benefits of live quarry shooting was needed and commissioned a detailed, independent report from Cambridge based Public & Corporate Economic Consultants (PACEC.)

PACEC, who are respected economic consultants, have worked for the Department of Trade and Industry, Defra, HM Treasury, the Rural Development Commission and the National Audit Office among others.

The focus of the study is live quarry shooting. While some aspects of this, such as game shooting, provide recreation and food, others, such as deer management, combine these elements with essential pest control or wildlife management. It is also inevitable that clay pigeon

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shooting, target shooting and shooting schools are touched upon since these often support and train people for live quarry shooting.

The report is based upon shooting activity in 2004. It was presented to the organizations in 2006 and this summary reflects its principal findings and the evidence on which they are based.

The survey reveals a vibrant and growing sport which contributes to a dynamic and sustainable rural economy. It not only helps to combat rural poverty but acts as a powerful force for the conservation of the landscape and the biodiversity of the countryside. Above all it provides the opportunity for people to enjoy the countryside while making a positive contribution to the environment, economy and social fabric.

Main findings

In the UK today:

- 480,000 people shoot live quarry
- Shooting supports the equivalent of 70,000 full time jobs
- Shooters spend £2 billion each year on goods and services
- Shooting is worth £1.6 billion to the UK economy
- Shooting is involved in the management of two-thirds of the rural land area
- Two million hectares are actively managed for conservation as a result of shooting
- Shooter providers spend £250 million a year on conservation
- Shooters spend 2.7 million work days on

Abstract

The size and scale of shooting in the United Kingdom was estimated using 2,000 survey responses from eighteen different provider and participant groups, including the police. It was found that 480,000 shooters take 15m pheasants, 3m partridges, 1m ducks and 300,000 grouse over land made available by 61,000 providers. The economic contribution of the sector to the UK economy used the same surveys with input-output analysis. It was found that there was a total of £2,200 million spent, giving rise to £1,600 million Gross Value Added in the UK and 70,000 full time equivalent jobs supported in the UK. The conservation and habitat management activities arising from live quarry shooting were assessed using survey research amongst providers. It was found that two-thirds of rural UK (15 million hectares) is shot over and two million hectares are actively managed at a cost of £250 million, supporting 12,000 full time equivalent jobs.

The environmental benefits and costs associated with shooting were assessed using contingent valuation through a representative survey of 600 adults. There was equal willingness to pay to fund the benefits

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conservation – the equivalent of 12,000 full-time jobs

Economic study – definitions

As a form of shorthand it has been occasionally necessary in the report to use everyday words or phrases to denote a more technical concept. These are the more important definitions:

Live quarry sporting shooting: The shooting of birds and mammals for recreation;

Gun: A shooter of any type of quarry (not just game);

Gun days: Shooting days multiplied by the average number of Guns per day;

Driven game (formal): Form of shooting in which game birds are flushed over the standing Guns;

Walked-up game (informal): Form of shooting in which the shooter flushes game as he or she walks over the shooting ground;

Coastal wildfowling: The shooting of ducks, geese and waders on coastal land affected by tides;

Inland wildfowling: The shooting of ducks, geese and waders on inland sites;

Pest control: The shooting of pest species such as rabbits and pigeons to prevent economic or environmental damage;

Deer stalking: Shooting deer for deer management and or crop protection in the context of sport;

Released birds: Birds bred by the shoot provider or bought in from a game farm and released into the wild for shooting;

Reared birds: Game birds bred by the shoot provider specifically for sporting shooting and released into the wild;

Syndicate: Typically a group of up to about 10 people shooting game over fixed or varying pieces of land;

Estate: Land which is not a tenant farm (rather wider definition than in colloquial use); **Club:** Typically a group of more than 10 people shooting a variety of quarry over fixed pieces of land. The distinction between club and syndicate in this study rests with the perception of the providers and participants who filled in questionnaires;

Shooting tenant: Individual who rents the shooting rights for an area of land from the landowner;

Shooting day: Time spent by Guns on and

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around the shoot site. Some or all of morning or afternoon is half a day;

Gamekeeper: Person who manages game and habitat;

Stalker: Gun who shoots deer, for deer management and or crop protection in the context of sport;

Shooting participants: Those who take part in sporting shooting (of live quarry), and either pay to do so, or do so for nothing. Many providers are also participants;

Gross value added (GVA): The standard monetary measure of the value of economic activity. Usually estimated as the sum of employment costs plus profits, but since many providers run at a loss, profits of shooting providers have been excluded in this study;

Suppliers: A range of firms and individuals sup-

plying shoot providers and participants with related goods and services. Potential suppliers include: shooting agencies (sales), accommodation, shooting training, land management services, reared game (for release);

Full time equivalents (FTE): The number of full-time employees that could have been employed if the reported number of hours worked by part-time employees was worked by full-time employees. This statistic is calculated by dividing the 'part-time hours paid' by the standard number of hours for full-time employees then adding the resulting quotient to the number of full-time employees.

Who provides the shooting?

In the UK sporting shooting is provided in various ways. A small group may form a syndicate to rent the shooting rights over land, a club may perform a similar function, or an individual

Abstract (continued)

(increases in wildlife and creation and maintenance of woodland) as to control the negatives (wounded and dead birds, lead shot, noise, and overstocking).

may reach an agreement directly with the landowner. The landowner himself may run the shoot, letting days on a commercial basis or an agent may take on this role, while many owners simply shoot over their own land in an informal way inviting family and friends.

The report considers any organization or individual who performs services which give rise to opportunities for shooting to be a 'shooting provider.' Overall it is estimated that there are 61,000 providers of shooting in the UK. Four-fifths of them provide pigeon shooting and more than two-thirds offer rabbit shooting, making pest control by far the most accessible form of shooting. Less than a half offer driven or walked-up game shooting. However, most



providers offer a variety of quarry, and pest control or rough shooting frequently takes place alongside more formal shoots. Most shooting is provided by landowners (67%) and half of them provide it directly. But many find an advantage in letting the land to a syndicate or club.

	Total
Driven lowland game (e.g. pheasant, partridge, duck)	26,000
Walked up lowland game	25,000
Grouse (driven & walked up)	1,600
Deer Stalking	17,000
Coastal wildfowling	3,800
Inland wildfowling	16,000
Avian Pest Control (e.g. pigeon)	48,000
Mammalian Pest Control (e.g. rabbit)	39,000
Total Providers	61,000

Estimated number of sporting shooting providers in the UK
Source: PACEC (figures are rounded)

Business or recreation?

Only 22% of providers said they saw shooting primarily as a business, and even fewer – 18% – organized shooting to make a profit; 73% said their motive was recreational.

Shooting – 970,000 days a year

Typically each provider was responsible for 16 days of shooting a year, resulting in 970,000 shooting days in 2004 across the UK. Game shooting accounted for just over a third of these and more than a half were spent controlling pests such as pigeons and rabbits.

Although there is a recreational element in pest control the economic importance should not be overlooked. Pests can inflict considerable damage on farm crops and if landowners had to pay for pest control in the absence of shooting it would cost an estimated £9,800 per provider.

The report also highlights the increasing importance of deer stalking which combines elements of recreation, pest control and management for conservation. There were as many days provided for stalking (150,000) as for shooting driven partridge and pheasant.

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Defra has recently highlighted inadequate deer control in many ancient woodlands as the cause of a reduction in their ecological value and shooting is helping to address this problem.

	Providers	Average days per provider	Shooting Days
Driven lowland game (e.g. pheasant, partridge, duck)	26,000	6	150,000
Walked up lowland game	25,000	5	110,000
Grouse (driven & walked up)	1,600	4	5,700
Deer Stalking	17,000	8	150,000
Coastal wildfowling	3,800	5	19,000
Inland wildfowling	16,000	2	39,000
Avian Pest Control (e.g. pigeon)	48,000	7	340,000
Mammalian Pest Control (e.g. rabbit)	39,000	4	150,000
Total Providers	61,000	16	970,000

Estimated number of sporting shooting days in the UK

Source: PACEC (figures are rounded)

Who shoots?

The report estimates that 480,000 people in the UK participate in live quarry shooting to some degree. Most of them shoot more than one species of quarry, and the most popular forms of shooting are driven lowland game and pest control, both of which are practised by about 330,000 people.

	Total UK
Driven lowland game	330,000
Walked up lowland game	270,000
Grouse (driven & walked up)	47,000
Deer Stalking	86,000
Coastal wildfowling	71,000
Inland wildfowling	94,000
Pest Control (e.g. pigeon, rabbit)	330,000
Total Participants	480,000

Estimates of the number of participants by type of shooting

Source: PACEC (figures are rounded)

The majority of shooters are male (93%) and over the age of 40. However, BASC has evidence that more and more women are becoming involved, and sporting organizations have active programs to engage the young.

The scale of shooting sports

Two-thirds of participants spend at least ten days shooting each year and are typically involved in more than one kind of shooting. Most of this takes place in the area where they live – 89% of those who live in Wales shoot in Wales – but many people shoot in more than one region. For example, 48% of those who had shot in Wales had also shot in south-west England, and a quarter of those living in England travelled to Scotland to shoot.

The social nature of shooting is revealed in the fact that 73% of participants had shot as a guest. Just under half shot as members of

syndicates and 42% had purchased shooting by the day.

The overall amount of shooting activity is measured in 'Gun days.' This is estimated by multiplying the number of days' shooting and the number of people shooting on each day. However, when it came to assessing the total number of Gun days there was a sharp disparity between the returns from the providers and from the Guns themselves.

It was decided that on the less formal shoots, often organized on an ad hoc basis, the providers tended to underestimate their activities and the participants gave a more accurate report. But on the formal driven game days the providers would supply a better estimate since participants often included days when they were not actually shooting, but beating or picking up downed game.

By adding together the resulting gun days, this produced an estimated total of 10 million Gun days a year.

	Gun days reported by Providers	Gun days reported by Participants	Final estimate of Gun Days*
Driven lowland game	1,500,000	-2,300,000	1,500,000
Walked up lowland game	-820,000	1,800,000	1,800,000
Grouse (driven & walked up)	59,000	-100,000	59,000
Deer Stalking	-200,000	680,000	680,000
Coastal wildfowling	-49,000	370,000	370,000
Inland wildfowling	-160,000	400,000	400,000
Pest Control	-820,000	5,400,000	5,400,000
Total	3,600,000	11,000,000	10,000,000

Number of Gun days in the UK as reported by providers and participants

*See previous paragraphs for explanation of choice of estimates

Source: PACEC (figures are rounded)

Pest control

The term pest control is used loosely to cover a range of shooting activities generally undertaken to:

- Protect agricultural crops, stock, forestry or the natural environment
- Protect game or wildlife
- Protect public health or safety

Mammals

Certain species, regarded as pests, may be legally shot at any time. They include agricultural pests, such as rabbits, foxes and rats, and those which damage habitat and other wildlife such as grey squirrels.

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Birds

In the UK all birds are protected but authorized persons may shoot certain game birds and waterfowl during the appropriate seasons. Under the Wildlife and Countryside Act (1981) the Government annually issues general licences. These allow authorized persons to shoot species listed on the general licence for specific purposes provided they comply with the terms and conditions of the licence. There are strict legal conditions and failure to observe them can lead to prosecution.

The environmental impact of shooting in the UK

Sporting shooting could not exist without conservation because if there were no conservation there would be nothing to shoot. And although many shoots undertake conservation work for its own sake, there is abundant evi-

dence that where land is managed for the benefit of game, other species flourish.

The report reveals, for the first time, the true scale of resources – financial and manpower – which shooting invests in conservation. It dwarfs the contribution of almost any other sector.

With increasing financial and institutional pressure on farmers to manage their land for enhanced biodiversity, shooting offers exceptional opportunities. By improving habitat, landowners can simultaneously increase their income from shooting rents and reap the financial benefits of environmental stewardship schemes.

This integrated approach – harmonizing recreational use with agri-environmental policy – offers an immediate economic return on environmental improvement, and is capable of doing so over a large area. Beside the financial

incentive to landowners and farmers to undertake conservation work, shooting, in itself, provides a sustainable use of natural resources.

In the UK as a whole shooting providers have management responsibilities within a total area of some 15 million hectares. That is about two thirds of the total rural land mass. However, shooting does not take place over the whole of that area and active shoot management – planting trees and hedgerows, for instance – is actually undertaken on some two million hectares, which represents an area the size of Wales.

This compares with 87,900 hectares of National Nature Reserves and 80,000 hectares of local reserves managed by the Wildlife Trusts.

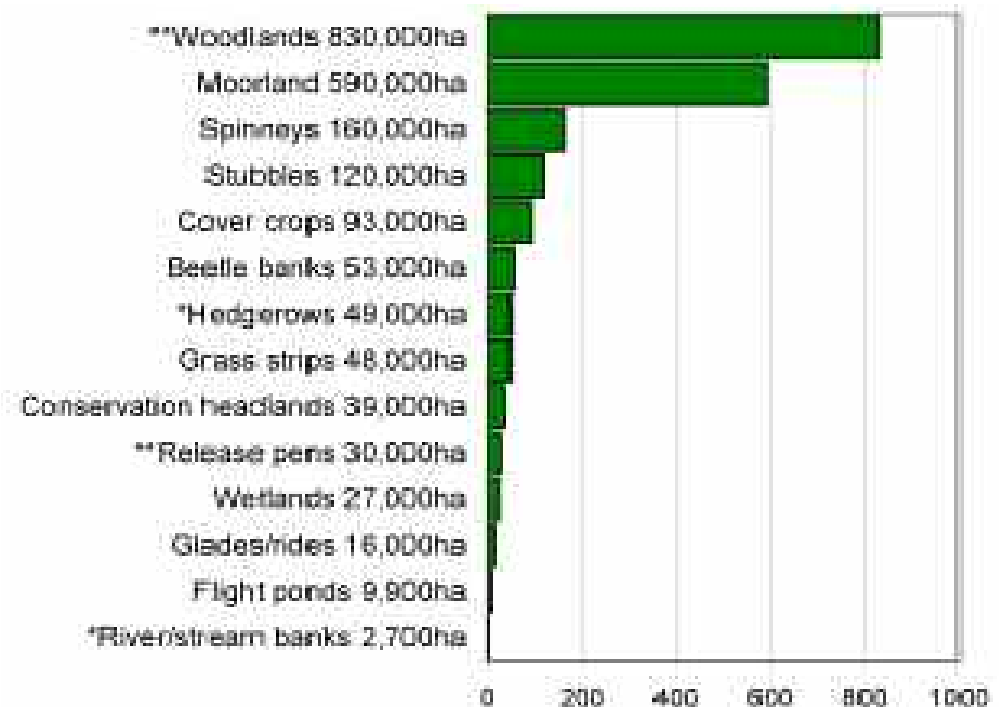
While the bulk of shooting-related conservation work, by area, focuses on woodland and moorland it is the smaller projects which can

often have a greater impact. Defra has stated that priority habitats require positive management to enhance their conservation status and such developments as hedgerow and pond creation can be vital in areas where farming methods may have degraded the natural habitat.

