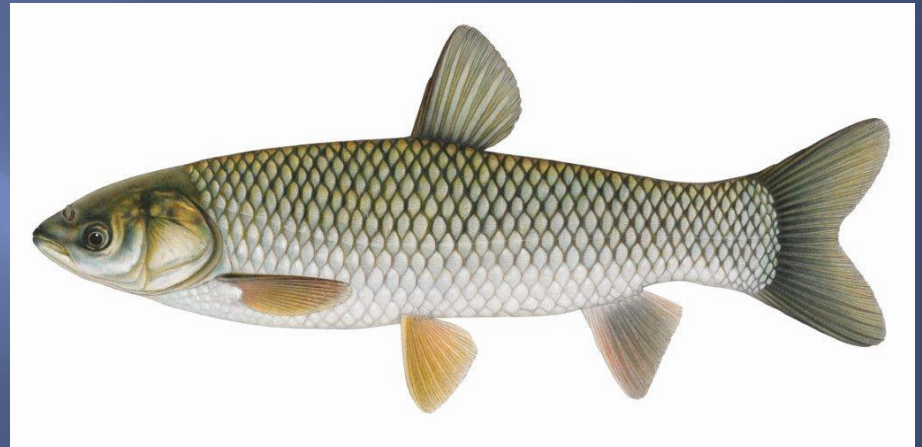


Grass Carp Response Capabilities

To Conserve and improve Fish and Wildlife resources and their Habitats for sustainable use and appreciation by all



John Navarro
Aquatic Invasive Species Program Administrator



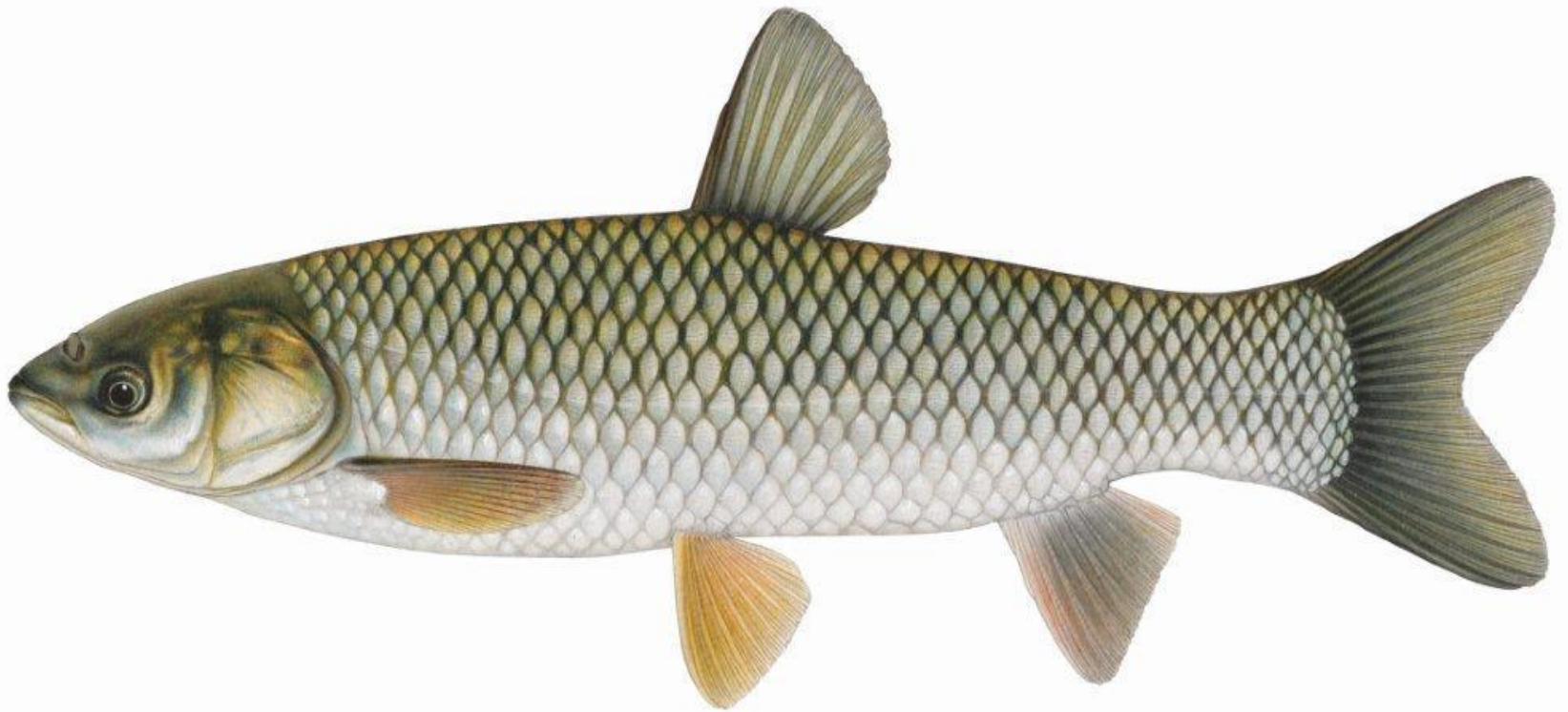
**“Asian carp reproducing in
Sandusky River and still
nothing done”**

