



Invasive Mussel Collaborative

Connecting People, Science and Management

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Great Lakes Commission

International Conference on Aquatic Invasive Species

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1986



● Zebra / Quagga Mussel Location

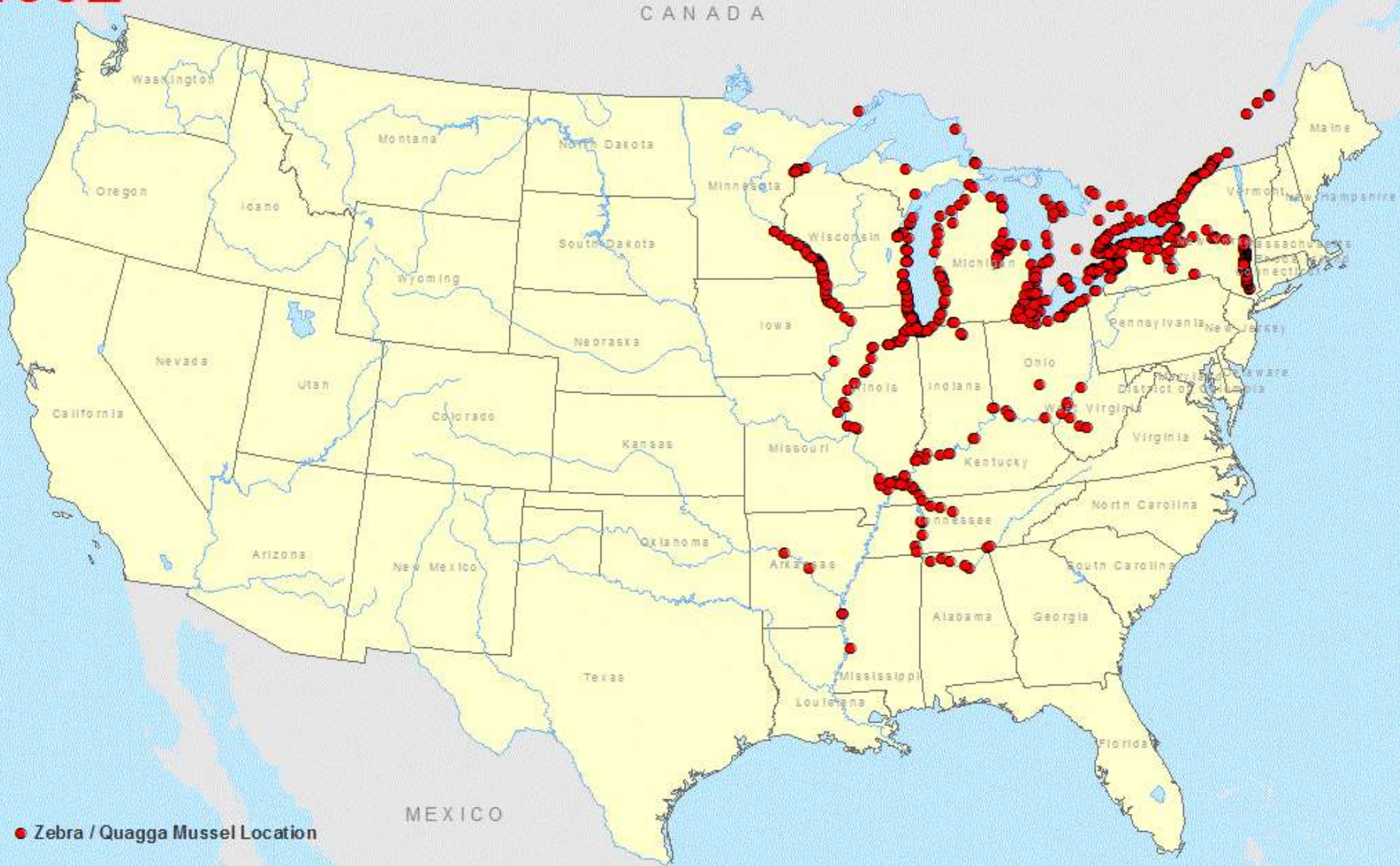
Source: U.S. Geological Survey, Nonindigenous Aquatic Species Database, April 2011

