

A History of Hunting, Fishing, and Fish and Wildlife Management in the United States

Origins and Early Development: A Uniquely American Approach

Access to natural resources was an important reason European immigrants came to and founded the United States. The European system of land ownership, along with political and religious issues, prompted many people to leave Europe and come to the Americas, where they could own land and have access to the resources of the land. Legal access to wildlife resources had become highly restricted in Europe and, while not the most important consideration, contributed significantly to many immigrants' decisions to leave their native countries. The restrictions on hunting and fishing for those who did not own land, especially in Great Britain, were absolute. Those who did not own property were restricted in their access to natural resources, including fish and wildlife, by truly draconian laws such as The Black Act, which could impose the death penalty for hunting on the lands of the wealthy.

The New World offered what appeared to be unrestricted access to natural resources, and especially to land as property. The Europeans who crossed the Atlantic found an unimaginable amount and diversity of wildlife in North America; however, they lacked historical or cultural knowledge regarding appropriate use of wildlife as a natural resource. Subsequently, a truly unique, American way of using wildlife resources evolved.

The history of wildlife policy in the United States parallels its history of land use and private property, because they developed simultaneously. Access to land and all other natural resources—including largely unfettered access to fish and wildlife—must be included in the historical picture. From the American perspective, the right to own land as property and the right to have access to fishing and hunting are historically, and perhaps psychologically, connected.

To fully understand fish and wildlife management in the United States, it is important to begin with

human history prior to European settlement of North America. It is possible to trace formal wildlife policy issues as far back as the seventh century. There is even biblical evidence indicating a systematic management of wild animals for recreational use and subsistence. Most of these management programs, if they can properly be called such, dealt with ownership of wild animals.

For most of human history, the concept of land ownership and ownership of wild animals was connected. Land was simply there to be used and possessed by whoever could do so, and wild animals could be taken by anyone under few constraints. The constraints that did evolve began with religious beliefs that wild animals belonged to the gods, and restrictions were placed on common folk by the monarch, who, as the agent for the gods, could restrict the taking of wild animals.

The signing of the Magna Carta (also known as the Magna Charta; initially signed in 1215), an English charter that essentially limited the powers of the English monarch, officially recognized the concept of land as property. The adjunct Charter of the Forest placed wild animals in the ownership of the state, which was declared to represent the rights of all citizens. The Magna Carta also restricted the English monarch from issuing permits to take fish from the waterways using traps or “weirs,” but this was to aid navigation, not to protect fish. At this point in history, fish and wildlife had first been considered sustenance and then evolved into the property of people or governments. Although considered property of the people or governments, it is important to note that English “qualification statutes” continued to limit the people’s right to take game, possess weapons, and even eat certain animals. The statutes established wealth and land ownership criteria; those who did not have the wealth and land required by the statutes were prohibited from taking game (Bean & Rowland, 1997; Lund, 1980).

In the United States, ownership of land dominated the issue of access to natural resources, especially as it pertained to the development of natural resource policy and law. The early immigrants to the Americas were, for the most part, the proletariat, or lower class, of Europe. The settlers had been landless; thus access to and use of natural resources, especially the land, was paramount. Because land was the primary concern, wildlife policy followed land policy in the United States, at least until the early 1900s. Understanding wildlife policy, therefore, first requires an understanding of land use policy.

The Colonial Through Civil War Eras: Land Acquisition, Disposition, and Withdrawal

Land use policy at the federal level developed in several stages: the acquisition of lands into the United States, the disposition of public lands to the states and private individuals, the reservation and withdrawal of some public lands to be managed for the benefit of all citizens, and the modern era of permanent retention and management of federal lands.

Acquisition of lands into the United States began with the founding of the original 13 colonies and continued until just after the end of the Civil War (1865). The federal government (or what at the time could be considered, yet not always labeled, the federal government) actively sought to acquire land by treaty, purchase, or force of arms. Major acquisitions before the Civil War were the Louisiana Purchase, the Florida Acquisition, the acquisition of Texas, the Treaty of Guadeloupe Hidalgo and the Gadsden Purchase in the Southwest, and the Oregon Compromise. After the Civil War came the Alaskan Purchase. These acquisitions, with some minor details omitted, created the modern shape of the United States.

Occurring during roughly the same time period was the era of disposition of public lands, which reached its zenith following the Civil War. The earliest land allocations were to settlers and farmers. These programs primarily recognized the legal rights of "squatters" to take and hold land, especially in the western United States, which was not otherwise being used by Europeans. Native Americans were not, for various reasons, considered to have property rights in the land. Following disposition of land to settlers, there were grants that provided school lands to new states, with about 5% of the land in each state belonging to the state for the purpose of raising funds for public schooling. In the western United States, other

dispositions greatly affected the country's development. These programs included the expansion of grants to encourage settlement of the West, mineral and mining grants, and grants to railroads to promote transportation over the vast new country.

In early America, wildlife was primarily considered a source of food and clothing, and a policy of "free taking," or the right for anyone to take game, developed (Lund, 1980). In general, both federal and state governments had few policies or limitations regarding hunting. There was some, but not much, regulation of hunting. During the early stages of land use policy development, the focus was not on regulating hunting but on predator and nuisance animal control or eradication to protect wildlife resources and agricultural crops. Control of predators was generally accepted as a proper function of government, and the government enacted little or no control of the killing of wolves, coyotes, foxes, and other birds or mammals that prey on wildlife.

