

rule” to reduce the monetary penalty by 50 to 75 percent right off the top. Citizens are often excluded from EPA decision making, even when it affects them. For example, in a federal environmental-impact statement, citizens are not given notice of a preliminary environmental assessment of their neighborhood until after it has been determined, based on this preliminary assessment, whether there are significant environmental impacts that require a full environmental-impact assessment be done or not. Citizens who may care, may know, or may simply want to participate are not given an opportunity until the process is far advanced.

Because the EPA is tied tightly to the specifics of each piece of legislation setting environmental policy and mandating its responsibilities, it is difficult for it to strategically plan for future environmental contingencies. This uncertainty makes it difficult for it to work with new, non-legislated ways of approaching environmental controversies, issues, and problems, such as the rising social concern for sustainability. However, the EPA is adaptable to changing political environments. It is exploring supplemental environmental projects (SEPs), begun in the late 1990s, so that convicted polluters can mitigate the damage they have caused in a community. By exploring collaborative, multistakeholder SEPs—SEPs with more than two stakeholders, usually community, industry, environmental, and sometimes labor organizations—the EPA is moving beyond the mandated citizen participation of the 1970s and 1980s and into citizen involvement for long-term environmental planning.

SEE ALSO *Environmental Justice; Environmental Law; Pollution; Risk Assessment.*

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Robert Collin

U.S. FISH AND WILDLIFE SERVICE

In the lands that later became the United States, early European settlers encountered an apparently unlimited supply of wildlife and other natural resources and often had utilitarian, negativistic, and dominionistic views of

wildlife. They embarked on a process of wildlife slaughter and habitat destruction, including deforestation, on a mass scale. That process continued through much of the nineteenth century and caused the local or regional extirpation of many species, including most large predators, white-tailed deer, elk, turkey, waterfowl, and the American bison. The first conservation efforts in the United States occurred at the state level because wildlife was considered a public resource held in trust by the states for the benefit of all the people; this was known as the public trust doctrine. However, individual states struggled to protect wildlife species that crossed state and national boundaries or were in the possession of commercial hunters and trappers.

Vermont was one of the first states to face a landscape stripped of natural resources. Deforestation in that state influenced George Perkins Marsh's *Man and Nature* (1864), which suggested that societal collapse would follow environmental degradation, and led Gifford Pinchot, the first chief of the U.S. Forest Service, to craft an anthropocentric and utilitarian ethic for conservation in the United States. That ethic defined wise use of natural resources as generating “the greatest good for the greatest number for the longest time” (Pinchot 1947, pp. 325–326) and provided the context for the emergence of the U.S. Fish and Wildlife Service (USFWS).

EARLY HISTORY OF THE USFWS

The roots of the USFWS can be traced to 1871, when Congress created the U.S. Commission on Fish and Fisheries to protect rapidly disappearing food fish stocks. A parallel effort to study the food habits of migratory birds led to the establishment of the Office of Economic Ornithology in the Department of Agriculture in 1885. The U.S. Commission on Fish and Fisheries was renamed the Bureau of Biological Survey in 1905 and was given management responsibility for the U.S. wildlife refuge system that started with Theodore Roosevelt's establishment of the first Federal Bird Reservation on Pelican Island, Florida, in 1903. In 1939 the Fisheries and Biological Survey bureaus were transferred to the Department of the Interior.

In 1940 those bureaus were combined into the Fish and Wildlife Service, and in 1956 the Fish and Wildlife Act created the USFWS. During the early years the responsibilities of the USFWS reflected its utilitarian roots: It focused on enforcing the law, regulating trade, and conducting research. Those activities were intended to protect and manage game species and minimize conflicts between wildlife and agriculture. The utilitarian approach to conservation was largely responsible for the restoration of elk, white-tailed deer, the American bison, turkey, bear, and many other species throughout the United States.

CHANGES IN THE ROLE OF THE USFWS

The role of the USFWS changed drastically in the 1960s and early 1970s, when the environmental and animal rights movements began to flourish. During that period the environmental ethics guiding wildlife conservation diverged from the early anthropocentric and utilitarian focus articulated by Pinchot. Aldo Leopold's *Sand County Almanac* (1949) helped promote an ecocentric ethic—the land ethic—for wildlife conservation. The more ecocentric ethical views prevalent in the environmental movement played a role in the establishment of the Endangered Species Act (ESA) of 1973. The ESA prohibited the importation, exportation, taking, or possession of a registered endangered species and gave USFWS responsibility for listing of, recovery planning for, education about, and delisting of species.

The ESA protected animal and plant species without consideration of the economic, cultural, and social preferences of humans. The ecocentric approach to wildlife conservation taken by USFWS was responsible for some notable conservation successes, including the delisting of the American alligator, gray wolf, grizzly bear, and bald eagle. However, the tendency to subordinate human interests to the protection of listed endangered species led to conflicts between the USFWS and several rural communities. Conflicts surrounding the spotted owl in the Pacific Northwest and the coho salmon in the Klamath Basin in Oregon were among the most publicized. Those conflicts raised questions about how to integrate the interests of stakeholders at the local, regional, and national levels. In some cases the conflicts threatened wildlife management objectives by alienating private landowners. Critics of the ecocentric focus of the USFWS argued that fear of ESA-related restrictions was a disincentive for wildlife conservation on private land and might motivate landowners to get rid of threatened species before restrictions on property uses were mandated. Landowners in some areas did restrict access to their land in efforts to prevent the discovery of endangered species.

