



Michigan Inland Lakes Partnership

Promoting collaboration to advance stewardship of Michigan's inland lakes.

**A Survey of
Aquatic Invasive Species
Management Programs
Serving Michigan**



The logo features a dark blue silhouette of Michigan's outline on the left, set against a dark blue background. To the right, the text "Michigan Inland Lakes Partnership" is written in a white, sans-serif font. Below the text, there is a light blue, wavy shape representing water, which also serves as a background for the text.

Michigan Inland Lakes Partnership

Promoting collaboration to advance stewardship of Michigan's inland lakes.

The **Michigan Inland Lakes Partnership** is a diverse partnership of state agencies, public universities, Native American tribes, non-governmental organizations, private businesses and their respective industry associations, whose primary mission is dedicated to promoting collaboration to advance stewardship of Michigan's inland lakes.

This is a larger version of the logo. It features a light blue silhouette of Michigan's outline. The text "Michigan Inland Lakes Partnership" is overlaid on the lower right portion of the map in a bold, black, sans-serif font. At the bottom left of the map, there is a small illustration of a reed or grass plant. At the bottom of the map, there are three wavy lines representing water.

**Michigan
Inland Lakes
Partnership**

www.michiganlakes.msue.msu.edu

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Introduction

The Great Lakes region, an expansive and profoundly valuable resource containing over 20 percent of the earth's surface freshwater and Michigan, hosting 11,000 equally diverse and valuable inland lakes as well as countless miles of rivers, streams and their respective tributaries together form an inter-connected freshwater ecosystem that is highly sensitive to the adaptive and aggressive characteristics of foreign aquatic invasive species (AIS).

Of the approximately 180 aquatic invasive species introductions that have occurred within the the Great Lakes region in the past eighty years, just four AIS plant and animal species alone have accounted for a majority of the billions of dollars of economic and ecological damage to the Great Lakes and inland lake aquatic ecosystems. The sea lamprey, introduced to the Great Lakes in 1929 following the opening of the Welland Canal, has been identified as the primary cause of the significant Great Lakes trout population declines which occurred in the 1940's and 1950's. Sea lamprey control programs continue to this day at an annual cost of fourteen million dollars. Zebra and quagga mussels, both natives of the Eurasian continent, have driven profound and catastrophic changes to Great Lakes sport fisheries and substantial economic damage to public utilities, power plants and municipal drinking water facilities throughout the region. In addition, an opportunistic and aggressive aquatic invasive plant, Eurasian Water Milfoil, has exacted a heavy toll on the ecological and recreational value of thousands of Michigan's inland lakes and connecting waterways. There are many more AIS within the Great Lakes and inland waters of Michigan that carry the potential to further impair, disrupt or destroy priceless freshwater ecosystems if they are not managed in a timely and effective manner.

The University of Notre Dame's Center for Aquatic Conservation recently estimated that the loss of ecosystem services directly attributed to aquatic invasive species is costing the Great Lakes region more than \$200 million per year. The loss of valuable ecological services represented by sharply declining Great Lakes sport fisheries and the loss of the recreational and economic viability of hundreds of Michigan inland lakes emphasizes the need for a more integrated, cohesive and well funded approach to AIS management.

The **Michigan Inland Lakes Partnership** recognizes the seriousness of the threat posed to Great Lakes and inland lake ecosystems by aquatic invasive species. One of the primary goals of the **Partnership** focuses on improving monitoring and management of AIS in Michigan and throughout the Great Lakes region.



Michigan Inland Lakes Partnership

Promoting collaboration to advance stewardship of Michigan's inland lakes.

Purpose

This survey was conducted by the **Michigan Inland Lakes Partnership** in order to provide concerned citizens, members of the scientific, academic and technical communities as well as decision-makers and stakeholders at all levels with a broad overview of the federal, bi-national, state and local government as well as non-governmental organization programs and initiatives that have been implemented to prevent and manage aquatic invasive species in Michigan and throughout the Great Lakes watershed region.

Summary

This document presents readers with a federal government through community level review of the aquatic invasive species programs (as represented by agency, organization or program dedicated web sites) operating within Michigan and the Great Lakes region. It explores the efforts of the United States government and its respective agencies, reviews bi-national cooperative partnerships and agreements as well as programs and laws managed and enforced by the State of Michigan and local governments. Unique and creative programs designed to encourage, enable and support direct citizen participation in AIS prevention, monitoring and early detection programs are also presented. In addition, the survey highlights examples of non-governmental organizations providing outstanding leadership and support to regional and local efforts to combat AIS. We also recognize the important role served by commercial businesses and their industry association in working to ensure the success of local inland lake aquatic invasive species management projects. The survey concludes with a look at model community based programs created to prevent and manage AIS in local inland lakes. It is our hope that those who devote the time to browse this document will come away with an improved understanding of the nature and scope of the programs and initiatives working in Michigan to prevent and manage aquatic invasive species.

