



Eco-Metrics Report

2020

 Nestlé PURINA.

INTRODUCTION

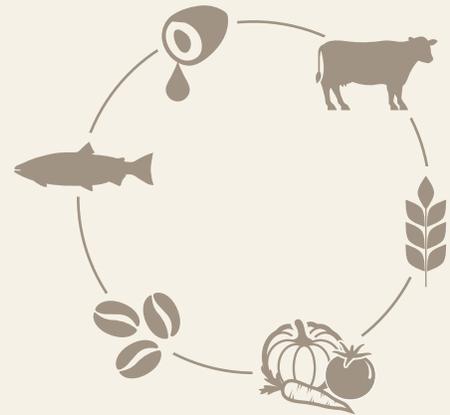
Nestlé has for many years been committed to responsible sourcing of its ingredients. It works to ensure that key commodity ingredients come from farms that use practices that are good for the land, animals, farm economics and for the environment.

Nestlé understands that to have a prosperous company into the future requires a healthy environment and so the company added a carbon commitment to be Net Zero in Green House Gas emissions by 2050.

As an operating company of Nestlé, Nestlé Purina is committed to these targets as well. As the largest user of cereals and grains, meat, and seafood in Nestlé, Purina in the US has a large involvement in programs to meet these goals. We recognize that for many years, the land has served as a carbon sink, sequestering carbon in the soil which improved land fertility, while filtering water, storing nutrients, and promoting biodiversity. Over the last few decades, this rich farmland has been overworked to generate ever more of the same crops for people and for farm animals, depleting soil nutrients. Additionally, the land has been over-tilled which releases greenhouse gases as it erodes fertility. As we focus on reducing greenhouse gases, we are taking a holistic approach to heal the land while storing carbon in it through regenerative agricultural techniques wherever possible.

As farmers and ranchers recognize and understand the opportunities to protect their soils in order to produce more with fewer resources, we are partnering across the U.S. with these farmers, conservationists, government ag agencies, academics, consultants, and equipment and service providers to create a better world for people and pets. Each of the projects you will read about in this publication helps to alleviate “pinch points” in the natural systems while adding balance to the environment. This report will recap progress made in existing projects and will introduce readers to a few new projects that more directly measure and reduce carbon.

We work with knowledgeable partners on our projects which enlarge the results and creates better decisions drawn from the expertise of many disciplines. In addition, we lend our expertise to boards that are creating larger benefits across agriculture.



Boards and associations where Purina shows its conservation leadership

- US Poultry and Egg – Board of Directors
- Field to Market – Board of Directors and Exec Committee member
- The Nature Conservancy –Board of Trustees, Missouri
- Ducks Unlimited – Conservation Program Committee Member
- Poultry and Egg Sustainability and Welfare Foundation – Board of Trustees
- U.S. Farmers and Ranchers in Action – Advisory Committee

We are humbled to receive, in 2019 and 2020, recognition from our partners and peers including:

- Ducks Unlimited’s Corporate Conservation Achievement Award in 2020
- Field to Market’s Collaboration of the Year Award for the Rice Stewardship Partnership (of which we are a partner) 2019
- Pheasants Forever’s Corporate Partner in Conservation – Longtail Award

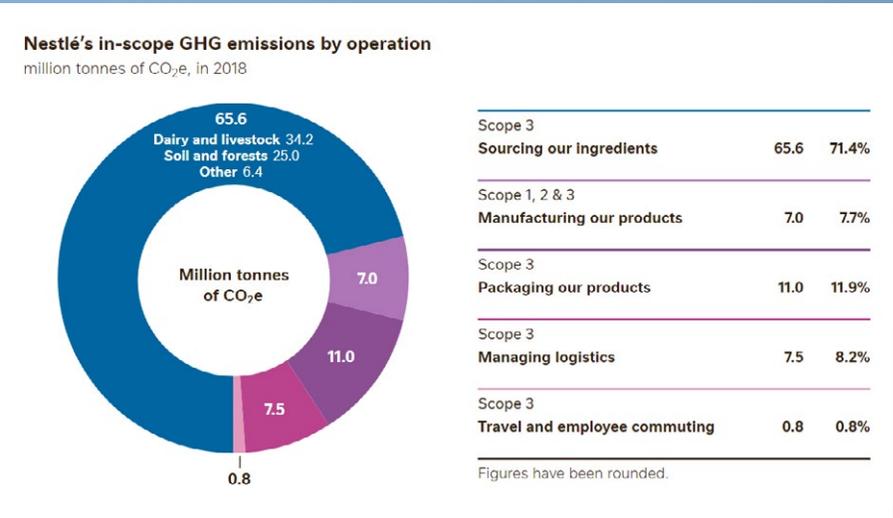


While we are proud of our contributions and the recognition they are receiving, we are very aware that there is still so much work ahead.



