



GULF OF MEXICO RESTORATION
A PRIVATE LANDS VISION FOR SUCCESS

INTRODUCTION

The Gulf of Mexico is a national treasure. The Gulf ecosystem hosts a diverse array of habitats from coral reefs and hyper-saline lagoons to emergent wetlands and vast sea grass meadows.

With 1.3 billion pounds of annual seafood production, the Gulf produces more finfish, shrimp and shellfish than the South and mid-Atlantic, Chesapeake Bay and New England areas combined.

In addition, the Gulf is home to at-risk wildlife species, such as the Louisiana black bear, and its five million acres of coastal wetlands provide critical stopover habitat for hundreds of species of migratory waterfowl and neo-tropical songbirds each year.

The health of this ecosystem will be decided on private lands. The land area of the Gulf's five states—Alabama, Florida, Louisiana, Mississippi and Texas—encompasses more than 290 million acres. Private agricultural and forest lands account for 86 percent of this land area. Consequently, the management of private agricultural lands tremendously influences the health of the region's industry, tourism and natural resources, especially when it comes to the quality and quantity of water needed to keep the Gulf of Mexico alive.

USDA's Natural Resources Conservation Service (NRCS) is already poised to work with farmers, ranchers and forestland owners to improve the health of this critical ecosystem through an incentive-based voluntary approach.

