Great Lakes-St. Lawrence Legislative Caucus

Web Meeting on Blue Accounting

April 17, 2020 | 9 am CDT/10 am EDT

Great Lakes-St. Lawrence Legislative Caucus

CSG MIDWEST

Webinar Technology

- This event is being recorded. The recording will be available later today at **www.greatlakeslegislators.org**.
- The agenda and slide deck are available now in the “handouts” pane and will be on the website later today.
- All lines will be in listen-only mode during the presentations.
- To ask a question:
  - Raise your hand (you must enter the audio PIN to use this option).
  - Type into the “questions” pane.
  - Email your question to **gllc@csg.org**.

Agenda

Webinar Technology

Lisa Janairo, GLLC Director, CSG Midwest

Welcome and Introductions

Senator André Jacque (Wisconsin), Chair, GLLC Task Force on Nutrient Management

Data-Driven Decision Making: How Blue Accounting Can Help Drive Progress in the Great Lakes

Eric Brown, Nicole Zacharda, Erika Jensen, and Rhonda Wille, Great Lakes Commission

Questions and Discussion

Wrap-Up

Adjourn

Sen. André Jacque, Wisconsin
Chair
GLLC Task Force on Nutrient Management

Featured Speakers

Eric Brown
Senior Advisor for External Relations
ebrown@glc.org
(202) 821-6230

Nicole Zacharda
Program Manager
nzacharda@glc.org
(517) 242-6014

Featured Speakers

Erika Jensen
Program Manager
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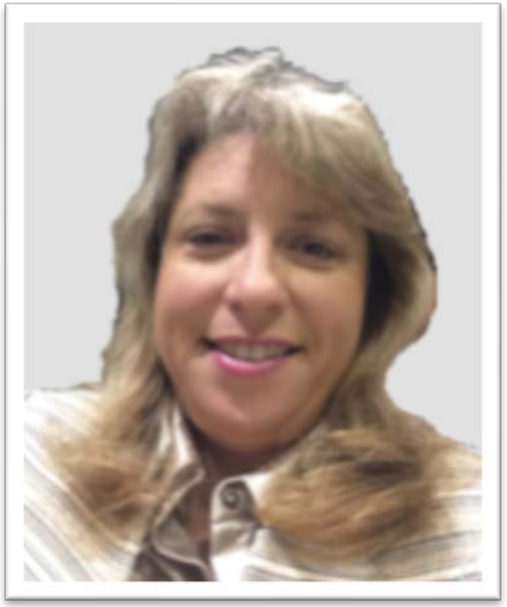


Rhonda Wille
Chief Information Officer
rhonda@glc.org
(248) 396-9240

REIMAGINING FOR RESILIENCE

Blue Accounting

Great Lakes Commission
des Grands Lacs

Data Driven

DECISION MAKING

Great Lakes Basin

COMMITMENT TO A SHARED FUTURE

Great Lakes Commission - April 17, 2020

Eric Brown, External Relations
Nicole Zacharda, Program Water Quality/Nutrients
Erika Jensen, Program Aquatic Invasive Species
Rhonda Wille, Chief Information Officer
1300 Victors Way, Suite 1350, Ann Arbor MI

www.blueaccounting.org

Ensure a Healthy Great Lakes

The Great Lakes provide
DRINKING WATER FOR 48 MILLION PEOPLE, fuel a $5 TRILLION REGIONAL ECONOMY, and create AN INVALUABLE SENSE OF HOME AND COMMUNITY
for the basin via their scenic beauty and recreation.

Social, Economic and Environmental Issues

The government agencies of
TWO COUNTRIES, EIGHT STATES, TWO PROVINCES, AND 249 COUNTIES,
as well as hundreds of NGOs and private businesses, make decisions that affect the lakes.
WE MUST WORK TOGETHER TO SUCCEED.

Institutional and Leadership Cooperation

Aquatic Invasive Species

Coastal Wetlands

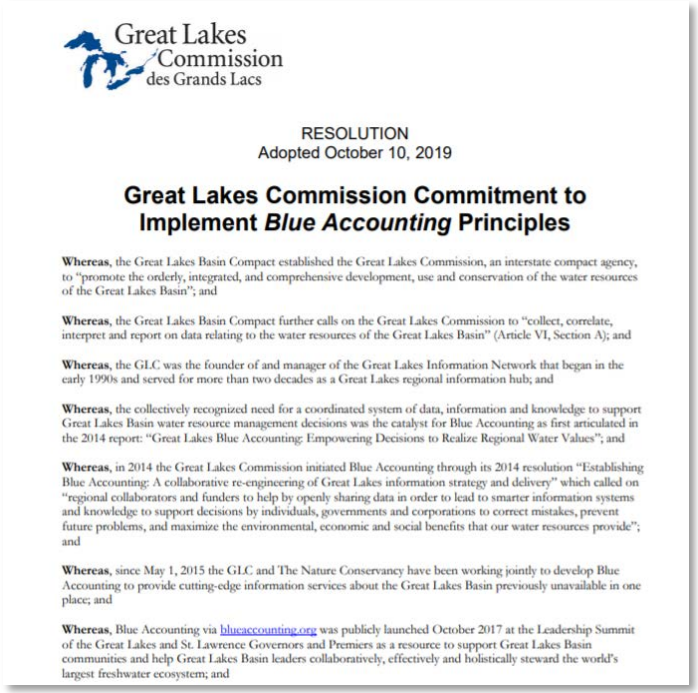
ErieStat

Maritime Transportation

Source Water

Bringing Blue Accounting Closer to the States and Provinces

- GLC unanimously recommitted to the principles of Blue Accounting in October 2019
- GLC Board of Directors now serves as the Blue Accounting Steering Committee
- GLC called on all jurisdictions to "openly share data and information to enhance the Great Lakes Basin's collective ability and accountability to measure progress toward achieving shared goals



Great Lakes Commission
des Grands Lacs

RESOLUTION
Adopted October 10, 2019

Great Lakes Commission Commitment to Implement *Blue Accounting* Principles

Whereas, the Great Lakes Basin Compact established the Great Lakes Commission, an interstate compact agency, to "promote the orderly, integrated, and comprehensive development, use and conservation of the water resources of the Great Lakes Basin"; and

Whereas, the Great Lakes Basin Compact further calls on the Great Lakes Commission to "collect, correlate, interpret and report on data relating to the water resources of the Great Lakes Basin" (Article VI, Section A); and

Whereas, the GLC was the founder of and manager of the Great Lakes Information Network that began in the early 1990s and served for more than two decades as a Great Lakes regional information hub; and

Whereas, the collectively recognized need for a coordinated system of data, information and knowledge to support Great Lakes Basin water resource management decisions was the catalyst for Blue Accounting as first articulated in the 2014 report: "Great Lakes Blue Accounting: Empowering Decisions to Realize Regional Water Values"; and

Whereas, in 2014 the Great Lakes Commission initiated Blue Accounting through its 2014 resolution "Establishing Blue Accounting: A collaborative re-engineering of Great Lakes information strategy and delivery" which called on "regional collaborators and funders to help by openly sharing data in order to lead to smarter information systems and knowledge to support decisions by individuals, governments and corporations to correct mistakes, prevent future problems, and maximize the environmental, economic and social benefits that our water resources provide"; and

Whereas, since May 1, 2015 the GLC and The Nature Conservancy have been working jointly to develop Blue Accounting to provide cutting-edge information services about the Great Lakes Basin previously unavailable in one place; and

Whereas, Blue Accounting via blueaccounting.org was publicly launched October 2017 at the Leadership Summit of the Great Lakes and St. Lawrence Governors and Premiers as a resource to support Great Lakes Basin communities and help Great Lakes Basin leaders collaboratively, effectively and holistically steward the world's largest freshwater ecosystem; and

Bringing Blue Accounting Closer to the States and Provinces

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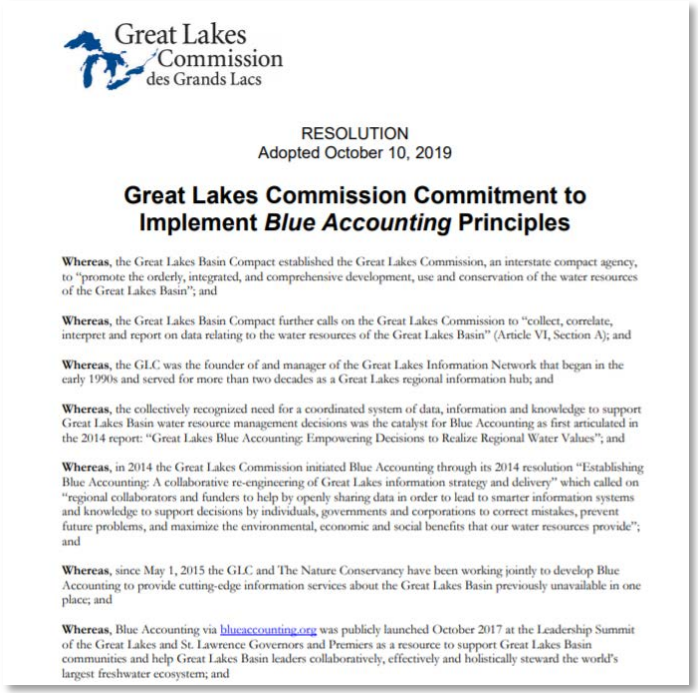

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Blue Accounting ErieStat

Tracking Progress Toward a Healthier Lake Erie

TRACKING PROGRESS TOWARD A HEALTHIER LAKE ERIE

Approximately 11 million citizens rely on Lake Erie for drinking water. Clean, safe water is essential to Lake Erie's vital role in supporting tourism, commercial and recreational fishing, agriculture, and manufacturing.

Under the Great Lakes Water Quality Agreement, the U.S. and Canada, with the Lake Erie states and province, have agreed to work together to **reduce the amount of phosphorus entering the western and central basins of Lake Erie by 40 percent (from 2008 levels). ErieStat tracks progress toward this goal.** The governments of Michigan, Ohio, and Ontario have further agreed to achieve the reductions for the western basin by the year 2025.

7.3

Severity of the 2019 Lake Erie algal bloom. Anything over 4 on the index is considered a "significant" bloom.

SHARE

9,358

Metric tons of total phosphorus reaching Lake Erie in the 2018. The target is 6,000 metric tons per year.

SHARE

3.2 Million

Acres of land used for agriculture in the Lake Erie basin were influenced by 4R Certified Retailers in 2019.

SHARE

ErieStat is an online tool that tracks total and dissolved phosphorus entering Lake Erie's western and central basins from selected tributaries (rivers).

VIEW THE LATEST PRIORITY TRIBUTARY DATA

ErieStat also shares the strategies and investments intended to achieve the shared goal of phosphorus reduction

HOW WE WORK

< Return to ErieStat

Blue Accounting uses metrics and relevant data to measure progress toward shared goals. For ErieStat, key water quality metrics were selected to track progress toward the shared phosphorus reduction goal. These metrics were selected to allow tracking of both total and dissolved phosphorus contributions from tributary rivers and streams to the lake. Water quality metrics are a starting point; additional metrics are anticipated in the future to measure progress of phosphorus control efforts in Lake Erie and on the surrounding landscape.

ErieStat will also showcase strategies and investments contained within the governments' Domestic Action Plans developed under the Great Lakes Water Quality Agreement. For more about the Domestic Action Plans, check out our Strategies page or download plans from the Resource page by searching for "plans."

WHY LAKE ERIE MATTERS

WHO'S HELPING

Convened by the Great Lakes Commission, representatives from federal, state, and provincial government agencies, as well as leading academic institutions, are contributing to the development of ErieStat.

