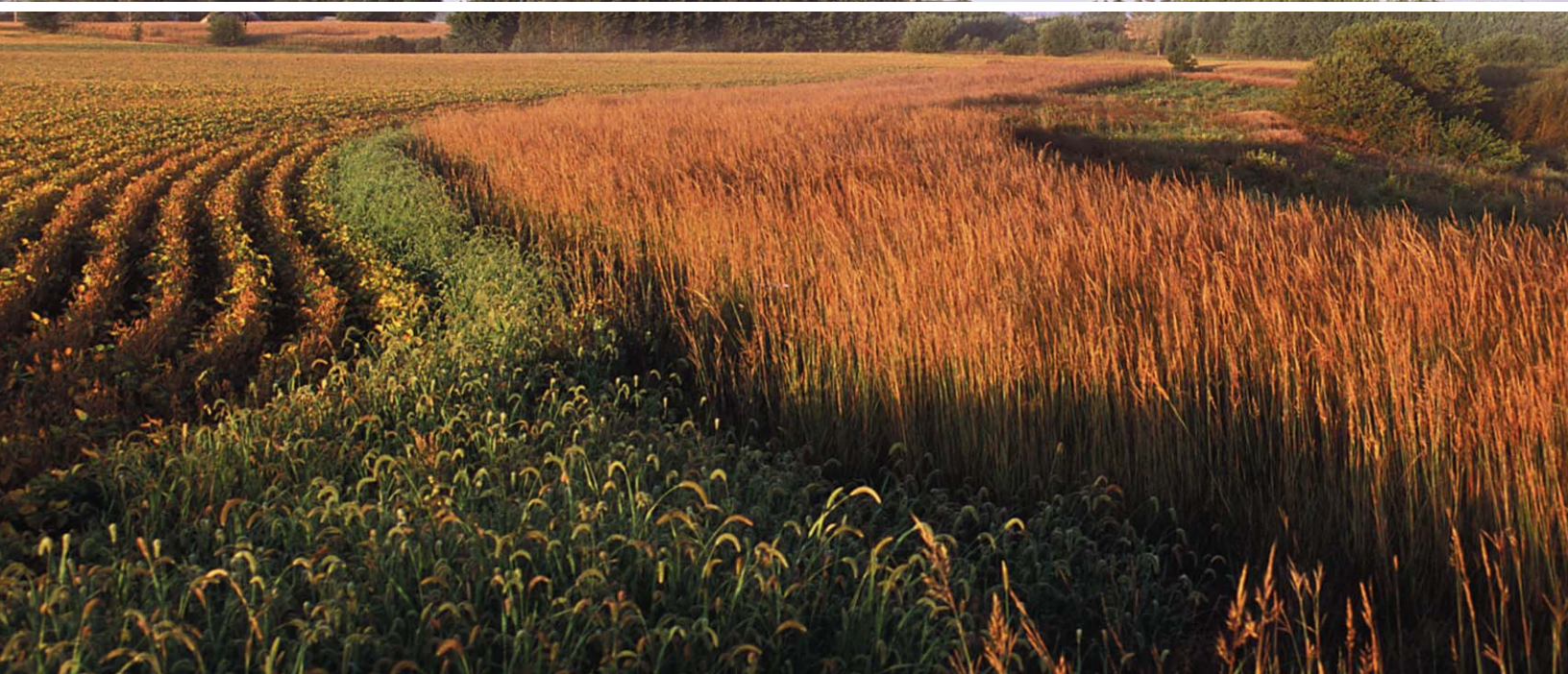




DEFENDERS OF WILDLIFE



# Targeting of Farm Bill Program Funding to Advance Conservation Priorities





## DEFENDERS OF WILDLIFE

Defenders of Wildlife is a national, nonprofit membership organization dedicated to the protection of all native wild animals and plants in their natural communities.

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Cover images, clockwise from top left: A spiderwort wildflower in the Dakota Grassland Conservation Area, South Dakota. Photo by Tom Koerner. Courtesy USFWS. Sharp-shinned hawk. Photo by Donna Dewhurst. Courtesy USFWS. Riparian buffer along Bear Creek in Story County, Iowa. Photo by Lynn Betts. Courtesy NRCS.

# Targeting of Farm Bill Program Funding to Advance Conservation Priorities

*“In the past, much of our conservation efforts in the country have been, I would term it, ‘random acts of conservation.’ Instead of focusing on the hot spots — focusing on areas where we can get the greatest ecological benefit — we have instead had a series of disjointed actions.”*

– Harris Sherman, Under Secretary for Natural Resources and Environment at USDA

## Executive Summary

Conservation programs have been an important part of U.S. farm policy since the Dust Bowl prompted the formation of the Soil Conservation Service in 1935 (Cook, undated). Public investment in natural resource conservation has expanded tremendously in the past three decades, with a proliferation of Farm Bill programs to address a wide range of issues: erosion, water quality, air quality, wildlife habitat, and more (P.L. 99-198, P.L. 104-124-7, P.L. 104-127, P.L. 107-171). While these programs have had tremendous benefits (Hohman & Halloum 2000), enrollment in conservation programs was initially driven by interest on the part of individual producers, rather than being targeted to the places of greatest need or potential benefit. This “random acts of conservation” approach is beginning to change, however, with the advent of a number of new initiatives aimed at matching program funding to state, regional and national priorities (Peterka 2012). This paper highlights the good work of a number of these initiatives, with emphasis on:

- Regional and multi-state wildlife and habitat initiatives;
- Regional priority programs for water quality;
- Targeting and evaluation mechanisms within individual programs.

We also provide recommendations to maximize the benefits of program targeting given the major changes and program consolidations in the new Farm Bill, including urging USDA to:

- Reaffirm its commitment the Working Lands for Wildlife initiative;
- Ensure that important conservation goals are not lost under the easement program consolidation;
- Think strategically and across programs about how targeting can better be used for maximum benefits;
- Balance attention to important existing priorities and novel opportunities under the Regional Conservation Partnership Program;
- Incorporate climate change resilience into conservation program delivery;
- Fully fund all conservation programs.

