



Exploring Our Ancient Roots

GENGHIS KHAN TO ALDO LEOPOLD, THE ORIGINS OF WILDLIFE MANAGEMENT

By Raul Valdez



Credit: Gris Valdez

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The vast Mongol empire (in orange) was the largest contiguous land empire the world has ever known. Ruled by Kublai Khan in the latter half of the 13th century, the empire's diverse landscapes hosted plentiful and varied species of wildlife that lured hunters and led to early wildlife management practices.

Wildlife management and hunting have long been integral activities of the human experience. Yet North American wildlife managers are largely unaware of this ancient intertwined history. Understanding the rich multicultural, archaeological, and even paleontological roots of our profession can deepen our appreciation of the work we do and of why it matters now more than ever.

Not surprisingly, Aldo Leopold was the first American wildlife biologist to recognize the significance of wildlife management practices established long ago in the Old World. In his seminal book *Game Management* (1933), Leopold states that the first documented record of a game management program was in Asia during the reign of Kublai Khan (from 1260-1294 A.D.), then the absolute ruler, or khan, of the Mongol empire.

Leopold quotes from the writings of Marco Polo in which the explorer—who spent many years with Kublai Khan—described the ruler's edicts that specifically forbade the taking of game birds and mammals, as well as other management practices exercised in reserves to provide for the protection and increase of game birds as sport. This was “the earliest known instance of food and cover control combined with restrictions on hunting,” writes Leopold. He speculates that the advanced nature of the khan's intensive management practices implied that these practices must have developed over a long historical time period.

Leopold's reference to Kublai Khan has since intrigued wildlife biologists, probably because it remains a concrete statement relative to the ancient origins of wildlife management and it was made by the most influential wildlife biologist of the 20th century. It associates wildlife management with an improbable area—the rangelands and steppes of Mongolia and central Asia—and with a historical past that has long fascinated Western culture.

Kublai Khan's name is probably often confused with that of his grandfather, Genghis Khan, the founder of the Mongol empire, who ruled from 1206-1227. Genghis rose from being a poor, nine-year-old fatherless and marginalized sheep herder to become one of the most recognized names in world history. His reputation is synonymous with wars, conquest, pillage, and human annihilations (Weatherford 2004, Craughwell 2010), adding further intrigue to wildlife management's origins.

In some ways, Genghis Khan might be considered an early ‘father’ of wildlife management. He established wildlife protected areas and held an annual communal hunt, an elaborate three-month-long excursion in which mounted Mongols encircled large concentrations of wild animals. This gave him the privilege of being the first to enter the circular entrapment of wildlife and to demonstrate his prowess as a hunter. He recognized the importance of wildlife to Mongol society and codified hunting by establishing a hunting season during which wildlife could only be hunted in winter. He also initiated intensive habitat management and instituted bag limits. These management practices were maintained by his successors (Yule and Cordier 1903, Weatherford 2004, Craughwell 2010).

The Mongol empire, which continued to grow after the death of Genghis Khan through annexations made by Genghis's sons and grandsons, became the largest contiguous land empire in the history of the world. The empire extended from China to southern Siberia and Moscow and south to Poland, Hungary, the Middle East and central Asia (Prawdin 1940, Phillips 1969, Saunders 1971). Our knowledge of



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During massive annual hunts, Kublai Khan rode in a grand pavilion borne on the backs of elephants. Thousands of huntsmen, aides, and nobles pursued quarry of birds, ungulates, and predators, sometimes using trained cheetahs (far left) to capture game. Falconry was a favorite sport of Kublai Khan, who, according to accounts by Marco Polo, traveled with as many as 10,000 falconers. To protect his empire's game, he instituted hunting seasons, habitat management, and other measures.

the lives and fortunes of the Mongol khans is based on the literature of contemporary historians and foreign emissaries, who also recorded their observations of Mongol culture (Craughwell 2010, Golden 2011). Yet it is the prolific explorer Marco Polo—who became intrigued with the wildlife he encountered during his journeys through Asia—to whom we owe many early observations of the wildlife of the empire and its management and utilization (Yule and Cordier 1903).

Management Enables Massive Hunts

Marco Polo—an astute observer of Mongol customs, culture, and political organization—recorded detailed observations of wild landscapes, regional wildlife, and its hunting and management under Kublai Khan. Marco was amazed by the size of wildlife populations, and described numerous wild species and favored game animals including wild pigs (*Sus scrofa*), musk deer (*Moschus moschiferous*), wapiti (*Cervus canadensis*), gazelles (*Gazella* spp.), cranes (*Grus* spp.), chukar partridge (*Alectoris chukar*) and pheasant (*Phasianus colchicus*). He was also impressed by the scale of hunting among the khan, the nobility, the military, and huntsmen, some of whom used carnivores that had been trained to hunt including lynx (*Lynx lynx*), tigers (*Panthera tigris*), and cheetahs (*Acinonyx jubatus*). Kublai Khan and his entourage no doubt reveled in annual hunting excursions, enjoying the excitement, vagaries, and dangers of close encounters with wild animals and delighting in the ensuing feasts.