- Indiana State Department of Agriculture, Division of Soil Conservation
- Indiana Department of Environmental Management, Office of Water Quality
- Michigan Department of Environmental Quality, Water Resources Division, Surface Water Assessment Section
- Michigan Department of Agriculture & Rural Development, Michigan Agriculture Environmental Assurance Program, Environmental Stewardship Division
- Michigan Department of Natural Resources, Michigan Office of the Great Lakes
- Ohio Environmental Protection Agency
- Ohio Department of Agriculture
- Ohio Lake Erie Commission
- Pennsylvania Department of Environmental Protection
- New York State Department of Environmental Conservation
- Ontario Ministry of Environment & Climate Change
- Ontario Ministry of Agriculture, Food, and Rural affairs
- Environment & Climate Change Canada
- Agriculture and Agri-Food Canada
- Environmental Protection Agency
- United States Department of Agriculture, Natural Resource Conservation Service
- United States Geological Survey
- National Oceanic and Atmospheric Administration, Great Lakes Environmental Research Laboratory
- National Center for Water Quality Research, Heidelberg University
- University of Michigan Water Center
- Michigan State University, Institute of Water Research
- Ohio Sea Grant College Program, F.T. Stone Laboratory
- Great Lakes Observing System
- Essex Region Conservation Authority

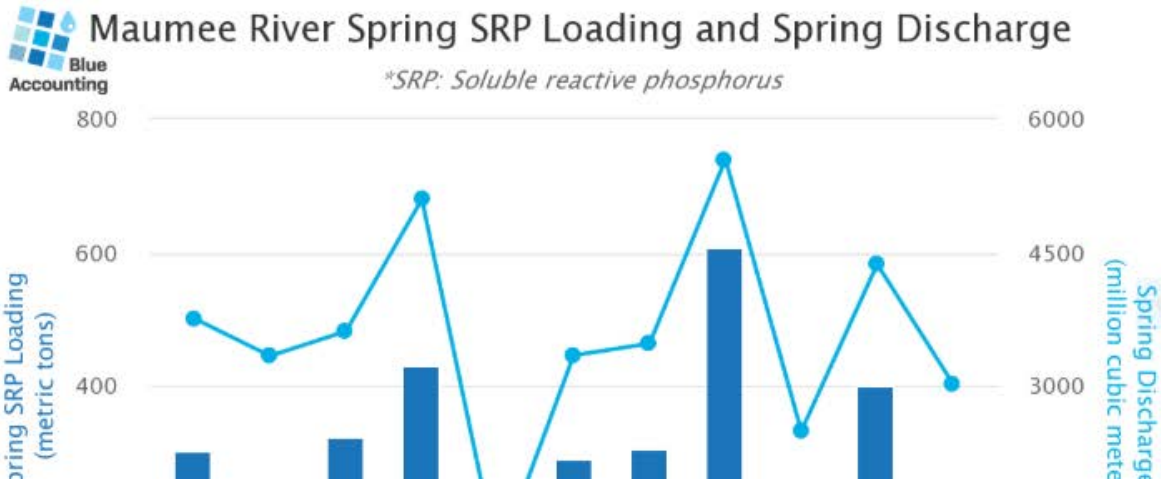
GOALS

Under the Great Lakes Water Quality Agreement, the U.S. and Canada, with the Lake Erie states and province, have agreed to work together to reduce the amount of phosphorus entering the western and central basins of Lake Erie by 40 percent (from 2008 levels). ErieStat will track progress toward this goal and support the **Annex 4, Nutrients, Subcommittee** convened under the Water Quality Agreement. The governments of Michigan, Ohio, and Ontario have further agreed to achieve the reductions for the western basin by the year 2025 with an aspirational goal of a twenty percent reduction by 2020.

Download the ErieStat fact sheet here.

TRACKING PROGRESS

Harmful Algal Blooms (phosphorus in the spring) +

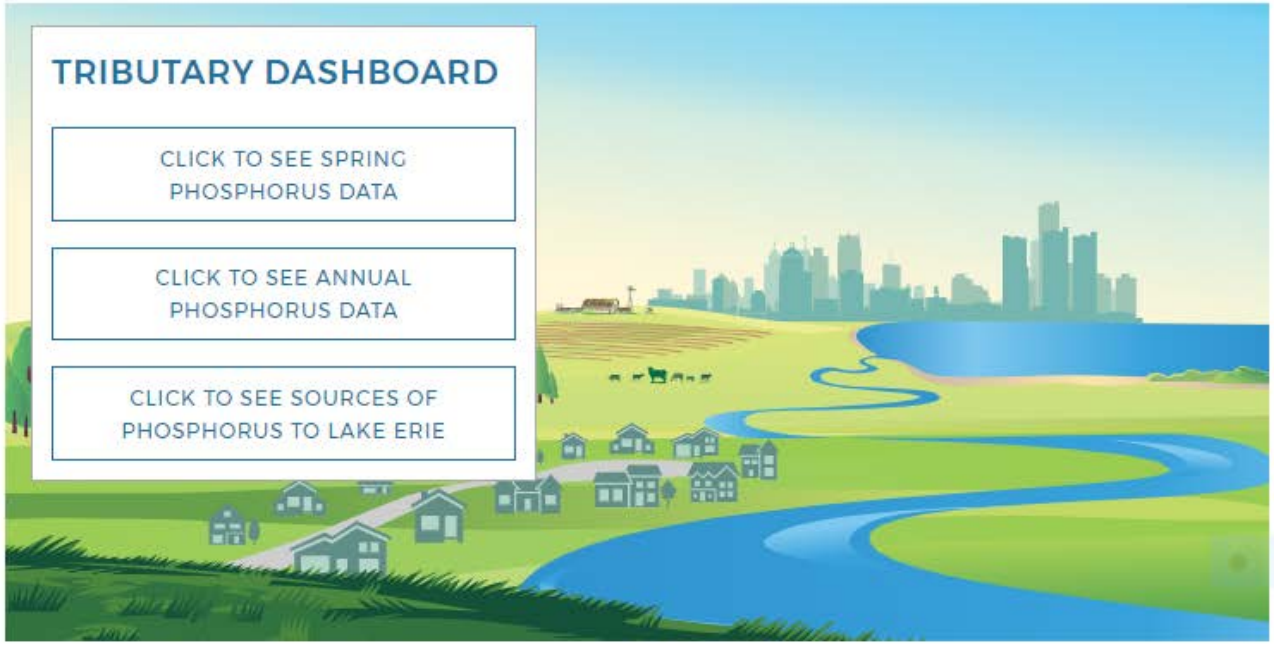


PROGRESS

Controlling phosphorus from the land to the lake

PROGRESS

Controlling phosphorus from the land to the lake



SPRING DATA ANNUAL DATA

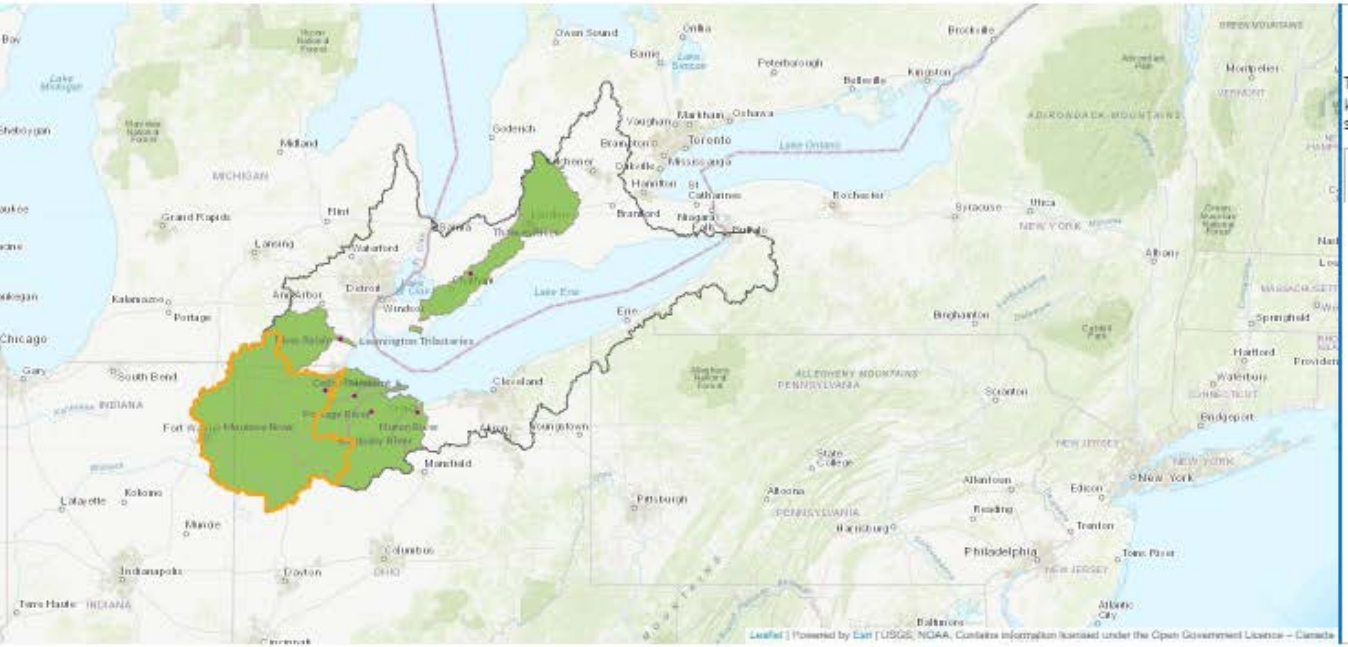
SPRING PHOSPHORUS TARGETS

The U.S. and Canada set phosphorus reduction goals (40 percent of 2008 loads) for eight priority tributary watersheds for both total and soluble reactive phosphorus (SRP) during March-July. SRP refers to phosphorus that is in a dissolved state and is of particular interest because it is the easiest form of phosphorus for algae to use to fuel growth.

The targets for these tributaries are expressed in terms of the flow weighted mean concentration (FWMC) - which is a way to normalize the load for flow. This is important because much of the load is delivered during storm events. It means that efforts to reduce the load must also include efforts to reduce the amount of flow (runoff). FWMC also provides an important backstop and relative measure of whether phosphorus control efforts are actually having an impact. For example, in a dry year the load may be low due to less runoff, but the FWMC will still be high if the proportion of phosphorus in that runoff is high.

The calculation of spring load requires high frequency flow and water quality monitoring, which is now in place for all nearshore priority tributaries. Not all tributaries had monitoring in place going back to 2008.

Click on the watershed of interest to see available data.