Woodland managed for shooting rather than for commercial timber production provides richer and more varied habitat. In the wide rides required for shooting, there can be four times as many butterflies as on woodland edge.

Most small woods are planted specifically for game shooting and in 2004 shooters spent £8m on trees. On average shoots maintain 61 hectares of woodland.

Game shoots also maintain an average of about nine hectares of cover crops. These provide an important source of food and shelter for songbirds, particularly during the winter.



Estimated extent of habitat and wildlife management undertaken on land used for sporting shooting in the UK

*Hedgerows and river/stream banks are assumed to be 4m wide

**Management of woodlands includes work on release pens

Source: PACEC (figures are rounded)

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Pest control

The control of pests and predators makes a significant contribution to the conservation of many vulnerable species, particularly ground nesting birds. Species such as rats and crows attack both songbirds and game birds, typically stealing their eggs. Left uncontrolled, pests and predators can significantly harm biodiversity and damage conservation.

The pest and predator control work undertaken by shooting in 2004 accounted for 38,000 rats, 1,000 mink and 380,000 corvids (crow species). This not only protected game species but also non-quarry birds such as the song thrush and golden plover.

Half a million active conservationists

If shooting were stopped it would severely damage the conservation of wildlife and biodi-

versity. Among shoot providers, who contribute to the management of a total area the size of Wales, 20% would stop all habitat and wildlife management while 59% would manage habitats differently. The previous figure shows the various aspects of conservation which would be affected.

In effect, shooting provides an active army of nearly half a million conservationists – people who actually go out into the countryside, work to improve it and invest a huge amount of their own time and money in the project.

Working, and paying, for conservation

Shooting providers in the UK spend an estimated £250 million a year on habitat and wildlife management; that is five times the annual income of Britain's biggest wildlife conservation organisation, the RSPB.

The cost may be funded all or in part by government grants or by the providers themselves. In total the expenditure on habitat and wildlife management represents well over a quarter (29%) of all costs borne by shoot providers.

Shooters in 2004 spent £8 million on trees for planting.

	Habitat & wildlife management costs	Sporting shooting costs
Staff costs	140	190
Operation costs	49	580
Capital costs	57	84
Total costs	250	850
Share of sporting shooting	29%	100%

Breakdown of costs of habitat and wildlife management for sporting shooting (£m)

Source: PACEC (figures are rounded)

Conserving for all

It was David Bellamy who remarked that flying over the British Isles you could easily spot the areas where field sports flourished – it was where there was still a patchwork of woods, hedges and small fields. The landscape which we cherish is manmade and it can only be maintained through man's efforts. Shooting's effort amounts to £250 million of investment and the equivalent of 12,000 full-time jobs.

In preserving and enhancing habitat for wildlife, shooting is necessarily sustaining the natural beauty of the countryside. This is something from which we can all benefit. Whether you go to the country for recreation or simply view it from the window of a car or train, the landscape which you enjoy owes much to the care of the shooting community. Step out of your car and the abundant wildlife of areas managed for shooting enriches the

experience of all who visit the countryside, while the £7.7m invested in roads and tracks each year makes that experience all the more accessible. And shooting itself is a means of accessing the countryside. Many of the nearly half-million shooters do not live in rural areas. For them shooting offers the chance to escape from the metropolitan environment and re-connect with the natural world.

Overall shooting provides an impressive example of the increased social and economic benefits provided by the sustainable use and enhancement of the natural environment.

12,000 full-time conservation workers

While the amount of money devoted to habitat improvement is impressive the effort put in by shooters themselves dwarfs most other conservation projects in the UK.

An estimated 2.6 million work days are undertaken each year on habitat and wildlife management for shooting in the UK. This is the equivalent of 12,000 full time jobs. In comparison, English Nature employed 950 permanent staff and the Countryside Council for Wales just 660.

If these jobs are translated into labour costs – the money you would have to pay people to do this conservation work – they amount to £140 million.

Typically a shoot provider provided 16 days of shooting while undertaking 155 days of wildlife and habitat management a year.

Where shooting takes place the need to maintain and improve habitat for game is a strong incentive for landowners and farmers to enter into agri-environment schemes. Shooting rents provide a substantial contribution towards the

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costs of conservation work and the agri-environment schemes help more work to be undertaken than would otherwise be the case.

As a result of this almost a quarter of shoot providers (23%) said that conservation paid for itself. However, 19% said that funding came specifically from their own, private resources.

This conservation effort is widely recognized. Part of the report examines the public perception of shooting and it found that 63% of respondents (of whom only 8% shot) identified no negative issues. Those people who regularly use the countryside saw much more positive value in shooting than non-users.

Among non-shooting countryside users, 57% cited woodlands as the most positive benefit of shooting.

	Labour
Create or maintain conservation headlands	210
Create or maintain grass strips around fields	210
Create or maintain hedgerows	1,600
Create or maintain 'spinneys'	800
Retain overwinter stubbles	59
Plant cover crops	330
Create or maintain beetle banks	1,700
Maintain banks of streams and rivers	110
Maintain woodlands (coppicing, thinning)	2,400
Create or preserve wetlands	38
Create or maintain release pens	710
Remove trees to create glades / rides	300
Manage heather moorland	120
Create or maintain flight ponds	94
Pest control (to protect game and habitats)	3,100
Total	12,000

Breakdown of labour undertaken for habitat and wildlife management practices for sporting shooting (FTEs)

Source: PACEC (figures are rounded)

A sport worth £1.6 billion

Government figures show that countryside recreation and tourism is now a larger industry than agriculture in terms of numbers employed and financial turnover. Within this context shooting has become an important part of the rural economy, both through direct spending and the stimulus to wider economic activity which helps to sustain the rural community.

It is estimated that shooters spend £2 billion a year on goods and services. This produces a direct financial benefit to the UK – defined as gross value added – of £1.6 billion a year.

Shooters themselves spend money on guns, travel, accommodation and payment to the providers. The providers will pay for materials or services, such as fencing (£11 million a year), game cover crops and the wages of a gamekeeper. They also supply downstream in-



which employs the forestry contractor, who buys plant from the agricultural supplier, who employs a local workforce – the ‘supply chain effect.’ Furthermore, the wages earned and suppliers’ profits are ploughed back into the local economy, benefiting many activities not directly associated with shooting, and, by providing employment, helping to underpin the social fabric of the countryside. The game-keeper fills his vehicle at the local garage, spends his wages locally and sends his children to the local school. Nearly a quarter of the 61,000 shooting providers spent more than £50,000 each year, and the wages and profits which have been created by this shooting activity when spent locally create a second and subsequent rounds of expenditure, wages and profits known as the multiplier effects. PACEC used multipliers from the Office of National Statistics in compiling its report.

Overall the research reveals that shooting is

worth £1.6bn to the UK. That is the total gross value added– a standard measure of economic activity which is usually estimated as the sum of employment costs added to the profits.

So, as the countryside undergoes a major structural economic adjustment away from agriculture, shooting provides a source of income that runs with the grain of the rural community. An added bonus is the social quality of the shoot which brings together both local people of all backgrounds and visitors, and often provides a focus in dispersed communities where the opportunity for social interaction is rare.

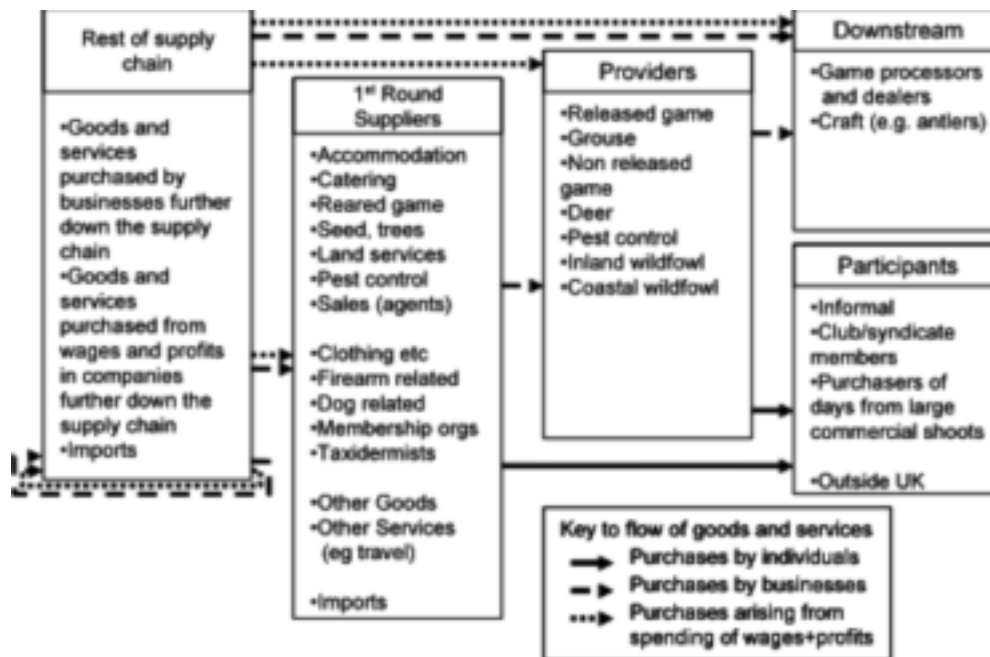
By encouraging social inclusion and building bridges between town and country, shooting helps fulfil the injunction of the England Rural Development Programme which says: “The rural environment needs to be better appreciated and valued by rural communities and better harnessed as a source of economic advantage.”

dustries with goods and services.

Every one of these transactions creates further economic impacts as firms buy from firms, creating ripples through the rural economy – the fencing contractor buys posts from the sawmill, which buys timber from the estate,

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Economic Framework

Source: PACEC (figures are rounded)

Thinking of others

In 2004 shoot providers donated £7 million to charity.

Supporting 70,000 jobs

A key finding of the report is that in the UK shooting supports the equivalent of 70,000 full time jobs (FTEs). While 31,000 jobs are directly created by shooting, a further 39,000 are dependent upon it.

	Total UK FTE paid
Beaters and loaders	15,000
Shoot managers, Gamekeepers ¹ , others	16,000
Total number of direct jobs supported	31,000
Number of supplier jobs supported	16,000
Number of jobs supported in downstream industries	930
Number of supply chain jobs supported (includes expenditure multiplier effects)	22,000
Total number of indirect jobs supported	39,000
Total number of jobs supported	70,000

Breakdown of paid jobs supported by sporting shooting

¹ Gamekeeper: Person who manages game habitat. They may rear birds for release into the wild.

Source: PACEC (figures are rounded)

It is estimated that 600,000 people are involved in the provision of sporting shooting in the UK. That is the equivalent of 49,000 full time jobs, or a fifth of the total agricultural workforce.

Much of the work is undertaken voluntarily – catering, for instance, may be provided by family members – but shooting still generates the equivalent of 31,000 full-time paid jobs. And those jobs which are unpaid may still make an economic contribution by providing services. They may also spend in the area on such items as travel, food and drink.

By far the largest number of jobs involves beaters and pickers up. Since they are only employed on shooting days the number of FTE jobs is relatively low, but they do provide a valuable source of casual employment in economically disadvantaged rural areas, especially for young people.

Category	Beaters and Loaders	Shoot managers, Gamekeepers etc	All Involved in provision
Workers	410	190	600
FTE work done	19	30	49
Paid workers	340	53	390
FTE paid jobs	15	16	31

Estimated work (including beating and loading) done to provide sporting shooting opportunities in the UK ('000)

Source: PACEC (figures are rounded)

The prevalence of low wages has been identified as a major contributor to rural poverty and in areas where employment opportunities are scarce shooting provides a valuable source of supplementary income. In contrast, most gamekeepers are in permanent, salaried positions and typically there are 11 paid FTE gamekeepers for every ten shoot providers. In the survey 63% of providers employed a gamekeeper. The role of the gamekeeper has changed dramatically in recent years. Many colleges offer gamekeeping courses and

young entrants to the occupation are now highly trained across a wide spectrum of habitat and wildlife management. They add considerably to the skill base of the rural economy.

Apart from those directly employed in shooting, a large number of jobs are dependent upon it. When shooting providers were asked if they used suppliers who were particularly dependent upon shooting, 81% said yes. In fact it is estimated that 16,000 first-round supplier jobs are supported by sporting shooting.

The economic benefits rippling out from shooting extend beyond the first time suppliers to downstream industries, such as game meat producers, and those who in turn supply them.

In total, participants and providers spent £59 million on downstream industries, supporting 930 jobs. However, when the rest of the supply chain is taken into account, an estimated 22,000 more

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jobs are supported by shooting. This comes from firms buying from firms and individuals spending the wages or profits derived from shooting.

Shooting and tourism

Shooting directly supports 5,700 jobs in the food and accommodation sector.

Participants are frequently accompanied by partners or non-shooting friends and it is estimated that 202 visitor nights were generated in 2004 by each shooting provider. The majority of these were in the local area (51%) while a further 44% were actually on site, again putting money into the local economy.

This helps to sustain rural communities in the winter when income from other forms of tourism is substantially reduced. This can make the difference between profit and loss for some rural services.

What is shot?