CARBON NET ZERO

The [climate is changing](#) bringing record high temperatures, increased hurricanes and floods. The polar ice caps are melting, raising sea levels on the highly populated coasts around the world, while arctic animals who rely on sea ice, are running out of firm ground. Agricultural growing zones are changing, affecting farmers everywhere. As a company dependent on a stable supply of high quality ingredients, a healthy climate is critical. For these reasons, Nestlé made a commitment to reduce our greenhouse gases to net zero by 2050, with an interim goal of 50% by 2030. This commitment galvanized the company into action and affected decisions globally -- especially in our supply chain as two-thirds of Nestlé's GHG emissions come from the farm, ranch, feedlot and forests linked to our supply chain. Massive changes will be needed to arrest global warming, and we want to erase our contribution to the problem and be a leader in restoring balance to the environment.



Note: Total scope 1,2,3 emissions combined are 113 million tons CO₂, however, several scope 3 categories were excluded from our [Net Zero](#) commitment following Science Based Targets Initiative guidelines.

Teams across Nestlé, which include Purina associates, are measuring our carbon footprint, and then prioritizing actions that could have the biggest impact. We are learning from experts and from other companies who are on the journey as well.

REGENERATIVE AGRICULTURE

As we studied our supply chain, and the opportunity to make the biggest difference, it became clear that something as fundamental as the land where our ingredients are grown can also be the place where excess greenhouse gases can be absorbed and where they will actually do the most good. As plants grow, they take in carbon dioxide from the air, and expel oxygen. The carbon is used by the plants to grow stalks, leaves, roots and grain. After the harvest, decomposers in the soil break down the roots into soil organic matter which feeds the microbes, fungi and other micro-organisms that create nourishment for the next generation of crops. This virtuous cycle on the farm improves yields, filters water, and encourages greater biodiversity above and below ground. The practice that encourages this healing is called regenerative agriculture and Nestlé and Nestlé Purina are looking for ways to work with farmers and other partners to incorporate regenerative practices into the way crops are grown.

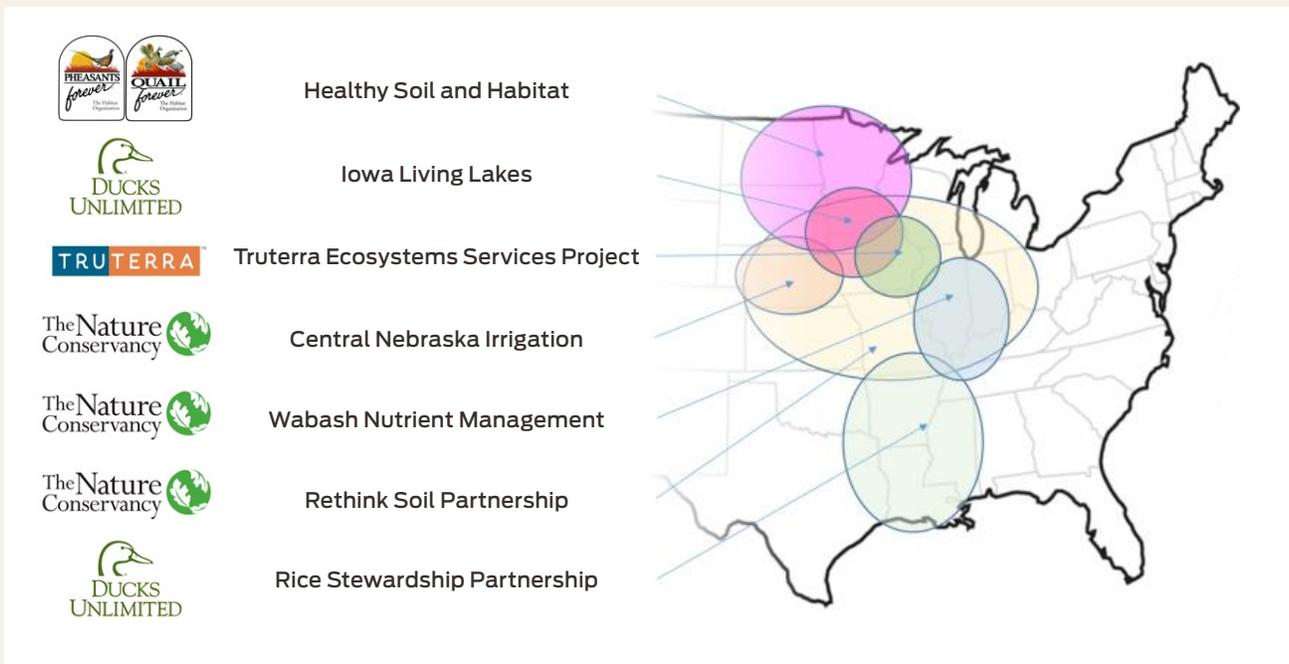
Farmers have been practicing forms of regenerative agriculture for decades. Techniques like minimally tilling the soil, planting cover crops after the fall harvest to have a living root in place, and cover to protect the topsoil from erosion over the winter, as well as rotating crops with more diverse varieties to replenish the soil have all been used by farmers for decades. But now these techniques are needed more than ever.