Before the Civil War, most wildlife management activities at the state level involved closure of hunting seasons or restrictions on the methods used in taking wildlife. Nonetheless, several states had begun to establish game warden systems so that laws could be enforced, with Maine establishing the country's first game wardens in the 1850s (Lund, 1980). At approximately the same time, introduction of basic state wildlife commissions also took place in such states as Missouri and Massachusetts.

During this period there were several important events that affected wildlife policy at the national level. First, in 1839, the United States established the first nationally protected area in Hot Springs, Arkansas. There is no real indication that it was established with wildlife in mind, but it was a significant action, because it presaged the era of natural resource management in the United States.

The first U.S. Supreme Court action that examined the relationship of government and citizens with wildlife occurred in 1842 (Bean & Rowland, 1997). In *Martin v. Waddell* (1842), the plaintiff, a New Jersey landowner, argued that he had the exclusive right to harvest oysters from a river adjoining land he owned. In this case, the court invoked the Magna Carta and ruled that private citizens could not own public waterways, that natural resources were public property, and that the states were responsible for management of the resources in the public trust. The right of the public to fish was of greater importance than private ownership (Bean, 1978). The Court's decision set the stage for major developments in future fish and wildlife

management policy in the United States, including the doctrine of state ownership, which asserts state ownership, and therefore legal authority, over fish and wildlife management.

Closely following the Supreme Court's decision in *Martin v. Waddell*, the most significant action to affect fish and wildlife policy at the federal level occurred. In 1849, the U.S. Department of the Interior was established, an action that placed several federal offices that dealt with land and resource management into one cabinet-level department, which today houses the U.S. Fish and Wildlife Service.

The Post-Civil War Era: Westward Expansion and Consolidation

Following the Civil War, there was a remarkable change in policies regarding wildlife and natural resources at both the federal and state levels. At the federal level, the United States had transformed itself from a loose federation into a unified republic. The idea of the Union became the prevailing ideology of America. The chaotic expansion into the West after 1865 ensued and eventually culminated in the Progressive Era around 1890. This period, from 1865 to the early twentieth century, marks a profound change in the American approach to natural resource management, including fish and wildlife management policy.

As the United States expanded into the West following the Civil War and Americans examined their relationship with natural resources, the discovery of the Yellowstone area awed and inspired both those who experienced it and those who heard reports of its grand landscapes, untouched beauty, and amazing geysers. The recognized need to protect the land's natural resources in conjunction with growing aesthetic appreciation motivated the establishment of Yellowstone as the first national park in 1872. This federal action not only provided protection for the area's natural resources, including wildlife within its boundaries, but it was the beginning of the National Park System and the impetus for future wildlife refuges and national forests to conserve wildlife and natural habitat.

Fisheries management also changed during this era. While fisheries management developed in conjunction with wildlife management throughout much of U.S. history, it is quite different from wildlife management in some respects. Although much hunting (and trapping) during early European excursions into North America was for commercial gain, there

was also much hunting for subsistence. Fishing, on the other hand, was much more a commercial than a subsistence enterprise during the early European settlement of North America.

After the Civil War, commercial fishing became increasingly relegated to oceanic fishing and fishing in larger inland waters. Recreational fishing picked up as a pursuit in the smaller inland waters. This period also saw a decline in some fisheries (including commercial fisheries) because of a lack of proper management. This prompted one of the first major events that directly pertained to fishing: the creation by Congress in 1871 of the U.S. Commission on Fish and Fisheries (also commonly referred to as the U.S. Fish Commission) to study the observed decline in some fish populations and to recommend ways to better manage fisheries to end the decline in fish populations. The U.S. Fish Commission was reorganized as the U.S. Bureau of Fisheries in 1902.

Near the completion of U.S. expansion into the West, the federal government established the Division of Economic Ornithology and Mammalogy within the Department of Agriculture in 1885, which grew in responsibilities and eventually became the U.S. Bureau of Biological Survey in 1905. The Biological Survey was responsible for several major land and resource surveys of the West, including Yellowstone. The efforts of the Biological Survey were largely dedicated to defining and cataloging the diversity of natural resources and wildlife.

The creation of the U.S. Fish Commission/Bureau of Fisheries and the Division of Economic Ornithology and Mammalogy/Bureau of Biological Survey were significant steps toward fish and wildlife management as it exists today on the federal level: the Bureaus of Fisheries and Biological Survey were moved to the Department of the Interior in 1939 and combined to become the U.S. Fish and Wildlife Service in 1940.

During this time, states had started to develop wildlife policies as well. Individual states began to require hunting licenses and to regulate hunting in ways other than simply closing lands to hunting. By 1880, every state had game laws. These laws included bag limits, prohibitions on taking certain types of wildlife (hence the idea of "non-game"), seasonal closure on hunting, and the beginning of the end of market or commercial hunting.

The Industrial Revolution and growing urbanization following the Civil War also contributed to the end of market hunting through the rise in popularity of recreational sports and sports clubs in the latter half of

the nineteenth century and the early twentieth century (Riess, 1995; J. F. Organ, personal communication, January 2010). Hunting and fishing sportsmen's clubs established during this time also grew in popularity and membership and were involved in the early efforts to stop market hunting. Such clubs included the Carroll's Island Club (established 1831) and the New York Sportsmen's Club (1844), the latter of which actively sought to assist in the prevention of the illegal taking and sale of game in accordance with state game laws (J. F. Organ, personal communication, January 2010; "New-York Sportsmen's Club," 1869).

