Indiana Conservation Partnership

2015 Conservation Accomplishments

The Partnership is comprised of eight Indiana agencies and organizations who share a common goal of promoting conservation. To that end, the mission of the Indiana Conservation Partnership is to provide technical, financial and educational assistance needed to implement economically and environmentally compatible land and water stewardship decisions, practices and technologies.

This report serves as a compliment to Indiana's Nutrient Reduction Strategy, both publications can be found online at http://www.in.gov/isda/.

For more information, contact the Indiana State Department of Agriculture.
ISDANutrientReduction@isda.in.gov
317.232.8770

Published: April 4, 2016

Table of Contents

Supporting Tabular Data: View tabular data for all maps included in this report, as well as program funding descriptions.

Methodology - USEPA Region 5 Load Reduction Modeling of Completed Conservation Practices in Indiana: View methodology used to compile this report.

This document along with information about Indiana's Nutrient Reduction Strategy can be found online at http://www.in.gov/isda/2991.htm.

Indiana Conservation Partnership:

Indiana Conservation Partnership - http:/icp.iaswcd.org/

Indiana Association of Soil and Water Conservation Districts and our 92 SWCDs - http://iaswcd.org/

Indiana Department of Environmental Management - http://www.in.gov/idem/

Indiana Department of Natural Resources - http://www.in.gov/dnr/

ISDA Division of Soil Conservation - http://www.in.gov/isda/2342.htm

Purdue Cooperative Extension Service - https://www.extension.purdue.edu

State Soil Conservation Board - http://www.in.gov/isda/2361.htm

USDA Farm Service Agency - http://www.fsa.usda.gov/FSA/stateoffapp?mystate=in&area=home&subject=landing&topic=landing

USDA Natural Resources Conservation Service - http://www.nrcs.usda.gov/wps/portal/nrcs/site/in/home/

Sharing Conservation Data, Targeting Resources, and Striving for Water Quality Outcomes

The practices highlighted in this report were completed via voluntary conservation efforts from private landowners in Indiana with support from the Indiana Conservation Partnership.

2015 Key Highlights:

- Indiana landowners supported by the ICP installed nearly 21,000 new conservation practices in 2015. 12,221 of these practices had associated sediment and nutrient load reductions to Indiana waterways reducing:
  - 1,093,763 tons of sediment, enough to fill 10,937 fifty-foot freight cars stretching end to end from Indianapolis to Fort Wayne
  - 2,284,033 lbs of Nitrogen, enough to fill 11 fifty-foot freight cars
  - 1,144,892 lbs of Phosphorus, enough to fill 5.5 fifty-foot freight cars
- Indiana landowners increased no-till acres on corn and soybean fields by 466% since 1990[1]
- Indiana landowners increased conservation tillage acres on corn and soybean fields by 311% since 1990[1]
- Indiana landowners increased cover crop acres on corn and soybean fields by 413% since 2011[1]
- Indiana leads the nation in acres planted to cover crops, second only to Texas[2]

2013-15 ICP Conservation Accomplishments Comparison								
	Total Practices Installed	Total Practices with Sediment and Nutrient Load Reductions	Sediment (tons/year)	Phosphorus (lbs./year)	Nitrogen (lbs./year)	Public Conservation Investment	Private Landowner Conservation Investment	Total Investment
CY2013	30,502	15,332	1,661,636	1,469,926	2,780,790	$42,825,181*	$16,003,304**	$58,828,485
CY2014	21,012	11,365	996,762	1,137,921	2,120,554	$18,564,015*	$9,570,813**	$28,134,828
CY2015	20,898	12,221	1,093,763	1,144,892	2,284,033	$27,362,612	$10,857,905	$38,220,517

Total practices installed – Includes all calendar year installed/completed conservation practices.

Public Conservation Investment– Value reflects total cost of practices with sediment and nutrient load reductions. Investment only includes incentive payments and actual practice construction/implementation costs (earth moving, rock, erosion control blanket, grade stabilization structures, cover crop seed and planting costs, grass seed, tree seedlings, exclusion fencing, planter equipment modification costs, private construction contractor costs including fuel and labor, etc). Costs do not include administration and public labor (NRCS, FSA, ISDA, IDEM, SWCD, DNR employee salaries, survey/planning/design costs, etc).

Private Landowner Conservation Investment – Value reflects total cost of practices with sediment and nutrient load reductions. Investment only includes actual practice construction/implementation costs.

**Amount does not include DNR Lake and River Enhancement (LARE) practice costs.*

***Amount does not include Conservation Reserve Enhancement Program (CREP) and LARE landowner match.*

[1] Indiana Tillage and Cover Crop Transect 1990-2015: http://www.in.gov/isda/2383.htm

[2] 2012 USDA NASS Census of Agriculture: http://www.agcensus.usda.gov/Publications/2012/Online_Resources/Highlights/Conservation/Highlights_Conservation.pdf

Reporting Completed Conservation Projects

ICP entities that work with private landowners to provide direct technical and/or financial assistance for conservation projects share data (page 6) with necessary formal agreements in place (1619 compliance, MOU's, etc.) to exchange information while always protecting personally identifiable information. The map on page 7 highlights calendar year 2015 completed conservation projects by county.

Note: this report highlights only completed practices, while noting some practices underway near completion. It does not show the many new contracts initiated or practices approved to begin construction.

Reporting Financial Inputs

The ICP shares financial data for all conservation practices at the county level, on an annual basis, per conservation program published on a mobile friendly website. Find out how much local, state, and federal conservation dollars came to your county on the ICP Accomplishments Report web application.

Reporting Water Quality Benefits

In 2013, members of the Indiana Conservation Partnership (ICP) began using the United States Environmental Protection Agency's (USEPA) Region 5 Nutrient Load Reduction Model to determine the impact of installed conservation practices implemented by the ICP on Indiana's water quality. The ICP adopted the Region 5 Nutrient Load Reduction Model to analyze conservation practices funded by state programs such as the Indiana State Department of Agriculture's Clean Water Indiana Program and the Indiana Department of Natural Resources' Lake and River Enhancement Program, as well as federally funded programs including EPA's Section-319 Program and USDA's Farm Bill Programs. This process is outlined on page 6. View the flow chart and further methodology.

These reductions continue for the life of the practices modeled (e.g., grassed waterways are designed to be 10-year practices, while cover crops are 1-year practices, established annually). These cumulative reductions for calendar year '13-'15 are highlighted by watershed on pages 14-16. Some ICP practices were not modeled because they were not associated with sediment loss, or were not covered by the EPA Region 5 Model. The calendar year 2015 load reductions are highlighted by watershed on pages 11-13. This effort represents ICP-assisted conservation in Indiana. **Data does not include the many unassisted practices designed and installed solely by a private landowner without ICP assistance. Reductions in dissolved nutrients, such as dissolved reactive phosphorus (DRP) and nitrate (NO3), are not accounted for by the Region 5 Model.**

As part of Indiana's Nutrient Reduction Strategy, this modeling effort illustrates the continued success and challenges of conservation and serves as a tool to help set watershed priority and reduction targets, manage conservation resources, and to further stakeholder involvement at all levels of government within and across Indiana[3].

[3] Refer to online posted methodology for further clarification

Reporting Positive Impacts to Drinking Water Sources and Targeting Conservation Efforts
The ICP focuses on specifically reporting the positive impacts of conservation practices to key drinking water sources throughout the state that have significant percentages of agricultural land use within their watershed. To view these reports and find out the positive impacts farmers are having on water sources, as well as learn about the most popular conservation practices visit Indiana's Nutrient Reduction Strategy website.

The ICP will continue to focus on these significant watersheds and water bodies to further target technical and financial conservation assistance to grow conservation practice adoption.

Identifying Trends to Customize Conservation Delivery
The ICP utilizes multiple trend analysis techniques to identify rates of conservation practice implementation on the watershed, county, and state levels to identify adoption rates, most popular practices, newly emerging practices, practices dwindling in use, policy, weather, and economic effects on practice adoption, conservation culture, etc. These trends will allow the ICP to target resources and adapt conservation delivery geographically based on landowner needs and attitudes while preparing for spikes or dips in conservation demand due to weather and economic drivers. Visit the Cover Crop and Conservation and Tillage Transect Data web page to view trends in the use of No-till, Conservation Tillage and Cover Crops in your county.

Incorporating in Other Data Sources (tillage and cover crop transects, social indicators, water quality monitoring, 303(d) list of impaired water bodies, privately funded and installed conservation practices, LIDAR, etc.)
The ICP leads many other efforts that measure practice adoption, social trends, edge of field and in stream water quality in addition to working with partners in the private agricultural industry on various projects. These data sources are being evaluated for integration into this report to further demonstrate and visualize the cause and effect relationship of conservation practices (or lack thereof) and in-stream water quality improvements; in addition to societal attitudes towards conservation and in-stream water quality.

