

CLEAN BOATS CLEAN WATERS



Aquatic Invasive Species **VOLUNTEER PROGRAM HANDBOOK**



Anissa Thompson

CLEAN BOATS CLEAN WATERS



Guidelines for Clean Boats, Clean Waters

MICHIGAN'S AQUATIC INVASIVE SPECIES VOLUNTEER PROGRAM

2011 EDITION

ACKNOWLEDGMENTS

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CLEAN BOATS CLEAN WATERS



Welcome to the Clean Boats, Clean Waters Aquatic Invasives Volunteer Program!

Michigan's greatest natural asset, and one of its clearly defining characteristics, is the abundant water resources — 3,300 miles of shoreline on four of the five Great Lakes, 35,000 miles of navigable streams, more than 11,000 inland lakes and thousands of square miles of wetlands. The state is rightfully known worldwide as a “water wonderland.” These watery wonders are home to hundreds of species of fish, waterfowl, plants and many other forms of life. The Clean Boats, Clean Waters Aquatic Invasives Volunteer Program is for people who care about Michigan's waterways and who want to protect them into the future.

Aquatic invasive species have long been recognized as a serious threat to the United States. According to Cornell University research, introduced species of animals, plants and microbes cost the U.S. economy at least \$148 billion a year. Invasive aquatic plants and animals jeopardize the future of Michigan waters.

With the arrival of aquatic invasive species, volunteers are needed now more than ever to help preserve and protect Michigan waters. Dozens of organizations, hundreds of teachers and thousands of students have participated in the Purple Loosestrife Project, inoculating infested Michigan wetlands with *Galerucella* beetles. Native plants have now returned to many of these wetlands. Fishing enthusiasts have joined Michigan's Angler Monitoring Network, reporting invasive species they find in the state's waters. Alert Michigan citizens have helped track the spread of zebra mussels to more than 200 inland lakes.

The mission of this program is to promote water resource stewardship by actively involving individuals in preventing the spread of harmful aquatic invasive species. To accomplish this goal, the program sponsors statewide training workshops and has developed resource handbooks, tool kits, and educational information. A statewide coordinator organizes volunteer efforts.

Through this program, volunteers are trained to organize and conduct a watercraft inspection demonstration and education efforts in their community. Volunteers are the key to reaching people recreating on Michigan's waters. Volunteers who instruct boaters on how to perform watercraft inspections can help prevent new invasions and help to maintain Michigan's valuable water resources. Thank you for taking the time to learn, act, and protect Michigan's waters from invasive species.

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Section 1:

What is the program all about?

PREVENTION AND CONTROL OF AQUATIC INVASIVE SPECIES IN MICHIGAN

Michigan's vast water resources are at great risk from invasion by non-native species of plants and animals. Most of the state's rivers and streams, ponds and lakes, shorelines and wetlands provide hospitable habitat for native and invasive species alike. They are attractive and accessible for many human uses, making it all too easy for people to introduce an invasive species inadvertently as they enjoy the recreational opportunities of Michigan's water wonderland.

Invasive species can disrupt food webs, foul infrastructure and recreational equipment, spoil tourism and recreational experiences, devalue waterfront property, create public health hazards and wreak havoc on water-based businesses. The now infamous zebra mussel is an example; it has infested more than 255 of Michigan's inland lakes. Depending on the characteristics of the lake, zebra mussel infestation means it may now be more susceptible to blooms of blue green algae with toxic properties. Native clams may be destroyed. Boaters' recreational equipment may be more easily damaged.

Aquatic invasive species are costly to control once they're in place and have established reproducing populations. Riparians (waterfront property owners) have spent as much as \$1,000 an acre in an attempt to keep Eurasian water-milfoil under control in the state's largest inland lake. Such species have so many ways of reproducing that they are virtually impossible to eradicate once they are well established in an environment that meets their requirements for food and shelter.

Prevention is Key

Therefore, the best defense for Michigan's aquatic ecosystems is a good preventive offense. Taking steps to protect them will also protect valuable property, whether it's an expensive watercraft or a waterfront home with a spectacular view.

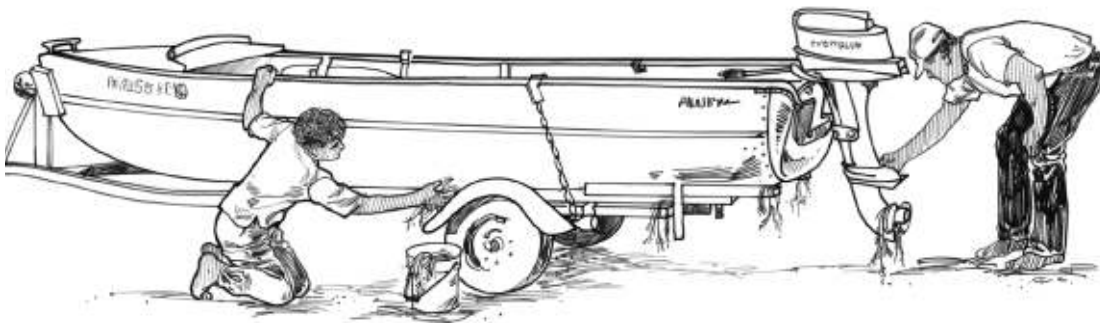
Preventing the introduction of invasive species may seem overwhelming, even impossible, because of the multitude of potentially invasive plants and animals and the vast array of potentially affected resources. However, as political philosopher Edmund Burke is credited with saying, "No one could make a greater mistake than he who did nothing because he could only do a little." And most people can do a little. In this situation, the consequences of one careless action can be enormously destructive, and the consequences of one preventive action can be enormously constructive.

How do we prevent new introductions of invasive species?

Fortunately, some of the best preventive, protective measures are simple, inexpensive and involve just a little time, energy, readily available materials and elbow grease. For example, if every boater spent a few minutes inspecting critical components of a watercraft and trailer and a little effort cleaning and drying the boat, that pathway of introduction would be significantly reduced.

Research indicates that most of the owners of Michigan's approximately 900,000 licensed boats have some awareness of invasive species. The study also suggests that most boaters want to take the appropriate action, but may not do so because they're uncertain what to do and how to do it.

One solution is education. That's the purpose of Clean Boats, Clean Waters — to educate boaters about the steps they can take to prevent the introduction of invasive species and to protect their boats.



THE CLEAN BOATS, CLEAN WATERS AQUATIC INVASIVE SPECIES VOLUNTEER PROGRAM VISION

The Clean Boats, Clean Waters Aquatic Invasive Species Volunteer Program promotes healthy ecosystems and a healthy economy by actively involving individuals in preventing the spread of harmful aquatic invasive species that threaten Michigan's ecosystems. Citizen involvement in demonstrating watercraft inspections will increase public awareness about the threats of aquatic invasive species. Volunteers inform and educate the public about how to help prevent the spread of invasive species by inspecting their watercraft and removing aquatic plants and animals from their boats and equipment before leaving an access site.

To accomplish these objectives, the volunteer program supports:

- Watercraft inspection demonstrations for aquatic invasive species.
- Communication with the public about the laws and issues surrounding the existence, spread and impact of invasive species to Michigan's waters.
- Distribution of educational materials, such as watercraft checkpoint cards and Stop Aquatic Hitchhiker™ stickers.
- Collection of data to evaluate the potential spread of invasive species, public awareness of invasive species issues, and the effectiveness of the invasive species program.
- Response to technical inquiries from the public concerning invasive species.