## Introduction

The Conservation Title of the Farm Bill authorizes a wide array of programs that provide technical and financial assistance to agriculture and forest producers who are interested in improving soil, water, air, and habitat quality on their land. The major programs can be divided into two overall categories: the “reserve” programs that offer easements or rental contracts for long-term to permanent land retirements, and “incentives” programs that provide cost-share to improve practices on working lands. Traditionally, the Farm Bill has contained four major programs that involve some type of easement or multi-year retirement of land and have been used for targeted priorities: the Conservation Reserve Program (CRP), Wetlands Reserve Program (WRP), Grasslands Reserve Program (GRP), and the Farm and Ranchland Protection Program (FRPP). Similarly, while multiple Farm Bill programs have provided financial and technical assistance to producers that want to improve conservation performance on working lands, the main programs that have been used in a targeted way are the Environmental Quality Incentives Program (EQIP) and the Wildlife Habitat Incentives Program (WHIP).

The 2014 Farm Bill made some major changes to both the reserve and incentives programs, particularly by consolidating programs with similar functions in order to streamline delivery and reduce the level of complexity faced by potential applicants. As this paper is a review of implementation to date, prior to passage of the 2014 bill, we will refer to the programs by their original names, in order to highlight the role that each played in delivering conservation benefits to targeted priorities. Each program is described briefly in the Appendix, and in more detail, with emphasis on the 2014 program changes, in our Guide to the Farm Bill Conservation Programs (Defenders of Wildlife 2014).

## Regional and State Wildlife and Habitat Initiatives

NRCS has initiated several efforts to target conservation funding to improve and restore key habitats, particularly through the WHIP program, but with other programs as well, such as the Wetlands Reserve Program (WRP), Grasslands Reserve Program (GRP), Conservation Reserve Program (CRP), Farm and Ranchland Protection Program (FRPP), and the Environmental Quality Incentives Program (EQIP).



Longleaf pine has needles 8 to 14 inches in length. Photo courtesy of Clemson Cooperative Extension, South Carolina.

## Longleaf Pine Restoration Initiative (WHIP)

Longleaf pine (*Pinus palustris*) once dominated the forests of the southeastern coastal plain, stretching across 90 million acres from southern Virginia all the way to east Texas. These ecosystems were among the most diverse in the nation, with nearly 900 endemic plant species, and nearly 200 species of reptiles and amphibians. Logging, fire suppression, agriculture, development, and conversion to plantations of faster-growing species like loblolly pine have reduced this important ecosystem to less than four percent of its original range. Both the diversity and the diminishment of longleaf pine forests are demonstrated by the fact that the remaining fragments of these habitats are home to 29 federally protected species, such as the red-cockaded woodpecker (USFWS 2011).

In 2010, recognizing the need to conserve and restore these vital landscapes, the Departments of Agriculture, Interior, and Defense entered a Memorandum of Understanding creating the America's Longleaf Initiative, with the objective of increasing the extent of these forests from 3.4 million acres to 8.0 million acres by 2025 (America's Longleaf 2010). Part of the USDA's fulfillment of this initiative was through the creation by NRCS of the Longleaf Pine Initiative, which since 2010 has used \$23.6 million through the WHIP program and Environmental Quality Incentives Program to target funding for establishment and improvement of longleaf pine in nine southeastern states (NRCS 2011a); EQIP funding has benefited 38,000 acres (NRCS 2013a). On the ground, this

money has translated into invasive plant control, seedling establishment, controlled burning, and understory vegetation management on more than 70,000 acres (NRCS 2011b, 2013a).

NRCS is also conducting partnerships and outreach to build support for markets for longleaf products. They are working with tribal partners who have traditionally used the needles in basket-making, establishing markets for longleaf pine mulch, and spreading awareness of the species' superior timber value among loblolly plantation forest landowners. Returning longleaf pine to its original keystone ecological role will not only yield great benefits for the many species that rely on this habitat type, but it may also help buffer the region against the effects of climate change. Unlike loblolly pine, longleaf is naturally resilient to fire, which was historically an important part of longleaf ecosystems. It is also less susceptible to beetle damage than other pines, has deep roots that resist wind-throw in storms and hurricanes, and grows in a wide variety of conditions, from very wet to very dry (USFWS 2011). NRCS's decision to target WHIP funding to restoration of longleaf pine should yield ecological and community benefits for years to come.

## Lesser Prairie-Chicken Initiative (WHIP, EQIP, CRP, GRP)

The Lesser prairie-chicken (*Tympanuchus pallidicinctus*) is a flagship species of the shortgrass and mixed-grass prairie, shinnery oak and sand sagebrush habitats of the southern



Pale purple coneflower in a prairie habitat, Neal Smith National Wildlife Refuge in Iowa. Photo by Sue Hollerich. Courtesy of USFWS.

GreatPlains. Once ranging over more than 180,000 square miles of west Texas, Oklahoma, Kansas, eastern Colorado and New Mexico, population levels have dropped by roughly 90% since widespread settlement of the region, to a 2012 estimate of only 37,000 birds (Van Pelt et al. 2013). The bird has been a candidate for threatened status under the ESA since 1998 (following a 1995 petition), was given an increase in priority in 2008, and was proposed for listing in December 2012 (77 FR 73828-88), and listed the bird as threatened in April 2014 (79 FR 19974-20071).

Ongoing threats to the species include conversion of habitat to row crops, overgrazing, use of herbicides on shinnery oak for rangeland improvement, and fire suppression, which leads to encroachment by junipers. Furthermore, due to their tendency to avoid anthropogenic structures, various forms of development may lead to lek abandonment and thus have an outsized effect prairie chicken habitat. Such development includes oil and gas drilling, fencing, wind energy generation, transmission lines and roads. Finally, the effects of climate change, particularly an increase in drought conditions and frequency of severe storms, may negatively impact the birds and their habitats (Van Pelt et al. 2013).