Collaboration with Other States
As a member of the Gulf of Mexico Hypoxia Task Force and participant in Great Lakes conservation (Tri-State Watershed Alliance) Indiana is proud to collaboratively work with other states in the Midwest and across the country to improve water quality and grow adoption of science based, nutrient runoff reducing, Best Management Practices which build soil health. The ICP is hungry to learn what is working in other states and willing to share their own experiences.

Conclusion
The primary value in ICP adoption of the EPA Region 5 model lies in benchmarking conservation impact and management of conservation resources across the state. As an additional result, the Indiana State Department of Agriculture has tied Key Performance Indicators and Performance Measures to the Indiana State Office of Management and Budget. On a larger scale, The ICP utilizes this model to set program/project goals, quantify impacts and estimate load reductions before a project ever begins.

Future plans include placing a dollar value on the amount of nitrogen and phosphorus kept on the land based on values provided by ongoing Water Quality Trading Projects and fertilizer costs. In addition, USEPA (Region 5) is currently updating the model to include fifteen more Best Management Practices (BMPs) as well as a water quantity component. In the future, estimates of water volumes kept on the landscape from various practices would help to assess and manage water quantity conservation efforts at

county and watershed scales, both in times of drought and flooding. As these components of the model become available, ISDA and its partners intend to utilize them to their fullest possible potential within the partnership.

Future improvements may also include working with EPA to relate Indiana load reduction data to the spatial extent of the Gulf of Mexico Dead zone (a Hypoxia Task Force goal), modeling carbon sequestration impact, and overlaying farmer social survey indicator data.

The ICP plans to continue utilizing the Region 5 Model and methodology for future years to come with the goal to assemble similar reports in March of each year. The partners encourage other organizations to share their data as well.

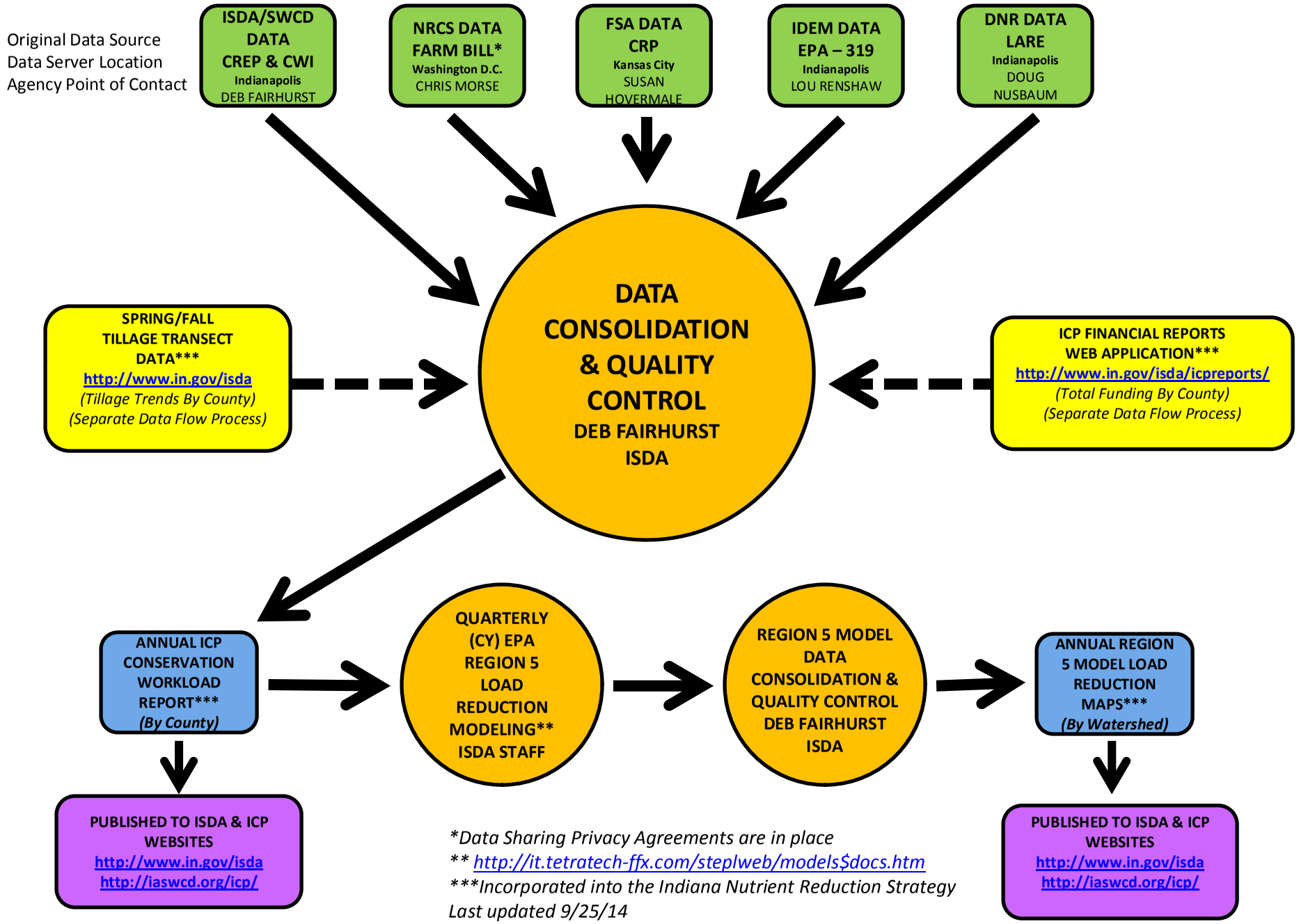
Acknowledgement

The ICP would like to thank the United States Environmental Protection Agency (USEPA), both in Region 5 and Washington DC for their continued support and validation of Indiana's Conservation Accomplishments and Load Reduction Modeling Process. The ICP hopes to continue to grow this collaboration with USEPA going forward to build further upon this process so the many benefits and trends of voluntary conservation projects can be shared in a timely and transparent manner.

Region 5 Model Training Webinar

What Is the Region 5 Model and How Do You Use It?
https://engineering.purdue.edu/watersheds/webinars/Region5/

Indiana Conservation Partnership Annual (CY) Workload Accountability Data Flow



*Data Sharing Privacy Agreements are in place

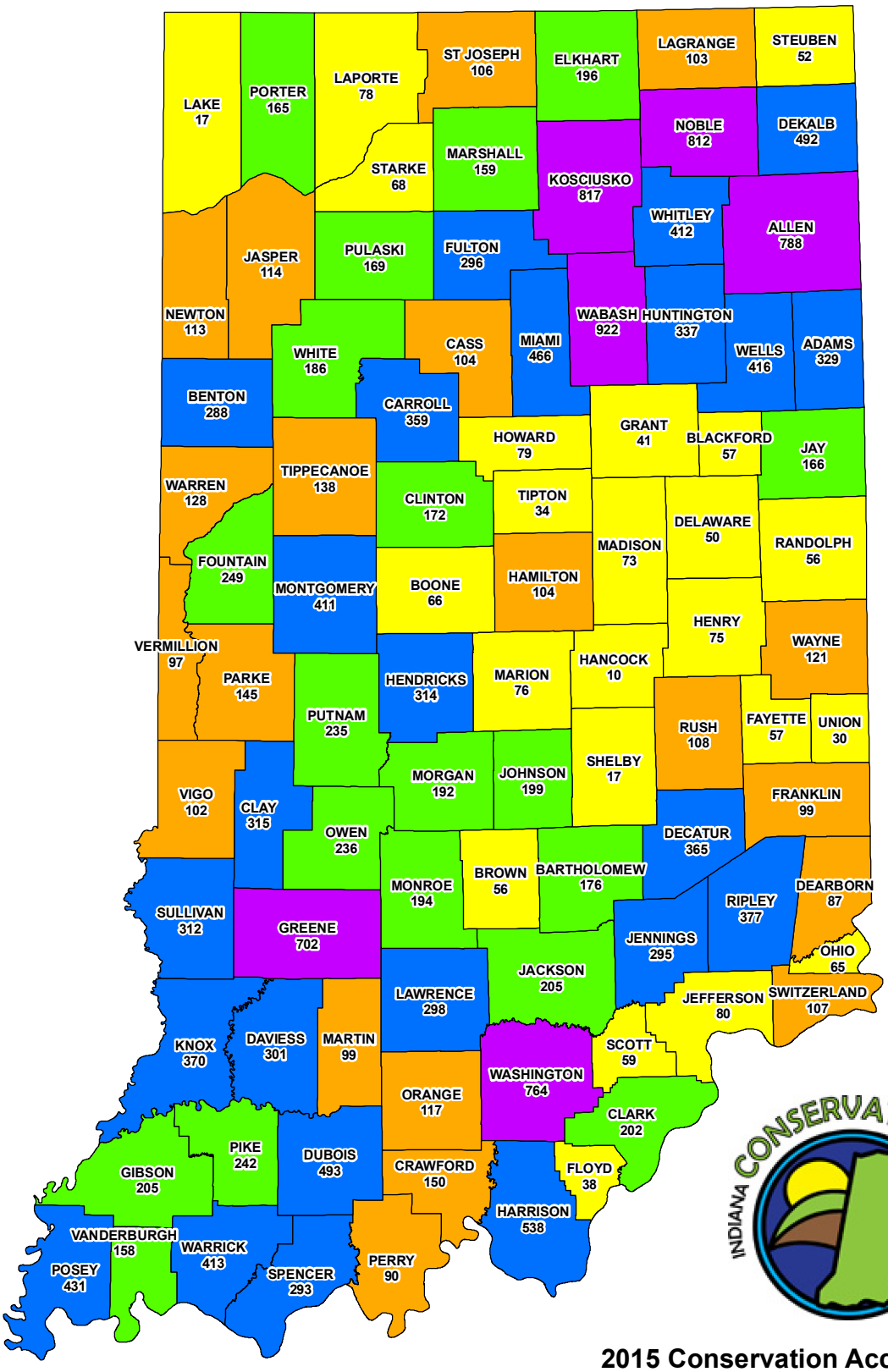
** http://it.tetratech-ffx.com/steplweb/models$docs.htm

