

A man wearing a dark baseball cap with a logo, glasses, and a light blue short-sleeved button-down shirt is operating a green combine harvester. He is looking off to the side with a focused expression. The harvester's green frame and a chain are visible in the foreground. The background shows a vast field of golden-brown crops under a clear blue sky.

EDF PARTNER
DENNY FRIEST

OCCUPATION
FARMER

LOCATION
RADCLIFFE, IOWA



ECOSYSTEMS

Field of dreams

Denny Friest, a fourth-generation farmer, grows corn and soybeans on 1,450 acres in Iowa with his wife, son and daughter-in-law. In his Iowa Soybean Association hat, Friest looks like a traditional farmer, but in fact he's part of an agricultural vanguard, an evangelist for the use of precise data to raise crops more efficiently, with less impact on the environment.

When he learned that fertilizer runoff from Midwestern farms flows down the Mississippi River, creating a 6,000-square-mile dead zone in the Gulf of Mexico, he enrolled in a program to cut fertilizer use. "We farmers are targeted as part of the problem, but we want to be part of the solution, too," he says.

Working with the On-Farm Network, Friest has cut fertilizer use on his farm by 30% while his yield has steadily increased. "This partnership gives farmers the resources we need," he says. "Rather than telling us what to do, EDF helped us become better managers—and better stewards of the soil." ■



WHY WE WORK ON ECOSYSTEMS

“Farms could become havens for wildlife, and farmers could be frontline stewards of clean water, fresh air and a healthy climate. They will need to be, if our planet is to sustain a growing population.”



David Festa
VP Land, Water and Wildlife

ECOSYSTEMS GOALS

- Conserve land and protect wildlife
- Protect water supply and freshwater ecosystems
- Cut reactive nitrogen pollution
- Foster markets for ecosystem services

For farmers, conservation pays

Through our on-the-ground partnerships in 12 states, EDF is helping farmers save money, reduce pollution and become better stewards of clean water and vanishing wildlife habitat.

Dairy farmers in Maryland and corn growers in Illinois have one thing in common: both often use far too much fertilizer. The excess runs off their fields into streams and lakes, creating oxygen-starved “dead zones” from the Chesapeake Bay to the Gulf of Mexico.

Starting in 2001, the Iowa Soybean Association, aided by EDF, decided to do something about this. Through the association's On-Farm Network, we began helping farmers cut polluted runoff by offering them accurate information about how much fertilizer their crops really need. The result: farmers pollute less *and* save money.

The program has caught on, and today we're working with farmers to improve water quality in 12 states. Our work took on added urgency in 2011, after massive floods in the Midwest sent fertilizer down the Mississippi River into the Gulf of Mexico, creating a dead zone the size of New Jersey, the largest on record.

We run a similar program in Ohio, where fertilizer runoff contributes to algae growth in Lake Erie that threatens the drinking water of 11 million people. And 265 farmers around Chesapeake Bay have joined with us to combat the dead zone that nearly eradicated the bay's oyster fishery.

Historically, farmers never knew exactly how much fertilizer to use, so they often applied too much, just to be on the safe side. The result: an estimated half of what they applied was flushed into waterways. Our network shows farmers how to use precise data collection and effective soil management to determine how much fertilizer their crops actually need.

We also strengthened incentives for farmers to restore wetlands and woodland buffers. These vanishing ecosystems filter pollution and provide habitat for birds and beneficial insects.

“EDF realizes that we too are environmentalists,” says Iowa farmer Denny Friest. “And they have helped us become better managers.” Today, the network includes some 1,000 farmers working nearly one million acres of critical watersheds. They have cut fertilizer use up to 25%, saving an average of \$3 per acre, without reducing yields.

“Our goal is to influence federal policies,” says EDF scientist Suzy Friedman. “We need to make precise use of fertilizer the rule, not the exception, among farmers. Then we can make a real difference in water quality in this country.”

EDF is also advancing more efficient farming practices by working with retailers like Walmart that have the purchasing power to create mass consumer demand for sustainable farm products.



TOO MUCH OF A GOOD THING

When too much fertilizer is applied to crops, the excess runs off and pollutes waterways. Reducing the excess and planting a buffer of grasses and trees can help.

“By promoting agricultural reform and partnering with landowners to protect habitat, EDF is helping us all.”