NRCS started the Lesser Prairie Chicken Initiative (LPCI) in 2008, “to increase the abundance and distribution of the LPC and its habitat while promoting the overall health of grazing lands and the long-term sustainability of ranching operations.” From 2010 to 2012, the initiative has provided more than \$24 million to 701 contracts covering almost 1

million acres in the Lesser prairie-chicken’s range for habitat improvement practices such as prescribed grazing, upland habitat management, and brush management (Van Pelt et al. 2013). Most of these practices have been funded through WHIP or EQIP, habitat management practices under CRP, and a smaller amount through GRP (NRCS 2012b, Van Pelt et al. 2013). The Lesser Prairie Chicken Range-Wide Conservation Plan (Van Pelt et al. 2013) identified core Focal Areas and Connectivity Zones that will further refine the targeting of conservation funding to where it will do the most good for the species; about 20% of the acres enrolled to date have fallen within those core areas, but they will be targeted more explicitly in the future. In addition, the counties at the core of the LPC’s current range (Ripper et al. 2008) have 4.8 million acres enrolled in CRP, much of which provides high quality habitat. However, this represents a nearly 1.15 million acre, or 20% decline from 2006 acreage, according to FSA enrollment data (FSA 2014).

### Sage-Grouse Initiative (EQIP, WHIP, FRPP, GRP, and WRP programs)

As the lesser prairie chicken is to the central plains, so the greater sage-grouse (*Centrocercus urophasianus*) is to the sagebrush ecosystems of the western plains and Great Basin: iconic, beloved, and dropping precipitously in population. It is estimated that the sage-grouse, whose original range extends across eleven states from California to North Dakota, once



Sage and wildflower matrix in Harney County, Oregon. Photo by Berta Youti, Eastern Oregon Stewardship Services.

numbered 16 million birds, but has declined dramatically to roughly 200,000 to 400,000 (NRCS 2013). There have been multiple Endangered Species Act petitions to list the bird over all or part of its range over the past 15 years. In October 2013, the U.S. Fish and Wildlife Service (FWS) proposed to list the bi-state population (found along the California-Nevada border) as Threatened (78 FR 64358-64384), while a population in the Columbia River basin and the species as a whole remain on the Candidate list.

The most important threats to the sage-grouse include habitat loss, primarily conversion to agriculture and degradation by the spread of invasive species, particularly cheatgrass, whose high flammability unnaturally alters the fire regime. Sage-grouse also respond adversely to many types of infrastructure, including roads, oil and gas wells, fences, pipelines, and utility lines, and are highly susceptible to West Nile virus (75 FR 13910-14014).

In 2010, NRCS partnered with FWS to launch the Sage Grouse Initiative, “a collaborative, targeted effort to implement conservation practices which alleviate threats to sage-grouse while improving the sustainability of working ranches” in eleven western states (USFWS 2010). By the end of 2012, the initiative had enrolled over 700 ranches and 2.5 million acres in practices through five different Farm Bill programs, including conservation easements, improved grazing management, removal of over 500 miles of fencing that posed a high risk of bird collisions, and removal of invasive, habitat-degrading juniper trees from over 200,000 acres (NRCS 2013b).

## Working Lands for Wildlife (WHIP, WRP and other programs)

The Working Lands for Wildlife (WLFW) arose from a partnership between the Natural Resources Conservation Service (NRCS) and U.S. Fish and Wildlife Service (FWS) to target conservation funding to assist seven species that are listed under the Endangered Species Act (ESA) or could become so in the near future (NRCS 2012c): gopher tortoise, lesser prairie-chicken, sage grouse, New England cottontail, bog turtle, golden-winged warbler, and southwest willow flycatcher. These species, whose combined range encompasses parts of 37 states, were chosen based on the criteria that with the help of conservation program assistance, their “decline can be reversed and will benefit other species with similar habitat needs.” An important aspect of this program is that participants who voluntarily maintain the conservation practices outlined in the program will be considered to be in compliance with any ESA regulatory responsibilities for up to a thirty-year period (NRCS 2012c).

**Gopher tortoise** (*Gopherus polyphemus*) is listed as Threatened in the part of its range west of the Mobile/Tombigbee Rivers, and is a candidate for listing in the remainder of its range, along the southeastern coast plain to South Carolina (76 FR 45130-62). It is one of the key species dependent on the longleaf pine ecosystem, described above in the Longleaf Pine Initiative section. Through WLFW, NRCS is providing “additional resources to support gopher tortoise



Native grasses and forbs are part of the planting mixture in a conservation buffer along Bear Creek in central Iowa. Photo by Roger Hill. Courtesy NRCS.

recovery, and incorporate a species-based indicator of the success of the Longleaf Pine Initiative” (NRCS 2012c).



Lesser prairie-chicken in Eastern New Mexico. Photo by Gary Kramer. Courtesy NRCS.

**Lesser prairie-chicken** (*Tympanuchus pallidicinctus*), an iconic and imperiled grassland bird, is the target of the Lesser Prairie-Chicken Initiative, a multi-program conservation effort described above. The WHIP element of this program aims to assist ranchers in improving 500,000 acres of rangelands over five years, using voluntary practices to improve grazing management and rangeland health (NRCS 2012c). NRCS anticipates that this targeting effort will also benefit “northern bobwhite, scaled quail, pronghorn antelope, mule deer, Swainson’s hawk, and short-eared owl” (NRCS 2012c).



Greater sage-grouse. Photo by Stephen Ting. Courtesy USFWS.

**Sage-grouse** (*Centrocercus urophasianus*), like the prairie chicken, is the target of a multi-state initiative described in greater detail above. The WLFW element of the initiative has a goal of helping “ranchers voluntarily restore or enhance 400,000 acres of rangeland over five years, combating sage-grouse habitat loss and helping to ensure the continued viability of western ranching” (NRCS undated-b).



New England cottontail at Crescent Beach State Park, Maine. Courtesy USFWS.

**New England cottontail** (*Sylvilagus transitionalis*) is an ESA candidate species and state listed in Maine and New Hampshire. One of the main causes of its decline is loss and isolation of large (25+ acre) blocks of early successional and shrubland habitats. WLFW aims to assist landowners in New England with creation and improvement of 2500 acres of shrub thickets, and estimates that doing so will also benefit nearly 60 other state priority species that have similar habitat requirements (NRCS 2012c).