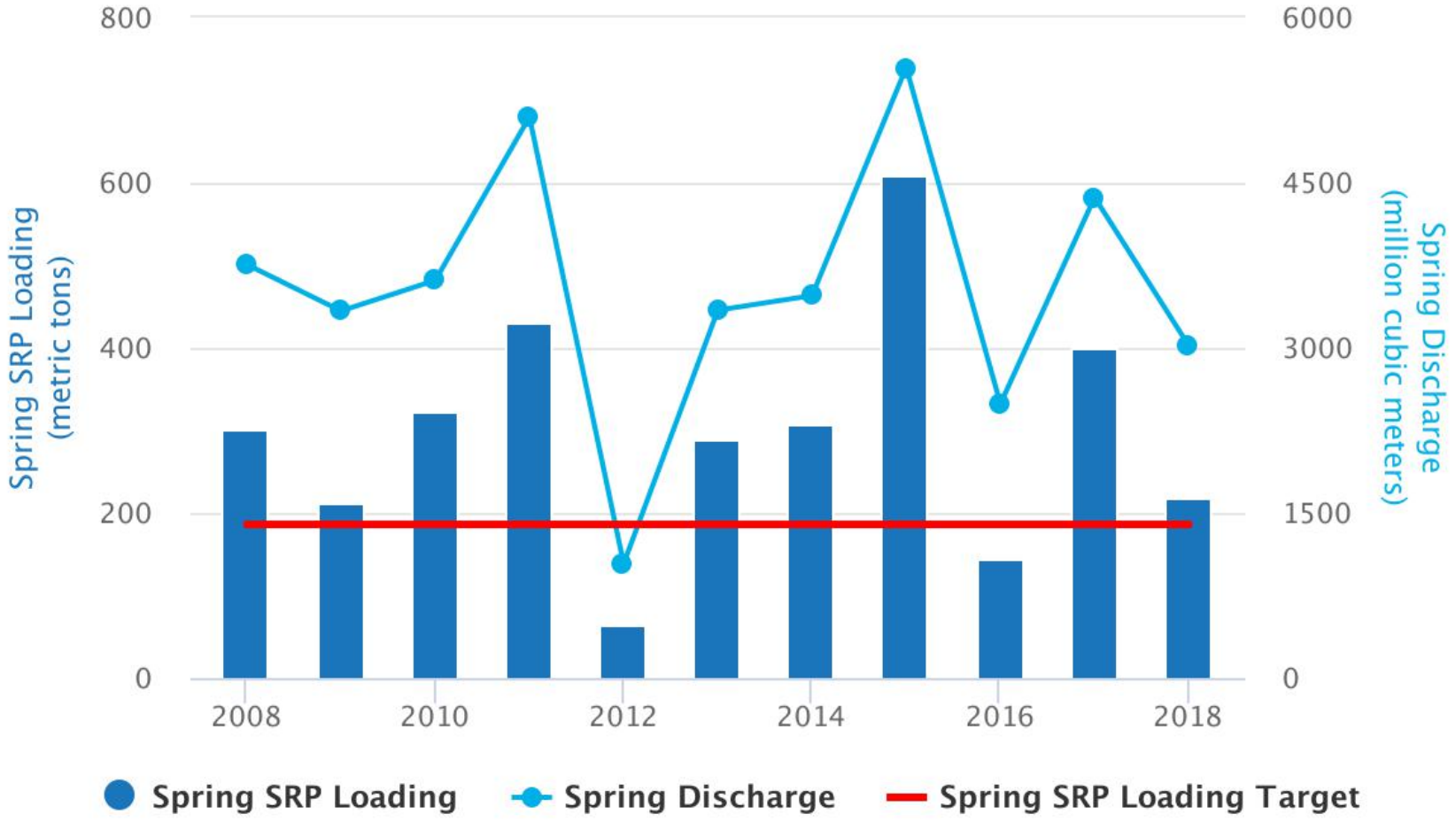


The Maumee River watershed is located primarily in northwestern Ohio, with the
km^2), 5,024 (13,012) of which are in Ohio. Major municipalities in the watershed i
some urban development, hay and pasture lands, and forest.

Spring SRP Loading and Spring Discharge | Spring SRP FWMC | Spring TP Loading and Spring Discharge | Spring TP F

Maumee River Spring SRP Loading and Spring Discharge

**SRP: Soluble reactive phosphorus*



STRATEGIES

Governments and their partners taking action to control phosphorus

Domestic Action Plans, available on the Resources page, are the "road map" for phosphorus control efforts being undertaken by states, the province of Ontario, and both federal governments. These plans contain specific activities for meeting the 40% phosphorus reduction goals for the western and central Lake Erie basins agreed to by the U.S. and Canada under the Great Lakes Water Quality Agreement. Note that New York State also shares information on ErieStat, but is not obligated to produce a Domestic Action Plan because phosphorus targets for the eastern basin of Lake Erie have not been developed.

The Lake Erie Binational Phosphorus Reduction Strategy, prepared by the Great Lakes Water Quality Agreement Nutrients Annex Subcommittee, identifies common themes from the Domestic Action Plans. While activities identified in the Binational Strategy may not be applicable in all jurisdictions, the five broad strategies are used below to help organize specific activities that each jurisdiction is taking to reduce phosphorus loads. These efforts are identified as Related Investments or may be accessed through the Investments page.

The ErieStat team is working with our partners in federal, provincial, and state governments to track progress toward a healthier Lake Erie. Content is being added over time; check back often or follow @BlueAccounting on Twitter for updates.

LIST VIEW GRID VIEW

Strategy #1: Reduce Phosphorus Loadings from Agricultural Sources

Updated on: January 28 2020

Key actions under this strategy include:

- Encourage farmers to adopt on-farm

Strategy #2: Reduce Phosphorus Loadings from Municipal Sources

Updated on: April 7 2020

Key actions under this strategy include:

- Optimize wastewater infrastructure

Strategy #3: Support Watershed Based Planning and Restoration Efforts

Updated on: January 28 2020

Key actions under this strategy include:

- Develop or refine local watershed

INVESTMENTS

Tracking the progress of individual strategies to control phosphorus

Specific activities identified by Lake Erie states, the province, and federal governments within Domestic Action Plans are tracked on ErieStat as Investments. Tracking these investments will enable the adaptive management of phosphorus control efforts and eventually, provide "big picture" views of phosphorus control Progress.

Investments made in the Lake Erie basin to control phosphorus aren't expressed only as dollars - it's also the programs implemented and the people and organizations who implement them. Investments include on-the-ground practices, research and monitoring, infrastructure upgrades, and outreach and education.

FILTER BY

Activity ▼ Jurisdiction ▼ APPLY

LIST VIEW GRID VIEW

UNITED STATES: GREAT LAKES SEDIMENT AND NUTRIENT REDUCTION PROGRAM

Updated on: September 23 2019

The Great Lakes Sediment and Nutrient Reduction Program (GLSNRP) provides grants to local and state governments and nonprofit organizations to install sediment and nutrient control practices in the Great

UNITED STATES: RUNOFF RISK ADVISORY FORECASTS FOR FARMERS

Updated on: September 23 2019

Runoff Risk Decision Support is a real-time forecasting tool that gives farmers guidance about when to apply fertilizers to their fields.The tools provide farmers and producers actionable recommendations about

INDIANA: PROMOTE SOIL HEALTH PRACTICES

Updated on: November 14 2019

Healthy soil with a higher organic content reduces erosion, ameliorates the effects of flood and drought, reduces nutrient and sediment loading to streams and rivers, and may require fewer nutrient inputs. The four

RESOURCES

SEARCH FILTER BY

All Types | All Locations | All Topics | APPLY

DISPLAYING 1 - 9 OF 36 RESOURCES

NEWEST

REPORT

BINATIONAL WEBINAR ON NUTRIENT REDUCTION EFFORTS IN LAKE ERIE

Updated on: April 8 2020

Representatives from the United States Environmental Protection Agency and Environment and Climate Change Canada presented on the ongoing efforts to manage

VIEW RESOURCE More info

PLAN

MICHIGAN DOMESTIC ACTION PLAN

Updated on: October 22 2019

Michigan outlines actions to reduce phosphorus loading to Lake Erie.

VIEW RESOURCE More info

PLAN

UNITED STATES ACTION PLAN

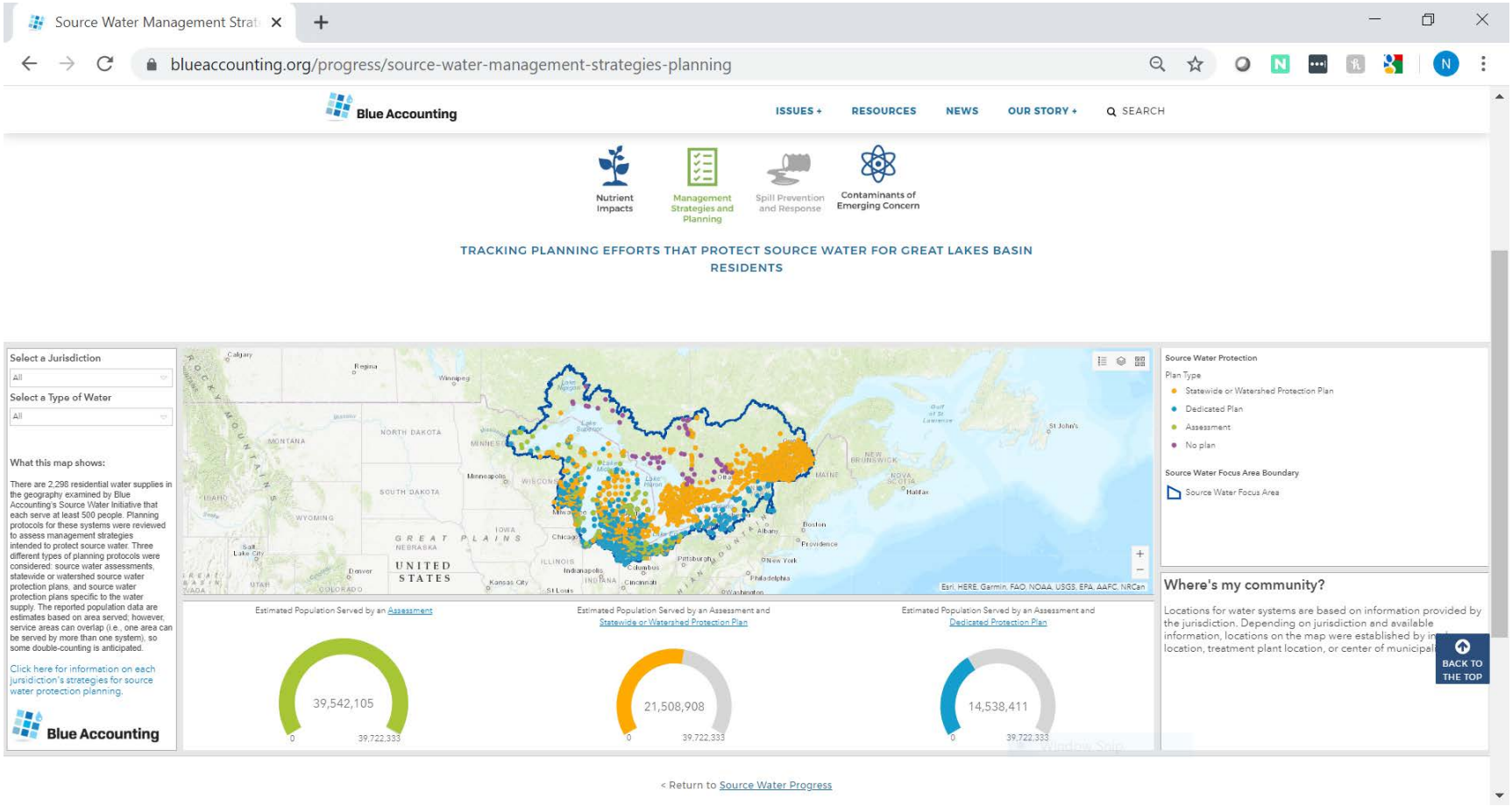
Updated on: August 14 2019

This document outlines federal and state efforts to achieve the binational phosphorus load reduction targets adopted in 2016 under the Great Lakes Water

