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Summary

As the U.S. and global economies continue to struggle, some inside and outside of Congress have expressed concern about how environmental regulation may stifle growth and productivity. Much of the criticism has focused on environmental regulations promulgated by the Environmental Protection Agency (EPA). Some claim that EPA is overreaching its regulatory authority and imposing costly and burdensome requirements on society. In general, the agriculture community, among others, has been vocal in its concerns, contending that EPA appears to be focusing some of its recent regulatory efforts on agriculture. Many public health and environmental advocates, on the other hand, support many of EPA's overall regulatory efforts and in some cases argue that EPA has not taken adequate action to control the impacts of certain agricultural activities.

Most environmental regulations, in terms of permitting, inspection, and enforcement, are implemented by state and local governments, often based on federal EPA regulatory guidance. In some cases, agriculture is the direct or primary focus of the regulatory actions. In other cases, agriculture is one of many affected sectors. Traditionally, farm and ranch operations have been exempt or excluded from many environmental regulations. Given the agricultural sector's size and its potential to affect its surrounding environment, there is interest in both managing potential impacts of agricultural actions on the environment and also maintaining an economically viable agricultural industry. Of particular interest to agriculture are a number of regulatory actions affecting air, water, energy, and pesticides.

Agricultural production practices from both livestock and crop operations generate a variety of substances that enter the atmosphere, potentially creating health and environmental issues. Recent actions by EPA to regulate emissions and pollutants have drawn criticism, including greenhouse gas emission reporting and permitting requirements, and National Ambient Air Quality Standards (NAAQS) related to particulate matter (commonly referred to as dust).

Water quality issues also are of interest to the agricultural industry, as water is an input for production and can also be degraded as a result of production through the potential release of sediment, nutrients, pathogens, and pesticides. Federal environmental laws largely do not regulate agricultural actors, in many cases giving responsibilities to the states. One exception is large concentrated animal feeding operations (CAFOs), which are subject to federal permitting requirements. Constraints on agricultural production to reduce pollution discharges typically arise at the state level in response to local concerns, and how to manage agricultural sources has been a prominent issue in several locations, such as the Chesapeake Bay and Florida. A proposed federal rule to define "waters of the United States" has drawn criticism from agriculture and others.

Changes in energy policy, namely increased bioenergy production continue to be important to many in the agricultural industry, based on the potential of corn-based biofuel production to contribute to the nation's energy supply through both the renewable fuel standard (RFS) and the increased percentage of ethanol in gasoline (E15).

Hundreds of chemical products are available to repel or kill "pests" that affect agricultural production. The federal regulation of these pesticides includes registering and restricting their use. The risks associated with agricultural pesticide use and possible impacts on human health and the environment also have led to recent federal regulatory reviews.

Contents

Introduction.....	1
Report Content and Caveats	2
Report Organization	3
Air.....	3
Mandatory Reporting of Greenhouse Gases (GHGs).....	4
GHG Emissions Tailoring Rule and the “Cow Tax”	6
Reduction of Emissions from Gasoline/Diesel Powered Stationary Engines.....	8
National Ambient Air Quality Standards (NAAQS)—Particulate Matter.....	9
National Ambient Air Quality Standards (NAAQS)—Ozone	13
EPCRA and CERCLA Reporting Requirements	14
Water.....	15
Implementation of Existing Clean Water Act Permit Requirements for CAFOs	16
Chesapeake Bay Protection and Restoration.....	18
Florida Nutrient Water Quality Standards	21
Defining “Waters of the United States”	23
Spill Prevention, Control, and Countermeasure (SPCC) Plans	25
Energy.....	28
Renewable Fuels Standard (RFS2) Rule	28
E15 Waiver Petition.....	31
Pesticides	33
Clean Water Act Permits for Pesticide Application.....	34
Pesticide Spray Drift.....	36
Atrazine	38
Pesticide Registrations and the Endangered Species Act (ESA).....	39

Figures

Figure 1. Status of PM ₁₀ Nonattainment Areas	11
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Tables

Table 1. CRS Specialists on Environmental Issues	3
Table 2. EPA Animal Population Threshold Below Which Facilities Would Not Be Required to Report GHG Emissions.....	6

Contacts

Author Contact Information.....	42
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Introduction

A healthy agricultural industry and a healthy environment are both important to the nation. However, agricultural production can have varying impacts on the environment. The use of both natural resources (e.g., soil and water) and synthetic inputs (e.g., fertilizers and pesticides) in agricultural production can sometimes create a negative impact on the surrounding ecosystem. For example, soil erosion, farm chemical runoff, and overgrazing can affect water and air resources. Converting grassland prairies and wetlands to crop production can impact wildlife populations. The magnitude of these environmental impacts varies widely across the country and changes over time.

Traditionally, farm and ranch operations have been exempt or excluded from many federal environmental statutes and regulations, and some point out that the relative number of environmental regulations affecting agriculture is small compared to other industries.¹ Historically, environmental policies have focused on large industrial sources such as factories and power plants, because attempting to regulate numerous individual crop and livestock operations can be a challenge for government regulators. Therefore, the current federal farm policy addressing environmental concerns is in large part voluntary; that is, it seeks to encourage agricultural producers to adopt conservation practices through economic incentives. Because natural resources are a major input into most agricultural production, many in agriculture cite the health of the surrounding environment as being important for long-term productivity. However, given the agricultural sector's size in the landscape² and its potential to affect its surrounding environment, there is interest in both managing potential impacts of agricultural actions on the environment and also maintaining an economically viable agricultural industry.

The U.S. Environmental Protection Agency (EPA) is the primary federal authority for administering environmental protection policies, while the U.S. Department of Agriculture (USDA) is the primary federal authority for incentivizing agricultural production. Most environmental regulation, in terms of permitting, inspection, and enforcement, is done by state and local governments, typically based on policies administered by the EPA. USDA provides both educational outreach and technical and financial assistance opportunities for producers to implement environmentally sustainable practices.³ While many of these voluntary programs and policies have been in place for decades and have had considerable success, some question whether a strictly voluntary approach to agricultural conservation generates sufficient environmental gains.⁴ EPA, on the other hand, has recently received criticism from some lawmakers and industry leaders for appearing to focus some of its recent regulatory efforts on agriculture. Some claim EPA has overreached its regulatory authority. In general, agricultural industry groups, among others, have been vocal in their displeasure with recent EPA regulatory proposals and the costs associated with protecting public health and the environment. Others,

¹ J. B. Ruhl, "Farms, Their Environmental Harms, and Environmental Law," vol. 27, no. 2 (2000), pp. 263-350.

² A total of 1.9 billion acres of land and water cover the contiguous 48 states, of which 71% is non-federal rural land (nearly 1.4 billion acres). Non-federal rural lands are predominantly rangeland (409 million acres), forest land (406 million acres), and cropland (357 million acres). Source: USDA, NRCS, *2007 National Resources Inventory*, Summary Report, Washington, DC, December 2009, p. 6, http://www.nrcs.usda.gov/technical/NRI/2007/2007_NRI_Summary.pdf.

³ For more information, see CRS Report R40763, *Agricultural Conservation: A Guide to Programs*.

⁴ Michelle Perez, Craig Cox, and Ken Cook, *Facing Facts in the Chesapeake Bay*, Environmental Working Group, September 2009, <http://www.ewg.org/files/chesapeake-bay-pollution.pdf>.

such as environmental groups, have supported some of the regulatory actions and in some instances voiced concerns that the federal actions may not go far enough in protecting public health and the environment, prompting some lawmakers offer statements supporting various EPA regulatory efforts.

Criticisms of the regulatory actions are reflected in recent legislative proposals that would restrict or prohibit certain actions.⁵ Beyond the criticism of individual regulations of EPA and other agencies, there also are calls for broad regulatory reforms, for example, to reinforce the role of economic considerations in agency decision making or to increase Congress's role in approving or disapproving regulatory decisions. Congress will likely continue to give attention to EPA's and other federal agencies' roles in regulating environmental protection. Both the Senate and House Committees on Agriculture have shown particular interest in EPA's actions and conducted oversight hearings on regulatory impacts on agriculture during the 112th Congress.⁶

Report Content and Caveats

This report provides the background, status, and issues related to selected environmental regulations or initiatives possibly affecting agriculture that have drawn attention in and beyond Congress.⁷ An issue's inclusion in this report is not intended to suggest or imply that the regulation or action has either a beneficial or harmful effect on agriculture or to what degree. Similarly, regulatory actions not included in this report do not indicate the lack of potential impact on the agriculture sector.

This report only addresses federal regulatory actions. In many cases, constraints on agricultural production to reduce pollution emissions arise at the state level in response to local concerns. State and local regulations are not specifically included in this report, but may be discussed generally where appropriate. Actions considered voluntary or in response to regulatory actions are also not included. This means that many USDA programs and initiatives, which offer funding to agricultural producers mitigate environmental impacts, are not discussed in this report.

The majority of the regulations discussed in this report are administered by EPA, though not all. In some cases, agriculture is the direct or primary focus of the regulatory actions. In other cases, agriculture is one of many affected sectors. In many cases, for a regulation to become effective, EPA rules must be adopted by states to which the program has been delegated (e.g., most environmental permitting programs are delegated to qualified states). Moreover, many states require that the state legislature review new regulations before the new rules would take effect. The general regulatory development and compliance process can be tedious and complex. In some cases, the promulgation and implementation of regulations may take years.⁸ In the case of

⁵ For example, the House-passed long-term continuing resolution H.R. 1, which was not enacted, is discussed further below. For more information, see CRS Report R41698, *H.R. 1 Full-Year FY2011 Continuing Resolution: Overview of Environmental Protection Agency (EPA) Provisions*.

⁶ For example, U.S. Congress, Senate Committee on Agriculture, Nutrition, and Forestry, *Oversight Hearing to Examine the Impact of EPA Regulation on Agriculture*, 111th Cong., 2nd sess., September 23, 2010; and U.S. Congress, House Committee on Agriculture, *Public Hearing to Review the Impact of EPA Regulation on Agriculture*, 112th Cong., 1st sess., March 10, 2011.

⁷ For additional information regarding EPA regulations beyond those affecting agriculture, see CRS Report R41561, *EPA Regulations: Too Much, Too Little, or On Track?*.

⁸ Some regulations do not become effective immediately. In some cases, the regulation takes effect over time or gradually expands to affect more individuals. Virtually all major EPA regulatory actions are subjected to court (continued...)

some environmental regulations, the agencies must adhere to court-ordered requirements and deadlines.⁹

This report has been revised and updated a number of times since its initial release in early 2011. A few of the initial issues covered in this report are no longer congressionally active, either due to enacted legislation or because of a change in Administration priorities. These issues have been removed and new emerging issues have been added. Congressional interest in environmental regulations affecting agriculture remains and oversight is ongoing. Legislative action and oversight is discussed within each of the sections below.

Report Organization

The remainder of this report is organized under four broad subheadings: Air, Water, Energy, and Pesticides. Each section includes selected regulatory actions and provides background information and statutory authority, followed by the current status of the rule or regulatory action and issues identified or raised by the agricultural community regarding the regulatory action. Finally, each section identifies the appropriate CRS specialist for additional information; these contacts are also listed in **Table 1**.

Table 1. CRS Specialists on Environmental Issues

Issue Area	CRS Specialist	Contact Information
Voluntary agriculture conservation	Megan Stubbs	mstubbs@crs.loc.gov, 7-8707
Clean Air Act	Jim McCarthy	jmccarthy@crs.loc.gov, 7-7225
Clean Air Act, particulate matter	Rob Esworthy	resworthy@crs.loc.gov, 7-7236
Clean Water Act	Claudia Copeland	ccopeland@crs.loc.gov, 7-7227
Spill prevention	Jonathan Ramseur	jramseur@crs.loc.gov, 7-7919
Agriculture-based biofuels, ethanol	Randy Schnepf	rschnepf@crs.loc.gov, 7-4277
Advanced biofuels	Kelsi Bracmort	kbracmort@crs.loc.gov, 7-7283
Clean Air Act, mobile sources, biofuels	Brent Yacobucci	byacobucci@crs.loc.gov, 7-9662
Pesticides, Toxic Substances Control Act	Jerry Yen	jyen@crs.loc.gov, 7-9113
Endangered Species Act	Lynne Corn	lcorn@crs.loc.gov, 7-7267

Air

Agricultural production practices from both livestock and crop operations generate a variety of substances that enter the atmosphere, potentially creating health and environmental issues. Agriculture’s effect on air quality rose to national importance in the 1930s, when the conversion of native grasslands to cropland caused severe dust storms known as the Dust Bowl. The federal

(...continued)

challenge, which also delays the implementation.

⁹ Court-ordered dates for proposed or promulgated regulations may change. It is not uncommon for EPA to request extensions of time, often due to the need to analyze extensive comments.

response to this phenomenon created many of the conservation outreach and education programs that remain in place today.¹⁰ While dust storms of this proportion are rare in the United States today, issues associated with soil erosion, particulates and farm chemical emissions, and livestock odor are still of concern.

The following section covers five federal regulations relating to air, including

- mandatory reporting of greenhouse gases (GHGs);
- GHG emissions tailoring rule and the “cow tax”;
- reductions of emissions from gasoline/diesel powered stationary engines;
- national ambient air quality standards (particulate matter and ozone); and
- Emergency Planning and Community Right-to-Know Act (EPCRA) and Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) reporting requirements.

Mandatory Reporting of Greenhouse Gases (GHGs)

EPA was required by the FY2008 Consolidated Appropriations Act¹¹ “to develop and publish a ... final rule not later than 18 months after the date of enactment of this Act, to require mandatory reporting of greenhouse gas (GHG) emissions above appropriate thresholds in all sectors of the economy of the United States.”

On October 30, 2009, EPA promulgated the final Greenhouse Gas Reporting Rule.¹² The rule required suppliers of fossil fuels or industrial gases, manufacturers of vehicles and engines, owners or operators of electric power plants, and other—mostly industrial—sources to report their emissions of GHGs to EPA annually, beginning in 2011. Covered entities are required to report to EPA if they emit 25,000 tons or more of carbon dioxide or the equivalent amount of five other GHGs (methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride and other fluorinated gases). About 10,000 facilities in 31 categories of sources were covered by the rule, as promulgated. EPA subsequently added 11 other categories of sources.

Status

The only agricultural sources covered by the Reporting Rule are manure management systems that emit methane and nitrous oxide in amounts greater than the reporting threshold. EPA identified six specific categories of agricultural sources that could be subject to the rule: beef cattle feedlots; dairy cattle and milk production facilities; hog and pig farms; chicken egg production facilities; turkey production; and broilers and other meat type chicken production. In all, EPA estimates that 107 livestock facilities nationwide would need to report under the rule.

¹⁰ For additional information, see CRS Report RL34069, *Technical Assistance for Agriculture Conservation*.

¹¹ P.L. 110-161.

¹² U.S. Environmental Protection Agency, “Mandatory Reporting of Greenhouse Gases,” 74 *Federal Register* 56260, October 30, 2009.

In EPA's FY2010 appropriations act,¹³ however, Congress included language barring EPA from using funds under that act to implement mandatory GHG reporting by manure management facilities. This prohibition has been carried over into FY2011, FY2012, FY2013, and FY2014 by the continuing resolutions and appropriations acts that have funded EPA's continued operation, including P.L. 113-76, the Consolidated Appropriations Act of 2014. Therefore, despite the inclusion of manure management systems among the regulated entities, no agricultural sources are currently required to comply with the Reporting Rule.

Issues

For the facilities required to report, the rule imposes little cost because it only requires monitoring and reporting, and the monitoring does not require direct measurement of emissions. EPA considered requiring direct measurement of GHG emissions from manure management systems, but rejected the approach due to what it termed "the extreme expense and complexity of such a measurement program."¹⁴ Instead, the agency promulgated an approach that allows the use of default factors, such as a system emission factor, for certain elements of the calculation, combined with the use of site-specific data (e.g., number of livestock). EPA estimated the total annual cost of the rule for the 107 potentially affected manure management facilities at \$300,000.

