



A Conservation Timeline

MILESTONES OF THE MODEL'S EVOLUTION

By Robert Brown, Ph.D.



Credit: NCSU Media Services

Robert Brown, Ph.D., is Dean of the College of Natural Resources at North Carolina State University.

Though the term “North American Model of Wildlife Conservation” was coined only nine years ago by Valerius Geist (Geist *et al.* 2001), it encapsulates centuries’ worth of history. What follows is a selection of some key historical events related to wildlife conservation in North America—events that continue to shape our attitudes, laws, and policies concerning wildlife and natural resources today.

Early European Settlement

From the 1500s to the mid-1600s, historians estimate that three to five million Native Americans lived in what is now the United States. They hunted mammals for food, in some cases decimating large game around human population centers. After European explorers arrived, bringing infectious diseases with them, vast numbers of native people perished and wildlife populations began to rebound.

The rebound didn’t last. European immigrants cleared land for farming, cut forests for ship building, and began hunting and trapping for European markets. As early as 1650, beavers had been nearly eliminated from the entire East Coast. Spaniards introduced domestic horses, cattle, sheep, goats, and pigs, which competed with grazing wildlife and carried diseases. Wildlife populations declined, and settlers blamed the loss on predators.



Courtesy of Thomas J. Ryder

Early settlers killed wolves and other predators with abandon, blaming them for declines in game populations.



Credit: Library of Congress

When Meriwether Lewis and William Clark explored the Louisiana Territory in 1804-06, they saw abundant wildlife and untouched wilderness.



Credit: NPS

Bison fell by the thousands as pioneers and fur traders killed the animals for their thick pelts and other products.

1630: Massachusetts Bay Colony offers a one shilling bounty per wolf killed.

1646: Portsmouth, Rhode Island enacts the first closed season on deer hunting.

The Colonial Age

As more settlers arrived in what are now the U.S. and Canada, market hunting and fur trapping for export expanded. The French as well as England’s Hudson Bay Company took furbearers in the northeastern U.S. and Canada. And in the Pacific Northwest, the Russian-American Fur Company took seals and sea otters. Still, in the 1700s, an estimated 40 to 70 million bison and roughly 10 million pronghorn roamed the West.

1748: South Carolina ships 160,000 deer pelts to England.

1768: The Steller’s sea cow is declared extinct.

Westward Expansion

When Lewis and Clark made their westward expedition from 1804 to 1806, they observed grizzly bears, abundant herds of buffalo and deer, and prairie dog towns a mile square. In 1813, James Audubon recorded a passenger pigeon flock he estimated at one billion birds. Yet even by the first decades of the 1800s, trading posts were plentiful across the West, prompting trappers and remnant tribes of Native Americans to harvest animals for their valuable hides.

1832: Carroll’s Island Club, the first known hunting club in the U.S., forms in Baltimore.

1833: In this single year, the American Fur Company ships 43,000 buffalo hides, mostly obtained through trade with the Native Americans.

1836: Ralph Waldo Emerson publishes *Nature*, one of the first writings to extol the inherent value of wildlife beyond its use for sustenance and profit.



Origin of the Public Trust Doctrine

In 1842, the U.S. Supreme Court denied a land-owner's effort to exclude people from taking oysters from New Jersey mudflats he claimed as his own. The decision referred to England's Magna Carta of 1215, noting that the document guarded "the public and common right of fishing in navigable waters." This decision codified the concept of the Public Trust Doctrine, which holds that, in the U.S., wildlife and fish belong to *all* the people, and stewardship of those fauna is entrusted to the individual states.

1844: The New York Sportsmen's Club forms and in 1848 drafts laws to regulate trout fishing and the hunting of woodcock, quail, and deer.

1854: Henry David Thoreau publishes *Walden*, his treatise on the solace of nature.

Collapse of the Bison

Railroad expansion in the 1860s and '70s made shipping bison hides, meat, and tongues economical—and marked a period of wildlife slaughter perhaps unparalleled in U.S. history. The annual bison kill in 1865 was one million animals; by 1871 that toll had soared to five million.

1872: President Ulysses S. Grant establishes Yellowstone National Park, with 3,348 square miles.

1886: A census reveals that only 540 bison remain in the entire U.S., mostly in the Yellowstone area of Montana.

Clubs to the Fore

Dozens of hunting, conservation, and scientific organizations formed in the 1880s, including the League of American Sportsmen, the American Ornithologist's Union, the Camp Fire Club, the New York Zoological Society, the Audubon Society, and the American Bison Society. These groups lobbied for stricter laws to stop market hunting for meat and hides and for feathers for the millinery trade. They also fought for bans on wasteful sport hunting.