Bog turtle sunning on a bed of small rocks. Photo by R.G. Tucker Jr. Courtesy USFWS.

**Bog turtle** (*Glyptemys muhlenbergii*), ESA listed as Threatened, is native to the rapidly urbanizing Northeast Corridor region from Maryland to western Massachusetts and Connecticut, and most of its habitat is on private land. Consequently, loss and degradation of its freshwater wetland and adjacent upland habitats are among its primary threats (USFWS 2009). Because of its need for a matrix of habitat types, WLFW is targeting funding for bog turtle habitat improvement both through WHIP and the Wetlands Reserve Program (WRP). The latter is being used for easements for wetlands protection and restoration, and the former for cost share for removal of invasive species, improving grazing



management, and creation of early successional habitats connecting wetlands (NRCS 2012c).



Golden-winged warbler, Wisconsin. Courtesy NRCS.

**Golden-winged warbler** (*Vermivora chrysoptera*), while not currently being considered for ESA listing, is a Bird of Conservation Concern nationally, as well as in three FWS regions (USFWS 2008). The warbler nests in abandoned pastures, forest clearings and areas adjacent to wetlands. Its status is fairly secure in the Midwestern and Great Lakes part of its range, but it has suffered a sharp decline in the Appalachian region, as forests have matured and the area has lost key species like the thicket-forming American chestnut. Over the next five years, WLFW aims to restore 10,000 acres of early successional forest habitat on private lands in the Appalachian region from the Catskills to Georgia. The 2013 State of the Birds report highlighted this initiative and pointed out that it will also likely benefit other declining species, like the American woodcock, ruffed grouse, and brown thrasher (NABCI 2013).



Willow flycatcher perching on a branch. Photo by Dave Menke. Courtesy USFWS.

**Southwestern willow flycatcher** (*Empidonax traillii extimus*) is a subspecies of the willow flycatcher that nests in thickets of riparian vegetation in the southwestern states, primarily Arizona and California (USFWS 2002). It is

threatened by the “reduction or elimination of surface and subsurface water due to diversion and groundwater pumping; changes in flood and fire regimes due to dams and stream channelization; clearing and controlling vegetation; livestock grazing; changes in water and soil chemistry due to disruption of natural hydrologic cycles; and establishment of invasive non-native plants,” and destruction of young by brown-headed cowbirds (USFWS 2002). It was listed as endangered in 1995 and as of 2007, there were about 1300 nesting territories known (about 2/3 the number needed for delisting), though a much larger amount suitable habitat needs to be created or protected in order to ensure that an adequate number of breeding territories can persist in the face of changes in hydrologic flow and vegetation condition (78 FR 343-534).

It was added to the WLFW program in the spring of 2012, so few enrollment results are available at this time. In California, funding has been used to restore the San Dieguito River following the Witch Creek Fire (NRCS-CA 2012). Arizona, whose small streams and rivers form the heart of the bird’s range, envisions using WHIP to help landowners “plant native vegetation, remove invasive weeds, prevent catastrophic fires, and reconnect rivers to their natural floodplains” (NRCS-AZ 2013). However, FY 2012 funding was down sharply in 2012 and the state only enrolled four WHIP contracts that year (USDA 2013a), and had no money available in FY 2013 (NRCS-AZ 2013).

## WHIP State Prioritization Efforts

In addition to the multi-state initiatives described above, many individual states are targeting WHIP funds to projects benefiting priority species or habitats, particularly those identified in State Wildlife Action Plans (SWAPs) as Species of Greatest Conservation Need (SGCNs). Some examples include:

- Montana (NRCS-MT, undated) has prioritized riparian and in-stream habitats for arctic grayling, west-slope cutthroat trout and bull trout, as well as upland prairie habitats and prairie potholes, which are home to many of the state’s SGCNs, including bison, swift fox, black-footed ferret, and many grassland birds (MTFWP 2012);
- Delaware has targeted WHIP funds toward maintenance and improvement of seasonal shallow-water habitat for migratory waterfowl, in accordance with the priorities of

both its SWAP (DEDFW, undated) and the North American Waterfowl Management Plan (NRCS-DE, undated);

- Indiana’s WHIP priorities include upland prairie and savanna habitats and wetlands (NRCS-IN 2010). These priorities are aimed at improving the status of several federal or state listed and other declining species, including SGCNs such as Henslow’s sparrow, western meadowlark, spotted turtle, and Blanding’s turtle (INDNR 2009);
- Nebraska also explicitly links its state WHIP plan to the priorities identified in its SWAP, “The Nebraska Natural Legacy Project,” with emphasis on prairie restoration and management, riparian areas, and native woodlands (NRCS-NE 2006). Assistance to landowners to help meet conservation priorities is particularly important for a state with 97% of its land in private ownership (Schneider et al. 2011);
- Michigan, in addition to targeting habitat priorities, such as grasslands, riparian areas, and forested lands, rates WHIP applications on their ability to ameliorate several of the priority threats identified by its SWAP: invasive species, fragmentation, riparian modification, and altered fire regimes (NRCS-MI 2006).

## Regional Priority Programs for Water Quality

Soil erosion and nonpoint source runoff, including from agriculture, contribute to water quality impairment in many areas of the country. NRCS and other partners have launched initiatives to combat this problem in several regions, and some of these have been codified in past Farm Bills. The new Farm Bill consolidates several of these into a single Regional Conservation Partnership Program.

### Chesapeake Bay Watershed Program

The Chesapeake Bay is 200 miles long, fed by over 50 rivers and countless small streams, and drains 64,000 square miles of land stretching from New York to Virginia (CBF, undated). Home to 17 million people and 84,000 farms, it should probably come as no surprise that the Bay has had its share of pollution problems. Serious efforts to clean up the Chesapeake date to 1983, the year that the Chesapeake Bay Foundation rated the Bay’s health at an abysmal 23 out of 100 points (CBF 2013). For many years after, however, the story seemed to be one missed deadline after another: in 1987, states and the federal government first committed reducing major pollutants — nitrogen, phosphorus and sediment — 40% by the year 2000. It didn’t happen.