***Incorporated into the Indiana Nutrient Reduction Strategy

Last updated 9/25/14

2015 Indiana Conservation Accomplishments

Implemented by Indiana Conservation Partnership



2015 Conservation Accomplishments

Total Practices

- 10 - 80
- 81 - 150
- 151 - 249
- 250 - 538
- 539 - 922

January 1 thru December 31, 2015
Conservation Practices Completed - 20,898
Conservation Practices Underway - 2,280

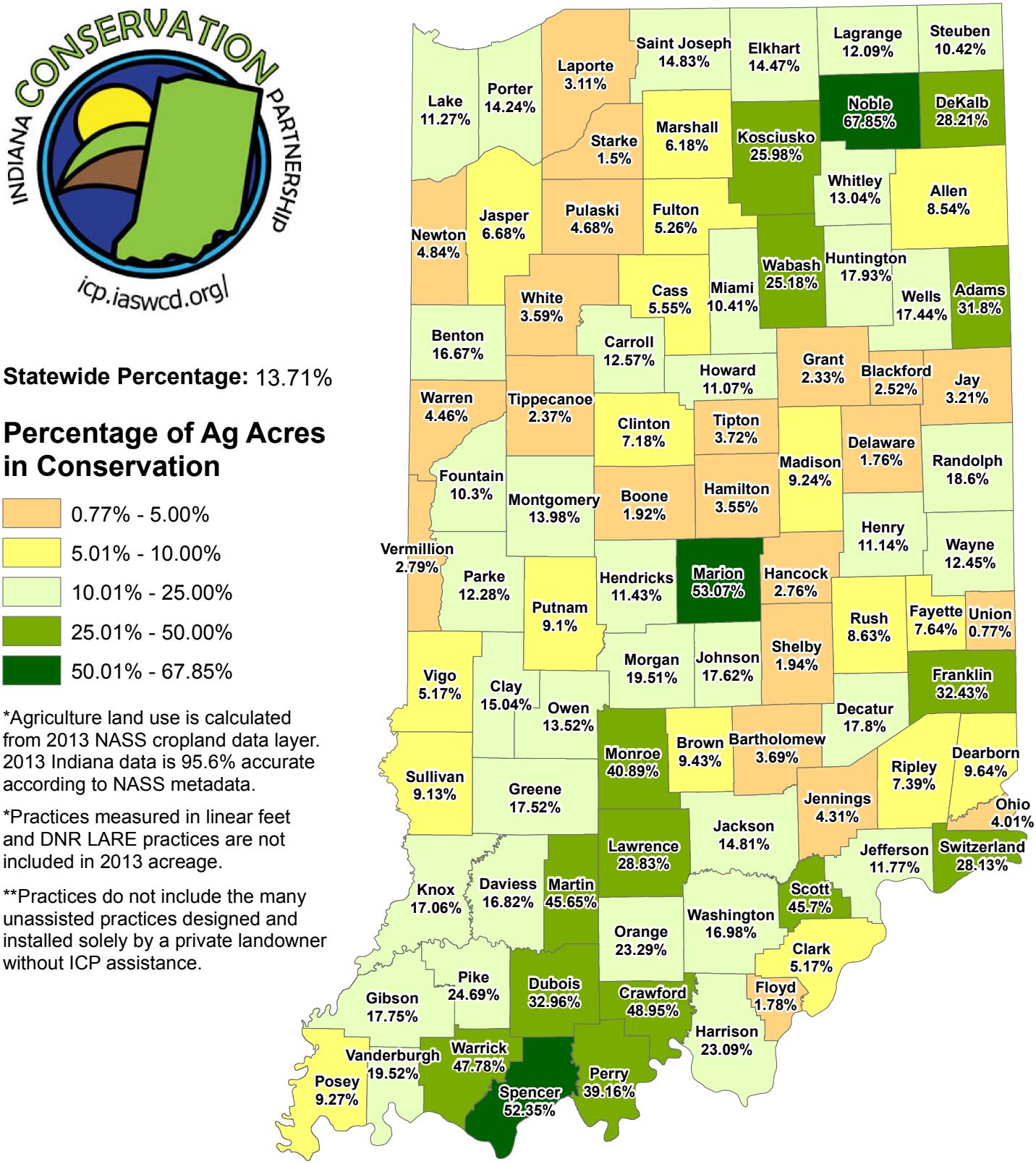
Data: Provided by Indiana State Department of Agriculture, Indiana Department of Environmental Management, Indiana Department of Natural Resources, Indiana's Soil and Water Conservations Districts and USDA Natural Resources Conservation Service.

See breakdown of practice by county based on program funding along with program descriptions in Supporting Tabular Data for 2015 ICP Accomplishments at http://www.in.gov/isda/2991.htm.

February 11, 2016
Deb Fairhurst, ISDA Program Manager

2013 Conservation Acreage by County

*Percentage of Ag acres with newly completed and applied conservation practices in 2013***



Statewide Percentage: 13.71%

Percentage of Ag Acres in Conservation

- 0.77% - 5.00%
- 5.01% - 10.00%
- 10.01% - 25.00%
- 25.01% - 50.00%
- 50.01% - 67.85%

*Agriculture land use is calculated from 2013 NASS cropland data layer. 2013 Indiana data is 95.6% accurate according to NASS metadata.

*Practices measured in linear feet and DNR LARE practices are not included in 2013 acreage.