FOUR REASONS TO CARE ABOUT AQUATIC INVASIVE SPECIES:

1. **Economics** – The costs of controlling invasive species in the United States increase every year. A typical consumer absorbs these costs through higher water and electric bills. A Cornell University study reports that invasive species on land and water already cost the United States \$148 billion annually. The Great Lakes sport and commercial fishing industry, valued at more than 7 billion annually, is at risk due to the growing numbers of invaders such as the zebra and quagga mussel, spiny water flea, sea lamprey, ruffe and round goby that prey on invertebrates of all sizes, large fish, as well as fish eggs and small fish. Large water users in the Great Lakes, including municipalities and industries, spent about \$120 million from 1989 to 1994 to combat the spread of zebra mussels alone.
2. **Health** – Some invasive species may cause significant health problems. For example, a South American strain of human cholera bacteria was found in ballast water tanks of ships in the port of Mobile, Alabama, in 1991. Cholera strains also were found in oyster and fin/fish samples in Mobile Bay, resulting in a public health advisory to avoid handling or eating raw oysters or seafood. Temporary bans on commercial harvest may be put into effect when health concerns exist.
3. **Ecology** – The rapid spread of zebra and quagga mussels in the Great Lakes shows how profoundly an invasive species can alter the aquatic environment. These tiny mussels reproduce rapidly. Coupled with consumption of microscopic plants and animals, zebra mussels affect the aquatic food web, decimate native mussel/clam populations, and place valuable ecological communities' resources at risk.
4. **Recreation** – Invasive species such as the sea lamprey, ruffe, and round goby can harm native fish, such as lake trout, walleye, yellow perch and catfish. They threaten a national sport and commercial fishing industry that supports 81,000 jobs in the Great Lakes. Aquatic invasive plant species such as purple loosestrife and Eurasian water-milfoil quickly establish themselves and have, in some cases, replaced native plants. The proliferation of these invasive plants impairs boating, swimming, fishing, navigation and flood control and degrades water quality, as well as fish and wildlife habitat.

(List adapted from the Aquatic Nuisance Species Task Force and the Great Lakes Panel on Aquatic Nuisance Species.)

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Section 2:
Who are the people involved?

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Section 3:

What do volunteers need to know about aquatic invasive species management in Michigan?

MICHIGAN AQUATIC INVASIVE SPECIES

The following species are present in Michigan waters and are considered invasive. Folders of resource material and references for several of these are included in the back of this guide.

PLANTS

Common name	Latin name	Habitat
Curly-leaf pondweed	<i>Potamogeton crispus</i>	Aquatic
Eurasian water-milfoil	<i>Myriophyllum spicatum</i>	Aquatic
European frogbit	<i>Hydrocharis morsus-ranae</i>	Aquatic
Flowering rush	<i>Butomus umbellatus</i>	Aquatic, wetlands
Phragmites	<i>Phragmites Australis</i>	Aquatic, wetlands
Purple loosestrife	<i>Lythrum salicaria</i>	Aquatic, wetlands
Starry stonewort	<i>Nitellopsis obtusa</i>	Aquatic
Yellow water flag	<i>Iris pseudacorus</i>	Aquatic, wetlands

ANIMALS

Common name	Latin name	Habitat
Alewife	<i>Alosa pseudoharengus</i>	Aquatic
Bighead carp	<i>Hypophthalmichthys nobilis</i>	Aquatic
Black carp	<i>Mylopharyngodon piceus</i>	Aquatic
Grass carp	<i>Ctenopharyngodon idella</i>	Aquatic
Fishhook water flea	<i>Cercopagis pengoi</i>	Aquatic
Quagga mussel	<i>Dreissena bugensis</i>	Aquatic
Rainbow smelt	<i>Osmerus mordax</i>	Aquatic
Round goby	<i>Neogobius melanostomus</i>	Aquatic
Ruffe	<i>Gymnocephalus cernuus</i>	Aquatic
Rusty crayfish	<i>Orconectes rusticus</i>	Aquatic
Sea lamprey	<i>Petromyzon marinus</i>	Aquatic
Silver carp	<i>Hypophthalmichthys molitrix</i>	Aquatic
Spiny water flea	<i>Bythotrephes cederstoemi</i>	Aquatic
Swimmer's itch ¹	<i>Schistosoma spp.</i>	Aquatic
White perch	<i>Morone americana</i>	Aquatic
Yellow perch parasite	<i>Heterosporis sp.</i>	Fish parasite
Zebra mussel	<i>Dreissena polymorpha</i>	Aquatic

¹ Native nuisance species.

MICHIGAN'S AQUATIC NUISANCE SPECIES STATE MANAGEMENT PLAN

Prevention and Control in Michigan Waters — Updated 2002

Michigan's waters are under assault from aquatic invasive species (AIS). AIS have long been recognized as a major problem in the Great Lakes. In 1996, Michigan was the second state in the United States to develop a state management plan to address AIS prevention and control – *Nonindigenous Aquatic Nuisance Species State Management Plan*.

In 2002, the Office of the Great Lakes convened an Aquatic Nuisance Species (ANS) Action Team, including the directors of the departments of Environmental Quality, Natural Resources and Agriculture, as well as representatives of other government agencies, academic institutions and stakeholder organizations, to update the existing plan and to coordinate responses to the problems associated with AIS. For a copy of the complete plan, visit www.deq.state.mi.us/documents/deq-ogl-ANSPlan2002.pdf. One recommendation of the action team was the creation of an ANS council, which was formed in 2002 to coordinate implementation of the updated plan.

This plan focuses on prevention as the key strategy for limiting the impacts of aquatic invasive species by controlling the initial introduction and subsequent transfer from one water body to another. However, prevention techniques alone are inadequate for limiting the negative impacts caused by aquatic invasive plants and animals. This plan also suggests that early detection, rapid response, control, mitigation, or eradication strategies must be considered. It incorporates information and education/outreach activities, research needs and policy and legislative initiatives as key components of the overall program. Prevention strategies rely heavily on information, education and communication. Therefore, this plan includes the full range of those activities in order to implement an effective prevention program. The plan identifies four goals for information, education and communication.

- **Goal I:** The prevention of the unintentional introduction and dispersal of aquatic nuisance species into, within and from Great Lakes waters through implementation of information/education activities.
- **Goal II:** Statewide coordination of information dissemination regarding aquatic nuisance species programs involving prevention, control, monitoring, research, education, policy and other related activities.
- **Goal III:** The active involvement of Great Lakes regional policymakers and user groups in the promotion of aquatic nuisance prevention and control programs.
- **Goal IV:** Provide adequate resources to implement Michigan's Information/Education Strategy for Aquatic Nuisance Prevention and Control.

The objective of the plan's information and education Goal I is to ensure that all recreational boaters take action to prevent the introduction and dispersal of aquatic invasive species.

The plan recommends:

Implement regional boat-wash demonstrations and/or inspections to show boaters how to prevent the spread of aquatic invasive species by their boats. To impede the spread to inland waters, target areas where there is high traffic between the Great Lakes basin and inland waters. Demonstrations should be conducted at public accesses or infested waters.

As Michigan moves ahead with implementation of actions to prevent and control aquatic invasive species, extra care to prevent new introductions is necessary. With a robust global economy, it is anticipated that without a new prevention program, new introductions are highly likely. For that reason, prevention actions at the national and regional level, as well as at the individual jurisdictional level, are critical. The growth potential of certain species in a new place, uninhibited by natural predation or disease, can be explosive and cause changes in Michigan's waters that are quick, permanent, and seriously detrimental to human, ecological and economic health.

The highest prevention priority is the control of ballast water discharges. Ships practicing good ballast water management can greatly reduce the number of species traveling in ballast water from world ports. Barriers placed in tributaries can make it difficult for invasive species to enter the Great Lakes via natural dispersal. Actions such as checking and cleaning boats and fishing equipment can dramatically reduce the likelihood of lake-to-lake transfer of invasive species.

Several other potential transport mechanisms could also result in releases of AIS into the Great Lakes and inland state waters. Some of these vectors are: the transportation and rearing systems related to the aquaculture industry and commercial barge traffic; inter-Great Lake boating associated with research or management activities; scuba diving; the sale and distribution of fishing bait; the transfer and disposal of nonindigenous pets; plant nurseries; fish stocking activities and individual releases by anglers. Taking action at all levels to stop the introduction and spread of invasive species by all potential pathways will ultimately protect Michigan waters from further economic and environmental degradation.

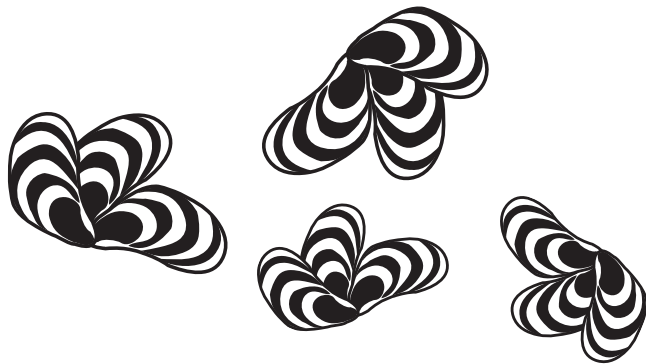
AQUATIC INVASIVE SPECIES LAWS

Federal Legislation

One important piece of national aquatic invasive species legislation is the National Invasive Species Act. A great deal of national and international focus has been placed on ballast water because of its implication in numerous aquatic invasive species introductions worldwide. The U.S. Coast Guard is responsible for regulating ballast water management. For information on regulations and links to specific ballast water programs, visit the Coast Guard Office of Operating and Environmental Standards website at www.uscg.mil/hq/g-m/mso/ans.htm.