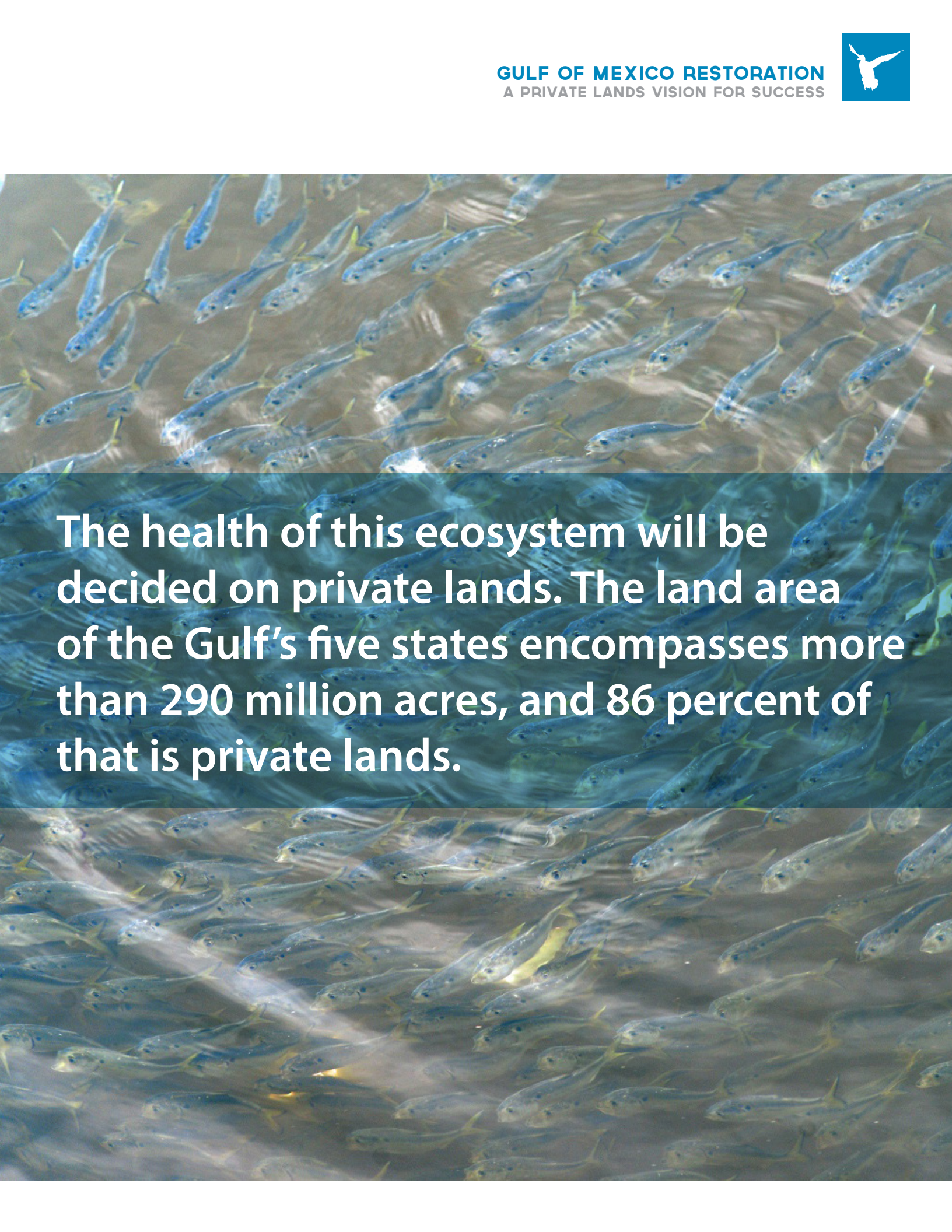
Key Successes

Continued Success. NRCS initiated the Migratory Bird Habitat Initiative in June 2010 when oil was still spilling from the Deepwater Horizon well. In a few months' time, NRCS and its partners mobilized landowners in eight states to create over 470,000 acres in additional habitat for migrating shorebirds and waterfowl affected by the spill. This effort continues today and a Mississippi State University study shows the work has directly increased the abundance of waterbirds.

Landscape-scale Conservation. NRCS has launched landscape initiatives that accelerate and focus conservation assistance in watersheds and habitat areas for greatest ecological benefit. The Mississippi River Basin Healthy Watersheds Initiative, the Gulf of Mexico Initiative and the Migratory Bird Habitat Initiative already offer infrastructure and a proven track record of conservation success in critical watersheds. Also, NRCS is working with other federal agencies to pilot a multi-tiered water quality monitoring strategy to measure the results of our work.

Boots on the Ground. Over 1,700 staff in 428 Gulf-area field offices work with farmers, ranchers and forestland owners to plan and install conservation practices. This on-the-ground technical expertise allows NRCS to act quickly and address natural resource concerns of regional and national priority while accounting for local needs.

Partnerships. NRCS leverages public-private conservation investments through an extensive network of existing partnerships. Coordinating with soil and water conservation districts, state and federal agencies, and nonprofit conservation groups, many NRCS investments are matched two- or three-fold.



The health of this ecosystem will be decided on private lands. The land area of the Gulf's five states encompasses more than 290 million acres, and 86 percent of that is private lands.

A PRIVATE LANDS VISION



4

Implementing the Gulf of Mexico Regional Ecosystem Restoration Strategy

will require concerted work and partnership among all the trustees and agencies involved on both public and private lands. With its unique mission and ability to implement conservation in a timely manner, NRCS proposes a comprehensive approach to Gulf restoration on private lands.

NRCS proposes a five-pronged strategy to enhance water quality and quantity, restore and protect high-priority coastal areas and enhance wildlife to benefit the ecosystems in the Gulf region. This strategy is measurable in geographic reach and total financial investment, and links other federal and state investments, thereby leveraging resources. Most importantly, NRCS is prepared to begin immediate implementation.

Five Step Approach

1. Expand NRCS' Gulf of Mexico Initiative to restore the health of major rivers in all five Gulf states.
2. Increase investments to restore and protect coastal Gulf of Mexico.
3. Expand NRCS' Migratory Bird Habitat Initiative in the lower Mississippi River delta and along all five Gulf Coast states.
4. Launch an NRCS "Room for the River" project to restore the Mississippi River's floodplain.
5. Expand NRCS' Mississippi River Basin Initiative in the lower and upper basin states to improve water quality and quantity, and help address the Gulf of Mexico hypoxic zone.



The health of the Gulf of Mexico region has deteriorated significantly—from loss of critical wetland habitats and imperiled fisheries to water quality degradation and significant coastal land loss. Amplifying this, the Gulf Coast region has endured significant natural and man-made catastrophes in the last decade, including major hurricanes and the 2010 Deepwater Horizon Oil Spill.

State, federal and local governments as well as other entities are working to improve the situation and some improvement is occurring on a small scale. However, large scale, sustainable results are yet to be seen. To achieve this, we need to take a regional approach that is carried out at the local level. A comprehensive private lands conservation strategy is essential to future success.