The total number of gamebirds and wildfowl shot for sport in 2004 was just under 19 million; almost four-fifths of these were pheasants and 99% was destined for the food chain. This is a small but important contribution to the nation's food supply. By way of comparison the UK poultry industry provides around 750 million birds for the table each year.

While 44% of the birds were sold to game dealers the remainder were consumed by the shoot providers, who are often game dealers in their own right, or were taken for eating by the shooters and their families. A small percentage of birds may not pass as fit for human consumption under EU food hygiene regulations which came into force on 1 January 2006.

Much of this game is now supplying an important local niche market, often with backing from

the Regional Development Agencies. North West Fine Foods, for example, markets a substantial quantity of game and wildfowl products. With the demand stimulated by the backing of celebrity chefs and an increasing number of supermarkets the harvest obtained by shooting is becoming increasingly significant.

This market is likely to be boosted by the government review of game laws and licences, (announced in the summer of 2006) which, having been formulated in the 19th century, are archaic and place unnecessary constraints on the market.

	Total UK FTE paid
Land mgt services	150
Pest control services	25
Shooting school	460
Sales/marketing	180
Accommodation/food	5,700

Table continued on page 344

	Total UK FTE paid
Membership/insurance	310
Game farm	300
Magazines	130
Feed/fertilizer/trees/seeds/fencing	760
Firearms & ammunition	590
Dogs (incl. training & kennelling)	1,700
Vet	560
Travel	1,300
Vehicles (providers only)	110
Vehicle running	690
Utilities/communications	56
Building: road/track/ property	860
General goods	1,100
General services	510
Craft	5
Art	180
Taxidermy	14
Total first-round supplier employment	16,000

Estimated number of first round supplier jobs in the UK supported by sporting shooting

Source: PACEC (figures are rounded)

Strategy for deer

Although deer stalking is a sport in its own right, it is usually conducted as part of an over-all deer management strategy which seeks to create a balance between maintaining a healthy population and limiting the economic and ecological damage which deer inflict. This has been recognized in Defra's Wild Deer Strategy and Action Plan launched in 2004.

In that year unpaid stalkers shot an estimated 120,000 deer. Of these, 61% were sold to dealers and 36% were eaten by the stalkers themselves.

Pigeon control

Pigeons provide the highest number of shooting days in the UK, and an estimated 3,600,000 were shot in 2004 to protect crops.

They provide excellent food for the table and 90% were used as such. Much of the remainder will, for various reasons including hygiene regulations, have been unfit for human consumption.

The picture across the UK

The scale, and economic significance, of shooting varies from home country to home country and region to region, with the largest effects being found in the southeast and southwest of England and in Scotland. In those three places nearly half (41%) the providers of shooting are found and almost 40% of all shooting activity takes place. In Scotland, where 1.5 million gun days were provided in 2004, the sport is of particular significance: of the 480,000 people who shoot, nearly half (42%) do some shooting in Scotland – though not every year. A quarter of those who live and shoot in England also travel to Scotland to shoot.

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The regional contribution to conservation is impressive. While the UK's largest charity dedicated to conserving all species and habitats – the Wildlife Trusts – manages 80,000 hectares nationally, shooters manage more than three times that area in the South East alone.

Country/Region of England	Gun days provided (m)	Providers	Guns (by region of participation)
South East	1.4	6,100	130,000
East	1.7	10,000	97,000
Gr. London	0	480	6,600
South West	0.9	10,000	110,000
West Midlands	1.4	3,400	85,000
East Midlands	0.8	4,800	80,000
York/Humber	0.5	2,700	68,000
North West	0.7	2,900	46,000
North East	0.4	3,100	50,000
England	7.8	44,000	370,000
Wales	0.6	2,700	110,000
Scotland	1.5	8,800	200,000
Northern Ireland	0.3	5,000	31,000
UK	10	61,000	480,000

The nature of sporting shooting by UK country and region
Source: PACEC (figures are rounded)

Symposium proceedings on the Ecologic and Economic Benefits of Hunting

	Total Gross Value Added	Total FTE Paid Jobs	Area influenced by shooting (000 ha)	Conservation Jobs (FTE)
England	1,300	54,000	8,600	8,800
Wales	73	2,600	500	340
Scotland	240	11,000	4,400	2,000
Northern Ireland	45	2,100	990	640
UK	1,600	70,000	15,000	12,000

Summary of benefits to the home countries
Source: PACEC (figures are rounded)

Country/Region of England	First round supplier spend by providers and participants	Direct GVA	Total GVA supported
South East	220	43	250
East	110	28	140
Gr. London	25	0.4	76
South West	280	44	270
West Midlands	66	14	92
East Midlands	110	15	120
York/Humber	94	14	110
North West	140	24	160
North East	53	10	61
England	1,100	190	1,300
Wales	73	5.3	73
Scotland	230	47	240
Northern Ireland	37	8.7	45
UK	1,400	250	1,600

Summary of benefits to the home countries
Source: PACEC (figures are rounded)



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Scotland

Nearly half of Britain's 480,000 shooters do some shooting in Scotland; this provides significant benefits to the local economy and to conservation.

Overall this involves 1.5 million gun days which are worth £240 million to the Scottish economy. Since the bulk of this money is spent in rural areas and often at times when other forms of tourism are at a low level it is particularly important.

The report reveals that there are 8,800 shoot providers in Scotland and estimates that each of these generates 202 visitor nights. That amounts to approximately 1.75 million visitor nights, most of which take place during the autumn and winter months when other visitors are thin on the ground. This can make the crucial difference between profit and loss for hotels in rural areas.

Overall it is estimated that there are 58,000 workers paid by shooting and this amounts to the equivalent of 11,000 full-time jobs.

The environmental benefits are equally impressive. Of Scotland's 7.8 million hectares, 4.4 million are influenced by shooting and 0.7 million are directly managed for shooting. As a result, shooting not only provides the equivalent of 2,000 full-time conservation jobs but spends £43 million a year on improving habitat and wildlife management.

Wales

In Wales, shooters enjoy 600,000 gun days. This activity is worth £73 million to the Welsh economy and provides the full-time equivalent of 2,600 jobs.

Most of these jobs are in rural areas and most of the money is spent in the countryside too.

This provides an important stream of income to many disadvantaged areas and provides a continuity of income which is crucial to the survival of some small businesses.

The environmental benefits are equally important. Shooting influences the management of more than half a million hectares and £9.6 million is spent on improving habitat and managing wildlife. That money supports the equivalent of 340 full-time conservation jobs, which is more than half the total number of staff employed by the Countryside Council for Wales.

Northern Ireland

Shooting is worth £45 million a year in Northern Ireland and supports the equivalent of 2,100 full-time jobs. This has been achieved despite stringent firearms laws which have severely restricted the growth of shooting sports when compared with other parts of the UK.

The recent relaxation of these laws is likely to see a sharp increase in activity and this clearly presents a significant economic opportunity for rural areas. For instance, 25% of shooters who live in England travelled to Scotland at some time to shoot. The equivalent figure for Northern Ireland is 1%. Since visitors can now borrow a gun there is great potential for the Province to develop its sporting tourism base.

Shooting is already making a substantial contribution to conservation, and influences the management of a million hectares. Ten million pounds is spent on habitat improvement and wildlife management each year and that provides the equivalent of 640 full-time conservation jobs.

The PACEC Report

The main objectives of the PACEC study were to:

- Define the key components of sporting shooting and their associated interests
- Assess the economic contribution of the sector to the UK economy
- Evaluate the conservation and management activities arising from game and wildfowl management and shooting
- Identify issues relevant to the future development of shooting in the rural economy

A staged program of research began in September, 2004, and it included a review of the literature, data collection, assembly of a database and economic modelling.

Surveys were carried out involving those who provide shooting opportunities, their suppliers and those who participate. The surveys were

designed to ensure statistically robust estimates of activities and impacts across different geographical areas and quarry types.

Target	Respondents	Method
Stakeholder	40	Face to face and telephone
Case studies	16	Face to face and telephone
Participants	1,128	Postal survey
Providers	968	Postal survey
Suppliers	169	Postal and telephone survey
Public	623	Face to face

Primary research

Source: PACEC

To survey those who shoot and those who provide shooting more than 10,000 questionnaires were sent out to random samples from 20 different groups. More than 2,000 completed questionnaires were returned.

To provide a complete picture of shooting in the UK data were collected from a full range of

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providers from local clubs to large commercial shoots. However, much shooting takes place on an *ad hoc* basis, involving informal arrangements (28%), and many shooters do not belong to organizations. To address this, a sample of shotgun licence holders was identified and surveyed with the help of police firearms licensing departments.

Source of Contact details	Sent	Received
Shotgun Certificate Holders (via the Association of Chief Police Officers)	800	101
Association of Deer Management Groups	400	76
British Association for Shooting & Conservation	1,801	426
British Deer Society	50	14
Countryside Alliance	2,102	452
Country Land and Business Association	1,020	146
Greater Exmoor Shooting Association	565	345
Shooting lease holders on Forestry Commission Scotland land	46	10
Game Conservancy Trust	800	197

Survey of participants and providers

Source: PACEC

Source of Contact details	Sent	Received
Good Shoot Guide (An Annual Publication of shoots)	50	8
Game Trust (Northern Ireland)	30	11
National Gamekeepers Organisation	1,050	135
Scottish Gamekeepers Association	200	23
Scottish Rural Property and Business Association	225	76
Union of Country Sports Workers	200	40
Ulster Farmers	100	6
Shooters Rights Association	150	0
Other (Pilot, case study, self selection)	30	30
Total	10,069	2,096

Survey of participants and providers

Note: Grossed up estimates for the entire population took into account joint membership of the above organizations, response rates, and multiple people involved in one provider organization

Source: PACEC



Biography

A graduate in communications from Florida International University, and editor and publisher of *The Hunting Report*, a monthly news publication serving the needs of hunters who travel, Barbara Crown has been at the forefront of developments affecting international hunters and the conservation programs that hunters support around the world.

The Hunting Report has a breaking-news format, and Ms. Crown becomes aware of challenges to international hunters as they arise, investigates their causes and then actively assists her readers in overcoming or circumventing the problems. She has digested and researched thousands of subscriber hunt reports and investigated stories on hunting all over the world. Her knowledge of international hunting is as broad as to span the challenges of travelling with firearms, the specifics of tur hunting in the Caucasus Mountains and the latest trophy shipment problems caused by government red tape.

As the editor of *The Hunting Report*, an international big game hunting newsletter serving hunters who travel, I report on hunting opportunities around the world and the issues that affect travelling hunters. Because of the nature of our publication and the kind of reporting we do, I am in a position to hear immediately about problems affecting hunters going abroad. I receive a continuous stream of reports from hunters. They call me as soon as they get home; they call me from international airports as they are boarding a flight; and they even call from satellite phones in the bush. If something is adversely affecting hunters who travel, I usually find out about it as it is happening. It is for this reason that I was invited to contribute to this symposium regarding the threats to the economic and ecological benefits of hunting.

I am not a scientist or a researcher. I don't conduct surveys, collect data, or compile and

sort numbers. So, I will not be giving carefully measured results on research projects or studies. What I do hope to give is a sense of the ethos of travelling hunters. These are the people responsible for the economic and ecological benefits of hunting discussed at this symposium. I am talking about the people who dig deep into their pockets and pay to go hunting all over the world. I say they are responsible for the economic and ecological benefits of hunting, simply because when they stop digging into their pockets, these benefits will stop too. So, I believe when we talk about threats to economic and ecological benefits, we are talking about things that would make hunters stop spending money to go hunting.

So, what could be so terrible that it would cause hunters to stop spending money on hunting abroad? We are talking about a special breed here. International hunters endure

Threats to the Economic & Ecological Benefits of Hunting: Challenges that Discourage International Hunters

Barbara V. Crown,

Editor and Publisher of *The Hunting Report*, Serving the Hunter Who Travels

all manner of physical discomforts and demands, from slogging through mud in the Okavango and climbing the vertical faces of the Caucasus to risking frostbite in the Arctic. We brave carrying security-sensitive items, namely guns and razor-sharp arrows, to places where we don't speak the language, don't really understand the culture, and don't know exactly how the system works. We dare travel to places that CNN and the BBC portray as chaotic, lawless, depraved and deadly. We seek to put ourselves in danger, trekking into remote, wild places where a bear, a Cape buffalo or a slip and fall down a steep, rocky ravine can literally put our lights out. So, again, what could be so terrible that it would make us baulk at hunting abroad?

To answer that question, there are a number of developments that have popped up over the last couple of years. By themselves, they seem like small things. Some of them, upon

closer examination, are not so small at all. And when we take them all together at once, they create a sense of insurmountable burden and uncertainty that will threaten international hunting and thus the conservation programs that hunters support from the Arctic to Zimbabwe.

As it is widely recognized that the biggest international hunting market is the American one, we have to start there. And the biggest problem this market is currently facing is quite frankly the downright pigheaded, highly bureaucratic, completely autocratic approach of the U.S. Fish & Wildlife Service in the application of CITES regulations and the U.S. Endangered Species Act. In August of 2007, the Service passed a set of Draconian regulations that do much to expand the letter of the law without serving the spirit of the law. I say that because the whole purpose of CITES and the Endangered Species Act after

Abstract

International hunting faces many challenges, from habitat loss to anti-hunters, to hunting closures and game population declines. The hunting community and the conservation programs we support have survived these challenges and can continue to do so. What has the power to destroy us, however, is a growing lack of confidence caused by multiplying uncertainties that are making hunters think long and hard before deciding to hunt abroad. The causes of these uncertainties have developed and grown over the last several years and include airlines refusing to take firearms and trophies, government restrictions that cause customs agents to pull firearms from transit, and airport security personnel who confiscate ammunition. Just as affecting are increasing trophy shipment delays and confiscations due to overly complicated requirements that do little to enforce the spirit of wildlife regulations, and also the prosecution of hunters for simple errors committed by a third party on trophy import-export forms.

(continued on page 353)

all is to prevent the illegal trafficking of species at risk and to support the recovery of those species. But the regulations that have been passed by the Service have a singular, myopic focus on enforcement that not only hinders the legal trafficking of species but also holds hunters legally responsible for things that are completely out of their control.