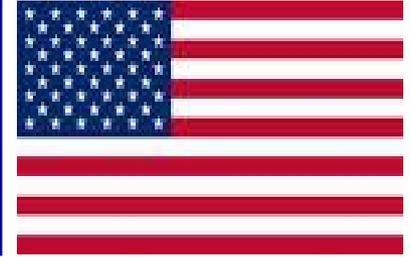
A Survey of Aquatic Invasive Species (AIS) Management Programs Serving Michigan

Project Team

-  Michigan Lake and Stream Associations
-  MI Chapter, North American Lake Management Society
-  Little River Band of Ottawa Indians
-  Little Traverse Bay Bands of Odawa Indians

Section 1.

United States Federal Government Aquatic Invasive Species Programs Serving Michigan



Primary Federal Laws Focused on Aquatic Invasive Species

- **Non-Indigenous Aquatic Nuisance Prevention Control Act of 1990**
- **National Invasive Species Act of 1996**

This **National Invasive Species Act of 1996** reauthorized and amended the **Non-indigenous Aquatic Nuisance Prevention Control Act of 1990**. The Act includes a number of additional findings, including that once introduced, aquatic nuisance species are unintentionally transported and introduced into inland lakes and rivers by recreational boaters, commercial barge traffic and other pathways; preventative management measures are needed nationwide to prevent the further introduction and infestation of destructive species. The Act reauthorized and modified a number of the **ballast management programs** and provisions identified in the **Nonindigenous Aquatic Nuisance Prevention Control Act of 1990**. The **National Invasive Species Act of 1996** also mandated the establishment of the **Aquatic Nuisance Species Task Force**, an inter-governmental organization dedicated to the prevention and control of aquatic invasive species.



Council on Environmental Quality

The Council on Environmental Quality

The Council on Environmental Quality (CEQ) coordinates Federal environmental efforts and works closely with agencies and other White House offices in the development of environmental policies and initiatives. CEQ was established within the Executive Office of the President by Congress as part of the [National Environmental Policy Act of 1969 \(NEPA\)](#) and additional responsibilities were provided by the Environmental Quality Improvement Act of 1970.

The President's Advisor

The Council's Chair, Nancy Sutley, serves as the principal environmental policy adviser to the President. Chair Sutley assists and advises the President in developing environmental policies and initiatives.

Through inter-agency working groups and coordination with other EOP components, CEQ works to advance the President's agenda. It also balances competing positions, and encourages government-wide coordination, bringing federal agencies, state and local governments, and other stakeholders together on matters relating to the environment, natural resources and energy.

www.whitehouse.gov/administration/eop/ceq/



The **National Invasive Species Council (NISC)** was established by [Executive Order \(EO\) 13112](#) to ensure that **Federal programs and activities to prevent and control invasive species are coordinated, effective and efficient.**

National Invasive Species Council members are the Secretaries and Administrators of 13 federal departments and agencies **to provide high-level coordination on invasive species** and is co-chaired by the Secretaries of [Commerce](#), [Agriculture](#), and the [Interior](#) defines invasive species as **"...an alien (or non-native) species whose introduction does, or is likely to cause economic or environmental harm or harm to human health"**.

www.invasivespecies.gov

ANS Task Force

Dedicated to the prevention and control of aquatic nuisance species



The **Aquatic Nuisance Species (ANS) Task Force** is an inter-governmental organization dedicated to preventing and controlling aquatic nuisance species, and implementing the **Non-indigenous Aquatic Nuisance Prevention and Control Act (NANPCA)** of 1990. The various NANPCA mandates were expanded later with the passage of the **National Invasive Species Act (NISA)** in 1996. The Task Force consists of 13 Federal agency representatives and 12 Ex-officio members, and is co-chaired by the **U.S. Fish and Wildlife Service** and **National Oceanic and Atmospheric Administration**.