Step 1: Expand NRCS' Gulf of Mexico Initiative to restore the health of major rivers in all five Gulf states

Proposal. Expand the Gulf of Mexico Initiative (GoMI) by treating agricultural lands in greatest need of conservation in seven priority river basins to improve water quality and quantity, as well as restore and protect critical wildlife habitat. Depending on available funding, the number of river basins could be expanded. This project also presents a significant opportunity to leverage resources with other federal and state partners to benefit priority river basins.

Background. In December 2011, NRCS launched GoMI, an innovative water and wildlife conservation initiative, which will focus up to \$50 million over three years in conservation assistance to farmers and ranchers in priority areas along seven major rivers draining to the Gulf. All five states along the Gulf Coast are part of this effort, including Alabama, Florida, Louisiana, Mississippi and Texas. Many communities and cities along these rivers—such as Pensacola, Mobile, Biloxi and San Antonio—will benefit from the cleaner water, more abundant wildlife and healthier fisheries.

Drawing from recent natural resource assessments, NRCS identified Gulf Coast watersheds where substantial opportunities exist to reduce nutrient and sediment loading through focused technical and financial assistance. Working in conjunction with state and federal agencies, local partners and producers, NRCS selected the seven river basins containing 16 of the watersheds with the greatest opportunity to build upon existing conservation efforts. Currently, NRCS has focused GoMI conservation work at relatively small watershed scales (the 8- and 12-digit hydrologic unit code [HUC] scales). This focus allows the agency to target resources where they can be most effective and measurable.



The Gulf of Mexico is home to five million acres of coastal wetlands that provide critical stop-over habitat for hundreds of species of migratory waterfowl and neo-tropical songbirds each year. More than half of that land is in private hands.



Water moves through a series of channels and lakes in Louisiana's coastal zone towards the Gulf of Mexico, including Lake Verret in Assumption Parish, Louisiana. Photo by: Quin Kinler, Resource Conservationist, NRCS, Louisiana.

Private Lands Vision. If GoMI were expanded to include larger river basins (increasing in scale from the current 8- and 12-digit scale to the 4-digit HUC major river basin scale), NRCS would be able to treat additional agricultural lands in the Gulf region that generate significant nonpoint source water loadings. At this scale in the seven river basins, there are about 6.1 million acres of agricultural lands. NRCS estimates that out of this total, about 1.8 million acres (or 30 percent) are in need of a high degree of conservation treatment to address water quality concerns. An additional 2.3 million acres (or 37 percent) are estimated to be in need of a moderate degree of water quality conservation. In total, there are about 4.1 million acres of land that are in need of some form of water conservation treatment.

If NRCS collaboratively worked with producers to install conservation, we estimate that such actions would reduce annual edge-of-field losses from these crop fields by:

- **Over 7.2 million tons of sediment** (or a reduction of 84 percent from current loss levels)
- **Over 132 million pounds of nitrogen** (or a reduction of 48 percent from current loss levels)
- **Over 12.5 million pounds of phosphorous** (or a reduction of 62 percent from current loss levels)

NRCS believes these benefits will provide significant water quality benefits to these priority rivers and to the Gulf waters. To better estimate and assess the positive impacts, NRCS wishes to partner with state water quality agencies, EPA, USGS and NOAA to translate these nonpoint source loading reductions into both in-stream benefits and, ultimately, Gulf of Mexico water quality benefits in estuaries and fisheries.

Step 2: Increase investments to restore and protect coastal Louisiana

Proposal. Expand and accelerate NRCS support for coastal wetland and barrier island protection and restoration projects.

Background. NRCS and its network of state and local partners are capable of planning and delivering significant restoration projects along the coast. For example, NRCS is a long-standing partner in implementing the 1990 Coastal Wetlands Planning Protection and Restoration Act (CWPPRA), a partnership of five federal agencies and the state of Louisiana working towards the common goal of creating, protecting and restoring valuable coastal wetlands. The program is the oldest and largest federally funded restoration program in Louisiana.

Since inception of CWPPRA, NRCS has:

- Been the federal sponsor of 66 of the 191 projects authorized by CWPPRA.
- Provided project design and construction contract administration on 12 other federally sponsored projects.
- The 57 active NRCS-sponsored projects cover more than 527,000 acres of valuable coastal wetlands at a cost of almost \$607 million. In addition to planning projects, NRCS has completed construction on 39 projects affecting 381,000 acres of coastal wetlands at a cost of \$232 million.

