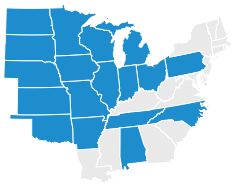
SUSTAINABILITY ANALYSIS

2021 PORK CARES SNAPSHOT REPORT

EXECUTIVE SUMMARY

About National Pork Board



The pork industry has had a legislative checkoff program since 1986. NPB desires to help pork producers share their sustainability story to support individual businesses across the country as well as represent the sustainability of the entire industry. Currently there are programs in place for promotion, research and education.

Quantifying the Impact of Actual Farm Practices

The EcoPractices® platform determines environmental benefits through its unique process that can pinpoint specific influences of individual agricultural practices. While agricultural practices have progressed to better care for natural resources, the ability to quantify the influence these practices have on sustainability has not kept pace. NPB seeks to put evidence-based measurements to its farm practices. Having such data brings more depth to decision-making. Short- and long-term goals can be based upon more meaningful information.

Swine Inventory:

2.4 million from **375 sites**

Defined as Sow and/or Finished Pigs per Year

Conservation Practice	Fields	Acres
Buffer	283	2,545
Forest	-	3,464
Grassed Waterway	435	1,811
Pollinator Habitat	-	68
Wetland	33	203

188,545 acres from **3,184 fields** on **208 farms**

WE CARE® ETHICAL PRINCIPLES

The We Care initiative was launched in 2008 as a joint effort of the National Pork Board, the National Pork Producers Council (NPPC), and state organizations representing farmers. Through the We Care initiative, they hope to earn the public's trust by making this industry better for all concerned — animals, farmers, food industry partners and consumers worldwide.

- Food Safety
- Animal Well-Being
- Environment
- Public Health
- Our People
- Our Communities

NATIONAL PORK BOARD'S ENVIRONMENTAL INITIATIVE

One pillar of the We Care Ethical Principles is Environment. This includes the use of manure as a valuable resource in a manner that safeguards air and water quality, includes air quality from production facilities to minimize the impact on neighbors and the community, and includes managing operations to protect the quality of natural resources.

- Air Quality
- Carbon Footprint
- Emergency Action Plan
- Manure & Site Management
- Feed Management
- Mortality Management
- Water Conservation

Crop Yields

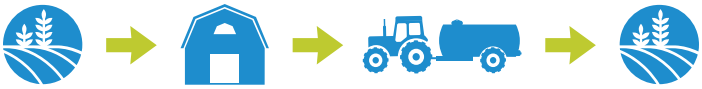
Barley	5 T/ac	Popcorn	244 bu/ac
Canola	0.9 T/ac	Potato	20 T/ac
Cereal Rye	88 bu/ac	Pumpkin	10 T/ac
Corn Grain	211 bu/ac	Soybean	64 bu/ac
Corn Silage	24 T/ac	Sudan Grass	2.9 T/ac
Hay	5.1 T/ac	Sugar Beets	33.3 T/ac
Horseradish	6 T/ac	Sunflower	0.8 T/ac
Navy Bean	1.9 T/ac	Triticale	6.4 T/ac
Oats	74 bu/ac	Winter Wheat	2 T/ac
Pasture	-		

MANURE APPLICATION & SAVINGS

40% of acres received liquid manure fertilizer at an average rate of **10,573 gallons/ac.**

The average **cost savings** from manure applied to **79,960 acres** was estimated to be **$135 per acre** based on a reduced need for commercial N, P & K resulting in **a total savings** of **$10.8 million.**

Manure produced during pork production has many benefits. Manure provides macro- and micro-**nutrients** to the crops that are grown. The soils applied receive **organic matter** which increases **carbon** storage. In addition, **microbial activity** is stimulated. Producers prioritize **stewardship** by properly applying manure to benefit the fields that are applied.