View of Chesapeake Bay wetlands with trees and marshes. Photo by Craig Koppie. Courtesy USFWS.

They gave themselves another decade, but didn't reach a 40% reduction by 2010 either (Fincham 2012).

In September of 2010, the Environmental Protection Agency (EPA), put the region on a “pollution diet” — specifically, into the Total Maximum Daily Load (TMDL) program. The TMDL program is one of the strongest tools in the EPA's toolbox and is used when a water body does not meet water quality standards for certain uses (such as recreation, sustaining aquatic life, or providing drinking water). In the case of the Chesapeake Bay, the watershed contains 92 different water bodies that are “impaired” by high levels of nitrogen, phosphorus, and sediments (EPA 2010). Nitrogen and phosphorus are important limiting nutrients in aquatic systems; therefore, the addition of these via runoff and airborne deposition spurs the growth of algal blooms. Algal blooms lead to the infamous “dead zones” because when the algae die in huge numbers, their decomposition sucks all the oxygen out of the water, leaving none for the fish, crabs, oysters and other aquatic organisms. Sediments are also problematic because they reduce the clarity of the water, preventing light from reaching the beds of submerged aquatic vegetation that serve as nurseries for many important species in the Bay. All the pollutants originate from a variety of point sources (such as municipal sewage treatment plants) and nonpoint sources such as stormwater runoff from fertilized lawns, paved areas, and farm fields.

The latter is where the Farm Bill comes in. With 30% of the region's land in agriculture, practices that limit excess

fertilizer and other nutrients in runoff can have a major benefit to water quality. To that purpose, the 2008 Farm Bill launched the Chesapeake Bay Watershed Program (CBWP), an effort to target funding of \$188 million over 2009-12 for the purposes of: “(1) improving water quality and quantity in the Chesapeake Bay watershed; and (2) restoring, enhancing, and preserving soil, air, and related resources in the Chesapeake Bay watershed.” Specifically, it directs USDA to assist producers in “controlling erosion and reducing sediment and nutrient levels in ground and surface water;” and habitat restoration and enhancement (PL 110-246).

A 2011 study by the Conservation Effects Assessment Program demonstrated that conservation practices undertaken from 2003-6 had reduced sediment loss from fields by 55 percent; nitrogen lost with surface runoff by 42 percent and subsurface flows by 31 percent; and total phosphorus loss from fields by 40 percent. Furthermore, they estimated that full implementation of conservation practices (such as those now underway) on lands with high or moderate need could result in further reductions: sediment loss by 87 percent, nitrogen by 66 percent in surface runoff and 53 percent in subsurface flows, and phosphorus by 57 percent (CEAP 2011). Between the allocated funding and additional program enrollments, the CBWP has invested \$235 million and has enrolled nearly 650,000 acres of farmland in practices to “control erosion and sediment; reduce nutrient loss and protect stream corridors” (NRCS 2013c).



North shore beach of Lake Superior, Minnesota. Photo by Dave Hansen. Courtesy Minnesota Extension Service.

These measures do seem to be having an effect on the ground, or rather, in the water, as measured by the State of the Bay Index score (in which 100 points represents a pristine bay and 70 is considered the goal). After nearly a decade of languishing in the range of 27 or 28 out of 100, the number rose to 31 in 2010 and 32 in 2012, driven in part by improved scores for phosphorus and dissolved oxygen, and a smaller than usual “dead zone” in the summer of 2012 (CBF 2013).

## Great Lakes Basin Program

The Great Lakes are an ecological treasure and an economic lifeline for the surrounding states and provinces. It has long been recognized that sedimentation, including topsoil erosion from farmland, is a significant source of pollution in the Great Lakes, as well as a hazard to navigation and a barrier to the effective functioning of water treatment facilities (GLBP, undated). The program started as an initiative in 1991 and was officially authorized in the 2002 Farm Bill (Public Law 107-171) and renewed in the 2008 Farm Bill (Public Law 110-246). Authorized at \$5 million per year since 2002, it is a relatively small conservation program. However, it has funded over 200 projects from Minnesota to New York, helping landowners implement best management practices such as cover cropping and no-till, and to install riparian buffers, filter strips, and streambank stabilization projects (GLBP 2012). The program estimates that every

\$1,000 spent has kept 132 tons of sediment, 297 pounds of phosphorus, and 197 pounds of nitrogen out of the Great Lakes (GLBP, undated).

## Mississippi River Basin Healthy Watershed Initiative

2,300 miles long and draining over 40% of the land area of the contiguous U.S., the Mississippi is indisputably one of the most important natural resources in the country. 60% of the grain grown in the U.S. is transported on the Mississippi, and fifty cities draw on the river for their municipal water supplies (NPS 2013). Unfortunately, like the Chesapeake Bay, the Mississippi River has pollution problems commensurate with its size: excess loading of nitrogen, phosphorus, sediments, and a host of toxins (NPS 2013). Nutrient pollution, in particular, has been linked to the Gulf of Mexico dead zone, which exceeded 7,700 square miles in size in four of the years from 2000 to 2008 (MRGMWTF 2013). Five federal agencies and 12 states in 2008 launched the Gulf Hypoxia Action Plan, aimed at reducing the levels of nutrients entering the river, and thus the gulf. Over the five years since the inception of the plan, the dead zone has averaged 5,700 square miles — an improvement, but still an area larger than the state of Connecticut (MRGMWTF 2013). Agricultural activities contribute 70% of both the nitrogen and phosphorus in the Mississippi River basin, with over half the nitrogen originating from corn and soybean production, and the



A pitcher plant bog along a small estuary in the Mississippi Sandhill Crane National Wildlife Refuge. Courtesy USFWS.

phosphorus “primarily from animal manure on pasture and rangelands” (Alexander et al. 2008).