Growing state involvement through laws and hunting regulations demonstrates the impact of the Magna Carta and the *Martin v. Waddell* decision, which emphasized regulation of natural resources in the public trust over private ownership, as well as the Progressive Era's growing concern with scientific and efficient management of resources. *Martin v. Waddell* recognized state authority over resources and, in doing so, established the foundation upon which the doctrine of state ownership of wildlife was developed (Bean & Rowland, 1997). Nonetheless, much abuse of wildlife continued, and by the 1890s many species, especially game animals, were in decline. Federal and state governments began to take a hard look at natural resource management, including wildlife policy. The federal government responded with increased management efforts through the U.S. Bureau of Fisheries and the U.S. Bureau of Biological Survey.

New Conceptions of Land Use and a New Movement

Expansion into the West following the Civil War looms large in the nation's collective memory, but in reality it was a very short period. While discourse on the expansion into the West is often in rural, agrarian terms, it was also a time of growing urbanization in the eastern and midwestern United States. The turmoil of the Civil War and growing urbanization seemed to inspire a reevaluation of the people's relationship with the land. As a nation, the stages of acquisition and disposition were over, and the time had come for wiser use and management of the land. The political and moral climate was ready for the Progressive Era, in which the common good was paramount, and reform was essential for efficient government.

The Progressive Era, which occurred roughly from the 1890s to the 1920s, was characterized by intolerance for past government inefficiency and uninformed policy and marks the third stage in fish and wildlife management, during which public lands were

reserved and managed for the benefit of all citizens. The natural resources that had been seen as property to be exploited at the beginning of the nineteenth century were now viewed as resources that the government¹ should manage for the greatest good for the greatest number of people over the longest period of time. This movement became known as *conservation*, which was one of the first great populist movements in America. The conservation movement can be traced back to the utilitarian philosophy of Jeremy Bentham, an English jurist and philosopher who advocated the greatest good for the greatest number of people. The Progressive Era and its characteristic populist views ushered in a reemergence of the moral consideration of the human relationship with natural resources, specifically with wildlife.

During the late nineteenth and early twentieth centuries, established legal regulation and management of wildlife and natural resources increased, with significant court decisions and legislation that would shape the future of fish and wildlife management. *Geer v. Connecticut* (1896) was heard before the U.S. Supreme Court in 1896 to determine if state laws that regulate wildlife ownership interfered with interstate commerce. Edgar Geer had legally killed game birds in the state, but a Connecticut law made it unlawful for him to ship the birds out of state, and he had been convicted on his intent to do so. The Court ruled that the states had "the right 'to control and regulate the common property in game' . . . 'as a trust for the benefit of the people,' " meaning that states could impose restrictions and limitations on the taking of game as well as on what citizens could do with the game after it was harvested, for the greater good of its residents. The Court reasoned that the state's duty to preserve a food supply for its residents validated the need for state regulation, as long as interstate commerce was only indirectly affected (Bean & Rowland, 1997, p. 14). The Court's assertion in *Geer v. Connecticut* supported wildlife management by the states and served to fortify the state ownership doctrine.

The Lacey Act of 1900 was the first federal law established for wildlife management (Bean & Rowland, 1997). The Lacey Act ensured the assistance of the federal government, through its authority over interstate commerce, in enforcing state game laws by prohibiting interstate transportation of illegally taken wildlife (Bean, 1978). This legislation had the effect

¹ The term "government" is used generically here for the concept of wildlife being held in the public trust rather than to address or imply federal or state government authority over wildlife.

of further curbing market hunting, such as bird hunting for plumes and feathers for women's hats.

In 1901, Theodore Roosevelt became President as a result of the assassination of President William McKinley. Roosevelt was an avid outdoorsman and advocated "the outdoor life" as an antidote to "the sedentary life" for Americans. He was influential in establishing the National Forest Service and the National Park System, designating more than 150 million acres as national parks and forests. He also established the first National Wildlife Refuge in 1903 at Pelican Island, Florida, followed by 86 more refuges on public lands. He convened a national convention of governors to discuss the use of natural resources, with an invitation that said, "It seems time for the country to take account of its natural resources, and to inquire how long they are likely to last" (Van Hise, 1918, p. 381). Throughout his presidency he argued for the intelligent and scientific use of natural resources and, through his own lifestyle, advocated hunting and fishing as one of those uses.

State efforts at fish and wildlife management increased and improved significantly by the late nineteenth and early twentieth centuries. State administrators began to exchange ideas and share successful management efforts. The increased communication among states helped to strengthen the International Association of Game, Fish, and Conservation Commissioners, which was established in 1902 and continues today as the Association of Fish and Wildlife Agencies (AFWA), which sought ways to further develop the joint management and conservation efforts among states as well as countries. State efforts continued to grow, and by 1910 most states had some type of fish and wildlife management program to protect and restore native species. States had also implemented the initial stages of hunting and fishing license fees to fund fish and wildlife management and had increased the success of fish and wildlife policy by implementing game warden systems (Lund, 1980). However, the management efforts of the states at this point were still hindered by a lack of staff trained in biological management, as well as unstable funding, which was still primarily dependent on state legislative approval each year (Jahn, 2000).