VALUE ADDED PROJECT PORTFOLIO

In this report, we will update you on projects around the US in which Purina has invested over the last five years to restore balance to regions where our ingredients are grown. Now, with the regenerative ag focus contributing to the Net Zero goal, we have added new projects that will reduce greenhouse gas emissions while they filter the water, increase biodiversity, and enable positive farm economics. Those projects include:

- A partnership with Pheasants Forever to work with growers in North and South Dakota, Western Minnesota and Northern Iowa to build soil health and create wildlife habitats, and
- A partnership with Truterra to measure the key metrics on 50,000 acres in Iowa. The project also provides incentives to farmers in the program to reduce GHG emissions and at the end, measure the results.

Locations of ecosystem enhancing partnerships:



There are many great stories among these projects -- of farmers managing their land for profit and for a healthy future; of government agencies who make resources available to farmers to enlarge their efforts, of conservation groups who help to lead us on the right path, and many others. We hope you will enjoy this report.

Rice Stewardship Partnership

Key Partners: Ducks Unlimited and USA Rice

Region: Arkansas, Louisiana, Texas, Mississippi and Missouri, California



Credit: calrice.org

The heart of the Rice Stewardship Partnership is the collaborations forged across the public and private sectors to create and enrich wetlands in rice growing areas.

Despite challenges caused by the COVID pandemic, record rains, and droughts, land in the Rice Stewardship Partnership (RSP) topped 790,000 acres since the program's inception in 2013. The RSP works in rice growing regions, two of which are where the majority of Purina's rice is sourced. These regions include the Mississippi Alluvial Valley, and the Louisiana and Texas Gulf Coast.

KEY FACTS

- Number of Acres Supported by RSP – 791,400
- Number of On-Farm Projects – 1,261
- Amount Contributed by Nestlé Purina - \$2 million over 4 years ending June 2021

Mississippi Alluvial Valley

Innovative Rice Irrigation – 50,200 Acres - Alternate Wetting and Drying (AWD)

- Reduced Greenhouse Gas Emissions – 38,413,954 kg CO₂ equivalents or 84,510,698 pounds or 42,255 tons CO₂e

Louisiana & Texas Gulf Coast

Precision Nitrogen Management – 222,800 Acres – Urease Inhibitors, Split Application, Plant Tissue Tests

- Reduced Greenhouse Gas Emissions – 138,418,921 kg CO₂ equivalents

Wetland Habitat Management – 174,800 Acres – Holding Rainfall on Rice and Rice Rotation Lands

- Foraging habitat for cumulative 2.63 million waterfowl – average 438,000 waterfowl per year that overwinter here before continuing their migration.

The Rice Stewardship Partnership (RSP) was forged to leverage private dollars with federal matching grants. The Regional Conservation Partnership Program ([RCPP](#)) was created by the Farm Bill to “implement projects that demonstrate innovative solutions to conservation challenges and provide measurable improvements and outcomes tied to the resource concerns they seek to address.”

Since 2014, 13 individual RCPP awards have been granted to a diverse group of partners led by Ducks Unlimited and USA Rice. The partnerships include rice growers, funders including Nestlé Purina, and in-kind donating organizations contributing land, services, and expertise to create the expansion of private lands conservation.

Since its inception, the RCPP has experimented with new practices to best help growers to steward their land. One such technique is called alternate wetting and drying to conserve water and interrupt the formation and release of methane, a potent greenhouse gas. According to the [International Rice Research Institute](#), alternate wetting and drying uses less water, and methane can be reduced by 30-70% without affecting yields. The way it works is that during the dry phase, the methane-producing micro bacteria are inhibited resulting in lower methane production.

Scott Manley, RSP program director, explains, “Alternate wetting and drying (AWD), sometimes called intermittent flooding, is an irrigation practice in rice fields where the initial flood is established, then fields are allowed to dry and then flooded again. This alternating process can be carried out throughout the growing season. The goal is to save irrigation water, capture more rainfall, and save money with reduced pumping. As soil is allowed to dry significantly, a reduction in methane emissions also occurs, adding a second benefit to the practice.”

