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THE LAW OF WILDLIFE PROTECTION IN THE UNITED STATES

David H. Getches*

Wildlife management law in the United States has responded to maturing social values and developing biological knowledge about fish and wildlife. These influences are reflected in several historical trends. The early democratization of wildlife harvesting opportunities marked a repudiation of English common law principles that had reserved wildlife for the amusement of the elite. Free access to wildlife was subsequently tempered by popularly supported first federal and then state legislation to curtail the demonstrated excesses of commercial harvesting. This, in turn, led to widespread state restriction and licensing of public hunting and fishing. State agencies charged with carrying out these laws had to provide hunting and fishing opportunities to as many people as possible while preventing species extinction. As agencies became more knowledgeable about species, their habitats and needs, the central mission of state government became the biologically sound management of wildlife populations. The federal government has taken the lead in recent years in the protection of particular species that have been endangered by commercial activity, past mismanagement and loss of habitat.

The history of American wildlife management has been characterized by tensions between the federal and state governments. Functions have been split between the two sovereigns, with the states concentrating their management on species that are hunted and fished. Although the federal government entered the arena of wildlife management to deal with interstate and international problems, primarily related to commerce, its influence has permeated nearly all aspects of wildlife management through the setting of important national limitations and requirements. The federal role has expanded to include concerns for endangered species that are often neglected by state laws and to promote more comprehensive scientific management of all wildlife resources. Federal power is exercised through federal public land use planning, financial incentives to states and specific prohibitions that supersede or drive state law.

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Today, the force of biological knowledge and public concern supports comprehensive management and protection of all species and the preservation of their habitat. Legal institutions have been slow to respond, however, due to economic concerns and other problems. Because modern wildlife management demands habitat protection for a wide variety of species, legal action is expensive. Greater public expenditures and trade-offs with economic development make legal change politically difficult. Yet the stakes are greater now than ever before: habitat is shrinking under the press of development while a growing population appreciates increasingly diverse and deeply held values in wildlife.

HISTORY

Wildlife protection law in the United States has roots in old English law. The original colonies in North America were subjected to the English common law, and many states and the federal government assimilated these laws and legal concepts in their constitutions and statutes. Although the early colonists retained the common law in most other areas, they repudiated many aspects of English wildlife law.

Under English law the sovereign—the King or Queen—was deemed to have all the legal rights to wildlife. No one owned wild animals or fish until they were captured or killed. The King or Queen granted hunting and fishing rights, typically favoring wealthy classes with special privileges. English "qualification statutes" required that one have a certain amount of money or land to have the privilege to hunt; common people were flatly prohibited from hunting or even eating wildlife. The laws also prohibited those not qualified to hunt from owning weapons used in hunting. Commoners who farmed and grazed small parcels of land were required to tolerate the activities of those who held hunting rights on the same land. Because hunting was then essentially an amusement, the restrictions on hunting under English law were designed, like rules in a game, to maintain the challenge of the sport.¹

The American colonists rebelled against the application of English wildlife laws; indeed, they viewed many of the laws as contrary to the democratic principles that underlay the United States Constitution. Americans believed that all citizens have a common right to the abundant wildlife resource. They considered hunting an economic right or necessity, not simply a sport for the aristocracy. To facilitate public hunting rights, some early colonial laws prohibited owners of unenclosed lands from preventing others from taking wildlife on their lands. Further, the second amendment to the United States Constitution,² ensuring all citizens the right to keep and

bear arms, was partly a reaction to the ban on hunting weapons in English law.

The American idea that everyone should be able to hunt led to serious depletions of some wildlife species. In fact, elimination of some wild animals was encouraged to help tame the wilderness and make areas suitable for agriculture. When wildlife populations began to decline, however, some states and local governments passed laws to protect wild animals. As early as 1646, the town of Portsmouth, Rhode Island enacted laws prohibiting deer hunting during certain seasons of the year. Later, states limited the number of animals that could be killed by a hunter. In 1878 Maine restricted hunters to three deer per year. Iowa set a daily bag limit of twenty-five prairie chickens per hunter.³

States were challenged to deal with a conflict between a growing exploitation of wildlife for profit and the principle that wildlife species should be protected in order to furnish a food supply for citizens who needed it and wanted to hunt. Because state legislatures were reluctant to limit public rights to hunt and fish, commercial hunters were able to take large numbers of wildlife, endangering the survival of certain species and depleting the numbers of animals available to hunters seeking food.⁴

The fur trade was an important influence in America's economic and social history. Some cities, like New York, were settled in their present locations partly for convenience in receiving and shipping furs in the lucrative international fur trade. Trappers reaped large fortunes by the uncontrolled harvest of wild animals for their pelts. As beaver populations rapidly declined in New England because of intensive trapping, fur trappers moved westward across the continent. In fact, when President Thomas Jefferson commissioned the Lewis & Clark Expedition, which forged a trail across the country and helped open up the West for settlement, he was motivated in part by reports of large numbers of English trappers moving into the area. Jefferson sought to assert American control over western wildlife resources. Fortunately for the beaver, the market for beaver hats suddenly declined around 1830. At that point, beaver were nearly extinct and probably would have been exterminated altogether if styles had not changed.⁵

Hunters zealously harvested birds and animals to supply markets with wildlife commodities ranging from meat to any kind of feathers that could adorn hats. As a result, the passenger pigeon, the most populous species of American bird in the mid-1800s, was rendered extinct by 1900. Bison roaming the Great Plains of the American West numbered 60 million animals in the mid-1800s, but were reduced to insignificance by

1880. Millions were killed for their tongues, considered a delicacy in the East. The United States government actually encouraged the extermination of the bison because it would lead to easier subjugation of American Indians on the plains (whose subsistence depended on the beasts) and the more orderly settlement of the West by non-Indians. In response to concern over the potential extinction of the bison and outrage expressed by many American citizens, Congress passed a bison protection bill in 1874. President Grant vetoed the bill, however, and the population of the animals dwindled.⁶

In the late nineteenth century, following a period of federal and state inattention to wildlife protection, states finally began to enforce existing laws to preserve breeding stocks of wildlife species to maintain food supplies. Because state restrictions were uneven, however, wildlife protection was frustrated by violators who crossed state lines. If one state prohibited marketing wildlife goods, illegally killed wildlife could be transported to a state that had no restrictions.⁷

Public concern for wildlife protection was first aroused among sport hunters, who were typically rich patrons of lodges. They clashed with market hunters seeking profits from the sale of wildlife goods. The sport hunters often used their political influence to pressure state governments to enact protective laws. Though their individual influence was significant, affluent hunters were few in number. But sport hunting became more popular as the frontier closed and Americans had more leisure time. The greater numbers of people who were attracted to hunting and fishing organized politically active clubs, and successfully urged enactment of state laws to protect wildlife. For example, the New York Sportsmen's Club, founded in 1844, drafted a model game law that was adopted in a few counties. When local governments were reluctant to enforce the laws, the club sued violators. Such groups also influenced legislatures and brought the discussion of wildlife protection to the attention of the American citizenry. They used the news media to educate the public about the benefits of legislation limiting hunting, especially commercial wildlife exploitation.⁸

It seems ironic that sport hunters would lead the way to a popular movement for wildlife protection. The initial dearth of regulation in America was traceable to the colonists' rejecting English law that benefited only an elite class of sportsmen. The underlying notion—that wildlife was a resource open to uncontrolled public use—facilitated the market hunters' abuses. Yet it was sportsmen's groups who ultimately convinced the public and the politicians of the need for regulation. Wide expanses of federal public lands in the West open to hunt-

ing for all, and the potential access to wildlife by large numbers of Americans (if it could be saved from the exploitation of market hunters) may have helped to convince citizens and politicians that the sportsmen's cause was not simply for the benefit of the few who had access to special hunting preserves.