In comments on the proposed rule, a number of agricultural stakeholders noted that agriculture as a whole is responsible for less than 1% of total GHGs emitted and questioned why manure management systems in particular were included in the proposal. Other categories of agricultural sources, such as livestock enteric fermentation and soil management, emit larger amounts of methane and nitrous oxide. EPA explained that it did not include reporting by the other agriculture categories because, for those sources, no direct GHG emission measurement methods are available except for expensive and complex equipment. Using emissions estimates for such sources, instead of direct measurement, would have a high degree of uncertainty and could burden a large number of small emitters.

Commenters also expressed concern about the difficulty that livestock facilities might have in determining whether or not they are subject to the rule. In response, EPA modified the proposal to remove manure sampling requirements and instead will allow facilities to use default values for estimating emissions. The threshold table within the final rule (**Table 2**) identifies animal population threshold levels below which facilities are not required to report emissions.

CRS Contacts

Claudia Copeland, Specialist in Resources and Environmental Policy, 7-7227, ccopeland@crs.loc.gov, or Jim McCarthy, Specialist in Environmental Policy, 7-7225, jmccarthy@crs.loc.gov.

¹³ Department of the Interior, Environment, and Related Agencies Appropriations Act, 2010, P.L. 111-88.

¹⁴ U.S. Environmental Protection Agency, "Mandatory Reporting of Greenhouse Gases," 74 *Federal Register* 56339, October 30, 2009.

Table 2. EPA Animal Population Threshold Below Which Facilities Would Not Be Required to Report GHG Emissions

Animal Group	Average Animal Population (Head)
Beef	29,300
Dairy	3,200
Swine	34,100
Poultry:	
Layers	723,600
Broilers	38,160,000
Turkeys	7,710,000

Source: U.S. Environmental Protection Agency, "Mandatory Reporting of Greenhouse Gases," 74 *Federal Register* 56485, October 30, 2009.

Notes: For all animal groups except dairy, the average annual animal population represents the total number of animals present at the facility. For dairy facilities, the average annual animal population represents the number of mature dairy cows present at the facility. For additional information, see Table JJ-1 of the Environmental Protection Agency, "Mandatory Reporting of Greenhouse Gases," 74 *Federal Register* 56485, October 30, 2009.

GHG Emissions Tailoring Rule and the "Cow Tax"

EPA promulgated standards for GHG emissions from new light duty motor vehicles on May 7, 2010.¹⁵ The standards themselves are not considered particularly controversial, but their implementation, on January 2, 2011, triggered two other requirements of the Clean Air Act (CAA) that apply to stationary sources. The first of these is a requirement that stationary sources emitting any air pollutant "subject to regulation" under the act must obtain a permit under Title V of the CAA (Title V permit) if they emit more than 100 tons per year of the pollutant subject to regulation. Agricultural sources, such as confined animal feeding operations (CAFOs), are among those that could potentially be subject to this permit requirement. Because permit applicants must pay a fee to cover the costs of administering the permit program, many in the agriculture community have referred to this requirement as the "cow tax."

The second requirement triggered by implementation of the motor vehicle standards is a requirement that new or modified stationary sources emitting more than 100 or 250 tons annually of any pollutant subject to regulation under the act must obtain pre-construction permits (referred to as "PSD" permits) and install Best Available Control Technology (BACT) to reduce emissions.

Status

On June 3, 2010, EPA promulgated a rule that sets higher thresholds for the Title V permit and PSD/BACT requirements that would apply to GHG emissions.¹⁶ EPA says that under the

¹⁵ U.S. Environmental Protection Agency, U.S. Department of Transportation, "Light-Duty Vehicle Greenhouse Gas Emission Standards and Corporate Average Fuel Economy Standards; Final Rule," 75 *Federal Register* 25324-25728, May 7, 2010.

¹⁶ U.S. Environmental Protection Agency, "Prevention of Significant Deterioration and Title V Greenhouse Gas Tailoring Rule; Final Rule," 75 *Federal Register* 31514, June 3, 2010.

promulgated rule, the agency has not identified any agricultural sources that would be required to obtain permits for GHG emissions, and therefore none would be subject to BACT requirements.¹⁷

Under the rule, called the GHG “Tailoring Rule,” the threshold initially is annual emissions of 75,000 tons of carbon dioxide equivalents, not 100 or 250 tons as required for other pollutants by the PSD and Title V permits. With this threshold, the nation’s largest GHG emitters, including power plants, refineries, cement production facilities, and about two dozen other categories of sources (an estimated 17,000 facilities in all, or nearly 70% of the nation’s largest stationary source GHG emitters), are the only sources required to obtain permits. Farms, smaller businesses, and large residential structures (about 6 million sources in all these categories), which would otherwise be required to obtain permits after GHGs became subject to regulation, are shielded from permitting requirements, including permit fees.

The June 2010 Tailoring Rule does not permanently exempt smaller sources. In promulgating the rule, EPA said it expected to lower the threshold, but not below 50,000 tons of GHG emissions, through separate rule-making that would take effect in 2013. The agency has subsequently decided not to lower the threshold and has also stated that, within five years of the rule’s promulgation, EPA and state permitting authorities would conduct a study of the permitting authorities’ ability to administer more inclusive PSD and Title V permit programs. Within a year of the study’s completion, EPA and state permitting authorities would conduct rulemaking for this phase of the program. The study might confirm the threshold, revise it, or establish other streamlining techniques for subsequent permitting activity. It is unclear how agricultural sources might be affected by these potential rule changes.

In the FY2010 appropriations act for EPA,¹⁸ Congress included a provision prohibiting EPA from using funds under the act to promulgate or implement any rule requiring the issuance of CAA Title V permits for GHG emissions associated with livestock production. This prohibition was carried over into FY2011, FY2012, FY2013, and FY2014 by the subsequent appropriations measures that fund EPA’s continued operation.

Issues

The issues related to the Tailoring Rule are similar to those raised by the “Mandatory Reporting of Greenhouse Gases (GHGs),” discussed above. The rule itself appears to exempt all agricultural sources by its high thresholds and the exclusion of fugitive emissions, but many are concerned about whether EPA intends to consider any agricultural sources as subject to regulation under future Clean Air Act GHG rules.

¹⁷ EPA Briefing on the Tailoring Rule, House Energy and Commerce Committee, May 14, 2010. This issue is also discussed in RTI International, for U.S. EPA, “Regulatory Impact Analysis for the Final Prevention of Significant Deterioration and Title V Greenhouse Gas Tailoring Rule,” Final Report, May 2010, pp. 64-66, at <http://www.epa.gov/ttn/ecas/regdata/RIAs/riatailoring.pdf>. A key reason that agricultural sources would not require permits is that EPA excludes what are called “fugitive emissions” from the emissions used to determine whether an agricultural source is a major source subject to permit requirements. Fugitive emissions are emissions that are not released through a stack or vent, or could not be reasonably collected and released through a stack or vent.

¹⁸ P.L. 111-88.

CRS Contacts

Claudia Copeland, Specialist in Resources and Environmental Policy, 7-7227, ccopeland@crs.loc.gov, or Jim McCarthy, Specialist in Environmental Policy, 7-7225, jmccarthy@crs.loc.gov.

Reduction of Emissions from Gasoline/Diesel Powered Stationary Engines

On June 15, 2004, EPA promulgated emission control standards for hazardous air pollutants emitted by gasoline- and diesel-powered stationary engines. This is primarily of concern to agricultural operations that rely on gas and diesel engines for irrigation pumping. The standards are generally referred to as the RICE (Reciprocating Internal Combustion Engine) rules. Besides setting emission standards, the rules would have exempted these engines from emission controls during startup, shutdown, and periods of malfunction. On December 18, 2008, the D.C. Circuit Court of Appeals ruled that the standards must address emissions during all phases of operation, including periods of startup, shutdown, and malfunction. As a result, the court vacated and remanded the rules to EPA.

Status

EPA subsequently divided the standards into two regulatory actions. On March 3, 2010, it issued a final rule for existing diesel-powered stationary engines.¹⁹ The rule applies to more than 900,000 stationary engines used as generators and to power pumps in industrial and agricultural settings. EPA issued final emissions standards for existing stationary engines that burn gasoline, natural gas, and landfill gas, known as spark ignition engines, on August 20, 2010.²⁰

Issues

The proposed rules were criticized by some state permitting authorities and industry groups as being unworkable, difficult to enforce, and perhaps unnecessary in rural settings. In response to these comments, EPA stated that most engines used by agricultural sources are smaller than 300 horsepower, and will be subject only to required management practices (e.g., frequency of oil changes). Catalysts or other control equipment would not be required.

CRS Contact

Jim McCarthy, Specialist in Environmental Policy, 7-7225, jmccarthy@crs.loc.gov.

¹⁹ U.S. Environmental Protection Agency, "National Emission Standards for Hazardous Air Pollutants: Reciprocating Internal Combustion Engines; Final Rule," *75 Federal Register* 9648, March 3, 2010.

²⁰ U.S. Environmental Protection Agency, "National Emission Standards for Hazardous Air Pollutants for Reciprocating Internal Combustion Engines; Final Rule," *75 Federal Register* 51570, August 20, 2010.

National Ambient Air Quality Standards (NAAQS)— Particulate Matter

National Ambient Air Quality Standards (NAAQS) are standards for outdoor (ambient) air that are intended to protect public health and welfare from harmful concentrations of pollution. NAAQS are at the core of the Clean Air Act, even though they do not directly regulate emissions. In essence, they are standards that define what EPA considers to be clean air. Once a NAAQS has been set, the agency, using monitoring data and other information submitted by the states, identifies areas that exceed the standard and must, therefore, reduce pollutant concentrations to achieve it. After these “nonattainment” areas are identified, state and local governments have up to three years to produce State Implementation Plans that outline the measures they will implement to reduce the pollution levels and attain the standards.

NAAQS have been set for six pollutants. The two that affect the largest number of areas are those for ozone and particulate matter (PM). Because some farming and livestock practices contribute to particulate matter emissions and because particulate matter and ozone can affect agricultural productivity, the agricultural community has shown particular interest in these standards. NAAQS ozone issues are discussed in the next section.

Status

Partially in response to an June 6, 2012 order by the U.S. District Circuit Court for the District of Columbia,²¹ and as agreed to in a consent decree,²² EPA published a final rule revising the PM NAAQS January 15, 2013. The January 2013 revisions change the existing (2006) annual health-based (“primary”) standard for “fine” particulate matter 2.5 micrometers or less in diameter (PM_{2.5}), lowering the allowable average concentration of PM_{2.5} in the air from the current level of 15 micrograms per cubic meter (µg/m³) to a limit of 12 µg/m³. The existing “24-hour primary standard” for PM_{2.5} that was reduced from 65 µg/m³ to 35 µg/m³ in 2006 was retained, as was the existing standard for larger, but still inhalable, “coarse” particles less than 10 micrometers in diameter, or PM₁₀.

EPA promulgated its previous final revisions to the PM NAAQS and the associated national air quality monitoring requirements on October 17, 2006,²³ primarily strengthening the preexisting (1997) PM_{2.5}. The 2006 PM NAAQS revisions did not strengthen the existing annual standard for PM₁₀.²⁴ The EPA periodic review (as mandated by statute²⁵) of the PM standards supporting the

²¹ *American Lung Ass'n v. EPA*, D.D.C., No. 1:12-cv-243, order issued June 6, 2012.

²² *American Lung Ass'n v. EPA*, D.D.C., No. 1:12-cv-243, order signed September 4, 2012. See also U.S. EPA, “Proposed Consent Decree,” 77 *Federal Register* 38060, June 26, 2012, <http://www.gpo.gov/fdsys/search/pagedetails.action?granuleId=2012-15603&packageId=FR-2012-06-26&acCode=FR>, and *American Lung Ass'n v. EPA*, D.D.C., No. 1:12-cv-243, joint motion filed June 5, 2012.

²³ U.S. Environmental Protection Agency, “National Ambient Air Quality Standards for Particulate Matter,” 71 *Federal Register* 61144-61233, October 17, 2006; and U.S. Environmental Protection Agency, “Revisions to Ambient Air Monitoring Regulations,” 71 *Federal Register* 61236-61238, October 17, 2006. EPA indicated that it would be expanding its research and monitoring programs to collect additional evidence on the differences between thoracic coarse particles typically found in urban areas and those typically found in rural areas.

²⁴ For additional information, see CRS Report RL34762, *The National Ambient Air Quality Standards (NAAQS) for Particulate Matter (PM): EPA's 2006 Revisions and Associated Issues*.

²⁵ Section 109(d)(1) of the Clean Air Act requires EPA to review the NAAQS and the scientific information upon (continued...)

revisions published January 2013, was initiated at the same time as implementation of the current 2006 PM NAAQS.

Revising PM NAAQS starts a process that includes a determination of areas in each state that exceed the standard and must therefore reduce pollutant concentrations to achieve it. Following determinations of these “nonattainment” areas based on multiple years of monitoring data and other factors, state and local governments must develop (or revise) State Implementation Plans (SIPs) outlining measures to attain the standard. Based on statutory scheduling requirements, nonattainment designations for revised PM NAAQS will not be determined until the end of 2014, and states would have until at least 2020 to achieve compliance with the January 2013 revised PM_{2.5} NAAQS. Based on anticipated reductions associated with several other existing national air pollution control regulations and programs, EPA predicted that seven counties in California would be the only areas unable to meet the new PM_{2.5} primary standard by 2020.

The 2006 revised NAAQS, primarily affected urban areas: 120 counties and portions of counties in 18 states have been designated nonattainment areas for PM_{2.5} by EPA based on 2006-2008 air quality monitoring data. Final designations for the 2006 PM NAAQS were published November 13, 2009. The majority of the roughly 3,000 counties throughout the United States (including tribal lands) were designated attainment/unclassifiable, and are not required to impose additional emission control measures to reduce PM_{2.5}. For those 120 counties designated nonattainment for PM_{2.5}, states had until November 2012 to submit state implementation plans (SIPs) identifying specific regulations and emission control requirements that would bring an area into compliance with the standard.²⁶

The EPA will not be designating any new nonattainment areas for PM₁₀ NAAQS since the standards were not strengthened by the 2013 NAAQS revision. Similarly, EPA did not designate any new areas for PM₁₀ following the 2006 final PM NAAQS revisions. To the contrary, a number of counties previously designated nonattainment have been determined by EPA to be in attainment since the 2006 NAAQS revisions. As indicated in **Figure 1**, below, the majority of the counties throughout the United States (including tribal lands) are designated attainment/unclassifiable for the PM₁₀ NAAQS. As of February 6, 2014, 49 of the original 89 areas designated nonattainment for PM₁₀ had been redesignated to maintenance.²⁷ As shown in **Figure 1**, the remaining 40 areas are either meeting the PM₁₀ NAAQS based on assessment of 2010-2012 air quality data (most recent three years available) and awaiting consideration for redesignation, have incomplete data, or remain nonattainment.²⁸ Those areas previously designated nonattainment for the PM₁₀ NAAQS typically include, or were adjacent to, densely populated localities, where PM monitors are frequently located. Only a subset of PM₁₀ NAAQS nonattainment areas in California and Arizona have SIPs that directly include requirements related specifically to agricultural operations in addition to requirements for other sources.

(...continued)

which they are based at five-year intervals.