REESTABLISHMENT OF THE UTILITARIAN PERSPECTIVE

In the mid-1990s the ethical perspective of USFWS started moving back toward anthropocentric utilitarianism. Unlike the earlier shift to ecocentrism, this move was tied to presidential influence over the USFWS rather than to a national social movement. In the 1992 presidential race Bill Clinton promised to move the country beyond a false choice between environmental protection and economic growth. His administration pushed the Habitat Conservation Planning process to achieve that



Fish and Wildlife Service Officer with Illegal Trade Items. *The responsibilities of the USFWS during their early years involved enforcing the law, regulating trade, and conducting research. Today, despite a period of a more ecocentric approach that emerged in the 1960s and 1970s, the USFWS continues to take an utilitarian approach to wildlife preservation and conservation. PHOTO BY CARL ZITSMAN/U.S. FISH AND WILDLIFE SERVICE.*

objective. Habitat Conservation Plans provided a loophole in the absolute rule of not harming endangered species. With an approved Habitat Conservation Plan, landowners, government entities, and corporations could kill individuals from a population of endangered species under the protection of incidental take permits. The 14 incidental take permits issued before the 1992 presidential race paled in comparison to the 425 approved as of July 2003.

The shift toward anthropocentric utilitarianism in USFWS operations expanded with the 1995 Safe Harbor Program and the 2007 Endangered Species Recovery Credits system. The Safe Harbor Program exempts landowners from further restrictions on their land when they agree to manage the land for endangered wildlife, and the

Credits system allows private and public entries to harm endangered species in exchange for purchasing conservation credits that require proper habitat management elsewhere.

This move back to anthropocentric utilitarianism has increased the ability of the ESA to accommodate human interests but could weaken protection for endangered species. Critics argue that sidestepping the exclusive focus on biotic integrity will allow human interests to displace the needs of other species.

SEE ALSO *Conservation; Environmental Law; Forests; Habitat Loss; Leopold, Aldo; Resource Management; Utilitarianism.*

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U.S. FOOD AND DRUG ADMINISTRATION

The U.S. Food and Drug Administration (FDA) is responsible for protecting the public health by assuring the safety, efficacy, and security of human and veterinary drugs, the nation's food supply, medical devices, cosmetics, and several other products. The FDA is also responsible for advancing the public health by helping to speed innovations that make medicines and foods more effective, safe, and affordable (FDA Mission Statement). In the area of food safety, the FDA executes the Federal Food Drug and Cosmetic Act (FFDCA) (21 U.S.C. §§ 301–399) by setting standards for food and food products, inspecting food production and distribution facilities, and ensuring proper labeling. In the area of animal health, the FDA is responsible for regulating the manufacture and distribution of food additives used in animal feed and of drugs that will be given to animals.

Under this diverse portfolio of products and activities, the FDA also has a mandate for environmental protection. The FDA is required under the National Environmental Policy Act (NEPA) (21 C.F.R. Part 25) to take environmental considerations into account in all final agency actions. For example, during the review of animal drugs under FFDCA, the FDA considers the excretion of drugs in animal waste and the effects of drug residues on the environment. NEPA requires that U.S. agencies include an environmental impact statement (EIS) with every major federal action that significantly affects the quality of the human environment. Environmental assessments (EAs) are prepared to help determine if an action will have a significant impact on the environment and whether an EIS is required.

The FDA is often faced with situations in which goals of human and animal health protection, speeding innovation, and environmental protection are at odds. Decisions under NEPA do not require that the action most beneficial to the environment be taken. For example, the FDA might be faced with a policy choice about whether to accept environmental harm from its actions to protect human or animal health or to make foods safer or more affordable. A contentious instance of this dilemma is the approval of the subtherapeutic use of antibiotics in feed to promote animal growth during agricultural production. Environmental and consumer groups have argued for a precautionary approach to limit or ban the use of antibiotics in animal feed. Concerns include the harmful effects of antibiotic residues on native species in the environment and the increased development of resistant microorganisms that cause disease.

The ethical principles of beneficence (doing good) and nonmaleficence (doing no harm) are prominent when the FDA makes decisions in the face of competing goals or interests. The distribution of risks and benefits to various stakeholder groups—the environment, animals, and humans—is an important consideration. Equity in decision making comes into play when the FDA considers this distribution. Integrity, autonomy, and justice are also prominent in how the agency makes decisions. For example, transparency in decision making, avoiding conflicts of interest in conducting safety studies, and giving consumers or users of products the right to know and choose based on good information are manifestations of these principles in the FDA's regulatory context.

An example of an emerging issue that spans environmental protection and the FDA's jurisdiction is the agency's proposal to regulate genetically engineered animals as new animal drugs (NADs) under the FFDCA. The claim by the agency is that the introduced and engineered gene is the "drug," because it alters the structure or function of the body of animals. The FDA has