As hunting and fishing became more popular in the twentieth century, the political influence of sportsmen grew. The demand for outdoor recreation in the United States accelerated after World War II as the average American enjoyed greater wealth and leisure. Between 1955 and 1980, the number of hunters grew more than 41 percent while the number of sport fishermen more than doubled.⁹ Wildlife protection was also demanded by other constituencies, not just sportsmen.¹⁰ Wildlife "uses" expanded to include photography, bird watching, and other nonconsumptive activities. A recent study shows that about half of all Americans participate in some nonconsumptive recreational wildlife use.¹¹

The political importance of wildlife has been closely related to the economic impact of wildlife uses, primarily sport hunting and fishing. Major commercial activity is now concentrated in the ocean and estuarine fisheries of New England and the Pacific Northwest.¹² Fur trapping continues in some places, but only on a small scale. Thus, the greatest economic effect of wildlife use is the multi-billion dollar contribution to national, state and local economies by hunters and fishermen who buy licenses, equipment, and related goods and services.¹³ These expenditures have given sportsmen a voice in political decisions. Although nonconsumptive wildlife users are more numerous and widespread, they have less political influence than sportsmen because of their varied interests and lack of concentrated economic power.

Although politicians have reacted primarily to the demonstrable economic values of wildlife, they are beginning to understand, if not act upon, a wider range of values. Beyond the palpable value to science of being able to study ecosystems in natural laboratories and relate the results to human survival, wildlife species also provide deeply-felt intangible benefits.¹⁴ Those benefits include the ideas, experiences and understanding that we gain from observing wildlife. Families enjoy new cohesiveness and friends cement lasting bonds from their shared moments of seeing and hearing wildlife. People draw satisfaction from viewing wildlife or simply knowing that species can still thrive in the wild in the midst of a technologically complex world. Wildlife reminds us of our mortality and that humans, like other creatures, are all part of natural cycles and processes. Ultimately, this understanding may be an anchor for human survival. These intangible benefits from

wildlife, with their historical, psychological, philosophical, aesthetic, intellectual and spiritual dimensions, are being realized by more people. But the law has just begun to reflect these values.

STATE WILDLIFE PROTECTION

States have undertaken most of the wildlife regulation in the United States. American law embodies the idea that the states hold wildlife as a public trust for all the people. Under the Constitution, states theoretically assumed the sovereign position of the King or Queen that existed under English law. From the beginning the trust was considered to be for the public benefit, not to be disbursed to favored classes as patronage. In 1842, the United States Supreme Court in *Martin v. Waddell*¹⁵ upheld the right of states to restrict the commercial harvesting of wildlife in order to protect a food source for the people. A subsequent case, *Geer v. Connecticut*¹⁶, explained state power over wildlife as being based on a state ownership interest. Regulatory authority of the state, as owner of wildlife, was rarely questioned. More recently, as state laws have come into conflict with federal interests in interstate commerce and in protecting wildlife as discussed below, the Supreme Court has repudiated the ownership doctrine and has recognized limits on state authority.¹⁷

State wildlife protection programs are varied, but all emphasize harvest regulation. Restrictions include prohibitions on commercialization, limits on hunting and fishing seasons, limits on the numbers of animals or fish that may be killed and requirements that any wildlife taken may not be wasted.¹⁸

Harvesting restrictions typically are carried out by requiring hunters and fishermen to purchase annual licenses from a state agency. Early licensing systems did not limit the number of hunters, but were means of controlling hunter activity and raising revenue through license fees. More recently, licensing has been used to achieve biological goals by permitting harvests based on timing, location and intensity of pressure on specific wildlife populations. States remain interested in hunting and fishing licensing because of the revenues that are raised; hunting and fishing license fees are typically a very large source of funds for state wildlife management agencies.¹⁹

Enforcement of the early hunting and fishing restrictions and licensing laws was weak. Although most states had fish and game agencies by the mid-1800s, they lacked enforcement personnel. All states now have such employees, constituting a special police force, often with training in wildlife biology, to enforce wildlife protection laws.²⁰

State wildlife management today typically includes fish and wildlife stocking programs. Some programs have attempted to reintroduce native species into areas where they have been exterminated or seriously diminished. Other programs have introduced animals and fish into areas where they did not formerly live. Fish stocking is used extensively to provide greater fishing opportunities for both sportsmen and commercial fishermen.²¹

Habitat management and acquisition are the most significant state wildlife programs. A large proportion of agency budgets is spent on improving and maintaining habitats, such as rehabilitating streams and wetlands. States also purchase land and water areas to protect animals from the impacts of growth, development and overuse.²² Most acquired areas are valuable habitat where game species can be perpetuated and conserved to expand future hunting opportunities; some lands are acquired primarily to furnish public access to wildlife resources for hunting and fishing. In many cases less than a fee simple interest may be acquired at lower cost and with benefits to the original owner.²³ Thus, a state wildlife agency might acquire an easement or other interest in a riparian area to assure that fish habitat is protected and that the public has access to fish. Yet the landowner can maintain ownership and certain rights necessary to use the land for other purposes (e.g., farming) that may be compatible with the easement. Several private, nonprofit entities now assist public agencies and private landowners in conceiving and executing these schemes.²⁴

Research efforts have tremendously enhanced the ability of states to regulate and manage wildlife. Every state wildlife management agency now has a research component staffed by highly qualified scientists who study animal diseases, migration patterns and habitat needs.²⁵ Such programs provide data on populations of mammals, birds and fish that enable the agencies to set more precise regulations and to develop more effective and well-conceived habitat acquisition plans. In most states research programs are largely funded by the federal government.²⁶

State planning allows agencies to anticipate their long-term needs and demands and to develop programs to meet those needs in the future. A majority of states now have long-range management plans. Some actively assist federal agencies in planning for the use of the extensive public lands in the western United States.²⁷