1989



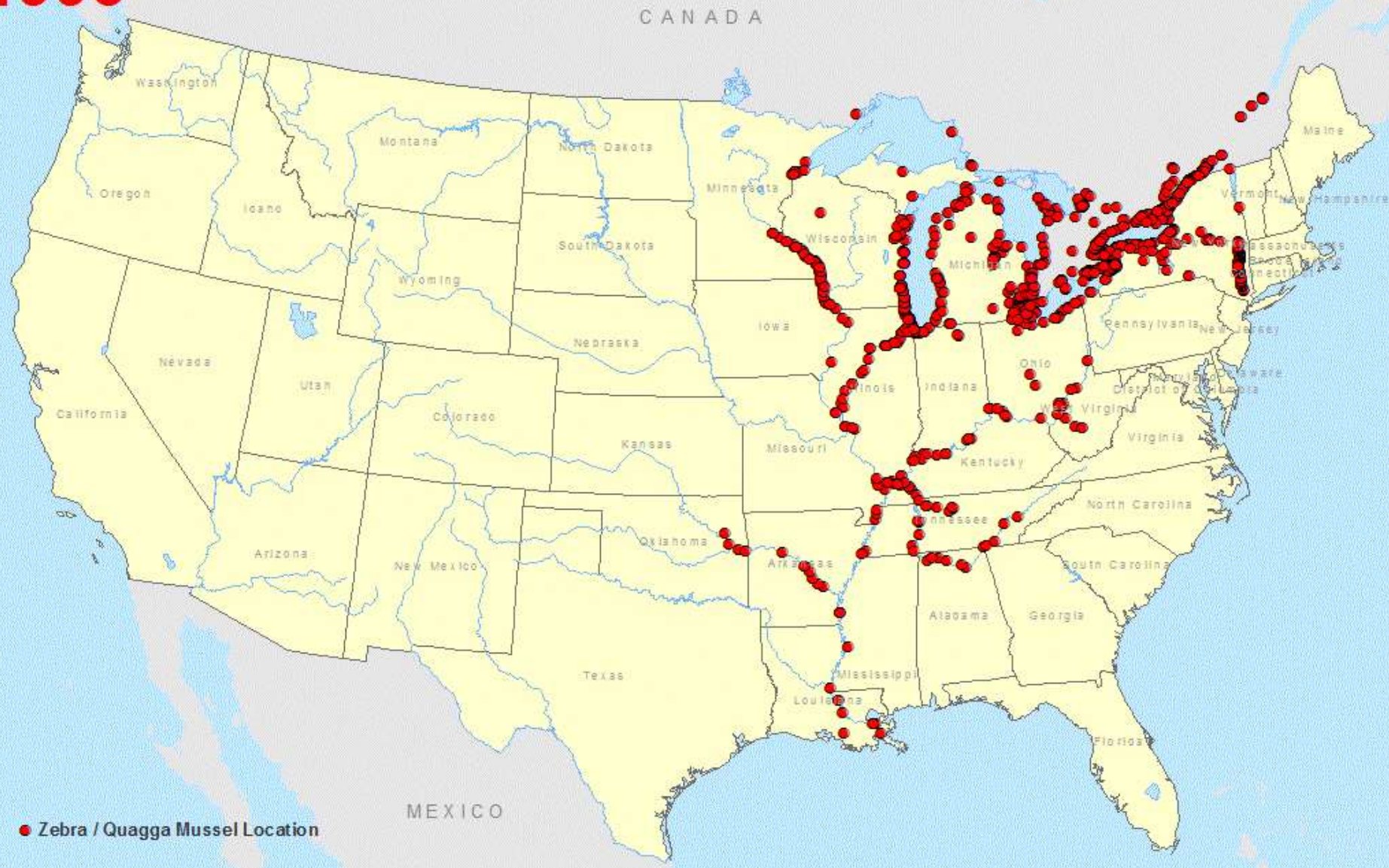
Source: U.S. Geological Survey, Nonindigenous Aquatic Species Database, April 2011