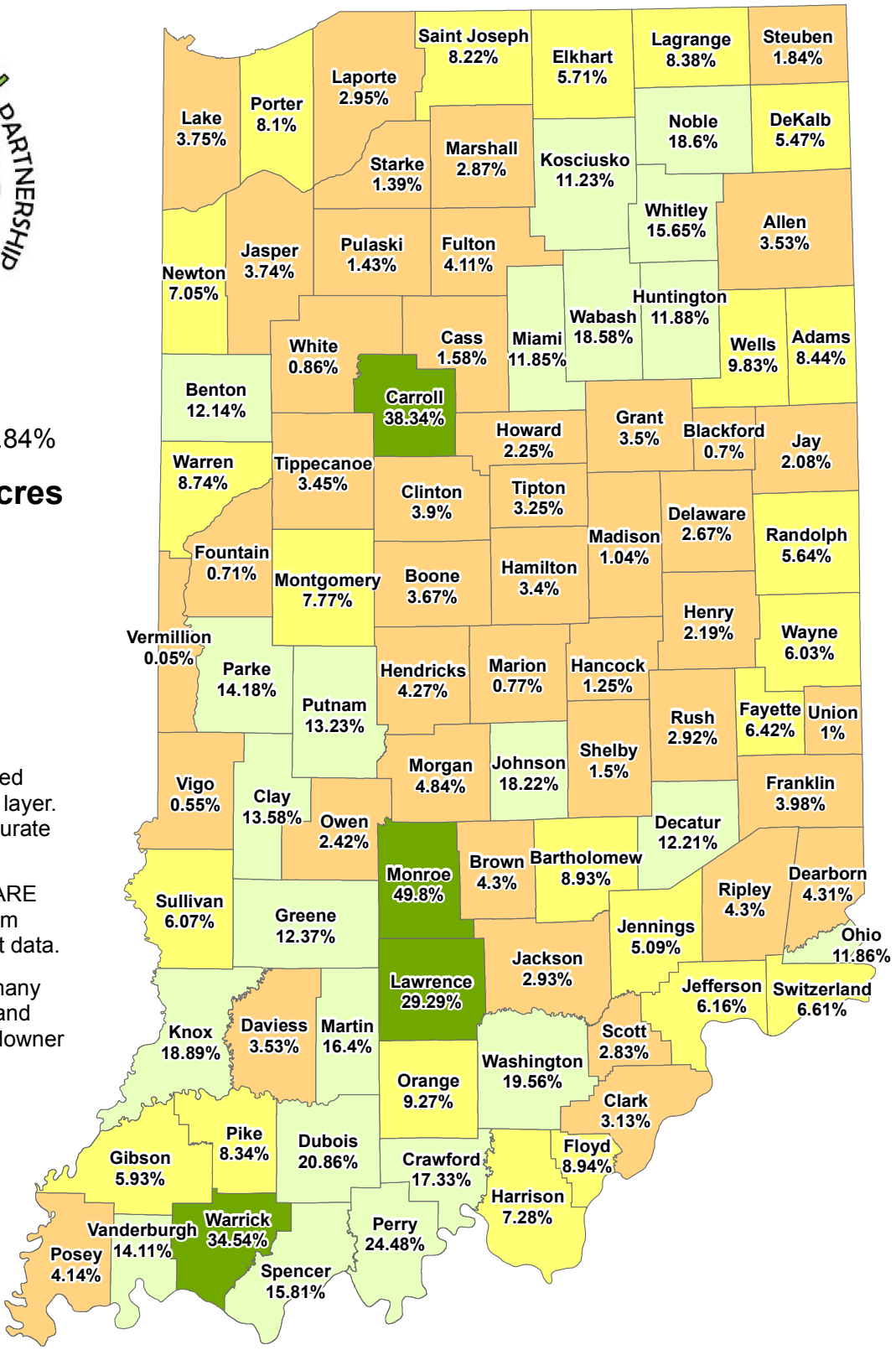
**Practices do not include the many unassisted practices designed and installed solely by a private landowner without ICP assistance.

Data provided by: Indiana State Department of Agriculture, Indiana Department of Environmental Management, Indiana Soil and Water Conservation Districts, and the USDA Natural Resources Conservation Service.

April 1, 2016
Trevor Laureys, ISDA Resource Specialist

2014 Conservation Acreage by County

*Percentage of Ag acres with newly completed and applied conservation practices in 2014***



Statewide Percentage: 7.84%

Percentage of Ag Acres in Conservation

- 0.05% - 5.00%
- 5.00% - 10.00%
- 10.00% - 25.00%
- 25.00% - 49.80%

*Agriculture land use is calculated from 2014 NASS cropland data layer. 2014 Indiana data is 94.4% accurate according NASS metadata.

*Certain IDEM 319 and DNR LARE practices have been omitted from 2014 acreage due to insufficient data.

**Practices do not include the many unassisted practices designed and installed solely by a private landowner without ICP assistance.

Data provided by: Indiana State Department of Agriculture, Indiana Department of Environmental Management, Indiana Soil and Water Conservation Districts, and the USDA Natural Resources Conservation Service.

April 1, 2016
Trevor Laureys, ISDA Resource Specialist

2015 Conservation Acreage by County

*Percentage of Ag acres with newly completed and applied conservation practices in 2015***

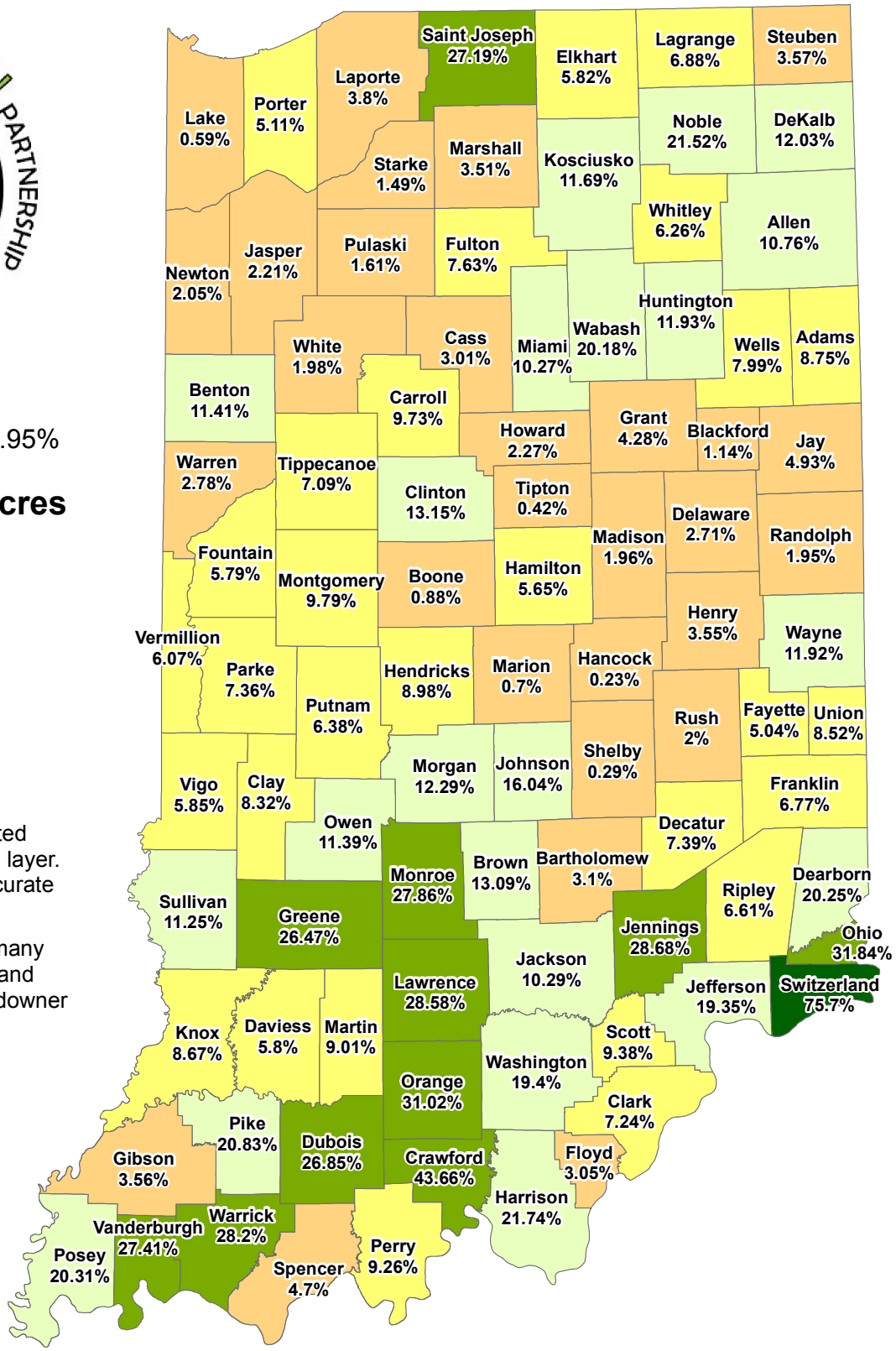
Statewide Percentage: 8.95%

Percentage of Ag Acres in Conservation

- 0.23% - 5.00%
- 5.01% - 10.00%
- 10.01% - 25.00%
- 25.01% - 50.00%
- 50.01% - 75.70%

*Agriculture land use is calculated from 2015 NASS cropland data layer. 2015 Indiana data is 93.9% accurate according NASS metadata.

**Practices do not include the many unassisted practices designed and installed solely by a private landowner without ICP assistance.



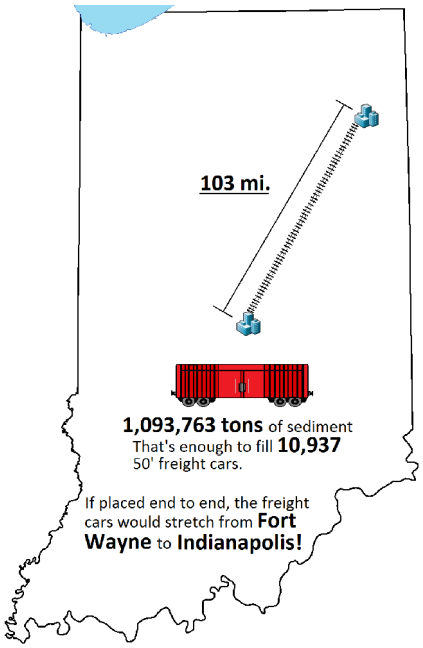
Data provided by: Indiana State Department of Agriculture, Indiana Department of Environmental Management, Indiana Department of Natural Resources, Indiana Soil and Water Conservation Districts, and the USDA Natural Resources Conservation Service.