Presentation Outline

- **Background Information**
- **Current Actions**
- **Desired Outcomes**



Background Information

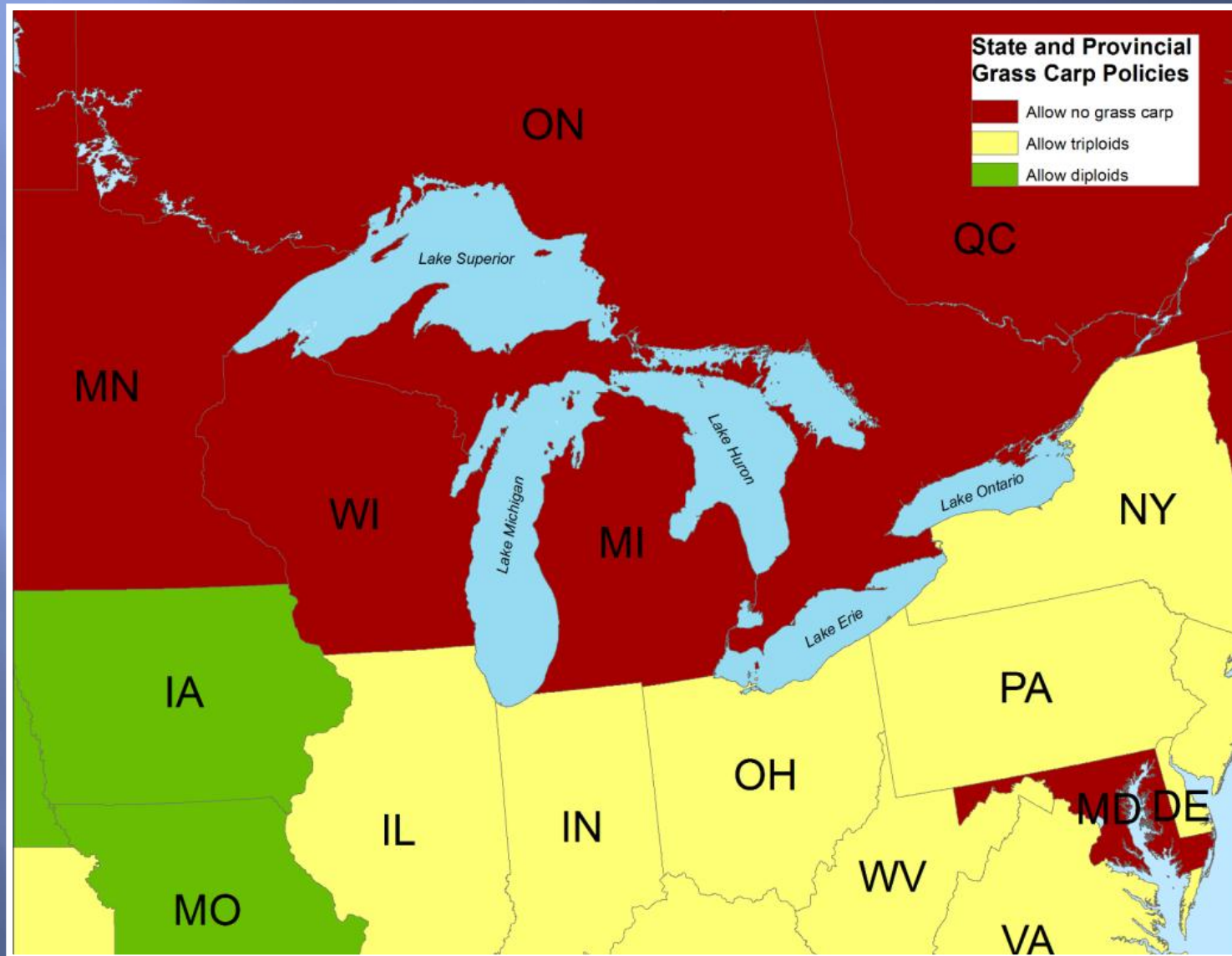


Why are Asian Carp Here?

- Effective for biological control
- Chemical control was falling out of favor
- Grass Carp valued for controlling vegetation
- Lack of containment was an issue