VIEW RESOURCE More info

Blue Accounting
Source Water

Protecting Drinking Water at its Source


Source Water Management Strat
blueaccounting.org/progress/source-water-management-strategies-planning
Blue Accounting
ISSUES +
RESOURCES
NEWS
OUR STORY +
SEARCH
Nutrient Impacts
Management Strategies and Planning
Spill Prevention and Response
Contaminants of Emerging Concern
TRACKING PLANNING EFFORTS THAT PROTECT SOURCE WATER FOR GREAT LAKES BASIN RESIDENTS
Select a Jurisdiction
All
Select a Type of Water
All
What this map shows:
There are 2,298 residential water supplies in the geography examined by Blue Accounting's Source Water Initiative that each serve at least 500 people. Planning protocols for these systems were reviewed to assess management strategies intended to protect source water. Three different types of planning protocols were considered: source water assessments, statewide or watershed source water protection plans, and source water protection plans specific to the water supply. The reported population data are estimates based on area served; however, service areas can overlap (i.e., one area can be served by more than one system), so some double-counting is anticipated.
Click here for information on each jurisdiction's strategies for source water protection planning.
Blue Accounting
Source Water Protection
Plan Type
Statewide or Watershed Protection Plan
Dedicated Plan
Assessment
No plan
Source Water Focus Area Boundary
Source Water Focus Area
Where's my community?
Locations for water systems are based on information provided by the jurisdiction. Depending on jurisdiction and available information, locations on the map were established by in
location, treatment plant location, or center of municipal
BACK TO THE TOP
Estimated Population Served by an Assessment
39,542,105
0
39,722,333
Estimated Population Served by an Assessment and Statewide or Watershed Protection Plan
21,508,908
0
39,722,333
Estimated Population Served by an Assessment and Dedicated Protection Plan
14,538,411
0
39,722,333
< Return to Source Water Progress

Aquatic Invasive Species

Erika Jensen – Great Lakes Commission Program Lead

PREVENTING THE INTRODUCTION AND SPREAD OF AQUATIC INVASIVE SPECIES

Aquatic invasive species cost Great Lakes communities and businesses millions of dollars each year.

Aquatic Invasive Species (AIS) have an impact on nearly every beneficial aspect of the Great Lakes. Public and private stakeholders recognize that effective AIS prevention and control is needed to protect coastal industries, water quality, ecosystem services, and human health. Federal, state and provincial agencies are making meaningful binational commitments and substantial investments to protect our Great Lakes from harmful AIS. Advised by agency representatives and other partners, Blue Accounting is tracking regional progress on efforts both to prevent further AIS introduction and spread as well as minimize the harmful impacts of already-established AIS.

188

The number of non-native species established in the Great Lakes

SHARE

31%

The estimated percentage of non-native species in the Great Lakes believed to be invasive and causing negative impacts

3

The number of new established non-native species documented in the Great Lakes since 2007

Aquatic invasive species cost Great Lakes communities and businesses millions of dollars each year.

Numerous local, state, provincial and federal plans and policies, including the Great Lakes Water Quality Agreement and Great Lakes Restoration Initiative Action Plan, identify goals and strategies for tackling the problem of aquatic invasive species (AIS). These shared regional goals are to:

Prevent the introduction of new aquatic invasive species

Preventing the introduction of new non-native species is the most cost-effective approach to minimize future threats from AIS. Prevention activities aim to reduce the uptake, movement and introduction of non-native species, and may be applied to any of the pathways that introduce AIS into the Great Lakes basin: trade in live organisms, recreational activities, shipping, and canals and waterways

Detect and respond to new introductions of aquatic invasive species

Early detection (i.e., monitoring) and response programs are intended to detect new non-native species early while populations are still localized. Early detection increases the likelihood that work to contain, control, and ideally eradicate new populations will be effective. A comprehensive basin-wide approach is needed to coordinate and guide detection and response efforts.

Control established aquatic invasive species to reduce negative impacts

More than 185 non-native species are established in the Great Lakes, some of which are considered invasive and are causing ecological and/or economic damage. While significant progress is being made to prevent the introduction and establishment of new AIS, damaging populations of AIS that already exist should be managed to reduce their negative impacts.

LIST VIEW GRID VIEW

Prevent: Trade in Live Organisms Pathway

Updated on: December 11 2019

Policies to restrict the trade of high-risk species, best practices for industries involved in the sale and distribution of live organisms, and outreach to consumers are all used to reduce the risk of spreading AIS.

Prevent: Recreational Boating Pathway

Updated on: December 11 2019

Policies and best management practices to clean boats, along with related gear and equipment, are used to reduce the risk that boats move AIS between bodies of water.

Prevent: Shipping Pathway

Updated on: December 11 2019

Ballast water treatment systems, related technologies and best management practices are developed and used on ships – voluntarily and as required by law – to reduce the risk of transporting and releasing AIS.

Prevent: Canals and Waterways Pathway

Updated on: December 11 2019

Different types of barrier methods and technologies are developed and used to modify or close canals and waterways to reduce the risk of AIS moving between watersheds.

PREVENT: TRADE IN LIVE ORGANISMS PATHWAY

Policies to restrict the trade of high-risk species, best practices for industries involved in the sale and distribution of live organisms, and outreach to consumers are all used to reduce the risk of spreading AIS.

- Regulatory policies restrict the sale, possession and transport of harmful invasive species.
- Consistent policies across state, provincial and federal agencies increase protection for the entire Great Lakes Basin and create a level playing field for industry and consumers.
- Outreach to consumers and industry promotes voluntary risk reduction activities that strengthen overall prevention efforts.

Historically, the importation and sale of aquatic species is the second largest invasion pathway for new species into the Great Lakes, introducing more non-native species than any pathway other than shipping. Effective prevention for this pathway requires a good understanding of what species are being transported and sold, and how and why potential invasive species are being released into the environment. This includes working with the many public and private entities involved with the aquarium, water garden, aquaculture, bait, and live food industries to identify and remove harmful species and encourage the use of low-risk or native alternatives. Education and outreach can also encourage industry stakeholders and consumers to adopt practices that ensure that plants and animals are not released into the wild. Best practices are promoted through outreach campaigns such as Habitattitude™, RIPPLE, and Be a Hero Release Zero™.

Education and voluntary best practices are supplemented with consistent policies at the U.S. and Canadian state, provincial, and federal level. These policies may regulate the import, sale, transportation, possession, and release of invasive species. Consistent policies create a level playing field for industry and consumers and help proactively ensure that harmful species used as bait, in water gardens, in aquariums, or for any other purpose will not be accidentally or deliberately released into the Great Lakes Basin.

PROGRESS: TRADE IN LIVE ORGANISMS

In 2013, the Great Lakes and St. Lawrence Governors and Premiers identified a list of sixteen "least wanted" aquatic invasive species that are considered a grave threat to the region's economy and ecology. Five additional species were added to the list in 2018 (denoted by a * in the below table). The governors and premiers called for specific steps to manage these least wanted AIS, including taking executive action within each state or province to prohibit or restrict the transfer of these high-risk species. They also called for regional collaboration to harmonize related state and provincial policies. The least wanted species are:

Least Wanted Species

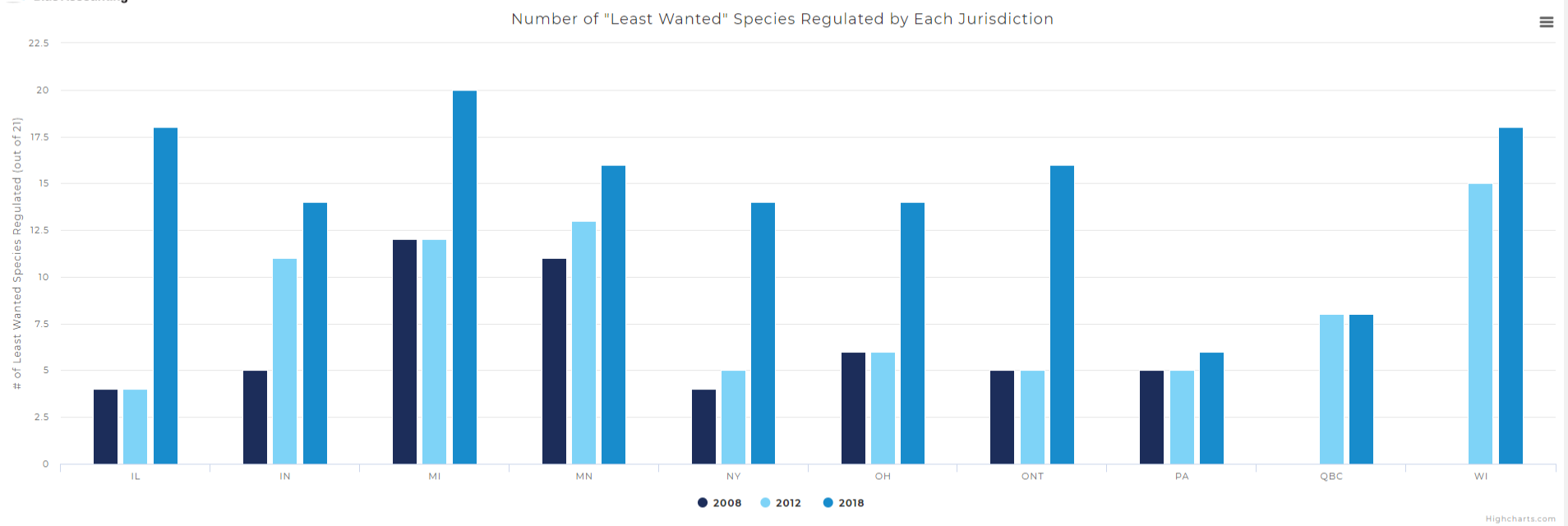
Fish	Aquatic Invertebrates	Plants
Silver carp	Yabby	Hydrilla
Bighead carp	Killer shrimp	Brazilian elodea
Grass carp	Golden mussel	Parrot feather
Black carp	New Zealand mudsnail*	Water chestnut
Northern snakehead	Marmorkreb*	European frog-bit*
Zander		Yellow floating heart*
Wels catfish		Water soldier
Stone moroko		
Tench*		