Also important are the federal noxious weed regulations that define noxious weeds and establish rules restricting their movement. The Federal Noxious Weed list includes aquatic species such as hydrilla, as well as a number of terrestrial species. Listed species cannot be moved into or through the United States without a permit. To view the complete list and associated regulations, visit the Animal and Plant Health Inspection Service website at <http://plants.usda.gov/java/noxiousDriver>.

The Lacey Act of 1990, later amended in 1998, prohibits importation of a list of designated species and other vertebrates, mollusks, and crustacea that are “injurious to human beings, to the interests of agriculture, horticulture, forestry, or to wildlife or the wildlife resources of the United States.” The act declares importation or transportation of any live wildlife as injurious and prohibited, except as provided under the act. The zebra mussel is listed under this act and recently several species of asian carp were added. To view the act, visit www.fws.gov/le/pdf/files/Lacey.pdf.



Michigan Laws

In 2009, Michigan passed a law prohibiting a person from placing any boat, boating equipment, or boat trailer in Michigan waters with aquatic plant material attached. This includes all types of aquatic vegetation, not only invasive species (an exception is made for wild rice). Violation can result in a fine up to \$100. The law also gives law enforcement officers the authority to order the removal of aquatic plants from boating equipment. The law can be found on the Internet at www.legislature.mi.gov/documents/2009-2010/publicact/pdf/2009-PA-0091.pdf.

The Michigan Department of Natural Resources is responsible for law enforcement of plants and animals. The Department of Agriculture is responsible for enforcement related to insects. Michigan’s rules of possession and penalties apply to those who intentionally or knowingly introduce a prohibited or restricted species. To view the description of penalties, visit www.legislature.mi.gov/documents/2005-2006/publicact/pdf/2005-PA-0076.pdf.

Michigan also has laws and rules pertaining to aquatic plant control. A permit from the Department of Environmental Quality is required for the application of chemicals to any plant that is growing in standing water at the time of the application. A permit is not required for the use of biological control such as Eurasian water-milfoil weevils.

A permit is generally not required from the MDEQ to control aquatic submerged vegetation in inland lakes by mechanical harvesting (i.e., cutting plants above the lake bottom with no soil disturbance). Inconsequential or insignificant (“de minimis”) vegetation removal done by hand (e.g., hand pulling, raking or cutting a few plants) does not require a permit. Larger scale removal of plants may require a permit from the MDEQ’s Water Resources Division (WRD). A use permit or authorization may be necessary from the Michigan Department of Natural Resources (MDNR) to use a state operated access site for this activity. In addition, cutting vegetation, including mechanical harvesting and mowing, on Great Lakes bottomlands requires a permit from the WRD. Disposal of harvested material within inland lakes, on Great Lakes bottomlands, or in wetlands is not allowed without prior written approval from the WRD.

Local Ordinances

Local ordinances may also exist. Contact your local municipality or government to find more information for your area.

Michigan Aquatic Invasive Species Laws

Michigan Public Acts 70–74 of 2005 define the following as prohibited and restricted aquatic fish and plant species and describe the rules of possession:

Prohibited and Restricted Species

“Prohibited fish species” means any of the following or the eggs thereof:

- Bighead carp (*Hypophthalmichthys nobilis*) or a hybrid or genetically engineered variant thereof.
- Bitterling (*Rhodeus sericeus*) or a hybrid or genetically engineered variant thereof.
- Black carp (*Mylopharyngodon piceus*) or a hybrid or genetically engineered variant thereof.
- Grass carp (*Ctenopharyngodon idellus*) or a hybrid or genetically engineered variant thereof.
- Ide (*Leuciscus idus*) or a hybrid or genetically engineered variant thereof.
- Japanese weatherfish (*Misgurnus anguillicaudatus*) or a hybrid or genetically engineered variant thereof.
- Rudd (*Scardinius erythrophthalmus*) or a hybrid or genetically engineered variant thereof.
- Silver carp (*Hypophthalmichthys molitrix*) or a hybrid or genetically engineered variant thereof.
- A fish of the snakehead family (family *Channidae*) or a genetically engineered variant thereof.
- Tench (*Tinca tinca*) or a hybrid or genetically engineered variant thereof.

“Prohibited aquatic plant species” means any of the following or fragments or seeds thereof:

- African oxygen weed (*Lagarosiphon major*) or a hybrid or genetically engineered variant thereof.
- Brazilian elodea (*Egeria densa*) or a hybrid or genetically engineered variant thereof.
- European frogbit (*Hydrocharis morsus-ranae*) or a hybrid or genetically engineered variant thereof.
- Giant hogweed (*Heraclium mantegazzianum*) or a hybrid or genetically engineered variant thereof.
- Giant salvinia (*Salvinia molesta*, *auriculata*, *biloba*, or *herzogii*) or a hybrid or genetically engineered variant thereof.
- Hydrilla (*Hydrilla verticillata*) or a hybrid or genetically engineered variant thereof.
- Japanese knotweed (*Fallopia japonica*) or a hybrid or genetically engineered variant thereof.
- Parrot’s feather (*Myriophyllum aquaticum*) or a hybrid or genetically engineered variant thereof.
- Water chestnut (*Trapa natans*) or a hybrid or genetically engineered variant thereof.
- Yellow flag iris (*Iris pseudacorus*) or a hybrid or genetically engineered variant thereof.
- Yellow floating heart (*Nymphoides peltata*) or a hybrid or genetically engineered variant thereof.

“Restricted aquatic plant species” means any of the following or fragments or seeds thereof:

- Curly leaf pondweed (*Potamogeton crispus*) or a hybrid or genetically engineered variant thereof.
- Eurasian water-milfoil (*Myriophyllum spicatum*) or a hybrid or genetically engineered variant thereof.
- Flowering rush (*Butomus umbellatus*) or a hybrid or genetically engineered variant thereof.
- Phragmites or common reed (*Phragmites australis*) or a hybrid or genetically engineered variant thereof.
- Purple loosestrife (*Lythrum salicaria*) or a hybrid or genetically engineered variant thereof, except for cultivars developed and recognized to be sterile and approved by the director of agriculture under section 16a of the insect pest and plant disease act, 1931 PA 189, MCL 286.216a.

Rules of Possession

- (1) A person shall not knowingly possess a live organism if the organism is a prohibited species or restricted species, except under one or more of the following circumstances:
 - (a) The person intends to present a specimen of the prohibited species or restricted species, for identification or similar purposes, to a person who is a certified applicator or registered applicator under part 83, to a public or private institution of higher education, or to the department or any other state, local, or federal agency with responsibility for the environment or natural resources.
 - (b) The person has been presented with a specimen of a prohibited species or restricted species for identification or similar purposes under subdivision (a).
 - (c) The person possesses the prohibited species or restricted species in conjunction with otherwise lawful activity to eradicate or control the prohibited species or restricted species.
 - (d) If the prohibited species or restricted species is not an insect species, the possession is pursuant to a permit issued for education or research purposes by the department under section 41306. If the prohibited species or restricted species is an insect species, the possession is pursuant to a permit issued for education or research purposes by the Department of Agriculture under section 41306 or by the United States Department of Agriculture.
- (2) A person described in subsection (1)(b) or (c) shall notify the Department of Natural Resources, the Department of Agriculture, or the Department of Environmental Quality if the prohibited species or restricted species was found at a location where it was not previously known to be present.

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Section 4:
Where are invasive species?

Tracking infestations of aquatic invasive species is an enormous undertaking, especially with limited financial resources. A few of Michigan's invasions have been documented by scientific research or government agencies, but most infestations are reported by informed, concerned volunteers. In this section you'll find the infestation information that was available when this handbook was published.

ONLINE DATABASE OF AIS IN MICHIGAN

In 2004, the Great Lakes Commission produced a spatial database of key aquatic invasive species (AIS) invasions within the state of Michigan, presented on a series of web pages at www.great-lakes.net/envt/flora-fauna/invasive/mapping.html

The webpages:

- Portray infestations of the following species in Michigan:
 - Sea lamprey
 - Round goby
 - Ruffe
 - Purple loosestrife
 - Zebra mussel
- Provide time series maps of sea lamprey, ruffe, round goby and zebra mussel infestations between 2001 and 2004.
- Show county and watershed infestation information about sea lamprey, ruffe, round goby, zebra mussel, quagga mussel and purple loosestrife.
- Present species data for the previously mentioned species and abstracts for spiny water flea and Eurasian water-milfoil.