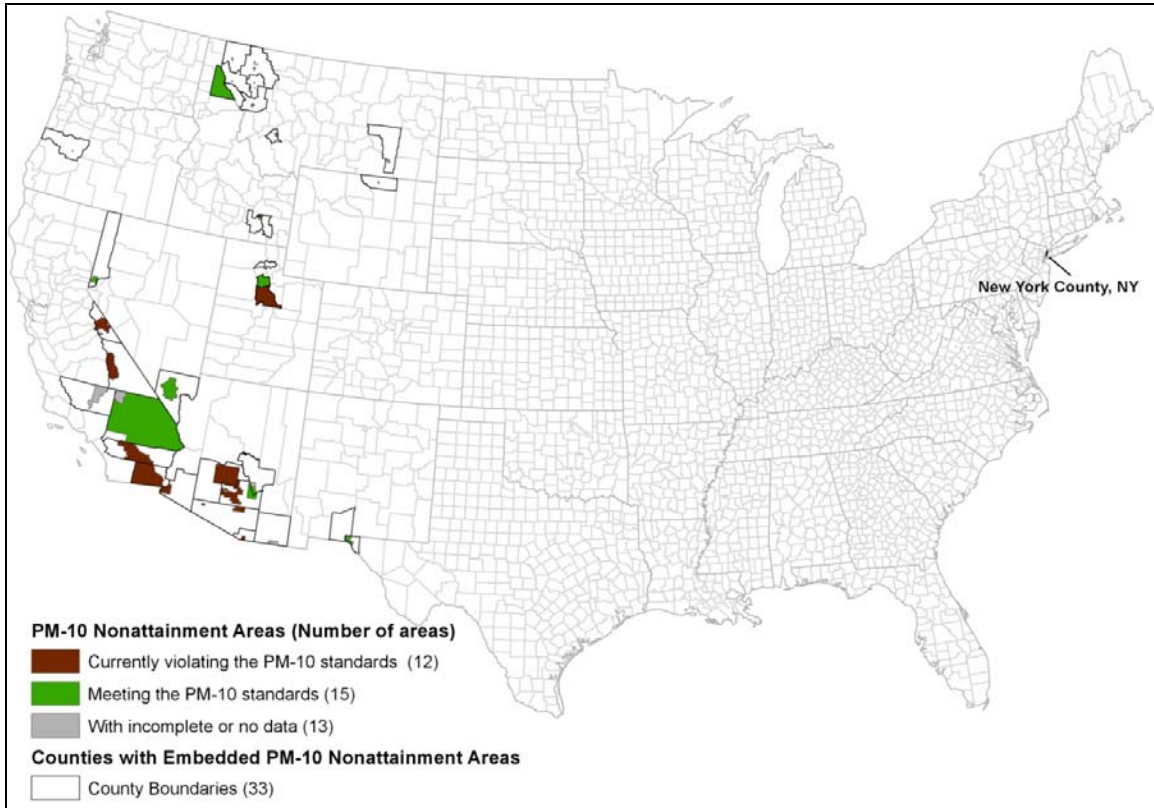
²⁶ For additional information, see CRS Report R40096, *2006 National Ambient Air Quality Standards (NAAQS) for Fine Particulate Matter (PM_{2.5}): Designating Nonattainment Areas*.

²⁷ See EPA’s PM₁₀ designations at <http://www.epa.gov/air/oaqps/greenbk/pindex.html>.

²⁸ According to information provided to CRS by EPA’s Office of Air Quality Planning and Standards (OAQPS) February 2014, 15 areas are meeting the PM₁₀ NAAQS based on 2010-2012 air quality data. States have submitted maintenance plans for 2 of these 15, and EPA has published clean data determinations for an additional 2 (of the 15) areas to suspend the PM₁₀ attainment plan requirement. Additionally, 13 areas have incomplete data and 12 areas remain nonattainment based on 2010-2012 air quality data..

Figure I. Status of PM₁₀ Nonattainment Areas

(status is based on 2010-2012 air quality; many areas are indicated as only portions of counties)



Source: Provided directly to CRS by EPA's Office of Air Quality Planning and Standards, February 2014.

Notes: Nonattainment area status as identified on the map is based on 2010-2012 air quality data, the most currently available three-year dataset at the time the determinations were made. Areas not highlighted on the map are designated attainment/unclassifiable. There are no PM₁₀ nonattainment areas in Alaska and Hawaii, which was not included on the map as provided by EPA. For more information, see CRS Report RL34762, *The National Ambient Air Quality Standards (NAAQS) for Particulate Matter (PM): EPA's 2006 Revisions and Associated Issues*.

Issues

The agricultural community has generally been more concerned with EPA's review and potential changes of the PM₁₀ NAAQS than with the PM_{2.5} NAAQS.²⁹ Thoracic coarse particles (PM₁₀) are generally emitted as a result of mechanical processes that crush or grind larger particles or the resuspension of dusts.³⁰ While certain agricultural operations can contribute to emission of PM₁₀—sometimes referred to as “farm dust”—there are many sources of thoracic coarse particles, for example, unpaved and paved roads, traffic-related emissions such as tire and brake lining materials, direct emissions from industrial operations, construction and demolition activities, and mining operations. EPA has noted that atmospheric science and monitoring information indicates

²⁹ There was some concern regarding designations in rural areas for the 2006 PM_{2.5} NAAQS. The designated nonattainment areas for the PM_{2.5} are primarily concentrated in and around highly populated metropolitan areas.

³⁰ U.S. Environmental Protection Agency, “National Ambient Air Quality Standards for Particulate Matter,” 71 *Federal Register* 61146, October 17, 2006.

that exposures to PM₁₀ tend to be higher in urban areas than in nearby rural locations.³¹ Urban or industrial ambient mixes of PM₁₀ dominated by high-density vehicular, industrial, and construction emissions have been the primary concern with respect to reducing the negative health effects. EPA continues to research the link between coarse particle composition and toxicity, including the toxicity of urban versus rural particles.

During the review process leading up to the publication of the revised PM NAAQS in January 2013, some Members of the 112th Congress raised concerns in letters to the EPA Administrator³² and during oversight hearings,³³ about EPA's staff draft reports,³⁴ the Clean Air Scientific Advisory Committee (CASAC) recommendations,³⁵ and the potential impacts that tightening the PM₁₀ NAAQS standards could have on the agricultural industry. Many Members encouraged EPA to retain the current PM₁₀ NAAQS standards. Other Members urged the Administrator to include retaining the PM_{2.5} as an option for consideration in the agency's proposed rule.³⁶ In addition, proposed legislation during the 112th Congress addressed the ongoing PM NAAQS review.³⁷ The January 15, 2013, final PM NAAQS rule revised the PM_{2.5} standard but did not modify the standards for inhalable "coarse" particles larger than 2.5 but smaller than 10 microns (PM₁₀), nor were modifications to the PM₁₀ standard proposed in 2012.

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³¹ U.S. Environmental Protection Agency, "Review of the National Ambient Air Quality Standards for Particulate Matter: Policy Assessment of Scientific and Technical Information," p. 2-36, OAQPS Staff Paper EPA-452/R-05-005a, December 2005, http://www.epa.gov/ttn/naaqs/standards/pm/data/pmstaffpaper_20051221.pdf.

³² Examples of letters to EPA Administrator Lisa Jackson include, but are not limited to, a joint letter from 21 Senators, July 23, 2010, <http://grassley.senate.gov/about/upload/Agriculture-07-23-10-dust-letter-to-EPA-signed-version-doc.pdf>; a joint letter from Senators Kent Conrad and Byron Dorgan and Representative Earl Pomeroy, August 5, 2010; a joint letter from 75 House Members, September 27, 2010; and a joint letter from 99 House Members, March 29, 2011, <http://fincher.house.gov/press-release/fincher-noem-call-epa-abandon-unreasonable-dust-standards>.

³³ See examples in footnote 6.

³⁴ U.S. Environmental Protection Agency, "Release of Final Document Related to the Review of the National Ambient Air Quality Standards for Particulate Matter," 76 *Federal Register* 22665, April 22, 2011, <http://www.epa.gov/ttn/naaqs/standards/pm/data/20110419pmpafinal.pdf>.

³⁵ Letter from Dr. Jonathan M. Samet, Chair, Clean Air Scientific Advisory Committee, to the Honorable Lisa P. Jackson, EPA Administrator. CASAC Review of *Policy Assessment for the Review of the PM NAAQS—Second External Review Draft*, 2010. Available at [http://yosemite.epa.gov/sab/sabproduct.nsf/264cb1227d55e02c85257402007446a4/CCF9F4C0500C500F8525779D0073C593/\\$File/EPA-CASAC-10-015-unsigned.pdf](http://yosemite.epa.gov/sab/sabproduct.nsf/264cb1227d55e02c85257402007446a4/CCF9F4C0500C500F8525779D0073C593/$File/EPA-CASAC-10-015-unsigned.pdf).

³⁶ See joint letter from Representatives Fred Upton, Chairman, Committee on Energy and Commerce, Ed Whitfield, Chairman, Subcommittee on Energy and Power, and Joe Barton, Chairman Emeritus, June 6, 2012, <http://energycommerce.house.gov/press-release/energy-and-commerce-leaders-urge-epa-protect-jobs-including-current-pm-standards>.

³⁷ During the 112th Congress, the House passed the Farm Dust Regulation Prevention Act of 2011 (H.R. 1633), which would have prohibited EPA from proposing, finalizing, implementing, or enforcing any regulation revising primary or secondary NAAQS applicable to PM "with an aerodynamic diameter greater than 2.5 micrometers" for one year. Further, the House-passed bill would have amended the CAA to exempt "nuisance dust" from the act and would have excluded nuisance dust from references in the act to particulate matter "except with respect to geographic areas where such dust is not regulated under state, tribal, or local law." A general provision was also included in FY2012 House-reported EPA appropriations language (H.R. 2584, Title IV, Section 454) that would have restricted the use of FY2012 appropriations "to modify the national primary ambient air quality standard or the national secondary ambient air quality standard applicable to coarse particulate matter (generally referred to as "PM₁₀."

National Ambient Air Quality Standards (NAAQS)—Ozone³⁸

Under the CAA, EPA is to review the science for each of the NAAQS every five years, and either reaffirm or revise the standard. The EPA Administrator completed a review of the ozone NAAQS in March 2008, and made both the primary (health-based) and secondary (welfare-based) standards more stringent, but he did not set the standards within the ranges recommended by the independent panel of scientists that advises him (i.e., CASAC). He also rejected their advice to change the form of the secondary standard to better measure whether ozone concentrations were above levels needed to protect crops and forests from damage.³⁹ Challenged in court, EPA agreed to reconsider the March 2008 decisions (court decisions are discussed further below).

Status

On January 19, 2010, EPA proposed to strengthen the primary ozone NAAQS and to revise the form of the secondary standard as the agency’s scientific advisers had recommended. Under the proposed revisions, the vast majority of counties with ozone monitors would be found in nonattainment of the primary standard, using the most recent available data, and many might violate the secondary standard, as well.

EPA expected to promulgate a final version in late summer 2011, but on September 2, 2011, the President requested that the agency withdraw its decision without promulgating it. Instead, the agency will continue a review that it aims to complete by October 2015. EPA is also proposing new monitoring requirements for the states, with more monitors to be placed in rural areas.⁴⁰

Issues

EPA has resumed implementation of its 2008 ozone NAAQS, which affects few agricultural areas. Despite the withdrawal of what would have been an even more stringent standard, air quality is likely to improve as a result of regulations currently being phased in for cars, trucks, and electric power plants, among other sources.

Ultimately, the 2015 ozone NAAQS revision could be one of the more significant regulations promulgated by EPA, and could call attention to air quality problems in agricultural areas to a far greater extent than previous standards.

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³⁸ For additional background on NAAQS, see the previously discussed “National Ambient Air Quality Standards (NAAQS)—Particulate Matter” section.

³⁹ The damage that crops and vegetation suffer from ozone exposure is cumulative over the growing season. In order to better measure and provide protection against these impacts, EPA staff recommended a new seasonal (3-month) average for the secondary standard that would cumulate hourly ozone exposures for the daily 12-hour daylight window. Previously, the secondary standard simply measured the highest individual readings for any 8-hour period. CASAC agreed with this recommendation.

⁴⁰ For additional information on the proposed standards, see CRS Report R41062, *Ozone Air Quality Standards: EPA’s Proposed Revisions*.

EPCRA and CERCLA Reporting Requirements

The Emergency Planning and Community Right-to-Know Act (EPCRA) and the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA, or Superfund) have reporting requirements that are triggered when specified quantities of certain substances are released to the environment, including ammonia and hydrogen sulfide. Both ammonia and hydrogen sulfide are chemicals generated by livestock manure, particularly swine and poultry, when in concentrated animal populations. Both CERCLA and EPCRA include citizen suit provisions that have been successfully used to take legal action against poultry and swine operations for violations of the reporting requirements of the laws. In 2005, a group of poultry producers petitioned EPA for an exemption from EPCRA and CERCLA release reporting requirements, arguing that releases from poultry growing operations pose little or no risk to public health, while reporting imposes an undue burden on producers and government responders.⁴¹

Status

In December 2008, EPA promulgated an EPCRA/CERCLA administrative reporting exemption for air releases.⁴² The final rule exempts hazardous substance releases that are emitted to the air from all livestock operations (not just poultry farms) from CERCLA's requirement to report releases to the air to federal officials. It provides a partial exemption for such releases from EPCRA's requirement to report releases to state and local emergency officials: the final rule continues to apply EPCRA's reporting requirement to large CAFOs (those subject to Clean Water Act permitting, discussed below in the section on "Implementation of Existing Clean Water Act Permit Requirements for CAFOs"), but it exempts smaller facilities. The reporting exemptions in the final rule took effect January 20, 2009.

The 2008 rule was challenged by industry groups, including the National Pork Producers Council, as well as environmental advocates. Industry argued that CAFOs should be exempted from all reporting under Superfund and EPCRA because air emissions from animal feeding operations pose no threat to public health or the environment. Environmentalists also went to court, arguing that CAFOs should report under both laws because air emissions from animal feedings operations do pose a public health and environmental risk. The legal challenges were consolidated in the U.S. Court of Appeals for the District of Columbia (*Waterkeeper Alliance v. EPA*, D.C. Cir., No. 09-1017). In June 2010 the government asked the court to remand the 2008 rule for reconsideration and possible modification. The court approved the government's request in October 2010. EPA anticipates proposing a new or revised rule, but a schedule for doing so is uncertain, and a rule has not been proposed. In the meantime, the 2008 exemption rule remains in effect. According to press reports, EPA does not plan to directly regulate air emissions from animal feeding operations, but is seeking to require their reporting.

Legislation was introduced in the 112th Congress to exclude "manure" from the definition of hazardous substance under CERCLA and to remove reporting liability under CERCLA and

⁴¹ For additional information, see CRS Report RL33691, *Animal Waste and Hazardous Substances: Current Laws and Legislative Issues*.

⁴² U.S. Environmental Protection Agency, "CERCLA/EPCRA Administrative Reporting Exemption for Air Releases," *73 Federal Register* 76948-76960, December 18, 2008.

EPCRA (H.R. 2997 and S. 1729), but no further action occurred. Proponents of the legislation argue that Congress did not intend either of these laws to apply to agriculture and that enforcement and regulatory mechanisms under other laws are adequate to address environmental releases from animal agriculture. Opponents respond that enacting an exemption would severely hamper the ability of government and citizens to know about and respond to releases of hazardous substances caused by an animal agriculture operation. No similar legislation has been introduced in the 113th Congress.

Issues

The agriculture industry remains concerned about the potential burden on large CAFOs of complying with the EPCRA reporting requirements, even though the final rule exempted facilities that are not subject to Clean Water Act permitting (see “Implementation of Existing Clean Water Act Permit Requirements for CAFOs,” below). Critics of the 2008 rule, including environmentalists and some state air quality officials, contend that the CERCLA and EPCRA reports provide good information about emissions that enable citizens to hold companies accountable in terms of how toxic chemicals are managed. Similarly, the agriculture industry is concerned about potential liability that could arise for animal operations if manure were to be defined as a “hazardous substance.”

