

Aquatic Invasive Species Outreach

Fisheries Division

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Aquatic Invasive Species

A species that is not native and whose introduction causes, or is likely to cause, economic or environmental harm or harm to human health



EGL

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ENVIRONMENT, GREAT LAKES, AND ENERGY

Michigan Department of
AGRICULTURE
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MICHIGAN INVASIVE SPECIES PROGRAM

Quality of Life (QOL) agencies



Department of Natural Resources

- Fisheries
- Wildlife
- Parks and Recreation
- Law Enforcement
- Forest Resources
- Marketing and Outreach



Department of Environment, Great Lakes, and Energy

- Water Resources



Department of Agriculture and Rural Development

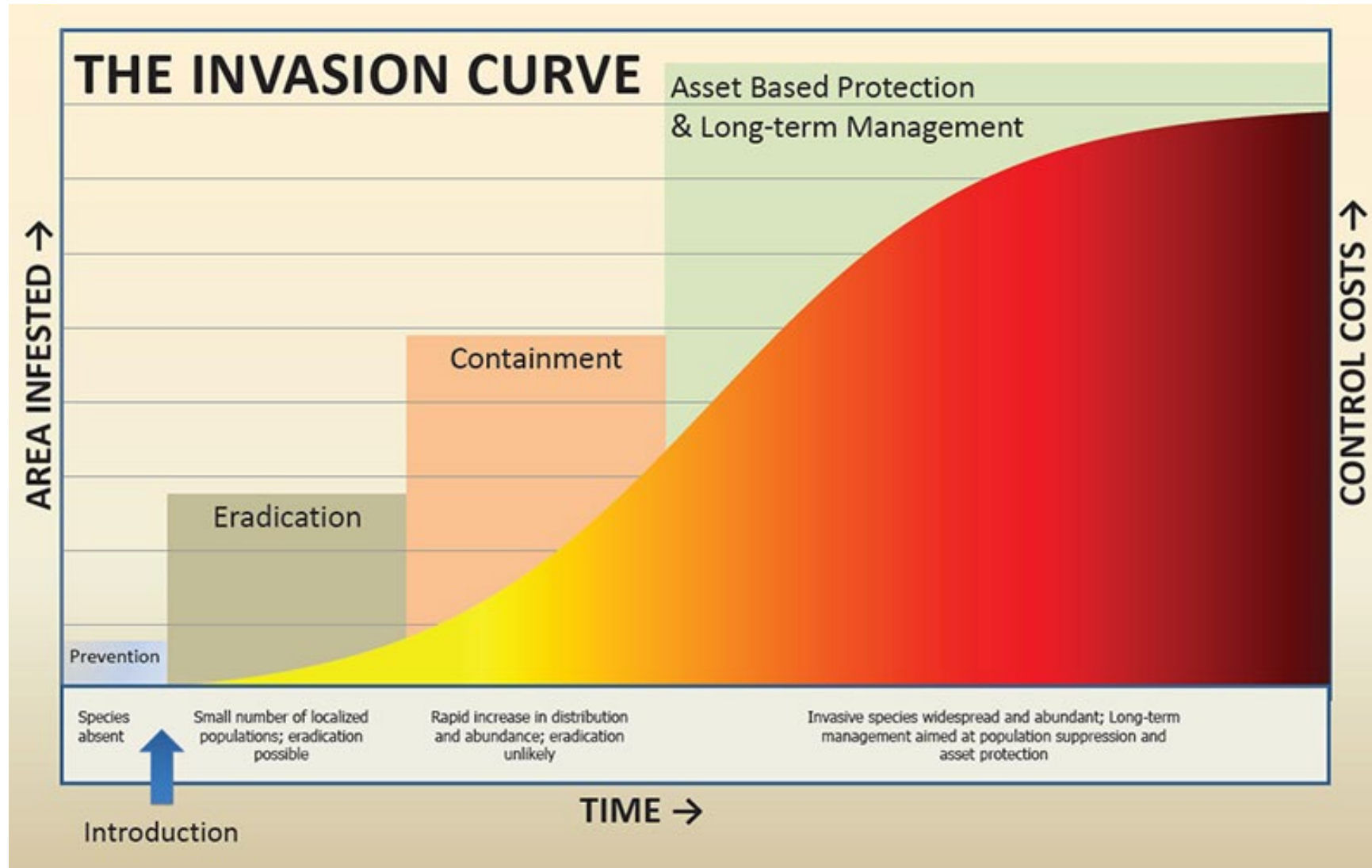
- Pesticide and Plant Pest Management
- Animal Industry
- Environmental Services Division