The screenshot shows the 'GLIN' website interface. At the top, there is a navigation bar with links for News, Calendar, Great Links, Site of the Month, E-mail Lists, Information Center, About GLIN, and Search. Below this is a banner for 'The Great Lakes Environment' with several small images. The main content area is titled 'Invasive Species Mapping in Michigan Time Series Map'. It includes a 'Mapping data:' section with links for 'Introduction', 'Time Series Map', 'Local AIS Information', and 'Data Downloads'. A 'Time Series Map' section explains that the data represents verified information and provides instructions on how to use the map's controls. A note states: 'Abundance of data does not imply abundance of invasive species.' The map itself shows the Great Lakes region with county boundaries. To the left of the map is a sidebar with 'Environment Topics' including Air and Land, Water, Flora and Fauna, Pollution, References, and Lake Conditions. Below the map are 'Species:' buttons for Sea Lamprey, Ruffe, Round Goby, and Zebra Mussel, and 'Controls:' buttons for Start and Stop.

www.great-lakes.net/envt/flora-fauna/invasive/timeseries.html

CLEAN BOATS CLEAN WATERS



Section 5:

How can volunteers organize an
Aquatic Invasive Species watercraft
education program?

The Clean Boats, Clean Waters program is an opportunity for volunteers to assist in the management and control of invasive species. Through Clean Boats, Clean Waters, volunteers are trained to organize and conduct watercraft inspection demonstrations. Trained volunteers educate boaters about how and where invasive species are most likely to hitch a ride. By showing boaters how to perform boat and trailer checks and distributing informational material, volunteers can make a difference in helping prevent the spread of invasive species and damage to recreational equipment.

This volunteer program demonstrates that people are willing to go beyond what is required if they understand the needs and benefits, and that they can be applied close to home.

GETTING STARTED

Recreational boating can be a significant corridor for the spread of invasive species between bodies of water. This pathway is a concern because of the more than 900,000 registered boaters moving around Michigan's 11,000 lakes. Watercraft inspection demonstrations at boat landings are designed to increase public awareness about invasive species and to assist boaters in taking preventive steps to avoid further spreading of troublesome species and damage to equipment.

Attending a Clean Boats, Clean Waters training workshop provides you with all the tools you need to start a volunteer watercraft inspection demonstration program in your community. Developing an effective program requires patience, time and an eye for organizing a working schedule.

A group that consists of a volunteer coordinator and a committee of several people is the best way to distribute the tasks equally and prevent volunteer burnout. When planning a volunteer watercraft program, consider these five Ws:

WHOM will you recruit for the watercraft education team?

Adult and youth volunteers can be recruited through lake association newsletters, local schools, 4-H or scouting groups. Many service organizations are looking for community-involvement opportunities. We recommend at least two people at the landing. Ideally, an adult works with a youth volunteer. Boaters are very cooperative when a young person is giving the message: "Clean Boats, Clean Waters, please."

WHAT are the duties of a watercraft educator?

Before you organize a team, decide what skills and tasks volunteers should have effective interaction with the public at boat landings. Generally, educators perform three duties:

1. Demonstrate how to visually check boats and recreational equipment for any hitchhiking plants or animals;
2. Demonstrate where and how to clean recreational equipment and other prevention steps boaters need to take every time they leave the water; and
3. Distribute educational materials.

Additional duties may include recording data on the Watercraft Information Report (see Section 6) or keeping track of supplies.

Here are some specific skills to consider:

A Clean Boats, Clean Waters volunteer is...

- Caring – wants people to enjoy water recreation and wants Michigan to be free of aquatic invasive species;
- Friendly – interested in meeting new people and helping them;
- Informed – understands the problems caused by aquatic invasive species;
- A good communicator – able to explain the problem and demonstrate inspection and cleaning techniques;
- Flexible – willing to volunteer on some weekends and holidays;
- Reliable – ready, willing and able to make and keep a commitment to the program during boating season;
- Accurate – able to record information for program organizers; and
- Physically able - healthy enough to inspect watercraft and trailers.

To identify the watercraft education team at a boat landing, all volunteers should wear Clean Boats, Clean Waters T-shirts. Volunteers need to wear this T-shirt to signify that they are working with a specific program (Clean Boats, Clean Waters) and not harassing boaters at the landings.

In addition, Clean Boats, Clean Waters logo stickers are included in the resource kit to use when the weather is inclement and T-shirts won't work. Place the sticker on your sweatshirt or coat. No matter what the weather, boaters will be able to identify the watercraft education team at a glance.



WHEN is the best time to volunteer at a boat landing?

When recruiting volunteers, be specific about the amount of time you want them to work. A volunteer is more likely to agree to a three-hour shift once or twice a month rather than an open invitation to volunteer all summer on weekends and holidays. Volunteers will readily step up if they know the expectations and how much time is realistically needed.

To get the most “bang for your buck,” become acquainted with the activity on your lake and when the lake is the busiest. Are the weekends a flurry of activity from Friday night at 4 p.m. until 8 p.m. Sunday? Or is Saturday morning from 6 a.m. until 10 a.m. the active time at the landings? Usually, holiday weekends during the summer are the busiest times at launch sites. Anglers are up and on the lake by dawn and are out on opening day of fishing season. Recreational boaters usually use the lake in the afternoon, and sunny, warm days draw lots of people to the lake. Become aware of fishing tournaments and special lake events that draw many boats to the landings. Remember, the boat landing can often be the first place an aquatic invasive species enters the system.

WHERE will the watercraft inspection demonstrations take place?

It is important to find out who owns the boat landing before you begin to schedule work shifts for your volunteers. The landing may be owned and maintained by one of several entities: the federal, state, or township government, lake association, or a private business or individual. To check ownership, you might need to contact several organizations.

Department of Natural Resources (DNR)-owned and leased boat landings are identified on the DNR website at www.mcgi.state.mi.us/MRBIS/findlocation.asp. County zoning offices, township and city halls are other potential sources.

You may need to obtain a permit for your event/activity (see Section 7). If you are thinking about installing signage or posting material, find out what the owner requires. If you have limited volunteer resources and many public landings, determine which landings receive the most boat traffic.

WHY is this volunteer program necessary?

Be prepared to answer this question. Often lake owners are frustrated with the public trust doctrine that mandates public use of all waters in Michigan. Lake owners feel it is unfair that they bear the brunt of the cost of managing aquatic invasive species. However, any proactive steps in preventing an infestation are more cost-effective than waiting for an infestation to occur.

Many lakefront property owners have been or are investing in control options at their own expense. Educating boaters can help prevent the reintroduction of invasive species such as Eurasian water-milfoil into the lake. Preventing aquatic invasive species is a better management option than the expensive alternatives. For example, treating Eurasian water-milfoil infestations with chemicals costs an average of \$325 to \$450 per acre per treatment. Eurasian water-milfoil can grow two inches per day and can fragment into hundreds of new plants within hours, so it would not take long for Eurasian water-milfoil to cover hundreds of acres. If this does not impress you, contact members of a lake organization struggling with an invasive species. They can tell you firsthand the tremendous impact that one invasive species caused in their community. Remember, a little prevention is worth a lot of cure.

MATERIALS

Developing a Clean Boats, Clean Waters volunteer watercraft education program does not require a lot of money. By attending a training workshop, you will receive all that you need to start. Boat landings can be very busy during the summer, and you may need more materials. Please refer to the Aquatic Invasive Species Publication List in Section 8 of this handbook. This list explains what publications are available, how to order more publications, and how to print some information from website links.

Resource Kit Contents

- Clean Boats, Clean Waters T-shirts
- Clean Boats, Clean Waters stickers
- Stop Aquatic Hitchhikers™ stickers
- Watercraft checkpoint stickers
- Aquatic Invasive Species identification cards
- Aquatic invasive species fact sheets

Materials to Have When Working at a Boat Launch:

You don't need to take all your materials to the boat landing. It's better to sort through the materials and decide what educational information is best suited for your area. The Clean Boats, Clean Waters program provides one plastic container in which to store all the educational materials. We recommend one resource kit for every landing you are monitoring. By using multiple plastic resource kits, each volunteer team can have all the materials they need and have them protected from the weather.