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Water

The release of sediment, nutrients, pathogens, and pesticides from agricultural production can degrade the quality of water resources. While it is widely believed that agriculture can have a significant impact on water quality, there is no comprehensive national study of agriculture’s effect on water quality.⁴³ Several water quality assessments document degradation from agriculture practices; however, the extent and magnitude is difficult to measure because of its nonpoint nature.⁴⁴ Federal environmental laws, such as the Clean Water Act (CWA), largely do not regulate agricultural actors, in many cases giving the regulatory responsibilities to the states.

⁴³ Marc Ribaud and Robert Johansson, *Agricultural Resources and Environmental Indicators, 2006 Edition*, USDA, ERS, Economic Information Bulletin No. (EIB-16), Washington, DC, July 2006, p. 2.2, <http://www.ers.usda.gov/publications/AREI/EIB16/Chapter2/2.2/>. Periodically EPA conducts a National Water Quality Inventory that provides a general water quality assessment based on state collected data. The information for the EPA Inventory is for a relatively small subset of the nation’s total waters that are assessed by states and does not represent the waterbodies that were not assessed. For additional information, see EPA, *National Water Quality Inventory: Report to Congress, 2004 Reporting Cycle*, EPA 841-R-08-001, Washington, DC, January 2009, http://water.epa.gov/lawsregs/guidance/cwa/305b/2004report_index.cfm.

⁴⁴ Nonpoint source pollution generally refers to diffuse runoff from farms, ranches, forests and urban areas. Nonpoint sources are also subject to natural variability (e.g., weather related events) and depend on many site-specific conditions, such as topography, soil type, and climate.

Constraints on agricultural production to reduce pollution discharges typically arise at the state level in response to local concerns.⁴⁵

The following section covers five regulations relating to water, including

- implementation of existing Clean Water Act permit requirements for CAFOs;
- Chesapeake Bay protection and restoration;
- Florida nutrient water quality standards;
- defining “waters of the United States” for CWA regulatory purposes; and
- spill prevention control and countermeasure (SPCC) plans.

Implementation of Existing Clean Water Act Permit Requirements for CAFOs

Under the CWA, while most of agriculture is exempt from federal regulation, large CAFOs are defined as point sources and thus are subject to the act’s prohibition against discharging pollutants into U.S. waters without a permit. In October 2008, EPA issued a regulation to revise a 2003 CWA rule governing waste discharges from CAFOs. This action was necessitated by a 2005 federal court decision (*Waterkeeper Alliance et al. v. EPA*, 399 F.3d 486 (2nd Cir. 2005)), resulting from challenges brought by agriculture industry groups and environmental advocacy groups that vacated parts of the 2003 rule and remanded other parts to EPA for clarification.⁴⁶ The 2008 rule details requirements for permits, annual reports, and development of plans for handling manure and wastewater. Parts of the rule are intended to control land application of manure and agricultural wastewater.

Status

According to EPA, the 2008 rule applies to about 15,300 CAFOs that need permit coverage (74% of the 20,700 CAFOs operating in 2008).⁴⁷ Under the rule, CAFOs were to obtain permits and develop and implement nutrient management plans by February 27, 2009.

Further legal challenges followed promulgation of the 2008 revised rule. Agricultural industry groups (although generally satisfied with the rule) filed lawsuits in several federal appellate circuits. Environmental groups also brought a legal challenge to the rule. The various petitions were consolidated in the U.S. Court of Appeals for the 5th Circuit. In addition, EPA officials discussed with environmental plaintiffs possible settlement of portions of the litigation that could involve additional regulatory changes. In December 2009, the court agreed to a joint request from

⁴⁵ Much of the federal response to water quality concerns for agriculture is primarily voluntary and incentive-based.

⁴⁶ U.S. Environmental Protection Agency, “Revised National Pollutant Discharge Elimination System Permit Regulation and Effluent Limitations Guidelines for Concentrated Animal Feeding Operations in Response to the Waterkeeper Decision, Final Rule,” 73 *Federal Register* 225, November 20, 2008, pp. 70417-70486. For additional information on EPA’s response to the court decision, see CRS Report RL33656, *Animal Waste and Water Quality: EPA’s Response to the Waterkeeper Alliance Court Decision on Regulation of CAFOs*.

⁴⁷ The rule specifies thresholds above which permits are required, such as animal feeding operations that stable or confine more than 700 dairy cows, 2,500 swine weighing 55 pounds or more, or 500 horses.

EPA and environmentalists to sever the activists' portion of the litigation. In settling with environmental plaintiffs, EPA agreed to issue guidance aimed at clarifying what CAFOs must do to comply with federal clean water regulations and to help CAFO owners determine whether they need permits; the guidance was issued in May 2010.⁴⁸

In settling that part of the lawsuit, EPA also agreed to propose a rule within one year to collect facility information from all CAFOs, such as number of types of animals, type and capacity of manure storage or treatment process, and quantity of manure generated annually by the CAFO, in order to provide a CAFO inventory and assist in implementing the 2008 rule. In October 2011, EPA proposed a rule, referred to as the CAFO reporting rule, that would require CAFOs to submit a specific set of basic operational information to EPA.⁴⁹ The proposal would require CAFOs to provide the following basic information: facility contact information; production area location; whether the CAFO has a CWA permit; the number and type of animals at the CAFO; and the number of acres available for land application of manure, litter, and process wastewater. The proposed rule drew criticism from industry groups who contend that the agency lacks legal authority to require CAFOs that do not discharge to report facility information. Environmental advocates defended EPA's authority to require non-discharging CAFOs to report, but they said that the proposed rule fell short of what is required of EPA under the 2009 settlement agreement that forced the reporting rule.

In July 2012, after reviewing public comments, EPA decided not to promulgate a regulation. Based on comments and responses, especially from states, EPA concluded that it can obtain much of the desired CAFO information from federal agencies, states, and other existing data sources. It would be more reasonable and efficient to obtain existing information from these sources, EPA said, before determining whether to issue a rule requiring CAFOs to submit information. The agency noted that the 2010 settlement agreement with environmental groups committed EPA to proposing a rule, but did not commit it to any particular final action.⁵⁰

The challenge to the 2008 CAFO rule by agricultural industry groups continued, even after EPA's settlement with environmental plaintiffs. In 2011, a federal court issued a ruling that supported industry's challenge on several issues. The court upheld the portion of the rule requiring a CAFO to apply for a permit if the facility has an actual discharge. However, the court vacated aspects of the rule requiring permits for proposed discharges (permits are still required for CAFOs that actually discharge) and allowing EPA to take enforcement action against CAFO owners based on their failure to apply for permits.⁵¹ In July 2012, EPA modified the 2008 CAFO regulations to conform to the court's 2011 ruling.

⁴⁸ U.S. Environmental Protection Agency, *Implementation Guidance on CAFO Regulations - CAFOs That Discharge or Are Proposing to Discharge*, EPA-833-R-10-006, May 27, 2010, http://www.epa.gov/npdes/pubs/cafo_implementation_guidance.pdf.

⁴⁹ U.S. Environmental Protection Agency, "National Pollutant Discharge Elimination System (NPDES) Concentrated Animal Feeding Operation (CAFO) Reporting Rule; Proposed rule," 76 *Federal Register* 65431-65458, October 21, 2011.

⁵⁰ U.S. Environmental Protection Agency, "National Pollutant Discharge Elimination System (NPDES) Concentrated Animal Feeding Operation (CAFO) Reporting Rule; Proposed Rule; Withdrawal," 77 *Federal Register* 42679-42682, July 20, 2012.

⁵¹ *National Pork Producers Council v. U.S. EPA*, 635 F.3d 738 (5th Cir. 2011).

Issues

The rest of the 2008 rule was not affected by the court's March 2011 ruling and remains in effect. The federal government did not seek a rehearing on the Fifth Circuit's ruling, nor did it petition the Supreme Court for a review. EPA concluded that the court's ruling effectively simplifies permitting by removing uncertainty about the "duty to apply" for a permit and thus is largely self-implementing. The agency has conducted outreach to states on the effect of the ruling and is in the process of revising the guidance that it issued in May 2010 concerning CAFOs that discharge or propose to discharge, in view of the ruling.

A number of questions linger about implementation of the 2008 rule. For example, agricultural industry groups are concerned that EPA regions may be providing differing interpretations of a provision of the 2008 rule that allows farms to self-certify that they will not discharge, a finding that allows them to avoid having to apply for a permit and protects CAFOs from liability for not having a permit in the event of an accidental discharge. Some agricultural industry groups also are concerned that EPA could initiate a new rulemaking that would include additional permit and pathogen control requirements.

Separate from the 2008 CAFO rule that applies nationally, EPA is developing new CWA requirements for CAFOs located in the Chesapeake Bay watershed (see "Chesapeake Bay Protection and Restoration," below), which could expand the universe of regulated CAFOs in that region and require more stringent standards for permits. Many in the agriculture sector were concerned that these Chesapeake Bay-specific rules would be the basis for EPA to propose a revision of the broader 2008 rule. In fact, under the 2010 settlement agreement with environmental groups, EPA had agreed to propose changes to the national rule, but in June 2013, EPA and the environmental parties modified the 2010 agreement. Under the modification, EPA will decide by June 2018 whether a national rulemaking is needed.

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Chesapeake Bay Protection and Restoration

Despite several decades of activity by governments, the private sector, and the general public, efforts to improve and protect the Chesapeake Bay watershed have been insufficient to meet restoration goals. Although some specific indicators of Bay health have improved slightly or remained steady (such as blue crabs and underwater bay grasses), others remain at low levels of improvement, especially water quality. Overall, the Bay and its tributaries remain in poor health, with polluted water, reduced populations of fish and shellfish, and degraded habitat and resources. The primary pollutants causing impairments are nutrients (nitrogen and phosphorus) and sediment discharged from multiple urban, suburban, and rural sources around the Bay.

In May 2009, President Obama issued an executive order that declared the Bay a "national treasure" and charged the federal government with assuming a strong leadership role in restoring

the Bay.⁵² The executive order established a Federal Leadership Committee for the Chesapeake Bay to develop and implement a new strategy for protecting and restoring the Chesapeake region. The resulting strategy, which was released in May 2010, launched major specific environmental initiatives to establish new clean water regulations on stormwater discharges and pollution discharges from animal feedlots in the Bay watershed, put new agricultural conservation practices on farms in the region, and restore land and water habitat.⁵³

According to EPA, agriculture represents the single largest source of nutrient and sediment pollution to the Bay, with about half of agriculture's pollutant load directly related to livestock waste. Agriculture covers about 25% of the Bay watershed, and is the largest intensively managed land use in the watershed. EPA believes that excess livestock waste, improperly applied fertilizers, and certain cropland tillage practices increase nutrient and sediment discharges to the Bay.

A central feature of the overall strategy for restoring the Bay is EPA's establishment of a total maximum daily load (TMDL). Section 303 of the CWA requires states to identify waters that are impaired by pollution, even after application of pollution controls. For those waters, states must establish a TMDL to ensure that water quality standards can be attained. A TMDL is essentially a pollution budget, a quantitative estimate of what it takes to achieve standards, setting the maximum amount of pollution that a waterbody can receive without violating standards. If a state fails to do this, EPA is required by the CWA to make its own TMDL determination for the state. Throughout the United States—including the Chesapeake Bay watershed—more than 20,000 waterways are known to be violating applicable water quality standards and to require a TMDL.⁵⁴ Lawsuits have been brought with the intention of pressuring EPA and states to develop TMDLs, including for the Chesapeake Bay because the waters of the Bay have been identified as being impaired, that is, as not meeting applicable water quality standards. The Chesapeake Bay TMDL is the largest single TMDL developed to date. It addresses all segments of the Bay and its tidal tributaries that are impaired from discharges of nitrogen, phosphorus, and sediment. The goal is to have TMDL implementation measures in place by 2025 to assure attainment and maintenance of all applicable water quality standards. The TMDL allocates needed reductions of these pollutants to all jurisdictions in the 64,000 square mile watershed, not to individual segments of streams or waterbodies, as is more typical of other TMDLs prepared by states or EPA.⁵⁵

As part of the TMDL development process, states are to prepare Watershed Implementation Plans (WIPs) identifying specific reductions and control measures to achieve needed pollutant reductions from point sources (i.e., industrial and municipal facilities and CAFOs) and nonpoint sources (i.e., farms and forests), as well as two-year milestones to implement the plans. EPA fully expects that states will meet commitments and milestones in the WIPs, but the agency also has identified a number of potential actions currently available to it if a state fails to do so, including expanding permit coverage to currently unregulated sources (which could include additional CAFOs in the Chesapeake Bay watershed), requiring net improvement offsets, conditioning EPA grants, or increasing federal enforcement in the watershed.

⁵² Executive Order 13508, "Chesapeake Bay Protection and Restoration," 74 *Federal Register* 23099-23104, May 15, 2009.

⁵³ For information, see http://www.chesapeakebay.net/news_federalstrategy.aspx?menuitem=51207.

⁵⁴ For background information, see CRS Report R42752, *Clean Water Act and Pollutant Total Maximum Daily Loads (TMDLs)*.

⁵⁵ For information on the TMDL, see <http://www.epa.gov/chesapeakebaytmdl/>.

Status

Under a consent decree resolving some of the litigation over the Chesapeake Bay,⁵⁶ EPA was required to establish a TMDL no later than May 1, 2011. EPA issued the TMDL on December 29, 2010—ahead of its self-imposed December 31 deadline.⁵⁷

Concurrent with issuance of the TMDL, the Bay watershed jurisdictions (Virginia, Maryland, West Virginia, Delaware, Pennsylvania, and the District of Columbia) prepared Phase I WIPs, which outlined the types of controls and best management practices (BMPs) that will be utilized to achieve the first major goal of the TMDL: that 60% of needed practices to achieve water quality standards will be in place by 2017. The jurisdictions have now developed Phase II WIPs, in which they describe how they will work with specific localities within their borders over the next five years to reduce nitrogen, phosphorus, and sediment loading into streams, lakes, and rivers that feed into the Bay.

The Bay region exceeded its overall nutrient and sediment reduction goals for 2012-2013, according to data submitted by states to EPA in March 2014. From 2009 through 2013, states reduced the amount of nitrogen reaching Chesapeake Bay by 17 million pounds—4 million pounds more than they had committed to. Phosphorus reductions were also ahead of schedule. However, according to the data, reductions from agriculture and stormwater—two sectors where controls have long proven problematic—are not on a trajectory that would meet either a 2017 interim cleanup goal or the overall Bay goals for 2025, suggesting that control measures for these sectors will need to be accelerated.

In the same consent decree that led to issuance of the Bay TMDL, EPA also agreed to revise CWA permit rules for CAFOs located in the Chesapeake Bay watershed (see “Implementation of Existing Clean Water Act Permit Requirements for CAFOs,” above). As part of the settlement, EPA agreed to propose Bay-specific rules to expand the universe of regulated CAFOs, including but not limited to designating an AFO as a CAFO or increasing the number of animal operations that would qualify as CAFOs and thus require CWA permits. The settlement also stipulates that EPA would propose more stringent permitting requirements for land application of manure, litter, and process wastewater in the Bay watershed in 2013, with rules to be final by mid-2014. However, in June 2013, EPA and the environmental groups announced a revised agreement. Under the modification, EPA will review compliance with existing CWA permits for CAFOs in the Chesapeake Bay watershed, assess state permitting programs for such operations, and inspect smaller, unregulated animal feedlots in the Bay watershed. On the basis of these reviews, EPA will decide by June 30, 2018, whether a national rulemaking is needed. As described above, under the earlier settlement agreement, EPA was to propose revisions to the 2008 national CAFO rules, but under the 2013 modification, EPA will first focus on pollution from CAFOs in the Chesapeake Bay region.

⁵⁶ *Fowler v. U.S. EPA*, Case No. 1:09-CV-00005-CKK (D.D.C.), May 10, 2010.