For example, the Service has added a number of steps, check-off boxes and other items to the export documents it will accept from other nations for CITES species. If the export documentation for a CITES trophy has the slightest clerical error, if the validation from the exporting country is not in the right place, or a particular box is not checked off, U.S. Fish & Wildlife can and will seize the shipment and slap the hunter with some rather hefty fines. Upon seizure, they always say the hunter can file for appeal. But the reality has been that appeals are no more than a

frustrating exercise in circular logic, because the Service has a practice of labelling seized trophies as contraband. And a hunter has no right to contraband because contraband is by definition an illegal and prohibited trade. Over the last two years, scores of trophies have been confiscated and hunters held liable for them because someone from the exporting country didn't do a perfect job filling out the export paperwork the way U.S. Fish & Wildlife wants it filled out.

It gets better. Depending on the nature of the document problem, the Service may even decide to charge the hunter with what is called a Lacey Act violation. This law makes it a felony to cross either national or state borders in the United States with an illegally taken or imported species. So, for example, if a clerical error on a hunting licence mistakenly indicates the species imported was taken out of season, the Service can charge

that hunter with a Lacey Act violation. The penalties for each violation include fines of up to \$250,000 and up to five years in jail.

This does nothing to help species at risk, but it goes a long way in making a hunter rethink his desire to hunt CITES animals, the very species that need funding from hunters the most. Now, whether it's US Fish & Wildlife or some other agency in another country, the point is that this kind of myopic focus on bureaucratic procedures and enforcement of fine legal points is a huge stumbling block for those who hunt abroad.

Quite comparable with the approach of US Fish & Wildlife Service are numerous developments with airlines and the transport and transit of firearms. Let us look specifically at the airlines first.

It used to be so pleasant to get on an aircraft

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and travel. When flight attendants and pilots thanked you for flying with their particular carrier, you believed their sincerity. Now, you know it's one of those things they say to feign politeness. In the current environment of heightened security, one gets the clearly transmitted feeling that airline employees know they've got you and if you make too big a fuss, they easily can have airport security haul you away – especially when you are travelling with guns.

There are several problems with airlines that push hunters to the limits of patience. They fall into three overall categories: inconsistent policies between carriers, improperly trained or misinformed agents, and an overall lack of accountability backed by heightened security.

Hunters complain to me on a continual basis about problems they have travelling with their firearms. The problems with airlines

begin with inconsistent policies between carriers. IATA, the International Air Transport Association, provides some guidelines regarding how much ammunition a passenger can check in (five kilograms), but they do not provide much else in the way of rules all airlines should follow. So, each airline decides how it will deal with firearms as checked baggage. Some require registering information on the firearm in the flight manifest within a specific period before flying. Others only require the guns be declared upon check-in. Some will allow up to two long guns per passenger. Others, three. Some allow the ammunition to be packed with the gun. Others do not. The real problems here emerge when a hunter connects to another carrier with a different policy, or his flight is cancelled and he's put on a carrier he hadn't planned on flying with at all.

Another related problem is a trend towards

Abstract (continued)

No one of these challenges is insurmountable by itself. But all together, they create a dense cloud of uncertainty that may cause hunters to hunt closer to home. This is a development that requires the attention and action of the international hunting community if we are to survive.

making it more expensive and more difficult for a hunter to travel with his firearm. More and more airlines are charging a fee just to handle firearms as checked luggage. They are also trimming the acceptable size and weight of gun cases. And now some airlines are charging for a second checked bag, meaning a hunter must pay the handling fee, a second checked bag fee, and if the gun case is too large or too heavy, there's a fee for that, too. A hunter may conceivably pay \$200 - \$300 just to take his gun. One must ask, is the next step refusing to take firearms as baggage at all? There are several airlines, albeit small ones, that already have chosen

LIMITED RELEASE

☐ Unsuitably Packed
☐ Not permitted
as cabin baggage

Claim Further

by the

by the

by the

by the

to do just that, and others that have been forced to as a result of some kind of regulation they cannot or do not want to deal with.

Some airlines have also chosen to bar hunting trophies from their cargo. Air France did this last year, along with KLM. This created a huge back-up in trophies coming from Western Africa. Hunters contacted me asking whether they should cancel their hunts because of it. Airline policies are in fact a threat.

The second category of problem with airlines is improperly trained or misinformed agents. Sometimes ticketing and counter agents just don't know what to do about firearms as checked luggage. Ticketing agents with Air France and British Air should know that specific information on firearms must be entered into the flight manifest and other security systems. But sometimes they don't know; or

they don't know to ask if a passenger is travelling with a firearm, and the hunter doesn't know there's a special policy to address.

At other times, the check-in agents insist the instructions in "their computer" are different from what the hunter found on the airline's website. This happened when some check-in agents looked in the International Air Transport Association's system for information on the importation of firearms to various destinations. That led to agents demanding importation paperwork up front. Most countries, however, do not issue this paperwork until the hunter arrives. Yet when Delta began flying direct to Africa, numerous hunters were denied boarding because they could not produce a South African gun import permit. I think this gives the picture. This problem is a perfect way to ruin a safari experience before it even starts, and people never know when they will encounter it.

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Add to that now the lack of accountability among airlines and their employees in terms of customer service. Every safari season, I receive a host of complaints from hunters whose bags and guns never arrived in Africa, despite many promises from an airline employee that the bags had been located and would be “on the next plane.” Safaris are ruined, hunters are uncompensated and no one is held accountable. In fact, in this current environment of heightened security measures, airline employees have quite a bit of power over the customers they are supposed to be serving. Agents with anti-hunting or anti-gun sentiments have refused to take guns and trophies. They harass hunters with humiliating questions and by calling airport security to “confirm” regulations, holding hunters until the last boarding call. Complaints by my subscribers about this kind of treatment have produced little more than a hollow apology by a customer service repre-

sentative who was not even involved in the incident, while the person who caused the problem continues at his or her post. And while hunters never know when they will encounter just such a person, they are learning that there is next to nothing they can do about it. They are completely at the airline’s mercy.

So, what else is wearing at hunters who travel? Consider varying restrictions on transiting with a firearm and then laborious importation requirements at the final destination. Most international hunters know South Africa has a multi-page application and some very specific import requirements, but every year first-timers are caught un-awares, especially if they are only transiting the country. About two years ago, the Netherlands suddenly began requiring a transit permit that caught scores of hunters off guard and left them without their firearms on safaris

to east Africa. Many of them got all the way back home still not knowing what happened to their guns. Neither the Dutch airline, KLM, nor their flight partner, Northwest, bothered to warn passengers about this requirement. For the most part, they still don’t.

Taking this problem a bit further, some countries completely bar the transit of firearms to other destinations. The UK, for instance, has a ban on the transit of firearms to a number of important hunting destinations, including Zimbabwe. So, if a check-in agent sees the passenger’s final destination is Zimbabwe, the gun is not getting on that plane. Every year there are hunters whose trips are derailed by these policies.

The United States is not much better. For a long while, transiting the U.S. with a firearm was not even allowed, which made it impossible for Canadians to travel to New Zealand

with a connection in the U.S. Now transiting is possible, but only by plane, and passengers must have documentation proving where they are going and why. Overnight stays are forbidden, so make sure your airline doesn't leave you stranded in the U.S. if you're travelling with a firearm. If you plan on hunting in the US, you must apply for a permit to temporarily import your firearm. It officially takes six to eight weeks, but my subscribers' experiences indicate it is necessary to provide a few extra weeks to ensure the permit arrives before it is time to leave on the trip.

Now, any one of these complications by itself can be seen as a big inconvenience to be endured. But all together, one right after another, they create the kind of uncertainty that makes a person, especially one new to international hunting, think long and hard about travelling abroad to hunt. Will the airline take

my gun? Will someone confiscate my ammunition? Will my gun and hunting equipment make it to my final destination, or will the airline lose it? Worse yet, will customs agents confiscate my gun during transit? Once I arrive, will I be able to import my firearm? Will my trophies be delayed because the airlines won't transport them? And if they arrive in the U.S. will the U.S. Fish & Wildlife Service reject them, confiscate them or even destroy them? And if they do, will they charge me with a wildlife violation or a felony even though I hunted legally and the mistake on the paperwork was a third party's?

Count the questions. That many uncertainties are enough to destroy international hunting. Perhaps old hands at international hunting travel won't be deterred, but newer hunters hit with a string of these problems on one or two trips become sufficiently discouraged that they will decide to hunt a little

closer to home.

So what can we do about this? The WFSA has created a Transit Task Force to address the issues hunters face when travelling with their firearms. It is chaired by John J. Jackson, III, of Conservation Force, and its members include WFSA President Edward Rowe and the WFSA Secretaries Vito Genco and Thomas Mason, as well as representatives of several important shooting and hunting organizations: Robert Green of Sporting Shooters Association of Australia, John Monson of Safari Club International, Rick Patterson of SAAMI, David Penn of British Shooting Sports Council and Johan Svalby of FACE. Also, Steve Turner of Total Travel Solutions, and myself.

Together, we are looking for ways to remove the spectre of uncertainty for sportsmen travelling with sporting firearms. We hope to get

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some kind of continuity in the way airlines handle firearms and inform and train their employees on policies and procedures. We hope to get airlines and our respective governments to understand that sport hunters are great contributors to conservation and to regional and local economies. The economies of countless small communities (from the prairies of the U.S. and Canada to the savannahs of Africa) would dry up if not for sport hunting money, and so would their conservation and anti-poaching programs. We are important travel consumers and conservation contributors. We are the source of many ecological and economic benefits, and barring our ability to travel with the tools of our sport will hurt our economies and our wildlife.

As for enforcement agencies such as U.S. Fish & Wildlife, allow me to be clear about one thing. We need such agencies to ensure

enforcement of the laws and regulations we have passed to protect and support the recovery of species at risk. But when those agencies hinder that recovery and the legal hunting programs that support recovery of species, we have a problem, and it takes organizations like John Jackson's Conservation Force and Safari Club International in the United States to challenge these agencies on legal grounds. At this moment, Conservation Force is in litigation with U.S. Fish & Wildlife over a dozen different conservation programs that they have needlessly scuttled, and over numerous legally-taken trophies hanging in limbo for technical and bureaucratic reasons. Safari Club International has also challenged the Service in court over various issues, including the downlisting of species that have fully recovered and no longer need to be excluded from hunting programs. However, in order to repair the problems of such agencies, in the

U.S. and anywhere else, it will require political will and leverage, and it is up to us as a united community to find it.

It's important we do, because the reality is that if hunters stop travelling because of the onslaught of difficulties and legal traps they face, the conservation programs and species we have all fought so hard to save will disappear. Anti-hunters don't need to close down hunting. They just need to discourage us from leaving home.



Biography

Born on 20 June 1952 en La Habana (Cuba) .

Member of Spanish Parliament for the V , VI , VII and VIII legislature. Married, three sons. Economist.

Technical Secretary of the Popular Group.

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The Economics of Hunting in Spain

Teofilo de Luis Rodriguez,
Economist, Technical Secretary and Member of Parliament (Popular Party, Spain)

Introduction

As a result of its locale and its varied climate in terms of temperatures, as well as its annual rainfall and its varied habitat, and perhaps also for historical reasons, broad-based hunting activities have taken place throughout Spain over many years. Research shows the economics of hunting in Spain to generate a yearly income of around €3.35 billion. Hunting is widely accepted.

With a population of 46 million people, according to available figures in 1999 the membership of the Spanish Hunting Federation exceeded 440,000 people. In 1998 the number of owners of gun licences for shotguns alone exceeded one million. At that time the number of hunting permits in Spain exceeded 1.1 million, and today it has grown to more than 1.5 million. We can consequently say there is a powerful and growing demand re-

garding hunting activities in Spanish society. There are now more than 15,000 direct employments that are produced by hunting. Today it is a real economic alternative to traditional practices of agriculture.

Future prospects

There have been many developmental dynamics concerning the use of resources in rural environments. These have included technical evolution of agricultural practices, and variations in cultivation methods, partially determined by the Common Agricultural Policy. Together, these have caused the abandonment of large tracts of open land.

From the viewpoint of economics it is evident that maintaining such large and important geographical areas without activity will at least generate higher opportunity costs.

Abstract

Spain has widely varying terrain and an abundance of game of various sorts, feathered and furred, small and large. There are very large tracts of land that are not built on. There is also a tradition of hunting that extends long into the country's history. Shotgun permits and hunting permit sales each run into seven figures, and it is believed a million people are involved in hunting and fishing, sometimes for subsistence purposes. There is a long history of breeding keeping and keeping specialist hunting dogs, and now there are many nationally-managed parks set aside as wilderness for hunting. There are now far-reaching changes taking place in agricultural practice which may have a bearing on land use and in turn affect hunting.

This paper briefly lays out a set of calculations of the monetary value of various aspects that relate to the primary and secondary spending which takes place around the broad spectrum of Spanish hunting activity. Included are values as divergent as sale of hunting accessories, insurance fees, permit sales and the veterinary fees for hunting dogs.

This behaviour pattern concerning agricultural activities has involved the increase of certain species of mammals to the disadvantage of other species, especially birds. However, it is a reality. Economic changes in the agricultural sector have unquestionably had negative effects on the environment, altering the distribution of population in the rural environment. The result has been population desertion and damage to the conservation of the conservation.

Notwithstanding all this, however, according to Eurostat, in Spain, where subsistence is linked to agriculture, hunting and fishing could involve about a million people, whose income has risen notably and whose employment rate has also improved.

This panorama is being influenced and sustained to a large extent by the agricultural policy of the European Union in the form of limitations of production, protection of its mar-

kets and the use of cash flow with regard to decisive contracts as an instrument for development.

The European Union is at present immersed in a process of enlargement which will undoubtedly affect the Common Agricultural Policy. And, with regard to the benefits that the European Union is granting, the enlargement may certainly influence the profitability of many Spanish agricultural operations in terms of the distribution of benefits.