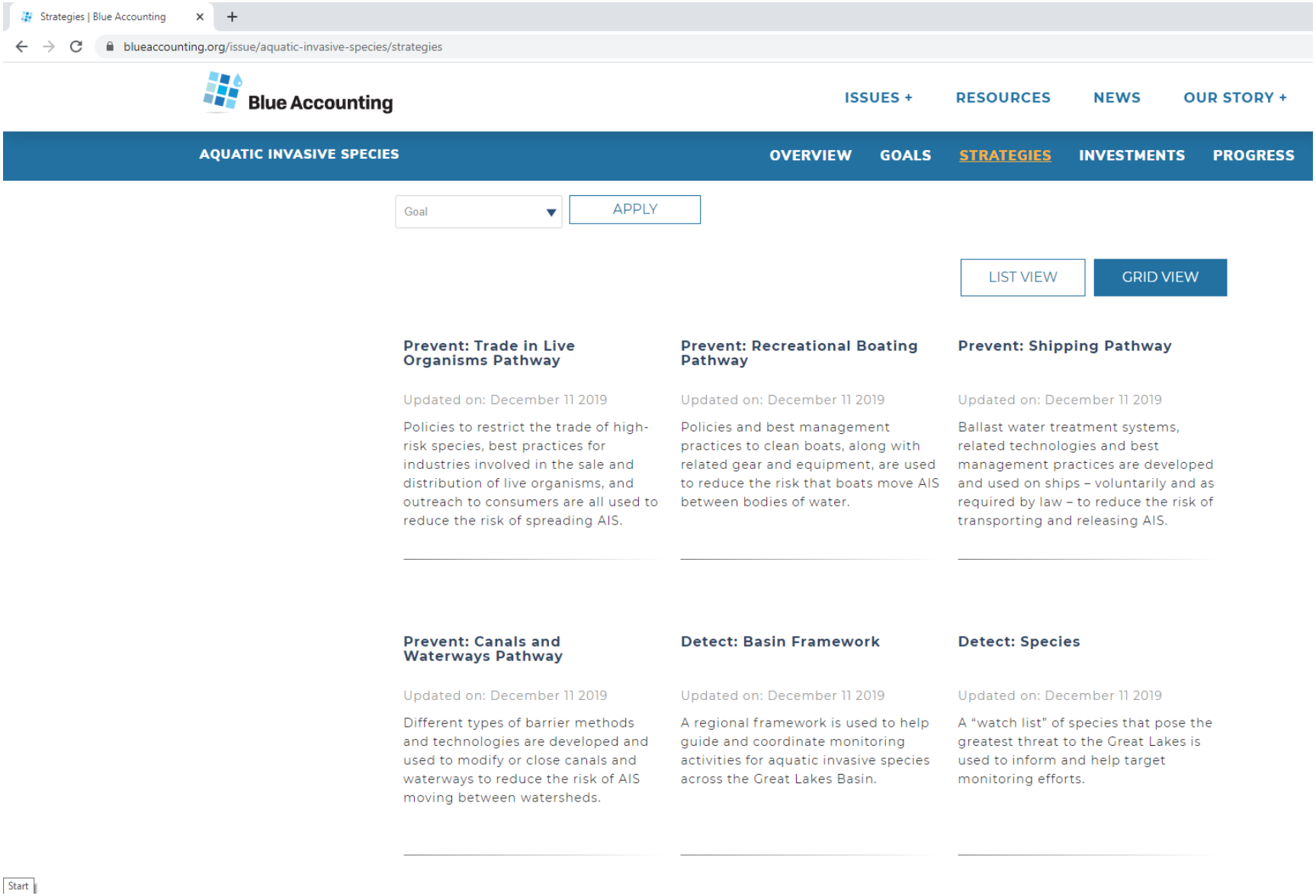
Since the announcement of the least wanted list in 2013, many jurisdictions have made substantial progress to regulate the sale, import, and possession of these species. The figures below reflect the jurisdictions (out of 10; 8 states and 2 provinces) that expressly prohibit each of the "least wanted" species. Some states may regulate species through a blanket restriction, such as prohibiting the sale of all non-native crayfish. The state of Illinois notably utilizes a "white list" approach where a blanket restriction applies to all species except those expressly allowed for sale in the state. The below figures are not intended to capture the status of species under those blanket restrictions and only show species that are specifically named as regulated in a state or province.

Prevent: Trade in Live Organisms

blueaccounting.org/progress/prevent-trade-live-organisms-pathway

Blue Accounting




Strategies | Blue Accounting
blueaccounting.org/issue/aquatic-invasive-species/strategies
Blue Accounting
ISSUES +
RESOURCES
NEWS
OUR STORY +
AQUATIC INVASIVE SPECIES
OVERVIEW
GOALS
STRATEGIES
INVESTMENTS
PROGRESS
Goal
APPLY
LIST VIEW
GRID VIEW
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Updated on: December 11 2019
Policies to restrict the trade of high-risk species, best practices for industries involved in the sale and distribution of live organisms, and outreach to consumers are all used to reduce the risk of spreading AIS.
Prevent: Recreational Boating Pathway
Updated on: December 11 2019
Policies and best management practices to clean boats, along with related gear and equipment, are used to reduce the risk that boats move AIS between bodies of water.
Prevent: Shipping Pathway
Updated on: December 11 2019
Ballast water treatment systems, related technologies and best management practices are developed and used on ships – voluntarily and as required by law – to reduce the risk of transporting and releasing AIS.
Prevent: Canals and Waterways Pathway
Updated on: December 11 2019
Different types of barrier methods and technologies are developed and used to modify or close canals and waterways to reduce the risk of AIS moving between watersheds.
Detect: Basin Framework
Updated on: December 11 2019
A regional framework is used to help guide and coordinate monitoring activities for aquatic invasive species across the Great Lakes Basin.
Detect: Species
Updated on: December 11 2019
A "watch list" of species that pose the greatest threat to the Great Lakes is used to inform and help target monitoring efforts.
Start

PREVENT: RECREATIONAL BOATING PATHWAY

Policies and best management practices to clean boats, along with related gear and equipment, are used to reduce the risk that boats move AIS between bodies of water.

- Inspection and decontamination programs provide information and tools for boaters to clean their boats and gear to remove unwanted organisms.
- Regulatory policies may be used to ensure boaters take specific actions to reduce invasive species risk.
- Outreach to boaters and recreational users promotes voluntary risk reduction activities that strengthen overall prevention efforts.

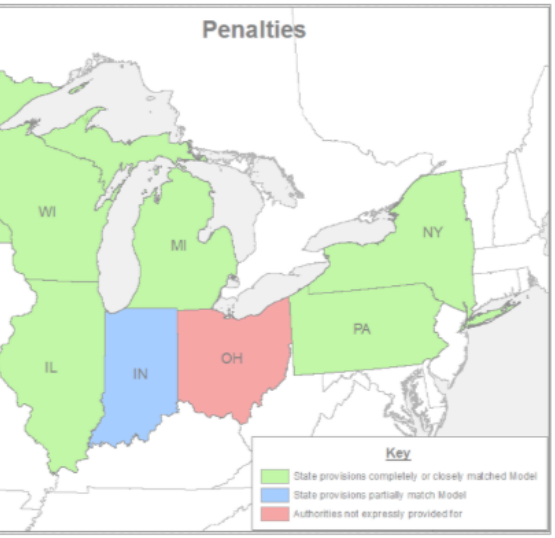
In the Great Lakes region, the recreational boating industry exceeds 4.3 million registered boats, presenting a significant challenge for managing this pathway. It is important to educate boaters and other recreational users on the damage that aquatic invasive species can cause and the actions that boaters can take to ensure their activities to do not contribute to further spread of AIS. Such outreach efforts focus on implementing national messaging campaigns, including boat ramp signage, public service announcements, and dissemination of campaign-branded materials. There are also federally adopted Voluntary Guidelines for Preventing the Spread of Aquatic Nuisance Species Associated with Recreational Activities covering equipment for six recreational activities: anglers, motor boaters, non-motorized boaters, scuba divers and snorkelers, seaplane pilots, and waterfowl hunters.

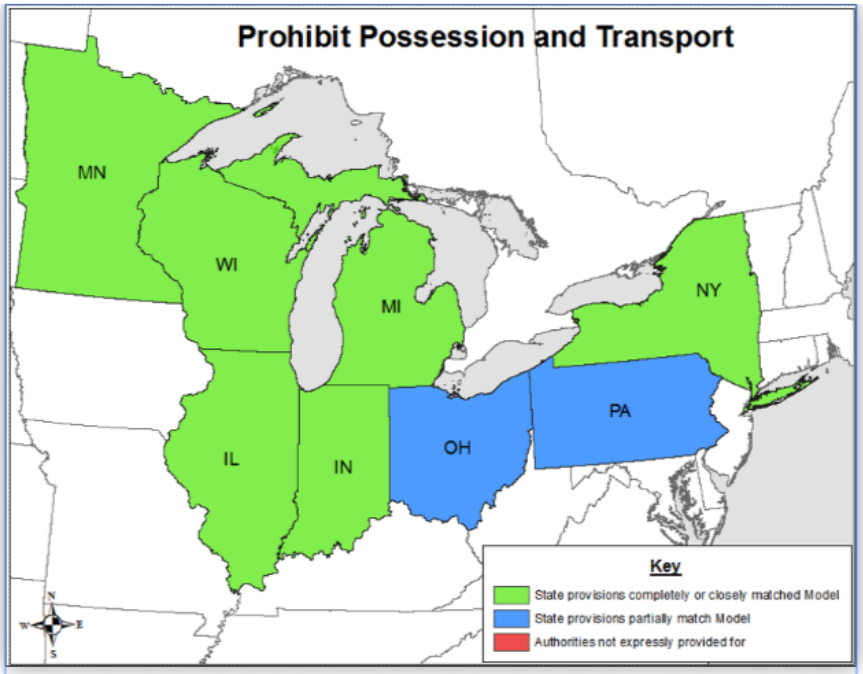
In addition to outreach and voluntary efforts, some agencies adopt regulatory-based inspection and decontamination policies for recreational watercraft. These regulatory programs may vary in the specific activities that are regulated (e.g., possession and transport of plants and animals; draining of water from bilges and live wells), agency authorities (e.g., mandatory inspection), and associated penalties. The National Sea Grant Law Center and the Association of Fish and Wildlife Agencies have developed guidance on model legislative provisions and model regulation for watercraft inspection and decontamination to aid jurisdictions in developing and passing consistent boating policies.

PROGRESS: PREVENTION: RECREATIONAL BOATING

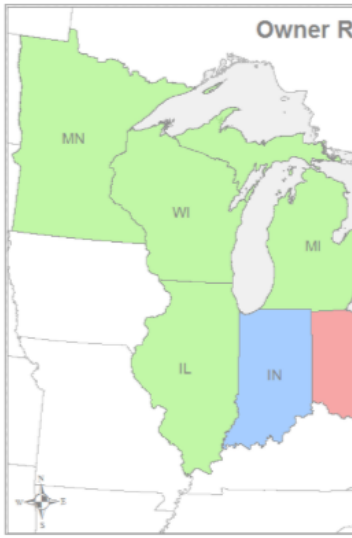
Blue Accounting is tracking progress of state policies toward prevent the movement of AIS through recreational boating. The maps below illustrate different components of watercraft inspection and decontamination regulations adopted by Great Lakes states as of 2017, based on the National Sea Grant Law Center (NSGLC) and the Association of Fish and Wildlife Agencies model provisions. A description of each provision is provided below each status map below.

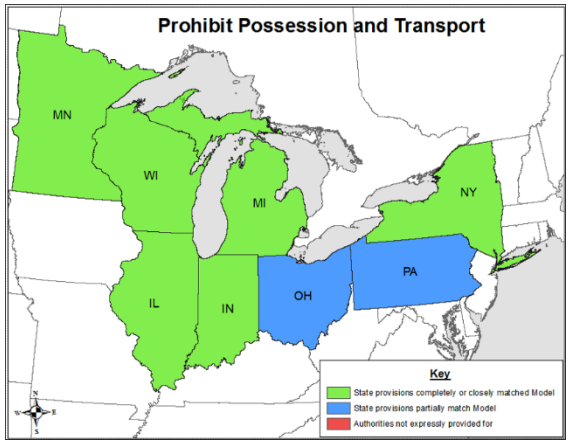
In addition, many states have developed extensive boater education and outreach programs. These can be coupled with inspection and/or law enforcement programs that have the potential to provide measures of boater attitudes, boat cleaning behavior and compliance.





Prohibits possession and transport aquatic invasive species. Except as authorized, a person may not possess, import, ship, or transport within this state, or cause to be imported, shipped, or transported within this state, an aquatic invasive species.