1992



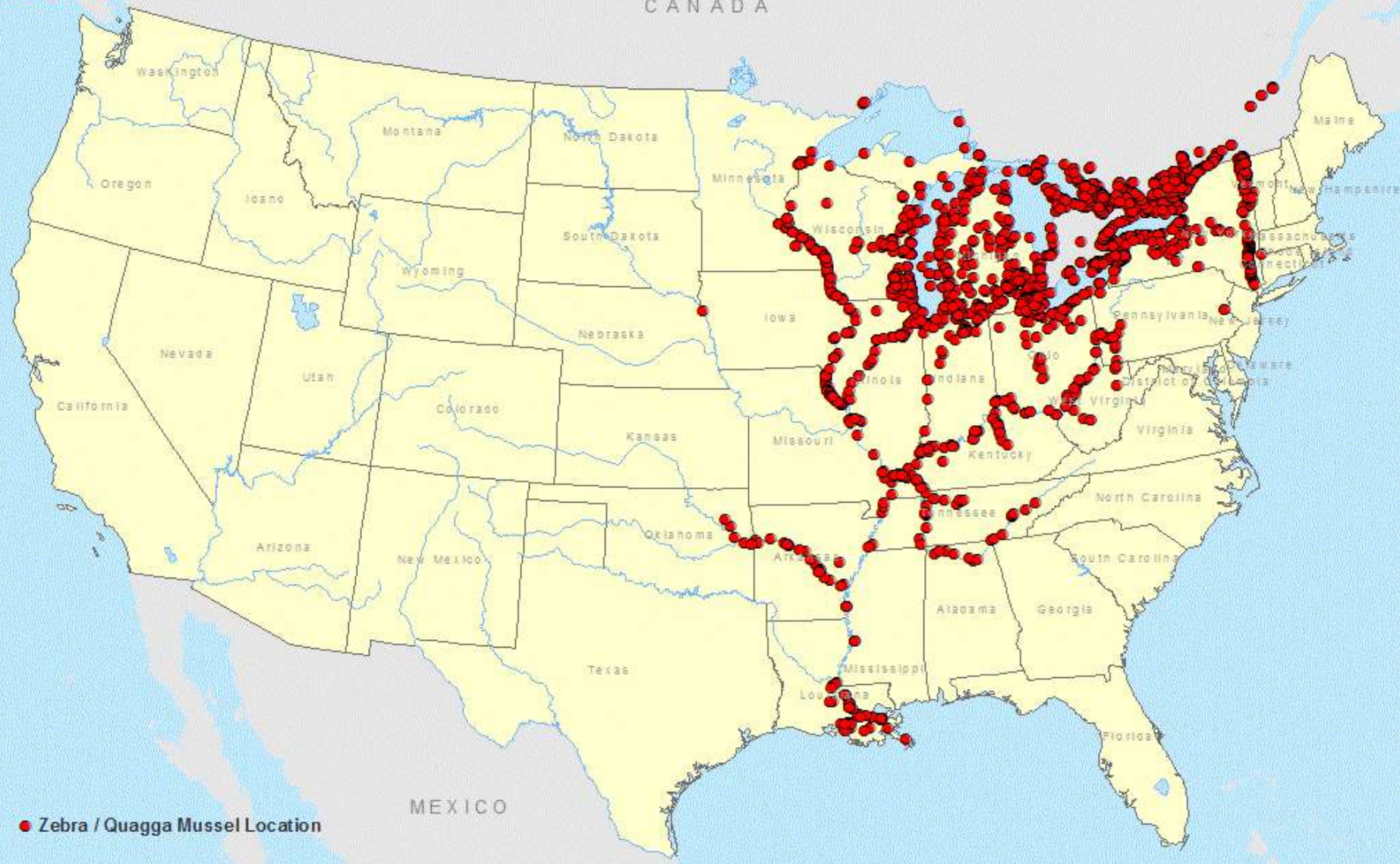
Source: U.S. Geological Survey, Nonindigenous Aquatic Species Database, April 2011

1993



Source: U.S. Geological Survey, Nonindigenous Aquatic Species Database, April 2011