Almost every state now has a non-game program, emphasizing protection and management of species that are not harvested.²⁸ These programs, however, usually pale in size and scope next to programs for management of game species. Al-

though there is great public interest in non-game programs, they suffer from a lack of funding. A heavy reliance on hunting and fishing license fees skews state wildlife programs towards perpetuation of game species and improving harvesting opportunities. Although potential sources of funding for non-game wildlife are severely limited, state legislatures have been reluctant to appropriate general state tax revenues to wildlife management agencies for any purposes. This is one result of the agencies' success in being largely self-supporting from license fees for management activities related to hunting and fishing.²⁹ One special source of revenue for non-game wildlife that has been adopted in a number of states is a voluntary "check-off" on state income tax returns that allows taxpayers to contribute money for non-game management.³⁰

FEDERAL WILDLIFE PROTECTION LAWS

Historically, the federal government has chosen to respect a primary state interest in managing wildlife resources. In recent years, however, Congress has asserted much greater regulatory and management authority over wildlife. Federal regulation first responded to commercial wildlife trade. Now federal financial assistance also guides and shapes state programs, and wildlife management has become part of planning and management of the federal public lands (national forests, Bureau of Land Management lands, national parks, etc.).³¹ Several federal laws also protect particular species of fish and wildlife on private as well as public lands.³²

In the federal system, the initial issue is whether the national government has power to regulate wildlife resources. The United States Congress may only exercise powers specifically granted to it under the Constitution. All powers not specifically given to Congress are reserved to the states.³³ Although the United States government traditionally has deferred to the states' sovereign interest in wildlife, there are several federal interests that have properly involved the federal government in wildlife protection: interstate commerce, treaties, and public land management.

The federal government's actions to protect wildlife populations from exploitation by commercial hunters were rooted in Congress's interstate commerce power. The market hunting problem was difficult for the states to control themselves because illegally taken wildlife could be removed to another state where it was legal, rendering prohibitions against commercialization in the first state ineffective. Congress properly enacted comprehensive legislation because, under the Constitution, it has the exclusive authority to regulate interstate commerce.³⁴ The Lacey Act³⁵ made it a federal crime to transport

wildlife killed in violation of the law of one state into another state, effectively ending market hunting.

Early in the twentieth century, the United States entered into treaties for the protection of several wildlife species. In 1911 a treaty was executed with Russia and Japan for protection of the northern fur seal.³⁶ Other treaties have been negotiated with foreign nations to protect commercial fisheries,³⁷ whales,³⁸ marine mammals³⁹ and endangered species.⁴⁰ They have been implemented through several federal statutes. When the Congress passed the Migratory Bird Act of 1913,⁴¹ the legislation was ruled unconstitutional as exceeding the authority of Congress.⁴² But a few years later, after the Migratory Bird Treaty⁴³ was signed with Great Britain to protect migratory birds in the United States and Canada, Congress enacted a law that controls virtually all aspects of hunting ducks and other migratory birds.⁴⁴ The Supreme Court upheld the Migratory Bird Treaty Act as a proper exercise of congressional power to enter into and carry out treaties under the United States Constitution.⁴⁵ Other federal laws have been enacted to carry out the agreements and provisions in wildlife-related treaties. For example, the Marine Mammal Protection Act declares a moratorium on taking all marine mammals, regardless of state laws to the contrary.⁴⁶

For many years there was uncertain and uneven state regulation of ocean fisheries. This has been clarified by a federal law, the Fishery and Conservation Management Act,⁴⁷ that leaves regulation of fish and wildlife within a three-mile offshore area to the states. The United States, however, asserted sovereignty as against that of other nations fishing within its territorial waters and preempted any inconsistent state regulation within 200 miles of the shores of the United States. Thus, the law established a 197-mile federal fishery conservation zone within which the United States has exclusive management authority over all marine life other than marine mammals, birds and highly migratory species. The law deals specially with anadromous fish that spawn in its fresh or estuary waters for which foreign fishing had become quite competitive and, in some cases, destructive. State officials participate with federal officials on regional councils in formulating comprehensive management plans for the species covered by the Act.

Perhaps the most pervasive form of federal wildlife management is through the statutes that require federal agencies to protect and manage wildlife resources on federal public lands.⁴⁸ About one-third of the total land area of the United States is owned by the federal government. The public lands are generally the least developed and the most important habi-

tat for fish and wild animals. Land management statutes require the federal agencies to consider wildlife and recreation interests when they plan for and manage the public lands.⁴⁹ This has interjected a requirement that federal agencies consider wildlife management regulation in the plans they develop for national forests⁵⁰ and Bureau of Land Management lands.⁵¹ Federal land management laws include language deferential to the authority of the states to manage wildlife, but the role of the land management agencies in preserving habitat is so extensive that it often has tremendous impacts on the way the states can manage species. The Constitution gives Congress authority to make all needful rules and regulations for the management of its property.⁵² This power is far-reaching and has even been interpreted by the Supreme Court as allowing federal regulation of deer harvesting in a national forest.⁵³

Sometimes federal laws come into direct conflict with state wildlife management laws. For example, in 1971 Congress passed a law protecting wild free-roaming horses and burros.⁵⁴ The protected beasts are descendants of animals that escaped or were abandoned by early western settlers and mineral prospectors. They are generally not protected by state wildlife laws and, indeed, are considered nuisances under many state laws because they interfere with livestock grazing. Yet the Supreme Court held that wild horses and burros are protected by federal law.⁵⁵ This protection would extend to the animals even when they are off federal lands, because they are essentially part of the federal public lands and therefore are covered by Congress' property power.

Endangered species protection involves pervasive federal controls. The federal power to regulate activities that interfere with endangered species is based on the commerce clause⁵⁶ and the treaty-making power⁵⁷ in the United States Constitution. Federal action is necessary where species cross state lines. It also may be desirable when endangered species' habitat is in a jurisdiction where there is no constituency for its preservation. For example, the endangered timber wolf is considered a threat to livestock in Minnesota.⁵⁸ Furthermore, state wildlife agencies are heavily dependent upon income from hunting and fishing licenses and thus tend to be less enthusiastic about endangered species programs, which usually lack adequate funding.

The Endangered Species Act⁵⁹ is probably the most potent federal wildlife law. It requires that the Secretary of the Department of Interior establish a list of species, sub-species or distinct populations that are endangered or threatened with extinction. The Act also provides for the listing of geographic areas ("critical habitats") considered essential to the conserva-

tion of a listed species. Species listed as endangered and their critical habitats are protected by stringent regulations. The Act's basic purpose of species "conservation" is broadly defined to mean the use of all methods necessary to bring a listed species to the point at which the protections provided by the Act are no longer necessary. In addition to the general mandate to "conserve" endangered and threatened species, the Act contains a number of more specific requirements controlling importation, commercialization and possession of such species, subject to criminal penalties. Section 9 of the Act⁶⁰ prohibits "taking" by anyone (with a few limited exceptions) of any listed species. The most comprehensive protection is afforded by § 7,⁶¹ which commands all federal agencies to ensure that their actions will not jeopardize the continued existence of a listed species or adversely modify its critical habitat.