At the federal level, the Migratory Bird Treaty Act of 1918 (MBTA) marked the first time the federal government entered into management of a specific type of wildlife (waterfowl) and ended the hunting of birds for their parts, such as feathers, that were declared protected by signed treaties. The MBTA implemented a migratory bird treaty between the United States

and Great Britain (on Canada's behalf) to manage waterfowl that migrate from Canada to the United States and Mexico, and the hunting of certain species was permitted only under federal regulations. Other similar treaties between the United States and Mexico, the United States and Japan, and the United States and Russia were also implemented under the MBTA. The Act asserted the federal government's authority to enforce wildlife regulations through its constitutional powers to make and enforce treaties with other countries (Bean, 1978).

The Lacey Act of 1900 and the MBTA remain primary sources of authority for the federal government in wildlife management today. However, the U.S. Supreme Court affirmed the authority of these federal acts in *Missouri v. Holland* (1920) without revoking the states' role as primary managers of fish and wildlife (Landres, Meyer, & Matthews, 2001). In this case, Ray Holland, a federal game warden, arrested the attorney general of Missouri for violating the MBTA. The state filed suit to challenge the constitutionality of the Act. The Court upheld the Act, and Justice Oliver Wendell Holmes opined, "But for the treaty and the statute there soon might be no birds for any powers to deal with. . . . It is not sufficient to rely upon the states [to protect the migratory birds]. The reliance is in vain. . . ." (*Missouri v. Holland*, 1920, p. 434; Bean, 1978). The Court's decision also acknowledged that a state may regulate the killing and sale of wildlife, but that such regulation is subject to federal treaties (Landres et al., 2001).

The state ownership doctrine gave states authority over fish and wildlife management, and today states are considered to hold primary management responsibility for fish and wildlife through broad trustee and police powers (Association of Fish and Wildlife Agencies, 2009; Thorne, Humphries, O'Brien, & Schmitt, 2005). As state fish and wildlife management efforts and responsibilities continued to grow, by 1920 federal involvement had also increased. Court decisions gradually established some federal authority in wildlife law through the treaty, property, and commerce clauses of the U.S. Constitution (Bean & Rowland, 1997).

As a result of many of these milestones during the early twentieth century, including President Roosevelt's efforts, another stage of wildlife management—the modern period of permanent retention and management of federal lands—began. Today the nation has a system of federal lands that constitutes approximately one third of the United States, with 262 million acres of public lands managed by the Bureau

of Land Management, 193 million acres of national forests and grasslands managed by the U.S. Forest Service, 96 million acres of national wildlife refuges, and 85 million acres in the National Park System (U.S. Department of the Interior, 2007; U.S. Forest Service, 2007; U.S. Fish and Wildlife Service, 2007b). The unique development of fish and wildlife management in the United States during this time, however, has established a system in which the states continue to be primarily responsible for wildlife management on many federal lands within their boundaries (Shaw, 1985; Thorne, Miller, Schmitt, Kreeger, & Williams, 2000), although in some cases that responsibility may be limited by federal constitutional authority (Bean & Rowland, 1997).

Several prominent figures in the history and development of fish and wildlife management emerged during the Progressive Era. C. Hart Merriam, Vernon Bailey, and Ernest Thompson Seton all made contributions to the early science of wildlife management and ecology. Merriam was a scientist and the first chief of the Division of Economic Ornithology and Mammalogy (later the Bureau of Biological Survey). Bailey was also a scientist working with the Bureau of Biological Survey. While Seton was primarily an advocate of hunting and Bailey and Merriam were concerned with classification and distribution of wildlife, all shared in the efficiency approach to wildlife management. The primary attempt to control and protect wildlife at this time continued to be predator and pest eradication. Merriam eventually left the Bureau of Biological Survey over the issue of predator control.

Another important figure, George Bird Grinnell, contributed significantly to the movement toward conservation. Grinnell, who is best remembered for his efforts to preserve the American bison and for his study of Native Americans, wrote many books and articles on conservation and lobbied for U.S. legislation to protect the American bison, which resulted in the National Park Protective Act (1894). Grinnell was a founding member of the Boone and Crockett Club, along with Theodore Roosevelt; he also founded the first Audubon Society and helped to organize the New York Zoological Society (Punke, 2007; Torrance, 1999).

Gifford Pinchot also played an important role in the development of wildlife management and the growing concern with conservation. Pinchot, who through political adroitness had secured a permanent place for the U.S. Forest Service in the U.S. Department of Agriculture, established the utilitarian philosophy of "the greatest good for the greatest number of people for the longest time," the underlying principle by

which the Forest Service operates. The idea recognized forestry as a branch of husbandry or agriculture. This approach, which includes consideration for human use of resources, focused on conservation rather than strict preservation.

An Ideological Split

At the end of the nineteenth century, when the American conservation movement was well under way, a schism took place that continues to divide many natural resource management efforts today. The split between the concept of *conservation*, or the management of natural resources, and the concept of *preservation*, or the valuing of wilderness and preserving rather than actively managing and using the nation's natural resources, is evident to this day in natural resource policy making and debates over ecological issues.