⁵⁷ Notice of the TMDL appeared in the *Federal Register* January 5, 2011. U.S. Environmental Protection Agency, “Clean Water Act Section 303(d): Notice for the Establishment of the Total Maximum Daily Load (TMDL) for the Chesapeake Bay,” 76 *Federal Register* 549-550, January 5, 2011.

Issues

EPA's TMDL plans and the overall federal Bay restoration strategy under the 2009 executive order are controversial with agricultural and other groups that are concerned about the likely mandatory nature of many of EPA's and states' upcoming actions. Agricultural interests are concerned that farm operations in the Bay watershed will be subject to more regulation than competitors in other states, putting their operations at a significant competitive disadvantage. Many of these groups have also been concerned that the underlying scientific data and modeling used by EPA to develop the TMDL do not fully reflect ongoing voluntary efforts by agriculture to reduce pollutant discharges. Legal challenges to the TMDL were brought by the American Farm Bureau Federation and home builder groups, who argue that, in setting pollution limits in the multistate plan, EPA has exceeded its CWA authority. In September 2013, a federal court upheld the TMDL. The court said that it found no evidence that EPA had intruded on states' rights in writing the plan.⁵⁸ That ruling has been appealed. On the other hand, environmental activists in particular are pleased that the federal government is now asserting a leadership role to restore the Bay and have supported legislation that would codify requirements for the Bay TMDL in the CWA, while authorizing grants and other assistance for implementing required measures. Companion bills to do so were introduced in the 111th Congress, while the House Agriculture Committee approved separate legislation (H.R. 5509) that would have authorized an expanded role for USDA in Bay restoration.

The 112th Congress showed interest in early implementation of the TMDL, especially impacts on agriculture. The House Agriculture Subcommittee on Conservation, Energy, and Forestry held oversight hearings on March 16 and November 3, 2011. Legislation (H.R. 4153, similar to H.R. 5509 in the 111th Congress) was introduced that would give states, not EPA, authority to set nutrient and sediment limits for the Bay and would increase USDA's role in Bay restoration. No legislation was enacted, and similar legislation has not been introduced in the 113th Congress.

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Florida Nutrient Water Quality Standards

The CWA directs states to adopt water quality standards for their waters and authorizes EPA to promulgate new or revised standards if a state's actions fail to meet CWA requirements. Water quality standards consist of designated uses, criteria to protect the designated uses, and an antidegradation statement. They serve as the framework for pollution control measures that are specified for individual sources by states.

Because of severe water quality impairment of Florida waters by nutrients (nitrogen and phosphorus) from diverse sources, including agriculture and livestock, municipal and industrial wastewater discharges, and urban stormwater runoff, EPA determined in 2009 that Florida's existing *narrative* water quality standards for nutrients must be revised in the form of *numeric* criteria that will enable Florida to better control nutrient pollution. In 2009 EPA entered into a

⁵⁸ American Farm Bureau Federation v. EPA, M.D. Pa., No. 11-00067, 43 ELR 20213, Sept. 13, 2013.

consent decree with environmental litigants requiring the agency to promulgate numeric nutrient water quality standards for Florida. To meet the legal deadline, EPA issued the first phase of these standards on November 15, 2010, establishing standards for lakes and flowing waters in the state. The EPA rule did not establish any requirements directly applicable to regulated entities or other sources of nutrient pollution. Water quality standards do not have the force of law until the state translates them into permit limits or otherwise imposes pollution control requirements on dischargers in the state.⁵⁹

Status

EPA said all along that it prefers that Florida implement its own numeric nutrient water quality criteria. Consequently, EPA delayed the effective date of the 2010 rule several times to allow the state to complete its process and to avoid confusion that could occur if federal criteria became effective while state criteria are being reviewed. Further, EPA's deadline for issuing the second phase of standards (for estuaries, coastal waters, and flowing waters in the South Florida Region) also was extended several times to allow the state to develop its own standards.

In March 2013, EPA and the state reached agreement on steps to put the state in charge of determining numeric limits on nutrient pollution in Florida waterways. Groundwork for the agreement was laid in November 2012 when EPA approved a June 2012 submission by the state for lakes, rivers, streams, and some estuaries. Under the March agreement, Florida pledged to move forward with rulemaking and legislation to complete the job of setting numeric nutrient criteria for Florida waterways. The proposed state legislation would require completion of nutrient criteria rulemaking for remaining coastal and estuarine waters by December 1, 2014, and establishment of interim nutrient standards until then. In response to the state's actions, EPA approved the state's implementation plan for controlling nutrient pollution in Florida waters and petitioned the federal court in Florida to allow it to approve the state's water quality standards, although they lack numeric criteria for all waters. In January 2014, the court agreed to amend the 2009 consent decree in light of the adoption of new nutrient criteria, thus lifting the requirement for EPA to issue numeric nutrient standards under the second phase of rulemaking, and in April EPA proposed to withdraw its numeric nutrient criteria for Florida waters.

Industry groups endorsed the agreement and the court's modification of the consent decree. However, it was criticized by environmental advocacy groups, who said that the plan lacks many elements that EPA previously said were essential and fails to cover large portions of the state's waters by, for example, exempting tidal waters, marine lakes, and flowing waters in the southern portion of the state, unless they are being used for "frequent recreation." Environmental groups' legal challenge to the plan was rejected by the court's January 2014 ruling, but the groups have appealed the ruling.

Issues

While few dispute the need to reduce nutrients in Florida's waters, EPA's rule has been controversial, involving disputes about the data underlying the proposal, potential costs of complying with numeric standards when they are incorporated into discharge permit limitations,

⁵⁹ U.S. Environmental Protection Agency, "Water Quality Standards for the State of Florida's Lakes and Flowing Waters; Final Rule," 75 *Federal Register* 75762-75807, December 5, 2010.

and disputes over administrative flexibility. Agricultural groups and others fear that numeric standards will result in mandates for costly pollution controls. EPA responds that adoption of numeric nutrient standards is intended to ensure the health of Florida's waterways and its economy, because the types of water quality problems associated with nutrients—algae blooms that are toxic to humans, fish, and animals—have economic impacts throughout the state.

Some groups also fear that EPA's actions in Florida, which represented the first time that EPA has established statewide numeric nutrient standards, and even though now apparently resolved, will be a precedent for similar regulatory action elsewhere. For example, environmental advocacy groups have petitioned or filed lawsuits seeking to require EPA to establish numeric nutrient water quality standards in Kansas and for the Mississippi River Basin.⁶⁰ In testimony before the House Agriculture Committee, the EPA Administrator stated that EPA is not working on any federal numeric nutrient limits, and the agency has developed guidance for its regional offices stating that addressing nutrient pollution is a problem best handled by states through a variety of tools.⁶¹

These issues also have drawn Congress's attention. In 2011, oversight hearings were held by subcommittees of the House Energy and Commerce and Transportation and Infrastructure committees. A bill in the 113th Congress (H.R. 1948) would restrict EPA's oversight of state water quality standards by allowing the agency to promulgate a water quality standard for a state only if EPA has previously approved the state's standard and the state concurs that a new or revised standard is necessary. Similar legislation passed the House in the 112th Congress. Even with EPA's approval of Florida's rules, controversies persist.

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Defining “Waters of the United States”

How best to protect the nation's remaining wetlands and regulate activities taking place in or affecting wetlands has become one of the most contentious environmental policy issues. Much of the debate has focused on the CWA, which contains a key wetlands regulatory tool, Section 404, which requires landowners or developers to obtain permits for disposal of dredged or fill material that is generated by construction or similar activity into navigable waters of the United States, including wetlands. A key issue since Section 404 was enacted in 1972 is which waters are determined to be “waters of the United States” for CWA purposes and thus are subject to Section 404 and all of the CWA's other requirements. In 2001 and 2006, the Supreme Court issued rulings in two cases that interpreted the regulatory scope of the CWA more narrowly than previously, but created uncertainty about the precise effect of the Court's decisions.

⁶⁰ In 2011, EPA denied the petition requesting that EPA promulgate national numeric nutrient criteria for the United States or, alternatively, for waters of the Mississippi-Atchafalaya River Basin and northern Gulf of Mexico, saying, “We do not believe that the comprehensive use of federal rulemaking authority is the most effective or practical means of addressing these concerns at this time.” Environmental groups have filed a lawsuit seeking to force EPA to issue numeric nutrient criteria, as they sought in the earlier petition.

⁶¹ “EPA Nutrient Reduction Framework Urges States to Develop Plan, Schedule for Criteria,” *Daily Environment Report*, March 17, 2011, p. A-16.

The George W. Bush and Obama administrations both attempted to lessen confusion over the Court's rulings for the regulated community, regulators, and the general public by issuing guidance documents to identify, in light of the Court's rulings, categories of waters that are jurisdictional, categories that are not jurisdictional, and categories that require a case-specific analysis to determine if CWA jurisdiction applies. But the non-binding guidance documents did not resolve all questions. In an effort to do so, in March 2014, EPA and the Army Corps of Engineers (Corps) jointly proposed a rule defining the scope of waters protected under the CWA.⁶² The proposed rule would revise regulations that have been in place for more than 25 years. It is particularly focused on clarifying the regulatory status of waters located in isolated places in a landscape, as well as small streams, rivers that flow for part of the years, and nearby wetlands—the types of waters affected by the Supreme Court's 2001 and 2006 rulings. In developing the proposed rule, EPA and the Corps relied on a draft synthesis of more than 1,000 published and peer-reviewed scientific reports. EPA has asked its Science Advisory Board (SAB) to review the draft synthesis, and the agencies will not issue a final rule before the SAB completes its work.

The agencies believe that, while the proposed rule would enlarge CWA jurisdiction beyond that under existing EPA-Corps guidance, which the agencies believe was narrower than is justified by science and the law, they contend that it would not enlarge jurisdiction beyond what is consistent with the Supreme Court's narrow reading of jurisdiction.

In 1977, Congress amended the CWA to exempt normal farming, ranching, and silviculture activities from Section 404. The act also exempts agricultural stormwater discharges and return flows from irrigated agriculture from Section 404 and other permit requirements of the law. Further, prior converted cropland is excluded from the definition of “waters of the United States” by rule. All of these exemptions and exclusions are self-implementing. Nothing in the 2014 proposed rule changes the existing statutory and regulatory exemptions. In addition, simultaneous with proposing the rule, EPA and the Corps issued an interpretive rule that identifies 56 conservation practices approved by the U.S. Department of Agriculture that additionally qualify for exemption under the Section 404 exclusion of “normal farming” activities. Through this interpretive rule, the agencies intend to resolve uncertainties about “normal farming” activities that are exempt from permitting when these conservation practices are used. In other words, effective immediately, producers who utilize any of the 56 identified practices according to USDA technical standards need not seek a determination of CWA jurisdiction and need not seek a CWA permit. The three agencies also have signed a Memorandum of Understanding detailing implementation of the interpretive rule and identifying a process for reviewing and updating the list of qualifying conservation practices.⁶³

Status

The Corps and EPA are accepting public comment on the proposed rule until October 20, 2014.⁶⁴ Although the EPA-Corps interpretive rule on agricultural conservation practices took effect on

⁶² Department of Defense, Department of the Army, Corps of Engineers, and Environmental Protection Agency, “Definition of ‘Waters of the United States’ Under the Clean Water Act, Proposed Rule,” 79 *Federal Register* 22188022274, April 21, 2014.

⁶³ For additional information, see CRS Report R43455, *EPA and the Army Corps’ Proposed Rule to Define “Waters of the United States”*, by Claudia Copeland.

⁶⁴ U.S. Environmental Protection Agency, *Clean Water Act Definition of “Waters of the U.S.”*, <http://water.epa.gov/> (continued...)

March 25, the agencies are accepting public comment until July 7, 2014.⁶⁵ The EPA Administrator stated at a congressional hearing that it generally takes about one year to finalize a rule. Complex and controversial rules can take much longer from proposal to promulgation. Once a rule is finalized, legal challenges are likely, possibly delaying implementation of any rule for years.

Issues

The agriculture sector has been vigorous in criticizing and challenging EPA regulatory actions that may affect the sector's operations, making potential impacts of the proposed rule on agriculture a focus of controversy—although the rule's potential impacts are not limited to agriculture. One of the sector's concerns about a new "waters of the United States" rule has been whether it would modify existing statutory and regulatory exemptions that exclude certain discharges resulting from agricultural activities from CWA permitting. As described above, the proposed rule makes no change and does not affect or alter these exemptions. The interpretive rule was intended to clarify the types of agricultural conservation practices that are exempt from Section 404, but some in agriculture contend that it has created confusion and uncertainty.

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Spill Prevention, Control, and Countermeasure (SPCC) Plans

The CWA mandated regulations to prevent the discharge of oil from various sources.⁶⁶ Pursuant to this statutory requirement,⁶⁷ EPA crafted regulations for non-transportation-related facilities in 1973. Affected facilities must prepare and implement, but not submit,⁶⁸ spill prevention control and countermeasure (SPCC) plans.⁶⁹ The EPA SPCC plan requirements apply to non-transportation-related facilities that drill, produce, store, process, refine, transfer, distribute, use, or consume oil or oil products,⁷⁰ and that could reasonably be expected to discharge oil to U.S. navigable waters or adjoining shorelines.⁷¹ Facilities, including farms,⁷² are subject to the rule if

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lawsregs/guidance/wetlands/CWAwaters.cfm.

⁶⁵ Department of Defense, Department of the Army, Corps of Engineers, and Environmental Protection Agency, "Notice of Availability Regarding the Exemption From Permitting Under Section 404(f)(1)(A) of the Clean Water Act to Certain Agricultural Conservation Practices," 79 *Federal Register* 22276, April 21, 2014. Comment period extension may be found here: <http://water.epa.gov/lawsregs/guidance/wetlands/CWAwaters.cfm>.

⁶⁶ Section 311(j)(1) of CWA.

⁶⁷ And in accordance with Executive Order 11735 (August 3, 1973), granting EPA the authority to regulate non-transportation-related onshore and offshore facilities.

⁶⁸ A subset of high-risk facilities must submit Facility Response Plans to EPA (40 CFR §112.20)

⁶⁹ U.S. Environmental Protection Agency, "Oil Pollution Prevention: Non-Transportation Related Onshore and Offshore Facilities," *Federal Register*, vol. 38, no. 237 (December 11, 1973), pp. 34164-34170.

⁷⁰ Per EPA SPCC regulations, "oil," means oil of any kind or in any form, including, but not limited to: petroleum; fuel oil; sludge; oil refuse; oil mixed with wastes other than dredged spoil; fats, oils or greases of animal, fish, or marine mammal origin; vegetable oils, including oil from seeds, nuts, fruits, or kernels; and other oils and greases, including synthetic oils and mineral oils (40 C.F.R. §112.2).

⁷¹ Some of the definitions for the terms used to determine SPCC applicability may be subject to interpretation. For (continued...)

they meet at least one of the following capacity thresholds: an aboveground aggregate oil storage capacity greater than 1,320 U.S. gallons,⁷³ or a completely buried oil storage capacity greater than 42,000 U.S. gallons.

Among other obligations, SPCC regulations require secondary containment (e.g., dikes or berms) for certain oil-storage units; and plans must be certified by a professional engineer unless a facility owner/operator is able to self-certify the plan.

Status

Following the passage of the Oil Pollution Act of 1990,⁷⁴ EPA proposed changes and clarifications to the SPCC regulations that were made final in July 2002.⁷⁵ EPA has both extended the 2002 rule's compliance date (on multiple occasions) and made further amendments to the 2002 rule.⁷⁶ For most types of facilities subject to SPCC requirements, the deadline for complying with the changes made in 2002 was November 10, 2011.⁷⁷ However, EPA extended the compliance date for farms⁷⁸ to May 10, 2013.⁷⁹ On March 26, 2013, Congress enacted P.L. 113-6, which prohibited EPA from using appropriations to enforce SPCC provisions at farms for 180 days after enactment (i.e., through September 22, 2013).

