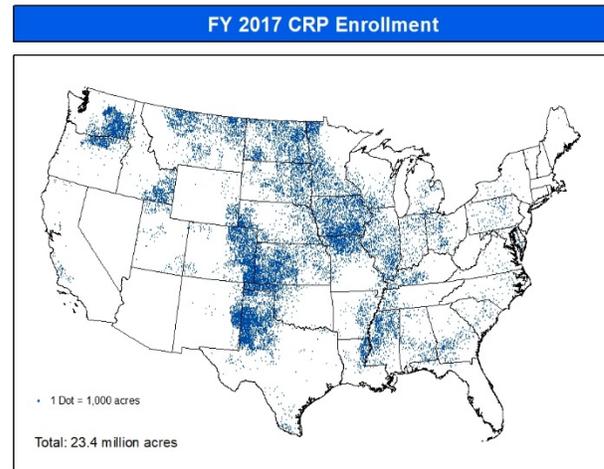


Environmental Benefits of the Conservation Reserve Program

2017

United States



<u>Fiscal Year</u>		2012	2013	2014	2015	2016	2017
Land Enrolled*	million acres	29.5	26.8	25.4	24.2	23.9	23.4
In Wetlands	million acres	2.3	2.1	2.0	1.9	2.1	2.2
Buffers	million acres	2.0	1.9	1.8	1.8	1.7	1.6
<u>Reductions (not leaving field or are intercepted by buffers)**</u>							
Sediment	million tons	230	216	207	202	198	192
Nitrogen	million lbs.	630	586	559	541	535	521
Phosphorus	million lbs.	125	116	111	108	106	103
<u>Greenhouse Gas Reduction (CO2 equivalent/year)**</u>							
CO2 Sequestered	Mil. metric tons	42	38	37	35	34	34
Reduced Fuel and Fertilizer Use	Mil. metric tons	13	12	11	10	10	10
Total	Mil. metric tons	54	49	47	45	45	44

*Cumulative acres. **Annual estimate - See Estimation Methodology at link below.

The Conservation Reserve Program (CRP) improves water quality. CRP water quality benefits accrue in multiple ways:

- Using models developed by the Food and Agricultural Policy Research Institute (FAPRI), CRP reduced nutrient losses in 2017 by an estimated 521 million pounds of nitrogen and 103 million pounds of phosphorus, compared to land that is cropped. Additionally, CRP enhanced water quality by reducing sedimentation by 192 million tons in 2017.
- CRP reduces the amount of nutrients and chemicals leaving a field in runoff and percolate. On average, CRP covers reduce nitrogen and phosphorus leaving CRP fields by 95 and 86 percent, respectively, compared to land that is cropped.
- Grass filter strips and riparian buffers intercept sediment, nutrients, and other contaminants before they enter waterways. Because buffers both reduce contaminants on the land they occupy and intercept contaminants from other lands, they have disproportionate water quality benefits.
- Wetlands restored and constructed by CRP improve water quality by converting nitrate-nitrogen into benign atmospheric nitrogen and help reduce the formation of hypoxic zones in the Gulf of Mexico, Chesapeake Bay, and other waters. Iowa's 126 Conservation Reserve Enhancement Program (CREP) constructed wetland projects are designed to

intercept and treat water from underground agricultural drainage systems. In 2017, these projects removed nearly 1.5 million pounds nitrate-nitrogen from agricultural drainage water.

CRP enhances wildlife habitat. The 23.4 million acres of grass, trees, and wetlands enrolled in CRP benefit numerous wildlife species. Independent studies have identified benefits to multiple bird populations including:

- **Prairie Pothole Ducks** –The U.S. Fish and Wildlife Service (USFWS) estimated that CRP contributes to a net increase in ducks each year. Between 1992 and 2012 CRP resulted in the hatching of over 37 million additional ducks from the North Dakota, South Dakota, and northeastern Montana portion of the Prairie Pothole region. CRP enrollment in the Prairie Pothole region has decreased, however, with CRP enrollment of 4.4 million acres in the Prairie Pothole region, including 1.5 million acres of wetlands, CRP continues to strongly benefit duck populations.
- **Ring-Necked Pheasants** – Western EcoSystems Technology, Inc. documented that, in prime pheasant habitat, a 4 percent increase in CRP herbaceous vegetation was associated with a 22 percent increase in pheasant counts.
- **Northern Bobwhite Quail** – Mississippi State University researchers found that quail populations were positively related to CRP upland buffer enrollment. Overall breeding season bobwhite densities were 70-75 percent greater on CRP buffers than control fields.
- **Grouse** – The CRP is recognized as an important tool for aiding sage grouse (SAGR) and lesser prairie chicken (LEPC) populations, species of conservation concern. The Western Association of Fish and Wildlife Agencies developed a range-wide conservation plan for the LEPC, reporting that “The CRP is a voluntary program that supports the most robust populations of LEPC across their range,” and the USFWS found that CRP and conservation measures to benefit LEPC result in positive population response by the species. With respect to SAGR, the Washington Department of Natural Resources (WDNR) found that CRP enrollment was associated with halting a decline in SAGR populations. In response, FSA has developed CRP State Acres For Wildlife Enhancement (SAFWE) initiatives to further assist LEPC and SAGR.
- **Grassland Birds** –Researchers from the USFWS, U.S. Geological Survey (USGS), and the University of Montana have demonstrated that, since its inception, CRP has had a large impact on grassland bird populations in the Northern Plains, including two birds designated as species of continental importance by Partners in Flight. Further, CRP has repeatedly been identified as important to grassland birds by the North American Bird Conservation Initiative. The 2013 *State of the Birds* report says: “CRP is restoring grassland habitat for breeding birds. Henslow’s Sparrow populations, which declined more than 95 percent between the mid-1960s and 1990s, rebounded in some areas through CRP. In Illinois, the regional Henslow’s Sparrow ... spring bird counts ... are now about 25 times greater than ... prior to CRP.”
- **State Acres for Wildlife Enhancement (SAFE)** – As of October 2017, 1.9 million acres have been enrolled in CRP’s SAFE program. SAFE identifies priority habitat to be conserved for wildlife species that are threatened or endangered, have suffered significant population declines, or are important environmentally, economically, or socially. Examples of SAFE conservation are habitats created for Columbian Sharp-tailed Grouse in Colorado, Idaho, and Washington; LEPC in Colorado, Kansas, New Mexico, Oklahoma, and Texas; Northern Bobwhite in Missouri; American Woodcock, Henslow’s

Sparrow, Sedge Wren, and Grasshopper Sparrow in Indiana; Upland Sandpiper in Maine; and Ferruginous Hawk in Washington.

CRP benefits honey bees and other pollinators. USGS scientists have shown that beekeepers strongly favor CRP lands when selecting locations to keep honey bee colonies during the summer in the Northern Great Plains; a region that supports over 40 percent of US honey bee colony stock. Beekeepers value CRP lands because it provides pesticide-free areas to keep bees in agricultural landscapes and because of the multiple flower species that grown on CRP. USGS research has highlighted the national importance of CRP lands in supporting honey bee colonies, diverse native bee communities, and monarch butterfly populations. Insect pollinators play a critical role in pollinating agricultural crops and maintaining ecosystem function. In the US insect pollination of agricultural crops is valued at over \$15 billion, annually.

CRP reduces greenhouse gas emissions. USDA has determined CRP sequesters more carbon—34 million metric tons carbon dioxide equivalent (CO₂)—on private lands than any other federally administered program. This carbon enhances soil health. In 2017, CRP resulted in the equivalent of a 44 million metric ton net reduction in atmospheric CO₂ from sequestration, reduced fuel use, and avoidance of nitrous oxide emissions from lower fertilizer use. Carbon sequestration helps offset the release of greenhouse gases (GHG) from other sources into the atmosphere. The total reduction in GHG is equivalent to removing 8.6 million cars from the road for a year.

CRP protects and enhances soil productivity. CRP greatly reduces erosion and protects soil productivity by targeting fragile cropland and placing these lands into protective conservation covers. Since 1986, CRP has reduced soil erosion by more than 9 billion tons.

CRP reduces downstream flood damages. Upstream CRP lands reduce downstream flood damage. Peak flows are reduced by slowing, storing, and infiltrating storm water runoff. For example, USGS estimated that CRP wetland catchments could store approximately 458,000 acre-feet of water annually, reducing water available for downstream flooding. The U.S. Army Corps of Engineers found that CRP land in the Indian Creek basin of Iowa resulted in urban areas realizing significant monetary benefits due to flood damage reduction.

CRP can benefit aquifer water levels. USGS examined the relationship between CRP enrollment and Ogallala aquifer water level changes. The analysis reveals that the benefits of CRP are greatest in areas with the greatest water-level decline. Targeting land in these areas for increased CRP enrollment or re-enrollment is likely to be beneficial to the aquifer.

FSA is using CRP enrollment data, the USDA soils and natural resource inventories, and agreements with Federal, State, and other partners to refine these performance measures and to estimate the benefits from CRP. For more information, documentation, and estimation methodology see <http://www.fsa.usda.gov/FSA/webapp?area=home&subject=ecpa&topic=nra>.