Writer and naturalist John Muir, another important figure, was an advocate of preserving natural resources, especially forests and wilderness. Muir was somewhat of a mystic, and his views and philosophy can best be interpreted as based in the transcendental tradition of author and philosopher Ralph Waldo Emerson as well as in fundamentalist Christianity. From these two traditions, Muir developed a *theocentric* view of nature (i.e., a view centered on God). Pinchot and Muir formed an early alliance to influence Theodore Roosevelt in the protection of the national forests. Although Pinchot and Muir could be considered to be on opposite sides of the split between conservation (i.e., active management of natural resources) and preservation (i.e., valuing and preserving rather than actively managing or using natural resources), the alliance served Pinchot's conservationist motives for the advancement of *silviculture*, or the development and care of forests, and Muir's preservationist motives for wilderness protection. Pinchot and Muir were ultimately divided over the construction of a dam in Yosemite Valley. Muir fought the construction for many years but lost and died soon after; the stress of this fight is said by some to have contributed to his death.

Although the science and policy of wildlife management has populism and progressive politics at its origin and accounts for the transition from private to public ownership of wildlife and increased government involvement in wildlife management, neither populism nor progressive politics fully explains the history and development of wildlife management. The influence of Aldo Leopold, who today is often referred to as the father of wildlife management in the United

States, had a significant impact on the development of modern wildlife management.

It is during the latter part of the Progressive Era that Leopold emerged as a major figure in U.S. fish and wildlife management. He is largely regarded as the seminal thinker, writer, scientist, and administrator in wildlife management in the United States. Leopold's work significantly shaped modern wildlife management, and he is best known for his book titled *Game Management* (Leopold, 1933) and for his collection of essays titled *A Sand County Almanac* (Leopold, 1949/1970).

Aldo Leopold was born in 1887 and was raised in a firmly middle-class family in Burlington, Iowa. He developed a keen interest in and passion for the natural world at a very young age and spent much of his time observing the environment as well as drawing and writing about his observations. He graduated from the Yale Forest School in 1909 and began his career with the U.S. Forest Service, which had been established only four years earlier, in 1905. Among his achievements with the Service was his influential role in establishing the management of Gila National Forest in New Mexico as a wilderness area. Gila National Forest became the nation's first officially designated wilderness area in 1924.

There is no evidence to suggest that either Leopold or his family was particularly liberal or conservative, using current political terminology. Few of his early writings suggest an interest in politics per se. He was active in politics only as far as they influenced wildlife management in the national forests. Typically, Leopold discussed political arrangements in light of equal access to natural resources, but not directly as political issues.

The course of Leopold's professional development, including his education and early career, occurred during the latter part of the Progressive Era and, in some respects, effectively illustrates the impact of the Progressive Era on wildlife policy. The Progressive Era marks a transition from an agrarian to an industrial economy and from elitist to populist politics. Conservation and natural resource management changed from exploitative to scientific during the Progressive Era. The latter scientific view is clearly the province of Leopold's work and was the basis of his seminal book, *Game Management*, which had a lasting impact on conservation practices in the United States and beyond.

Game Management was the first textbook written for the field of wildlife management in the United States and had an immense impact on wildlife management

and conservation, not only in the United States but globally. Leopold's book espoused the principles on which the modern model of wildlife management is based, including a strong emphasis on the scientific and ethical management of wildlife and natural resources. In the 1930s, however, agencies still lacked the funding and training to implement these principles effectively.

At the beginning of the twentieth century, during the Progressive Era and the time of Aldo Leopold, three broad themes were developing and exerting a lasting influence on wildlife management in the United States. First, a transition from private to public ownership of natural resources and wildlife occurred as recognition of the public trust doctrine took hold in the states, as well as a subsequent increase in federal involvement in wildlife management policy. Second, an increased emphasis on professional natural resource management through scientific training and the emergence of ecology as an educational discipline occurred, which had an impact on the development of government agencies as well as professional, scientific nongovernmental organizations. Third, an increased demand for public participation in policy decisions occurred.

Leopold was clearly aware of the first two trends—transition from private to public ownership with increased federal involvement and increased emphasis on scientific training—when he called for joint federal and state management of wildlife in the national forests using the scientific techniques of forestry. The focus on science-based management was pervasive in Leopold's writing and life. His development as a scientist and ecological thinker was reflected in his commitment to professional organizations and the implementation of scientific management.

The third trend is seen in Leopold's long-term efforts to give citizen review panels a place in the decision-making process, which resulted in formation of the Wisconsin Conservation Commission in 1926. The political seduction of the Commission was readily apparent, however, with political favors rather than conservation experience guiding Commission appointments and public opinion rather than science providing the basis for Commission decisions. Leopold expressed contempt for the Commission throughout the 1930s (Meine, 1988); despite this, he later relented and became a commissioner himself.

Although Leopold's training and early career took place during the age of progressive politics and efficiency in government, including natural resource conservation and wildlife management, he

was not a central figure in public policy at the height of the Progressive Era. While he clearly advocated mainstream progressive thinking early on, Leopold rejected the idea of efficiency as the central measure of governmental management.

Early in his career, Leopold was concerned with making wildlife resources available to all citizens, instead of having them be subject to market economics. By the end of his tenure with the U.S. Forest Service in the southwestern United States, he became openly hostile to economic development as the measure of success. His final writings as a Forest Service employee questioned “whether we too have forgotten that economic prosperity is a means, not an end” (Meine & Knight, 2006, p. 12).

Leopold's attitude would not change greatly. When he published *Game Management*, his full statement on wildlife management, in 1933, only six pages were devoted to administration, organization, and political issues. At the time he believed that the organizational structure of wildlife management agencies was immaterial, as long as personnel were dedicated and the science was strong.