NRCS launched the Mississippi River Basin Healthy Watershed Initiative (MRBI) in FY 2010. The Initiative targets funding from the Wetlands Reserve Enhancement Program, the Conservation Innovation Grants Program, and the Cooperative Conservation Partnership Initiative, a 2008 Farm Bill mechanism to target six percent of funding from the various financial assistance programs to help multiple producers work together to address regional level conservation priorities and “to cooperate in meeting applicable Federal, State, and local regulatory requirements related to production involving agriculture and nonindustrial private forest land” (PL110-246).

The Initiative has identified as its priorities projects reduce nitrogen and phosphorus runoff through avoidance (e.g., cover crops), controlling (e.g., no-till) and trapping (e.g., wetland restoration); thus the initiative was important to bring both financial assistance and easement programs (WREP) together under a single umbrella (NRCS undated-c). By the end of 2012, the initiative had “invested more than \$222 million in financial and technical assistance to support 123 MRBI partnership projects covering 640 watersheds, and nearly 577,000 acres of targeted conservation planning and implementation” (NRCS 2013d). Over the five years since the inception of the Hypoxia Action Plan, the dead zone has averaged 5,700 square miles (MRGMWTF 2013) — an important improvement, but still indicating the need for

continued investment in nutrient reduction efforts. A recent report by the World Resources Institute rated the effectiveness of the design of the MRBI and gave it a “fair” across the six factors that they assessed; in addition, they provided recommendations for how the program could achieve better outcomes for reduction in nutrient and sediment pollution (Perez and Walker 2014).

## Other Targeting and Evaluation Mechanisms

### Conservation Reserve Enhancement Program

The Conservation Reserve Enhancement Program (CREP) is a sub-program of the nation’s largest and oldest conservation program, the Conservation Reserve Program, which is administered through the Farm Service Agency (FSA) (Cowan & Johnson 2008). One of the first formal efforts to target conservation funding to states’ environmental priorities, it is managed through agreements between USDA and states, outlining the purpose and objectives, targeted areas, and covered practices (FSA 2013b). Enrolled producers receive rental payments for a 10-15 year period, as well as an additional incentive payment not available under the general CRP program.



Lotus plants provide valuable wildlife habitat on Maryland’s eastern shore. Photo by Tim McCabe. Courtesy NRCS.

Thirty-three states currently have CREP agreements with USDA; eleven of these have two or more agreements in place (FSA 2013c). Many of these agreements were initiated in the past few years, but there are also several notable examples of agreements that have been in place for long enough to have demonstrated results.

**Minnesota** signed the second CREP agreement in the nation in 1998. From the start, it was leveraged with the Reinvest in Minnesota Program, whose goal was to make the Minnesota River clean enough to fish and swim in by 2002. Within four years, the program enrolled 44,000 acres of riparian easements, restored 54,000 acres of wetlands, as well as marginal pasture and riparian enrollments (MBWSR 2003). Enrollments to date are over 100,000 acres. The Minnesota River Basin 2010 progress report, which tracks progress toward the Basin's watershed health and water quality goals, concludes that restoration of floodplains and riparian areas "has probably been the single greatest accomplishment [from the Citizens' Advisory Committee recommendations], principally because of the Conservation Reserve Enhancement Program (CREP)." However, they also warn that the acreage enrolled in CREP has only been about half of what envisioned, and recommend that both additional funding for the program and better targeting to "critical areas within a sub-watershed" are urgently needed (Kudelka 2010).

**Washington state** launched its CREP program in 1998, with the goal of enrolling 100,000 acres of riparian buffers "to improve the water quality of streams providing habitat for salmon species listed under the Federal Endangered Species Act" (FSA 1998). The program has resulted in tangible improvements to salmon habitat. For instance, in the Tucannon River, maximum daily stream temperatures frequently exceeded 80°F prior to implementation of CREP. Over 1,100 acres of riparian buffers have been restored, and the river has not had a single day over 72°F since 2006. Juvenile salmon are now found in ten more miles of the river than previously, and adult spring Chinook runs have increased dramatically, from an average of less than 500 in most years before 2007, to 2500 in 2010 (Smith 2012).

**Illinois** has two CREP agreements in place: one for the Illinois River watershed, which enrolled over 126,000 acres from 1998 to 2007, and a program on the smaller Kaskaskia River watershed, which began enrollments in 2010. Enrollments have targeted floodplain croplands and adjacent

erodible acreage. Monitoring data "indicate that both sediment and nutrient delivery to the Illinois River have either stabilized or decreased as a result of implementation of conservation practices in the Illinois River watershed. The most important observation from the nutrient data is the slow decreasing trend of nitrate-N yield from the major tributary watersheds." CREP program sites were also observed to be "more botanically rich and diverse" than non-enrolled sites, and anecdotal evidence indicates that these areas support increasing numbers of waterfowl and other birds (Illinois CREP 2010).

**New York** provides one of the best examples of leveraging the CREP program to advance a critically important goal. In 1989, the Environmental Protection Agency (EPA) began requiring municipalities to filter or disinfect their drinking water supplies in order to reduce the incidence of water-borne diseases from viruses, bacteria, and *Giardia* (54 FR 27466-541). Given the high quality of New York City's water supply and the estimated \$2 billion cost of a filtration plant, the city and state embarked on an aggressive plan to maintain and enhance the forested ecosystems in the Catskill and Delaware watersheds that were already providing that filtration service. These actions, along with a rigorous testing and monitoring system, enabled the city to receive a waiver to the treatment regulations and avoid constructing a treatment facility (NYC DEP 2011). Protection of these watersheds has been a huge and multi-faceted effort, but one of the important tools has been the CREP program, which has been in place since 1998. As of 2011, the program has enrolled 2,030 acres of riparian buffers and kept over 11,000 cattle out of streams (NYC DEP 2011).