Prohibit Possession and Transport
MN
WI
MI
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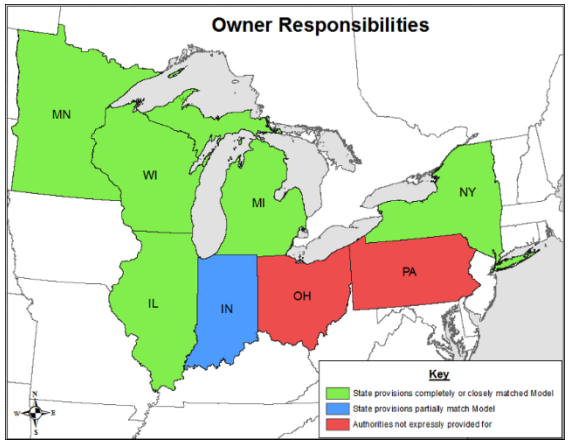
Key
State provisions completely or closely matched Model
State provisions partially match Model
Authorities not expressly provided for


Owner Responsibilities
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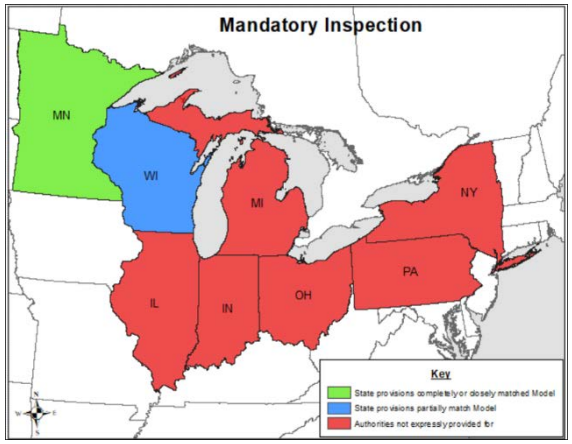
State provisions partially match Model
Authorities not expressly provided for


Mandatory Inspection
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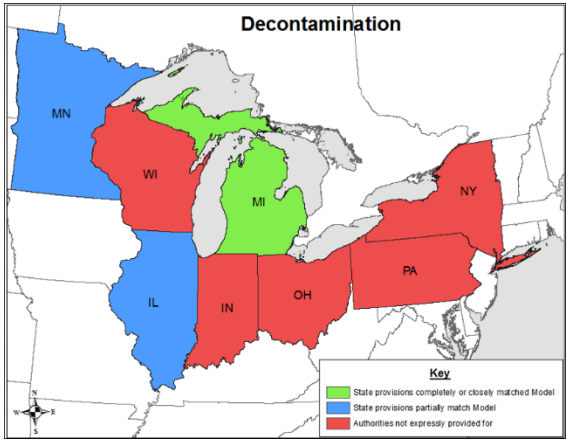
State provisions completely or closely matched Model
State provisions partially match Model
Authorities not expressly provided for


Decontamination
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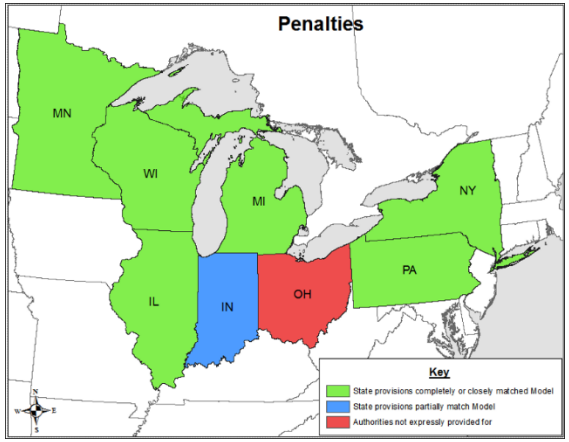
PA
Key
State provisions completely or closely matched Model
State provisions partially match Model
Authorities not expressly provided for


Penalties
MN
WI
MI
NY
IL
IN
OH
PA
Key
State provisions completely or closely matched Model
State provisions partially match Model
Authorities not expressly provided for

Aquatic invasive species cost Great Lakes communities and businesses millions of dollars each year.

Numerous local, state, provincial and federal plans and policies, including the Great Lakes Water Quality Agreement and Great Lakes Restoration Initiative Action Plan, identify goals and strategies for tackling the problem of aquatic invasive species (AIS). These shared regional goals are to:

Prevent the introduction of new aquatic invasive species

Preventing the introduction of new non-native species is the most cost-effective approach to minimize future threats from AIS. Prevention activities aim to reduce the uptake, movement and introduction of non-native species, and may be applied to any of the pathways that introduce AIS into the Great Lakes basin: trade in live organisms, recreational activities, shipping, and canals and waterways

Detect and respond to new introductions of aquatic invasive species

Early detection (i.e., monitoring) and response programs are intended to detect new non-native species early while populations are still localized. Early detection increases the likelihood that work to contain, control, and ideally eradicate new populations will be effective. A comprehensive basin-wide approach is needed to coordinate and guide detection and response efforts.

Control established aquatic invasive species to reduce negative impacts

More than 185 non-native species are established in the Great Lakes, some of which are considered invasive and are causing ecological and/or economic damage. While significant progress is being made to prevent the introduction and establishment of new AIS, damaging populations of AIS that already exist should be managed to reduce their negative impacts.

LIST VIEW GRID VIEW

Detect: Basin Framework

Updated on: December 11 2019

A regional framework is used to help guide and coordinate monitoring activities for aquatic invasive species across the Great Lakes Basin.

Detect: Species

Updated on: December 11 2019

A "watch list" of species that pose the greatest threat to the Great Lakes is used to inform and help target monitoring efforts.

Detect: Sites

Updated on: December 11 2019

Sites across the Great Lakes Basin are assessed to identify and prioritize the most likely points of introduction for new AIS.

Detect: Methods

Updated on: December 11 2019

Effective monitoring tools and survey designs are used to detect new species soon after they are introduced for the least amount of effort and cost.

Respond

Updated on: December 11 2019

Response plans and technologies are used to guide actions when a new high-risk species is detected and increase the likelihood the species will be eradicated or contained.

DETECT: BASIN FRAMEWORK

A regional framework is used to help guide and coordinate monitoring activities for aquatic invasive species across the Great Lakes Basin.

- Early detection efforts increase the likelihood that newly introduced species will be discovered if prevention efforts fail and provides an opportunity to respond to new introductions
- A regional early detection strategy identifies priorities for monitoring and facilitates coordinated decision-making and implementation among multiple agencies

Early detection for newly introduced species is an important aquatic invasive species management strategy. The results of early detection monitoring efforts can indicate whether prevention strategies are working. If a new species is detected, agencies may then be able to act to prevent additional introductions, and/or stop population growth and expansion of that species. Multiple agencies and other partners are conducting early detection monitoring efforts in the Great Lakes region. A comprehensive early detection strategy for the Great Lakes Basin is a specific commitment in Annex 6 of the binational Great Lakes Water Quality Agreement.

The *Aquatic Invasive Species Interstate Surveillance Framework for the U.S. Waters of the Great Lakes* (the Framework)[1] establishes a comprehensive, basin-wide strategy for detecting new introductions of AIS. The Framework is intended to guide and help coordinate monitoring activities for AIS threats within the Great Lakes. Part 1 of the Framework provides strategic guidance for decision makers on when, where and how monitoring efforts could be undertaken. Specifically, the Framework:

- Determines a species watch list
- Identifies priority locations for monitoring
- Provides guidance on monitoring protocols

Part 2 of the Framework provides guidance on how state and federal partners could coordinate decision making for implementing and maintaining a Great Lakes early detection program. A complementary strategy for the Canadian waters of the Great Lakes is currently under development.

DETECT

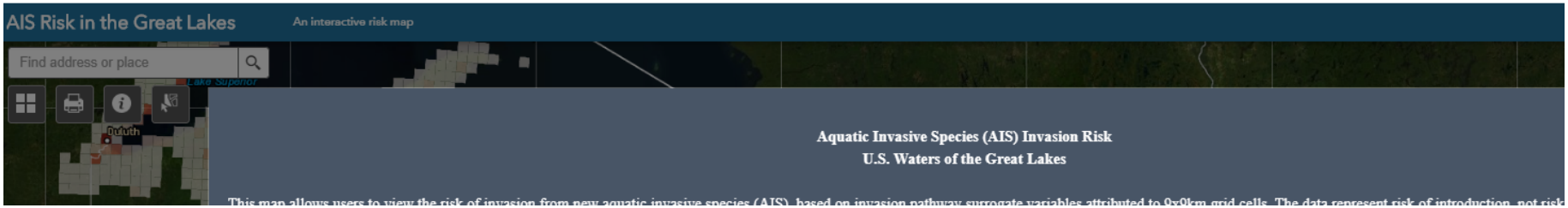
Tracking results of early detection efforts targeted toward aquatic plant species at priority sites across the Great Lakes Basin.

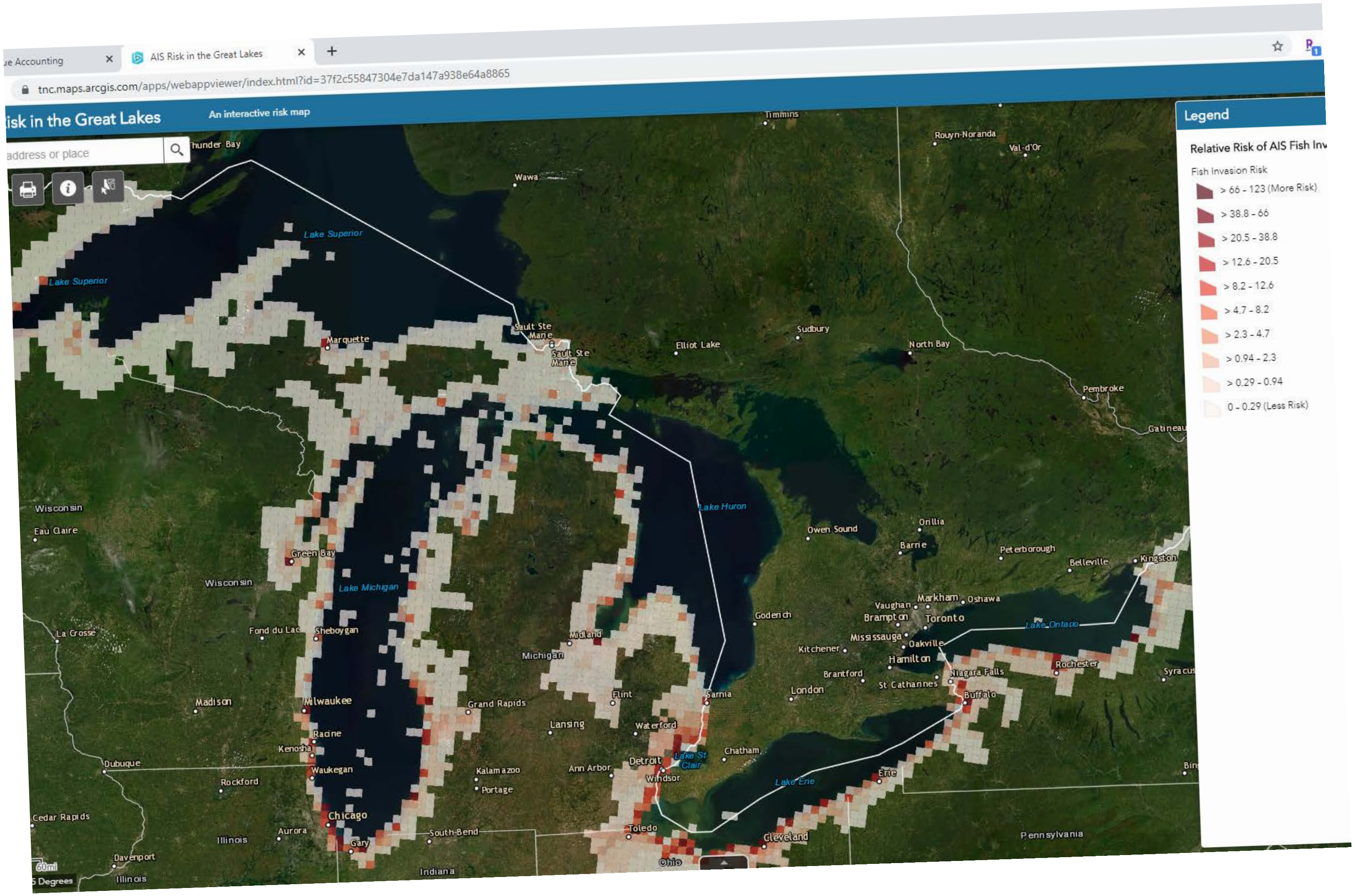
Early detection efforts at Great Lakes sites with a high risk of new introductions continues to expand across the Basin. Dedicated monitoring efforts for fish and invertebrates are being led by the U.S. Fish and Wildlife Service (USFWS), with well-established programs in each of the Great Lakes. Access to reports with results of recent USFWS detection efforts can be found here:

- https://www.fws.gov/northeast/lowergreatlakes/Programs/AIS/Projects/EarlyDetection.html
- https://www.fws.gov/midwest/alpena/programs.html
- https://www.fws.gov/midwest/GreenBayFisheries/pubs-2017.html

The Nature Conservancy, with the support of and on behalf of a Great Lakes interstate team, is conducting early detection efforts for invasive aquatic plants at high-priority sites across the Great Lakes Basin. These efforts are helping to implement the *Aquatic Invasive Species Interstate Surveillance Framework for the U.S. Waters of the Great Lakes* (the Framework). Locations of these monitoring efforts are provided in the mapping tool below. Methods are presented below the map.