Growers who experimented with innovative irrigation methods ultimately said that they would continue with these methods on more or all of their farmed acres into the future. Such practice adoption will yield long-term benefits to rice production and the environment.



ReThink Soil

Key Partners: The Nature Conservancy and Partners
Region: U.S. Midwest



© Devan King/TNC

Since 2017, Nestlé Purina has championed the soil health movement in the U.S. as an early supporter of TNC's reThink Soil initiative, which is advancing understanding and adoption of soil health practices throughout the U.S:

KEY FACTS

# of acres	58.8 million acres distributed over 16 US Midwestern states which is expected to change norms on 100 million agricultural acres in those states
Funding Contribution	\$1 million over 5 years, ending year end 2021

KPIs SINCE 2017

Estimates based on 2019 OpTIS data for soil health practice adoption

Phosphorus Reduction	27% reduction goal exceeded 59,931/yr metric tons of phosphorus kept out of waterways	compared to no cover crop or conservation till acres
Nitrogen Reduction	5.37 million acres of cover crops resulted in 1.6% less nitrogen loading	compared to no cover crops
Sediment Reduction	27% reduction goal exceeded	compared to no cover crop or conservation till acres
Soil Erosion Reduction	44 million/yr metric tons of soil prevented from erosion	calculated from change to average sediment loading
Soil Carbon Accumulation	7.55 million/yr metric tons of soil carbon accumulated	Annual average based on conservation practice adoption between 2004 – 2019 calculated from modeled outcomes

OpTIS Metrics

The Operational Tillage Information System (OpTIS) uses publicly available, remote-sensing data to monitor trends in the adoption rate of soil health practices each year across the U.S. Corn Belt. Government agencies, academic researchers, scientists and supply chain companies can use this data to inform policy development, help improve farmers' productivity and ensure a sustainable future -- which is why it is imperative that we get the data into the hands of the agriculture data users that can use the information to help improve soil health practice adoption rates in the places that need it the most.

ADVANCING SOIL HEALTH BY THE NUMBERS



**\$20
MILLION**

private investment to advance soil health, including \$10 Million from the Foundation for Food and Agriculture Research, awarded to the Soil Health Institute (SHI), the Soil Health Partnership (SHP) and The Nature Conservancy (TNC).

THIS FUNDING CONTRIBUTED TO



**2,000+
soil samples**

collected by SHI in **3 countries** to help determine best measurements for overall soil health

**nearly 700
treatments**

evaluated by SHI in development of soil health metrics



**nearly 10,000
research acres**

across **120 farms** enrolled in soil health practice trials by SHP and developed a network of peer learners



**125 million
acres**

of row crops analyzed to determine soil health practice trends across the Corn Belt

**1,500+
non-operating
landowners**

participated in demographic and incentive research by TNC



**2.6 million
acres**



of new cover crops in the Corn Belt between 2014 and 2018

© The Nature Conservancy

As part of reThink Soil, TNC is working with partners to use Operational Tillage Information System (OpTIS) remote sensing technology to map multi-year trends in adoption of soil health practices across over 125 million acres of row crops. Last year, TNC expanded the geographic scope and granularity of the data analysis to continue improving stakeholders' ability to assess and address adoption trends.

Using OpTIS data, TNC estimates that, from 2018-19, farmers adopted soil health practices, like cover crops and reduced tillage, on 58.8 million acres. Compared to a scenario without their use, these practices had the potential to keep 44.4 million tons of sediment and 59,931 tons of phosphorus out of waterways. From 2004 to 2019, adoption of these practices resulted in an estimated average annual soil carbon increase of 7.55 million tons per year. As part of the larger soil health community, Nestlé Purina's support helped enable this impressive scale of farmer adoption and conservation outcomes.

"The soil health movement, of which reThink Soil is an important part, has already generated significant environmental outcomes," says Shamitha Keerthi, TNC agriculture and water quality scientist. "As of 2019, the cumulative acres of soil health practices that have been adopted have led to a 27 percent reduction in phosphorous and sediment runoff as compared to conditions without these conservation practices."

In 2020, more than 450 data users attended webinars hosted by TNC and partners to learn the many facets of the OpTIS dataset. The OpTIS partners also developed a suite of visual assets (including an [animated video](#)) as part of a social media campaign to guide ag data users to the OpTIS data portal. TNC also helped launch AgEvidence, an online, publicly-available database of 40 years of scientific research on the environmental and agronomic impacts of soil health practices, including water quality and climate change mitigation benefits. (<https://www.agevidence.org/>). And, TNC joined seven major organizations in forming the [Food and Agriculture Climate Alliance](#) (FACA), which developed a set of U.S. policy recommendations in six areas – including soil health – signaling to lawmakers the necessity of promoting tools that allow farmers and ranchers to be part of the climate solution.