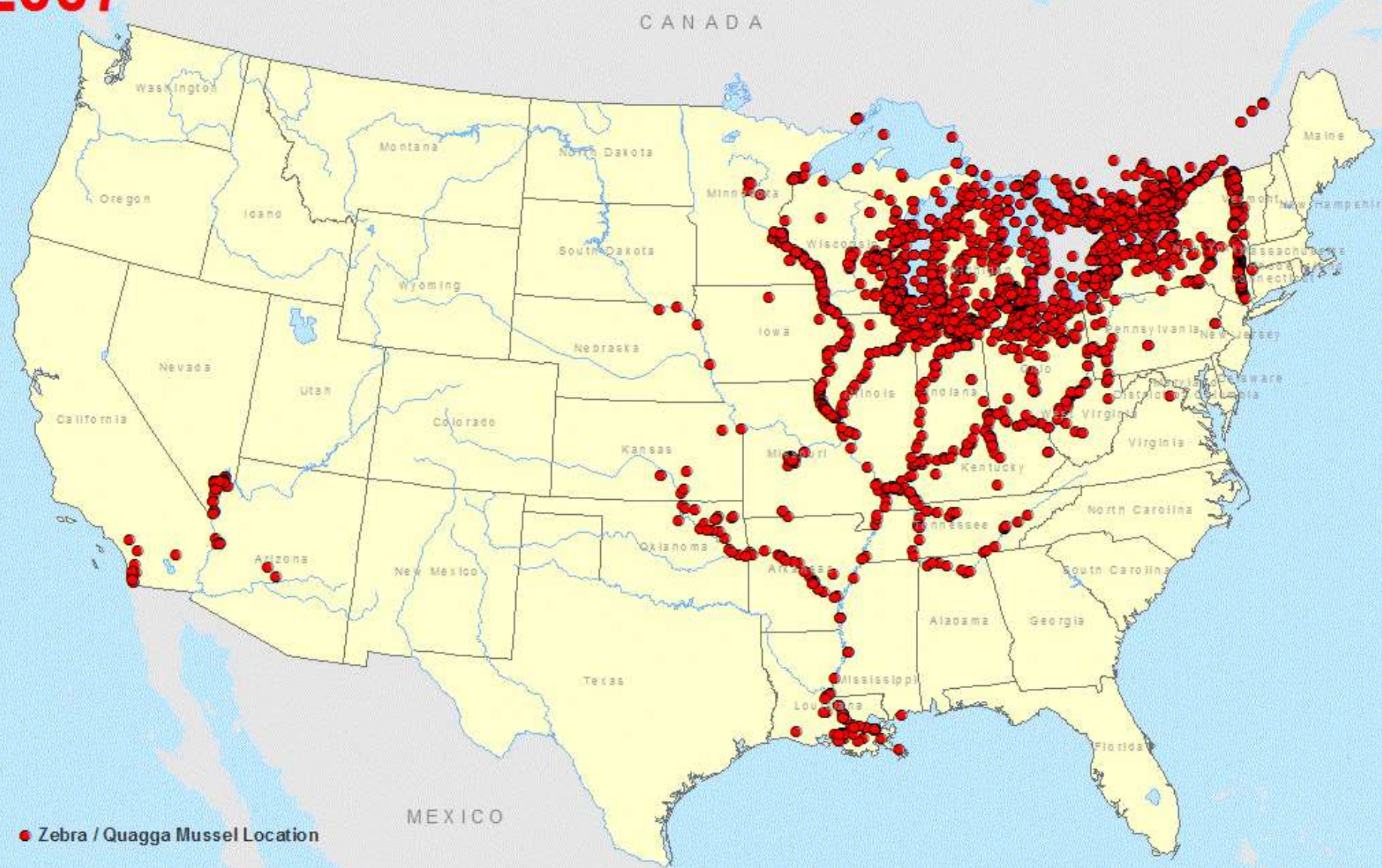
2000



● Zebra / Quagga Mussel Location

Source: U.S. Geological Survey, Nonindigenous Aquatic Species Database, April 2011

2007



● Zebra / Quagga Mussel Location

Source: U.S. Geological Survey, Nonindigenous Aquatic Species Database, April 2011

Zebra and Quagga Mussel Sightings Distribution

Dreissena polymorpha and *D. rostriformis bugensis*



- Zebra mussel occurrences
- Quagga mussel occurrences
- Both species occurrences
- Zebra/Quagga mussels eradicated
- Zebra/Quagga mussels failed

Widespread Impacts





STOP AQUATIC HITCHHIKERS!™

Prevent the transport of nuisance species.
Clean all recreational equipment.
www.ProtectYourWaters.net



CLEAN DRAIN DRY YOUR BOAT

HELP STOP THE SPREAD OF INVASIVE SPECIES



DON'T MOVE A MUSSEL

DONTMOVEAMUSSEL.CA



ZEBRA MUSSELS.