Department of Transportation



Managing Along the Invasion Curve



Control Costs



**Total = over \$2.5 billion
over 20 years**

Implementing Existing Management Plans

- **Invasive Carps Management Plan**
 - Prevention is critical!
 - Increased focus on Brandon Road Lock and Dam and Grass Carp concerns in Lake Erie
- **AIS State Management Plan**
 - Goals linked to invasion curve
 - QOL Decontamination policy and procedure
 - QOL Early detection guided by Watch-list
 - QOL AIS Response Plan



Prevention Measures to Protect our Resources

- Multifaceted approach to protect natural resources from invasive species
 - Focus on pathways of AIS introduction
- Regulatory framework to prevent introduction and spread
 - Part 413 of NREPA
 - Director's Invasive Species Order
 - Fisheries Orders
- Non-regulatory outreach efforts
 - Passive and active efforts

New Michigan Boating Law
Effective 2019

New requirements to stop the introduction and spread of *Aquatic Invasive Species!*



It's the law:

- ✗ **DO NOT** launch or transport watercraft or trailers unless they are free of aquatic organisms, including plants.
- ✗ **DO NOT** transport a watercraft without removing all drain plugs and draining all water from bilges, ballast tanks, and live wells.
- ✗ **DO NOT** release bait into the water.



Violation of the law is a state civil infraction. Violators may be subject to fines.

AIS Signage

HELP STOP AQUATIC HITCHHIKERS!



Avoid spreading aquatic invasive species.
Recommended Actions:

- ✓ **CLEAN** boats, trailers and equipment
- ✓ **DRAIN** live wells, bilges and all water
- ✓ **DRY** boats and equipment
- ✓ **DISPOSE** of unwanted bait in the trash

IT'S THE LAW

Violation of the law is a state civil infraction. Violators may be subject to fines.

DO NOT launch or transport watercraft or trailers unless they are free of aquatic organisms, including plants.
DO NOT transport a watercraft without removing all drain plugs and draining all water from bilges, ballast tanks, and live wells.
DO NOT release unused bait into the water.

Michigan.gov/InvasiveSpecies



Clean Boats, Clean Waters "Tool Sign"

Angler NOTICE!



HELP STOP Aquatic Hitchhikers

New Zealand mudsnails and didymo (rock snot) have been detected in Michigan rivers. Both have harmful impacts on aquatic ecosystems and hinder fishing opportunities.



New Zealand Mudsnail



Didymo (rock snot)

- CLEAN** Your gear with HOT water or chemical disinfectants and remove any visible plants, mud and aquatic life before transporting.
- DRAIN** The water from all equipment before transporting elsewhere.
- DRY** All your gear for at least 5 days before going to a new waterbody.

mi.gov/invasives



AIS Rack Cards

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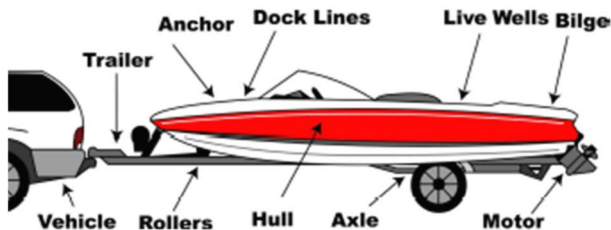
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Follow these steps:

1. **CLEAN** boats, trailers and equipment.
2. **DRAIN** live wells, bilges, ballast tanks, and all water by pulling drain plugs.
3. **DRY** boats and equipment.
4. **DISPOSE** of unwanted bait in the trash.