Key items to distribute to all boaters are the Watercraft Checkpoints sticker or card and Stop Aquatic Hitchhikers™ sticker. These will guide you and the boater in inspecting the appropriate places and describe the prevention steps that boaters need to take every time they leave the water.

Select other materials to take to the boat launch based on which aquatic invasive is most threatening in your area. Perhaps Eurasian water-milfoil is really a pressing issue for your lake; then it makes sense to give boaters an identification card.

Resist the temptation to give the boater one of every card in the resource kit, because boaters will often discard them. It's best to start by handing out a little information and have additional material available if the boaters want to learn more about a particular invasive species.

Additional boat launch items to consider:

- Clipboard and pencil
- Copy of the boat landing script (see Section 5)
- Watercraft Information Report (see Section 6)
- Check Points Illustration (see Section 5)
- Stop Aquatic Hitchhikers™ stickers
- Selected watch cards and brochure (see Section 8)
- Cell phone and local contact phone numbers for emergencies
- Digital camera

WATERCRAFT INSPECTION DEMONSTRATION TIPS

An effective volunteer watercraft team is prepared to raise boater awareness and to encourage and demonstrate the steps necessary to avoid spreading invasive species and damage to recreational equipment. On very rare occasions, you may be uncomfortable about a situation or person. **Always** back away from a potentially dangerous or violent situation. **Never** encourage confrontation, no matter how strongly you might feel about the subject. Remember, volunteers are not enforcers of rules and should never jeopardize their own safety. If you are suspicious of someone (for example, a loiterer or someone who is not intending to go boating), do not hesitate to leave the launch site. Do not put yourself or volunteers at risk. If you feel that a boat launch site is unsafe in any way, please notify the organization you are working for. Use the following DO and DON'T lists to prepare your boat landing message.

The DO List

- Wear the Clean Boats, Clean Waters T-shirt to promote the message. This message gives credibility to the program and to the efforts that volunteers are making across the state.
- Always first introduce yourself and mention the organization you are working for and why you are at the landing.
- Approach boat owners only before they are on the ramp.
- Always ask if the boater would mind answering a few questions.
- Be polite and courteous to all boaters you encounter.
- Listen to a boater's concerns. Remember that you are encouraging boaters to become interested in invasive species.
- Make sure boaters know that they can make a difference!

The DON'T List

- Don't begin asking questions upon approaching boaters, because they might be confused about who you are and why they should give you their time.
- Don't delay boaters or cause a backup.
- Never preach to a boater; your mission is to educate, not alienate.
- If the boater is reluctant to cooperate, hand out educational material and record whatever information you can.

BOAT LANDING MESSAGE

Getting out and speaking to the public can be intimidating. Volunteers can feel a little anxious and nervous. The following prepared script will help volunteers practice and role-play before their first boater shows up at the landing. Practicing with other folks will give volunteers the confidence it takes to greet a boater. If volunteers really want to watch a “pro,” they just need to ask a few kids to get involved. Are kids intimidated? Usually not!

The following prepared script is only one sample of the many methods of addressing boaters at landings and performing watercraft inspection demonstrations. Each volunteer should develop his or her own style and learn how to adapt in a variety of boat landing experiences. Approach boaters only before they are on the ramp, and use the Watercraft Information Report to record the information about the boat and boater (see Section 6). At times you may have only 30 seconds to talk to the boater; other times, long lines at landings may provide you with lots of time to talk. Remember, if the boater is not interested, just hand out a checkpoint card and sticker and record whatever information you can.

No matter what style you use to approach boaters, any watercraft inspection demonstration process should include these points:

1. Tell them who you are, who you represent and why you are there.
2. Ask if they have a short time to answer some questions.
3. Collect information on the Watercraft Information Report form.
4. Ask if they are familiar with Eurasian water-milfoil or zebra mussels or other species in your area. Briefly explain about these invasive species.
5. Ask if they will let you demonstrate how to inspect their boat and equipment.
6. Talk while inspecting, and point out watercraft checkpoints. If they do not want to assist you in the inspection, continue to talk about invasive species as you inspect.
7. Give your final message, the prevention steps:
 - Inspect and remove any visible mud, plants, fish or animals before transporting equipment.
 - Drain water from equipment before transporting.
 - Dispose of unwanted bait in the trash, not in the water.
 - Spray, rinse or dry equipment to remove or kill invasive species.

8. Give them the watercraft checkpoint card or sticker, a Stop Aquatic Hitchhikers™ sticker and other appropriate educational materials.
9. Thank them for their time and cooperation.

Sample Script

As the vehicle approaches, write down the state the vehicle is from and type of watercraft. Introduce yourself:

Good Morning/Afternoon. I am from _____. We are working with state agencies and local groups to talk with boaters about invasive species and help them check their boats for Eurasian water-milfoil and zebra mussels. We are trying to keep Eurasian water-milfoil, zebra mussels and other harmful invasive species from spreading from lake to lake. We also want to help boaters prevent damage that invasive species can cause to their recreational equipment. I have a few quick questions I would like to ask you, and then I would like to walk around your watercraft with you and point out a few places where these species can attach to boats and trailers.

Hand out informational brochures or watch cards.

Ask the questions and record on the Watercraft Information Report:

1. What was the last body of water your boat was on? Print the name in the blank.
2. Did you use your boat during the past 5 days?
3. Have you ever heard of Eurasian water-milfoil, zebra mussels or other invasive species?

If YES, check all categories from which they got information.

<input type="checkbox"/> PSA	<input type="checkbox"/> Publication
<input type="checkbox"/> Newspaper/Media	<input type="checkbox"/> Signs
<input type="checkbox"/> Presentation or Display	<input type="checkbox"/> Other

If NO, explain that invasive plants and animals overtake the lake’s ecological community and that state agencies are attempting to prevent their spread from lake to lake. Always explain to the boater that invasives are the reason that volunteers are out at the launches, trying to raise public awareness about how invasives spread and why they are detrimental to Michigan lakes and rivers.

4. Are you familiar with the problems caused by Eurasian water-milfoil?

Eurasian water-milfoil grows in dense surface mats that shade out native plants, block fish movement, entangle boat motor propellers, and interfere with swimming and many other types of water recreation. Eurasian water-milfoil out-competes native vegetation needed by fish and wildlife. This underwater plant can grow very rapidly — up to 2 inches per day — and can reach lengths of 20 feet. Refer to pamphlets, brochures, and other handouts for more information to provide on Eurasian water-milfoil.

5. Are you familiar with the problems caused by invasive mussels?

Zebra mussels compete with other aquatic organisms for food. They reduce the amount of plankton in the water that fish feed on; they kill native clams by colonizing on their shells; and they clog intake pipes at water utilities and industries. In addition, zebra mussels can attach in huge numbers to any hard surface, such as the bottom of your boat if it was moored in the lake and to piers and docks. They can also damage your boat's bilge and live well. They reproduce quickly — one female can produce up to 1 million eggs per summer.

Refer to pamphlets, brochures and other handouts for more information to provide on zebra mussels.

6. Perform a watercraft check (using checkpoint illustration):

If you would walk around your boat with me, I can show you some areas to look for invasive hitchhikers.

Make sure you talk aloud as you inspect; it helps reinforce the Clean Boats, Clean Waters behavior. Talk to boaters about inspecting and cleaning their watercraft and about draining the water from their boat — such as the bilge, bait buckets and live wells — before they leave the access.

Water is another way invasives can move from lake to lake so it is always a good idea to drain your water. Vegetation can be found on motor boats, the motor/prop, anchors, bunks, rollers, the trailer axle, lights/wiring; for jet skis, it can be found in the intake grate and propeller; and for sailboats, it can be found in the centerboards. Check your anchor and anchor line to see if any plants are clinging to it.

Some aquatic invasives, such as zebra mussels, are also found on the motor/prop, on the sides and bottom of boat below the waterline, on the anchor, and clinging to vegetation. It is a good idea to drain water from the motor, live well, bait well, bait bucket, bilge, and transom wells. Always inspect the hull and sides of your boat for aquatic invasives; if it feels gritty or sandy, it may be that new zebra mussels are attached.

An extra precaution that you can take to eliminate other aquatic invasives is to wash your boat with warm tap water or take your boat through a car wash (Manual self-service facility, **NOT** automatic) or dry your boat and equipment in the sun for five days before entering another lake.