While Leopold's primary interest was in the science of wildlife management rather than in politics, his work should not be considered unimportant regarding the political nature of contemporary wildlife policy. As far as conservation and progressive politics are concerned, the major political battle had been fought well before Leopold's time. Leopold's interest in politics and active involvement was minor throughout the 1920s; resurfaced in the 1930s, especially at the national level; and was most evident at the state level in the 1940s, when he served as state wildlife commissioner in Wisconsin. His inordinate emphasis on the scientific aspects of wildlife management and the relative unimportance he placed on administrative forms of wildlife management can be said to have had lasting effects on wildlife management today.

It is worth noting that Leopold's predecessors—C. Hart Merriam, Vernon Bailey, and Ernest Thompson Seton—were more firmly of the Progressive Era than he. However, Leopold shared their concern with predator and pest eradication through the 1920s. Leopold was also influenced by the views of Gifford Pinchot and John Muir. He synthesized the utilitarian philosophies of Pinchot and the theocentric views of Muir into what is commonly referred to as *reform environmentalism*, an ecological and evolutionary philosophy of environmental ethics that recognizes a link between human health and the health of natural

resources and promoting responsible care and use of natural resources.

Thus, Leopold went beyond his training and experience in progressive politics in America. He took the science-based principles of natural resource management and incorporated them into a more general view of the role of humans in the natural world. In essence, he reintroduced the idea of morality into human relationships with the natural world. Although his primary contribution at the time was the incorporation of ecology into wildlife policy, he also effectively incorporated the different ecological aspects of Pinchot's and Muir's perspectives into one modern concept of reform environmentalism.

1930s and 1940s: Increased Governmental Oversight, Expertise, and Effectiveness

In the 1930s, enactment of wildlife management policies in the United States reached its pinnacle. The progressive idea of efficiency in management evolved into the scientific management of wildlife under the influence of Leopold. There were 32 major actions, laws, or other events of historical importance to wildlife management that occurred during this period. Some of those most pertinent to fish and wildlife management policy were:

- Iowa State College's establishment of a game management program, which became the model for Cooperative Wildlife Research Units, as they are now known in nearly every state;
- the adoption of the American Game Policy, a national policy outlining goals and priorities for wildlife conservation (the committee was chaired and the report written by Aldo Leopold), which laid the groundwork for the Cooperative Wildlife Research Unit Program, the Federal Aid in Wildlife Restoration Act (the Pittman-Robertson Act), and the founding of the Society of Wildlife Specialists, subsequently renamed The Wildlife Society (Organ & Ellingwood, 2000; The Wildlife Society, 2010; J. F. Organ, personal communication, January 2010);
- the establishment of the President's Committee on Wild Life Restoration to formulate a federal wildlife conservation plan;

- enactment of the Fish and Wildlife Coordination Act, which allowed the federal and state governments to work together on a national wildlife policy;
- enactment of the federal government's requirement for waterfowl hunters to purchase a Migratory Bird Hunting Stamp (the Migratory Bird Hunting Stamp Act of 1934, also commonly referred to as the Duck Stamp Act), which allowed for exclusive funding for federal wildlife programs;
- the federal government's regulation of hunting on land owned by the federal government, such as national forests;
- development by the International Association of Fish and Wildlife Agencies (formerly the National Association of Game Wardens and Commissioners and now the Association of Fish and Wildlife Agencies) of a model organizational bill for the creation of state wildlife commissions;
- the treaty between the United States and Mexico to protect game mammals and birds; and
- the passage of the Federal Aid in Wildlife Restoration Act, commonly called the Pittman-Robertson Act.

With fish and wildlife management efforts quickly expanding, the need for stable funding became increasingly important. By the early 1900s, many state fish and wildlife agencies had established fishing and hunting license systems based on the premise that anglers and hunters should pay for the privilege of using publicly owned resources (Jahn, 2000). In 1937, the Pittman-Robertson Act linked wildlife policy to the sale of hunting licenses and excise taxes on firearms, ammunition, and other sporting goods and established an additional wildlife management funding source for state agencies. The Act required states to enact a law to prohibit the use of hunting license revenues for any other purpose than wildlife management before they could qualify for matching funds from excise taxes on the sale of hunting-related sporting goods, including guns and ammunition.

In addition to a reliable source of funding provided by the Pittman-Robertson Act, policy was enacted in the 1930s that required state personnel who were hired using funds provided by the Act to be trained and qualified to perform their duties, reflecting the lasting influence of the Progressive Era and Aldo Leopold on wildlife management policy.

While the Pittman-Robertson Act is generally hailed as landmark legislation, it has also created a modern dilemma. While wildlife policy should serve the needs of all society, the funding of wildlife management is tied to a "user pay, user benefit" system, which arguably compels agencies to give greater consideration to the needs and wildlife values of hunters, who generate the revenue, over those of the general public.

Although sportsmen's needs with respect to wildlife may differ from those of the general public, the role of sportsmen in this period of tremendous momentum for wildlife management was not limited to license costs or excise taxes on equipment related to their sport. Sportsmen recognized the need to protect and scientifically manage wildlife. While the American Game Policy provided the foundation, sportsmen initiated and led the crusade for many advances in conservation and wildlife management, including establishment of hunting seasons, enactment of the Migratory Bird Hunting Stamp Act and the Fish and Wildlife Coordination Act in 1934, and establishment of the Cooperative Wildlife Research Unit Program in 1935.

While federal policy and efforts regarding fish and wildlife were increasing through such efforts, a system with both federal and state governments working together developed. This working relationship was officially established through the federal Fish and Wildlife Coordination Act, which required that federal agencies consult with state agencies on actions related to wildlife conservation (Association of Fish and Wildlife Agencies, 2009).

