

Federal Laws Protecting Environmental Quality

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Federal environmental laws can influence farmers' decisions about production practices or input use. These laws use a variety of mechanisms for protecting the environment, ranging from voluntary incentives to regulatory approaches.

Introduction

Farmers face a complex set of factors when they make decisions about farm management and conservation practices. The vagaries of weather and markets introduce uncertainty into farmers' operations. The use of conservation practices may also introduce uncertainty about net returns while producing benefits enjoyed mostly off the farm. Decisions made by farmers on how and where to produce commodities can be influenced by policies and programs for protecting the environment. USDA has several major programs for providing financial and technical assistance to farmers for protecting water quality, soil quality, and wildlife habitat (see AREI Chapters 5.2, 5.3, 5.4, 5.5, and 5.6).

Farmers can also be influenced by other Federal environmental protection policies and programs that may restrict certain production practices. This chapter will focus on these programs. The U.S. Environmental Protection Agency is chiefly responsible for administering these policies and programs. The **Clean Water Act** (1972) is the major law protecting water quality. Several CWA programs address "nonpoint-source" pollution, which is the most prevalent type of pollution associated with agriculture (see Chapter 2.2, "Water Quality Impacts of Agriculture").

The Nonpoint Source Program (Section 319) requires States to develop nonpoint-source management programs. Nonpoint-source control plans can include State regulatory measures, but usually emphasize voluntary actions like those used in USDA conservation programs. Implementation grants to States and tribes (\$200 million in FY2005) fund projects like installation of best management practices (BMPs) for animal waste; design and implementation of BMP systems for stream, lake, and estuary watersheds; and basin-wide landowner education programs. The Clean Water State Revolving Fund (CWSRF), created by Congress to fund the construction of water treatment plants, can be used by States to provide reduced-rate loans for water quality projects included in the State nonpoint-source plan. Fifteen States have used CWSRF for funding waste management systems, manure spreaders, conservation tillage equipment, irrigation equipment, filter strips, and streambank stabilization.

Contents

Chapter 1: Land and Farm Resources
Chapter 2: Water and Wetland Resources
Chapter 3: Knowledge Resources and Productivity
Chapter 4: Agricultural Production Management
Chapter 5: Conservation and Environmental Polices
• 5.1 Conservation Policy Overview
• 5.2 Land Retirement Programs
• 5.3 Compliance Provisions for Soil and Wetland Conservation
• 5.4 Working-Land Conservation Programs
• 5.5 Conservation on Private Grazing Lands
• 5.6 Farmland Protection Programs
• 5.7 Federal Laws Protecting Environmental Quality
Appendix: Data Sources

Water pollution from some animal feeding operations is treated as a point source under the Clean Water Act (see Chapter 4.5, “Animal Agriculture and the Environment”). Confined animal feeding operations meeting certain size thresholds or other conditions fall under the National Pollution Discharge Elimination System (NPDES, Section 402). These operations, known as Concentrated Animal Feeding Operations (CAFOs), must obtain NPDES permits that specify standards for the production area (i.e., housing, waste storage) and for the land where wastes are applied. CAFOs must also implement a nutrient management plan for animal manure applied to land, a significant change for Federal water quality laws.

As a form of nonpoint pollution, nutrient runoff from fields has traditionally been addressed with voluntary approaches. This is the first time that a nonpoint source of water pollution has been regulated at the Federal level. EPA estimates that up to 15,500 operations are covered by the CAFO regulations. These regulations may impose significant manure management costs in areas where land for spreading manure is scarce. These costs could influence location decisions for large operations and spur the development of alternative uses for manure. EPA encourages CAFOs to seek financial and technical assistance from USDA to help them meet manure management requirements.