Note that the July 2002 final rule and subsequent amendments did not alter the requirement for owners or operators of facilities, including farms, to maintain and to continue implementing their SPCC plans in accordance with the SPCC regulations in effect before the 2002 rulemaking.

Issues

Many of the recent SPCC issues have involved program scope and applicability: which facilities, materials, and equipment should be subject to SPCC requirements. These issues have garnered considerable attention in the 113th Congress,⁸⁰ ultimately resulting in enacted legislation that alters the applicability for farms subject to the SPCC regulations.

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example, the definition of “navigable waters” has been a subject of debate and litigation in recent years. See CRS Report RL33263, *The Wetlands Coverage of the Clean Water Act (CWA): Rapanos and Beyond*.

⁷² Although the definition of facility does not specifically mention farms, farms are explicitly defined as “a facility on a tract of land devoted to the production of crops or raising of animals, including fish, which produced and sold, or normally would have produced and sold, \$1,000 or more of agricultural products during a year.” See 40 C.F.R. §112.2.

⁷³ Only counting containers greater than 55 gallons. 40 C.F.R. §112.1(d).

⁷⁴ P.L. 101-380; 33 U.S.C. §2701 et seq.

⁷⁵ U.S. Environmental Protection Agency, “Oil Pollution Prevention and Response; Non-Transportation-Related Onshore and Offshore Facilities: Final Rule,” 67 *Federal Register* 47041, July 17, 2002.

⁷⁶ These actions were, at least in part, related to legal challenges that followed the 2002 final rule.

⁷⁷ U.S. Environmental Protection Agency, “Oil Pollution Prevention; Spill Prevention, Control, and Countermeasure Rule Compliance Date Amendment,” 75 *Federal Register* 63093, October 14, 2010.

⁷⁸ Defined as “a facility on a tract of land devoted to the production of crops or raising of animals, including fish, which produced and sold, or normally would have produced and sold, \$1,000 or more of agricultural products during a year” (40 CFR §112.2).

⁷⁹ U.S. Environmental Protection Agency, “Oil Pollution Prevention: Spill Prevention, Control, and Countermeasure Rule—Compliance Date Amendment for Farms,” 76 *Federal Register* 72120, November 22, 2011.

⁸⁰ For further details, see CRS Report R43306, *Spill Prevention, Control, and Countermeasure (SPCC) Regulations*: (continued...)

On June 10, 2014, the President signed the Water Resources Reform and Development Act (WRDA) of 2014 (P.L. 113-121). Section 1048 of the act alters the applicability of the SPCC. Selected changes include the following:

- Farms with an aggregate aboveground storage capacity less than 2,500 gallons are not subject to SPCC regulations;
- Farms with an aggregate aboveground storage capacity less than 6,000 gallons (or a to-be-determined lower threshold) and no reportable discharge history are not subject to SPCC regulations;
- Farms with an aggregate aboveground storage capacity less than 20,000 gallons (the prior threshold was 10,000 gallons), no individual storage tank greater than 10,000 gallons, and no reportable discharge history may self-certify their SPCC plan, in lieu of hiring a professional engineer for certification.

In addition, several recent rulemakings included provisions that may benefit farming operations.

- In an April 2011 final rule,⁸¹ EPA exempted all milk and milk product containers and associated piping from the SPCC requirements.⁸² EPA's rationale for the exemption is that these units are subject to industry standards for sanitation and construction and may be regulated by other agencies, including the USDA. In addition, the final rule states that exempted milk storage units are not included in a facility's overall oil storage volume, a primary factor for SPCC applicability.
- In a November 2009 final rule,⁸³ EPA exempted pesticide application equipment and related mix containers that may currently be subject to the SPCC rule when crop oil or adjuvant oil are added to formulations. EPA also clarifies that a nurse tank is considered a mobile refueler, and, like other types of mobile refuelers, is exempt from the sized secondary containment requirements. EPA estimated that the total cost savings to farm owners and operators from these (and other) amendments amount to \$13 million on an annualized basis (2007\$).⁸⁴

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Background and Legislation in the 113th Congress, Spill Prevention, Control, and Countermeasure (SPCC) Regulations: Background and Legislation in the 113th Congress, by Jonathan L. Ramseur.

⁸¹ U.S. Environmental Protection Agency, "Oil Pollution Prevention; Spill Prevention, Control, and Countermeasure (SPCC) Rule—Amendments for Milk and Milk Product Containers," *76 Federal Register* 21652, April 18, 2011.

⁸² Pursuant to the CWA definition of oil, the SPCC requirements apply to petroleum-based and non-petroleum-based oil (CWA §311(a); 33 U.S.C. 1321(a)). In a 1975 *Federal Register* notice, EPA clarified that its 1973 SPCC regulations apply to oils from animal and vegetable sources (U.S. Environmental Protection Agency, "Oil Pollution Prevention, Applicability of 40 CFR part 112 to Non-Petroleum Oils; Notice," *40 Federal Register* 28849, July 9, 1975). EPA subsequently stated that "milk typically contains a percentage of animal fat, which is a non-petroleum oil" and is thus subject to SPCC provisions (U.S. Environmental Protection Agency, "Oil Pollution Prevention; Spill Prevention, Control, and Countermeasure Rule Requirements—Amendments," *74 Federal Register* 2461, January 15, 2009).

⁸³ U.S. Environmental Protection Agency, "Oil Pollution Prevention; Spill Prevention, Control, and Countermeasure (SPCC) Rule - Amendments," *74 Federal Register* 58784, November 13, 2009.

⁸⁴ *Ibid*, p. 58805.

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Energy

The agricultural industry is sensitive to fluctuations in energy sources and cost. The use of fossil fuel-based fertilizers, diesel fuel, and, more recently, corn-based ethanol all have a significant impact on both crop and livestock operations. Since the 1970s, federal policies have offered a variety of incentives, regulations, and programs to encourage growth in the bioenergy industry as a sustainable alternative to fossil fuels.⁸⁵ The increased emphasis on agriculture-based biofuels has received mixed reviews within the agricultural community.⁸⁶ While some continue to push for greater federal involvement, critics of the federal intervention also have emerged.

The following section covers several federal regulations relating to energy, including

- renewable fuels standard (RFS2) rule; and
- E15 waiver petition.

Renewable Fuels Standard (RFS2) Rule

The Energy Independence and Security Act of 2007 (P.L. 110-140; EISA) expanded the renewable fuel standard (RFS) originally established in the Energy Policy Act of 2005 (P.L. 109-58; EAct05).⁸⁷ The RFS requires that U.S. transportation fuel contain a minimum amount of biofuel—this mandate then supports the domestic production and use of biofuels. The 2013 RFS mandate was 16.55 billion gallons of biofuels (consisting mostly of ethanol produced from corn starch), ramping up to 36 billion gallons in 2022 (consisting of approximately 60% of advanced biofuels). EISA also requires that advanced biofuels (e.g., cellulosic biofuels, biomass-based diesel, and others) and conventional biofuels from newly built refineries used to satisfy RFS mandates meet certain lifecycle GHG reduction requirements.⁸⁸ EPA is required to classify biofuel production based on their lifecycle emissions, including emissions from direct and indirect changes in land use. Only fuels that achieve a 50% reduction in GHG emissions relative to petroleum fuels may be classified as advanced biofuels. Cellulosic biofuels must achieve at least a 60% GHG emission reduction, while fuels from new corn ethanol plants must achieve a 20% GHG emission reduction—corn ethanol plants in existence or under construction when EISA was enacted (December 19, 2007) are grandfathered.

⁸⁵ For more information on agriculture-based biofuels, see CRS Report R41282, *Agriculture-Based Biofuels: Overview and Emerging Issues*.

⁸⁶ Examples of agriculture-based biofuels policy proponents include organizations who currently benefit directly from policies, such as the National Corn Growers Association (corn-based ethanol) and American Soybean Association (soybean-based biodiesel). Critics include organizations who rely on current biofuel sources for other non-fuel purposes, such as the National Cattleman's Beef Association and National Pork Producers Council.

⁸⁷ See CRS Report R40155, *Renewable Fuel Standard (RFS): Overview and Issues*; or CRS Report R43325, *The Renewable Fuel Standard (RFS): In Brief*.

⁸⁸ See CRS Report R40460, *Calculation of Lifecycle Greenhouse Gas Emissions for the Renewable Fuel Standard (RFS)*.

Status

Under the Clean Air Act Section 211(o), as amended by EISA, EPA is required to set the annual standards—or volume requirements—under the RFS each November for the following year based on gasoline and diesel projections from the Energy Information Administration (EIA). EPA is also required to set the cellulosic biofuel standard each year based on the volume projected to be available during the following year, using EIA projections and assessments of production capability from industry.

From 2010 to 2014, EPA analysis suggested that the United States did not have sufficient cellulosic biofuel production capacity to meet the RFS mandates. As a result, EPA proposed substantial reductions to the statutory RFS mandates for cellulosic biofuels for each of those years.⁸⁹ However, cellulosic biofuel production (and imports) failed to meet even the reduced standards for 2010-2013 and participating fuel companies were obligated to purchase waiver credits from the EPA in lieu of fulfilling their blending obligations. Then, in February 2013, under remand from the U.S. Court of Appeals for the District of Columbia, EPA revised the 2012 RFS for cellulosic biofuels to zero, and in November 2013, also revised the 2011 RFS for cellulosic biofuels to zero. Also, in April 2014 EPA revised the 2013 cellulosic biofuel standard from 6 million ethanol-equivalent gallons to approximately 810,000 ethanol-equivalent gallons.⁹⁰ In addition to the difficulty of achieving the lowered cellulosic biofuels mandates, total renewable fuel consumption (after achieving a 10% blending level in 2013) appears limited by blending and distribution infrastructure—a phenomenon referred to as the blend wall.⁹¹ Also, significant declines in national transportation fuel consumption since 2006 have contributed to the difficulties in meeting biofuels RFS mandates. EPA is expected to announce a final 2014 RFS mandate in June.⁹²

Issues

The RFS has been a major policy supporting the development of U.S. biofuels industries, especially for corn-based ethanol producers. Many believe that the expanded RFS will continue to be a primary pillar of support for existing U.S. biodiesel production capacity (due to the uneconomical nature of U.S. biodiesel production). In future years, as the advanced biofuel mandates grow, the RFS could be the key driver for the development of biofuels from cellulose, algae, and other non-food/feed commodities. However, unless substantial infrastructure issues which limit consumers ability to use higher levels of ethanol are first overcome or greater emphasis is placed on producing advanced biofuels that can be used with existing infrastructure, the biofuels blending and consumption goals may be difficult to achieve and the RFS—if imposed under such conditions—could have significant unintended economic consequences.

⁸⁹ CRS Report R41106, *Meeting the Renewable Fuel Standard (RFS) Mandate for Cellulosic Biofuels: Questions and Answers*.

⁹⁰ U.S. Environmental Protection Agency, “Regulation of Fuels and Fuel Additives: 2013 Cellulosic Biofuel Standard,” *79 Federal Register*, May 2, 2014.

⁹¹ The blend wall is the upper limit to the total amount of ethanol that can be blended into U.S. gasoline and still maintain automobile performance and comply with the Clean Air Act.

⁹² “EPA Proposes 2014 Renewable Fuel Standards, 2015 Biomass-Based Diesel Volume” Office of Transportation and Air Quality, EPA-420-F-13-048, November 2013.

Unintended Consequences of RFS Expansion

The initial biofuels expansion, which occurred during the 2006 to 2010 period when biofuels usage was unobstructed by the blend wall, contributed to concomitant pressure on limited agricultural resources (most notably land) as feedstock production intensified on existing cropland and expanded onto new, marginal lands. This contributed to higher prices for those commodities that compete for the affected cropland, as well as having important secondary effects in related agricultural markets, including livestock feed markets and agricultural input markets.

Corn is the primary feed ingredient used by the U.S. livestock sector (i.e., dairy, cattle, hogs, and poultry), representing over 90% of all grains consumed, and about 57% of all grains and feed concentrates consumed annually. As the price of corn rose, the entire feed complex price structure rose as well, putting a cost squeeze on the U.S. livestock sector. A severe, widespread drought in 2012 further elevated concerns of ethanol-induced corn shortages. Under these conditions, livestock and poultry producers joined the petroleum industry at the time in calling for the modification or elimination of the RFS.

However, a return to normal weather and crop yields in 2013, coupled with the emergence of the blend wall (see “E15 Waiver Petition” discussion, below) in late 2012 have largely reduced the availability and cost of corn as an impediment to continued domestic ethanol consumption. Since 2010, both corn use for ethanol and ethanol production appear to have plateaued. Now, instead of corn shortages and resource constraints, it appears that without important blending and distribution infrastructure developments, corn ethanol consumption may be challenged to achieve its ceiling set in the RFS of 15 billion gallons by 2015. As a result, its impact in other corn-user markets has become negligible and is expected to diminish further in the coming years as corn yields outpace biofuels consumption. These infrastructure constraints, coupled with fresh memories of corn ethanol’s past impact in secondary markets, are likely to keep tremendous pressure on policy makers to waive future RFS mandates.

Unachieved Cellulosic Biofuels Mandates

After four successive years (2010-2013) in which, first, EPA lowered the cellulosic biofuels mandate, and then cellulosic biofuels production failed to achieve the lowered mandates, many question whether the RFS mandates for cellulosic biofuels need to be drastically scaled back or eliminated entirely. The cellulosic biofuels industry has argued that it would be able to produce enough fuel to meet the RFS mandates if certain obstacles are overcome: lowering the cost of conversion technology at the initial stages of commercial application, easing access to financing, expediting government approval of cellulosic biofuel production pathways, developing environmental regulations that are more complementary to the cellulosic biofuels industry, removing feedstock supply uncertainties, and creating certainty for tax incentives. But with limited commercial success to date and the blend wall standing as a major barrier to further rapid expansion of biofuels consumption, there is considerable uncertainty about the future of the cellulosic biofuels industry—even if the technological and commercial breakthroughs for cellulosic biofuels were achieved.

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E15 Waiver Petition

By 2022, EISA requires the use of 36 billion gallons of renewable fuels, and much of this could be ethanol from a variety of feedstocks (many of which are agricultural-based; see “Renewable Fuels Standard (RFS2) Rule” discussion, above). However, there is an obstacle to the use of this quantity of ethanol in gasoline. Currently, although some ethanol is sold as an alternative fuel (E85), most is sold as an additive in conventional and reformulated gasoline. Until recently, the amount of ethanol that could be blended into gasoline for all uses was limited to 10% by volume (E10) pursuant to EPA guidance under the CAA, as well as by vehicle and engine warranties, and certification procedures for fuel-dispensing equipment.

As the RFS is structured, assuming that most of the mandate is met using ethanol, the volume of ethanol blended in gasoline is limited by gasoline consumption. In 2013, the RFS required over 16 billion gallons of renewable fuel, while projected gasoline consumption for 2013 was 134 billion gallons. After 2013, the renewable fuel mandate is scheduled to continue to increase. However, a limit of 10% ethanol means that ethanol for gasoline blending (not including E85) likely cannot exceed 14 billion-15 billion gallons per year.⁹³ This “blend wall” is the maximum possible volume of ethanol that can be blended into U.S. motor gasoline. The actual limit could be slightly lower, since older fuel tanks and pumps at some retail stations may not be equipped to handle ethanol-blended fuel.⁹⁴ Because of the blend wall and other issues, EPA has proposed a total RFS of 15.21 billion gallons for 2014—a level lower than both the 2014 level scheduled in EISA and the actual amount required in 2013. What level EPA will finalize for 2014 and subsequent years will determine whether there is impetus to roll out E15 on a wider scale.