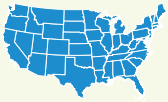
IN-FIELD ENVIRONMENTAL OUTCOMES

The data is reflective of weather and soils influence in addition to implemented in-field management practices for the project year.†

	Overall Farm
Net GHG Emissions	**-0.36 T CO_2e/ac**
Soil Carbon Sequestered	**0.29 T C/ac**
Soil Erosion Rate	**0.82 T/ac**

EROSION AVERAGE

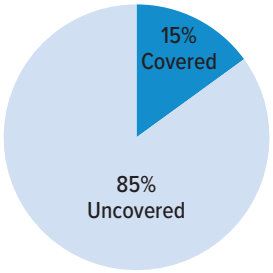
*The USDA National Resources Inventory provides estimates on average erosion for different systems across the US.**



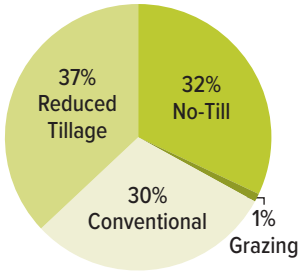
National Average

4.6 T/ac

COVER CROPS



TILLAGE



According to the 2017 US Ag Census, the national average is **4% cover crop adoption**, **37% no-till adoption** and **35% reduced till adoption**.

SOIL CONDITIONING INDEX (SCI)

SCI is an NRCS tool that shows soil health trajectory. A positive SCI means a positive trajectory of soil health.

The fields in the project are an overall **+ trajectory** for **SCI.**

Cropland	Forage
97%	3%

IN-FIELD PRACTICE COMPARISON IMPACTS

When compared to conventional practices (i.e. conventional tillage, no cover crop scenario), in-field farm practices generated:‡

109,318 fewer tons of CO_2e, *which is the same as*

21,227 average passenger cars off the road for a year

29,383 tons of soil carbon sequestered

118,270 tons of soil saved instead of being lost to erosion, *which is the same as*

7,392 dump trucks of soil

652 tons of nitrogen saved instead of being lost through leaching and runoff.

117 tons of phosphorus saved instead of being lost through runoff.

SUSTAINABLE Environmental Consultants

Powered by ECOPRACTICES

Data provided by 208 pork producers in the United States through a program funded by the Pork Checkoff.

†‡Sustainable Environmental Consultants, through its EcoPractices platform, estimates an environmental impact value for reducing greenhouse gas emissions, reducing soil erosion, and reducing nutrient loss due to reduced leaching. These estimates adhere to processes that are documented by the NRCS Technical Guides and publications from the EPA. These values are tailored to a specific location and participant's operation. Models used are supported by USDA, NRCS, other government agencies, and major universities. Modeled results include input data from public resources for weather, soils, and historical crop rotation. Greenhouse gas simulations were produced from the Greenhouse Gas Inventory (GGIT) tool developed by Soil Metrics, LLC (2021) https://soilmetrics.eco. The GGIT tool implements the USDA-sanctioned greenhouse gas inventory methods described in Eve et al. (2014) 'Quantifying Greenhouse Gas Fluxes in Agriculture and Forestry: Methods for Entity-Scale Inventory". The GGIT tool utilizes greenhouse gas modeling technology developed for the COMET-Farm tool, licensed by Colorado State University to Soil Metrics, LLC.

*USDA, NRCS 2017 National Resource Inventory

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› **Animal Well-Being**	PQA+ Provided	309
	TQA Provided	61
	PQA+ Site Assessment Provided	118
› **Our Communities**	Charitable Donations	$1.5 million 88,810 lbs
	Community Presentations	19
	Volunteer Hours	11,946
	Volunteers Trained	-
	Jobs/Internships Given	1,198
	Scholarships Offered	13
› **Our People**	Additional Leadership Opportunities Offered to Employees	2
› **Environment**	Renewable Energy Generation	2.4 million kWh
	Area of Land for Pork Production*	90 acres
	Conservation Practices Adjacent to Barn Site Acres*	21 acres

To learn more about the U.S. Pork Industry Sustainability Goals and Metrics, please visit porkcares.org.

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Data provided by 208 pork producers in the United States through a program funded by the Pork Checkoff. Usage per pig is based on swine inventory.

*Metrics approved for additional reporting after data collection completion for portion of farms

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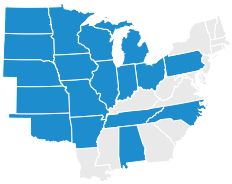

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WATER USAGE

Tracking water usage is important to quantify the amount of water utilized within swine facilities to water the pigs, clean the barns and function as needed.

470 gallons per pig

ENERGY USAGE

General energy use in a barn includes lighting, fans, feeders and temperature control.

61 kilowatt hours per pig

MANURE PRODUCTION

800 million gallons of manure are produced each year. This provides an estimated **$10.8 million** in nutrients that are applied to crop fields as fertilizer.