## Conservation Innovation Grants

The 2002 Farm Bill authorized a portion of the EQIP program to be used for Conservation Innovation Grants to provide cost-share funding for "innovative conservation practices" (Public Law 107-171). The program is an important means both to target priority environmental issues, and also to pilot new and innovative solutions that have shown promise in research but need field testing and demonstration. The program has provided roughly \$20 million per year (matched by at least 50% non-federal funds), for a variety of projects addressing an array of resource concerns, including water quality, water use efficiency soil, energy, and habitat projects (NRCS 2012d). Projects that will advance wildlife and conservation priorities include:

- Studying the effectiveness of prescribed fire as a way to control invasive woody vegetation and restore rangelands in Texas, including both ecological effects and social acceptance (NRCS 2012d);
- Reclaiming abandoned mine lands in Pennsylvania by planting a hybrid variety of chestnut tree bred for tolerance to chestnut blight disease. The project demonstrates new soil preparation techniques aimed at improving mine reclamation success, while also providing an opportunity to restore a once-dominant tree species in the region (NRCS-PA 2013);
- Implementing a market-based system for ranchlands in Florida to reduce nutrient runoff into Lake Okeechobee and improve wetland habitat quality (SWCS 2007);
- Improving the economics of removal of invasive woody vegetation, particularly junipers, from sagebrush habitats by facilitating use as biomass fuel (SWCS 2007);
- Studying the benefits of seasonal flooding of fields in Washington. In addition to providing important migratory stopover habitat for Pacific Flyway shorebirds and waterfowl, temporary flooding may also increase soil fertility and reduce levels of soil pathogens (SWCS 2011).

## Conservation Effects Assessment Program

The Conservation Effects Assessment Program (CEAP), while not technically a targeting initiative, deserves special mention here for its importance in the effort to “quantify the environmental effects of conservation practices and programs and develop the science base for managing the agricultural landscape for environmental quality” (NRCS undated-d). CEAP conducts national and regional assessments of conservation program effectiveness in four areas: croplands, wetlands, wildlife, and grazing. For instance, CEAP studies have demonstrated the effectiveness of the Working Lands for Wildlife Program in the maintenance of lesser prairie-chicken leks (Bartuszevige and Daniels 2013), and demonstrated that “conservation practices are generating substantial natural resource benefits for producers and the communities of the Chesapeake Bay region” (NRCS 2013e). Linking conservation efforts to outcomes through CEAP is important to the success of conservation programs in general and to the targeting efforts described above.



Burrowing owl in New Mexico. Photo by Gary Kramer. Courtesy NRCS.

# Recommendations for Further Improving Conservation Program Targeting

As stated above, the new Farm Bill makes major changes to the Conservation title, most notably program consolidation: WHIP becomes a subprogram of EQIP; several easement programs (WRP, GRP, and FRPP) are combined into an Agricultural Conservation Easement Program, and the various regional programs would also be combined under one umbrella program called the Regional Conservation Partnership Program. It is of critical importance that recent advances in program targeting not be lost under this new system. Implementation must ensure that the new Farm Bill allocates assistance to project-based and outcome-oriented initiatives focused on national, regional and state priority resource concerns and the most critical areas, while still continuing to help farms in all regions improve conservation of natural resources. In addition, the Farm Bill must continue to protect and restore the most environmentally important lands — such as wetlands, floodplains, and grasslands — and the most critical wildlife habitat. Program conservation outcome measurement, evaluation, and reporting are critical and should be granted a secure funding source. Restoration of educational assistance will also improve program delivery and effectiveness. We urge the USDA to:

## Reaffirm its commitment to Working Lands for Wildlife

The 2014 Farm Bill made major changes to the Conservation title, notably the conversion of WHIP to a subprogram of EQIP. It will be very important in rulemaking and implementation that WHIP's value in creating and improving habitats for imperiled species not be lost under this new system. Of particular interest is the Working Lands for Wildlife initiative, which targets assistance to priority imperiled species needs, and was funded primarily through the WHIP program. It is our hope that this important initiative will still receive the funding and attention it deserves now that wildlife funding is rolled into a much larger program.

## Ensure that important conservation goals are not lost under the easement program consolidation

Another big change in the 2014 Farm Bill is the consolidation of several programs with very different purposes (WRP, GRP, and FRPP) into an Agricultural Conservation Easement Program.

As with wildlife under EQIP, the Farm Bill easement programs must continue to protect and restore the most environmentally important lands — such as wetlands, floodplains, and grasslands — and the most critical wildlife habitat. In rulemaking and implementation, NRCS should seek ways to capitalize on the potential benefits of the program consolidations, like the opportunity to generate more interest from landowners via a streamlined application process, and the chance to achieve multiple objectives, like protecting complexes of wetlands and grasslands, targeting assistance to priority landscapes, and realizing joint benefits for upland and aquatic species.

## Think strategically and across programs about how targeting can better be used for maximum benefits

For instance, the WHIP program prioritizes assistance targeting Southwest willow flycatcher riparian habitats. However, the best way to protect these habitats is under the Wetlands Reserve Program (now known as a Wetland Reserve Easement under the Agricultural Conservation Easement Program), which would allow longer term protection through easements and assistance. Unfortunately, the WRP's provision regarding riparian areas allows enrollment only if these “link wetlands that are protected by easements,” even though in some states—like Arizona—there are no other wetlands to be linked: riparian areas themselves are the majority of the existing wetlands. The state of Arizona has not enrolled a single acre in WRP conservation agreements since FY 2009 (USDA 2013b), making it the only state in the contiguous U.S. to be missing out on the program entirely, despite the recognized critical importance of its riparian habitats. NRCS should explore whether the provision allowing enrollment of “other wetlands of an owner that would not otherwise be eligible, if the Secretary determines that the inclusion of such wetlands in a wetland reserve easement would significantly add to the functional value of the easement” can be applied to these areas.



### **Balance attention to important existing priorities and novel opportunities under the Regional Conservation Partnership Program**

The regional program consolidation is another major change whose efficacy will be dependent on thoughtful implementation. The programs that have been repealed in the wake of this consolidation were serving important functions and meeting critical conservation needs. For instance, the Chesapeake Bay Program aimed to improve a watershed that is home to millions of people and a diverse economy, and appears to have been getting results, according to indices of Bay health (CBF 2013). The new program must not abandon the important priorities of the programs it replaces. At the same time, this program offers promise as a way to fund conservation partnerships that can bring innovative solutions to previously underserved communities and priorities. There is potential for the RCPP to fund initiatives that reduce the likelihood of conflict between wildlife and agriculture or ranching, for exploring payments for specific habitat and biodiversity conservation outcomes, and other novel tools.