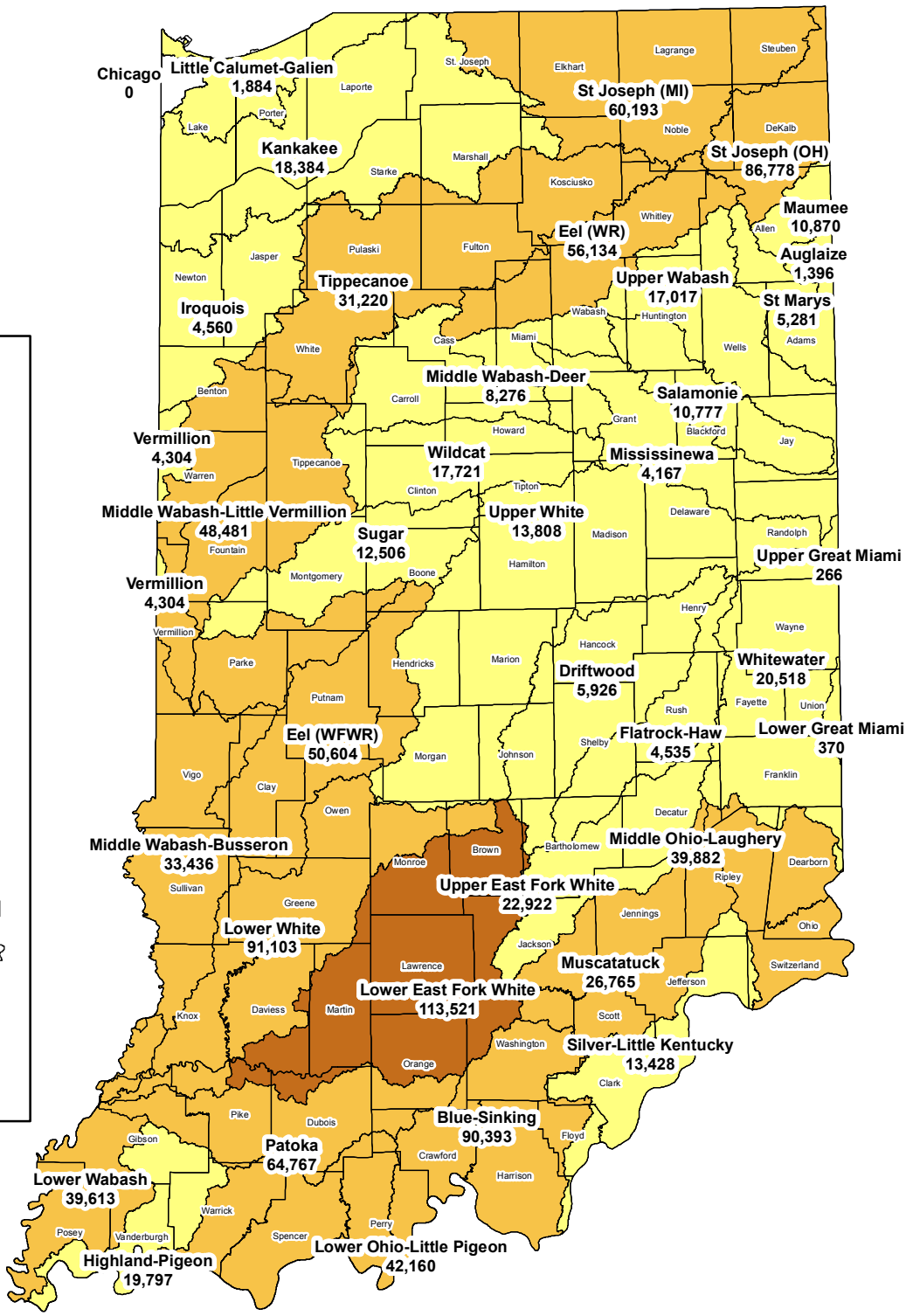
April 1, 2016
Trevor Laureys, ISDA Resource Specialist

2015 Sediment Load Reductions
1,093,763 Tons

http://icp.iaswcd.org/

In 2015, voluntary conservation efforts from private landowners in Indiana with support from the ICP have reduced sediment and nutrients from entering Indiana's waterways.





A total reduction of 1,093,763 tons of sediment statewide.

Sediment Reduction (tons/year)

- No Reported Reductions
- 1 - 25,000
- 25,001 - 100,000
- 100,001 - 175,000

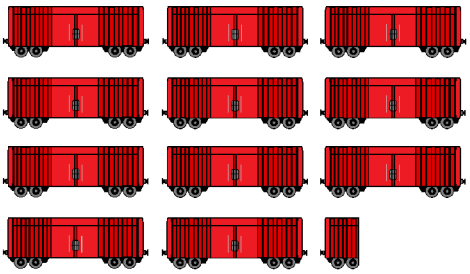
Based on EPA Region 5 Model analyses conducted on 12,221 conservation practices installed by the Indiana Conservation Partnership January 2015 thru December 2015. This effort does not include the many unassisted practices designed and installed solely by a private landowner without ICP assistance.

March 2, 2016
Deb Fairhurst, ISDA Program Manager
To learn more about Indiana's Nutrient Reduction Strategy visit: http://www.in.gov/isda/2991.htm.
For questions and comments email ISDANutrientReduction@isda.in.gov

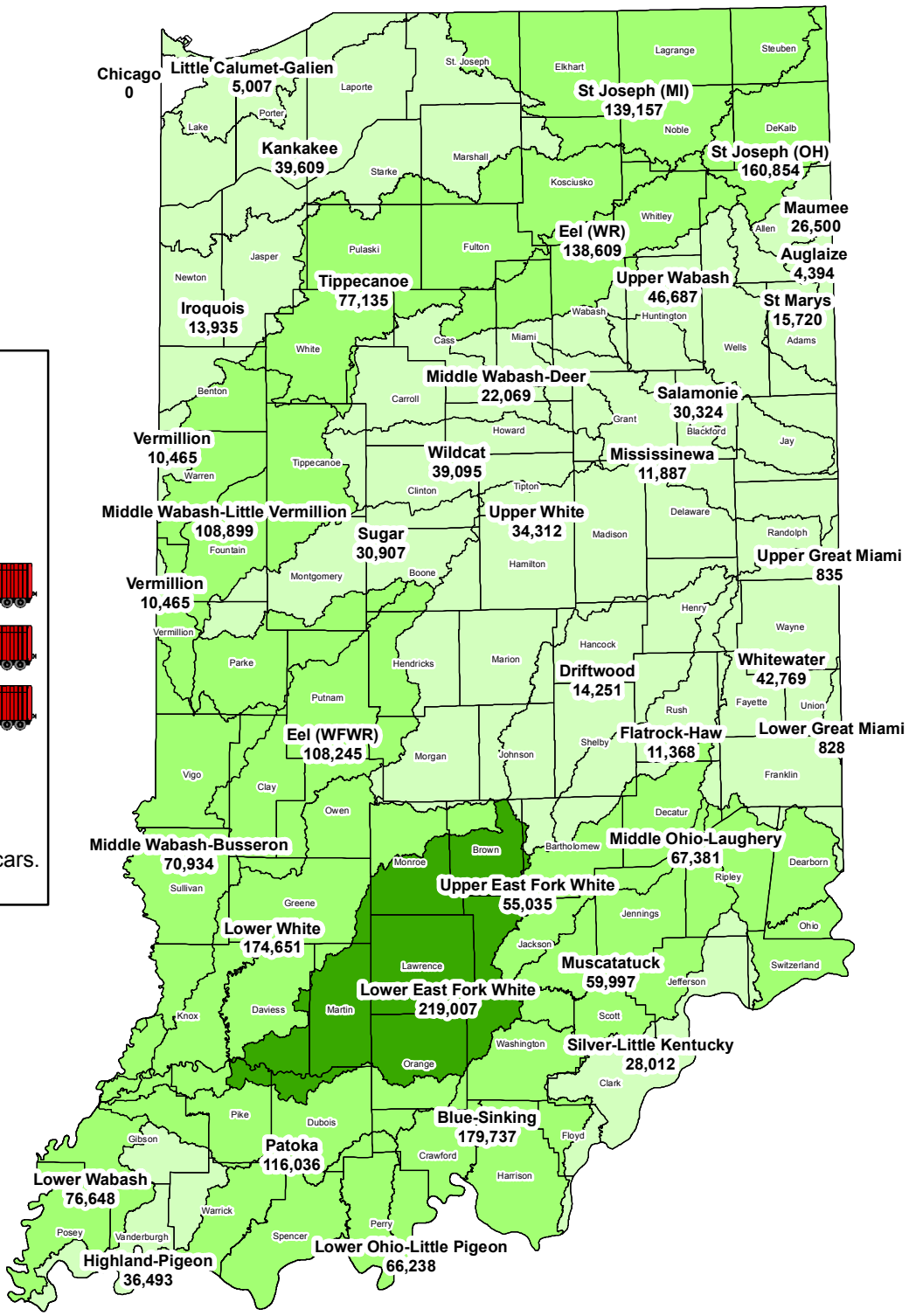
2015 Nitrogen Load Reductions
2,284,033 Pounds

http://icp.iaswcd.org/

In 2015, voluntary conservation efforts from private landowners in Indiana with support from the ICP have reduced sediment and nutrients from entering Indiana's waterways.