After the summit of Heads of State of the European Union held in Brussels at the end of October, 2002, the incorporation of 10 new countries to the EU obliges it to assume a compromise on the part of the actual members, not to increase the expenses with regard to the agricultural policy during the period of 2006-2013, which in this period permits a clear horizon relative to the agricultural benefits and

the distribution of structural EC-funds as from 2007. These evident dynamics in the context of the enlargement of the EU obliges or could oblige it to an adaptation of worldwide rural economics.

To confirm this approach, one can assume that in any case the profitability of certain kinds of farming could be harmed and it could become interesting to search for alternative activities in rural environments, in order to avert the abandoning of land and the migratory flow to the big cities. As this prospect looms, Spanish environmental conservation, which would be affected by the depopulation, would be harmed.

Overview

By its nature, hunting incorporates many different elements and practices. It includes a substantial and quite dynamic sampling of varied

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economical subsectors. Hunting necessitates the construction of a large framework that contains both equipment and labour.

Among some of the sectors that directly bring income and employment we can specify the following:

- Farms
- Fodder and other products
- Daily care tasks in rural environments
- Hunting dogs (“rehalas”)
- Breeding kennels
- Arms, ammunition, sports shops
- Organics

- Licences, insurances
- Accoutrements, leather goods
- Taxidermists
- Veterinarians
- Marketing of hunting products
- Publications (books, magazines, other media)
- Practitioners’ hunting operations
- Agencies

By virtue of some of the factors that have been mentioned previously, hunting practices generate a lot of further activity in other quite different sectors, which concern the support of the consumer.

Among those one can specify:

- Hotels, restaurants
- Travel agencies
- Energy sector
- Means of transport
- Investments in rural environment; conservation of areas
- Tree nurseries; treatment of the environment

All these economic components the estimations of which are now known, including both the income generated as well as employment that depends directly on hunting, combine to form a considerable sum.

Hunting activities themselves thus form a strong economic sector, and one can add to this reality a further fact: hunting activities are certainly contributing to the conservation of natural habitats and to an adequate level of population of species that can be hunted. This augments the balance and the existence of species that cannot be hunted but which have great zoological value. Hence, hunting also contributes an important additional benefit to the environment.

In addition, a remark should be made with respect to population structure. There are distinct possibilities of development through movement of labour into large zones of Spain, which otherwise would remain uninhabited.

Furthermore, hunting activities make a notable contribution to the Spanish tourism sector.

I. Economic flow of different kinds of hunting in each season

Hunting activities, where the object is to shoot carefully designated quarry animals and birds, generate an important economic flow, as well as for breeding and sale of animals in farms as for the cost generated by hunting days including the marketing of animals brought to bag.

• Big game hunting

Total	€119,676,378.96
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• Small game hunting

Total	€276,190,015.90
Total hunting	€395,866,394.86
Total jobs	400

SOURCE: FEC / MINISTERIO AGRICULTURA, PESCA Y ALIMENTACION

II. Veterinary income generated by the taking of big game

The current legislation demands a check to be made of every wild boar that is brought down in order to guarantee its suitability for consumption. This requires the intervention of a veterinarian.

The expansion of some species like the wild boar provides an annual increase of total bag, which this season has reached 117,305. The individual cost of veterinarian intervention added up to €12 per animal.

• Value of veterinarian control of quarry brought to bag

- Wild boar	117,305	€1,410,034.50
- Deer	70,863	€425,895.21

Total	€1,835,929.71
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(Estimates of a working group)

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III. Taxidermy, customs, carpenters, tanners

- **Taxidermy** — There are 326 studios with an average of 1.8 employments per studio.
 - Number of employments 578
 - Billing €19,592,994.60
- **Customs** — There are two specialized companies with a head count of 12 employees.
 - Number of employments 12
 - Billing €721,214.53
- **Carpenters** — There are two companies with a headcount of 22 persons.
 - Number of employments 22
 - Billing €961,619.37
- **Tanners** — There are three specialized companies with 10 employments.
 - Number of employments 10
 - Billing €450,759.08
- Total employments 631
- Total billing €21,726,587.57

SOURCE: Taxidermy Sector

IV. Rehalas

These kennels of dogs of particular breed move the animals out of their cover towards the line of hunters. They form an essential element for the development of traditional hunting in Spain.

In this case one has to consider cost of the initial establishment of the kennels and the pack, and thereafter the annual cost of maintenance.

- **Cost of first establishment** €57,126.20
 - **Operation Cost** €15,734.50
- In order to determine the activity generated by rehalas it is necessary to multiply both the cost of installation and operation cost by the number of existing kennels, which is about two thousand rehalas across Spain.
- **Cost of first establishment** €114,252,400
 - **Operation Cost** €31,469,000
 - Total** €145,721,400

SOURCE: Asociación Española de Rehalas

V. Guns and ammunition

Manufacture of arms and ammunition gives rise to an economic sector of considerable stability in País Vasco, Castilla La Mancha, Cantabria and La Rioja and also, perhaps to a lesser extent, in Andalucía, Comunidad Valenciana and Cataluña.

- **Employments and production value** €202,102,340.34
- **Number of workers** 1,474

The volume of exports is approximately 60%.

SOURCE: (ACACE)

VI. Accessories

- **Employments and turnover**
- Turnover €152,476,770.88
- Number of workers 1,529

The value generated by the sale of products other than arms amounts to 6,000,000,000 pesetas.

SOURCE: (ACACE)



VII. Hunting dogs

There are large numbers of dog breeds whose origins are linked with the various styles of hunting.

Their support to hunting is not only accomplished by pedigreed animals recognized as such, but also by many others which are not so recognized, and which exist in great numbers.

Every hunter works more than one dog. Using relatively low estimates, one can calculate that 1,000,000 hunters have three dogs per person at their disposal. Considering feed and veterinary costs only, the numbers consequently say:

• Feed and veterinary costs (calculated on 3,000,000 dogs)

— Annual feed	€73,924,488.84
— Veterinary charges:	€171,288,449.75

Total Cost	€245,212,938.59
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• Acquisition Cost	€36,060,726.26
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Total	€281,273,664.85
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SOURCE: Spanish Hunting Federation; Asociación de Rehalas

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VIII. Ownership fees for firearms

Licences of type D add up to 156,702 and those of type E total 1,746,137. We consider that about one fifth of that number of owners renew their licences each year.

• Economic value of income in civil service	€5,031,958.22
• Membership fees, Spanish Hunting Federation	€ 5,253,062.16
• Economic value of private activities	€10,063,916.43
Total	€20,348,936.81

SOURCE: Spanish Hunting Federation

IX. Expenses stemming from the possession of a hunting permit

Total of licences	996,700	€15,645,233.69
Total of contracted insurances		€24,482,829.08
Total		€40,128,062.77

SOURCE: Rates in the various autonomous regions

X. Civil liability insurance

(In regard to hunting reserves)

Total estimated cost of premium subscription	€30,050,605.21
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SOURCE: Spanish Hunting Federation

XI. Rental of hunting reserves

The estimated area of hunting reserves in Spain is about 36 million hectares and one can suppose that 80% of this is subject to rental. Working from the average value (13.52 €/ha.) one can further estimate the annual generated rental.

Renting Value	29,000,000 hectares	€392,160,398.11
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SOURCE: Working group

XII. Regional planning

The adequate administration of habitats and populations occasionally necessitates plans for their organization using technical criteria.

The total area affected by these plans is about 33 million hectares¹. At the rate of 100 pesetas per hectare, one can estimate an economic value of:

Regional planning (value)	€19,833,399.44
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SOURCE: Working group

XIII. Hunting reserve salaries

• Economic value for remuneration

8,500 X 150,000 pesetas X 14 (=17,955,000,000 pesetas)	€107,911,723.34
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Number of authorized rangers	8,500
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SOURCE: ASAJA

¹One hectare is equal to 2.471 acres

XIV. Communication media

The wide social support of activities generates a large demand for information, and this is satisfied by communication media.

Total **€19,741,525.32**

SOURCE: Communication Sector

XV. Catering sector

The hotel business offers catering services which are utilized by hunters. These offer jobs to a significant number of employees as well as initiating a large amount of expenditure in consumption of products.

Total **₣164,076,304.50**

Hotel sector

There are 1,499 hotels in rural areas and small centres of population. During the last few years the occupation rate has increased by 35 %.

• **Income** **€9,616,193.67**

• **Employments (1,499 x 2)** **2,998**

Total **€173,692,498.17**

SOURCE: Data obtained by surveys of national hotels and the
Asociación de la Hostelería

XVI. Transport sector

The Spanish market has increased during the last years and has now reached a high of 1,220,000 hunters utilizing specialized cross-country vehicles.

• Number of cross-country vehicles: year 2000: 83,900

It is estimated that 5 % of those are bought for use in hunting.

• Number of cross-country vehicles used for hunting: year 2000: 4,195

• **Expenditure in the sector (without fuel) year 2000:**
€450,759,078.29

SOURCE: automobile sector

XVII. Energy

A presumption of movement in all Spain of 30,000 vehicles on one weekend would mean 120,000 vehicles per month during four months of the year.

Fixing an average price between gasoline and diesel fuel of ₣0.79 per litre, consumption value will depend on the average movement per weekend and vehicle, which is put at 150 km.

30,000 vehicles per weekend x 4 120,000 vehicles/month

120,000 x 4 months 480,000 vehicles/season

480,000 x 150 km 72,000,000 km/season

• Estimated consumption (6.9 litres per 100 km): 4,968,000 litres

• Consumption value (x 0.79 ₣/l) **€3,924,719.99**

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Economist, Technical Secretary and Member of Parliament (Popular Party, Spain)

XVIII. Incomes of hunting reserves

According to information from the year 1990, there were 2005 reserves in Spain for big game hunting, 26,000 reserves for small game hunting and 91 aquatic hunting reserves which all together took up more than 33 million hectares. Today we can estimate that the number of reserves for big game hunting is about 4,000 and the number for small game hunting about 26,000.

• Annual cost of hunting territory:

• Big game hunting	€336,927,385.72
• Small game hunting	€559,656,461.48

Total **€896,583,847.20**

Valuation of subsectors

I. Economic flow of different kinds of hunting for each season	€395,866,394.86
II. Veterinary income generated by the capture of wild boar and deer	€1,835,929.71
III. Taxidermy: customs, carpenters, tanners	€21,726,587.57
IV. Rehalas	€145,721,400
V. Guns and ammunition	€202,102,340.34
VI. Accessories	€152,476,770.88
VII. Hunting dogs	€281,273,664.85
VIII. Ownership fees for firearms	€20,348,936.81

IX. Expenses stemming from the possession of a hunting permit	€40,128,062.81
X. Civil Liability Insurance	€30,050,605.21
XI. Rental of hunting reserves	€392,160,398.11
XII. Regional planning	€19,833,399.44
XIII. Hunting reserve salaries	€107,911,723.34
XIV. Communication media	€19,741,525.32
XV. Catering sector	€173,692,498.16
XVI. Transport sector	€450,759,078.29
XVII. Energy	€3,924,719.99
XVIII. Cost of hunting reserves	€896,583,847.20

TOTAL **3,356,138,384.78 €**

Employments

• Sales of guns and accessories	1,524
• Guns and ammunition	1,474
• Tanners, taxidermists	631
• Hotel sector	2,998
• Care/supervision	8,500

TOTAL **15,132**

Biography

Professor Göran Ericsson holds a chair in wildlife tourism focusing on natural resource use and the human user groups at the Swedish University of Agricultural Sciences (SLU). He received his MSc in Biology, Economy & Business Administration from Uppsala University in 1994, his doctorate in Animal Ecology in 1999 at SLU, his associate professorship in 2002, and he became a tenured full faculty professor in 2007. He has been very widely published in the literature and teaches and speaks nationally and internationally.

His main research areas are human dimensions of natural resource use, attitudes towards hunting and large carnivores including WTP studies, human impact on animal behaviour, population dynamics including migration of moose in the boreal and sub-arctic landscape, browsing and interaction between plants and large herbivores. Professor Ericsson is currently the leader of a large thematic program, "Wildlife and Forestry", and deputy leader of the program "Adaptive Management of Fish and Wildlife Populations." He currently supervises six post-doctoral students and four PhD candidates.

Background

Questions about change are easy to ask but hard to answer because they require longitudinal data. At minimum, two cross-sectional surveys are required with the same question wording done on the same population at different times. Alternatively, there may be a panel study that follows the same people over time to determine whether their attitudes change, whose attitudes change, and why they change. Unfortunately these kinds of surveys are rare in most types of research, human dimensions related science research being no exception, and particularly rare in the wildlife literature. Such consistent work over time requires a long-term commitment by institutions in terms of financial and logistic support.

Fairly often one sees people protesting against hunting in media such as television, radio and newspapers. One of the best known

examples is that fox hunting in England has been opposed and laws successfully passed to ban such hunting. In the U.S. there have been highly publicized referenda opposing hunting of, for example, mountain lions and wolves, and other charismatic fauna. The idea that there is growing opposition to hunting may increase the interest in wildlife managers and hunters' associations in studying the issues.

People conducting research on human dimensions of wildlife may have little incentive to dispute the conventional wisdom when we see people protesting against hunting – but are there any good data to support this conventional wisdom? Studies reviewed by Ericsson, Heberlein et al (in progress) show that there is no scientific evidence to support the conventional-wisdom hypothesis that people are becoming more negative toward hunting and we have three studies in the US, one national, the second over time in a single state, and the



Positive and Stable Attitudes towards Hunting in Sweden: Implications for Conservation

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third of specific groups that show no change over time.

I am reporting a replication of a survey conducted in 1980 which asked Swedes about their attitudes toward hunting and about wildlife. In 2000 and 2008 we – Göran Ericsson, Thomas Heberlein and Camilla Sandstrom – were able to replicate this survey to see if there are any evident increases in negative attitudes toward hunting or whether support for hunting is stable or increasing.