Central Nebraska Irrigation Project

Key Partners: The Nature Conservancy, Cargill, Nestlé Purina
Region: Nebraska



Credit: Jason Whalen, Fauna Creative

KEY FACTS (CUMULATIVE 2017-2020)

- Acres enrolled: 50,000
- Farmers enrolled: 50
- Water savings to date: 1.98 billion gallons*
- Purina support: \$500,000 over 3 years

KPIs

- Water saved to date: 1.98 billion gallons

The Central Nebraska Irrigation Project, a collaboration of The Nature Conservancy, Cargill and Nestlé Purina, is training farmers in irrigation technology that is paired with their smartphones to help them water crops more efficiently, reducing use of groundwater from the Ogallala Aquifer, saving travel time to manually control equipment, and reducing the cost of energy needed for irrigation pumps.

Participating farmers are given a “starter kit” of irrigation technology: pivot telemetry to remotely operate the pivot, a flowmeter to track how much water is used in real time, and a weather station to assess on-field moisture conditions. They are also offered cost sharing on soil moisture probes to assess moisture in the ground. All information is delivered to their personal smartphone accounts to help them evaluate whether irrigation is needed. The farmer can then control his or her pivot irrigators from the smartphone at any time or place, whether that be a child’s soccer game or another farm field. In 2020, one of the project participants was recognized by Field to Market as a Farmer Spotlight Honoree.

The project’s initial goal was to save 2.4 billion gallons of water over three years. Because 2019 was an unusually wet year, the program was extended for a fourth year to give farmers three typical years of experience with the technology. Now, the project is on track to achieve irrigation reductions by volume of at least 2.6 billion gallons. The Ogallala Aquifer is a finite resource, and irrigation efficiencies that leave water in the system benefit local rivers and wetland and the species that depend on them, like the iconic sandhill crane.



Credit: Big Foot Media

Living Lakes

Key Partner: Ducks Unlimited

Region: Prairie Pothole Region, Northern Iowa



Credit: Jason Whalen, Big Foot Media

KEY FACTS

# of acres	540 acres
Amount Contribution	\$1 million over 3 years (ending year end 2021)

KPIs FOR COMPLETED FOUR OF NINE WETLANDS REMEDIATED

- Carbon removal: 64 tons/year
- Nitrogen (kg/year): 36.75 tons/year
- Phosphorus (kg/year): 0.16 tons/year
- Sediment (kg/year): 1,086 tons/year

The Living Lakes project was undertaken in 2019 to remediate some of the thousands of wetlands, grasslands and shallow lakes across the State of Iowa.

Purina's contribution will help Ducks Unlimited restore nine Conservation Reserve Enhancement Program (CREP) wetlands over the three years of the program. Additionally, Ducks Unlimited is partnering with Iowa Department of Natural Resources to enhance existing publicly owned shallow lakes and large marshes to restore native prairie pothole habitats. Improving these natural wetlands provides benefits to fish and wildlife habitat, water quality, flood-water storage, outdoor recreation and quality of life for local residents. These projects take place on property owned by the state of Iowa, but help improve water quality throughout the region.

As of year-end 2020, in partnership with Purina, Ducks Unlimited has restored 240 acres of grassland, 191 acres of wetland and 98 acres of shallow lake habitat.

DU's partnership with Iowa Department of Agriculture and Land Stewardship (IDALS) and the Iowa Water Quality Initiative (including CREP) continued to grow in 2020. DU is contributing to the development of 4 water quality wetlands for construction in summer, 2021. These wetlands will treat runoff from over 3,500 acres of crop fields. Based on the relationship developed over the last 3 years, DU and IDALS formally entered into a new partnership with the goal of doubling the rate of wetland construction. DU has dedicated biological, GIS and engineering staff working to identify, plan and design a minimum of 10 wetlands annually. Mike Shannon, Ducks Unlimited Project Manager, said, "This new partnership would not have been possible without Nestlé Purina funding."