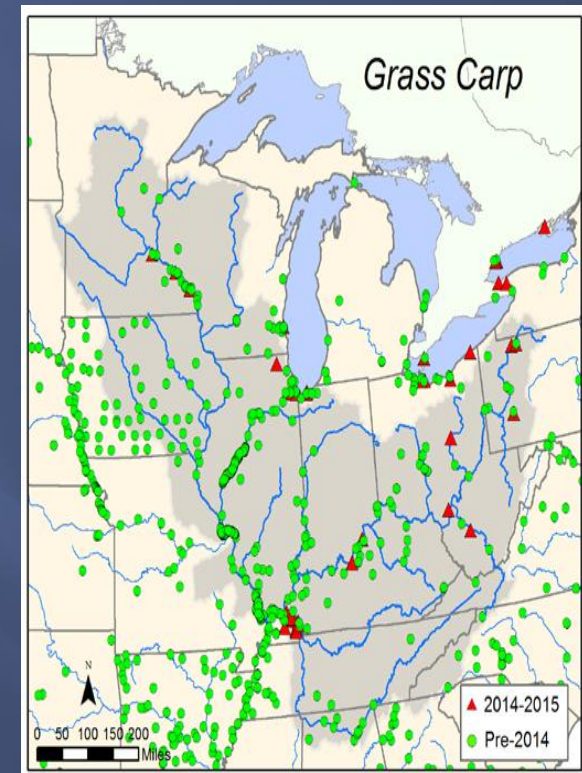


Grass Carp Regulations Vary



History of Grass Carp in Lake Erie

- Grass Carp imported in 1963
- Biological control of vegetation
- Switched to sterile fish in 1983
- Wild fish detected in 1980's
- Assumed to be sterile
- Bighead Carp and Silver Carp detections in 2012 increased awareness of Grass Carp