### **Incorporate climate change resilience into conservation program delivery**

The USDA has been a leader in thinking about how climate change will affect critical elements of the agriculture system, wildlife habitat, water, and ecosystem services. Many of these issues were captured in the February 2013 report, “Climate Change and Agriculture in the United States” (ARS 2013) and will be topics of study by the forthcoming climate and agriculture research “hubs.” We urge the USDA to use the opportunity of new rulemakings associated with the conservation program changes in order to maximize the ability of the conservation programs to deliver resilience in the face of climate change for our wildlife and natural resources.

### **Fully fund all conservation programs**

Between the effects of the sequester and the funding reductions in the 2014 Farm Bill, conservation programs overall are facing a cut of \$6 billion over the life of the bill, compared to the levels set forth in the 2008 Farm Bill. It is critically important that going forward, there be no further reductions to these important programs through the budget and appropriations processes.



One of the last remaining oak savanna habitats can be found on Bald Top on the William L. Finley National Wildlife Refuge in Oregon. Photo by George Gentry. Courtesy USFWS.

# Appendix:

## Farm Bill Programs At-a-Glance

The Farm Bill authorizes a wide array of programs that provide technical and financial assistance to agriculture and forest producers who are interested in improving soil, water, air, and habitat quality on their land. The major programs can be divided into two overall categories: the “reserve” programs that offer easements or rental contracts for long-term to permanent land retirements, and “incentives” programs that provide cost-share to improve practices on working lands. The following is not an exhaustive list, but provides an introduction to those programs that have been used effectively to target important conservation initiatives related to key wildlife habitats, water quality, and other objectives. More detailed information on these programs, and the changes in the 2014 Farm Bill, is available in the Guide to Conservation Programs (Defenders of Wildlife 2014).

### Easement and Land Retirement Programs

There are four major programs that involve some type of easement or multi-year retirement of land. These are the Conservation Reserve Program, Wetlands Reserve Program, Grasslands Reserve Program, and the Farm and Ranchland Protection Program. The new Farm Bill consolidates all but the Conservation Reserve Program into a new Agricultural Conservation Easement Program.

**Conservation Reserve Program (CRP)** is the largest and oldest of the Farm Bill conservation programs, dating back to the 1985 Farm Bill and at one point enrolling nearly 40 million acres nationwide. CRP provides a rental payment to producers who take highly erodible or otherwise sensitive lands out of crop production and instead plant perennial, resource-conserving cover species for a period of 10 to 15 years. It is administered by the Farm Service Agency (FSA) rather than the Natural Resources Conservation Service (NRCS). A sub-program of CRP, called the Conservation Reserve Enhancement Program (CREP), is one of the most important programs for targeting assistance to state and regional conservation priorities (FSA 2013a).

**Wetlands Reserve Program (WRP)** provides restoration cost-share, as well as 30-year or permanent easements, to protect wetlands on farmlands. Enacted in the 1990 Farm Bill, it aims to reverse the trend of wetland loss, which approaches 50% nationwide and 90% in some states. It is most often used to restore the ecological function of low-lying cropland that tends to flood frequently. The restored hydrologic function and vegetation provide an array of benefits, including flood control and waterfowl habitat (NRCS 2012a).

**Grasslands Reserve Program (GRP)** provides rental contract or permanent easements for producers to protect grasslands from conversion to row crops, orchards, or vineyards. In some cases the program also provides restoration funds where grasslands have been degraded. Its goals are to maintain grazing land and grassland or shrubland wildlife habitat in the face of conversion pressures.

**Farm and Ranchland Protection Program (FRPP)** is something of a hybrid between an easement and working lands program, in that the easement pays to retire the development rights on the land. This allows continuation of farming or ranching in areas of rapid growth or urban sprawl, where increasing land values and tax rates would otherwise make it difficult to retain the land in agricultural production (NRCS undated-a).

### Working Lands Incentives Programs

Multiple Farm Bill programs provide financial and technical assistance to producers that want to improve conservation performance on working lands. The main ones that have been used in a targeted way are the Environmental Quality Incentives Program (EQIP) and the Wildlife Habitat Incentives Program, which the new Farm Bill eliminates as a stand-alone program and folds into EQIP.

**Environmental Quality Incentives Program (EQIP)** is the largest of the incentives programs, with funding levels over \$1.3 billion authorized each year by the 2014 Farm Bill. It provides technical assistance and cost-share for a wide array of practices through contracts of up to ten years. The program has multiple purposes, including helping producers comply with environmental laws, enhancing natural resources and conserving energy. EQIP contracts can address a wide range of conservation issues and practices, including water quality, air quality, water conservation,

erosion reduction, and wildlife habitat. EQIP has a number of sub-programs and initiatives, including for Air Quality, Water Quality, On-Farm Energy, Organic Farming, Conservation Innovation Grants, and several regional and landscape initiatives that (NRCS 2008b).

*Wildlife Habitat Incentives Program (WHIP)* was a cost-share program with the purpose of helping landowners “develop upland wildlife, wetland wildlife, threatened and endangered species, fish, and other types of wildlife habitat” (PL 104-127). Always a much smaller program than EQIP and now rolled into that program going forward, it nonetheless has been discussed in detail because of its outsized role in providing assistance to landowners interested in preserving and improving habitats for species of state and national conservation concern. From its inception, WHIP was used on a number of important projects to benefit key imperiled species, including the Karner blue butterfly, Indiana bat, Atlantic salmon, and northern bobwhite quail, as well as important habitats such as cold-water streams, oak savanna, longleaf pine, and prairies (Hackett 2000). More recently it has been an important element of targeted initiatives like Working Lands for Wildlife. The success of the new Farm Bill in furthering wildlife conservation depends in large part on how well the initiatives of this small but crucial program are handled going forward.

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