DON'T BE A CARRIER.

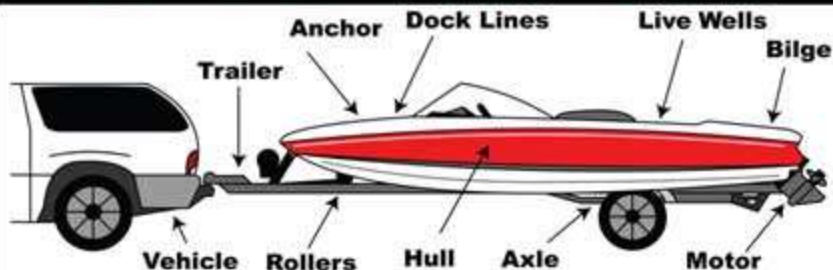
CLEAN, DRAIN AND DRY YOUR BOAT.



Lake George

Boat Inspections
Lake George Park Commission

LOOK FOR MUSSELS HERE



CHECK YOUR BOAT, TRAILER AND VEHICLE



FIGHT THE SPREAD OF AQUATIC INVADERS

- Limited options for response, containment or eradication in open waters
- New potential for management: Zequanox^{®1}
 - Trial applications
- Ongoing investments to develop other technologies
- Apply collective impact principles
 - Bring multiple interested parties into a **common understanding and agenda**
 - Use **management and science** to create potentially powerful management tools



Effects of biocontrol application

A colony of zebra mussels attached to a native mussel. The native mussel survives the application of biocontrol; the zebra mussels do not.

¹Any use of trade, product, or firm names is for descriptive purposes only and does not imply endorsement by the U.S. Government.

Mission

Advance scientifically sound technology for invasive dreissenid mussel control to produce measurable ecological and economic benefits.

Provide a framework for communication and coordination, identify the needs and objectives of resource managers, prioritize the supporting science, recommend communication strategies and **align science and management goals into a common agenda for invasive mussel control.**



Steering Committee

29 member orgs from U.S. and Canada Federal, Tribal, state, provincial and local agencies; NGOs; industry, academia

Core Team

Great Lakes Commission, Great Lakes Fishery Commission, National Oceanic & Atmospheric Administration & U.S. Geological Survey

Science Team

12 members representing research agencies and institutions

**Neutral backbone support and coordination
Great Lakes Commission**



Steering Committee

- **Identify** needs and objectives of resource managers
- **Prioritize** science and research questions
- Assist with **communication** strategies
- Provide input on development of products or tools that **advance adaptive management**
 - Management decision support tools, monitoring protocols, data analysis, etc.
- Provide **guidance and direction** to the Collaborative Science Team

Science Team

- Establish **current state** of the science
 - Add your project / publication!
<http://invasivemusselcollaborative.net/research>
- Develop a **research agenda**
- Provide **support for research** projects to address pressing needs
- Work with resource managers to **guide adaptive management** and research at a range of scales and environments
- Broad topics
 - Understand ecosystem effects
 - Develop and refine control strategies
 - Develop models and decision support tools
 - Examples: effectiveness and Zequanox application issues, food web changes and fishery production, HABs link, socioeconomic considerations

Collaborative Communication Tools

- Website: www.invasivemusselcollaborative.net
- Email list-serv: invasivemussels@great-lakes.net
- Webinar Series:
 - **Register Now!**
 - Zebra Mussel Response in Lake Winnipeg – April 21
 - Recordings Available:
 - Lessons learned from Zequanox applications (July 2015)
 - Non-Zequanox control case studies (January 2016)



Invasive Mussel Collaborative

www.invasivemusselcollaborative.net

THANK YOU!