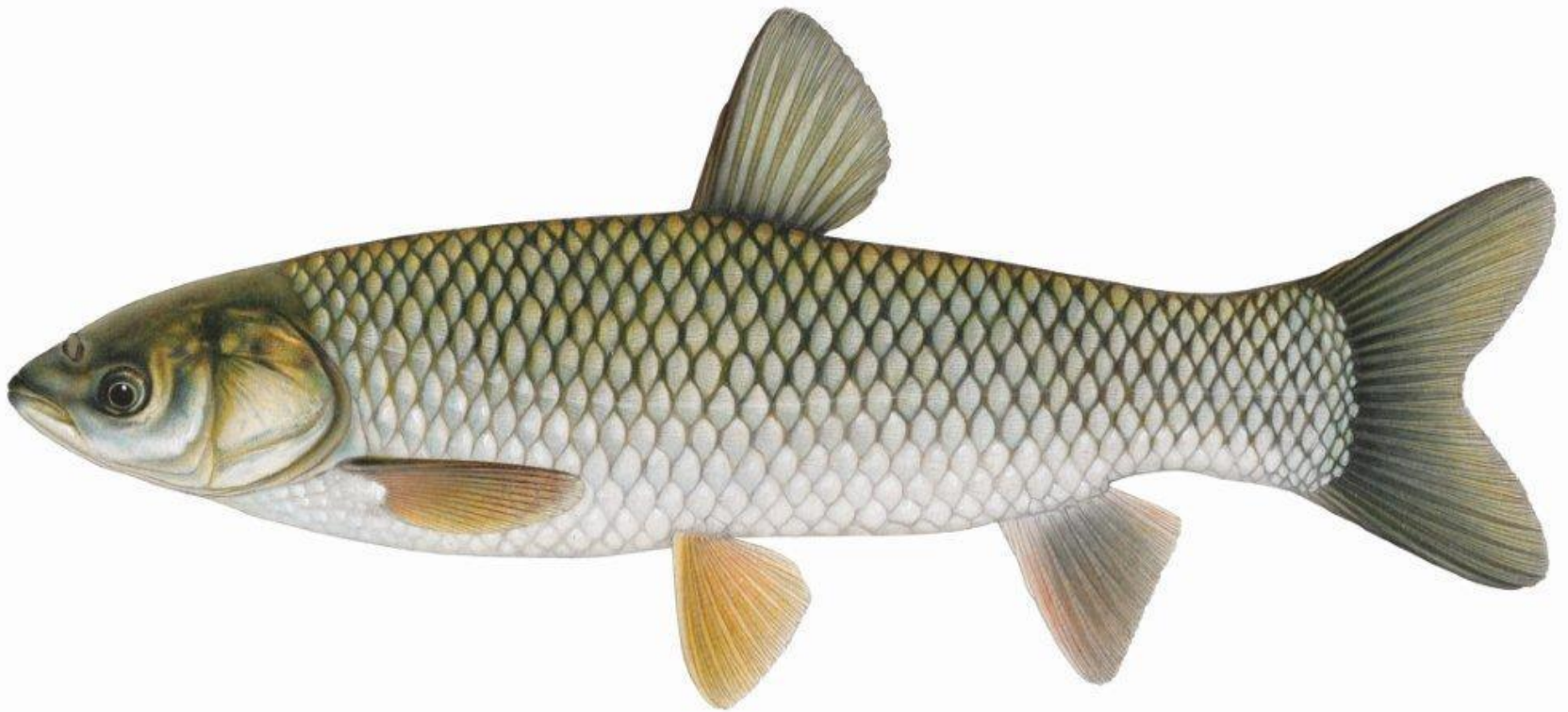


So What Do We Know?

- Successful development of eggs
- Low egg densities
- No larval fish
- General idea of spawning locations (modeling)
- Strong spawning link to hydrograph (high flow)

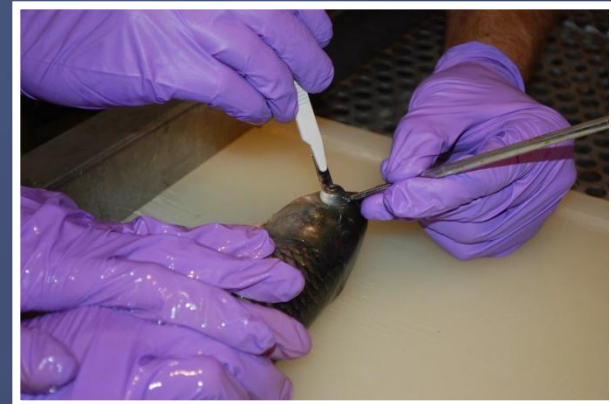


Current Actions



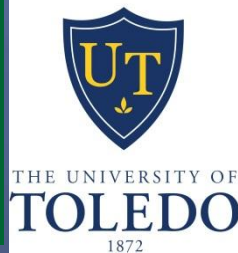
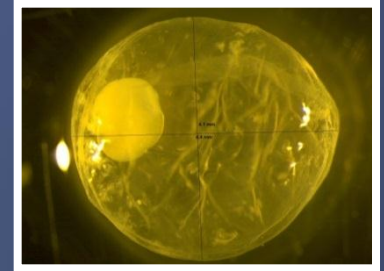
Grass Carp Supply Chain

