

Farm Policy



The future holds great challenges for the nation's water resources. Shifting weather patterns, more damaging floods, and rising water shortages will threaten communities, the economy, and the environment. This chapter is part of a larger report, ***Weathering Change: Policy Reforms That Save Money and Make Communities Safer***, which shows what the federal government must do to help the nation confront these looming challenges.

To see the entire report, visit www.AmericanRivers.org

Introduction:

Agriculture is central to everything we do. American farmers have created unprecedented advances in food production and greatly improved our quality of life. Farming also has extensive impacts on land, water, and wildlife, however. The extent of the impact is heavily influenced by federal farm policy. Crop subsidies affect the quantity and type of crops farmers grow, the amount of water farmers use, and the health of surrounding waterways. Conservation programs can reduce agriculture's impact and contribute to sustainability if properly designed. One early example of this is the Soil Conservation Service, which was instrumental in solving the widespread erosion problems that caused the Dust Bowl in the 1930s. American agriculture is now faced with perhaps its greatest challenge since that time: climate change. Congress must ensure that federal farm policy — which is set in the Farm Bill that is passed roughly every five years — protects and restores the forests, wetlands, and floodplains that buffer farms and surrounding communities from extreme droughts and floods. Federal farm policy must lead the way toward a more sustainable future for agriculture so that farmers, communities, and wildlife can thrive in a changing climate.



Subsidies encourage unsustainable farming practices that cause water pollution and destroy sensitive landscapes.

I. Today's Policy

Federal farm policy encourages degradation of the nation's water resources, increases flood risk, and makes communities and wildlife less prepared for a changing climate.

Crop Subsidies: Farm subsidies were first introduced in the 1930s to help struggling farmers, but today they largely benefit a few corporate producers and encourage unsustainable farming practices. Between 1995 and 2009, the federal government paid out \$250 billion in farm subsidies.¹ These subsidies come in a variety of forms. There are direct payments regardless of crop prices. There are counter-cyclical and market-loss payments, which kick in when the price of crops falls below a certain level. Subsidized crop insurance provides 50 percent coverage for catastrophic crop losses at no cost to producers.

Some level of subsidy may be desirable in order to maintain a secure food supply or to preserve real family farms. However, the vast majority of subsidies go to the largest and wealthiest corporate producers that are already profitable without government handouts. Sixty-two percent of farm subsidies go to large commercial farms, while less than 30 percent of small farms receive any payments.² What's more, much of the aid is targeted to low-value crops such as corn, cotton, rice, and soybeans. Those crops, in addition to wheat, received more than 70 percent of all crop subsidies totaling \$170 billion in the past 15 years.³ In effect,

most farm subsidies encourage large monoculture of field crops, precisely the type of agriculture that has the greatest impact on the surrounding land and water. It creates large volumes of nutrient- and pesticide-laden runoff, which cause widespread water quality problems in lakes, streams, and coastal waters. These crops also use a substantial amount of water and compete with a growing number of people and industries in the arid West.

Conservation Programs: Conservation programs first became a major part of the Farm Bill in 1985 with the establishment of the Conservation Reserve Program (CRP), which focused on removing highly erodible land from production. Since then, the scope and funding of conservation programs have expanded significantly.⁴ The 2008 Farm Bill authorized \$24 billion in conservation program funding, which makes it the largest single source of funding for conservation on private lands.⁵ These funds are administered through a wide range of conservation programs that focus on preserving different types of landscapes such as grasslands, forests, and wetlands by retiring sensitive lands from production or improving practices on working lands. The Wetlands Reserve Program, for example, funds purchases of easements to retire former or converted wetlands and provides technical and financial assistance to restore farmed wetlands.

