Acres of Land Enrolled in the Conservation Reserve Program (CRP)

This EnviroAtlas national map depicts the acres of land within each 12-digit hydrologic unit (HUC) enrolled in the US Department of Agriculture's (USDA) Conservation Reserve Program (CRP). The CRP, established in 1985, is administered by the USDA Farm Service Agency. Farmers enrolled in the program receive annual rent payments and establishment cost share to remove environmentally sensitive land from crop production and plant environmentally beneficial perennial species.

Why is the Conservation Reserve Program important?

Farmers may voluntarily enroll marginal farmland in the CRP for 10 to 15 years. Environmentally sensitive or marginal farmland includes stream or lake riparian areas, periodically saturated or flooded lowland, or soils subject to wind or water erosion. Depending on the character of the candidate farmland, the CRP offers a number of initiatives with management practices tailored to wetland and riparian areas, duck and upland bird habitat, wildlife enhancement, retention of highly erodible soils, or honeybee and native pollinator habitat.

Farmland returned to natural cover may provide a number of ecosystem services that represent a long term investment in increased agro-ecosystem productivity. Natural land cover on sensitive areas helps protect water quality and terrestrial and aquatic habitat. Natural grassland and woodland slow stormwater runoff, filter pollutants from the air and soil, recharge groundwater, moderate air and water temperatures, and sequester carbon to mitigate global warming. A recent Farm Service Agency study reported that exports of sediment and nutrients fell to 0 after marginal cropland was planted with CRP natural cover.[1] By FSA estimates, CRP is responsible for a reduction of 450 million tons of erosion annually. Targeting the most highly erodible cropland could further increase the retention of erodible soils.[2] Another study on the high plains Ogallala aquifer in Oklahoma found that CRP parcels significantly increased groundwater recharge in areas where irrigation had reduced groundwater supplies.[3]

CRP acreage, particularly native plantings, benefit native pollinators such as bees, butterflies, birds, bats, and flies that provide a critical service to native and agricultural ecosystems. About 75% of all crop plants depend on native and domesticated (honeybee) pollinators.[3] The lack of local


Photo: Iowa stream, L. Betts, NRCS

pollinators can result in lost crop productivity. Recent declines in honeybee populations make the services provided by wild pollinators even more critical to maintaining stable crop yields.[4] Native pollinators require blooming plants throughout the growing season and nesting habitat in tree cavities or abandoned insect or rodent nests.[5]

CRP acreage is important in the Prairie Pothole region of the Northern Great Plains to maintain and restore duck breeding habitat. Results from a study evaluating the nesting success of 5 duck species during 1992–1997 in CRP vs. non-CRP acres estimated an additional 12.4 million recruits to the fall migration attributed to improved CRP habitat.[6]

CRP enrollment is affected by factors such as farm bill enrollment caps, high commodity crop prices, and regional rental rates. The most recent 2014 farm bill reduced annual enrollment to a cap of 24 million acres in 2018, a reduction from a high enrollment of 37 million acres in 2007.[7] High crop prices and early opt-out provisions raise concerns that more CRP acreage may be returned to agricultural uses.

How can I use this information?

This map identifies the number of acres of agricultural lands in the U.S. summarized by 12-digit HUC that are enrolled in the Conservation Reserve Program. The map can be used to identify areas with fewer CRP acres that may be in need of more protection. This dataset may be compared with other EnviroAtlas map layers such as National Wetland Inventory or land cover in estimated floodplains to analyze how agricultural lands relate to wetland ecosystem services.

CONTINUED ON BACK ▶

Overlaying the map with EPA impaired waters data may assist in planning to maximize filtration capabilities when implementing Total Maximum Daily Loads in streams. CRP acreage alongside or upstream of impaired stream segments may help reduce sediment and nutrient loads to streams. Comparing individual HUCs in this layer with another national map, Acres of Pollinated Crops with No nearby Pollinator Habitat, may highlight areas where pollinator habitat may be increased through CRP plantings. Multiple CRP-assisted functions may be ranked in importance depending on local needs for water quality improvement, wildlife habitat, flood protection, nutrient filtration, or groundwater recharge. Once high-ranking areas are identified, detailed site analysis may be planned for restoring local areas. An area can be more thoroughly investigated by increasing the transparency of the overlying map and adding data for streams and water bodies (NHDPlus, found under the boundaries icon) to an aerial imagery base map.

How were these data created?

This dataset was developed by the USDA using a 10km raster based on the feature class maintained by the USDA Farm Service Agency of Conservation Reserve Program enrollment boundaries. Polygons in the dataset were converted to points and then converted to the raster. The number of CRP acres was summarized by 12-digit HUC boundaries and expressed as a range (0, 0–50, 50–100, etc.).

What are the limitations of these data?

The data are a snapshot of land enrolled in the Conservation Reserve Program circa January 2016. The acreage is expressed as a range (0, 0–50, 50–100, etc.) to protect the confidentiality of program participants. CRP acreage is in constant flux with early releases, renewals, and contracts expiring annually. About 3.8 million acres of CRP contracts are due to expire in 2016 and 2017.[7]

How can I access these data?

EnviroAtlas data can be viewed in the interactive map, accessed through web services, or downloaded.

Where can I get more information?

A selection of resources related to the environmental services provided by the Conservation Reserve Program is listed below. For additional information on how the data were created, access the metadata for the data layer from the drop down menu on the interactive map table of contents and click again on metadata at the bottom of the metadata summary page for more details. To ask specific questions about this data layer, please contact the EnviroAtlas Team.

Acknowledgments

EnviroAtlas is a collaborative effort led by EPA. Rich Iovanna, USDA Farm Service Agency, developed this map for EnviroAtlas. The fact sheet was created by Sandra Bryce, Innovate!, Inc.

Selected Publications

1. Food and Agricultural Policy Research Institute (FAPRI). 2007. Estimating water quality, air quality, and soil carbon benefits of the Conservation Reserve Program. FAPRI-UMC Report No. 01-07. University of Missouri-Columbia, Columbia, Missouri.

2. U.S. Department of Agriculture Farm Service Agency. 2017. Conservation Reserve Program Statistics: Maps and Tables. Accessed March 2021.

3. Rao, M.N., and Z. Yang. 2010. Groundwater impacts due to Conservation Reserve Program in Texas County, Oklahoma. *Applied Geography* 30:317–328.

4. Garibaldi, L.A., M.A. Aizen, A.M. Klein, S.A. Cunningham, and L.D. Harder. 2011. Global growth and stability of agriculture yield decrease with pollinator dependence. *Proceedings of the National Academy of Sciences* 108(14):5909–5914.

5. Cane, J.H. 2001. Habitat fragmentation and native bees: A premature verdict? *Conservation Ecology* 5(1):3. Online paper accessed March 2021.

6. Reynolds, R.E., T.L. Shaffer, R.W. Renner, and B.D.J. Batt. 2001. Impact of the Conservation Reserve Program on duck recruitment in the U.S. Prairie Pothole region. Journal of Wildlife Management 65(4): 765–780.

7. Stubbs, M. 2014. Conservation Reserve Program (CRP): Status and issues. Congressional Research Service Report 7-5700, Congressional Research Service, Washington, D.C. 24 p.

USDA Farm Service Agency. 2015. Celebrating 30 years of the Conservation Reserve Program. Story map highlighting individual farm success stories in establishing CRP acreage under various initiatives. Accessed March 2021.