Sportsmen, however, were instrumental in founding the National Wildlife Federation, The Wildlife Society, and other conservation organizations during this time period. They also played yet another critical policy role in the passage of the Pittman-Robertson Act.

Establishing stable sources of funding and hiring trained staff, as well as participating in the continuing conservation initiatives of sportsmen and legislation, increased state agencies' effectiveness at wildlife management. Many state wildlife agencies increased their effectiveness even more in the 1940s by reorganizing according to the 1934 model of wildlife administration

law, which sought to eliminate political “packing” by the party in power and to establish a continuity of management programs with a commission of non-salaried members who served staggered terms.

As mentioned earlier, the Bureaus of Fisheries and Biological Survey were moved to the U.S. Department of the Interior in 1939 and merged in 1940 into the U.S. Fish and Wildlife Service, which concentrated fish and wildlife management at the federal level into one office.

Another significant legislative act was the Bald and Golden Eagle Protection Act of 1940. The Act was an acknowledgment of the bald eagle as the symbol for the nation and sought to protect the bird, as well as the golden eagle, not just for ecological reasons but for historical and aesthetic reasons as well.

Fish and wildlife management training programs began to emerge at the college level across the country during the 1940s and 1950s, ensuring a future with trained personnel for state and federal fish and wildlife management agencies.

It is also important to note that the first mandatory hunter education program was introduced during this period, in New York in 1949. Since then similar state programs have helped to reduce hunting accidents and make commonplace the standard of hunter ethics introduced in the late 1800s by the Boone and Crockett Club, an organization founded by Theodore Roosevelt that helped to advance much historical fish and wildlife management legislation.

1950s to the Present Day: Federal Involvement and Environmental Protection

In 1950, Congress passed the fisheries management companion to the Pittman-Robertson Act. The Federal Aid in Sport Fish Restoration Act, commonly called the Dingell-Johnson Act, provided funding for recreational fisheries management through taxes on fishing equipment and motorboat fuel. The Act provides matching reimbursement funds based on the same principle as the Pittman-Robertson Act.

At this time, management of commercial fisheries (mostly marine fisheries) was still under the purview of the U.S. Fish and Wildlife Service. In 1970, however, the Bureau of Commercial Fisheries within the U.S. Fish and Wildlife Service was transferred to the U.S. Department of Commerce and was renamed the National Marine Fisheries Service. Except with regard to anadromous fish, such as salmon and steelhead, this act completely separated the management of

commercial and recreational fishing; it is recreational fishing that is of concern in this book.

During the mid to late twentieth century, court decisions and federal legislation increased federal involvement in wildlife management. States today continue to assert state ownership of wildlife and practice primary responsibility of management, often on federal as well as state public and private lands (Association of Fish and Wildlife Agencies, 2009; Thorne et al., 2000). The Fish and Wildlife Coordination Act of 1934 and regulations of the U.S. Department of the Interior (DOI) regarding state-federal relationships require that federal agencies consult with state agencies on wildlife management efforts (U.S. Department of the Interior, 2009; Association of Fish and Wildlife Agencies, 2009). While the federal government has the authority to preempt state management through the treaty, commerce, and property clauses of the U.S. Constitution, involvement of both federal and state government in wildlife management has resulted in a system in which both work together.

The primary congressional acts that establish federal policy on wildlife management and involve the federal government in wildlife management are the National Environmental Policy Act (NEPA) and the Endangered Species Act (ESA), but also include the Marine Mammal Protection Act of 1972, the International Convention for the Regulation of Whaling, the Convention of Nature Protection and Wildlife Preservation in the Western Hemisphere, and the Convention on International Trade in Endangered Species of Wild Fauna and Flora, all of which affect federal wildlife management agencies and the states.

NEPA and the ESA have had the greatest impact on the federal government. The U.S. Fish and Wildlife Service had been, prior to these Acts, a minor recreation agency within the large U.S. Department of the Interior. By the early 1970s, however, NEPA and the ESA had made the U.S. Fish and Wildlife Service a major force in government. The implementation of the ESA was used by several federal administrations to gain further control of some wildlife management activities in the United States, specifically those involving federal action or threatened or endangered species. The states generally responded to NEPA and the ESA with similar state laws. As with hunting, recreational fishing is affected by NEPA and the ESA. These acts also established federal guidelines that state fishing regulations must meet when the state programs receive federal funding.

As acts such as NEPA and the ESA have brought wildlife management policy to the forefront of federal legislative concerns, legal debates regarding policy and environmental law have increased as well.

In addition to the congressional acts, several U.S. Supreme Court decisions contributed to federal law regarding fish and wildlife management. In the *Kleppe v. New Mexico* (1976) decision, the U.S. Supreme Court recognized that the federal government can regulate wildlife on federally owned lands. In 1979, the Court recognized federal authority to regulate wildlife under the Commerce Clause in *Hughes v. Oklahoma* (1979) (Bean & Rowland, 1997). William Hughes, who held a Texas license to operate a commercial minnow business, was arrested for transporting minnows purchased in Oklahoma to Texas. The Court's decision in this case partially overruled the state ownership of wildlife supported in *Geer v. Connecticut*. However, seven years later, in *Maine v. Taylor* (1986), the Supreme Court held that the State of Maine could prohibit importation of baitfish because the state had an important interest in protecting its wild fish from parasites, and there was no other way to prevent infestation.