Methods

We collected data using a mail survey to the general public in Sweden in 2000 and 2008. Sweden has a national register including all permanent residents which is continuously updated. Random samples ($n_{2000} = 1001$, $n_{2008} = 1200$) of all Swedish citizens aged 16 to 65 were drawn from this register in order to

replicate the 1980 national survey ($n_{1980} = 3000$) (Norling, Jägnert and Lindahl, 1981). The 1980 survey was a three-contact survey whereas those of 2000 and 2008 were four-contact surveys (Dillman, 2000) with personalized mailings. We first sent a pre-notice card by bulk mail. Two days later, the respondents received by priority mail an envelope including a questionnaire, a pre-paid return envelope, and a cover letter explaining the purpose of the study asking for their voluntary participation. Seven days later a combined reminder-and-thank-you postcard went to the respondents. Twenty-two days later those who had not yet responded got a second complete mailing with a new cover letter and a replacement questionnaire. We offered no incentives to the respondents at any stage of the survey administration. In 1980 the response rate was 67% (Norling, Jägnert and Lindahl, 1981), in 2000 73% (Ericsson and Heberlein 2003 a, b), and in 2008 60% (Ericsson *et al*, in preparation).

Abstract

Conventional wisdom suggests that attitudes toward hunting are becoming more negative. This guess seems to be consistent with media reports, political actions, hunting participation, and general social change. We see in the news media there are people protesting against hunting. Fox hunting in England has been opposed and laws have been successfully passed to ban it. In the USA there have been highly publicized referenda opposing hunting. However, there are very few longitudinal data series to verify this. Sweden is one exception.

This paper reports a replication of a mail survey conducted in 1980 which asked Swedes about their attitudes toward hunting and about wildlife. In 2001 and 2008 parts of the survey were replicated, with additional questions, to see whether there is any evidence of increases in negative attitudes toward hunting, or whether support for hunting is stable or increasing. The general attitude towards hunting changed significantly from 1980 to 2001, and moved from 72%

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Question	1980	2000	2008	Significant differences
General support for hunting	72%	81%	82%	+9%/+10%***
Support for the right of indigenous people to hunt		93%	93%	0 % n.s.
Support for hunting game mammals such as deer and moose for recreation and sport		34%	39%	+5% *
Support for hunting game mammals such as deer and moose for recreation and meat		67%	70%	+3% n.s.

Table 1: Support for Attitudes in Sweden between 1980 and 2000. *** $p < .0001$, * $p < .05$

a) Ericsson et al, in prep. b) (Norling, Jägnert and Lindahl, 1981)

Besides replicating the 1980s question “What is your general attitude towards hunting [*Positive, Accept, Hesitant, Negative*]?” we included:

“How do you feel about traditional native hunting done by some Indians and Eskimos [*Strongly approve, Somewhat approve, Somewhat disapprove, Strongly disapprove*]?”

“How do you feel about hunting game mammals such as moose and deer for recreation and *sport*?”

“How do you feel about hunting game mammals such as moose and deer for recreation and *meat*?” (from Heberlein and Willebrand, 1998).

Results

In 1980 72% of all Swedes were positive towards or accepted hunting. In 2000 this had significantly increased to 80% (Chisquare, $P < .001$). In 2008 this was replicated at 82% and was thus still significantly higher than in 1980 (Table 1).

Judging from the overwhelming 93% support for indigenous people’s right to hunt there are very few in Sweden who do not use meat or related products. This support has gone unchanged between 2001 and 2008. It is still a minority of Swedes in general that supports hunting game mammals for recreation and sport, but this shows a significant increase between 2001 and 2008, that is, up from 34% to 39%. It is interesting – but not surprising, given the above – to see that the public support for hunting game mammals such and deer and moose for recreation and meat is still high, up from 67% to 70% support, although this a non-significant increase given a significance level of 0.05 (Table 1).

Positive and Stable Attitudes towards Hunting in Sweden: Implications for Conservation

Göran Ericsson, Department of Wildlife, Fish, and Environmental Studies,
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Discussion

The major wave of urbanization occurred before 1980 in Sweden (www.scb.se). Since the early 1980s Sweden has mostly seen a concentration of the human population within and around the urban centres. Thus, the strong and increased support for hunting in general in Swedish society since 1980 till the 2000s most likely is not related to the percentage of the population living in cities, nor in the urban areas. If anything, we would have expected to see decreased support for hunting as not only fewer and fewer people live in the rural areas, but also fewer urban citizens are in contact with nature and consumptive activities.

Heberlein & Ericsson (2005) showed that both the number and type of contacts with the countryside including generational ties influence the attitude towards wildlife and hunting, and also to large carnivores such as wolves.

By deducing from the 2005 paper, we might be justified to see Swedish society as currently in a transition period where the majority of the urban population still keeps enough ties to the countryside to be positive towards extractive activities such as hunting game mammals for meat, but not just for the recreational part of it. This might change. Within years the segment in the population that does not have any rural ties may have increased so we could then see declining support for hunting.

In the 2005 paper (*ibid*) we showed that this might have implications for nature conservation in general and not only for advocates of hunting. One conclusion can be that if fewer people have access to the rural areas or fewer gain their own derived extractive or social network experience from cutting firewood, picking berries or mushrooms, forestry, fishing or hunting, then specialized interests such as hunting – those which require commitment in terms of

Abstract (continued)

being positive to 81% being positive. This was verified in the 2008 survey, which produced an 82% positive response. This paper discusses some of the potential driving forces behind the increased public acceptance of hunting. Discussed are urbanization, conditional approval tied to utilitarian values, and the rebounding wildlife populations.

time and effort – will eventually lose support.

Table 1 indicates the high support for hunting is conditional upon Swedish hunters taking something usable from the hunt, such as meat. When replacing the word “Sport” with “Meat” the support significantly increases, lending evidence to this conditional idea. Looking at data as well from 1980 (Norling, Jägnert and Lindahl, 1981) and 2004 (Ericsson *et al*, 2005) we see that that there are still seven out of ten Swedish households which use wild game meat at least once a year. Fur-



thermore, I believe that the strong network around hunting is the actual key to the continued strong support. Let us play with percentages to illustrate this. Around three percent of the Swedish population hunt, paying the mandatory federal hunting fee that goes into administration and wildlife research. Data from 2001, 2004, 2008 (Ericsson *et al*, unpublished data) show that more than ten percent of the Swedish claim that they live in a household with at least one hunter. Moreover, around seventy percent of the Swedish public say in surveys that they have at least one friend who hunts. This roughly corresponds to the fraction of Swedish households that use wild game meat at least once a year.

Most of the Swedish game populations, wildlife and birds, have shown a considerable increase over the last 50 years. Most noticeable to Swedish society and in many people's everyday life has been the dramatic increase

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of large ungulates – moose (*Alces alces*), deer species and wild boar (*Sus scrofa*), and for the large carnivores, especially brown bears (*Ursus arctos*), as well as for European lynx (*Lynx lynx*) and the rebounding and re-colonizing wolves. Game is more abundant and thus a conclusion can be that beside the meat aspect, hunters may be seen as solving problems in the society by keeping the sometimes new and often increasing fauna under control to reduce risks such as car accidents, browsing damage and as vectors for wildlife diseases.

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Biography

Marina Lamprecht, and her husband and son, Professional Hunters Joof and Jofie Lamprecht, own and personally run the safari company Hunters Namibia Safaris, which is based on the family's private wildlife property in the Camelthorn Kalahari, near Windhoek. Marina Lamprecht is currently serving a third two-year term on the Executive Committee of the Namibia Professional Hunting Association (NAPHA), and she chaired NAPHA's Education Committee for ten years. She has served on the boards of the Khomas Regional Education Forum and the Namibian National Advisory Council on Education. She currently also serves on the Namibian Tourism Board's Marketing Committee and as Trustee of the LSI Foundation.

Initiator of the prestigious WHS Scholarship Programme, she continues to mentor the recipients. She is also a founding member of the Hunters Namibia Safaris Education Foundation, which strives to improve the quality of education at marginalized rural schools throughout Namibia by providing books and other essential equipment. Marina Lamprecht annually presents seminars on hunting in Namibia at the Safari Club International Convention, and regularly addresses workshops on trophy hunting as a lucrative form of land utilization. She holds a degree in political science.

Overview

Hunting is part and parcel of Africa, the land where Mankind began. It is built into the life of our continent and the spirit of our people. Namibia is emphatically a pro-wildlife and wildlife-utilization country, and our progressive national constitution is the first in the world to formally enshrine the sustainable utilization of living natural resources.

As 12th-generation Africans, my family is dedicated to our country, the community, the wildlife and the environment. We know that it is essential to utilize this land effectively for our people and our wildlife, and our hands-on experience has shown that the most beneficial and sustainable form of rural land utilization is, indeed, trophy hunting. By this I mean finding, stalking and bagging a good representative example of a certain species of game, which confers great monetary

value upon an animal, as opposed to hunting for subsistence.

We also recognize that as we take on the many challenges of our time in Africa, including poverty, education and land reform, our focus increasingly must be on the most effective utilization of land for the direct benefit of human beings.

In political terms, wildlife is not yet considered agriculture, but at our family's as well as other Namibia game farmers' vast private lands, our game animals most certainly are products of the land. In Namibia traditional agriculture once focused on domestic stock such as cattle, sheep and goats, and wild game was shot indiscriminately. This attitude is now almost completely outmoded in Namibia.

Trophy hunting began in Namibia in the



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1960s, as a sideline to traditional agriculture, in areas where game such as springbuck, oryx, kudu and warthog were plentiful. This nascent industry was mainly based on the free-market system and began with an absolute minimum of government interference, which at least initially ensured efficiency and equitable access. It has grown steadily ever since, and has, inevitably and appropriately, come under a degree of government supervision. In 2007 trophy hunting in Namibia generated revenues of \$ N316 million, representing 2.3% of the Gross Domestic Product. Note that this does not include secondary goods and services such as airfares, shoulder accommodations and meals, game-park fees, car rentals, shopping and so on, which would approximately double this figure.



The cattle industry, Namibia's main agricultural sector, achieved \$N637.1 million in 2007. However, at that point trophy hunting had already far surpassed our country's other main agricultural components: small stock at \$N285.1 million and other livestock at \$N258.2 million. To put these values into perspective, note that our hunting industry revenue grew by 12% annually from 1996 to 2006. This considerably outpaced the goal of 7% annual growth that was set by "Government

Abstract

Namibia has become one of the most popular trophy hunting destinations in Southern Africa. This is due in part to its political stability and diversity, a well-developed infrastructure, the ease with which hunting rifles may be temporarily imported into the country, and the friendliness and warm hospitality of the people. The key component, however, is Namibia's land-use and game-management policies, which have created great and healthy populations of game and which enable three basic types of sustainable trophy hunting. As well, Namibian hunting professionals are recognized as among the best trained and most ethical in the world. This is largely due to the high certification standards set by Namibia's Ministry of Environment and Tourism and the self-policing work of the Namibian Professional Hunting Association.

Despite Namibia's success in positioning itself as a model for sustainable, fair-chase trophy hunting, the industry here and worldwide is now being severely

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in Vision 2030,” a white paper on economic development in Namibia.

This strong growth led to the following official statement in the introduction of the Namibian Ministry of Environment and Tourism’s New Protected Areas and Wildlife Management Bill, which is currently in its final draft stage:

Generally the approach of the Bill is to build on the successful conservation of wildlife and wild habitats in Namibia over the past 30 years and particularly since Independence.

This success has been based on devolving rights over wildlife to freehold and communal area land holders. By giving land holders rights to use wildlife and benefit from it, government has provided incentives for conservation. This has resulted in the fact that 80% of wildlife is found outside of protected areas, and wildlife is increasing on communal land. A strong wildlife industry has been created that, linked to tourism, is a major contributor to the national economy. Income and other benefits such as jobs and training linked to wildlife and tourism in communal area conservancies are contributing to combating poverty.

Our wildlife is a natural resource, which, if managed properly through

game ranching and utilized sustainably through fee-based trophy hunting, has the potential to develop into one of our country’s most valuable renewable assets. We are a nation with a proud hunting heritage, and our trophy-hunting sector is well respected by our government and fellow Namibians as an essential and integral part of Namibia’s conservation, tourism, farming and business industries.



Land and livestock resources in Namibia

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Early days

In the 1960s, when trophy hunting was just beginning in Namibia, game ranching was unknown in our country. In those days wild animals were seen to be in direct competition with domestic stock for grazing and water, and therefore a liability for a stock farmer. By the late '60s, farmers began to realize that game indeed had value, and increasingly thereafter our wild animals came to be seen as an asset. Since the mid-1970s the numbers of wild animals on private land has increased dramatically. As our American friends would say, "If it pays, it stays."

Namibia has a dual economy. On the one hand, we have a modern, well-organized and efficient commercial segment; and on the other, a less well-structured communal portion, in which our tribal peoples mainly rely on subsistence agriculture. The communal, or tribal,

subsistence sector only recognized the value of sustainable utilization of wildlife after Namibia's independence in 1990. This was mainly because until then local communities had no decisive rights over game and thus no interest in it. Although commercial farmers were granted conditional ownership of game on their lands during the 1960s, the rural people of the communal areas only received utilization rights through the Nature Conservation Amendment Act of 1996, which makes provision for communal conservancies.

Experience in Namibia and elsewhere has repeatedly shown that the value of wildlife on both private and communal land can be greatly increased through wildlife-based commerce such as trophy hunting and tourism, even at much lower levels of stocking and utilization.

In Namibia, the greatest portions of revenue from game-ranching ventures derive from tro-

Abstract (continued)

affected by the global economic contraction. A longer-term threat is the gradual attrition in numbers of recreational hunters in much of Europe and the USA. This paper concludes that ethical, fair chase and selective trophy hunting has proved to be a successful conservation tool as well as the most lucrative form of commercial and communal land utilization in Namibia, with obvious ecological as well as economic benefits.

phy hunting, live animal sales and tourism, not the sale of venison, and overall the potential return from wildlife far exceeds that of cattle. Once farmers and local communities realized that their game offered so much more than meat value, they were less likely to engage in uncontrolled hunting and more likely to become conservation-conscious. The next step is to understand that the only way to ensure the long-term survival of wildlife is to use the game wisely for the benefit of man.