Prevent the spread of ecologically and economically harmful aquatic invasive species such as zebra mussels and Eurasian watermilfoil with the following simple steps:

- ✓ **CLEAN** boats, trailers and equipment and remove all mud, debris and aquatic plant material from trailers and watercraft before launching or retrieving a watercraft.
- ✓ **DRAIN** live wells, bilges, ballast tanks, and all water from boats before leaving the access site. Disinfect live wells and bilges with a bleach solution (1/2 cup bleach to 5 gallons of water) when possible.
- ✓ **DRY** all boats and equipment thoroughly before leaving an access area and prior to relaunching in a new waterbody.
- ✓ **DISPOSE** of bait in the trash. Do not release bait into the water.
- ✓ **DO NOT TRANSFER FISH** to water bodies other than where they were caught.



Inspection points on boats, trailers, and vehicles for aquatic invasive species decontamination.

Help stop the spread of Didymo and New Zealand Mudsnaills



CLEAN

boats and gear with **HOT (140° F)** water or chemical disinfectants and remove any visible plants, mud and aquatic life before transporting.

DRAIN

the water from all equipment and watercraft before transporting elsewhere.

DRY

all gear for at least five days before going to a new water body.

These methods work for didymo, New Zealand mudsnails and most other aquatic invasive species.

Helpful Tips:

- Avoid visiting multiple rivers in a single day.
- Plan time to decontaminate between trips.
- Designate specific gear, especially porous items like rope and nets, for use only in infested waters.



The problem

Didymo - nuisance algae

- Didymo (aka "rock snot"), a microscopic alga (diatom), produces stalks that can form thick mats that cover river and stream beds.
- These mats alter habitat and food sources for fish and can foul fishing gear and impact fishing access and wading.
- Didymo looks and feels like white or brown wet wool – it is not slimy.
- Infestations range from cotton ball-sized patches to thick blankets and long, rope-like strings that flow in currents.

Invasive New Zealand mudsnail

- The brown-to-black, 1/8-inch long New Zealand mudsnail reproduces cloning - a single snail can start an entire population.
- With few natural predators, their numbers grow rapidly each year, decreasing food for other invertebrate populations.
- Fish that feed on native invertebrates like mayflies and caddisflies may find it more difficult to forage.
- Fish will consume New Zealand mudsnails, but they offer the fish little nutritional value, are difficult for fish to digest and can be excreted alive.
- Feeding on mudsnails can reduce the growth, condition and ultimately the abundance of key sport fish including trout.

Take extra steps to decontaminate

- Clean all surfaces that can transport didymo and New Zealand mudsnail, including boats, anchors and fishing gear such as waders, wading boots and nets.
- Didymo's microscopic cells and New Zealand mudsnails can survive without water for days. Thorough drying (five or more days) or rinsing with hot water or a chemical disinfectant is necessary to assure no live organisms are transported.
- Because porous items don't fully dry and may not be disinfected by chemical washes, avoid using rope, netting, felt-soled wading boots or other porous materials when possible, or restrict use of these items to a single stream or river.

For more information, visit Michigan.gov/Invasives. To report new locations of didymo or New Zealand mudsnail, email photos and location information to EGLE-WRD-AIP@Michigan.gov.