The force of the Endangered Species Act was demonstrated in *Tennessee Valley Authority v. Hill*,⁶² in which the Supreme Court upheld a challenge to a nearly completed federal dam on the grounds that it would—if completed—jeopardize a newly discovered endangered species of fish, the snail darter.

Federal involvement in the area of wildlife management goes beyond the exertion of regulatory power. Selective financial support for federally-funded programs has dramatically influenced state wildlife law. Several federal programs provide money to states to help them manage and regulate their fish and wildlife resources. The two most generous programs distribute funds collected from excise taxes on the sale of hunting equipment (firearms and ammunition) and fishing equipment to states, based on their geographic size and on the respective numbers of hunters and fishermen in each state.⁶³ The funds are channeled primarily to management programs for species that are hunted and fished. By defining the types of funded programs that are eligible for assistance, the federal government has guided many aspects of state wildlife management.

Under the Fish and Wildlife Conservation Act of 1980,⁶⁴ the federal government is authorized to give funds to states for planning that will result in comprehensive management of all wildlife species. This Act is intended to ameliorate the emphasis placed on game species as a result of license fee funding of state agencies. Unfortunately, the Act has not been funded, so the intended benefits are not being realized.

Habitat acquisition—purchase of rights to lands and waters needed for wildlife—is an important federal activity. The first federal habitat acquisition was in 1903 when President Theodore Roosevelt ordered creation of the Pelican Island Bird Refuge to protect egrets and herons that were being hunted to supply the taste for feathered hats. Congress then began desig-

nating wildlife refuges and has since established an extensive national wildlife refuge system of hundreds of areas comprising 85 million acres.⁶⁵ Development activities that would restrict or damage wildlife habitat are prohibited in refuges. These areas protect a wide variety of species, although much of the land acquisition funding comes from a special federal stamp tax on waterfowl hunting licenses.⁶⁶ Public hunting is allowed in many refuges where it would not contradict the needs of wildlife. The United States may enter into agreements with private landowners to acquire interests in their land for the protection of wildlife habitat. Federal funding is also used for state habitat acquisition.

Research and scientific information, made possible by and through the federal government, have similarly enabled better and different wildlife management. Federal technical assistance is selectively provided in areas of particular federal concern. Other, subtler federal influences have also been apparent. For instance, the United States Forest Service commissioned Aldo Leopold to study the wildlife management problems such as overgrazing. In response, Leopold developed wildlife management methods that were dependent upon habitat manipulation. Leopold's book, *Game Management*,⁶⁷ became the primary text used for many years in training wildlife biologists. This contributed to the development of a corps of professional wildlife managers, rather than officials who simply enforce prohibitions or regulations. Leopold's influence on wildlife managers as students and consequently his influence on wildlife management as a science, has been significant.

Some federal laws insist that environmental information and data be assembled and considered before making government decisions. The National Environmental Policy Act (NEPA),⁶⁸ requiring an assessment of all the environmental effects of any proposed federal action, has helped produce data about wildlife species and their habitats. The Fish and Wildlife Coordination Act passed in 1934,⁶⁹ specifies that equal consideration is to be given to fish and wildlife values in making water development decisions. It requires federal agencies to consult with the U.S. Fish and Wildlife Service and state wildlife agencies before federal agencies decide to dam, develop or control any stream. The Act has been eclipsed in importance by NEPA, however, as courts have held that compliance with NEPA is sufficient to satisfy both statutes.⁷⁰

NEPA is particularly well-suited to identifying wildlife-related issues connected with major federal activities and projects having a significant environmental impact. It adopts an ecosystems approach to natural resources management and

requires public participation in fact gathering and decision-making. Interest groups and members of the public who, prior to the Act, had little voice in management decisions are now a necessary part of the process. This is especially important for groups and individuals that do not represent hunting and fishing constituencies.⁷¹

The most pervasive regulation of development activities that may affect riparian habitat is under § 404 of the federal Clean Water Act.⁷² The Act is a comprehensive water pollution control program administered by the Environmental Protection Agency, but § 404 is an aberration. It requires that a federal permit be obtained from the U.S. Army Corps of Engineers for "discharges of dredged or fill materials into the navigable waters." The § 404 program expanded on a late nineteenth century regulatory program for controlling obstructions to navigation.⁷³ "Navigable waters" are now defined to include even wetlands and the areas adjacent to them⁷⁴ where the historically paramount concern of the Corps of Engineers with navigation and flood control is usually not present. "Discharges" include almost any construction project—dams, buildings, or bridges—and alterations such as clearing vegetation, moving earth, and drainage. Traditionally such matters of local land use and water development were left to local law.⁷⁵

Neither its navigation-related history nor the pollution control context of the Clean Water Act have constrained the interpretation and application of § 404. Once federal jurisdiction applies, a project is subject to broad environmental review. If there is a "practicable" alternative that is less harmful to aquatic life than the proposed project, the Corps is supposed to deny the permit.⁷⁶ Furthermore, the permit review process opens the project to scrutiny under the policies of federal and state laws that would not apply directly.⁷⁷ The Corps is to seek comments from the Fish and Wildlife Service and incorporate them in its decision. One sweeping provision of the Corps regulations requires a finding that the permit would be "in the public interest," implicating far-ranging balancing of benefits against detriments of the proposed project.⁷⁸ And if the permit is granted by the Corps, the EPA can override the decision.⁷⁹ No other federal law insinuates environmental considerations so thoroughly into private development decisions and activities.

CONCLUSION

In the early days of the nation, wildlife protection in the United States was consciously limited to allow broad public access to fish and game. State and federal regulatory programs gained support as the public realized that controls, especially on commercial harvests, were necessary to prevent destruction

of wildlife resources. Thus, modern wildlife laws and management programs do not repudiate the democratic ideal of popular access to wild fish, birds and mammals; rather they reflect a more sophisticated sense of the importance of preserving a diversity of wildlife and their ambiance.

The federal government's historical deference to the states in wildlife management matters has given way to a growing body of federal regulation. Beginning at the turn of the century, Congress enacted a few laws asserting direct control over wildlife to which state law was subordinated. In the past twenty years the national government's role in wildlife management has grown dramatically in response to broader values than were reflected in state laws, curtailing the once plenary authority of the states. Intensified federal agency management of the public lands and their wildlife resources also has encroached upon state resource management autonomy. Federal action has generally reflected evolving public attitudes toward wildlife protection and improved scientific knowledge; state responses are more restrained by local political concerns. Federal leadership continues today through regulatory requirements that prevent or mitigate habitat damage caused by pollution and encroachment of development and through funding broader management of species and habitat acquisition.

Wildlife professionals generally agree that the ultimate goals for wildlife management are to promote diversity and balance among species. But they know that this can only be achieved by expensive, and often politically difficult habitat protection programs. Habitat loss is directly traceable to economically productive development activities that destroy wild lands, lakes and streams and acquisition of new land or rights in land (for habitat) is costly.