In response to increasing federal authority through court decisions, Congress passed a bill in 2005 that included legislation to reaffirm the authority of states to regulate certain hunting and fishing activities, resulting from litigation related to restrictions placed by states on non-resident hunting licenses. The legislation essentially limits the federal authority of the Commerce Clause in matters regulating access to hunting and fishing and gives the states authority to regulate the activities (U.S. Congress, 2005; Nevada Outdoor Democratic Caucus, 2005). In conjunction with the Fish and Wildlife Coordination Act and DOI regulations regarding state-federal relationships (U.S. Department of the Interior, 2009), the legislation is meant to ensure that states maintain authority to manage fish and wildlife within their boundaries.

While this overview of the history of fish and wildlife management in the United States includes brief discussions of the critical legal decisions related to wildlife law, the authors recommend consulting other sources for in-depth analyses of the development of both federal and state wildlife law.² Like many

other areas of U.S. law, fish and wildlife law and regulation in the United States has evolved through a healthy and ongoing agreement and disagreement over federal and state assertions of authority. It is beyond the scope of this book to elaborate in detail on these issues; the purpose here is to provide an overview of the development of hunting, fishing, and fish and wildlife management in the United States over the past three centuries and to acknowledge some of the major legal decisions and legislation that have informed that development.

The major change in wildlife policy in recent years is the shift of wildlife policy from the “back burner” as recreation to a national issue of environmental policy. While this evolution of wildlife management is precisely what Aldo Leopold had predicted, some wildlife professionals do not agree with the shift in emphasis. The debate over policy priorities continues to be controversial and, while other areas of public policy came under close scrutiny during the 1970s and 1980s, wildlife policy has remained obscure and loosely defined.

Although much of wildlife management and legislation focused on protecting wildlife species, it was learned through trial-and-error management that raising wildlife in captivity and predator control programs were not the answer to replenishing wildlife populations, but instead that managing and protecting habitat was critical. In 1989 the North American Wetlands Conservation Act encouraged increased habitat management and conservation and resulted in international partnerships. Joint efforts and funding have managed to maintain and restore more than 9 million acres of wetland and upland habitat (Samuel, 1999; Jahn, 2000).

Current issues in fishing relate more to water quality and fish advisories rather than the morality of fishing. Indeed, the debate in hunting between opponents and supporters has not been duplicated in recreational fishing, despite some animal rights groups' attempts to advance such a debate.

The Result: The North American Model of Wildlife Conservation

The culmination of historical, political, legal, ethical, and financial factors in the development of wildlife policy in the United States led to several unique aspects of fish and wildlife management not previously practiced on any other continent. These unique aspects include considering fish and wildlife a public

²For more information on federal wildlife law and the role of the federal government in managing and conserving wildlife and habitat, see Bean & Rowland (1997) and Musgrave, Flynn, O'Brien, Lambert, Smith, & Marinakis (1998). For more information on the doctrine of state ownership of wildlife and the role of states in managing and conserving wildlife and habitat, see Association of Fish and Wildlife Agencies (2009).

resource, eliminating commercial use of wildlife, funding fish and wildlife management conservation through the users of the resources, and using trained professionals and science to manage fish and wildlife. These unique aspects of management have come to be known collectively as the *North American Model of Wildlife Conservation*. The Model successfully balances public ownership and use of fish and wildlife with sustaining fish and wildlife populations. To achieve this successful balance, the Model operates on seven basic principles (Geist, 2006; Mahoney, Geist, Organ, Regan, Batcheller, Sparrowe, et al., 2009; Orion The Hunter's Institute, 2008):

- **Public Trust:** Natural resources, including fish and wildlife, are managed by the government for public use and enjoyment, as well as for sustainability.
- **Democratic Rule of Law:** Laws allocate the use of fish and wildlife by citizens to protect the public trust. Citizens can participate in creating and amending laws associated with fish and wildlife conservation and use.
- **Opportunity for All:** Every citizen has a fair and equitable opportunity under the law to participate in hunting and fishing.
- **Noncommercial Use:** To protect the resources and the public's right to those resources, commercial markets in dead wildlife and animal parts is prohibited.
- **Legitimate Use:** To protect and maintain wildlife populations, legal use of wildlife is deemed to be the harvest of wildlife for food and fur, self-defense, and property protection.
- **International Resources:** Because fish and wildlife migrate freely across boundaries of states and nations, fish and wildlife management policies and laws consider fish and wildlife to be international resources.
- **Scientific Policy:** Fish and wildlife management and policy is directed by science and trained professionals.

The success of the Model is demonstrated by the abundance and health of game in the United States and the success stories cited in the preface to this book.

Conclusion

The overall development of wildlife policy in the United States has progressed from exploitation to responsible use, then to scientific management and conservation, even in some cases to restrictive preservation, and finally to an effective, uniquely American model of conservation. This progression has been accompanied by a change in policy from common ownership to state ownership and control, to a doctrine of public trust, and finally to the emerging role of the federal government in the management of wildlife resources. This progressive change in wildlife policy has been marked by a shift in emphasis from economic uses (including subsistence and predator eradication) of wild animals to recreational uses, and to broader ecological concerns and emerging ethical concerns of public trust in wildlife management.

Today, state and federal laws for wildlife management have evolved to protect the full range of wildlife values—ecological, recreational, educational, historical, and aesthetic.