Barbara Kingsolver
EDF National Council Member
and bestselling author



Coastal wetlands are the first line of defense against hurricanes and floods. More than a million acres of Louisiana's wetlands have been lost in the past century.

Making the Gulf of Mexico whole again

Gulf Coast wetlands are a miracle of nature, protecting industry, cities, fisheries and wildlife. EDF is part of a strong bipartisan coalition to restore them.

More than a year after BP's Deepwater Horizon well was capped, the city of New Orleans remains vulnerable to hurricanes, and Louisiana's wetlands—which nurture the Gulf's \$23 billion fishing industry—are in bigger trouble than ever. The state loses up to 30 square miles of coastland each year, due to canals and levees that starve the wetlands of sediment and freshwater.

The oil spill worsened the ecological disaster, but it also opened up opportunities to rethink how the Mississippi River and its delta are managed.

For 35 years, EDF has been at the forefront of efforts to restore Gulf Coast wetlands. In 2011, we joined forces with allies ranging from the Louisiana governor's office to the 17,000-member Houma Nation to press for full restoration of the Gulf. Our goal was to ensure that most of the BP

penalties from the oil spill—which could reach \$21 billion—go to rebuilding endangered Gulf communities and ecosystems. BP committed an initial \$1 billion in 2011 to pay for early restoration projects, in an agreement EDF helped advance.

We then helped shape a bill in Washington that would dedicate 80% of BP's fines to economic recovery and wetlands restoration, instead of to the general federal budget. Cosponsored by two Democrats and seven Republicans, the proposed legislation represents a milestone for a politically polarized Congress.

As Senators Mary Landrieu (D-LA) and Richard Shelby (R-AL) hammered out the bill, we gained support on both sides of the aisle by introducing provisions that were important to both Republicans and Democrats. Our strategy included radio ads pointing out how investing in coastal restoration creates more jobs than oil and gas investments.

To advance wetlands restoration, EDF scientist Dr. Angelina Freeman helped develop a model project in Myrtle Grove, La. It demonstrated how the Mississippi River's land-building power can be harnessed to restore wetlands and protect coastal communities.

The Army Corps is now using EDF's wetlands rebuilding model on its first restoration projects.

“EDF played a critical role in bridging the differences between the parties and winning bipartisan support for legislation to restore the Gulf after the devastating oil spill.”

William K. Reilly, Co-chair, National Commission on the BP Deepwater Horizon Oil Spill and Offshore Drilling



Extending a welcome mat to wildlife

The largest population of endangered golden-cheeked warblers in the world nests at Fort Hood Army Base in Texas, where deafening explosions are commonplace. The birds are doing fine, however, thanks to a program designed by EDF.

Under the plan, Fort Hood gets credits for restoring warbler habitat on private land outside the base, allowing it to continue maneuvers. Landowners get paid to restore habitat, and wildlife receives a significant net gain in habitat.

The project is working so well we've expanded it from six to 34 counties, spanning the entire Texas Hill Country. The program offers credits to energy companies running transmission lines and others. With this offset system, such projects can proceed around the country while endangered wildlife and ecosystems win greater protection.

A voice for rivers: Changing how the West views water

For the Southwest, the Colorado River is a lifeline. But a century of “use it or lose it” laws have discouraged conservation, devastating wildlife and drying up the river system.

EDF is helping transform the way water is used in the Colorado River basin, which covers seven states and Mexico. With local and national partners, we are advocating a host of remedies to restore the entire river. They include: flexible water management, conservation in cities and on farms, and guaranteed water rights for the environment.

“We need to ensure enough water is left in our rivers to keep fish and wildlife healthy,” says Ecosystems VP David Festa. “With climate change further stressing rivers, there’s no time to lose.”

Agriculture uses three-quarters of the water in the Colorado basin, an unsustainable share given the region’s growing population. EDF seeks to end the tug of war between cities and farms.

We’re finding ways to help farmers conserve water and transfer the saved water to other users for fair compensation. “By moving water



among users, you can use it more efficiently,” says Festa.

Our goal is to reward farmers for services they provide. The crops they grow will become just one asset in a portfolio that includes clean water, wildlife habitat and climate protection. That will finally make it profitable to protect the resources on which all life depends.

30 million people depend on the Colorado River for their water supply