For example, in partnership with the Louisiana Department of Wildlife and Fisheries, NRCS has helped protect and restore Raccoon Island in the Isles Dernieres Chain. Raccoon Island is experiencing shoreline retreat gulfward and bayward, threatening one of the most productive wading bird nesting areas and shorebird habitats along the Gulf Coast. It is also home to the Louisiana's largest nesting colony of brown pelicans, the state bird. Through the project, NRCS has helped restore 60 acres of back bay marshes, thus creating valuable avian habitat.

Private Lands Vision. NRCS and its state, local, and private conservation partners can build upon their combined capabilities and continue to collaboratively design and deliver barrier island protection and restoration projects, as well as coastal wetland restoration and freshwater introduction projects.



Plant life and vegetation thrive in wetlands and marsh areas along the Gulf of Mexico.

A photograph of a lush green forest. In the foreground, a vibrant green snake is perched on a branch of a tree with feathery leaves. Below the branch, a stream flows through the forest, reflecting the sunlight. The background is filled with more trees and foliage, creating a sense of depth and a natural, serene environment.

Working together with local partners in the Gulf of Mexico, NRCS can deliver significant restoration projects along the state's coast.

Step 3: Migratory Bird Habitat Initiative

Proposal. Expand the Migratory Bird Habitat Initiative (MBHI) to provide valuable wetlands habitat for migratory birds in the Lower Mississippi River Delta and along the Gulf Coast.

Background. In close cooperation with the U.S. Fish and Wildlife Service and state fish and wildlife agencies, NRCS initiated a coordinated effort with farmers and landowners across eight states to protect and feed birds migrating toward the Gulf of Mexico.

10

Wildlife experts estimated more than 50 million birds migrate through the Mississippi, Central and Eastern Flyways each fall and spring and feared that significant populations of these birds could be injured by the Deepwater Horizon oil spill. NRCS and its partners launched MBHI in June 2010 when oil was still spilling from the well. The initiative mobilized private landowners to help create additional, alternative habitats to provide healthy food and resting areas for shorebirds, waterfowl and other birds headed for the Gulf.

The initial goal was to enroll 150,000 acres. After landowners expressed extreme interest in the program, NRCS enrolled more than 470,000 acres – which more than tripled expectations across the eight initiative states.

These acres are within the three flyways passing through the Gulf of Mexico. These flyways are important corridors in spring and fall for millions of migratory birds because the Gulf States are the first and last lands encountered for trans-Gulf migrants. Additionally, the Gulf region's southern latitudes provide critical wintering habitat for significant numbers of waterfowl, wading birds, sparrows and other birds considered short-distance migrants who are escaping frozen waters and freezing temperatures farther north.



Osprey in flight with a spotted sea trout taken on Anna Marie Island in Florida (Gulf of Mexico).

Photo by: Mike Weimer, U.S. Fish and Wildlife Service.



Migratory birds enjoy wetlands on private lands in the Gulf of Mexico. Photo by: Beverley Mosley, NRCS, Bryan, Texas.

Under the MBHI, NRCS has:

- Worked closely with partners to identify the most ecologically valuable areas in the Gulf of Mexico region to target enrollments under the MBHI.
- Supported farmers and landowners entering into one to three-year contracts for improvements on their crop and wetland areas to benefit migratory birds.
- Worked with producers to prepare predominately rice and cotton fields for habitat.
- Helped to prepare berms and dikes around fields so they can be flooded to generate instant shallow water wetland areas. (Flooded fields with varying water levels provide habitat for a wide range of bird species that stop to refuel).
- Plant appropriate wetland vegetation to provide nesting habitat and food sources.

Private Lands Vision. Mississippi State University has engaged other universities and wildlife organizations to monitor and assess the impacts of MBHI over the last three years. Overall, to date, the university has found that MBHI has had a significant positive impact on waterfowl and water bird populations. For example, during 2011-2012, managed wetlands through MBHI supported nearly three times more dabbling ducks and twice as many water birds than on non-managed wetlands. These statistics demonstrate that with increased conservation investment, NRCS' work with farmers to create and restore critical wetland habitat offers the potential to provide even more impressive results.

Step 4: “Room for the River” Mississippi River floodplain restoration

Proposal. Purchase up to 160,000 acres of permanent conservation easements on croplands along the Mississippi River floodplain in the Lower Delta to improve water quality and enhance wildlife habitat for aquatic and terrestrial species.