New AIS Outreach: Kiosks

Several panels for relevant issues

- Boater laws/recommendations panel
- Species focused panels
 - New Zealand mudsnail
 - Invasive carps
 - Red swamp crayfish
- "Don't Dump Bait" panel
- General AIS awareness panel

Distribution

- Carl T. Johnson Hunt and Fish Center in Cadillac
- Trade shows, events, etc.
- Hatcheries and visitor centers



New AIS Outreach: Billboards

- Multiple billboards with AIS prevention messaging for boaters and anglers
- Summer 2021 & Summer 2022
- AIS program is currently working with Wildlife Forever to evaluate messaging, locations, and costs



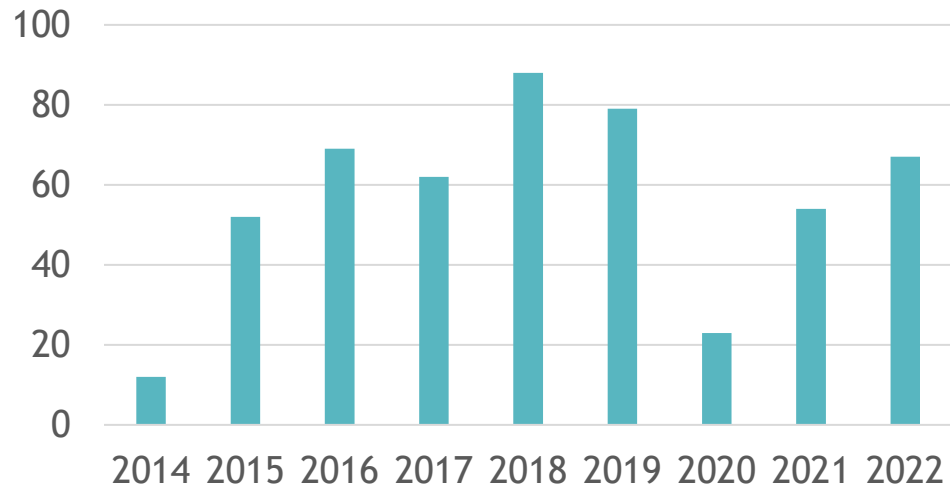
Actions at Boating Access Sites

- Clean Drain Dry stenciling at boating access sites
- Installation of boat washes and CD3 stations through partnerships with local organizations
- Law Enforcement Division efforts to engage with boaters and enforce laws
 - Thousands of officer hours and user contacts annually
 - Warnings and citations issued