Status

On March 6, 2009, Growth Energy (on behalf of 52 U.S. ethanol producers) applied to EPA for a waiver from the CAA limitation on ethanol content in gasoline. Until recently, ethanol content in gasoline for all uses was capped at 10% (E10); the application requested an increase in the maximum concentration to 15% (E15). If fully granted, the waiver would allow the use of significantly more ethanol in gasoline than is currently permitted.

On November 4, 2010, EPA granted a partial waiver allowing the use of E15 in MY2007 and newer vehicles.⁹⁵ The agency delayed a decision on MY2001-MY2006 vehicles until the

⁹³ However, some of the mandate—in the range of 1 billion gallons—will be met with non-ethanol fuels, mainly biodiesel and other biomass-based diesel fuels. Thus, the overall mandate can exceed the blend wall limit by some amount.

⁹⁴ For more information see CRS Report R40445, *Intermediate-Level Blends of Ethanol in Gasoline, and the Ethanol “Blend Wall”*.

⁹⁵ Environmental Protection Agency, “Partial Grant and Partial Denial of Clean Air Act Waiver Application Submitted by Growth Energy to Increase the Allowable Ethanol Content of Gasoline to 15 Percent; Decision of the Administrator; (continued...)”

Department of Energy completed testing of those vehicles. On January 21, 2011, EPA announced that the waiver would be expanded to include MY2001-MY2006 vehicles.⁹⁶ EPA determined that data were insufficient to address concerns that had been raised over emissions from MY2000 and older vehicles, as well as heavy-duty vehicles, motorcycles, and non-road applications (including farm equipment), and thus a waiver for these vehicles/engines was denied. EPA has noted that granting the waiver eliminates only one impediment to the use of E15—other factors, including retail and blending infrastructure (including gasoline storage tanks and pumps), state and local laws and regulations, and manufacturers’ warranties, would still need to be addressed. Because of concerns over potential damage by E15 to equipment not designed for its use, this partial waiver was challenged in court by a group of vehicle and engine manufacturers, among others,⁹⁷ although the challenge was ultimately unsuccessful. In the 112th Congress, the House adopted an amendment (H.Amdt. 156) to H.R. 1 that would have blocked EPA from using FY2011 funds to implement the agency’s waiver decision, although the Senate bill did not contain that provision and the bill was not enacted. In the 113th Congress, legislation has been proposed (H.R. 1462 , H.R. 1469, and S. 344) that would overturn EPA’s E15 decision and bar the agency from issuing further waivers.

On March 15, 2012, EPA approved the model misfueling mitigation plan (MMP) submitted by the Renewable Fuels Association (RFA) as step for companies to develop their own MMPs.⁹⁸ Since then, companies have registered with EPA, and at least 78 retailers have begun selling E15.⁹⁹

Issues

EPA approval of the waiver request could help open the door to E15 blending. This could be a strong signal to the biofuels industry concerning federal support for meeting and enforcing RFS mandate levels. As a result, this could help to stimulate new investment in the biofuels sector. In the short run, the corn ethanol industry would be the main beneficiary, since it is best able to respond to the expanding RFS mandates. Any further increase in corn ethanol use would benefit corn producers. The net result could be an intensification of agricultural resource use with the same consequences discussed previously (see “Renewable Fuels Standard (RFS2) Rule”). However, as noted above, because of the limited availability of E15 and for other reasons, EPA has proposed a 2014 RFS mandate that is lower than both the 2014 level scheduled in the statute

(...continued)

Notice,” 75 *Federal Register* 68094-68150, November 4, 2010.

⁹⁶ Environmental Protection Agency, “Partial Grant of Clean Air Act Waiver Application Submitted by Growth Energy to Increase the Allowable Ethanol Content of Gasoline to 15 Percent; Decision of the Administrator,” signed January 21, 2011 (awaiting publication in the *Federal Register*).

⁹⁷ The Alliance of Automobile Manufacturers (Alliance), the Association of International Automobile Manufacturers, Inc. (AIAM), the National Marine Manufacturers Association (NMMA), and the Outdoor Power Equipment Institute (OPEI). OPEI, Fact Sheet: E-15 Partial Waiver Legal Challenge, December 17, 2010. The case is *Alliance of Automobile Manufacturers et. al v. Environmental Protection Agency*.

⁹⁸ Renewable Fuels Association News Release, “Ethanol Industry, EPA Ready for E15 Rollout,” March 15, 2012; available at <http://www.ethanolrfa.org/news/entry/ethanol-industry-epa-ready-for-e15-rollout/>.

⁹⁹ Renewable Fuels Association New Release, “Lawrence Gas Station First in the Country to Offer E15 Fuel,” July 17, 2012; available at <http://www.ethanolrfa.org/news/entry/lawrence-gas-station-first-in-the-country-to-offer-e15-fuel/>. Choose Ethanol, E15 Stations; available at <http://www.chooseethanol.com/pages/e15-stations-by-state>.

and the actual 2013 mandated level. Further reductions in the RFS mandates would likely hinder a significant roll-out of E15.

The ability to address concerns over the use of E15 in legacy equipment (both infrastructure and vehicles) will affect the rollout of E15 to retail stations. As noted above, EPA's decision to allow E15 in some vehicles only addresses one part of the blend wall. State laws and regulations, vehicle and equipment certifications and warranties, and questions over fuel suppliers' willingness to market the fuel could all be impediments to an expansion of E15 use. For example, few automakers have updated their vehicle warranties to allow E15 in their newer vehicles, and none have updated warranties to cover the use of E15 in existing (pre-2012) vehicles.

Equipment manufacturers, meat producers, gasoline suppliers, and others challenged the EPA E15 waiver decision in federal court. On August 20, 2012, the U.S. Court of Appeals for the D.C. Circuit found (2-1) that the plaintiffs did not have standing to challenge EPA's decision,¹⁰⁰ and in June 2013 the Supreme Court denied a petition from the plaintiffs to appeal the circuit court decision.

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Pesticides

Agricultural “pests,” which includes certain insects, plant pathogens, weeds, and vertebrates, can interfere with the production of crops and livestock used for food and fiber. Pesticides are used in agriculture to prevent, kill, repel or mitigate pests that might harm crop yields, but their use may pose risks to human health and the environment. In order to prevent unreasonable risks from pesticide use, pesticides are primarily regulated at the federal level by the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA).¹⁰¹ FIFRA directs the Environmental Protection Agency (EPA) to regulate the sale and use of pesticide products through registration (that is, licensing) based on risk assessments.¹⁰² The federal regulation of pesticides also requires routine re-evaluations of risks in order for any necessary restrictions to reflect the latest scientific understanding. For more information about pesticide laws, see CRS Report RL31921, *Pesticide Law: A Summary of the Statutes*.

The following section covers four selected issues concerning federal regulations relating to pesticides, including

- Clean Water Act permits for pesticide application;

¹⁰⁰ *Grocery Manufacturers Association, et al. v. EPA*, D.C. Cir. No. 10-1380.

¹⁰¹ FIFRA is codified at 7 U.S.C. 136-136y.

¹⁰² Section 408 of the Federal Food, Drug, and Cosmetic Act (FFDCA, 21 U.S.C. 346a) is cross-referenced in FIFRA and addresses setting permissible levels of pesticide residues on food as part of the process for considering whether to register a pesticide that is used in food production.

- pesticide spray drift;
- atrazine; and
- pesticide registration and the Endangered Species Act (ESA).

Clean Water Act Permits for Pesticide Application

For the more than 30 years since Congress enacted the Clean Water Act (CWA) and the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), little apparent direct conflict existed between the two laws. EPA's operating principle during that time was that pesticides used according to the requirements of FIFRA do not require regulatory consideration under the CWA. EPA had never required CWA permits for use of FIFRA-approved materials, and EPA rules did not specifically address the issue.¹⁰³

EPA's interpretation and operating practice were challenged in several court cases. At issue has been how FIFRA-approved pesticides that are sprayed over or into waters are regulated and, specifically, whether the FIFRA regulatory regime is sufficient alone to ensure protection of water quality or whether such pesticide application requires approval under a CWA permit. The issue arose initially over challenges to some routine practices in the West (weed control in irrigation ditches and spraying for silvicultural pest control on U.S. Forest Service lands). It drew more attention in connection with efforts by public health officials to combat mosquito-borne illnesses such as West Nile virus. The litigation created uncertainty over whether application of pesticides and herbicides to waterbodies requires a CWA water discharge permit.

Status

EPA tried to promulgate policy to clarify the relationship of the two laws and to address conflicts resulting from several judicial rulings, ultimately in a regulation issued in 2006 that attempted to specify circumstances in which pesticides applied to U.S. waters do not require CWA permits. That rule was challenged by multiple parties, and in January 2009, a federal appellate court vacated the rule.¹⁰⁴ As a result, persons who spray pesticides on or near water are now required to obtain a CWA permit.

The federal court's ruling appeared to leave little room for EPA to fashion a new rule consistent with the agency's long-standing view that FIFRA-compliant applications do not require CWA permits. Industry groups subsequently petitioned the Supreme Court to review the case, but the Court denied the petition.

To meet the court's mandate, EPA issued a pesticide general permit, or PGP, on October 31, 2011.¹⁰⁵ EPA estimates that the universe of affected activities that for the first time will be subject to CWA permits is approximately 5.6 million applications annually, which are performed by

¹⁰³ For more information on pesticide use and water quality, see CRS Report RL32884, *Pesticide Use and Water Quality: Are the Laws Complementary or in Conflict?*.

¹⁰⁴ *National Cotton Council of America v. U.S. Environmental Protection Agency*, 553 F.3d 927 (6th Cir. 2009).

¹⁰⁵ U.S. Environmental Protection Agency, "Final National Pollutant Discharge Elimination System (NPDES) Pesticide General Permit for Point Source Discharges From the Application of Pesticides; Notice of final permit," 76 *Federal Register* 68750-68756, November 7, 2011.

365,000 applicators covering four use patterns: (1) mosquito and other flying insect pest control; (2) aquatic weed and algae control; (3) aquatic nuisance animal control; and (4) forest canopy pest control. The permit covers about 500 different pesticide active ingredients that are contained in approximately 3,700 product labels.

The permit applies to a variety of entities, including agricultural interests involved in crop and timber tract production, forest nurseries, and operating irrigation systems; pesticide and agricultural chemical manufacturing; mosquito or other vector control districts and commercial applicators that service them; utilities (e.g., electric power, natural gas, water supply, and wastewater); and government agencies and departments engaged in air and water resource management and conservation. It requires all operators to minimize pesticide discharges to waters by practices such as using the lowest effective amount of pesticide product that is optimal for controlling the target pest. It also requires operators to prepare pesticide discharge management plans to document their pest management practices. Permittees must monitor for observable adverse effects in the treatment area and where the pesticides are discharged to U.S. waters. The permit does not cover agricultural stormwater runoff or irrigation return flow, as these discharges are statutorily exempt from CWA permitting, and it also does not cover terrestrial application to control pests on agricultural crops or forest floors. Thus, because pesticide applications to land that do not result in point source discharges of pesticides to U.S. waters do not require permit coverage, EPA says that many farms are not affected by the court's decision and do not need CWA permits. The EPA general permit applies in states and areas where EPA is the National Pollutant Discharge Elimination System (NPDES) permitting authority, but has been used as a model for other states to develop their own general permits.¹⁰⁶ General permits issued by the other states must meet CWA guidelines and also may be more stringent than EPA's requirements.

Most entities subject to the EPA general permit were automatically covered, while some pesticide applicators with more significant discharges must submit a notice of intent (NOI) to be covered by the PGP. For example, any federal or state agency that conducts pest management as an integral part of its operation, and special-purpose districts with a specific responsibility to control pests, must submit a NOI. The permit took effect in January 2012.

In an effort to halt EPA's regulatory activity, the House passed legislation in the 112th Congress (H.R. 872) intended to overturn the court's 2009 ruling by exempting aerial pesticide application activities from clean water permit requirements. Also in the 112th Congress, the text of H.R. 872 was included as a provision of the 2012 farm bill approved by the House Agriculture Committee, but this bill was not enacted. In the 113th Congress, legislation to exempt certain authorized pesticide uses from any permit requirements has been introduced again (S. 175, S. 802, H.R. 935). The text of H.R. 935 was introduced in the House-passed farm bill (H.R. 2642), but it was not included in the enacted 2014 farm bill (P.L. 113-79).

Issues

General permits cover categories of point sources that have common elements and that discharge the same types of wastes. They allow the permitting authority to allocate resources efficiently,

¹⁰⁶ The CWA authorizes EPA to delegate NPDES permitting authority to qualified states, and EPA has done so for the majority of states. For this permit, EPA will be the permitting authority in Massachusetts, New Mexico, Oklahoma, Alaska, Idaho, and the District of Columbia and for certain tribal lands.

especially when there is a large number of potential permittees. Permitting procedures are streamlined and simplified, compared with CWA individual permits. Still, many agricultural industry groups are fearful that the court's ruling and EPA's general permit will lead to more burdensome and potentially costly requirements that affect their operation and activities.

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Pesticide Spray Drift

Pesticide spray drift describes the movement of pesticide during or soon after its application through the air. Such drift can potentially move away from the intended target to unintended locations. Various stakeholders, including many in the agricultural community, have expressed their concerns to states and EPA regarding potential risk associated with exposure to spray drift.¹⁰⁷ These include potential risks to the health of applicators and by-standers, and potential effects on non-target animals and plants.¹⁰⁸ Many of these stakeholders remain cautious about the level and extent of restrictions EPA may require to prevent unreasonable adverse effects from spray drift. Pesticide spray drift has also been the subject of several citizen petitions and lawsuits filed against EPA by environmental advocacy groups.¹⁰⁹

When considering whether to register a pesticide under FIFRA, EPA currently incorporates an assessment of the potential risks from spray drift as part of an overall risk assessment of a pesticide. EPA may require an applicant of a pesticide registration to conduct specific tests if the applicant proposes application methods that could potentially result in spray drift. Results from these tests may be used by the agency in determining whether precautionary labeling or certain other restrictions are needed as a condition for registration. Accordingly, EPA's current regulation of pesticide spray drift primarily affects pesticide manufacturers. Pesticide applicators may be subject to enforcement by states or EPA if pesticides are not applied in accordance with label restrictions.

¹⁰⁷ U.S. Environmental Protection Agency, *For Your Information: Spray Drift of Pesticides*, December 1999, at <http://nepis.epa.gov/Exe/ZyPURL.cgi?Dockey=200002PC.txt>.

¹⁰⁸ As an example, spray drift from application of certain neonicotinoids may be one of the factors that affects the health of particular pollinators. For more information on the role that pesticides may have on pollinator decline, see CRS Report R42855, *Bee Health: The Role of Pesticides*, by Renée Johnson.

¹⁰⁹ As an example, two environmental groups filed a citizen petition in 2007 requesting EPA to revoke all tolerances and cancel all registration for the pesticide chlorpyrifos due in part to concerns of exposure to spray drift. The citizen petition is available in a docket at <http://www.regulations.gov#!docketDetail;D=EPA-HQ-OPP-2007-1005>. Additionally, the two environmental groups filed a lawsuit in 2010 to compel EPA to respond to the 2007 petition. The litigation led to a stipulation and order filed with a federal district court for EPA to conduct a preliminary human health risk assessment for chlorpyrifos and to respond to the petition. The stipulation and order is available in the docket. In 2011, EPA completed a preliminary human health risk assessment for chlorpyrifos, which is available in a docket at <http://www.regulations.gov#!docketDetail;D=EPA-HQ-OPP-2008-0850>. In 2012 and 2013, EPA responded to the 2007 citizen petition. The responses are available in the docket containing the 2007 petition. Another example of a citizen petition regarding exposures of children to spray drift is available at <http://www.regulations.gov#!docketDetail;D=EPA-HQ-OPP-2009-0825>.