Background. There are more than 320,000 acres of cropland in the Mississippi River floodplain between the Army Corps of Engineers levies, from Kentucky and southern Missouri to the mouth of the river in Louisiana into the Gulf of Mexico.

12

NRCS has purchased conservation easements on cropland areas in the Mississippi River floodplain to help restore cropland to a natural floodplain, reconnect the land to the river, and to allow for planting appropriate vegetation – such as bottomland hardwood trees and wetland vegetation. **Continuing this work will produce multiple benefits including:**

- Improved water quality in the Mississippi River. Reducing sediment, nutrient and pesticide loading into the river will benefit riverside communities, but also help to address hypoxia conditions in the Gulf.
- Enhanced wildlife habitat. By targeting easement enrollments, we can help establish wildlife habitat corridors for migratory birds, aquatic species and terrestrial species, (such as the Louisiana black bear), between public refuges, forests and parks, as well as private lands that already have established conservation easements.

Private Lands Vision. NRCS has extensive experience purchasing conservation easements and restoring floodplain lands along the Mississippi River and its tributaries. Coupled with other conservation priorities outlined in this document, investment to purchase and restore an additional 160,000 cropland acres will provide significant steps toward improving water quality in the Mississippi River floodplain and ultimately the Gulf of Mexico.



Wooden boxes in farm wetland provide a nesting habitat for wood ducks and other native water fowl.

A white egret is captured in mid-flight, its wings fully extended, showing the intricate structure of the feathers. The bird is positioned in the upper right quadrant of the frame. The background is a soft-focus landscape of a marsh or floodplain, with tall green grasses in the foreground and a body of water visible in the distance. The overall scene is bathed in natural light, creating a serene and vibrant atmosphere.

**Conservation easements along the
Mississippi River floodplain can improve
water quality and enhance wildlife habitat
for many species.**

Step 5: Mississippi River Basin Initiative

Proposal. Expand water quality conservation investments in the Lower and Upper Mississippi River Basins through the Mississippi River Basin Healthy Watersheds Initiative (MRBI). With more funding, the number of priority watersheds in the initiative could be expanded to provide additional targeted water quality conservation activities to reduce sediment and nutrient loadings to the river.

14

Background. The Mississippi River is the largest in North America, flowing more than 2,300 miles through the heartland to the Gulf of Mexico and the centerpiece of the second largest watershed in the world. The watershed provides drinking water, food, industry and recreation for millions of people. It also hosts a globally significant migratory flyway and home for more than 325 bird species alone.

Sediment and nutrient loading from agricultural lands has contributed to water quality problems throughout the river basin and into the Gulf. According to the U.S. Geological Survey (USGS), agricultural lands contribute about 80 percent of the phosphorous and 71 percent of the nitrogen that are delivered to the Gulf.

The majority of these nutrient loads delivered by the Mississippi River are a result of agricultural nonpoint sources far removed from the Gulf Coast. According to USGS's SPARROW model – a tool for the regional interpretation of water quality monitoring data – the volume and intensity of the nutrient loadings are from the Corn Belt region of the Midwest that include Illinois, Indiana, Iowa, Minnesota and Ohio.

Water quality and hypoxia conditions in the Gulf of Mexico will not be measurably improved until sources of nutrients are appropriately addressed.

Since this process began NRCS has:

- Initiated the Mississippi River Basin Health Watersheds Initiative (MRBI) in 2010
- Worked with producers using a conservation systems approach to manage nitrogen and phosphorus within fields to minimize runoff and reduce downstream nutrient loading
- Worked with federal, state, and local water quality agencies and conservation partners to identify high-priority focus areas
- Targeted up to \$320 million in additional conservation funding in focus watersheds over four years to improve water quality and benefit wildlife habitat
- Worked with federal, state and private conservation partners to improve MRBI's performance, and better leverage technical and financial resources

Private Lands Vision. Members of the Mississippi River Basin/Gulf of Mexico Hypoxia Task Force have embraced MRBI as a principle vehicle for assisting states as they develop their State Nutrient Reduction Strategies. Additional conservation investment will continue to catalyze and increase the voluntary collaborative efforts between producers and conservation partners to significantly reduce downstream nutrient loading.



Flooding crop fields, wildlife plantings, and conservation easements on private lands boost water quality and wildlife habitat.





Natural Resources Conservation Service

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