- USFWS Certification Program
- Concerned With Laundering
- 2-Year Undercover Operation
- 600 Grass Carp Purchased
- Ploidy Tested – USGS
- All Tested Fish Sterile
- Confident in Supply Chain



Addressing the Knowledge Gaps

- Ploidy analysis: fertile vs. sterile
- Otolith microchemistry: natal origin
- Commercial fishermen: removal
- Egg/Larvae sampling: early life history
- Telemetry: seasonal movements
- Modeling: spawning and hatching locations
- Population genomics: understand population
- Vegetation mapping: food availability/impact

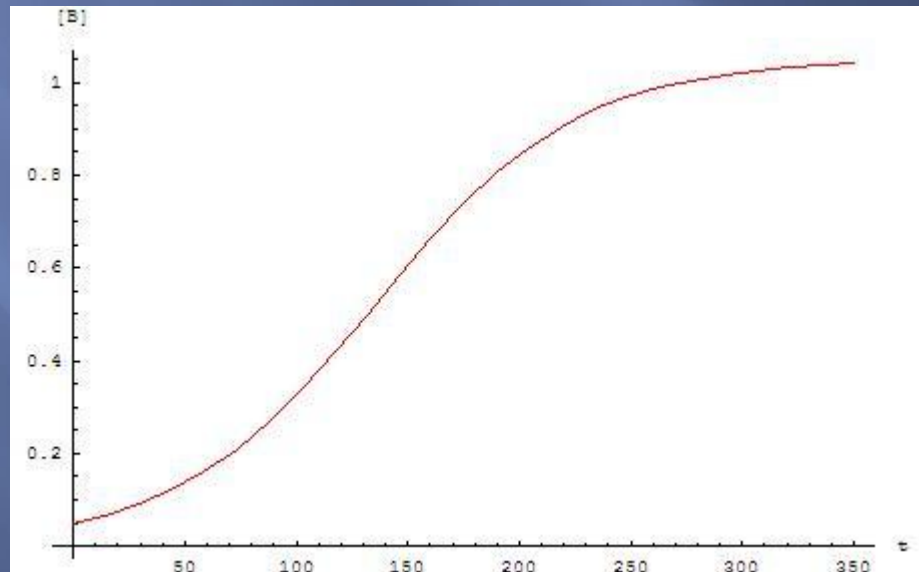


Desired Outcomes



Where Are We on the Invasion Curve

- ✓ **Arrival:** Repeated Detections
- ✓ **Survival:** Fish survive through the winter
- ? **Establishment:** Self-sustaining population
- ? **Spread:** Expanding populations



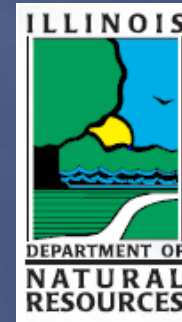
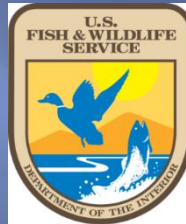
Grass Carp Objectives

- Test capture methodologies
- Validate information provided to date
- Inform future activities for BH/SC/BC
- Buy time - look for fatal flaw
- Develop response capabilities
- Articulate the situation
- Increase information sharing





2014 Lake Erie Asian Carp Response Exercise



Overall Exercise Effort Summary

- Conducted over 3 days in September (2014)
- 219 Electrofishing runs (96 hrs. shock time)
- 53 Gill net lifts (58.8 hrs. of soak time)
- 3 Commercial seine hauls
- 2 fish collected and two observed



Increase Knowledge to Help Targeted Control Efforts

- Determine habitat use and movement
- Determine origin of spawning
- Refine of capture techniques



Future Grass Carp Planned Action

New for 2017 and 2018 - Develop and implement targeted sampling in the Sandusky River.



What We Will and Will Not Do

- **We will** continue to gain knowledge
- **We will** control Grass Carp at specific locations using sound science
- **We will not** run around Lake Erie looking for Grass Carp



**“~~Asian~~ Grass carp
reproducing in Sandusky
River and a unified effort
underway to address the
problem ~~still nothing done~~”**