Habitat cannot be adequately protected as long as it must be justified by a comparison of demonstrable economic benefits and costs. Public revenues from wildlife enjoyment fall short of needs. Because hunting and fishing license fees are almost the exclusive source of state funding for wildlife management, programs concentrate on harvestable species and are generally inadequate for habitat protection activities. Although burgeoning tourism and outdoor recreation enterprises have linked economic benefits to wildlife habitat, it is still impossible to provide an entirely economic justification for the kind and level of habitat and management protection that are needed. Relatively recent federal endangered species laws and comprehensive public land management provisions are important exceptions to the general focus on harvestable

species. But even these programs are not yet fully integrated into the state systems of fish and wildlife management.

If wildlife protection law is to keep pace with technical and scientific understanding in the field it must account better for non-economic values. It must reflect an appreciation of the scientific, psychological, aesthetic and cultural importance of wildlife to society. Much of the nation's heritage is rooted in the satisfaction and enjoyment of maintaining rich wildlife resources. The public was belatedly aroused to support once-unpopular regulation of harvesting when commercial over-exploitation threatened the existence of this heritage. If the law is to evolve further the public must respond to a less graphic but even more pervasive threat: loss of wildlife heritage through decisions driven by economic balancing. Wildlife economics is imprecise and insensitive to many significant values. The danger of ignoring deeply felt wildlife values will perpetuate a system that resists sound technical advice as well as strong societal needs.

Economic development and expanding communities compete for wildlife habitat more intensely than ever. If the law hesitates to respond sufficiently until major problems are widespread and demonstrable, the harm may be irreversible in many parts of the country. The losses will be felt most acutely in a society where increasing technological complexity and population drive up not only the national economic wealth, but also the values produced by wildlife. Even the most abundant economic success may be inadequate to buy back what is lost.

NOTES

- * The author is grateful for the research assistance of Sarah Bates and William Brooks, third-year students at the University of Colorado School of Law.
1. These historical antecedents to American wildlife management are described in M. Bean, *The Evolution of National Wildlife Law* 10 (rev. ed.1983); J. Tober, *Who Owns the Wildlife?* 23(1981); and T. Lund, *American Wildlife Law* 3-10(1980).
 2. U.S. Const. amend. II.
 3. Early American wildlife laws are discussed in J. Trefethen, *An American Crusade for Wildlife* 31, 39(1975); T. Lund, *supra* note 1 at 19, 24-25, 32; and J. Tober, *supra* note 1 at 9.
 4. T. Lund, *supra* note 1 at 57-58; J. Trefethen, *supra* note 3 at 59.
 5. For an account of the American fur trade in the eighteenth and nineteenth centuries, see J. Trefethen, *supra* note 3 at 31, 41-54. See also G. Reiger, *Hunting and Trapping in the New World* in Council on Environmental Quality, *Wildlife and America* 42-52 (H. Brokaw ed. 1978).
 6. Nineteenth century market hunting is described in J. Tober, *supra* note 1 at 75-81, 93-102; J. Trefethen, *supra* note 3 at 55-65.
 7. See J. Tober, *supra* note 1 at 139-140; J. Trefethen, *supra* note 3 at 131.
 8. For more information on the role of sportsmen's groups in early American wildlife conservation, see J. Tober, *supra* note 1 at 43, 130; J. Trefethen, *supra* note 3 at 73-74.
 9. Fish & Wildlife Service, U.S. Dep't of Interior and Bureau of the Census, U.S. Dep't of Commerce, *1980 National Survey of Fishing, Hunting and Wildlife-Associated Recreation* 136 (1982).
 10. S. Yaffee, *Prohibitive Policy* 36-39 (1982), describes a broad national constituency that emerged after World War II and pressed for the enactment of protective laws for endangered species. The growing national concern for wildlife is also chronicled in Note, *The Multiple Use-Sustained Yield Act of 1960*, 41 Or. L. Rev. 49 (1961).
 11. Fish & Wildlife Service, *supra* note 9 at 30.
 12. For a discussion of the commercial fishing industry in the United States, see Alverson, *Commercial Fishing* in Council on Environmental Quality, *supra* note 5 at 67-85. See also Weber, *Federal Marine Fisheries Management*, in the National Audubon Society, *Audubon Wildlife Report* 1986 267-344(1986).

13. In 1980 Americans spent \$17.3 billion for fishing and \$8.5 billion for hunting. See Fish & Wildlife Service, *supra* note 9 at 4.
14. The greater sophistication and breadth in discussions of wildlife values is exemplified by the excellent collection of essays in *Valuing Wildlife: Economic and Social Perspectives* (D. Decker & G. Goff eds. 1987).
15. 41 U.S. (16 Pet.) 367 (1842). A landowner claimed ownership of the oysters on his land based on his predecessor having received land title in a grant from the King in 1664. In denying the landowner's claim, the Supreme Court held that the King originally held the land and its wildlife in trust for the people. Thus, the King could not make a private grant that abridged the people's common right to take wildlife from those lands. The Court determined that the state succeeded to the King as holder of the trust after the American Revolution.
16. 161 U.S. 519 (1896). This case expounded a theory of state ownership of wildlife. In *Geer*, the defendant was convicted under state law of possessing game birds with the intent to ship them out of the state. The defendant challenged the state law as an impermissible interference with the federal government's power to regulate interstate commerce. The Court found that governments have historically had the power to regulate the taking of wildlife. It noted that, in order to manage the wildlife as a trust for the people, the state needed the right to control and regulate wildlife as common property, including imposing conditions that would remain after the game was killed. Finally, the Court held that the state's duty to preserve wildlife as a valuable food supply was a valid use of the state's police power, so long as interstate commerce was only indirectly affected; however, the Court also recognized that the exercise of the state's power is only valid if it is not incompatible with the powers conveyed to and exercised by the federal government under the Constitution. See also M. Bean, *supra* note 1 at 12-17.
17. *E.g.*, *Missouri v. Holland*, 252 U.S. 416 (1920). A state official challenged the constitutionality of the Migratory Bird Treaty Act of 1918 (see *infra* at note 44) by taking waterfowl out of season in violation of federal but not state law. He was arrested by a federal warden. The state asserted that, since the state owns the wildlife within its borders, the federal government is precluded from regulating wildlife. The Supreme Court upheld the federal statute, relying on the supremacy of the federal government's treaty-making power under the Constitution. It

concluded that the state's claim of ownership was not enough to bar the federal regulation.

Later, *Hughes v. Oklahoma*, 441 U.S. 322 (1978) expressly overruled *Geer vs. Connecticut*, holding that the *Geer* rule of state ownership had "been eroded to the point of virtual extinction in cases involving regulation of wild animals." *Hughes*, a minnow dealer in the state of Texas, was arrested for transporting minnows out of the state of Oklahoma in violation of Oklahoma law. The Court held that, although Oklahoma had a legitimate state interest in conserving its minnows, the method chosen to do so was unconstitutional because it interfered with interstate commerce. The Court added that states may impose restrictions on wildlife trade in order to conserve state resources, but they must first attempt "nondiscriminatory alternatives."