Leave boaters with a final message: Clean Boats, Clean Waters.

Please make it a habit to:

- Inspect and remove any visible mud, plants, fish or animals before transporting equipment.
- Drain water from your equipment (boat, motor, trailer, live wells) before transporting.
- Dispose of unwanted bait in the trash, not in the water.
- Spray, rinse or dry equipment to remove or kill invasive species.

Give boaters the Stop Aquatic Hitchhikers™ sticker and help them place it on the handle side of the trailer winch post. Remind boaters to follow the precautions listed on the Stop Aquatic Hitchhikers™ sticker every time they leave a body of water. Also give boaters the Watercraft Checkpoints card or sticker.

Thank the boaters for their time and cooperation.



POTENTIAL SCENARIOS AND QUESTIONS

“Why are you out here wasting resources when the plant is going to come anyway?”

Even the most educated people will ask this question. Just be prepared mentally for such viewpoints and think about why you are out there and what you will say in reply. Expect the unexpected. Here are some suggested responses:

Even if we cannot keep the plants out completely, we can prevent a lot of widespread damage. Prevention also gives us time to adopt new control methods as they are developed in the future. The longer we keep invasives out of a lake, the longer we put off the enormous costs of management and property devaluation.

If lakefront property owners are investing thousands of dollars or more for control, boater education can help keep invasive plants and animals from being re-introduced into the lake.

“Aren’t all plants bad anyway?”

It is important to clear up this misconception! This is what you can say:

Native plants are lifelines for an aquatic ecosystem, providing the basis for all life within it. The problem lies with invasive (non-native) plants that have no natural inhibitors and therefore out-compete native plants, lowering the water body’s aquatic diversity.

“I don’t have time for this... I know all about it already!”

This remark is fairly common. If boaters do not wish to help you with the survey, you must respect their rights and let them be. In such a situation, the suggested action would be to offer them a sticker and checkpoint card and wish them a nice day.

“Why did it take Michigan so long to do something about invasive species?”

There is no good answer to this question. Here is how you can respond:

In the past, environmental problems have often become established and have sometimes reached a crisis before we did anything about them. In this case, we have learned and are trying to take action before these species spread to more of our sensitive environments. Instead of focusing on what could have been done, we are trying to focus energies on the present and future. We have also become aware of

species, such as hydrilla and asian carp that could invade Michigan waterways and be very damaging to the ecology and economy of our state. We’re trying to prevent their introduction and avoid those costs.

OH NO, YOU FOUND SOMETHING!

Aquatic invasive species can hide in the most mysterious places, and even the most diligent volunteer may not detect a hitchhiker. Catching the invasive on a watercraft before it enters a lake is the most effective means of preventing the spread of non-native species. The following information provides you with specific instructions on how to collect a sample from a watercraft during the inspection process.

Submitting a sample from a watercraft inspection:

If you think you have found an invasive species on a watercraft, request a sample from the owner and follow the procedures. Ask the boater which body of water the boat was on last, and record that information on the Watercraft Information Report. Recommend that the boater take the boat to a car wash (**NOT** automatic) and have the watercraft washed down before it is launched.

Take a sample if:

- You think you have found an invasive species from a body of water that is not currently listed as infested.
- You think you have found an invasive species on a boat entering a body of water not known to be infested with that species.

Steps to follow:

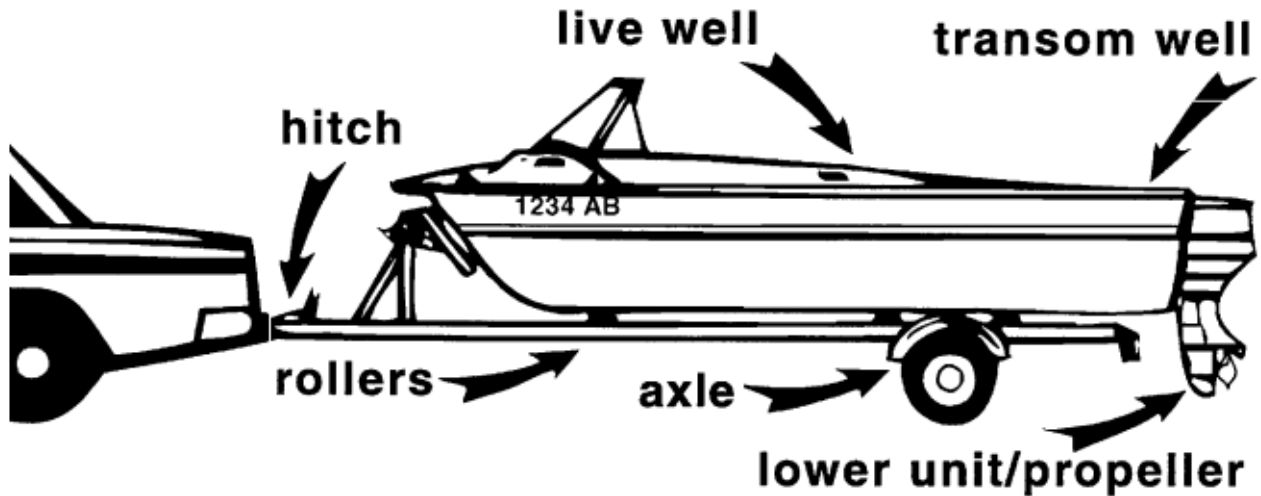
- Put the sample in a plastic bag and keep it in a cool place (a cooler in your car or refrigerator at home). Send the specimen to the local Sea Grant office for identification. See Section 2 of this handbook for locations and phone numbers.
- Use a permanent marker and record the following information on the plastic bag:
 - a. Date
 - b. Body of water
 - c. Description of where the sample was found — on a boat, brought in by an angler caught on fishing line, etc. Be sure to provide the specific location on the lake where the specimen was found to assist in any follow-up work.

Remember if you find “something,” don’t give up; there are a variety of control and management options to address invasive species on your lake. Early detection is the key to controlling the situation!

CLEAN BOATS CLEAN WATERS



WATERCRAFT CHECK POINTS



- | | | |
|---------------------------------------|--|---|
| <input type="checkbox"/> Anchor | <input type="checkbox"/> Ladder | <input type="checkbox"/> Spare tire |
| <input type="checkbox"/> Axle | <input type="checkbox"/> Landing net | <input type="checkbox"/> Tackle |
| <input type="checkbox"/> Bait bucket | <input type="checkbox"/> License plate | <input type="checkbox"/> Tow rope |
| <input type="checkbox"/> Bunks | <input type="checkbox"/> Motor | <input type="checkbox"/> Trailer |
| <input type="checkbox"/> Bow line | <input type="checkbox"/> Wheels | <input type="checkbox"/> Transducer |
| <input type="checkbox"/> Fishing line | <input type="checkbox"/> Live well | <input type="checkbox"/> Transom well |
| <input type="checkbox"/> Floor | <input type="checkbox"/> Lights/wiring | <input type="checkbox"/> Trolling motor |
| <input type="checkbox"/> Hull | <input type="checkbox"/> Rollers | |
| <input type="checkbox"/> Intake pipe | <input type="checkbox"/> Prop | |

CLEAN BOATS CLEAN WATERS



Section 6:
How can volunteers share their information?

KEEPING RECORDS

Volunteer watercraft education teams may wonder why it's important to keep track of the boaters who visit boat landings. Some teams may feel that their presence is all that is needed to assist boaters in checking their recreational equipment for invasive species.

The Clean Boats, Clean Waters program strongly encourages teams to use the reporting form in this section to record the following information:

- What state the visiting vehicle is from
- What type of recreational watercraft is being used
- What body of water the boat was on last and when
- Whether the boater has taken prevention steps
- Whether the boater allows inspection
- Whether plants or animals are on the boat entering or leaving the water body
- Whether the boater has prior knowledge of invasive species
- How many people listened to the message

This information will be entered into a statewide database.

What are the advantages of keeping records about volunteer watercraft inspection education programs?

1. With limited state resources, it makes sense for each volunteer team to track its own data.
2. Collecting data helps the team discover traveling patterns of boaters who visit the lake.
3. The data could also be useful for local ordinance reviews that pertain to the boat landing or water body use.
4. Most importantly, by recording and sharing consistent information, the program can gain valuable insight about the public's knowledge of invasive species and the traveling patterns of aquatic invasives. In this way, volunteer teams assist lake managers with invasive species prevention and control and quantify the impacts that volunteers are having on invasive species. Having this information helps justify the continued need to support invasive species programs.