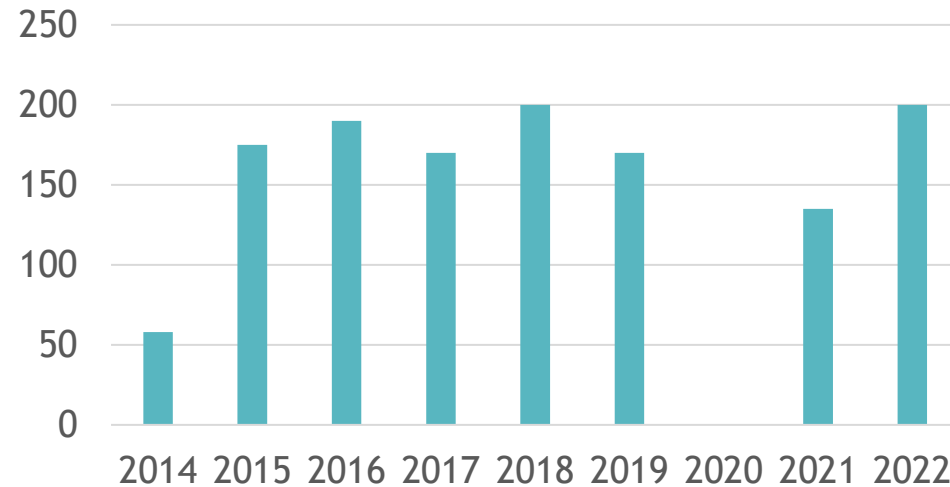


Michigan's AIS Landing Blitz

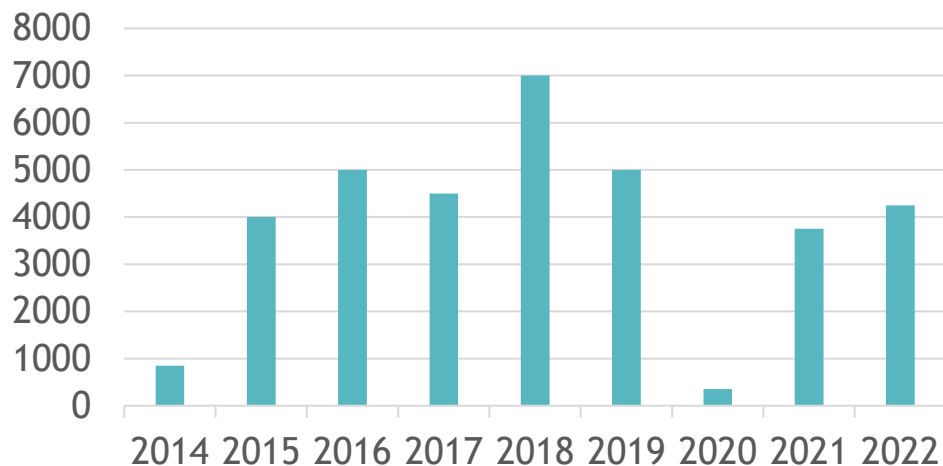
Number of Locations



Boats washed



Impressions



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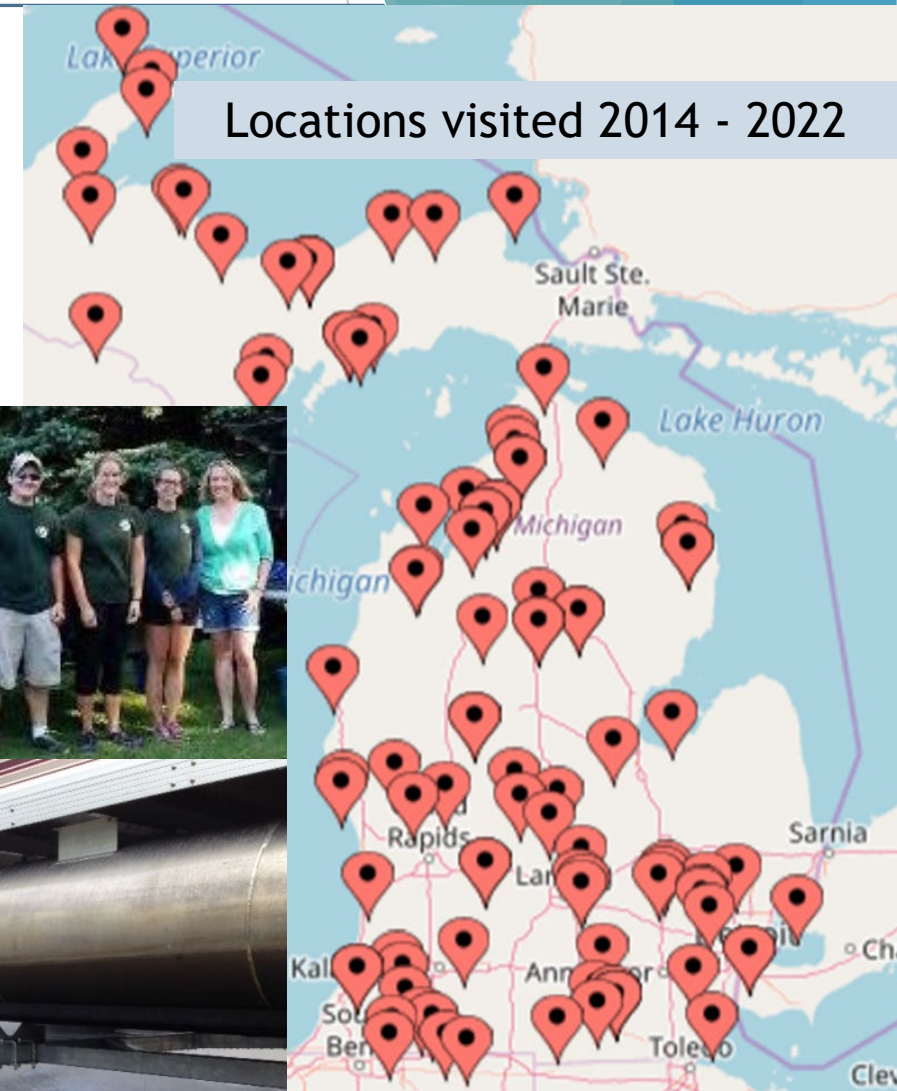
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Mobile Boat Wash Partnership