VIEW FULL SCREEN MAP





ue Accounting
AIS Risk in the Great Lakes
tnc.maps.arcgis.com/apps/webappviewer/index.html?id=37f2c55847304e7da147a938e64a8865
isk in the Great Lakes
An interactive risk map
address or place
Legend
Relative Risk of AIS Fish Inv
Fish Invasion Risk
> 66 - 123 (More Risk)
> 38.8 - 66
> 20.5 - 38.8
> 12.6 - 20.5
> 8.2 - 12.6
> 4.7 - 8.2
> 2.3 - 4.7
> 0.94 - 2.3
> 0.29 - 0.94
0 - 0.29 (Less Risk)
Lake Superior
Lake Michigan
Lake Huron
Lake St Clair
Lake Erie
Lake Ontario
Thunder Bay
Wawa
Timmins
Rouyn-Noranda
Val-d'Or
Marquette
Sault Ste Marie
Elliot Lake
Sudbury
North Bay
Pembroke
Gatineau
Wisconsin
Eau Claire
Green Bay
La Crosse
Fond du Lac
Sheboygan
Midland
Michigan
Owen Sound
Orillia
Barrie
Peterborough
Belleville
Kingston
Goderich
Vaughan
Markham
Oshawa
Brampton
Toronto
Mississauga
Oakville
Kitchener
Hamilton
Rochester
Syracuse
Brantford
St Catharines
Niagara Falls
Buffalo
London
Sarnia
Flint
Madison
Milwaukee
Grand Rapids
Lansing
Waterford
Racine
Kenosha
Waukegan
Dubuque
Rockford
Kalamazoo
Portage
Ann Arbor
Detroit
Windsor
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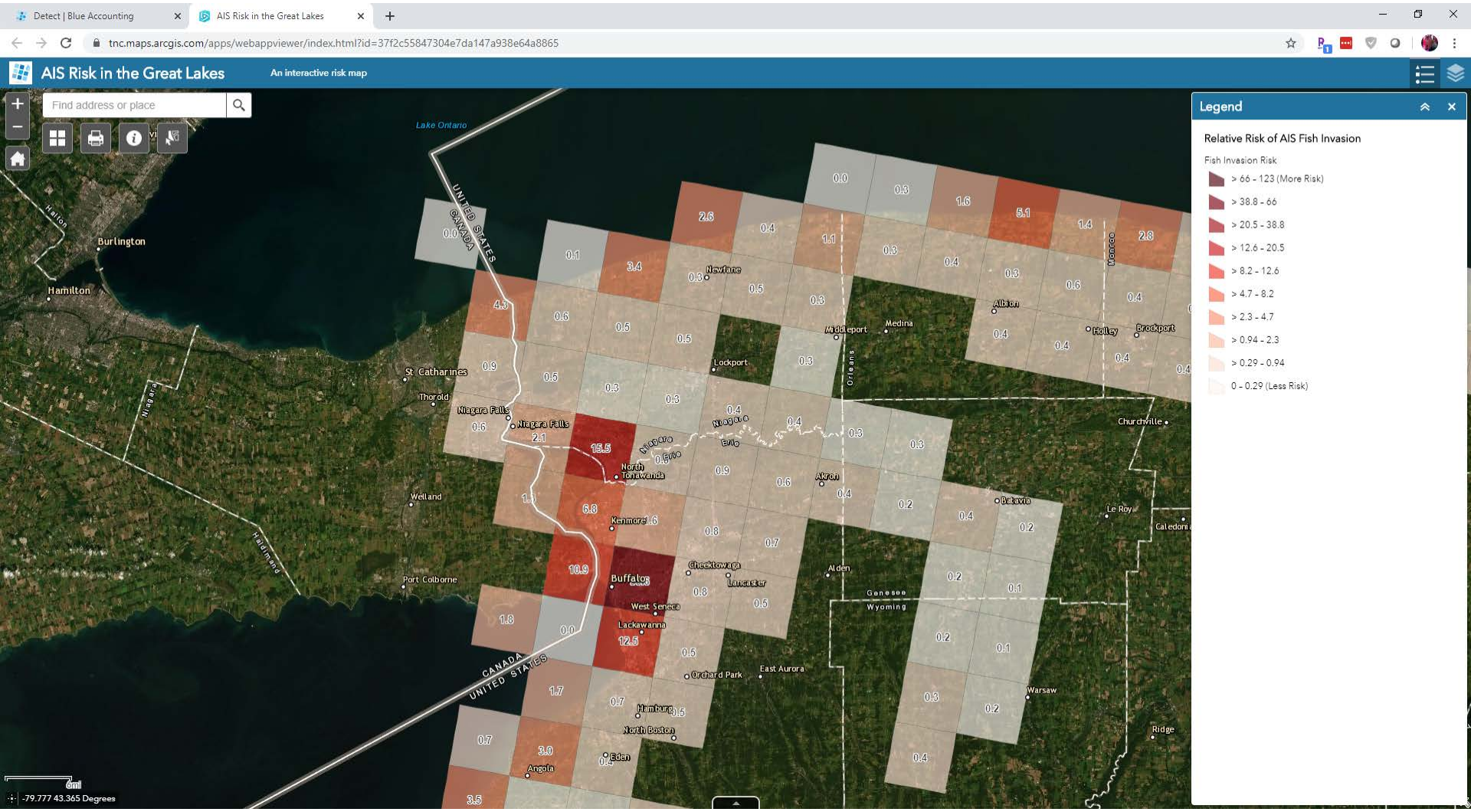
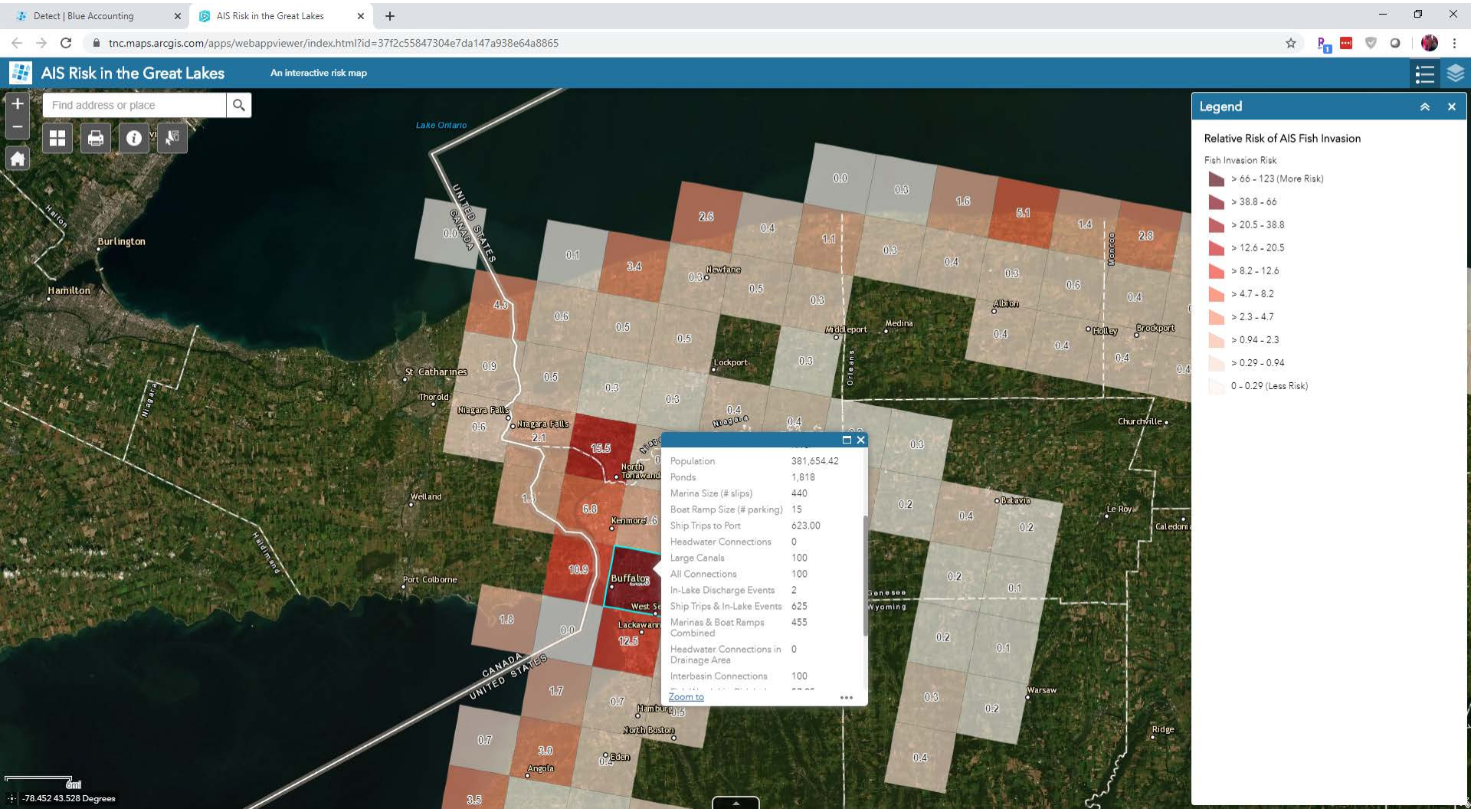

Detect | Blue Accounting
AIS Risk in the Great Lakes
tnc.maps.arcgis.com/apps/webappviewer/index.html?id=37f2c55847304e7da147a938e64a8865
AIS Risk in the Great Lakes
An interactive risk map
Find address or place
Lake Ontario
UNITED STATES
CANADA
Halton
Burlington
Hamilton
St. Catharines
Thorold
Niagara
Niagara Falls
Welland
Haldimand
Port Colborne
Newfane
Lockport
Middleport
Medina
Albion
Holley
Brockport
Monroe
Orleans
Churchville
North Tonawanda
Akron
Batavia
Le Roy
Caledonia
Kenmore
Buffalo
Cheektowaga
Lancaster
Alden
West Seneca
Lackawanna
Genesee
Wyoming
Orchard Park
East Aurora
Warsaw
Hamburg
North Boston
Eden
Angola
Ridge
Legend
Relative Risk of AIS Fish Invasion
Fish Invasion Risk
> 66 - 123 (More Risk)
> 38.8 - 66
> 20.5 - 38.8
> 12.6 - 20.5
> 8.2 - 12.6
> 4.7 - 8.2
> 2.3 - 4.7
> 0.94 - 2.3
> 0.29 - 0.94
0 - 0.29 (Less Risk)
-79.777 43.365 Degrees