1881: Approximately 60 ring-necked pheasants from Shanghai, China, arrive in Washington state. Most die during a subsequent shipment to Oregon, but the survivors are released and followed by

a second shipment in 1882—an introduction that leads to the establishment of pheasants as one of the most popular game species in North America.

1887: Theodore Roosevelt, George Bird Grinnell, and other influential hunter-conservationists gather in New York to form the Boone and Crockett Club, with a mission to preserve the big game of North America.

1892: John Muir and others form the Sierra Club, dedicated to the preservation of the Pacific Coast and Sierra Nevada wilderness.

Age of Legislation

Legislators in the last decade of the 19th century acted on a growing awareness of the need for natural resources conservation, taking action to protect disappearing wildlands, passing laws establishing national parks and forests, and protecting wildlife.

1891: Congress passes the Forest Reserve Act and creates Shoshone National Forest, the nation's first federally managed forest reserve.

1898: Gifford Pinchot becomes the first chief of the Division of Forestry, renamed the U.S. Forest Service in 1905.

1900: Congress passes the Lacey Game and Wild Birds Preservation and Disposition Act, making it a federal offense to transport illegally taken wild game across state borders.

The Conservation President

An avid hunter and advocate for the conservation of game and wild lands, Theodore Roosevelt served as President from 1901 to 1909—and launched a conservation agenda unmatched by other leaders. In all, Roosevelt set aside 230 million acres during his presidency—more than 80,000 acres for each day he was in office, includ-



Credit: Keith Schengili-Roberts/Wikimedia

Flocks of passenger pigeons darkened the sky in the early 1800s. Just a century later the species was extinct, a victim of unregulated hunting.



Credit: Jim Peaco/NPS

Yellowstone National Park—a symbol of the majesty of the natural world—was protected by President Grant in 1872.



Credit: Library of Congress

Theodore Roosevelt and John Muir admire Yosemite Valley from Glacier Point in 1903—land their efforts helped protect for generations.



ing 16 national monuments, 55 wildlife refuges, and five national parks.

1903: President Roosevelt establishes Pelican Island as the first National Wildlife Refuge.

Concern over Populations

After considerable debate in Congress, the U.S. signed a treaty with Great Britain in 1916 for the Protection of Migratory Birds in the United States and Canada—the first international wildlife conservation legislation. Hunters and conservationists formed organizations including the Izaak Walton League, Forests and Wild Life, the Wildlife Management Institute, and American Wild Fowlers (later to become Ducks Unlimited) to support hunting laws and wildlife restoration.



Credit: George Gentry/USFWS

President Roosevelt created Pelican Island National Wildlife Refuge in 1903, protecting the birds from market hunters and habitat destruction.

1913: Pennsylvania becomes the first state to issue a hunting license.

1914: The last passenger pigeon dies in the Cincinnati Zoo.

1916: Congress creates the National Park Service.

Birth of a Profession

Desperation in the wake of the Great Depression and Dust Bowl drove innovative wildlife conservation initiatives. In 1934 Congress passed the Migratory Bird Hunting Stamp Act, better known as the “Duck Stamp Act.” Funds from stamp sales have protected more than 5.3 million acres of waterfowl habitat in the U.S. The Civilian Conservation Corps developed thousands of acres of waterfowl

breeding grounds in the 1930s, and several influential conservation organizations formed including the Cooperative Wildlife Research Unit Program, the General Wildlife Federation (now the National Wildlife Federation), the North American Wildlife Institute (now the North American Wildlife Foundation), and The Wildlife Society.

1933: Aldo Leopold becomes the first professor of wildlife management in the U.S. at the University of Wisconsin.

1934: Congress passes the Fish and Wildlife Coordination Act to ensure collaboration

across conservation agencies, and the Division of Predator and Rodent Control (now Wildlife Services) forms.

1935: The Soil Conservation Service (now the Natural Resources Conservation Service) forms.

1937: Congress passes the Pittman-Robertson Federal Aid in Wildlife Restoration Act (P-R Act), which levies a tax on certain hunting equipment to be used for wildlife restoration projects, research, and education (see page 35).

Funding Boosts Post-War Efforts

Conservation efforts took a backseat during World War II. After the war, however, hunting license sales nearly doubled from pre-war levels, reaching 12 million by 1947. States used P-R funds to restock deer, pronghorn, elk, mountain goats and sheep, bears, beavers, and turkeys. Due in large part to such efforts, white-tailed deer numbers have risen from approximately 500,000 in the early 1900s to roughly 20 million today, while wild turkey numbers have jumped from about 30,000 to seven million.

1949: Leopold’s *A Sand County Almanac* is published, posthumously.

Origin of a Green Revolution

The prosperous post-war era led to commercial development of land for housing and agriculture, as well as to the concentration of farming and livestock operations, and a loss of wildlife habitat. Liberal use of pesticides and herbicides greatly increased farming efficiency, but raised concerns about health and safety.