Wabash River -- Nutrient Management through Wetland Creation

Key Partner: The Nature Conservancy
Region: Indiana, S. Illinois



Credit: Rich Fields, IN-DNR

KEY FACTS – CUMULATIVE 2017-2020

- Farmers = 21 farmers
- Acres* = 406 acres
- Investment = \$600,000 over 6 years (\$100,000/year)

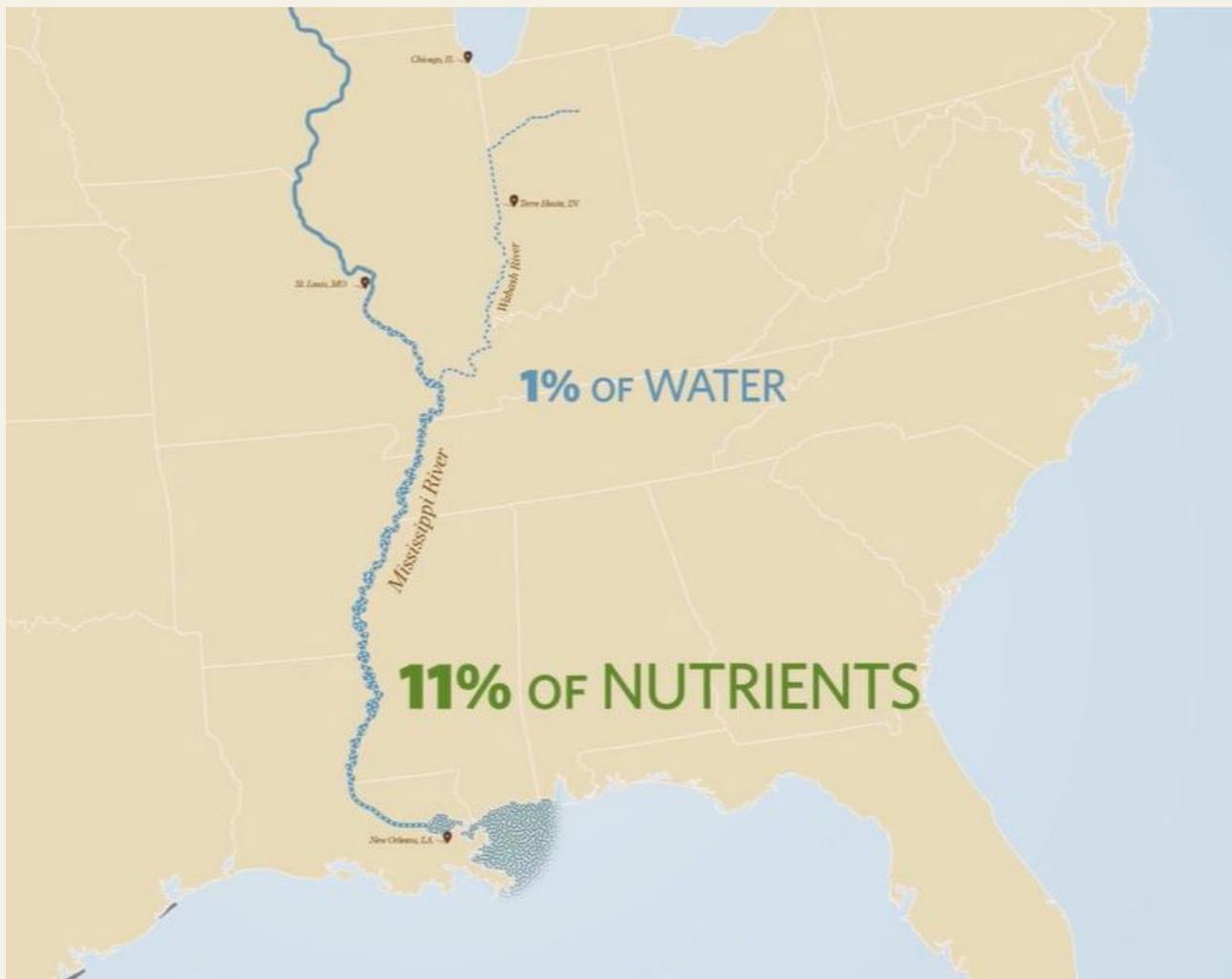
**By year end 2021, 600 acres will be improved through Purina's gifts to TNC.*

KPIs

- Metric tons/year of nutrient loading reductions—12.7 Metric tons/year
- Acres Restored – 406 river's edge acres

The Wabash River floodplain restoration project was Purina's first value added project, begun in 2016. The Wabash is a tributary to the Mississippi River and is considered a nutrient hot spot because it contributes 1 percent of the water to the Mississippi but 11 percent of the nutrients (phosphorus and nitrogen). Nutrients that wash from farm fields into river systems can cause algal blooms which deplete the oxygen in the water as they decompose. This affects fish, plants and other water animals who need oxygen to survive. The Nature Conservancy has made the Wabash a priority and is working to restore frequently flooded farmlands into bottomland hardwood forest that, in high water conditions, can allow the sediments and nutrients to settle out instead of being carried into the Mississippi and on to the Gulf of Mexico. Studies show that, on average, 40% of the nutrients and sediment that flow through restored floodplains are retained and processed by them, leaving cleaner water to flow downstream. With Purina's and other partners' support, TNC established a plan to restore 600 acres of floodplain in the southern portion of the river.