EPA has taken several actions to address risks from spray drift. In 2009, EPA proposed guidance for pesticide registration applicants and registrants to revise label statements intended to reduce spray drift.¹¹⁰ This guidance was not formally adopted. EPA also initiated a voluntary Drift Reduction Technology Program to encourage development and verification of new pesticide application technologies that may reduce spray drift.¹¹¹ EPA is currently evaluating a drift reduction technology verification protocol, prior to its adoption for verifying the effectiveness of various spray drift reduction technology.¹¹² Additionally, EPA has worked with pesticide applicators and the agricultural community to encourage the use of best management practices.¹¹³

Status

In January 2014, EPA proposed guidance regarding the agency's process in evaluating risks from pesticide spray drift as part of its overall process for conducting pesticide risk assessments.¹¹⁴ The agency sought comments regarding refinements to models that are currently used by the agency to estimate spray drift and indirect exposure of such drift to children.

Issues

Pesticide manufacturers and applicators are concerned that the proposed risk assessment methodologies regarding spray drift may result in EPA requiring overly restrictive measures regarding how and when certain pesticides are used.¹¹⁵ They contend that refinements to models proposed by EPA do not take into account technological advances in pesticide application that reduce spray drift. Conversely, environmental advocacy groups contend that EPA's proposal would not lead to sufficiently protective measures taken by the agency to ensure that off-target spray drift is minimized. Potential impacts of spray drift from conventional agricultural operations on neighboring organic farm operations have also been an area of some concern.¹¹⁶

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¹¹⁰ U.S. Environmental Protection Agency, Pesticide Spray and Dust Drift, May 2014, available at <http://www.epa.gov/pesticides/factsheets/spraydrift.htm>.

¹¹¹ A fact sheet and additional information about the Drift Reduction Technology Program is available at EPA's website: <http://www.epa.gov/etv/este.html#pdr>.

¹¹² U.S. Environmental Protection Agency, *Evaluation of the Verification Protocol for Low and High Speed Wind Tunnel Testing for Row and Field Crops*, April 2012, at <http://nepis.epa.gov/Adobe/PDF/P100FAAH.pdf>.

¹¹³ See footnote 110.

¹¹⁴ U.S. Environmental Protection Agency, "Pesticides; Consideration of Spray Drift in Pesticide Risk Assessment: Notice of Availability and Request for Comment," *79 Federal Register* 4691-4693, January 29, 2014.

¹¹⁵ As an example, see comments submitted April 30, 2014 by the National Agricultural Aviation Association in response to U.S. Environmental Protection Agency, "Pesticides; Consideration of Spray Drift in Pesticide Risk Assessment: Notice of Availability and Request for Comment," *79 Federal Register* 4691-4693, January 29, 2014. Comments are available at <http://www.regulations.gov/#!documentDetail;D=EPA-HQ-OPP-2013-0676-0042>.

¹¹⁶ As an example, see comments submitted April 30, 2014 by Western Growers in response to U.S. Environmental Protection Agency, "Pesticides; Consideration of Spray Drift in Pesticide Risk Assessment: Notice of Availability and Request for Comment," *79 Federal Register* 4691-4693, January 29, 2014. Comments are available at <http://www.regulations.gov/#!documentDetail;D=EPA-HQ-OPP-2013-0676-0080>.

Atrazine

The herbicide atrazine is one of the most widely used agricultural pesticides in the United States today.¹¹⁷ Widespread use of atrazine, reports of its presence and persistence in surface and drinking water in nearby areas where the herbicide is applied, and scientific studies suggesting that exposure to atrazine might disrupt the normal action of hormones in animals have prompted EPA to review the herbicide extensively.¹¹⁸

EPA has conducted a number of risk assessments of atrazine during the past 20 years as new information has become available to ensure that the existing registration still adequately prevents “unreasonable adverse effects on the environment” under FIFRA. In 2006, EPA issued a re-registration eligibility decision for atrazine after the agency completed a cumulative exposure assessment of atrazine and another triazine herbicide, simazine.¹¹⁹ The agency determined in its decision that products containing atrazine were eligible for continued registration only if registrants took certain risk mitigation measures including ecological monitoring of watersheds and specific label modifications.

In 2009, EPA requested its FIFRA Scientific Advisory Panel (SAP) to assist in reviewing the agency’s approach for evaluating new information about atrazine from human epidemiological studies as well as studies of laboratory animals and wildlife.¹²⁰ From 2009 to 2012, the agency held six SAP meetings to consider the then newly available information about atrazine. Though no decisions resulted from these meetings, the agency indicated that the information from such meetings would be taken into account as part of the registration review process, which is described below.

In 2011, EPA received a citizen petition requesting “a federal ban on the use and production of atrazine.”¹²¹ The agency denied the petition in August 2013 for not “demonstrat[ing] that immediate regulatory action is either necessary or appropriate.”¹²²

¹¹⁷ Atrazine is the common name for 6-chloro-N2-ethyl-N4-(1-methylethyl)-1,3,5-triazine-2,4-diamine. Atrazine is used for controlling broadleaf and grassy weeds in fields. It is used primarily on corn and sorghum in the Midwest. U.S. Environmental Protection Agency, *Atrazine – Chemical Details*, May 2014, at http://iaspub.epa.gov/apex/pesticides/f?p=CHEMICALSEARCH:3:0::NO:21,3,31,7,12,25:P3_XCHEMICAL_ID:1273 and U.S. Environmental Protection Agency, *Atrazine Preliminary Work Plan for Registration Review*, June 7, 2013, at <http://www.regulations.gov/#!documentDetail;D=EPA-HQ-OPP-2013-0266-0008>.

¹¹⁸ U.S. Environmental Protection Agency, *Atrazine Preliminary Work Plan for Registration Review*, June 7, 2013, at <http://www.regulations.gov/#!documentDetail;D=EPA-HQ-OPP-2013-0266-0008>.

¹¹⁹ U.S. Environmental Protection Agency, *Decision Documents for Atrazine*, April 6, 2006, at http://www.epa.gov/oppsrd1/REDS/atrazine_combined_docs.pdf.

¹²⁰ U.S. Environmental Protection Agency, *Atrazine Updates*, January 2013, at http://www.epa.gov/pesticides/re-registration/atrazine/atrazine_update.htm.

¹²¹ U.S. Environmental Protection Agency, “5-6-11 Save the Frogs Petition to Ban Atrazine,” September 14, 2011, available at <http://www.regulations.gov/#!documentDetail;D=EPA-HQ-OPP-2011-0586-0002>.

¹²² U.S. Environmental Protection Agency, “EPA Response to Save the Frogs’ May 6, 2011 Petition Requesting a Federal Ban on the Use and Production of Atrazine. August 27, 2013,” September 13, 2013, available at <http://www.regulations.gov/#!documentDetail;D=EPA-HQ-OPP-2011-0586-1294>.

Status

In June 2013, EPA initiated its periodic review of the registration for atrazine.¹²³ Such periodic reviews are required under FIFRA.¹²⁴ EPA anticipates making a registration review decision in 2016.¹²⁵ As part of this periodic review, the agency plans to conduct separate assessments on ecological, human health, and other risks using currently available information. The agency determined that registrants of atrazine were not required to develop new information. The public will have opportunity to comment on draft risk assessments and the proposed registration review decision upon their publication in the *Federal Register*. On the basis of its review, EPA will decide whether further regulatory restrictions are necessary to prevent unreasonable adverse effects on human health or the environment. Additionally, a “Special Review” of the potential risks posed by atrazine and related triazine pesticides that was initiated by the agency in 1994 remains ongoing during the registration review process.¹²⁶

Issues

Pesticide manufacturers, distributors, and agricultural users of atrazine have expressed concerns that frequent reviews by EPA may lead to new restrictions or cancellation of uses.¹²⁷ These stakeholders contend that further restriction could potentially limit the availability of atrazine as a cost-effective measure that helps growers increase crop yields. Conversely, public health and environmental advocates maintain that new restrictions on atrazine uses should be considered and may be warranted if the current measures associated with its registration are no longer adequate to ensure that the distribution, sale, and use of atrazine will not present risk of unreasonable adverse effects on human health or the environment.

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Pesticide Registrations and the Endangered Species Act (ESA)

The Endangered Species Act (ESA)¹²⁸ seeks to protect species identified as endangered or threatened with extinction and to protect the habitat on which they depend. It is administered primarily by the Fish and Wildlife Service (FWS). For certain marine and anadromous species, it

¹²³ Additional documents related to the registration review of atrazine are in the regulatory docket. U.S. Environmental Protection Agency, Atrazine Registration Review, Docket ID: EPA-HQ-OPP-2013-0266, June 26, 2013, <http://www.regulations.gov/#!docketDetail;D=EPA-HQ-OPP-2013-0266>.

¹²⁴ 7 U.S.C. 136a(g).

¹²⁵ U.S. Environmental Protection Agency, *Atrazine Final Work Plan Case Number 0062*, December 2013, at <http://www.regulations.gov/#!documentDetail;D=EPA-HQ-OPP-2013-0266-0308>.

¹²⁶ U.S. Environmental Protection Agency, Office of Congressional and Intergovernmental Relations, e-mail communication, October 17, 2013.

¹²⁷ As an example, see comment submitted August 26, 2013 by the National Corn Growers Association in regards to the registration review of atrazine. Comments are available at <http://www.regulations.gov/#!documentDetail;D=EPA-HQ-OPP-2013-0266-0074>.

¹²⁸ Act of December 28, 1973, P.L. 93-205, 87 Stat. 884. 16 U.S.C. §§1531-1544. For a more detailed discussion of ESA and its structure, see CRS Report RL31654, *The Endangered Species Act: A Primer*.

is administered by the National Marine Fisheries Service (NMFS). Dwindling species are listed as either endangered or threatened according to assessments of the risk of their extinction. Once a species is listed, legal tools are available to aid its recovery and to protect its habitat. For activities on privately owned land such as farms and ranches, the primary direct impact of the ESA is through the law's prohibitions on taking of listed species. The word *take* means "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct."¹²⁹ Thus, such activities as applying pesticides to kill insects eaten frequently by an endangered bat species, or cutting down a tree that contains the nestlings of an endangered bird, would constitute a taking.¹³⁰

If federal actions (or actions of non-federal parties that require a federal approval, permit, or funding) might adversely affect a listed species as determined by FWS (or NMFS, depending on the species), the federal action agencies must complete a biological assessment.¹³¹ The assessment is used to determine whether formal consultation is necessary.¹³² Through consultation with either FWS or NMFS, federal agencies must ensure, based on "the best scientific and commercial data available," that their actions are "not likely to jeopardize the continued existence" of any endangered or threatened species, nor to adversely modify critical habitat.¹³³ This is referred to as a Section 7 consultation. "Action" includes any activity authorized, funded, or carried out by a federal agency, including permits and licenses.

Actions of some federal agencies may affect a variety of agricultural practices over a very wide area or a region and have the potential to affect many listed species. Perhaps the most widely known of such agency actions is the registration and use of pesticides. Under ESA, EPA is required to consult with FWS and/or NMFS on whether the use of a pesticide might jeopardize the continued existence of a listed species or adversely modify critical habitat. To mitigate harm, EPA might need to include restrictions on a pesticide label regarding its use (such as limiting total area, weather conditions, distance from a particular habitat type, etc.). Consultation, or lack of consultation, between agencies in such cases has sometimes been contentious and has led to citizen lawsuits to enforce the ESA. On several occasions, EPA has been sued for failing to comply with ESA requirements on some of its pesticide regulation decisions.¹³⁴

Status

In 2013, EPA announced the availability of a final paper "describing enhanced opportunities for stakeholder input during its review of pesticide registrations ... and associated consultations under the Endangered Species Act (ESA)."¹³⁵ This paper was jointly prepared by EPA, USDA, NMFS,

¹²⁹ 16 U.S.C. §1532. Harassment and harm are further defined by regulation at 50 C.F.R. §17.3.

¹³⁰ Plants have substantially less protection under the ESA, so removing an endangered plant on private land would trigger an ESA violation only under extremely limited circumstances. See 16 U.S.C §1538(a)(2).

¹³¹ 16 U.S.C. §1536(c).

¹³² 50 C.F.R. §402.12(a). Informal consultations are also important, and may be as simple as a federal official of one agency calling an FWS or NMFS official to describe a small project and to find out whether there are any listed species in the vicinity.

¹³³ 16 U.S.C. §1536(a).

¹³⁴ See *Washington Toxics Coalition v. EPA*, 413 F.3d 1024 (9th Cir. 2005) and *Center for Biological Diversity v. EPA*, 2010 wl 2143658 (N.D. Cal. May 17, 2010). For more information, see CRS Report RL34641, *Changes to the Consultation Regulations of the Endangered Species Act (ESA)*.

¹³⁵ U.S. Environmental Protection Agency, "FIFRA Pesticide Registration Review and ESA Consultation Processes; (continued...)"

and FWS, and outlined changes to EPA's registration review process that are intended to facilitate ESA consultations across the participating federal agencies, including a greater role for USDA. The practical effect of this paper appears to be earlier and more wide-ranging consultation among the agencies while conducting pesticide risk assessments. EPA's statutory obligation under ESA to consult with FWS and/or NMFS on its actions and to avoid jeopardy remained unchanged.

Also, in 2013, the National Research Council (NRC) of the National Academies, as requested by EPA, USDA, NMFS, and FWS, published a report containing recommendations relevant to scientific and technical issues in assessing risks to species listed under the ESA from potential exposures to pesticides that are registered under FIFRA.¹³⁶ The NRC recommended a common approach for EPA, NMFS, and FWS to conduct risk assessments that take into account exposure modeling, data on observable health effects, and uncertainties in current scientific understanding. Since NRC published its report, EPA, USDA, NMFS, and FWS have reported progress in implementing these recommendations including the development of interim approaches to be applied in the periodic review of pesticide registration reviews beginning in 2014.¹³⁷ Section 10013 of the Agriculture Act of 2014 (2014 farm bill, P.L. 113-79) directs EPA, USDA, NMFS, and FWS to submit two reports (in 2014 and 2015) on the implementation of the NRC recommendations.

Issues

As EPA, USDA, NMFS, and FWS continue to implement the NRC recommendations, the agencies' approach may affect how pesticides are assessed in terms of risk to listed species. Such assessments are used to inform the potential need for risk mitigation measures. These measures could include imposing restrictions on the application of certain pesticides, possibly affecting pesticide applications, including those in agricultural areas. As federal agencies work toward a revised approach for integrating ESA requirements as part of the pesticide registration process, various stakeholders, including pesticide registrants and the environmental community, continue to voice their concerns on how these activities are conducted.¹³⁸ The environmental community remains active in litigation against EPA that seeks to compel the agency to implement requirements to protect listed species under ESA from the use of pesticides registered under FIFRA.

(...continued)

Stakeholder Input; Notice of Availability," 78 *Federal Register* 18585-18586, March 27, 2013 and U.S. Environmental Protection Agency, "Enhancing Stakeholder Input in the Pesticide Registration Review and ESA Consultation Processes and Development of Economically and Technologically Feasible Reasonable and Prudent Alternatives – March 19, 2013," March 27, 2013, at <http://www.regulations.gov/#!documentDetail;D=EPA-HQ-OPP-2012-0442-0038>.

¹³⁶ National Research Council, *Assessing Risks to Endangered and Threatened Species from Pesticides*, (Washington, DC: The National Academies Press, 2013).

¹³⁷ U.S. Environmental Protection Agency, *Interagency Approaches for National-Level Pesticide Endangered Species Act Assessments Based on the Recommendations of the National Academy of Sciences April 2013 Report*, November 13, 2013, at <http://www.epa.gov/espp/2013/interagency.pdf>.

¹³⁸ See supporting documents submitted in docket under U.S. Environmental Protection Agency, *Pesticide Registration and Endangered Species Consultation Workshop*, April 2014, at <http://www.regulations.gov/#!docketDetail;D=EPA-HQ-OPP-2014-0233>.

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