These excursions were elaborate, involving planners, administrators, skilled personnel, and an abundant investment of resources and capital (Allsen 2006). Marco described Kublai Khan's annual three-month hunt, which took place several days' journey from the capital, Khanbalik (site of modern Beijing). The khan was joined by thousands of mastiff dogs and their handlers to pursue larger game plus numerous falconers and hundreds of falcons, hawks, and eagles to pursue his favorite quarry: waterfowl and cranes. Falconry was his passion, and the gyrfalcon (*Falco rusticolus*) was his favorite raptor for medium-sized game.

The hunting camp consisted of thousands of tents to provide the housing for the khan's extensive entourage. Many participated in the hunt, which provided a "great store of venison and feathered game of all sorts" to provision the large number of participants (Yule and Cordier 1903). Marco marveled at the quantities of game collected and the excellent sport enjoyed by all participants.

The plentiful wildlife populations were the product of an elaborate program of wildlife management that incorporated law enforcement, hunting seasons, protected areas, habitat management, and predator control. Maintaining high concentrations of wildlife required the concerted efforts of individuals with wildlife management expertise, especially land managers who knew the habitat requirements and life histories of individual species.



An inkling of the personnel involved in managing wildlife was recorded by Father Odoric of Penderone, a Jesuit priest who visited the Mongol court in 1325,



Courtesy of Raul Valdez; from *The Babylonians* by H.W.F. Saggs (1999)

Dating from the 7th century B.C., a wall panel from the Ashurbanipal palace in the ancient Assyrian city of Nineveh depicts members of a hunting party leading fierce mastiff hunting dogs and bearing nets and stakes, perhaps to capture or hold game. Now housed in the British Museum, the panel hints at the prominent role hunting had in ancient culture.

after the sojourn of Marco Polo (Yule and Cordier 1913). He described a forested wildlife protected area with specialists designated as keepers of the forest to “take diligent charge thereof.” These keepers planted food plots of millet and other favored foods for partridges and quail and provided feeding stations during the winter. The main duty of the keepers was to provide plentiful populations of wildlife for the khan’s hunting pleasure and to supply his larder (Komroff 1930).

There were several such wildlife management areas devoted to producing hunt-

ing opportunities and, probably more important, a source of meat protein, which supplemented domestic animal food sources, especially for Mongol royal households and other elites. During the months of December, January, and February when the khan resided in Khanbalik, all game killed within 20 to 30 days’ journey from the capital was to be sent to the court. The gutted carcasses of game mammals including “boars, roebucks, bucks, stags, lions, [and] bears” as well as game birds were sent directly to the khan (Yule and Cordier 1903). Processed game animals could be transported over long distances across the frozen winter landscapes of northern China without spoiling.

The enforcement of hunting seasons and the prohibition of hunting by certain classes of Mongolian society had to have been a top priority and strictly enforced. This was evident in the wildlife edicts of the day. It was forbidden to keep hawks or hounds in an area encompassing 20 days’ journey from the hunting area, and there was a prohibition against hunting “hare, stag, buck, and roe” during the months of March to October. Those who dared to hunt illegally “would rue it bitterly.” Although not mentioned but implied by Marco, there must have been a large force employed to enforce the khan’s wildlife protection edicts. As a consequence, game animals were numerous and, as Marco observed,

“the game multiplies at such a rate that the whole country swarms with it, and the Emperor gets as much as he could desire” (Yule and Cordier 1903).

Digging Even Further Back

Even long before the khans there had already been an ancient cultural attachment to the hunt, not only among Mongols but in other Asian societies that preceded the Mongols by thousands of years. Beginning with the earliest civilizations about 5,500 years ago and originating in the Tigris-Euphrates area of modern Iraq—including empires of the Sumerians (c. 3100-2300 B.C.), Babylonians (c. 1792-1595 B.C.), and Assyrians (c. 870-612 B.C.)—organized hunting became one of the favorite sports of the nobility (Hobusch 1980, Allsen 2006).