8-yr program summary

- 344 events
- 135+ locations
- 2,352 boats washed
- 14,000+ contacts
- 2,200+ volunteer hours
- ~75k social media impressions
- 2022: 133+ boats washed and 600+ boaters reached during 43 mobile boat wash events



DNR Mobile Boat Wash Program

- Received GLRI to begin implementation in 2023
- Focus will be on DNR-administered access sites
 - Boating access properties during the summer
 - State game areas during the fall (waterfowl season)
- First year will focus on SE MI, second year will be statewide



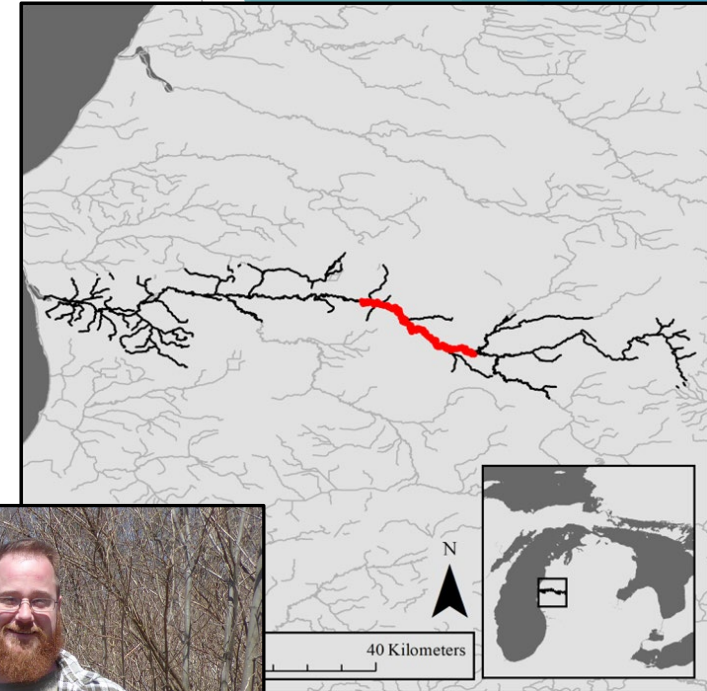
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Assessing Risk and Engaging Angling Community

- Pere Marquette River – first reported New Zealand Mudsnail (NZMS) infestation in 2015
- 300+ angler surveys in 2016-17
- 56% didn't decontaminate
- 52% aware of NZMS infestations
- Only 46% of “aware” anglers decontaminate gear
- Transient anglers
 - Many visit multiple waters within a few days



Wader Wash Stations - Partnering for Impact!

- Seeking partners to increase awareness and maintain a wader washing station
- DNR-Fisheries Division could assist partners with construction and provide messaging



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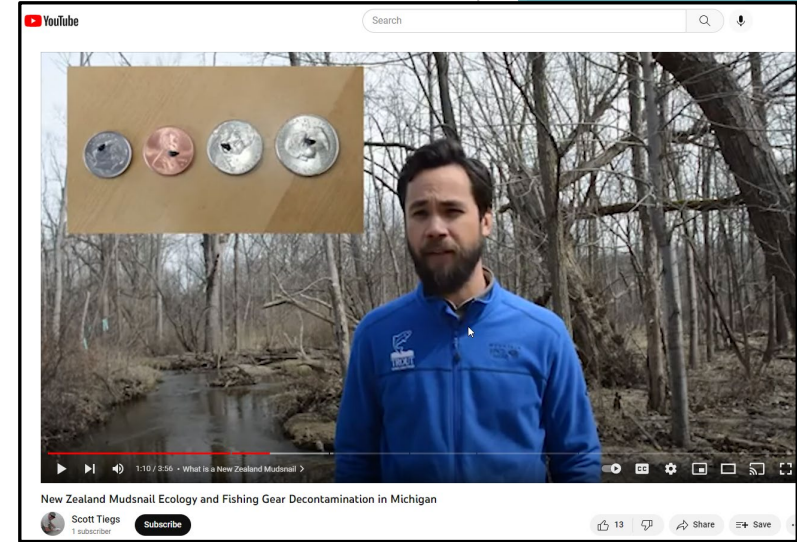
Bolstering Efforts via Grant Programs