18. For a summary of state restrictions, see Wildlife Management Institute, *Organization, Authority and Programs of State Fish and Wildlife Agencies* (1977).
19. State hunting and fishing license income was \$53.4 million in 1985. U.S. Fish and Wildlife Service, Annual Report on Total Paid Hunting and Fishing Licenses—1985. Although there were many more resident licensees than non-residents, the non-residents generally paid higher fees. The Supreme Court has upheld charging higher license fees to non-residents. *Baldwin v. Fish & Game Comm'n of Montana*. 436 U.S. 371 (1978). Baldwin challenged the constitutionality of a Montana statute that charged nonresidents almost eight times more than residents for elk hunting licenses. The basis for his claim was that the Montana law violated the equal protection clause of the fourteenth amendment and the privileges and immunities clause. The equal protection clause, U.S. Const. amend. XIV, prohibits states from discriminating against certain classes of people, such as nonresidents, without a rational basis. The Court found that the Montana license fee system is a reasonable means of preserving elk populations. Because Montana has a substantial interest in protecting its elk populations for its citizens, there was a rational basis for discriminating against nonresidents. The privileges and immunities clause, U.S. Const. art. IV, § 1, protects citizens of one state from fundamental discrimination by another state favoring its own citizens. The Court held that the Montana hunting license fee did not violate this clause; states must treat residents and nonresidents equally only in matters that bear "upon the

validity of the Nation as a single entity," and hunting privileges are not among such matters.

20. In a few states, wildlife enforcement officers are employed as state police officers, but work exclusively on state wildlife agency matters. For a summary of state enforcement programs, see Wildlife Management Institute, *supra* note 18 at chart 4 and chart 16. A more detailed account of these programs appears in Chandler, *State Wildlife Law Enforcement, in Audubon Wildlife Report 1986, supra* note 12 at 593-628.
21. Every state maintains one or more types of fish hatchery (warm water, cold water or salt water) to raise fish for stocking. Wildlife Management Institute, *supra* note 18 at chart 11. There are a number of federally owned and operated hatcheries. In addition, federal funds are used to construct, improve or renovate state fish hatcheries, although most fish hatchery operations are paid for by the states. *Audubon Wildlife Report 1986, supra* note 12 at 199-200.
22. In 1984 states owned fee title to 4,098,133 acres of land for fish and wildlife purposes. Counting other public and privately-owned lands managed for wildlife with assistance from federal grants, the total is more than 38 million acres. The National Audubon Society, *Audubon Wildlife Report 1987* 66-67 (1987).
23. State wildlife agencies in 1976 leased 16 million acres and held easements for over 81,000 acres for public hunting purposes. Wildlife Management Institute, *supra* note 18 at chart 8.
24. See generally, *Land Saving Action* (R. Brenneman & S. Bates eds. 1984); Montana Land Reliance & Land Trust Exchange, *Private Options: Tools and Concepts for Land Conservation* (1982).
25. Wildlife Management Institute, *supra* note 18 at 3.
26. *Audubon Wildlife Report 1986, supra* note 12 at 586.
27. Wildlife Management Institute, *supra* note 18 at 3. See also *infra* notes 50 and 51.
28. *Id.* at chart 15. For a description of state non-game program elements and details of particular programs, see Cerulean and Fosburgh, *State Nongame Wildlife Programs, in The National Audubon Society, supra* note 12 at 631-656.
29. It has been suggested that non-game wildlife funding might be augmented by taxes imposed on equipment used in nonconsumptive wildlife activities (e.g., binoculars, birdseed and photography equipment). Mangus and Shaw,

Alternative Mechanisms for Funding Nongame Wildlife Conservation, Public Admin. Rev. 407 (Sept./Oct. 1984).

30. A chart showing state revenues from non-game check-offs appears in *Audubon Wildlife Report 1986*, *supra* note 12 at 640-641.
31. See text *infra* at notes 48-51. T. Lund, *supra* note 1 at 85-87 describes the increasing federal influence in state wildlife management efforts.
32. *E.g.*, Bald Eagle Protection Act, 16 U.S.C. §§ 668-668d(1982); Marine Mammal Protection Act, 16 U.S.C. §§ 1361-1407 (1982), discussed *infra*, note 46; Endangered Species Act of 1973, 16 U.S.C. §§ 1531-1543 (1982), discussed *infra* in text and notes 59-62.
33. U.S. Const. amend. X.
34. U.S. Const. art. I, § 8.
35. Act of May 25, 1900, ch. 553, 31 Stat. 188 (codified as amended at 16 U.S.C. §§ 701, 3371-3378, and 18 U.S.C. § 42(1982)). Although the Act originally only applied to game animals, its protection was subsequently extended to all wildlife. Other provisions prohibit the importation of injurious wildlife and authorize the Secretary of Agriculture to adopt affirmative measures necessary for the preservation, distribution, introduction and restoration of game birds and other wild birds subject to the laws of the states.
36. Treaty for the Preservation and Protection of Fur Seals, July 7, 1911, 37 Stat. 1542, T.S. No. 564.
37. *E.g.*, International Convention for the High Seas Fisheries of the North Pacific Ocean, May 9, 1952, 4 U.S.T. 380, T.I.A.S. No. 2876.
38. International Convention for the Regulation of Whaling, Dec. 2, 1946, 62 Stat. 1716, T.I.A.S. No. 1849.
39. Interim Convention on Conservation of North Pacific Fur Seals, Feb. 9, 1957, 8 U.S.T. 2283, T.I.A.S. No. 3948, 314 U.N.T.S. 105.
40. Convention on International Trade in Endangered Species of Wild Fauna and Flora, March 3, 1973, T.I.A.S. No. 8249, 27 U.S.T. 1087.
41. Act of March 4, 1913, ch. 145, 37 Stat. 828 (repealed 1918).
42. *United States v. Shauver*, 214 F. 154 (E.D. Ark. 1914), appeal dismissed, 248 U.S. 594 (1919); *United States v. McCullagh*, 221 F. 288 (D. Kan. 1915).
43. Convention for the Protection of Migratory Birds, Aug. 16, 1916, United States-Great Britain (on behalf of Canada), 39 Stat. 1702, T.S. No. 628.
44. In 1918 the United States passed the Migratory Bird Treaty Act, 16 U.S.C. §§ 703-711. This Act implemented

four treaties entered into by the United States concerning migratory birds. When passed, the Act went farther than the treaty with Great Britain required by prohibiting all hunting of migratory birds except as permitted by regulations of the Secretary of Agriculture (authority now transferred to the Secretary of the Interior.)