2,284,033 pounds of Nitrogen.
That's enough to fill **11.25** 50' freight cars.



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Reductions in dissolved nutrients, such as dissolved reactive phosphorus (DRP) and nitrate (NO3), are not accounted for by the Region 5 Model.

A total reduction of 2,284,033 pounds of nitrogen statewide.

Nitrogen Reduction (lbs./year)

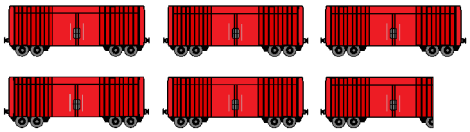
- No Reported Reductions
- 1 - 50,000
- 50,001 - 200,000
- 200,001 - 300,000

March 2, 2016
Deb Fairhurst, ISDA Program Manager
To learn more about Indiana's Nutrient Reduction Strategy visit: http://www.in.gov/isda/2991.htm.
For questions and comments email ISDANutrientReduction@isda.in.gov

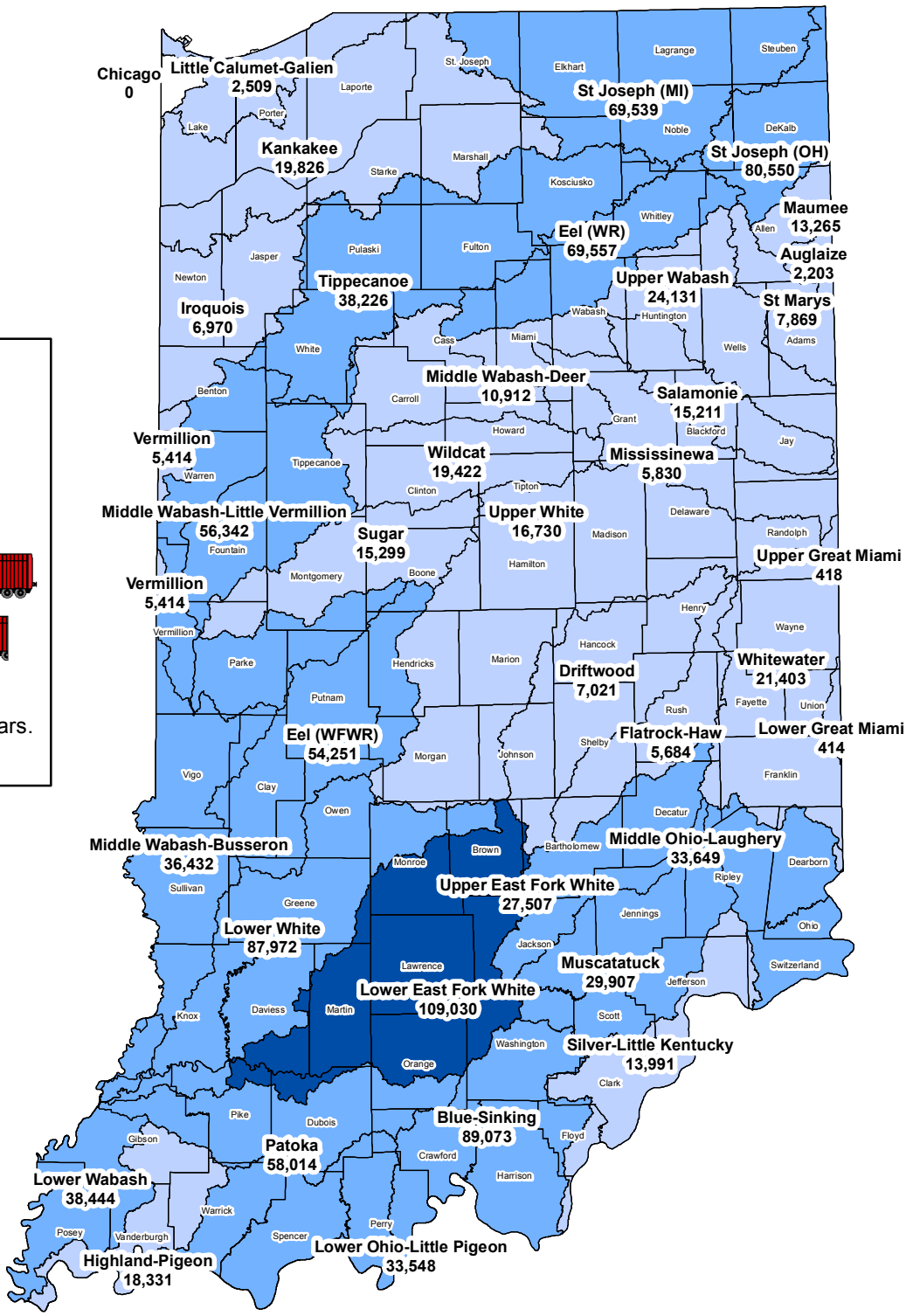
2015 Phosphorus Load Reductions
1,144,892 Pounds

http://icp.iaswcd.org/

In 2015, voluntary conservation efforts from private landowners in Indiana with support from the ICP have reduced sediment and nutrients from entering Indiana's waterways.



1,144,892 pounds of Phosphorus.
That's enough to fill **5.75** 50' freight cars.



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Reductions in dissolved nutrients, such as dissolved reactive phosphorus (DRP) and nitrate (NO3), are not accounted for by the Region 5 Model.

A total reduction of 1,144,892 pounds of phosphorus statewide.

Phosphorus Reduction (lbs./year)

- No Reported Reductions
- 1 - 25,000
- 25,001 - 100,000
- 100,001 - 175,000

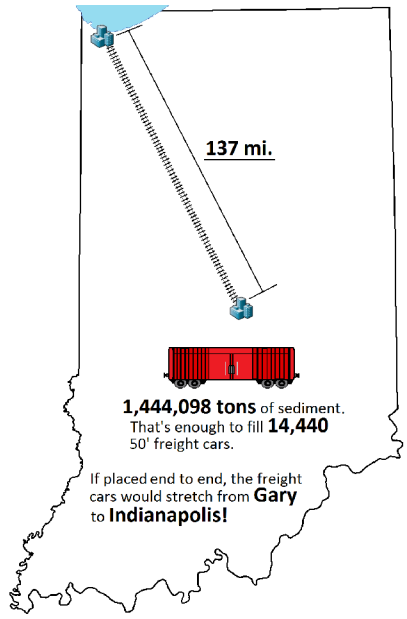
March 2, 2016
Deb Fairhurst, ISDA Program Manager
To learn more about Indiana's Nutrient Reduction Strategy visit: http://www.in.gov/isda/2991.htm.
For questions and comments email ISDANutrientReduction@isda.in.gov