Oakland University

- Evaluated effectiveness of decontamination methods
- Developed video to promote decontamination

Michigan State University

- Evaluating effectiveness of different AIS messaging
- Determining usage rates of wader washing stations
 - Identify hurdles for adopting decon efforts
- Identify strategies to improve effectiveness of outreach to prevent AIS spread



Addressing Concerns with Didymo “Rock Snot”

- Nuisance blooms detected in Michigan
 - St. Marys, Manistee, and Boardman rivers
- Didymo blooms \neq poor water quality
- No open water treatment options available
- Focus on increased awareness
 - Press releases, social media, direct communications with stakeholders, NotMISpecies webinar, promoting decontamination
 - Developed and installed new signage
- Funded Lake Superior State University to investigate environmental conditions that may lead to nuisance blooms

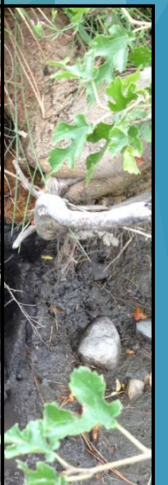


Threat of Red Swamp Crayfish

- Most invasive crayfish worldwide
 - Outcompete native species
 - Dig complex burrows causing erosion and infrastructure problems
 - Feed on vegetation and negatively impact water clarity (water becomes turbid)
 - Reproduce in large numbers
- Listed as a prohibited species in 2015
 - Widely available in trade
 - MI anglers using live crayfish purchased from food markets in southwest MI



Included With Value Pack		
		
Live Crawfish Value Pack 100 lb FedEx/UPS	Live Crawfish Value Pack 120 lb FedEx/UPS	Live Crawfish Value Pack 150 lb FedEx/UPS
<ul style="list-style-type: none">• Field Run \$474.99• Select \$499.99	<ul style="list-style-type: none">• Field Run \$564.99• Select \$599.99	<ul style="list-style-type: none">• Field Run \$709.99• Select \$749.99



Outreach Response for Red Swamp Crayfish

- First confirmed detections in 2017
- Crayfish could have been introduced from releases linked to multiple vectors
 - Biological supply for schools
 - Live food markets
 - Live bait
 - Pet stores
- Law Enforcement Division
 - Inspections and enforcement

Tiny lobsters of doom: Why this invasive crayfish is bad news

By KATE WELLS • JUL 27, 2017

PROGRAM
The Environment
Report

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This is the photo sent to Seth Herbst. "And as soon as I saw that photo, it was a clear as day that that was a red swamp crayfish," he sighed.



Promote
public/private
collaboration to
leverage
expertise &
resources as a
mechanism to
address
Michigan's AIS
priorities

Michigan Invasive Species Grant Program

- Competitive state grant program started in 2014
- \$3.6M required each year and appropriated by state legislature
- Over \$29 million awarded to 203 projects

Great Lakes Restoration Initiative

Clean Boats, Clean Waters

- Mini-grants since 2020
- MSUE AIS Educator
- Resources include E/O materials and training/education

AIS Task Force

- Engage partners and collaborate on shared goals for AIS prevention
 - MI Waterfront Alliance, MI Lakes and Streams Assoc., MI Boating Industry Assoc.



Thank You!

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