Importantly, Purina's support also helped enable purchase and installation of a U.S. Geological Survey (USGS) Super Gage (old English spelling) which is an in-river instrument that tracks water temperature, pH, dissolved oxygen and other factors. This device allows researchers to understand the scale and pattern of nutrient loading in the river. Super Gages are installed on many river systems in the U.S., and one was needed on the Southern Wabash to collect real time river data and, with it, to advise farmers and municipalities about practices and strategies to reduce nutrient loading and protect the river. The Environmental Protection Agency called the installation of this technology one of their [Strategies for Success](#).



Soil Health and Habitat Program and Build a Wildlife Area

Key Partner: Pheasants Forever

Region: North Dakota, South Dakota, Western Minnesota and Northern Iowa



Credit: BJ Werk - Pheasants Forever - MN Precision Ag & Conservation Specialist

KEY FACTS

- # acres enrolled in 2020: 5831
- # of fields: 57
- # farmers: 11
- Funding Contribution: \$1 million over 3 years: 2020-2022

BASELINE KPIS

- No Till usage: 50%
- Acres using cover crops: 46%
- Average GHG emissions by county: 542 lbs reduction per acre per year

Purina and Pheasants Forever, a wildlife habitat conservation organization that is driving conservation forward, entered into a partnership to help farmers in the prairie pothole region of North Dakota, South Dakota, Iowa, and Minnesota. The goal of this project is to build healthier topsoil, sequestering or reducing carbon emissions, and creating wildlife habitat. Called [The Soil Health and Habitat Program](#), Pheasants Forever & Quail Forever’s team of conservation specialists is working one-on-one with participating growers to measure and evaluate ecological metrics and outcomes on up to 30,000 acres over the three-year program. Those acres found to be low producers will receive an incentive payment and perennial seed cost share for a five-year commitment. In addition, cost-share is available to help cover costs by the farmers implementing cover crops. Pheasants Forever has partnered with Truterra to track the Eco-metric outcomes generated by the Program.

Nathan Anderson is an Iowa farmer enrolled in the Soil Health and Habitat Program. He states this about his Program participation. “A lot of the spaces we use on our farm that are less profitable can sometimes be removed from production which saves money on inputs while maintaining yield and diversifying spaces we have. We are improving economically while also protecting resources used by others.”

Another program in which Purina is partnering with Pheasant Forever is Pheasants Forever and Quail Forever’s Build A Wildlife Area® Program. The program actually began in 2003 as a mechanism for protecting strategic wildlife habitat and creating more public lands for outdoor recreation. [Pheasants Forever’s Build A Wildlife Area Program](#) employs a minimum \$3:\$1 match using state, federal, and other funds.

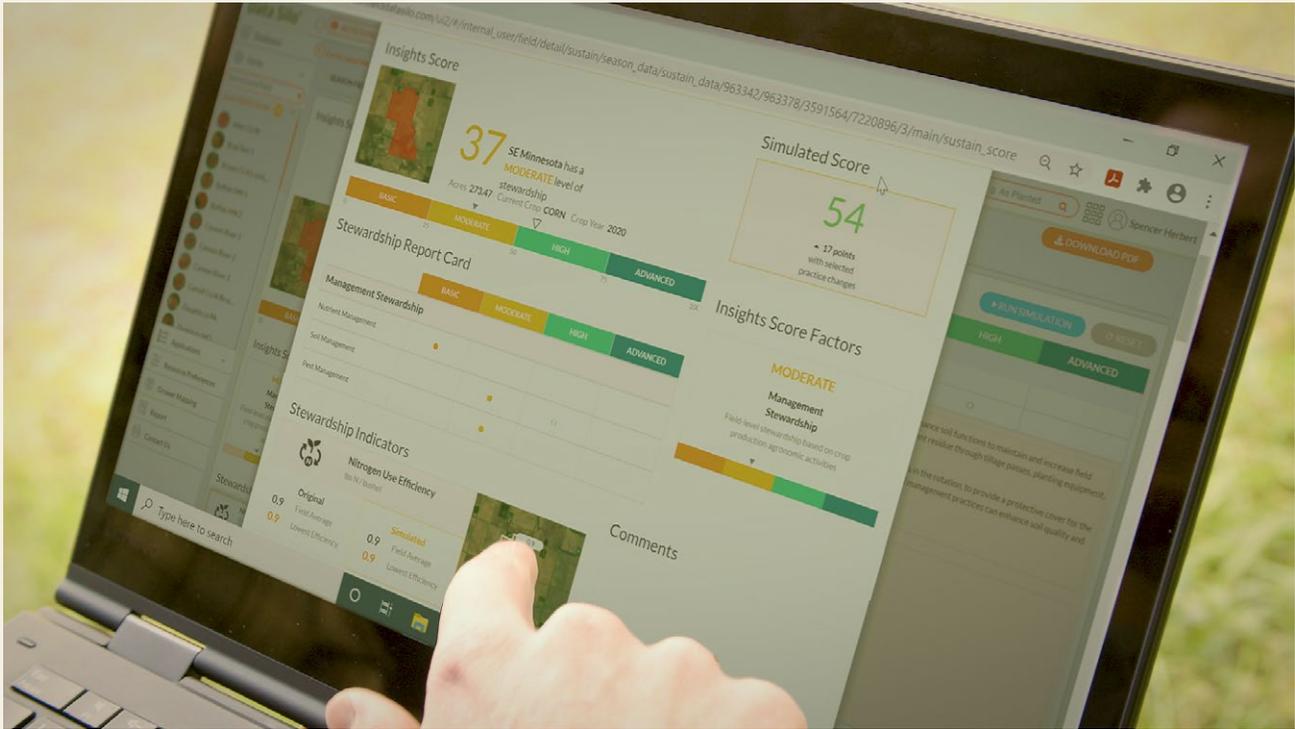
The program puts 100 percent of the funds donated directly toward costs associated with land acquisition projects, creating public access, conserving critical habitat for wildlife, and preserving outdoor heritage traditions.