1962: Rachel Carson publishes *Silent Spring*, documenting the potentially harmful impacts of pesticides on wildlife. By some accounts this book launched the modern environmental movement.

1964: Congress establishes the Land and Water Conservation Fund to acquire land for “the benefit of all Americans,” and President Lyndon Johnson signs the Wilderness Act and the Wild and Scenic Rivers Act.

Protection for the Rare

During the presidency of Richard Nixon, Congress passed the Endangered Species Conservation Act in 1969, then strengthened it as the Endangered Species Act (ESA) in 1973, adding provisions for enforcement and funding. This landmark act established protections for threatened and endangered species, funded research on rare species, and provided for the designation and protection of critical habitat. In addition to



Credit: USFWS

Aldo Leopold and Olaus Murie, leaders in natural resources conservation and management, attend a 1946 meeting of The Wilderness Society Council.



Credit: Ragesoss/Wikipedia

Rachel Carson’s seminal work, *Silent Spring*, triggered public awareness of environmental degradation in the 1960s.



the ESA, Nixon signed the Marine Mammal Protection Act, the National Environmental Policy Act, the Clean Air Act, and the Clean Water Act, and he established the Environmental Protection Agency.

1975: The Convention on International Trade in Endangered Flora and Fauna Species Act (CITES) takes effect in the U.S.

1980: The Alaska National Interest Lands Conservation Act expands the National Wildlife Refuge System by 53 million acres.

1985: Congress passes the Food Security Act, or Farm Bill, establishing the Conservation Reserve Program.

Modern Milestones

Throughout the 1990s to the present, conservationists and national leaders worldwide have become increasingly aware of the mounting threats to wildlife and habitats, including human population growth, resource extraction, habitat fragmentation, climate change, and loss of biodiversity. Efforts to address these threats and live sustainably will continue for decades to come.

1993: President Bill Clinton forms the National Biological Survey (NBS), a consolidation of 1,600 federal government scientists in eight bureaus of the Department of the Interior, to identify species and habitats that are at risk of becoming threatened.

1996: Secretary of the Interior Bruce Babbitt renames the NBS the Biological Resources Division and assigns it to the U.S. Geological Survey.

1998: President Clinton signs the Kyoto Protocol, which calls for sharp cuts in greenhouse gas emissions. (In 2001 President George W. Bush announced that he would not submit the treaty to the Senate for ratification, citing the economic costs.)

1999: The Departments of Interior, Agriculture, Commerce, and Defense form a coalition with university researchers to conduct research on natural resources and the environment and offer additional educational and outreach programs. The organization, known as the Cooperative Ecosystem Studies Units, now comprises more than 200 universities, NGOs, and federal agency partners in 17 regions.



Credit: Dave Menke/USFWS

The bald eagle is a beneficiary of the Endangered Species Act, signed by President Nixon in 1973.



Credit: John and Karen Hollingsworth/USFWS

International trade in wildlife products came under greater scrutiny with the ratification of CITES by the U.S. in 1975.



Credit: Rachel Brittin/AFWA

Launched in the 1990s, Teaming With Wildlife—a coalition of more than 6,000 conservation groups—lobbies for increased resources for wildlife and habitat restoration.

2000: Congress passes a version of the Conservation and Reinvestment Act (CARA). Now called the State Wildlife Grants Program, the legislation diverts \$50 million a year from the U.S. Fish and Wildlife Service budget to the states, and requires each state to have a comprehensive wildlife conservation plan.

2008: After a decade-long campaign launched by sportsmen's groups, Minnesota passes the Clean Water, Land, and Legacy Amendment, which funnels a percentage of state taxes directly to the state's Department of Natural Resources.

2009: President Bush establishes three marine national monuments, which protect nearly 200,000 square miles of the Pacific Ocean.

2010: After announcing an opening of offshore drilling early in the year, President Barack Obama places a moratorium on deepwater drilling operations in the wake of the Gulf of Mexico oil spill, widely viewed as the worst environmental disaster in U.S. history. (A judge blocked the moratorium in June and the Obama administration issued a revised moratorium in July.)

Our society debates conservation decisions with great emotion, whether the issue is drilling for oil in the Arctic National Wildlife Refuge, controlling urban deer, or managing wolves. This debate over wildlife and wild places occurs despite our increasing urbanization and distance from nature. Such trends make it all the more critical for wildlife professionals to know and understand the history of our field, and to share that knowledge with the public and with decision makers to ensure that science forms the basis of conservation policy. If we do not, then the democracy of conservation—a core tenet of the North American Model of Wildlife Conservation—will be in danger, as will the very animals and ecosystems that we treasure. ■