See: Watercraft Information Report Form on next page

Working with the Watercraft Information Report Form

The report form is fairly straightforward, but the following guidelines are designed to assist you in collecting and recording the correct information (See next page for form).

- The "Prior Knowledge" section allows you to indicate where boaters previously obtained information about aquatic invasives (if they have never heard about them, you don't have to check anything). If boaters have a Stop Aquatic Hitchhikers™ decal, ask them where they got it.
- In the "Prevent AIS" column, check whether or not the boater says they have taken preventive actions, such as power washing or drying the boat.
- In the "Inspect Today" column, check whether or not the boater allows you to inspect the watercraft.
- In the "AIS Found" section, write "Y" if the boat or trailer has weeds hanging off it as the boaters are coming in or going out. Also note whether invasive animals are present and write "Y" if they are. Write "N" if no weeds or invasive animals were found on inspection. Record this information before you ask them to remove plants or animals. This information will help show whether boaters are removing vegetation before coming to new waters.
- The "# Contacts" entry does not necessarily equal the number of people on the boat. Count only the people who actually listened to you. Also, you can use this section if you talk to people at the landing, anglers for example, who aren't boating. You won't have boat information from them, but you can still count them as contacts.

It's important to have one person collect and keep all of your team's reports for the season. At the end of the season, please send copies of the reports to the Clean Boats, Clean Waters coordinator:

Clean Boats, Clean Waters
c/o Michigan Sea Grant
334 Natural Resources Building
Michigan State University
East Lansing, MI 48824-1222

Best of luck in your watercraft inspection education program, and remember to make sure boaters know that they can make a difference!

Sharing Information and Networking Opportunities

Everyone who attends a Clean Boats, Clean Waters training workshop is entered into a volunteer database. Each participant's name, address, and contact information is collected during the workshop and used to facilitate future communication from program leaders to participants and among participants. Contact information provided will only be used for this program and will not be otherwise distributed.





Watercraft Information Report

PLEASE PRINT

Notice: Information requested on this form will be used to track and evaluate public awareness and education efforts for watercraft inspection. Personal information, including names of staff or volunteers, is not intended to be used for other purposes but may be made available to requesters.

Volunteer Name:		Waterbody Name:										Date:									
Landing Location:		County:										City/Twp/Village:									
Time	Watercraft Information								Boater Information												
	State	Personal	Pontoon	Fishing	Pleasure/Ski	Sailboat	Kayak/Canoe	Other	Date	Last Used	PSA	News	Display	Pub	Sign	Other	Prevent AIS	Inspect Today	AIS Found	# Contacts	
am																					
pm																					
am																					
pm																					
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Comments/Notes:

Question Boaters Ask (use back of this page):

CLEAN BOATS CLEAN WATERS



Section 7:

How can volunteers take care of boat landings?

BOAT LANDING INVENTORY

The Clean Boats, Clean Waters program offers an excellent opportunity for volunteers to help care for boating access sites. Among the contributions volunteers can make are:

- Inventory the site
- Report to the owner on its status
- Post a sign about invasive species
- Display information about invasive species

Use the information in this section to guide you in those activities.

Conduct an inventory of information about the landing(s) you plan to use. PLEASE PRINT

Water Body Name: _____

Boat Landing Location (Road, Street, Drive): _____

County: _____

Township, City, Village: _____

Boat Landing Owner: _____

Ramp Type:

- | | |
|---|----------------------------------|
| <input type="checkbox"/> Concrete Slab | <input type="checkbox"/> Asphalt |
| <input type="checkbox"/> Concrete Plank | <input type="checkbox"/> Gravel |
| <input type="checkbox"/> Other _____ | <input type="checkbox"/> Dirt |

Parking Lot Type:

- | | |
|-----------------------------------|--------------------------------|
| <input type="checkbox"/> Concrete | <input type="checkbox"/> Dirt |
| <input type="checkbox"/> Asphalt | <input type="checkbox"/> Other |
| <input type="checkbox"/> Gravel | |

Number of Parking Spaces: _____ Disability Spaces: _____

Type of Information Display:

- | | |
|--|--------------------------------|
| <input type="checkbox"/> Kiosk | <input type="checkbox"/> Other |
| <input type="checkbox"/> Information Center (glass-enclosed) | <input type="checkbox"/> None |

Place to leave brochures? Yes No

Is an Aquatic Invasive Species sign posted and visible from the landing?

- | | |
|---|--------------------------------|
| <input type="checkbox"/> Green and white | <input type="checkbox"/> Other |
| <input type="checkbox"/> Yellow and black | |

Sign's distance from the landing: _____

Overall facility condition: _____

After you have inventoried the site, decide which efforts are most needed at that location, and discuss them with the landing's owner. You should always get permission before making any changes at the landing site.

How can we share the findings from our inventory?

Contact the landing's owner and ask for some time to explain the Clean Boats, Clean Waters program and get the necessary permission to use the launch site for your team's work (See the DNR Permit Application at the end of this section). At that time, you can also discuss your findings and any ideas you have for improvements/changes.

Boat Landing Ownership and Maintenance

Whoever owns or operates a boat landing is responsible for its maintenance.

How can I find out who owns the boat landing?

It is important to know who owns the landing and who to contact. Ownership of boat landings can be determined through a variety of methods. Plat maps are one useful source, as are searches at the register of deeds office for the county in which the landing is located. Department of Natural Resources (DNR)-owned and leased boat landings are identified on the DNR website – www.mcgi.state.mi.us/MRBIS/findlocation.asp

How are state, county, village, or city parks regulated?

State-owned parks with boat landings are regulated under Public Act 451 of 1994. County, village, and cities that own parks with boat landings usually operate such parks and boat landings under local ordinances or have agreements with the State of Michigan for operational standards (such as Grant-in-Aid or Michigan Natural Resources Trust Fund).





Boat Landing Sign

Michigan has developed this sign about invasive species for use at boating access sites. If you find one of these at the site you will be using, make a note of it on your inventory form. If you find another type of sign there, also note that in the appropriate place on the inventory. If the boat landing has no sign about invasive species, you can request one of these signs by contacting the Michigan Office of the Great Lakes at (517) 335-4056.

Displaying and Distributing Information

If the landing has a message board or kiosk, volunteers may be able to display and/or distribute information about invasive species and contact numbers to use if a questionable plant or animal is found. The boat landing may be the first opportunity for volunteers to educate boaters. The Clean Boats, Clean Waters team cannot be there for every boater, but volunteers can often offer educational information at any time.

Launch Regulations

The Michigan Department of Natural Resources (DNR) encourages free boat launching as part of its responsibility for public access to the state's waters. However, a reasonable launch fee may be charged under authority of Public Act 451 of 1994 for the purpose of operating and maintaining a boat access site owned or operated by DNR and other access providers. Excessive, unjustified, or unreasonable boat launching fees restrict or prohibit public boating access and use of navigable waters in the state.

What is the public trust doctrine?

The Michigan Constitution establishes a state-administered public trust for navigable waters of the state. Under the public trust doctrine, the state holds the water of navigable bodies of water in trust for all its citizens and has an obligation to protect public rights in navigable waters.

What is the relationship of the public trust doctrine to local regulations?

The public trust doctrine plays a substantial role in any decision relating to the public's access to and use of public waterways. The doctrine provides that the government holds all navigable waters in trust for the benefit of, and unrestricted use by, the public as a whole. This doctrine essentially creates a property right for the public as a whole in the waterways within a state. Access and use of waters may be restricted only under the police powers of the state for the protection and conservation of the public health, safety, and welfare, including environmental conservation and recreational purposes. Any regulation of the use of waterways must be reasonable in respect to the public interest being protected.

Local government units may not enact any ordinance or regulation that in any manner excludes any boat from the free use of the waters of this state or that pertains to the use, operation, or equipment of boats or that governs any activity regulated by the Michigan Waterways Commission.



Michigan Department of Natural Resources
EVENT APPLICATION/PERMIT TO USE STATE LAND
*This information is required under authority of Part 5 of Act 451 of 1994, as amended,
 MCL 324.501- 511 and the Rules for the Regulation of State Lands, R299.921 – R299.932.*

DNR USE ONLY	
Management Unit	
Permit Number	

APPLICANT: Please read all attachments before completing application. Submit completed application to local DNR office where permit is being sought. Application must be submitted at least sixty (60) days prior to proposed use. Attach additional information as needed to fully describe proposed use activity. Checks or money orders should be made payable to "State of Michigan."
 • Initial application fee of fifty dollars (\$50.00) must be submitted with application.