USDA conservation programs have had considerable success in reducing the impacts of agriculture

on the American landscape. The Conservation Reserve Program alone currently covers approximately 34 million acres and has reduced soil erosion and improved water quality, flood storage, and wildlife habitat. However, inadequate funding and a lack of effective targeting limit the impact of these programs and their ability to buffer farmers, communities, and ecosystems from a more volatile climate. Conservation programs cover only a small fraction of the agricultural lands in the country, and many vital landscapes are not being managed as sustainably as they could be. There is a backlog of 300,000 applications for the Wetland Reserve Program alone.⁶ There could be cuts to these programs in the next Farm Bill. The Wetland Reserve Program, in particular, does not have baseline funding beyond 2012, and if it is to continue, it will have to be offset by decreases in other programs.⁷

In addition, existing funding levels do not achieve the maximum benefit because of the failure to prioritize funding to the most vulnerable areas or coordinate with other conservation efforts. A single farmer improving practices or retiring land can have a small local impact, but a critical number of producers must implement conservation practices in order to achieve meaningful improvements throughout a watershed.⁸ Currently, many conservation programs target resources to a list of top priorities within a given area, but this does not ensure that the most critical areas within priority watersheds are being addressed. Failing to ensure that all conservation programs focus on the most critical landscapes and reach a sufficient threshold to have a meaningful impact will mean that scarce funding is not being used to maximum benefit.

Increased Flood Risk: Farming has a dramatic impact on the landscape and its ability to manage floods. The conversion of land to agricultural use and the construction of dams and levees to protect crops play a central role in determining how water flows across the landscape and affects downstream communities. Americans have drained and cleared countless acres of wetlands and forests in order to grow crops. This landscape transformation has increased the rate and magnitude of runoff as it traded natural landscapes for fields that were less effective at absorbing rainfall. Farmers transitioned to more intensive production of row crops such as soy and corn in the second half of the 20th century — spurred in part by U.S. farm policy — which further decreased the landscape's ability to hold water and increased downstream flood risk.

As agriculture has expanded, many farmers have installed drainage systems under the soil — known as tile drains — to more effectively remove water from their fields and increase yields. These systems have a large impact on hydrology and water

quality, although the link between tile drainage and flooding is complex and difficult to separate from the long-term conversion of land to crop production.⁹ Tile drainage can either increase or decrease peak flows depending on a number of factors such as soil type.¹⁰ However, tile drainage can contribute to wetland loss and open up new lands to production. To the extent that tile drainage contributes to the conversion of these natural landscapes, it can increase flood risk. Tile drainage also contributes significantly to downstream nutrient pollution. Heavily tile-drained parts of the Corn Belt contribute the greatest amount of nitrate to the dead zone in the Gulf of Mexico.¹¹

Agricultural levees have also had a profound impact on flood risk throughout agricultural lands. Farmers have built levees for centuries to protect their fields from floods. On the Upper Mississippi alone there are 2,200 miles of levees and floodwalls.¹² Levees strait-jacket rivers and disconnect them from their floodplains. During large storms, levees send water rapidly downstream instead of allowing it to spread over the floodplain. This puts additional pressure on downstream flood defenses and increases the risk of inundation in heavily populated areas. Levees can and do fail during large events, often to catastrophic effect. Agricultural levees are frequently designed to a lower protection standard than those that protect communities despite the fact that development has sprung up behind many of them. The failure of these levees in extreme events can inundate downstream areas, as occurred in the 1993 Mississippi River floods.¹³ Even worse, in many cases, little to nothing is known about where agricultural levees exist or what their condition is.

Small watershed dams present a further challenge to managing flood waters on agricultural lands. Since 1948, the Natural Resources Conservation Service (NRCS) has helped to construct over 11,000 watershed dams. These structures were intended to reduce erosion, control floods, and provide



Natural Resources Conservation Service

Agricultural dams and levees have left communities vulnerable to floods.

water supply. In many cases, these dams have created a hazard to public safety due to downstream development after construction of the dam.¹⁴ While NRCS requires communities to limit development in these hazardous areas, sponsoring communities have often not enforced floodplain easements, resulting in hazardous conditions. Many of these structures are now at or near the end of their 50-year life expectancy and need expensive upgrades. Small watershed dams have also had a range of negative impacts on native fish and wildlife.¹⁵ Few communities can afford to fix these aging structures, and although NRCS has been offering assistance through its Watershed Rehabilitation Program, the need far outweighs available resources. In addition, most of the funding in this program is used to extend the life of dams. While removal is considered in each case, it is rarely chosen, and removal is not seriously analyzed as a viable alternative in many cases.