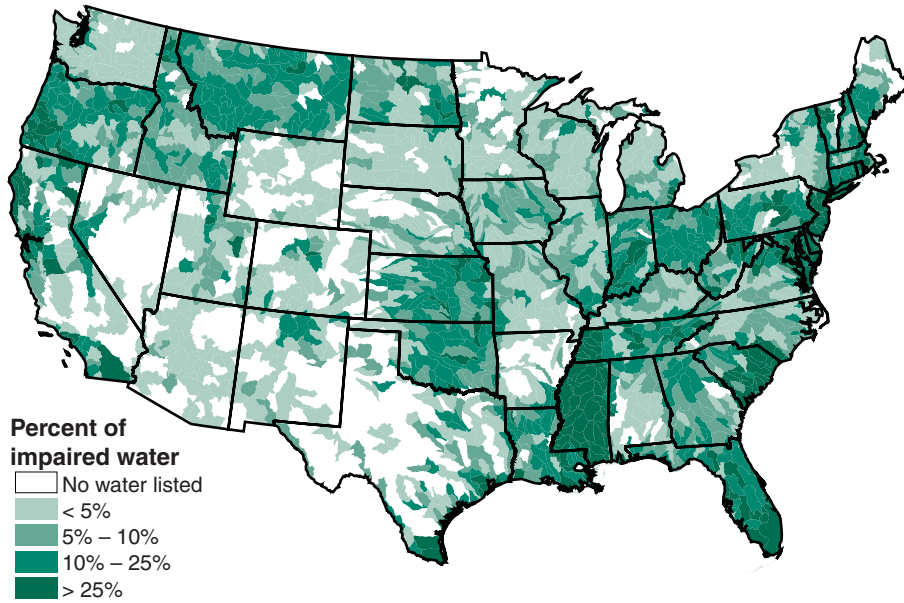
The **Total Maximum Daily Load** provisions of the Clean Water Act are intended to be the second line of defense for protecting the quality of surface water resources. When technology-based controls are inadequate for water to meet State quality standards, Section 303(d) of the Clean Water Act requires States to identify those waters and to develop total maximum daily loads (TMDL). A TMDL is the maximum amount of a pollutant that a water body can receive and still meet water quality standards, and an allocation of that amount to all the pollutant’s sources. States must submit to EPA a list of impaired waters and the cause of the impairment. More than 20,000 such waters have been identified as impaired under Section 303(d) (fig. 5.7.1).

Among the top impairments are sediment, nutrients, and pathogens. States, territories, and authorized tribes are responsible for establishing a program to meet TMDLs. Point-source reductions to meet wasteload allocations are achieved through NPDES permits. Agricultural nonpoint sources are generally addressed through voluntary programs, but States may use regulations. TMDLs have not generally been used to regulate agricultural production, but particular management practices are required on agricultural operations in three TMDL-designated watersheds in California.

Section 404 of the Clean Water Act establishes a program for protecting wetlands. It regulates the discharge of dredged and fill material into U.S. waters, including wetlands, and is a key policy for meeting the “no net loss” goal for wetland acreage. Section 404 contains a review process that handles small conversions through general permits. More thorough, qualitative reviews are conducted for major proposals affecting wetlands. Activities regulated under this program include fills for development, water resource projects (such as dams

Figure 5.7.1

Impaired watersheds, 2000



Source: U.S. EPA.

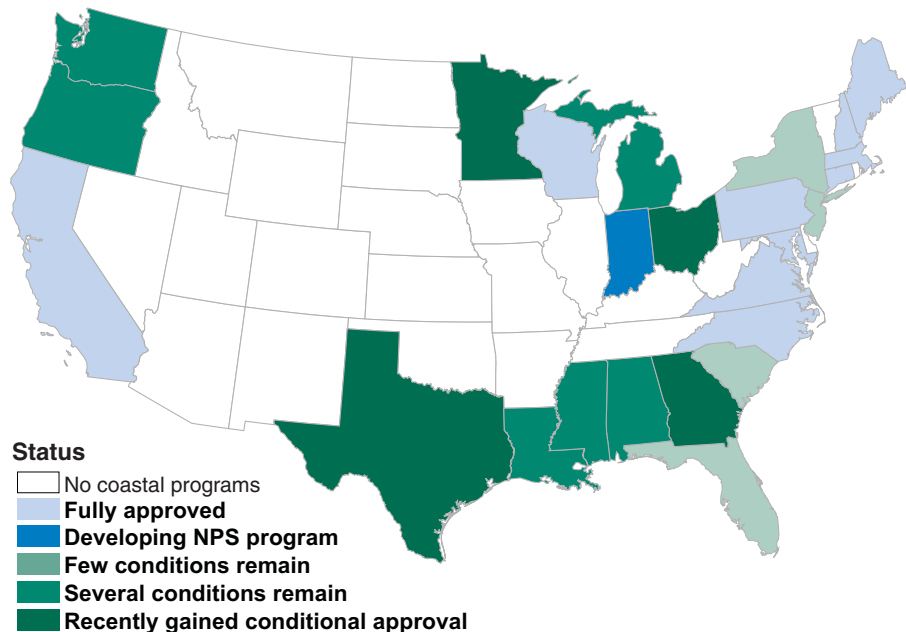
and levees), infrastructure development (such as highways and airports), and conversion of wetlands to uplands for farming and forestry. Under the law, a permit is required to fill a wetland, and is granted only if impacts to wetlands are minimized. Compensation for any unavoidable impacts is made through wetland restoration elsewhere. The U.S. Army Corps of Engineers administers the program, while EPA develops and interprets environmental criteria used in evaluating permit applications. Ongoing farming activities are generally exempt from Section 404, but filling wetlands to create new farmland would require a permit.