Detect | Blue Accounting
AIS Risk in the Great Lakes
tnc.maps.arcgis.com/apps/webappviewer/index.html?id=37f2c55847304e7da147a938e64a8865
AIS Risk in the Great Lakes
An interactive risk map
Find address or place
Lake Ontario
UNITED STATES
CANADA
Burlington
Hamilton
St. Catharines
Thorold
Niagara Falls
Welland
Port Colborne
Buffalo
Lockport
Newfane
Medina
Albion
Holley
Brockport
Churchville
Batavia
Le Roy
Warsaw
Ridge
North Boston
Eden
Angola
Hamburg
Lackawanna
Kenmore
Legend
Relative Risk of AIS Fish Invasion
Fish Invasion Risk
> 66 - 123 (More Risk)
> 38.8 - 66
> 20.5 - 38.8
> 12.6 - 20.5
> 8.2 - 12.6
> 4.7 - 8.2
> 2.3 - 4.7
> 0.94 - 2.3
> 0.29 - 0.94
0 - 0.29 (Less Risk)
Population 381,654.42
Ponds 1,818
Marina Size (# slips) 440
Boat Ramp Size (# parking) 15
Ship Trips to Port 623.00
Headwater Connections 0
Large Canals 100
All Connections 100
In-Lake Discharge Events 2
Ship Trips & In-Lake Events 625
Marinas & Boat Ramps Combined 455
Headwater Connections in Drainage Area 0
Interbasin Connections 100
Zoom to
-78.452 43.528 Degrees

RESOURCES

Resources on aquatic invasive species prevention, detection, response and control efforts across the Great Lakes Basin are provided here as additional background to further inform strategic decision-making.

SEARCH FILTER BY

All Types | All Locations | All Topics | APPLY

DISPLAYING **1** - **9** OF **64** RESOURCES

NEWEST

ARTICLE

ONE-PAGER: SMART SURVEILLANCE TO CURB INVASIVE SPECIES IN THE...

Updated on: April 14 2020

A one-pager describing Blue Accounting's aquatic invasive species surveillance tool.

REPORT

HARMONIZING GREAT LAKES REGULATED SPECIES: PROGRESS TOWARDS...

Updated on: March 16 2020

This report provides an assessment of progress toward harmonization of prohibited AIS in Great Lakes states and provinces over the last decade, including a

FUNDING OPPORTUN...PLAN

GREAT LAKES RESTORATION INITIATIVE ACTION PLAN III

Updated on: March 16 2020

U.S. Environmental Protection Agency (EPA) and its federal partners are developing Action Plan III, which will outline priorities and goals for the Great

Roadmap for Success

1. Independent Analysis

Commissioned to determine the sentiment about:

- Is Blue Accounting needed
- What is it
- Where should it reside
- Who should use it

2. Analytics Review

Took a critical look at key indicators of site adoption:

- Accessibility and user experience
- Content relevance and engagement with the target audience
- Are they coming back
- How are they finding us, referral links

3. Clout Assessment

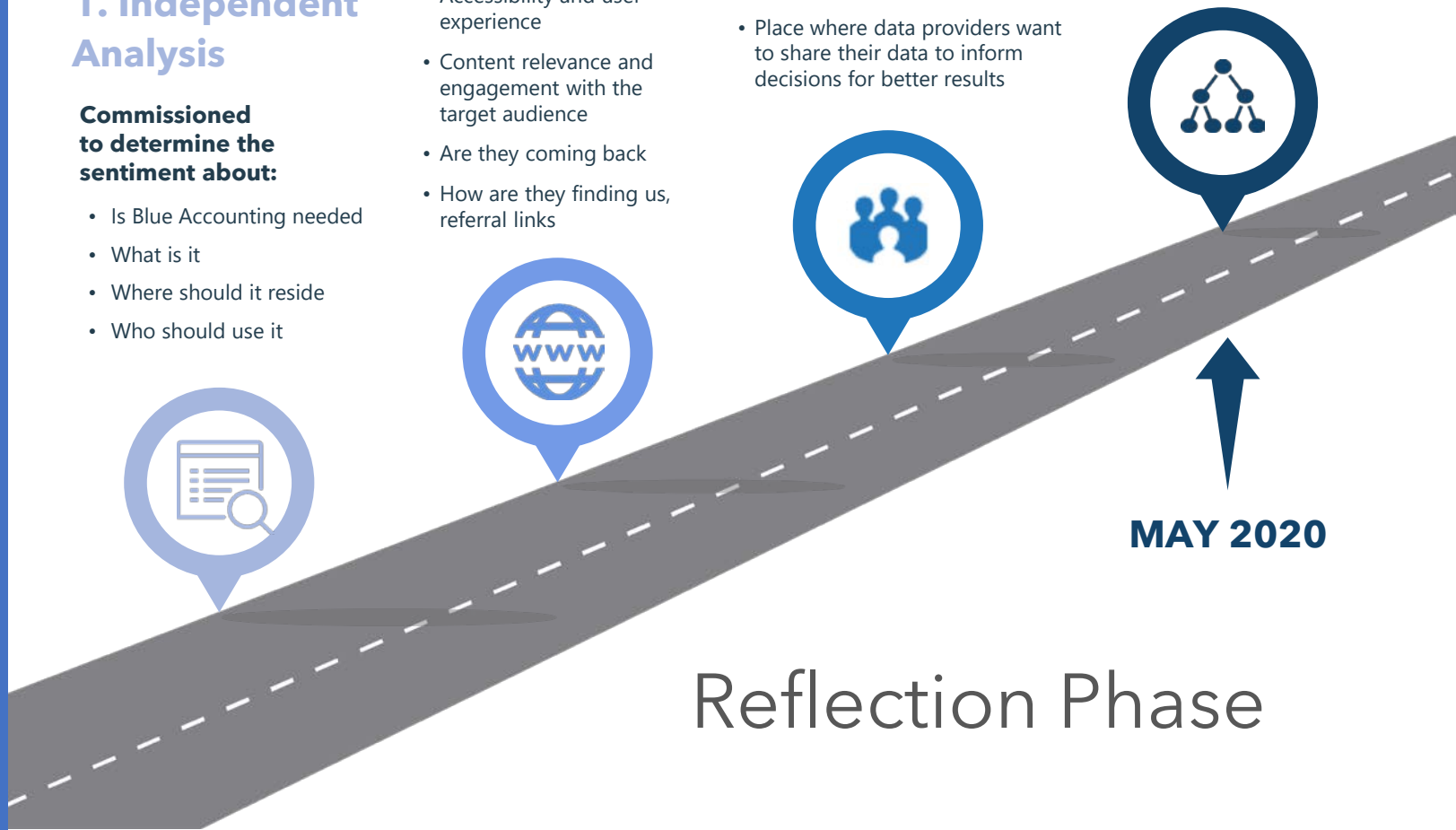
How do others see us:

- Written into policy programs, white papers, social media and the news
- First source for data context to decision-makers, collaborators and the scientific community
- Place where data providers want to share their data to inform decisions for better results

4. Rapid Prototyping

Developing a Framework:

- Pre-work mapping content, identifying goals, visuals
- User journey maps
- Stakeholder interviews (elected officials, their staff, agency leaders) for user experience.



MAY 2020

Reflection Phase

Dashboards to Inform and Advise

What gets measured gets done . . .

The information you need, when you need it

Connect Data and Policy

Answer the question "Are Great Lakes Basin policies working?"

Compelling Visualizations

A *picture is worth a thousand words . . .*

Bringing visually powerful insights to share information and trends

Actionable Insights

Understanding the data is one thing, but identifying actions to improve outcomes is absolutely necessary

COMMON AGENDA

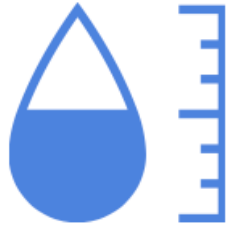
Identify common issues of concern that can benefit from collaboration between science and policy.

SHARED RESOURCES

Ability to share assets, data and scientific insights. Working across political and jurisdictional boundaries.

SHARED GOALS

Establish shared goals that affect each jurisdiction . . . and the Great Lakes Basin as a whole.



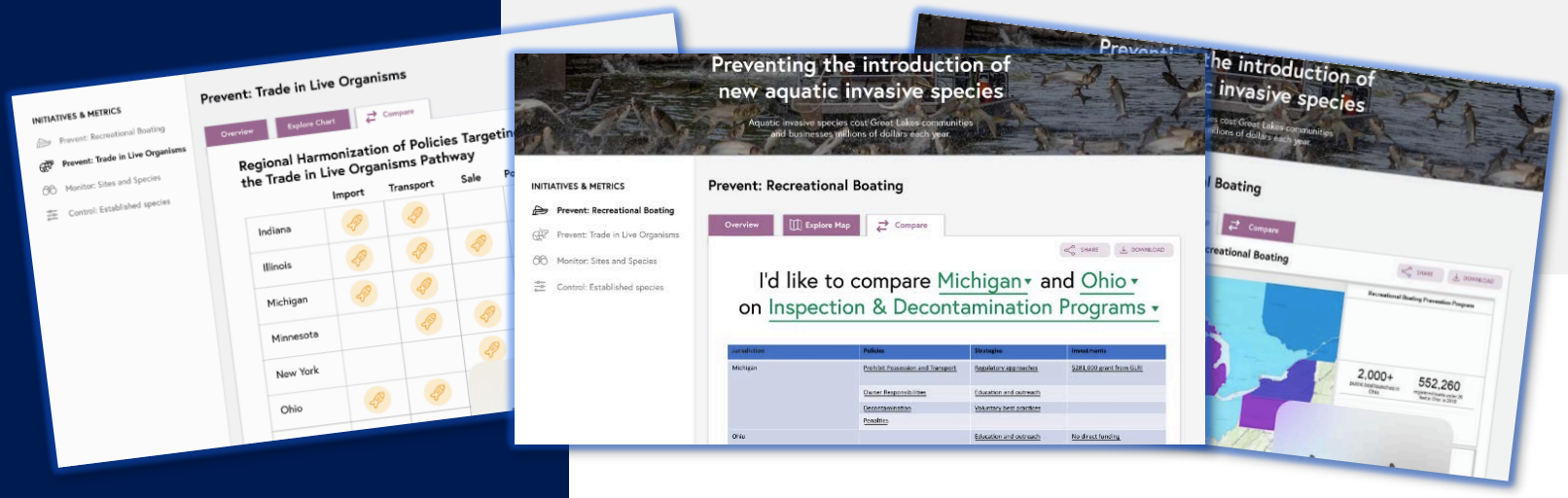
MEASUREABLE

Identify specific metrics to report progress without influence or consternation on data from trusted sources.

Partnership to Progress

Progress Dashboard Prototype

- Personalized context, by province, state or lake
- View issues across a province, state, lake or issue
- Comparative Filtering of States
- Drill down into details by program
- Resource library of successful strategies
- Trusted sources of data with context
- Are investments working and who are the investors



Questions and Discussion

Thank you to our sponsor

Fred A. and Barbara M.
Erb Family Foundation