Name of Applicant/Organization			Name of Contact Person		
Address			Address		
City, State, ZIP			City, State, ZIP		
Telephone () () ()	FAX () () ()	Federal ID Number	Telephone () () ()	FAX () () ()	e-mail address

Proposed Event Location on State Land (Name of Trail or Department Facility or Legal Property Description, and Attach Map)

Duration - 1/2 Day or less 1 Day 2-3 Days 4-7 Days 8+ Days

Will Applicant charge a fee/donation for participation? No Yes _____

Will Event require use of parking lot/campground/access site? No Yes If Yes, explain: _____

Will structures or equipment be placed on State Land? No Yes If Yes, explain: _____

Will sound amplification equipment be used? No Yes If Yes, explain: _____

Will food, beverages or other items be sold? No Yes If Yes, explain: _____

Will alcohol be served or consumed? No Yes If Yes, explain: _____

Will Event require use of utilities (water, electric, sewer) ? No Yes If Yes, explain: _____

Will Event be competitive? No Yes If Yes, indicate Length of Route and describe below: Length: _____

TYPE OF EVENT: 4-Wheel Drive ATV Motorcycle Snowmobile Boating Fishing Equestrian Field Trials
 Dog-related (other) Walking/Running Bicycle Skiing Adventure Race Family Other (specify) _____

Description of Proposed Type of Event (Attach additional information as needed to fully describe event activity.)

Date(s) of Proposed Use From: _____ To: _____	Weekend Use <input type="checkbox"/> Yes <input type="checkbox"/> No	Time of Event (if applicable)	No. of Participants/Users	No. of Recreational Units (Camping)
SAFETY PLAN - A Safety Plan is normally required for events as stated in the attached Conditions.		Name of person in charge of Safety Plan () () ()	Telephone () () ()	Safety Plan Attached <input type="checkbox"/> Yes <input type="checkbox"/> No
FIRE PLAN - A Fire Plan is required for motorized events and may be required for other types of events, as stated in the attached Conditions.		Name of person in charge of Fire Plan () () ()	Telephone () () ()	Safety Plan Attached <input type="checkbox"/> Yes <input type="checkbox"/> No

APPLICANT: Read all pages and attachments before certification and signature.

APPLICANT CERTIFICATION

I certify that the information submitted herein, including all attachments, is accurate and complete and that I have read and understand and agree to abide by the requirements contained on all attachments, including liability insurance and performance bonding requirements. I have enclosed the required Application Fee. I understand that, if I have submitted a Review Fee that is not the correct amount, an additional fee must be paid prior to review of my application. I also understand that all remaining fees for the use of the State Land must be received by the Department within 14 days of notification of approval to the applicant or permissions may be considered void.

Applicant/Authorized Representative - Print or Type _____ Signature _____ Date _____

FOR DNR USE ONLY							
Management Unit	County	Performance Bond Type <input type="checkbox"/> Surety <input type="checkbox"/> Cash	Amount \$ _____	Receipt No.	Other Charge \$ _____	Receipt No.	
Review Fee \$ _____	Receipt No.	Application Fee \$ _____	Receipt No.	Use Fee \$ _____	Receipt No.	Timber Consideration Fee \$ _____	Receipt No.
Insurance Aggregate Amount \$ _____	Date Permit Issued	Date Permit Expires	Applicant's Permit Number				
Department Representative (please print) _____		Telephone (with area code) _____	E-mail Address _____				
Signature _____		Address _____					

ADDITIONAL REQUIREMENTS: As contained in the attached Exhibit(s).

CLEAN BOATS CLEAN WATERS



Section 8:

Where can volunteers get
more information and materials?

USEFUL WEBSITE LINKS

Aquatic Nuisance Species Task Force (ANSTF)
www.anstaskforce.gov

Aquatic Plant Management Society (APMS)
www.apms.org

Center for Aquatic Plants, University of Florida
<http://aquat1.ifas.ufl.edu>

Cornell University Department of Natural Resources: Biological Control of Non Indigenous Plant Species
www.invasiveplants.net

EPA Office of Water
www.epa.gov/water

Federal Interagency Committee for the Management of Noxious and Exotic Weeds (FICMNEW)
www.fs.fed.us/ficmnew/index.shtml

Fisheries Learning on the Web
www.projectflow.us

Great Lakes Indian Fish and Wildlife Commission's (GLIFWC) Exotic Plant Information Center
www.glifwc.org/invasives

Great Lakes Information Network (GLIN)
www.great-lakes.net

Invasive Plant Association of Wisconsin
www.ipaw.org

Listed Noxious Weeds and Invasive Non-Native plants - Eastern Region, USDA-Forest Service
www.fs.fed.us/wildflowers/invasives/index.shtml

Maine Department of Environmental Protection Invasive Aquatic Species Program
www.state.me.us/dep/blwq/topic/invasives

Michigan Clean Water Corps
www.micorps.net

Michigan Department of Environmental Quality
www.michigan.gov/deqaquaticinvasives

Michigan Department of Natural Resources
www.michigan.gov/dnr

Michigan Inland Lakes Partnership
<http://michiganlakes.msue.msu.edu>

Michigan Invasive Plant Council
<http://invasiveplantsmi.org>

Michigan Natural Features Inventory
<http://web4.msue.msu.edu/mnfi>

Michigan Sea Grant
www.miseagrant.umich.edu/ais

Minnesota Department of Natural Resources
www.dnr.state.mn.us/invasives

Minnesota Sea Grant
www.seagrant.umn.edu/exotics

Nab the Aquatic Invader!
www.iisgcp.org/NabInvader

North American Lake Management Society (NALMS)
www.nalms.org

Natural Resources Conservation Service, USDA
www.plants.usda.gov

Plant Conservation Alliance's Alien Plant Working Group
www.nps.gov/plants/alien

Protect Your Waters and Stop Aquatic Hitchhikers
www.protectyourwaters.net

Purple Loosestrife Project-Michigan State University
www.miseagrant.umich.edu/ais/pp

Swimmer's itch
<http://dnr.wi.gov/lakes/swimmersitch>

USDA National Invasive Species Information Center, Aquatic Species
www.invasivespeciesinfo.gov/aquatics/main.shtml

USGS Water Resources
<http://water.usgs.gov>

Washington State Department of Ecology
www.ecy.wa.gov/programs/eap/lakes/aquaticplants

Wisconsin Department of Natural Resources Invasive Species
<http://dnr.wi.gov/invasives>

Wisconsin Sea Grant
www.seagrant.wisc.edu

Wisconsin State Herbarium
www.botany.wisc.edu/herbarium



AQUATIC INVASIVE SPECIES PUBLICATIONS

When pdf files are indicated, feel free to download and print your own copy of the publications.

Clean Boats, Clean Waters Publications

Available at www.miseagrant.umich.edu/cbcw

Clean Boats, Clean Waters fact sheet
Clean Boats, Clean Waters AIS Volunteer Program brochure
Clean Boats, Clean Waters AIS Volunteer Program handbook
Watercraft Checkpoints poster

Sea Grant Publications

Available at www.miseagrant.com

Clean Boats, Clean Waters AIS Volunteer Program (brochure)

Great Lakes Unwanted Aquatic Invasive Species – Poster Series

Presents key facts about aquatic invasive species in the Great Lakes. Colorful illustrations, photos and graphics help people understand why invasive species are a problem and what can be done. Individual 12" x 18" posters portray ruffe, goby, water fleas, zebra mussel, sea lamprey, purple loosestrife and Eurasian water-milfoil, while a 24" x 31" poster presents all seven species.

Other Publications

Many of the following publications are available from websites; links are provided below.

Aquatic Invasive Plants

The Facts on Eurasian Water-milfoil fact sheet
www.miseagrant.umich.edu/downloads/ais/fs_EWM-milfoil.pdf

A Field Guide to Invasive Plants of Aquatic and Wetland Habitats for Michigan
<http://web4.msue.msu.edu/mnfi/education/aquaticsfieldguide.cfm>

Heading Off Hydrilla
www.miseagrant.umich.edu/downloads/ais/hydrillafactsheet.pdf

Zebra Mussels

Boaters: Take Action against Zebra Mussels
www.seagrant.umn.edu/exotics/ZMBoaters.pdf