The Coastal Zone Management Act Reauthorization Amendments (CZARA) of 1990 added nonpoint-source water pollution requirements to the Coastal Zone Management Act of 1972. CZARA requires that each State and territory with an approved coastal zone management program submit to EPA and to the National Oceanic and Atmospheric Administration a program to implement management measures for nonpoint-source pollution to restore and protect coastal waters. A list of economically achievable management measures for controlling agricultural nonpoint-source pollution is part of each State's management plan. States can initially use voluntary incentive mechanisms such as education, technical assistance, and financial assistance, but may enforce management measures if voluntary approaches fail. Currently, 34 coastal States and territories have developed nonpoint-source pollution control plans (fig. 5.7.2).

The Safe Drinking Water Act (SDWA) of 1974 requires the EPA to set standards for drinking-water quality and requirements for water treatment by public water systems. States are required to develop Source Water Assessment Programs to assess the areas serving as public sources of drinking water in order to identify potential threats and to initiate protection

Figure 5.7.2

Coastal nonpoint-source pollution control programs, 2005



Source: U.S. Department of Commerce, NOAA.

efforts. Each assessment must include four elements: (1) delineating (or mapping) the source water assessment area, (2) conducting an inventory of potential sources of contamination in the delineated areas, (3) determining the susceptibility of the water supply to those contamination sources, and (4) releasing the results of the determinations to the public. Under the 1996 amendments, EPA is required to establish a list of contaminants for consideration in future regulation. The Drinking Water Contaminant Candidate List, released in March 1998, lists chemicals by priority for (a) regulatory determination, (b) research, and (c) monitoring. Several agricultural chemicals—including metolachlor, metribuzin, and the triazines—are among those to be considered for potential regulatory action. Also under the 1996 amendments, water suppliers are required to inform their customers about the levels of certain contaminants (and associated EPA standards), and the likely sources of the contaminants.

The **Clean Air Act (CAA)** of 1970 sets limits on how much of a pollutant can be in the air anywhere in the United States. Under Section 110, each State must develop a State Implementation Plan (SIP) to identify the sources of air pollution and to determine what reductions are required to meet Federal air quality standards. A SIP is a collection of the regulations a State will use to clean up polluted areas. Pollutants regulated under the CAA are called criteria air pollutants. Permissible emission levels are generally based on health concerns, but visibility standards may also apply. The criteria pollutant most associated with agriculture is particulates. Where airborne dust from fields, burning crop residues, or other sources exceeds permissible levels, States must take steps to reduce emissions. Airborne dust from fields in Washington and particulates from burning rice straw in California have led to SIPs for controlling emissions from agricultural fields.

Ammonia is a precursor for fine particulates in the atmosphere, and confined animal operations are the source for over 70 percent of ammonia emissions in the United States. California has implemented State regulations for reducing ammonia emissions from dairy operations that were affecting air quality in heavily populated areas downwind. EPA recently revised the particulate matter standard to control for fine particulates. This could result in States' requiring animal feeding operations to control ammonia emissions.

The **Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA)** of 1947 provides direct controls over the sale and use of pesticides. Under FIFRA, all pesticides must be approved by EPA through a mandatory registration process. Products determined to pose an unacceptable risk to human health or to the environment can be denied registration, thereby preventing their distribution and use. Fifty pesticides and pesticide formulations have been banned under FIFRA as of 2004.

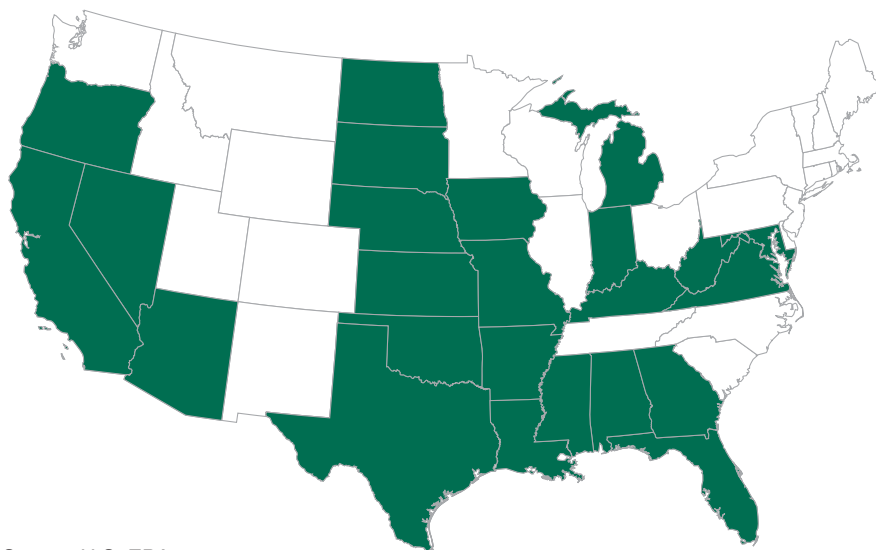
In 1996, the **Food Quality Protection Act** amended FIFRA to eliminate inconsistencies between it and the Federal Food, Drug, and Cosmetic Act of 1938 (which regulates pesticide residues on food). The amendments allow EPA to move quickly to suspend the use of a pesticide to prevent serious risks to human health and the environment. The amendments also provide incentives for the development and maintenance of minor use registrations. Minor uses of pesticides are defined as uses for which pesticide product sales do not justify the costs of developing and maintaining EPA registrations. Lack of registrations can limit the pest control tools available to the growers of "minor" crops (including many fruits and vegetables).