II. Risks and Consequences

No other sector of the economy is more vulnerable to climate change than agriculture. Farming is deeply affected by changes in precipitation, temperatures, and other climate-driven factors. At the same time, agriculture and the federal policies that influence it have a large impact on the ability of the environment and communities to withstand climate change. Right now, many federal farm policies are moving us in the wrong direction. Subsidies encourage additional production, which facilitates encroachment onto wetlands and floodplains, affecting everything from flood management to water quality to wildlife habitat. The conversion of natural landscapes to row crop production increases flood risk and creates new sources of polluted runoff even as the changing climate brings more extreme storms. Increased irrigation in water stressed regions lowers water levels and reduces available water supplies as droughts are becoming more frequent and severe. The stresses farming puts on waterways, wetlands, and forests makes them less resilient to the additional pressures climate change will bring. This in turn limits these landscapes' ability to slow floodwaters and provide clean water, making communities less prepared to deal with a more volatile and uncertain climate.

Levees and dams also present a significant challenge in a changing climate. As storms grow more intense, agricultural levees will continue to push damaging floodwaters toward downstream population centers. The risk of failure will also grow and present an increasing threat to public safety in a more volatile climate. Many communities do not have sufficient funds to maintain these structures,

and it is unlikely that federal funding will be available to assist with necessary improvements in the future. Communities may be stuck with unsafe infrastructure and few resources to make needed improvements even as climate change exacerbates the problem.

III. Preparing for the Future

The Farm Bill offers a valuable opportunity to correct the wasteful practices of the past and help farmers, communities, and wildlife prepare for the challenges of a changing climate.

Reform farm subsidies: Farm subsidies must be shifted away from large corporate producers and low-value, water-intensive crops. The overall amount of subsidies should be reduced considerably. A smaller amount of direct payments should be targeted to small farmers that demonstrate financial need and prove to be responsible stewards of land and water resources. In general, commodity subsidies should be phased out in favor of “green payments” or incentives through existing conservation programs.

At the very least, there needs to be a greater effort to strengthen environmental protections on lands that receive farm payments. Farmers that receive federal assistance are required to avoid the conversion of wetlands and to reduce erosion from highly erodible lands. Unfortunately, these conditions do not apply to crop insurance. Overall, conservation requirements have been successful in improving environmental performance, but they have not been adequately enforced and could be further improved.¹⁶ USDA should increase inspections and impose penalties on farmers that fail to comply with these requirements. Congress should expand existing protections to crop insurance and implement new stream buffer requirements on all lands receiving federal assistance.

Fully fund and more effectively target conservation programs: Congress must make conservation programs a priority in future farm bills. It is essential that these programs receive funding at levels that are closer to existing need. The Wetland Reserve Program (WRP), which could be cut due to the lack of expected funding in the next Farm Bill, is particularly important, as it promotes both community and ecosystem sustainability in a number of ways. Wetlands provide a number of free community services including clean water and flood management, both of which will be increasingly important in a changing climate. Congress must maintain robust funding for WRP in the next Farm Bill. Similarly, programs such as the Agricultural Water Enhancement Program,

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which addresses a critical need by encouraging more efficient water management, should be expanded.