Hunting game in order to preserve game

If it were not for trophy hunting, wild animals in most of Africa would have little value to the local people and would be killed indiscriminately because they compete with domestic livestock and occupy land that could be farmed, built on or otherwise developed. In explaining this to uninformed non-hunters, it is helpful to point out that domestic stock are the least likely species to become extinct simply because they are the most utilized animals on earth and thus have become an essential part of our food chain. Through trophy hunting, our wild animals have earned even greater value than merely that of their meat and hide, which makes them more important yet to the livelihood of African farmers and communities. As a result, wildlife in Namibia is managed effectively in order to ensure its survival on private as well as communal lands.

Quantitatively and qualitatively, the results of the past four decades show that trophy hunting has been one of the most successful wildlife conservation initiatives in Namibia. Trophy hunting has developed into an extremely lucrative form of land use as well as a most effective wildlife management tool. Thus vast tracts of farmland have been bought up and consolidated by hunting operators, who then remove miles of stock fences and other infrastructure in order to restore wildlife

habitat. The result is game ranches where wild animals can breed and range within a functional ecosystem.



Game numbers (key hunttable game on private land) 1972 – 2005 (MET data)

Species	1972	1982	1992	2005
Springbok ('000)	231	227	554	620
Increase (%)		-2%	144%	11.9%
Gemsbok ('000)	67	126	311	350
Increase (%)		88%	147%	12.5%
Kudu ('000)	181	203	389	340
Increase (%)		12%	92%	-12.6%
Warthog ('000)	86	145	235	174
Increase (%)		69%	62%	-26%
TOTAL ('000)				1,484
Increase (%)	565	701	1,489	-0.3%
Overall increase (%)		24%	112%	162.7%

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Types of hunting in Namibia

Namibia offers a variety of hunting opportunities to meet most requirements and budgets. Prices are scaled to the quality, number and species of trophies, the size of the party and of course location and duration.

Farm Hunting is very popular, especially among hunting clients from Europe. Species offered depend on the region, but are usually limited to widespread Namibian game such as kudu, gemsbok, hartebeest, springbuck, warthog, Hartmann's (mountain) zebra, duiker, steenbuck, jackal and baboon. Cheetah, leopard and caracal are often taken on farms as well.

Farm hunting was developed by stock farmers who wished to diversify their sources of income, so hunting usually takes place alongside normal farming activities and among

domestic livestock such as cattle, goats and sheep. In recent years, conservancies have been developed in commercial farming areas wherein farmers cooperate with each other on the conservation and sustainable utilization of their combined wildlife resources. This has the benefit to the client of enlarging the hunting area as well as offering a greater animal population.

Accommodations are typically comfortable, either in specially built and well-equipped facilities or the farm homestead itself, with the owner's family. This is the ideal way to get to know the people of the country and be exposed to Namibia's unique and charming lifestyle, cultures and traditions. The host is usually a licensed Hunting Guide or Master Hunting Guide, and this is the best arrangement for the budget-conscious trophy hunter.

Private Game Ranches in dedicated wildlife

areas with no domestic stock or interior fences are widespread and becoming increasingly popular in Namibia. The range of trophies they offer is very diverse and often includes sable, blesbuck, giraffe, Cape eland, Livingstone eland, black wildebeest, blue wildebeest, waterbuck, southern and black-faced impala, Burchell's zebra, steenbuck, duiker, tsessebe, white rhino, roan and Damara dik-dik, as well as all the species found on farms and conservancies. Private game ranches in Namibia typically encompass at least 25,000 acres (40 square miles) and some are more than 100,000 acres.

Accommodation is usually in luxurious lodges or tent camps and the facilities, service and cuisine are of world-class standard with a distinctly Namibian flair, and the emphasis on the classic African safari ambience.

Although some people in the international

hunting community categorically reject trophy hunting “behind wire” – inside a high game fence, that is – those who have had proper, first-hand experience with it generally develop a different opinion. Hunting in a huge wilderness area, one where game animals exist naturally and self-sustainably, can be carried out well within the guidelines for ethical, fair-chase sport (“the pursuit of free wild animals, possessing the natural behavioural inclination to escape from a hunter and fully free to do so” – see the Addendum) even if, somewhere in the distance, there is a fence. Even unfenced regions have boundaries.

Namibia also has 55 registered Communal Conservancies, covering approximately 126,000 square kilometres (49,000 square miles) or 15.3% of the country. These contain hunting concessions in tribal areas where, until recently, communities often found themselves in direct conflict with wildlife for re-

sources. Trophy hunting – carried out by Namibian Professional Hunters in contract with the government and the tribal authorities – greatly benefits these conservancies, where it is now firmly established as a wildlife-management tool and the primary source of income and meat for often marginalized and remote communities. This is ideal for the adventurous trophy hunter who wants to experience “old Africa” in rugged and remote, very sparsely populated areas.

Most hunting for the Big Five takes place in these areas, which have produced some of the largest elephant (the heaviest ivory) taken on the continent during the past two decades.

In 2008 Namibia adopted a new policy to regulate the granting of tourism and trophy hunting permits on state land, which includes game parks as well as protected and communal areas. This will serve as the basis for new

laws concerning concessions that are to become part of the Namibian Ministry of Environment and Tourism’s New Protected Areas and Wildlife Management Bill. The new policy lays down clear objectives and principles for the granting of concessions, including empowerment objectives for the communities in these areas. The Ministry of Environment and Tourism held a much-anticipated trophy-hunting concession auction on April 22, 2009. The hunting rights for five large areas of state land outside communal conservancies were leased for three-year periods to Namibian-registered companies for record prices. The concessions were the Mahongo Game Park, the Eastern Kavongo Region, Western Kavongo Region & Mangetti National Park, the Waterberg Plateau Park as well as Daan Viljoen & von Bach Parks. Three black rhinoceros concessions were also auctioned.

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Licensing hunting professionals

Intelligent game-management programs to ensure sustainable yields are only part of the whole. Education and training are also of utmost importance as the trophy hunting industry must be responsible for the safety of clients in situations that go far beyond normal tourist activities. To this end, Namibia has several categories of Hunting Professionals, and our country's standards of training as well as the criteria for these categories are respected around the world. To qualify, applicants must pass both theoretical and practical hunting examinations set by the Ministry of Environment and Tourism (MET).

The entry level is that of Hunting Guide, a person licensed to guide hunts on his or her own farm, or the farm where he or she is employed, as well as a conservancy where the land may be registered. A Master Hunting

Guide may hunt on two additional farms where the hunting rights are registered in his or her name.

The next rank is Professional Hunter. To become a PH, unless the owner of a guest farm or hunting operation the applicant must successfully complete a two-year apprenticeship with a registered PH and then tackle the notoriously difficult theoretical and practical examinations. A MET-certified PH may hunt with clients anywhere in Namibia with the permission of the land owner.

A Big Game (or Dangerous Game) PH is, in addition to the above, also licensed to take clients to hunt lion, buffalo, elephant, crocodile and rhino. This class of Hunting Professional must first qualify as a PH before gaining the required experience hunting dangerous game and then passing further examinations.

Any of these certified professionals may also qualify as a Bow Hunting Guide by attending a specialized course and passing another set of tests. All Namibian Hunting Professionals are required to hold current MET certificates, to be registered with the Namibian Tourism Board and to refresh their first aid training every two years.

The Namibian Professional Hunting Association

One of the turning points in the history of trophy hunting in Namibia came in 1974, when a group of interested parties banded together to establish NAPHA, the Namibian Professional Hunting Association. NAPHA has become one of the most active and respected organizations of its kind in the world. Although it is a private, not-for-profit and non-governmental organization, NAPHA works closely with the Ministry of Environment and Tourism on hunting-related

matters. NAPHA members are expected to adhere to strict codes of ethics and guidelines that address hunting and the environment as well as business and social issues.

A full accounting of NAPHA rules and standards, as well as membership and committee lists, is available online at www.natron.net/napha. See also the addendum.

Throughout, NAPHA policy meshes with MET regulations to achieve long-term sustainable hunting and social responsibility, not short-term financial gain.

NAPHA's unique and prestigious Game Fields medal rewards the hunting client for taking a gold medal trophy of extreme age – it is crucial that hunters preserve gene pools by harvesting trophies that are past their prime, leaving the younger, stronger males to reproduce. NAPHA also offers bronze, silver, gold and

conservation medals. In addition, NAPHA has a Disciplinary Committee as well as an Ombudsman to whom hunting clients can turn for assistance and advice in the event of a dispute or unsatisfactory service.

Where the MET licensing categories leave off, NAPHA picks up with an education program in support of its own categories of Hunting Assistant and Camp Attendant. These certificates confer industry recognition and status on the many skilled and dedicated trackers, skimmers, and housekeeping and catering staff employed in the hunting industry. The education program provides opportunities to improve skills and also ensures that clients receive high quality service across the board when hunting with NAPHA-member operators.

While many skimmers and trackers have superb hunting skills as well as a deep knowledge of fauna and flora, they are often unable

to qualify as Hunting Professionals because they are illiterate or semi-literate. One of NAPHA's proudest achievements was our successful negotiation with MET to allow verbal theoretical examinations. The high standard of the examination is not affected in any way, and the practical test has remained the same. The NAPHA Education committee drew up a detailed syllabus for an intensive 10-day preparatory course with the Eagle Rock Hunting Academy, run by veteran PH and NAPHA founding member Volker Grellmann, and, since the inception of this program in 2001, 169 previously disadvantaged Namibians have thus qualified as Hunting Guides or Professional Hunters.

A NAPHA "Hunters Support Education" committee provides books, computers, photocopiers, faxes and even mattresses, blankets, towels and catering equipment to schools across Namibia that educate children from the

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hunting community. Since 2004, 18 schools have received donations worth more than N\$500,000. This does not include the independent donations – of funds, learning materials, supplies and meat from the hunt – made by many hunting operators and their guests to schools throughout Namibia. Hunters Support Education also recently introduced an initiative to reward individual students from these schools, selected for their academic excellence and model citizenship. The first award ceremonies took place at the end of 2008; the winners were honoured with NAPHA Certificates as well as N\$250 cash prizes. Schools that receive support from NAPHA report an increase in pass rates, especially in the higher grades, resulting from greater motivation among both learners and teachers.

Funding for these Hunter Support Education programs comes from the sale of NAPHA medals and donations from hunters as well as

international hunting organizations such as Safari Club International and Dallas Safari Club. NAPHA members believe that education is the most effective way to end the cycle of poverty in Namibia. Trophy hunters are regarded as generous and supportive by the community and it is heart-warming to see the enthusiastic waves and bright smiles of recognition when driving past a rural school in a hunting truck.

Hunting legislation in Namibia

One of NAPHA's first actions as a duly constituted body was to petition Government for legislation to regulate the trophy hunting industry. Thus "Ordinance No. 4 of 1975 on Nature Conservation" and "Regulations on Trophy Hunting No. 240 of 1976" came into being. These codes stipulate, among other things, that only registered persons and establishments, meeting strict requirements, may par-

ticipate in commercial trophy hunting. This was regarded as a management tool to help achieve sustainable utilization of game in Namibia.

Namibian firearms law was designed not to unnecessarily impede visiting trophy hunters, who may temporarily import their own rifles and shotguns with no advance permitting. (Visitors may be asked only to show proof that they have booked a hunt with a registered Namibian hunting operator.) The Namibian Police issue Temporary Weapons Importation Permits at the airport or other point of entry into our country, and this document must be shown again upon departure. A maximum of 100 rounds of ammunition, for the specific calibre only, may be imported. For safety as well as humane kills, there are legal minimum calibres for hunting small, medium and large game. Handguns and automatic weapons are prohibited.

Our trophy hunting legislation was put in place not only to guide participants, but also, when necessary, to investigate and punish wrongdoing. Following is a current example of how NAPHA and MET work together to enforce the law and maintain ethical hunting standards:

Leopard and cheetah hunting in Namibia face a number of challenges. On April 24th and June 15th, 2009, the Ministry of Environment and Tourism issued a moratorium, first on cheetah and then on leopard, for trophy permits. The reasoning was that the CITES export quotas for these two species had been exhausted for 2009. MET's decision was supported by our Association, although several PHs had to inform clients of this development at short notice.

At the same time, allegations of unscrupulous and illegal hunting of leopard and cheetah, often involving unregistered and unqualified

foreigners acting as hunting professionals, began to reach NAPHA. The Executive Committee took action to protect Namibia's game and our reputation as a destination for ethical hunting and called an urgent meeting of the general membership, on July 31st, 2009, to discuss the situation.

At the meeting, an overwhelming majority voted to request MET to temporarily suspend leopard hunting with hounds, to take immediate effect, and not issue trophy leopard or cheetah permits for 2010, in order to use the year to put effective controls in place. NAPHA also elected a Predator Hunting Committee to draft and implement these controls. At the time of writing, the Ministry of Environment and Tourism has not yet issued an official statement.

New initiatives

The population of huntable game – largely kudu, oryx, springbuck and warthog – on privately owned land in Namibia has grown by 8% per annum since 1972. However, since 2005 the off-take of those species by the trophy hunting industry has increased by 22.5% per annum. In addition, non-trophy game animals are also utilized for meat as well as live capture and sale.

Thus the demand for certain species of game has begun to grow at a more rapid rate than production and we are no longer using those game populations sustainably. NAPHA is consequently reaching out to commercial farmers (that is, those raising crops or domestic stock for market rather than subsistence) to educate them about game ranching and trophy hunting.

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Marina Lamprecht,
Hunters Namibia Safaris

In July 2008 NAPHA presented its first workshop specifically for commercial farmers coming on, in order to promote game ranching and trophy hunting as an effective and lucrative form of land use, provided it is done in a controlled, sustainable and ethical manner. The workshop was attended by government ministers, members of parliament and new farmers as well as business people aspiring to become farmers and trophy hunting operators. The majority of the farmers who attended came from previously disadvantaged communities.

The Ministry of Environment recently introduced a program to stock farms belonging to emerging commercial farmers free of charge with breeding populations of a variety of game species, with the agreement that MET would capture the same number of animals for relocation once viable herds had been established on the farms. This initiative is expected to make a valuable contribution towards address-

ing the increase in demand for certain game species by international trophy hunting clients.