In 1929 the United States passed the Migratory Bird Conservation Act, 16 U.S.C. §§ 715-715r (1982). This Act remedied the failure of the Migratory Bird Treaty Act to ensure the survival of migratory birds by providing for the acquisition of habitat. The Act established a commission to review and approve proposals to purchase or rent areas for migratory birds. Although the original purpose was to establish areas as inviolate sanctuaries, political pressures led to subsequent amendments to the Act that authorize the Secretary to permit hunting, fishing and other recreational uses where it is determined to be consistent with the primary purpose of the refuge.

The Migratory Bird Conservation Act was supplemented in 1934 by the Migratory Bird Stamp Act, 16 U.S.C. §§ 718-718j (1982), which requires waterfowl hunters to purchase a federal stamp. See *infra*, notes 65-66 and accompanying text.

45. *Missouri v. Holland*. 252 U.S.416 (1920). See discussion of this case *supra* note 17. Past and present efforts to protect migratory birds are discussed in Chandler, *Migratory Bird Protection and Management*, in The National Audubon Society, *supra* note 22 at 83-105.
46. 16 U.S.C. §§ 1361-1407 (1982). This Act, which was passed in 1972, represented the first federal effort toward comprehensive federal management of particular species of wildlife. The approach taken in this Act was used as a guide for developing the Endangered Species Act of 1973, discussed *infra* in text and notes 59-62. The Act preempted the states' authority over marine mammals and substituted a single federal program. The Act established a moratorium on taking all marine mammals, with limited exceptions. One exception permits takings by Alaska Natives of the North Pacific and Arctic coasts. There are provisions allowing states to regain authority over management and to obtain federal assistance if state programs meet certain criteria. In addition, the moratorium on taking marine mammals may be lifted when a species or population meets the Act's requirement of an "optimum sustainable population."

Finally, the Act directs that "its policies be the policies of the United States in the negotiation of

international treaties concerning marine mammals," and that these policies should provide authority for restricting imports of wildlife products.

Current protection and management efforts are described in Weber, *Marine Mammal Protection*, in *The National Audubon Society*, *supra* note 22 at 163-176.

47. 16 U.S.C. §§ 1801-1882 (1982).
48. See Swanson, *Wildlife on the Public Lands* in Council on Environmental Quality, *supra* note 5 at 428-441.
49. E.g., the Multiple Use-Sustained Yield Act of 1960, 16 U.S.C. §§ 528-531 (1982), declares Congress' policy to be "that the national forests are established and shall be administered for outdoor recreation, range, timber, watershed, and wildlife and fish purposes." The Act states that its purposes are not to be in derogation of the original purposes for which national forests were established (timber and watershed protection).
50. The National Forest Management Act of 1976, 16 U.S.C. §§ 1601-1614 (1982), provides many of the substantive guidelines for managing national forests that were lacking or generally stated in the Multiple Use-Sustained Yield Act. It requires that land management plans be prepared for each forest, according to regulations of the Secretary of Agriculture that provide "for a diversity of plant and animal communities based on the suitability of the specific land area." The Act was intended to insure compliance with the National Environmental Policy Act, discussed *infra* note 68. For a discussion of current wildlife management issues in national forests, see Fosburgh, *Wildlife Issues in the National Forest System*, in *The National Audubon Society*, *supra* note 12 at 159-173.
51. The Federal Land Policy and Management Act (FLPMA), 43 U.S.C. §§ 1701-1782 (1982), passed in 1976, defines the responsibilities and authority of the Bureau of Land Management in the Department of Interior for the management of lands that have not been set aside or withdrawn for some particular purpose or included in a special management system (such as National Forests, National Monuments or Wildlife Refuges and wilderness areas). Historically, such lands have been available for public grazing, mining and recreation, but until FLPMA they were not subject to an overall management directive. FLPMA directs the Secretary of Interior to develop and maintain comprehensive land use plans for the public lands. These plans are to be based on an inventory of the public lands and their resources. The Act requires opportunities for public participation in planning.

For a discussion of current wildlife management issues on BLM lands, see Barton, *Wildlife and the Bureau of Land Management*, in *The National Audubon Society*, *supra* note 12 at 497-541.

52. U.S. Const. art. IV, § 3.
53. *Hunt v. United States*, 278 U.S. 96 (1928). This decision upheld the authority of the federal government to remove wildlife from federal lands without complying with state law. The state relied on *Geer*, *supra* note 16, and the state ownership doctrine in challenging the federal program. The Supreme Court found that the federal government need not comply with state law and that its power to protect its land and property was superior to the state's power over game.
54. The Wild Free-Roaming Horses and Burros Act, 16 U.S.C. §§ 1331-1340 (1982), enacted in 1971, requires that wild horses and burros be considered an integral part of the natural system of the public lands. Those animals, although not technically "wildlife," are to be protected as "living symbols of the historic and pioneer spirit of the West."
55. *Kleppe v. New Mexico*, 426 U.S. 529 (1976). In this case, the federal law protecting wildlife horses and burros directly conflicted with state laws and programs that allowed for the control of these animals. The Court held that the power to protect wildlife that use federal lands was incidental to the power granted under the property clause of the Constitution.
56. U.S. Const. art. I, § 8.
57. U.S. Const. art. II, § 2.
58. The Minnesota wolf controversy is outlined in Trefethen, *supra* note 3 at 288-295. See also Peterson, *Gray Wolf*, in *The National Audubon Society*, *supra* note 12 at 951-967.
59. 16 U.S.C. §§ 1531-1543 (1982).
60. 16 U.S.C. § 1538 (1982). "Taking" is broadly defined to mean "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct."
61. 16 U.S.C. § 1536 (1982). When a federally funded or constructed project or activity potentially impacting a listed species is proposed, a "biological assessment" must be prepared to determine whether any such species is likely to be affected. If an action will affect a listed species, the agency proposing that action must consult with the Secretary of Interior, who will issue a "biological opinion" detailing how the proposed project will impact the species and suggesting alternatives, if any, to avoid these impacts. If the

opinion finds that the project will jeopardize the species, and that there are no reasonable alternatives, the project or activity may not proceed.

62. 437 U.S. 153 (1978). This decision prompted Congress to amend the Act in 1978, to create a process for obtaining exemptions from the Act's prohibitions of certain actions that will jeopardize a listed species. The exemption process invokes a committee of high government officials to consider whether there is any reasonable and prudent alternative to the proposed action and whether the benefits of the action clearly outweigh the benefits of any alternatives that do not jeopardize the species.
63. The Federal Aid in Wildlife Restoration Act (Pittman-Robertson Act), 16 U.S.C. §§ 669-669i (1982), enacted in 1937, imposes a federal excise tax on the sale of firearms, shells and cartridges. The funds provide up to 75% of the costs of state projects, including wildlife research, management, and the acquisition, restoration and maintenance of wildlife habitat. The federal government has used this Act to influence state wildlife management efforts by providing funding for "qualified" projects and requiring states to use funds collected from sales of licenses to fund fish and wildlife agencies' administration. Amendments to the Act in 1970 broadened the scope of "qualified" projects to include hunter safety programs and development of comprehensive fish and wildlife resource management plans.