In addition, conservation programs must be better targeted to the most ecologically valuable lands and the most pressing natural resources concerns in order to ensure that there are measurable achievements in overall watershed health and resilience. NRCS should increase place-based targeting that concentrates resources in priority watersheds to protect the most ecologically valuable lands. Water quality, water quantity, and flood reduction should be a primary concern throughout conservation programs in light of the increases in floods and droughts that a changing climate will bring. Projected climate impacts should be considered in the design of all conservation program goals and targets in order to ensure that expected benefits are not undermined by changing conditions. If properly targeted, NRCS conservation programs can make vital improvements in the resilience of the nation's water resources and prepare human and natural communities for a changing climate.

Reduce long-term flood risk: Congress and the USDA must work to ensure that federal farm policy decreases long-term flood risk from agricultural landscapes. NRCS should establish an overarching flood management strategy based on a watershed scale to help farmers naturally increase flood storage and reduce flood risk downstream. In particular, this means better understanding the link between tile drainage and flooding in different landscapes and reforming programs that support this practice based on those results. There must be a concerted effort to ensure that federal programs are not encouraging tile drainage where it might increase flood risk by accelerating water transport or opening new, environmentally sensitive lands to production. Tile drainage must also be assessed in light of the consequences that rising temperatures and greater runoff from tile drained fields could have for water quality. NRCS must reassess any programs that support this practice to avoid exacerbating existing nutrient pollution problems.

We also need to address the risk that agricultural levees pose to farmers and communities. First and foremost there needs to be a better understanding of the location and condition of these levees. Congress should fund a national inventory and inspection of all levees and create state-level levee safety programs to continue inspections and reduce long-term risk from these structures.¹⁷ This effort should also focus on examining how agricultural levees affect the vulnerability of downstream flood defenses that protect municipalities. In addition,

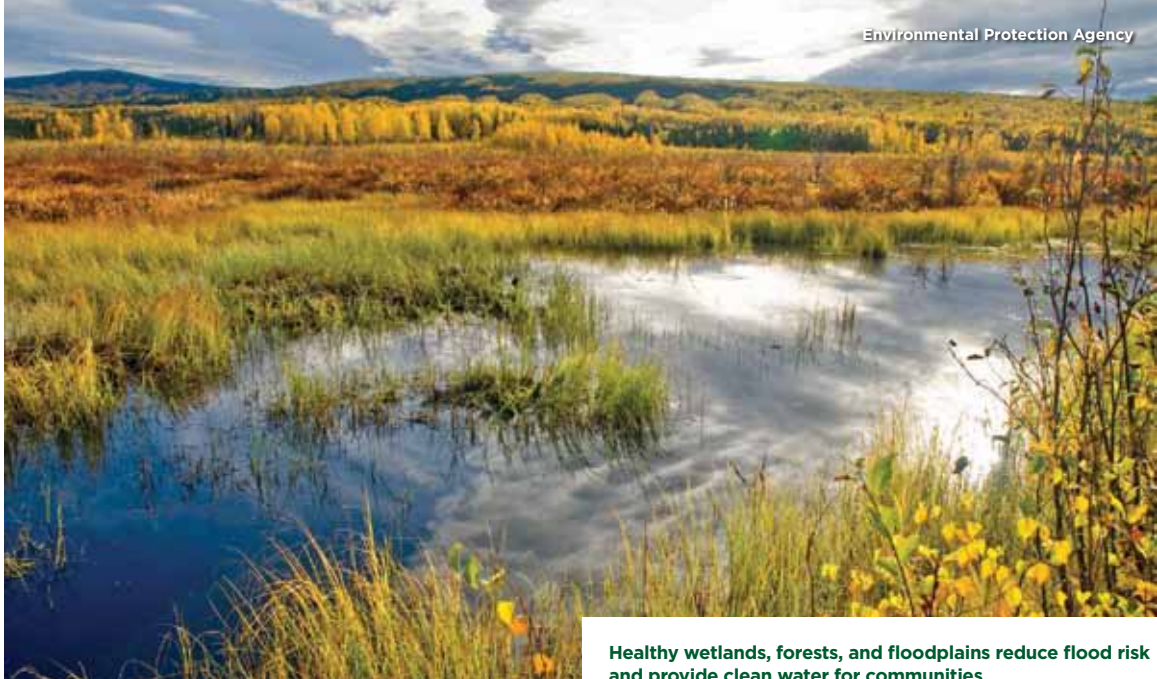
Congress should create a grant program that will allow communities to address these risks by reconnecting rivers to floodplains, obtaining easements, planting more flood tolerant crops, and removing or setting back levees where possible.