Build A Wildlife Area properties are purchased from willing sellers and these investments are permanently protected as public Wildlife Management Areas or Waterfowl Production Areas. As part of Purina’s sustainability grant, Pheasants Forever will acquire a minimum of 1,000 acres for public access over the three years of the grant while enhancing each property for wildlife and public recreation.



Farmer-Led Sustainability

Key Partner: Truterra
Region: Iowa



Credit: Truterra

KEY FACTS

- Acres: 50,000
- Growers: 81
- Fields: 561

KPIs – BASELINE

- Net GHG emissions estimate: 669 lbs CO₂/acre/year
- 100% of acres use conservation tillage with 44% as no-till
- 85% of acres follow a nutrient management plan
- 8% of acres have cover crops planted

A first step on the road to greenhouse gas reduction from the farm is to benchmark current management and conservation practices. Purina chose to partner with Truterra—a sustainability business of Land O’Lakes, one of the largest farmer-owned cooperatives in the United States. The Purina program incorporates 50,000 acres and more than nine million bushels of corn annually over 2 years. Farms in the program are located in Eastern Iowa, where Purina has two manufacturing facilities (Davenport, Iowa and Clinton, Iowa). Farm practices and agronomic data were entered in the Truterra™ Insights Engine for each agricultural field to generate the environmental sustainability baseline and allow the farmer and their agronomy advisor to model the impact of various conservation practices on field sustainability and profitability. Purina enabled farmers and their agronomy advisors to access insights on impacting nitrogen efficiency, erosion, soil quality, or GHG emissions and identify feasible improvements that fit each farm’s business model.

The first year of benchmarking concluded at the end of 2020 and the results showed that farmers in this area use advanced conservation practices already with a high percentage of farmers using no-till or minimum tillage on their farms and greenhouse gas emission levels were lower than system averages. Purina is looking forward to seeing the Year 2 insights in the Spring of 2022.

WHAT’S AHEAD

For the last 5 years, Nestlé Purina has been investing in ecosystem challenge areas in regions where our crops are grown. With our focus on Net Zero greenhouse gas emissions, our conservation priority, while still ecosystem balance, has a more urgent edge on carbon sequestration or carbon reduction resulting from more efficient crop growing methods. This has led us into new partnerships including the one with Truterra, where they are measuring outcomes including greenhouse gas reductions, and working with crop advisors and farmers to ever-improve their outcomes. Pheasants Forever’s Healthy Soil and Habitat Program is another new project that is working closely with farmers to use methods like conservation tillage, crop rotations and cover crops to lock more carbon in the soil where it will benefit crop yields, filter on-field water, create greater above and below ground biodiversity, and improve farm economics. There will be additional partnerships created going forward as we learn more about where we can get the best results for our time, money and resources as we join forces with farmers, and other companies and organizations to try to arrest the devastations that global climate change is causing.

SUMMARY

Some projects in this report have reached their conclusion with Purina although the work goes on led by the conservation community with their partners. We are proud of our participation in these projects, and proud of all collaborators, especially our conservation partners and farmers, for what has been accomplished.

Nestlé Purina remains committed to working with farmers and others, contributing to practices that create healthy farmland for our nutritious ingredients.

Special thanks to The Nature Conservancy, Ducks Unlimited, Pheasants Forever, Truterra and other key partners for their contribution of data and photos to this report.