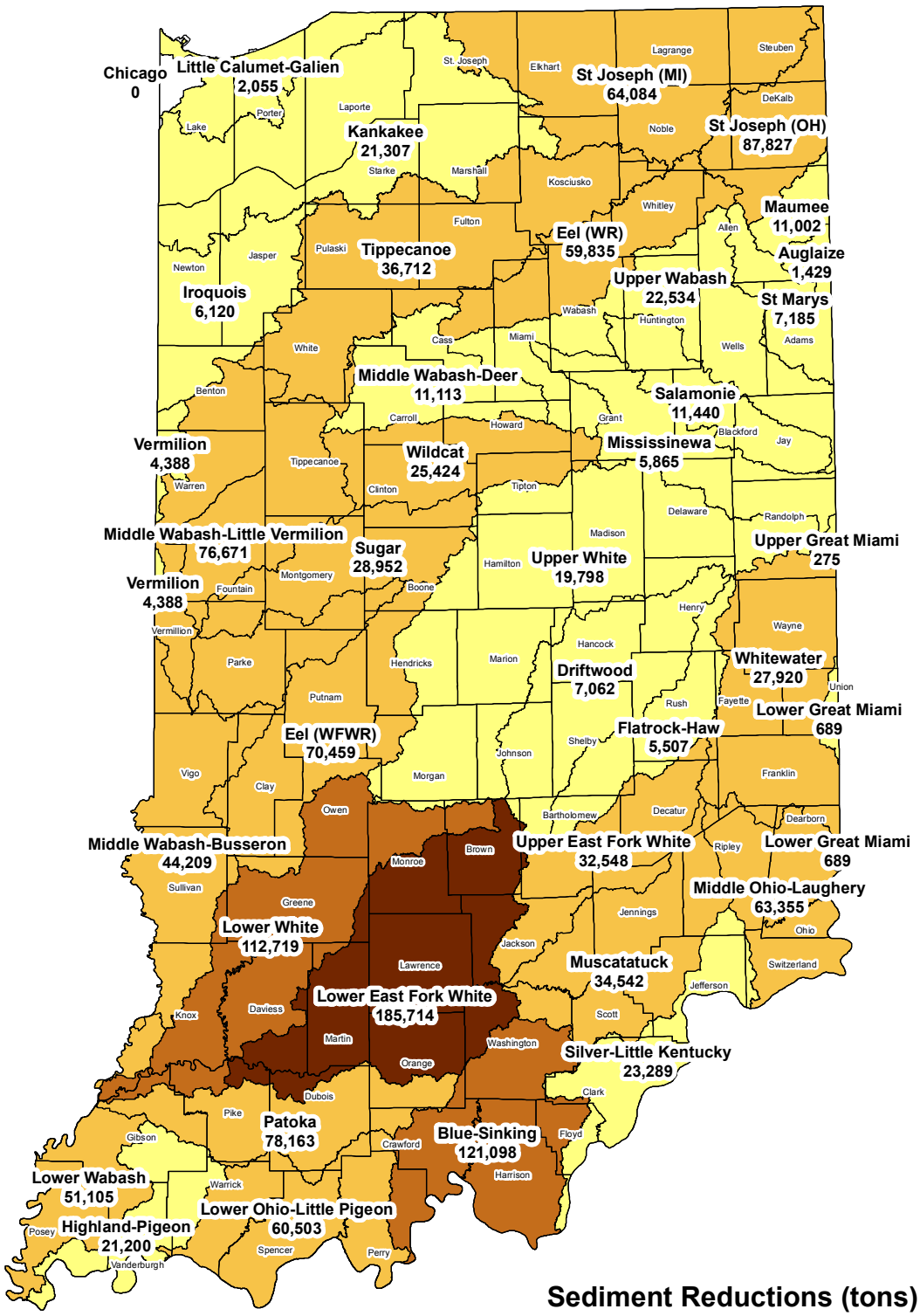
2013-15 Cumulative Sediment Load Reductions

1,444,098 tons

http://icp.iaswcd.org/

Since 2013, voluntary conservation efforts from private landowners in Indiana with support from the ICP have reduced nutrients and sediment from entering Indiana's waterways.





Sediment Reductions (tons)

- No Reported Reductions
- 1 - 25,000
- 25,001 - 100,000
- 100,001 - 175,000
- 175,001 - 250,000

Based on EPA Region 5 Model analyses conducted on 19,136 conservation practices installed by the Indiana Conservation Partnership January 2013 thru December 2015. This effort does not include the many unassisted practices designed and installed solely by a private landowner without ICP assistance.

The cumulative analysis encompassed a breakdown of 2013 thru 2015 conservation practices by lifespan including 1, 5, 10, 15, 20 and 40 years. The map reflects all of the practices minus the 2013 and 2014 practices with a lifespan of one year.

To learn more about Indiana's Nutrient Reduction Strategy visit http://www.in.gov /isda/2991.htm
For questions and comments email ISDANutrientReduction@isda.in.gov

March 3, 2016
Deb Fairhurst, ISDA Program Manager

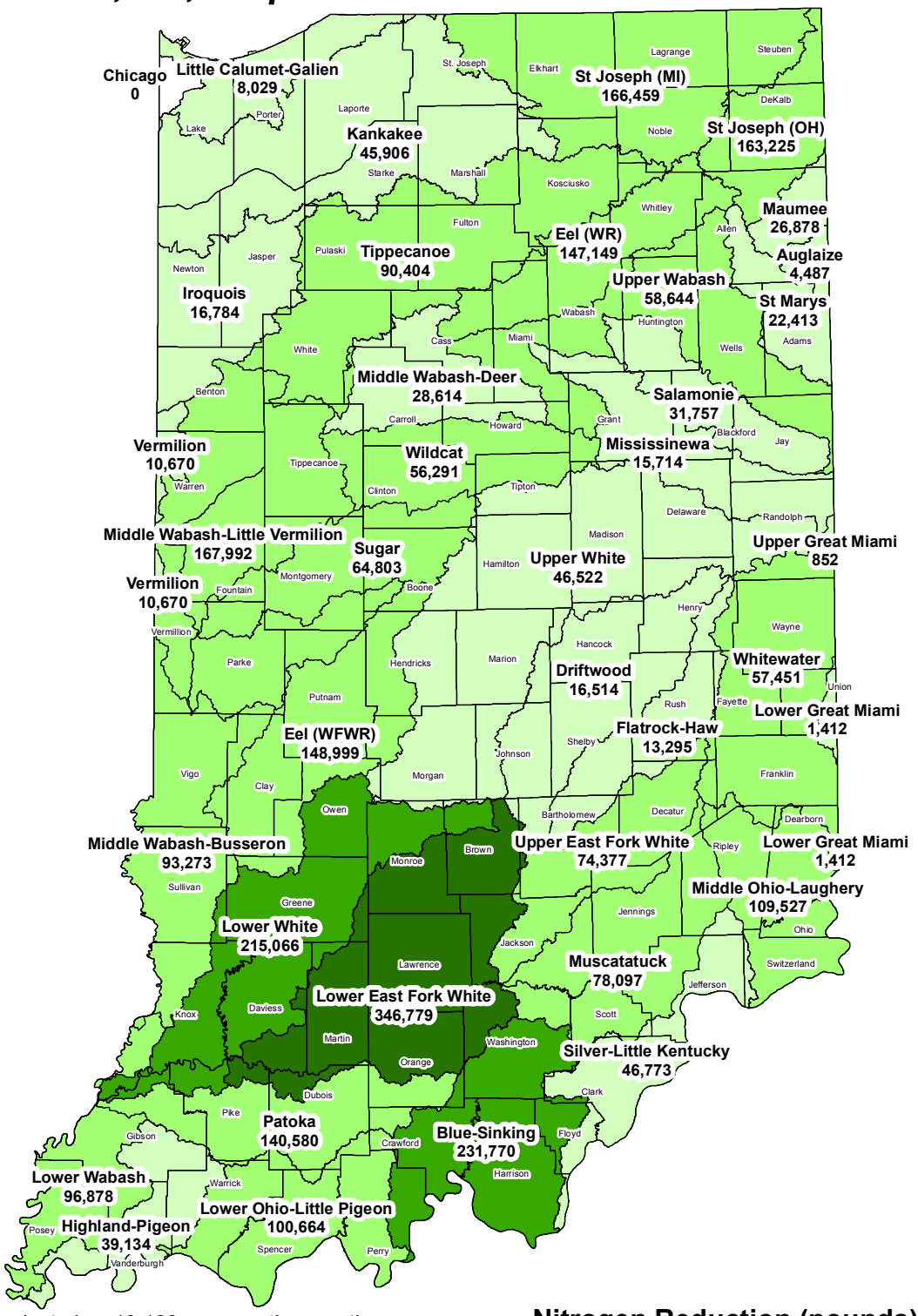
2013-15 Cumulative Nitrogen Load Reductions

2,984,179 pounds

http://icp.iaswcd.org/

Since 2013, voluntary conservation efforts from private landowners in Indiana with support from the ICP have reduced nutrients and sediment from entering Indiana's waterways.

2,984,179 pounds of Nitrogen.
That's enough to fill **14.75** 50' freight cars.



Nitrogen Reduction (pounds)

- No Reductions Reported
- 1 - 50,000
- 50,001 - 200,000
- 200,001 - 300,000
- 300,001 - 400,000

Based on EPA Region 5 Model analyses conducted on 19,136 conservation practices installed by the Indiana Conservation Partnership January 2013 thru December 2015. This effort does not include the many unassisted practices designed and installed solely by a private landowner without ICP assistance.