These traditional hunts were extravagant events that required hundreds and even thousands of eager participants plus the numerous horses, mules, and camels used as mounts and for transporting hunting and camping paraphernalia. In addition, birds of prey, dogs, and trained wild predators were essential hunting aids that allowed for the diversified hunting of waterfowl, upland game birds, small and large game mammals, and predators. There was a strategic reason for encouraging such hunting: It was viewed as a manly sport that developed courage, endurance, discipline, equestrian expertise, knowledge of coordinated tactics, and killing skills—the same qualities inherent in a successful warrior (Phillips and Willcock 1999).

Cultural innovations that transformed landscapes and ultimately wildlife and their habitats began in Asia and eventually developed into wildlife management practices. Humans entered central Asia about 40,000 years ago and, by about 9,000 years ago, they initiated farming accompanied by animal domestication, forever transforming landscapes by eliminating ecosystems, and degrading and fragmenting wildlife habitats (Headrick 2009, Redman 1999). By at least 5,000 years ago, horses had been domesticated (Levine 2005). The domestication process was itself a form of wildlife management because all domestic animals arose from wild ancestors.

Domestication required knowledge of animal behavior in order to tame wild animals to the point of being dependent on humans. Domestication especially of sheep (*Ovis aries*) and goats (*Capra hircus*), and prevention of farm-crop damage from wildlife, also added an urgency to control and even eliminate



predators, and hence began intensive predator control, concomitant with numerous trapping methods. In addition, hunting strategies developed thousands of years ago, such as the use of nets to drive and encircle wildlife and lassos to rope large ungulates, became useful as live-animal capture techniques.

Hunting restrictions were some of the earliest management principles imposed. In the Old Testament, written about 3,000 years ago, there is a statement which can be interpreted as a biblical law explicitly relating to the restriction of hunting (Orr and Spanier 1992). Readers were cautioned to not kill female birds with young, in effect adumbrating the establishment of hunting seasons (Deuteronomy 22:6). The importance of wildlife as a protein source made it essential that it be harvested judiciously and that wildlife harvest restrictions be included in religious doctrine.

The equally significant establishment of protected areas to ensure a source of wildlife for subsistence and sport hunting and for aesthetic reasons prompted the development of new wildlife habitat management strategies. Game parks or hunting preserves, as well as royal gardens, were established by monarchs and other elites as symbols of wealth and privilege. They became known as *paradeisos*, hence the origin of the word *paradise*, originally referring to a walled enclosure where wildlife was abundant and readily observed and procured (Allsen 2006).

Game parks were widespread during the Achaemenid or Persian Empire (534-330 B.C.) and became the model of later royal protected areas (Cook 1983, Allsen 2006). These planned, manipulated habitats instigated the need for a trained cadre of wildlife professional managers, who had the skills to manage plant and animal communities; they were likely the first trained wildlife professionals. Game parks were the precursors of modern wildlife refuges and probably established the conceptual framework of national parks.

An extensive commercial trade network of foods, metals, luxury goods, and wildlife became established in Asia thousands of years ago (Renfrew 2009, Wengrow 2010). Wildlife acquired an economic and commercial value which, apart from wild animal by-products, included the establishment of a trade in live animals that were in demand to both supplement existing wildlife populations and establish new ones. Perhaps more lucrative was the commercialization of live animals associated with the creation of private

zoos and game parks among royalty and the wealthy, who especially valued exotic species (Schafer 1963, Redman 1999). Wild animals were included in tributes to royalty and were exchanged among royalty as gifts (Allsen 2006, Valdez and Tuck 1980, Bodenheimer 1960). In addition, private menageries likely provided the impetus for initiating wildlife captive-management techniques (Hoage et al. 1996).

Ancient Lessons for Modern Times

History has taught us that wildlife management knowledge evolved over millennia, with hunting providing the initial impetus. In more-recent centuries, the ever-increasing efficiency in harvesting wild animals and the large-scale conversion of land



Credit: Walters Art Museum

for farming greatly depleted wildlife populations. Yet wildlife remained an important food source, and its ancient significance as a source of subsistence and sport made it imperative that conservation practices be developed to ensure a continued supply of plentiful wild animals.

Although wildlife management techniques have made great technological advances (Silvy 2012), they have not replaced Leopold's five basic management tools: refuges, predator control, game laws, restocking, and habitat management (Leopold 1933). Indeed, as history shows, these tools were integral in the evolution of human societies and were basic components of the survival skills necessary for a successful hunter and gatherer, especially as they related to humanity's ability to manipulate plant and animal populations. It is gratifying for today's wildlife managers to know that the seminal tools of their profession arose millennia ago in Asia—a legacy destined to serve the wildlife resources of tomorrow. ■

Stylized lions rage against the arrows of chariot-borne hunters in a scene carved between 800 and 600 B.C. This cylinder seal originated in Elam, an ancient civilization that arose east of Mesopotamia in what is now Iran.