The Federal Aid in Fish Restoration Act (Dingell-Johnson Act), 16 U.S.C. §§ 777-777k (1982), enacted in 1950, provides for funds to be collected from a federal excise tax on the sales of fishing equipment and tackle. States may use the funds for "fish restoration and management projects" or "comprehensive fish and wildlife resource management plans." Unlike the Pittman-Robertson Act, which permits funds to be used for any wildlife, funds under this Act may only be used for "fish which have a material value in connection with sport or recreation."

64. 16 U.S.C. §§ 2901-2911 (1982).
65. For a history of the national wildlife refuges, see Greenwalt, *The National Wildlife Refuge System* in Council on Environmental Quality, *supra* note 5 at 399-412. The National Wildlife Refuge System Administration Act, 16 U.S.C. §§ 668dd-668ee (1982), put the wildlife refuges and waterfowl production areas acquired with funds generated from waterfowl stamp sales (see *supra* note 63) under the jurisdiction of the Fish and Wildlife Service, together

with the existing "game ranges," "wildlife ranges" and "wildlife management areas."

66. Council on Environmental Quality, *supra* note 5 at 402-403. The Migratory Bird Hunting Stamp Act of 1934 established the Migratory Bird Conservation Fund. Act of March 16, 1934, ch. 71, 48 Stat. 451, 16 U.S.C. §§ 718-718j (1982). The Fund is comprised of proceeds from the sale of federal migratory bird hunting stamps, which are required of each waterfowl hunter over sixteen years of age. The Stamp Act was amended in 1958 to ensure that revenues from stamp sales would only be spent for the acquisition of refuges and "waterfowl production areas" (smaller tracts of wetlands, usually less than 200 acres). In 1976 Congress sought to encourage non-hunters to contribute to the wetlands acquisition fund by changing the name of the stamp to the "migratory bird hunting and conservation stamp." Act of Feb. 17, 1976, Pub. L. No. 94-215, § 3a, 90 Stat. 189, 16 U.S.C. § 718a (1982). M. Bean, *supra* note 1 at 215-217.
67. A. Leopold, *Game Management* (1933).
68. 42 U.S.C. §§ 4321-4370 (1982). Enacted in 1969 (and signed into law in 1970), this Act served as the model for subsequent federal planning statutes and for many similar state laws. The Act is essentially a procedural requirement for any federal agency contemplating any action that will have a significant effect on the environment. The most important section, § 102 (42 U.S.C. § 4331 (1982)), requires the responsible official in a federal agency proposing the action to prepare an environmental impact statement (EIS), which includes an evaluation of environmental effects, a discussion of alternative courses of action and other relevant information. The Act is intended to require federal officials to consider the potential environmental consequences of their actions in advance. Although the Act does not require the agency to take the most environmentally sound course of action, the opportunity for public review and comment on agency proposals and the ability of interested parties to sue an agency for violating the procedural requirements of NEPA have made federal agencies more aware of and sensitive to the environmental consequences of their actions and programs.
69. 16 U.S.C. §§ 661-667d (1982). The Act requires that recommendations from wildlife agencies be made a part of any report submitted by the agency responsible for construction.

70. *E.g.*, *Environmental Defense Fund v. Froehlke*, 473 F.2d 346 (8th Cir. 1972).
71. *See* R. Liroff, *A National Policy for the Environment: NEPA and its Aftermath* (1976); M. Bean, *supra* note 1 at 195-202.
72. 30 U.S.C. § 1344 (1986 and Supp. 1988).
73. The Rivers and Harbors Act of 1899, ch. 42 § 10, 30 Stat. 1151 (codified at 33 U.S.C. § 403 (1986)), requires a federal permit for bridges, dams, dikes, causeways and other structures, and the excavation or fill of any navigable water. The express purpose was to protect the navigable capacity of United States waters. The Corps of Engineers, as the permitting authority under the Act, adopted regulations requiring considerations of environmental factors in dredge and fill permit decisions. The regulations were upheld. *Zabel v. Tabb*, 430 F.2d 199 (5th Cir. 1970), cert. denied, 401 U.S. 910 (1971). But the desirability of exercising more comprehensive regulatory authority led to the inclusion of § 404 in the Clean Water Act.
74. The 1972 Amendments to the Clean Water Act define "navigable waters" as "the waters of the United States." 33 U.S.C. § 1362(7). This extended federal jurisdiction to the maximum extent permitted by the commerce clause of the Constitution. *NRDC v. Callaway*, 392 F. Supp. 685 (D.D.C. 1975). Corps regulations extending to wetlands and adjacent areas (33 C.F.R. § 323.2(d)) were applied in *United States v. Riverside Bayview Homes*, 474 U.S. 121 (1985). The agency determines what constitutes waters of the United States subject to regulation based on the nature of the prevailing soils, hydrology and vegetation. *Avoyelles Sportsmen's League v. Marsh*, 715 F.2d 897 (5th Cir. 1983).
75. *E.g.*, *United States v. Byrd*, 609 F.2d 1204 (7th Cir. 1979) (placing fill in small inland lake).
Congress enacted exemptions to the § 404 permit requirement for activities such as: "normal farming, silviculture, and ranching activities," maintenance of existing structures, maintenance of farm and stock ponds, irrigation ditches and drainage ditches, etc. These exemptions are narrowly construed. *E.g.*, *United States v. Akers*, 785 F.2d 814 (9th Cir. 1986) (exemptions do not extend to construction of dike and drainage of area to be farmed).
76. 40 C.F.R. § 230.10(a)(1987).
77. *E.g.*, *Riverside Irrigation Dist. v. Andrews*, 758 F.2d 508 (10th Cir. 1985) (otherwise nonfederal water project must satisfy requirements of Endangered Species Act); see *supra* note 61. In addition, states may veto a § 404 permit for noncompliance with state water quality standards

and other substantial requirements. See 33 U.S.C. § 1341; 33 C.F.R. §§ 320.3(a), 325.2(b)(1).

78. Input from the U.S. Fish and Wildlife Service comes in the form of a report recommending what action the Corps may take, see *supra* note 69, and biological assessments under Endangered Species Act, see *supra* note 61.

The Corps balances "[t]he benefits which reasonably may be expected to accrue from the proposal. . . against its reasonable foreseeable detriments." 33 C.F.R. § 320.4(1987). In this process the Corps considers:

[a]ll factors which may be relevant to the proposal . . . including the cumulative effects thereof. Among those are conservation, economics, aesthetics, general environmental concerns, wetlands, cultural values, fish and wildlife values, flood hazards, floodplain values, land use, navigation, shore erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food and fiber production, mineral needs, considerations of property ownership, and, in general, the needs and welfare of the people.

79. 30 U.S.C. § 1344(c)(1986). This authority has rarely been exercised. But see *Bersani v. EPA*, 674 F. Supp. 405 (N.D. N.Y. 1987) (denying a permit for a major shopping center that would involve filling wetlands).