Economic challenges facing hunting

Most of the trophy hunting industry's marketing takes place at large expositions in the USA, Europe and Asia between January and March each year. Traditionally, these events have been effective and critically important media for hunting operators from all over the world, providing opportunities to interact with many thousands of potential clients. However, recent experience shows that prospects for the safari industry have been damaged by the global economic crisis. Attendance declined dramatically at most of the conventions in late 2008 and early 2009, and as a result bookings were down noticeably as well. In addition, hunting companies in Namibia and across Africa report that a significant percentage of safaris already booked for 2009 and 2010 are

being cancelled or postponed.

The emerging trend among those hunting clients whose financial position still allows them to travel seems to be to concentrate on the very well-established and known operators, which leaves newer companies with little business. According to Digu Naobeb, CEO of the Namibia Tourism Board, and Jackie Asheeke of FENATA, every indication is that the top end of the travel market will be less affected than the middle and lower ends. In the year to date, Air Namibia reports a 15% decrease in bookings compared to 2008, and our national airline carries 80% of the visitors traveling to Namibia from Europe.

The largest trophy hunting organization, Safari Club International (SCI), counts 55,000-plus members and 188 chapters in all 50 US states and 19 countries in Africa, Asia, Australia, Europe and South, Central and North America.

SCI is the leader in protecting the freedom to hunt and promoting wildlife conservation worldwide. SCI's 2009 Hunters Convention, in Reno, Nevada, USA, registered fewer attendees than in 2008. (Some observers estimated attendance was down by as much as 30%.) Namibia is consistently one of the most represented African countries at the convention, with 36 outfitters exhibiting this year. The Honourable Nandi-Ndaitwah, Namibia's Minister of Environment and Tourism, spent three days at the event, meeting with SCI executives and Namibian operators.

Dallas Safari Club, with some 4,000 members, actively promotes the conservation of wildlife and wilderness lands, and educates youth and the general public to protect the interests of hunters. The traffic at its convention this year was also far less than expected. Namibia was represented by 33 trophy hunting operators.

The annual German hunting convention, Jagd und Hund, in Dortmund, attracted 38 Namibian vendors. Hunting and outdoor shows in France, Canada, Scandinavia and Asia attracted Namibian operators as well, but attendance and bookings across the board were also much lower than usual.



German-speaking countries have traditionally been the source of most of Namibia's trophy hunting visitors. However, recent statistics from the Ministry of Environment and Tourism indicate that while Germans hunting in Namibia over a 10-year period increased from 1,490 to 1,905, the number of trophy hunters from the USA in the same decade swelled from 155 to 1,516. The American market is thus now one of Namibia's most important, but it is also the one most affected by the global economic contraction. A downturn in hunting revenues threatens the further development of trophy hunting in our country for at least the short to medium term.

Cultural challenges facing hunting

By August 2009, financial data from the USA, Britain, Germany, France and Italy indicated that the losses to those economies seemed to have been stemmed and recovery, however

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slow, was in the foreseeable future. As consumers in those countries regain confidence, not to say some of the value of their portfolios, it is expected that they will eventually resume trophy hunting and other recreational activities. However, there is a larger, long-term threat to the business of trophy hunting, and that is the steady shrinkage in the numbers of hunters in much of Europe and North America.

Between 1996 and 2006 the number of hunters in the USA declined by 10% overall, to approximately 12 million. In Europe, 11 out of 20 countries showed declines in their hunting populations between 1996 and 2006. One of the largest downturns occurred in Italy, which lost 20% of its sport hunters in that period and 50% between 1980 and 2006. France experienced a drop in its hunting population of some 18% between 1996 and 2006. However, to the direct benefit of Namibia, which still gets nearly one third of its trophy hunters from

there, Germany is one of the important exceptions: while in 1995 there were some 326,000 licensed German hunters, today the number has grown to approximately 350,000. Austria and Switzerland show modest increases as well (– Thomas A. Heberlein, PhD, The University of Wisconsin–Madison, USA).

Many factors contribute to these declines, but chief among them in North America appears to be the continual urbanization of populations, while overall factors include the aging of hunters and the lack of new hunter recruitment.

Conclusion

Thanks to the country's excellent hunting opportunities, the variety and quality of game species, outstanding hunting professionals and the focus on fair chase, our political stability and well-developed infrastructure, Namibia is now firmly established as one of Africa's most popular and

successful trophy hunting destinations.

As Namibian citizens, it is essential for each of us to utilize our land to its fullest potential in sustainable ways by developing farming operations that make meaningful contributions to our country. Game ranching and trophy hunting are, without a doubt, two of the most lucrative means of doing so. The inherent biological, ecological and physiological advantages of wild animals, and the fact that wildlife offers substantial extra value beyond meat and hide, make game ranching and trophy hunting extremely beneficial forms of land utilization, as well as proven tools for conservation.

It is with pride I say that the results of the past four decades have proved that selective, ethical and sustainable trophy hunting is one of the most lucrative forms of land utilization as well as a great conservation tool in our country.

Trophy hunting currently employs more people and pays better salaries, as well as provides more training, skill recognition and job promotion opportunities than any other form of commercial agricultural or communal conservancy land utilization in Namibia.

The Namibian trophy hunting industry can do little to counteract the effects of the global economic contraction other than to continue to offer high quality hunting for good value. While Namibia has developed its own programs, policies and legislation to sustain high-quality trophy hunting, organizations within the nations from which we draw our clientele must in turn create their own programs to sustain hunters as an ecological force. As Professor Heberlein has pointed out, it is unfortunate that while the scientific community worldwide works to protect wildlife populations, it does not take an interest in sustaining populations of hunters.

Addendum

Fair chase

A wild animal should exist as a naturally interacting individual within a wild sustainable population, located in an area that meets both spatial and temporal requirements of the population of which that individual is a member. "Fair chase" is defined as the pursuit of free wild animals, possessing the natural behavioural inclination to escape from a hunter, and fully free to do so. In addition:

Wild animals are not to be hunted with an artificial light source or other similar technical equipment.

Motorized or other (horse, etc.) modes of transport may not be used to chase the animal.

No ethical hunter should take female animals with dependent young.

Wild animals should be hunted sustainably within an ecologically functional system.

The Code of Ethical Hunting in Africa

1. Hunt on the principles of Fair Chase, as defined above.
2. Abide by relevant laws, other legal requirements and recognized Codes of Conduct.
3. Enhance by action the survival of wildlife populations, the protection of bio-diversity and the promotion of sustainable utilization.
4. Use humane practices in the utilization of wildlife.

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5. Use the correct hunting methods and equipment.
6. Engage at all times in fair and honest practices.
7. Educate others in sustainable use, conservation, correct procedures and in the ethics of hunting.
8. Recognize the needs of indigenous rural communities relating to sustainable natural utilization.

Namibian Professional Hunting Association Mission Statement

The fundamental purpose of NAPHA is to enhance and maintain, by effective management, an organizational infrastructure that can serve professional hunting members, clients and other interest groups. Our intent is to ensure

and promote ethical conduct, sustainable utilization of natural resources, and to secure the industry for current and future generations. The Association insists that its members provide the highest standard of professional service to international hunting guests. They are expected to hunt strictly in accordance with the ethical principles as stipulated in NAPHA's Hunting Code. The Hunting Professional is at all times encouraged to act responsibly towards nature, wildlife and the local population.

Acknowledgements

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Eagle Rock Hunting Academy – Volker Grellmann

The Wildlife Game – Ron Thomson

The Meat Board of Namibia – Willem Schutz

University of Wisconsin-Madison – Thomas A. Heberlein

WWF Namibia – Chris Weaver



An incredible wealth of information was presented at this Symposium. Besides the sheer volume of information contained in the presentations and discussions, there is the fact that “hunting” exists within many contexts. What is accepted in one area may not be accepted in another. Therefore, local culture must be acknowledged in any decision-making process.

Despite the differences of culture and conditions, there are common themes. Many studies and first-hand experiences clearly demonstrated undeniable proof that regulated hunting is a critical part of science-based wildlife management and it provides incredible widespread economic benefits to rural communities. This economic benefit is one of the most important tools to help end poverty.

Keeping wildlife populations in balance with the ecosystem is the cornerstone of modern scientific management. Presentations proved that regulated hunting is the most effective tool to ensure that species exist in balance with nature. Even more significant is the role regulated hunting has played in the protection and reintroduction of endangered species.

The hunting experience requires clean and healthy ecosystems. To this end, presentations demonstrated hunting is the highest/best land use. Livestock and farming destroys ecosystems, and photo safaris don’t provide the large and diversified distribution of wealth that hunting does. Compound this with eco-tourism’s demand for a specific (and limited) type of beauty and the economic impact is even further centralized. What is important to remember is there is a role for all activities and there were great case-studies that provided a model for establishing the right balance.

Finally, we have seen the incredible economic benefits of regulated hunting. Hunting is big industry, but unlike most big business it is widely dispersed throughout rural communities. Around the world regulated hunting is a primary funding source. In developing countries we have seen the economic impact of regulated hunting is a critical tool to help end poverty.

Symposium Summary and Recommendation

Executive Summary: The Symposium on the Ecologic and Economic Benefits of Hunting

Capitalizing on these incredible benefits requires the proper framework. This framework must ensure revenues are distributed to the local community. Since hunting is a relatively labor-intensive activity, many in the local community realize employment opportunities. But the legal frameworks must ensure revenues are focused on wildlife and local communities and not gobbled up by general treasuries. These legal frameworks must also provide a mechanism for biologically-based hunting quotas and enforcement of those quotas.

We have a great story to tell, and a great deal of time in this Symposium was spent talking about how to tell it. In today's world perception is reality. It is not enough to continue DOING what is right, we must also educate the public so they understand. It is perhaps our biggest challenge. As Aldo Leopold, father of modern science-based wildlife management, said "managing wildlife is easy...managing people is what is difficult." While a minority of extremists opposed to regulated hunting—or any sustainable use of natural resources—are masters at getting media attention, the good news is the public as a whole sees through their misguided agenda. Studies show that throughout the world the vast majority of the public supports regulated hunting. But the message is clear: To succeed in supporting wildlife, ecosystems and economic gains for rural communities we must engage in dialogue with all stakeholders. There must be bottom-up communications in the decision-making process.

We have many challenges. The actions of international NGO's are pushing top-down, unilateral decisions that interfere with regulated hunting and eliminate the great benefits. In the process they are harming wildlife, ecosystems, and communities.

Another challenge is hurdles in transportation of firearms by hunters. If hunters can't travel with their firearms, they won't hunt and all the benefits disappear. This can result from poor business policies of transportation companies and/or well-intentioned but poorly-reasoned regulations intended to prevent the illicit trade of weapons is a threat to hunting and therefore a threat to wildlife and ecosystems.

Thank you,
Rick Patterson

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WFSA President Ted Rowe's Closing Remarks at The Symposium on the Ecologic and Economic Benefits of Hunting

Delivered on the 17th September 2009.

At the close of this symposium, we have determined that:

- Strategies for ensuring the future of wildlife world-wide will include continued scientific data gathering, effective communication strategies and an inclusive decision making framework. It is incumbent on all to demonstrate responsible stewardship of all natural resources.
- Sound scientific information demonstrates the importance of hunting to the future of wildlife.
- The worldwide hunting community including NGO's, hunting tourism and related industries, academics, and individual citizens are eager to contribute sound scientific information, support and perspectives in wildlife management decision-making.
- We will promote the principles of sustainable use, including hunting, as the preferred conservation strategy for wildlife management.
- There is a clear need for consistent and coordinated communication of the ecologic and economic benefits of hunting.

Thank you,

Ted Rowe



Symposium proceedings on the Ecologic and Economic Benefits of Hunting

EUGENE LAPOINTE

President IWMC World Conservation Trust
Former Secretary – General of CITES (1982/1990)

SWITZERLAND

“During my thirty active years on the international scene, I have attended an innumerable number of meetings and conferences. The Windhoek Symposium will be one that I shall cherish as it was an enriching experience due to the high quality of the presentations, not to say of its guests and collaborators. At all times I felt welcome and could always rely on the WFSA team who have accomplished an exemplary task. Congratulations to all.”

YVES LECOCQ

Secretary – General/Senior Policy Advisor FACE –
Federation of Associations for Hunting &
Conservation of the European Union

BELGIUM

“The conclusion of some of the best international experts in wildlife biology, conservation and management but also in rural economy, psychology, sociology and ethics, that sustainable hunting benefits biodiversity as well rural development, carries considerable weight.”

LUC BELLON

Anthropologist

PAKISTAN

“The symposium has been a remarkable effort and an important stepping stone in reconciling three worlds far too long set apart: hunting, conservation and development.

FETENE HAILU BUTA

Tropical Resource Ecologist, Director,
Wildlife Utilization Directorate, EWCA

ETHIOPIA

“I believe that the current principal threat to wildlife is habitat conversion for other uses rooted in undervaluing wildlife resources; with this regard the Windhoek Symposium has armed all participants with key global diverse experiences and knowledge to stand for the sustainable use of our natural resources for the well-being of societies.”

HANK JENKINS

President – Species Management Specialists;
former Wildlife Biologist with the Australian
National Parks and Wildlife Service

AUSTRALIA

“The first of its kind that I have attended, the Windhoek Symposium proved to be a stimulating forum for the exchange of views on the role that sport hunting can play in the conservation management of a variety of wild species. On the basis of presentations and subsequent discussion of the issues, it is clear that responsible and ethical hunting provides a practical management tool that is capable of benefiting both species conservation and the economic well-being of landowners.”

BENGT - ANDERS JOHANSSON

Member of Parliament

SWEDEN

“As a member of the Swedish Parliament I am very satisfied that I participated in the WFSA world symposium “Ecologic and Economic Benefits of Hunting.” It will give me a much better understanding and possibility to save wildlife for coming generations.”

RON THOMSON

Retired National Parks Board Director; Member of
the Institute of Biology (London) and a Chartered
Biologist for the European Union (20 years)

SOUTH AFRICA

“One of the most professionally prepared and executed conferences I have ever attended.”

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