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To learn more about Indiana's Nutrient Reduction Strategy visit:http://www.in.gov /isda/2991.htm . For questions and comments email ISDANutrientReduction@isda.in.gov

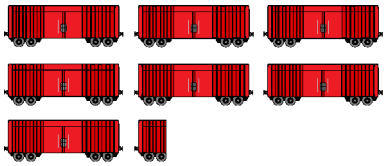
March 3, 2016
Deb Fairhurst, ISDA Program Manager

2013-15 Cumulative Phosphorus Load Reductions

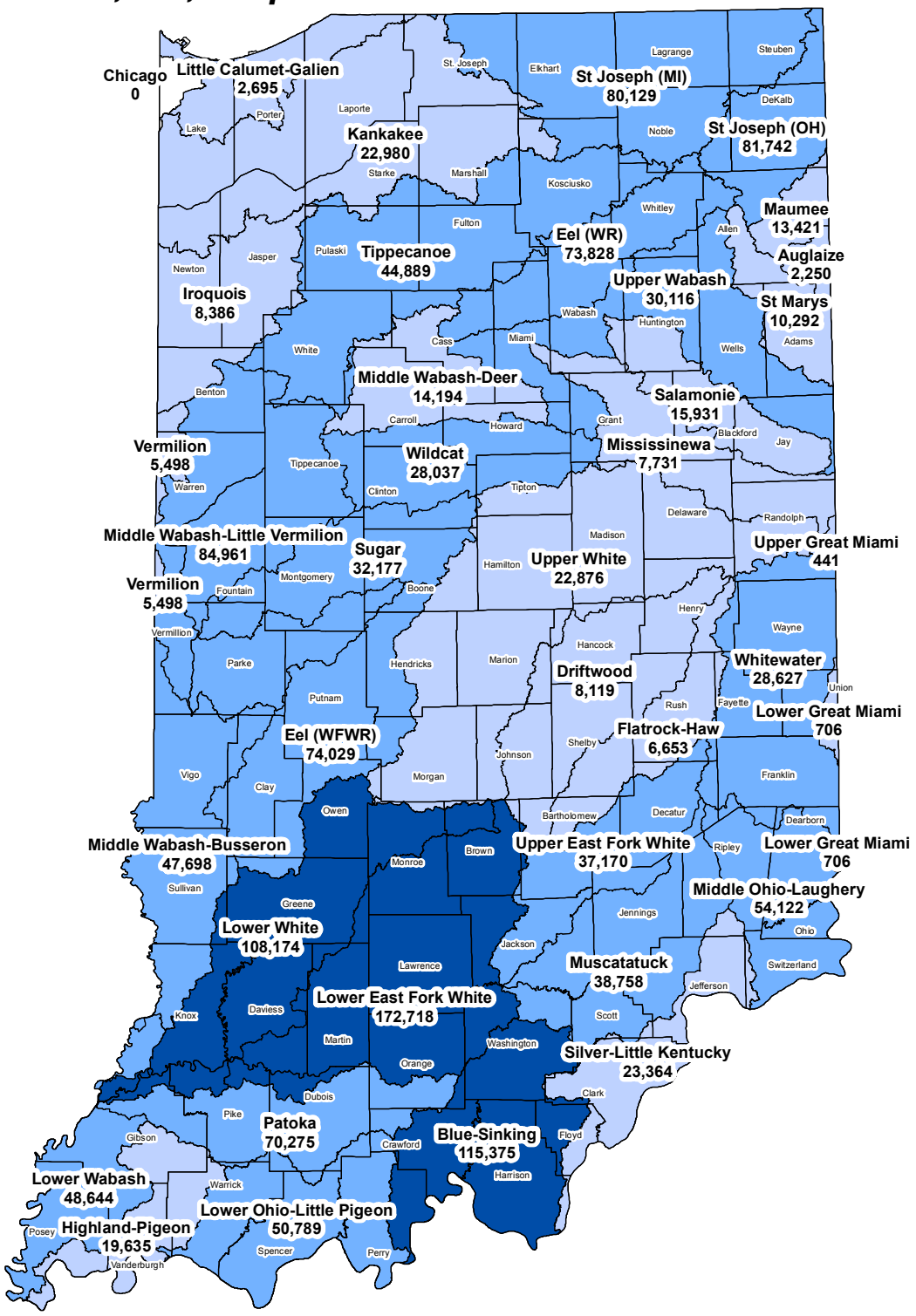
1,487,431 pounds

http://icp.iaswcd.org/

Since 2013, voluntary conservation efforts from private landowners in Indiana with support from the ICP have reduced nutrients and sediment from entering Indiana's waterways.



1,487,431 pounds of Phosphorus.
That's enough to fill **7.25** 50' freight cars.



Phosphorus Reduction (pounds)

- No Reported Reductions
- 1 - 25,000
- 25,001 - 100,000
- 100,001 - 175,000

Based on EPA Region 5 Model analyses conducted on 19,136 conservation practices installed by the Indiana Conservation Partnership January 2013 thru December 2015. This effort does not include the many unassisted practices designed and installed solely by a private landowner without ICP assistance.

The cumulative analysis encompassed a breakdown of 2013 thru 2015 conservation practices by lifespan including 1, 5, 10, 15, 20 and 40 years. The map reflects all of the practices minus the 2013 and 2014 practices with a lifespan of one year.

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To learn more about Indiana's Nutrient Reduction Strategy visit:http://www.in.gov /isda/2991.htm . For questions and comments email ISDANutrientReduction@isda.in.gov

March 3, 2016
Deb Fairhurst, ISDA Program Manager

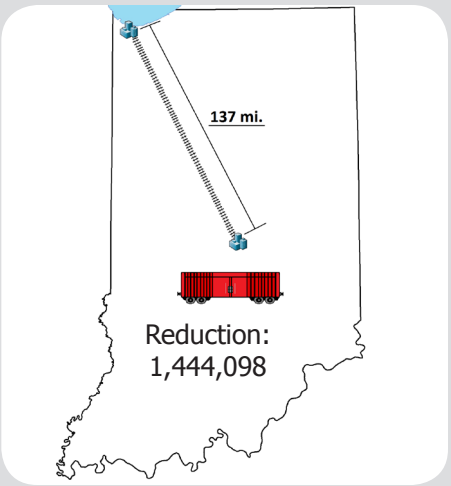
Indiana Nutrient and Sediment Load Reductions

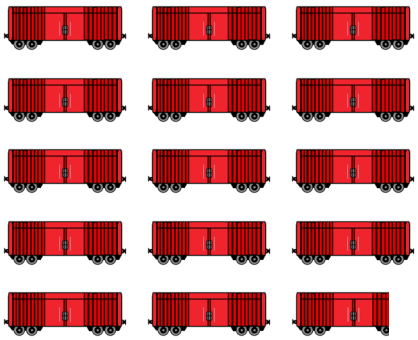
Voluntary conservation efforts from private landowners in Indiana with support from the Indiana Conservation Partnership have reduced nutrients and sediment from entering Indiana's waterways. The figures below represent these efforts in 2015 from conservation practices installed since 2013.

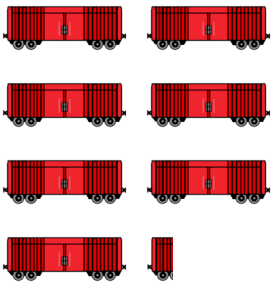
Sediment
14,400 50' freight cars
If placed end to end, that would stretch from Gary to Indianapolis.

Nitrogen
14.75 freight cars

Phosphorus
7.25 freight cars




Reduction:
2,984,179 Pounds


Reduction:
1,487,431 Pounds

Top Conservation Practices in Indiana

By quantity of practices installed and reduction per practice:

- No Till
- Reduced Tillage
- Cover Crops
- Grassed Waterways
- Wetland Enhancement
- Filter Strips
- Nutrient Management
- Riparian Buffers

For more information about conservation practices visit: nrcs.usda.gov

Indiana Conservation Partnership (ICP)

Data is collected by Indiana Conservation Partnership Agencies and aggregated using the USEPA's Region 5 Model to show total nutrient and sediment reductions.

INDIANA ASSOCIATION OF soil and water conservation DISTRICTS

INDIANA DEPARTMENT OF NATURAL RESOURCES

IDEM

INDIANA STATE DEPARTMENT OF AGRICULTURE

INDIANA CONSERVATION PARTNERSHIP
icp.iaswcd.org

With Support From:

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

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For more information about Indiana's Nutrient Reduction Strategy, please see isda.in.gov