The **Endangered Species Act (ESA)** of 1973 conserves the ecosystems upon which endangered and threatened species (wildlife and plants) depend. To do so, the law regulates the modification or degradation of habitat deemed critical for species survival. All Federal agencies are required to protect endangered species and protect their habitat. Private landowners who wish to conduct activities on their land that might incidentally harm wildlife listed as endangered or threatened are required to obtain an incidental take permit from the U.S. Fish and Wildlife Service. To obtain a permit, the landowner must develop a Habitat Conservation Plan. The plan is designed to offset any harmful effects the proposed activity might have on the species. Under the Act, EPA must also ensure that the use of pesticides it registers will not result in harm to any species listed as endangered and threatened by the U.S. Fish and Wildlife Service, or to habitat critical to those species' survival. EPA's Office of Pesticide Programs initiated the voluntary Endangered Species Protection Program in 1988 to protect endangered and threatened species from harm due to pesticide use. Labels of certain pesticides contain information to help users minimize the risk of pesticide use in critical habitat areas. At least 1 county in 24 States has pesticide use restrictions under this program (fig. 5.7.3).

The Endangered Species Act may have a large impact on agriculture through the supply of irrigation water from Federal irrigation projects. The Bureau of Reclamation has taken measures to protect the flow of rivers supporting endangered species, such as salmon. Sufficient flow for endangered species can reduce the irrigation water available to farmers from Federal irrigation projects, with obvious implications for crop production.

Figure 5.7.3

States with pesticide use limitations under the Endangered Species Protection Program, 2005



Source: U.S. EPA.

For example, the ESA triggered a complete shutdown of irrigation water to more than 1,300 farms and ranches in the Klamath River Basin during a drought in the spring of 2001. Conflicts over the ESA’s implementation in the irrigated West will continue to be the source of many legal actions.

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), commonly known as Superfund, was enacted in 1980 to provide broad Federal authority to respond to releases of hazardous substances that might endanger public health. CERCLA requires reporting to EPA when a facility releases more than a “reportable quantity” (100 pounds in a 24-hour period) of a hazardous substance. EPA is authorized to require long-term remedial action that permanently and significantly reduces threats to public health. Originally focused on hazardous wastes from industrial plants, the increased size and consolidation of animal feeding operations has raised the possibility that the emission of substances like ammonia and hydrogen sulfide from such operations may be subject to the notification provisions of CERCLA (U.S. EPA, 2005).

Role of USDA Conservation Programs

Federal environmental laws cover many aspects of agricultural production. Laws aimed at preserving habitat (Section 404 of the Clean Water Act, Endangered Species Act) or at controlling the use of toxic agricultural inputs (FIFRA) are the source of direct constraints on agriculture at the Federal level. Those Federal laws directed at reducing pollution to the environment (i.e., Clean Water Act, Clean Air Act, Coastal Zone Management Act) have generally not constrained agriculture directly, opting instead for voluntary approaches overseen primarily by the States. Constraints on agricultural production to reduce pollution emissions are more likely to arise at the State level in response to local problems.

USDA's conservation programs can help farmers respond to resource issues subject to regulation. For example, being in a 303(d) impaired watershed is a screening advantage in applications for EQIP (see Chapter 5.4, "Working-Land Conservation Programs"). EPA encourages CAFOs to seek financial and technical assistance from USDA to help them implement Clean Water Act provisions, and 60 percent of EQIP's funding is earmarked for animal feeding operations. USDA also helps farmers reduce air pollution in dust and ozone nonattainment areas in California with a cost-share program funded through EQIP. The Wildlife Habitat Incentives Program is being used to help landowners protect habitat for endangered species. The Conservation Reserve Program (see Chapter 5.2, "Land Retirement Programs") and Grassland Reserve Program both consider potential benefits to endangered species in the selection of land offered for enrollment.

References

U.S. Environmental Protection Agency (2005). *Animal Feeding Operations Air Quality Compliance Agreement Fact Sheet*. Available at www.epa.gov/compliance/resources/agreements/caa/cafo-fcsht-0501.html