Finally, NRCS must ensure that its watershed protection and rehabilitation activities are contributing to resilience in a changing climate. Congress should provide additional funding to the Watershed Rehabilitation Program to reduce the risk that aging dams pose to farmers and downstream communities. It is essential, however, that this program fund projects that promote resilience for both human and natural communities. Leaving these structures in place may not always be the best strategy for reducing long-term risk. The Principles and Guidelines (P&G) for federal water infrastructure projects, which are currently under revision, can help guide these projects toward non-structural alternatives that are more cost effective and provide multiple benefits (see Water Resources Development Policy chapter). By requiring agencies to prioritize non-structural alternatives and give more weight to ecosystem services and climate change impacts, the Administration can ensure that the Watershed Rehabilitation Program adopts a strategic approach that better incorporates decommissioning as a viable alternative and reduces long-term risk. NRCS should also work with communities to ensure better enforcement of floodplain easements and prevent future development in breach inundation areas.

IV. Benefits of Being Prepared

Reducing flood risk and minimizing agriculture's impacts on the environment and surrounding communities makes sense no matter what the future holds. We should not waste scarce resources to support wealthy corporate producers that degrade land and water resources. Nor should we settle for conservation programs that achieve anything less than the maximum benefit. In an era when we face changing conditions, greater water stress, and more frequent floods, these reforms become even more important.

Agriculture is central to all we do, and we can continue to support farmers in ways that accomplish multiple goals like using water more efficiently, maintaining healthy wetlands and streams, and creating an agricultural landscape that reduces flooding. American farmers know better than anyone how to be good stewards of their land, but they also respond to financial incentives. The federal government must move away from policies that promote unsustainable behavior and provide incentives to help farmers prepare the nation for a more volatile and uncertain climate. ■



Healthy wetlands, forests, and floodplains reduce flood risk and provide clean water for communities.

FOOTNOTES

- ¹ Environmental Working Group. Farm Subsidy Database. (2010).
- ² *Ibid.*
- ³ *Ibid.*
- ⁴ Weldon, A. et al. *Conserving Habitat through the Federal Farm Bill* (Defenders of Wildlife, 2010).
- ⁵ Food, Conservation, and Energy Act of 2008, H.R. 6124, Public Law 110-246 (110th Congress) 122 Stat. 1651 (2008).
- ⁶ National Wildlife Federation. *Background on Farm Bill and Wildlife* (2010).
- ⁷ Monke, J. *Previewing the Next Farm Bill: Unfunded and Early-Expiring Provisions*. (Congressional Research Service, 2010).
- ⁸ Soil and Water Conservation Society. *Realizing the Promise of the Farm Security and Rural Investment Act of 2002*. (2004).
- ⁹ *Agricultural Water Use Technical Report Team*. (Minnesota Water Sustainability Framework, 2010).
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- ¹² Theiling, C.H. and Nestler, J.M. River state response to alteration of Upper Mississippi channels, floodplains, and watersheds. *Hydrobiologia* 640, 17-47 (2010).
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- ¹⁵ Mammoliti, C. The effects of small watershed impoundments on native stream fishes: a focus on the Topeka Shiner and Hornyhead Chub. *Transactions of the Kansas Academy of Science* 105, 219 (2002).
- ¹⁶ Classen, R. et al. *Environmental Compliance in U.S. Agricultural Policy: Past Performance and Future Potential*. (USDA, Agricultural Economic Report No. AER-832, Washington, DC, 2004).
- ¹⁷ National Committee on Levee Safety. *Recommendations for a National Levee Safety Program* (2009).