ANS Task Force Primary Missions

- Prevention
- Monitoring
- Control
- Education
- Research

www.anstaskforce.gov



Dedicated to the prevention and control of aquatic nuisance species

Federal ANS Task Force Member Departments and Agencies

U.S. Fish and Wildlife Service (Task Force Co-Chair)

National Oceanic and Atmospheric Administration (Task Force Co-Chair)

U.S. Coast Guard

U.S. Environmental Protection Agency

U.S. Department of the Interior Bureau of Land Management

U.S. Department of the Interior Bureau of Reclamation

U.S. Department of State

U.S. Department of Agriculture Animal and Plant Health Inspection Service

U.S. Army Corps of Engineers

U.S. Geological Survey

U.S. National Park Service

U.S. Forest Service

U.S. Department of Transportation

www.anstaskforce.gov



**STOP AQUATIC
HITCHHIKERS!**

Protect Your Waters and Stop Aquatic Hitchhikers!

Welcome to a site for recreational users who want to help stop aquatic nuisance species. As Americans, we love to spend time on the water. Protecting these resources is an important part of our overall enjoyment. A concern we must all address is the spreading of harmful plants, animals and other organisms. These aquatic nuisance species can hitch a ride on our clothing, boats, and items used in the water. When we go to another lake or stream, the nuisance species can be released. And, if the conditions are right, these introduced species can become established and create drastic results.



**Stop Aquatic Hitchhikers!
Clean all recreational equipment.**

The Stop Aquatic Hitchhikers web site is part of the [ANS Task Force](#) public awareness campaign and is sponsored by the [U.S. Fish and Wildlife Service](#) and the [U.S. Coast Guard](#).

www.protectyourwaters.net



Aquatic Invasive Species Program

The **Branch of Aquatic Invasive Species**, part of the Service's Fisheries Program office in Washington D.C., leads the Service's Aquatic Invasive Species (AIS) Program. The AIS Program is currently authorized by the **National Invasive Species Act (1996)**; formerly the **Nonindigenous Aquatic Nuisance Prevention and Control Act of 1990**.

The AIS Program also funds staff for the **ANS Task Force** and numerous Task Force activities. The Task Force now has 13 Federal members and 12 *Ex-officio* members, which is chartered under the Federal Advisory Committee Act and co-chaired by the Service's Assistant Director for Fisheries and Habitat Conservation and the Undersecretary of Commerce/NOAA.

www.fws.gov/fisheries/ans/ANS.cfm

USFWS Tasked AIS Activities

Preventing the Introduction and Spread of Aquatic Invasive Species

Detection and Monitoring of Aquatic Nuisance Species

Rapid Assessment and Response to New Introductions of Aquatic Invasive Species

Control and Management of Aquatic Invasive Species

Outreach and Education



U.S. Fish & Wildlife Service

Fisheries

Great Lakes - Big Rivers

Aquatic Nuisance Species

How We Manage Aquatic Nuisance Species

More than 20 Federal agencies are involved with preventing and controlling aquatic nuisance species, in cooperation with States, Tribes, private industry, and others. The fishery program seeks to prevent and reduce the establishment and spread of aquatic nuisance species by providing leadership in collaborative efforts to implement activities and programs that prevent the establishment of aquatic nuisance species, by partnering to develop methods and conduct programs designed to prevent the spread of aquatic nuisance species to new locations and limit the growth of established populations.

We meet these goals by partnering in initiatives to identify and monitor high-risk pathways for introductions and participating in preventative actions to reduce introductions. We support State management plans and work to fulfill the **National Aquatic Invasive Species Act**. We also serve on the [Great Lakes Panel on Aquatic Nuisance Species](#) and support national and state initiatives to combat aquatic invasive species and provide educational materials.

www.fws.gov/midwest/fisheries/topic-ans.htm

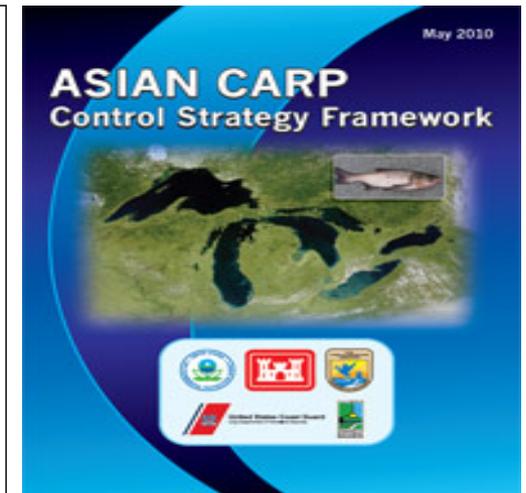
Asian Carp Control

The official website of the Asian Carp Regional Coordinating Committee



Asian Carp Regional Coordinating Committee

AsianCarp.org is an official web site established to coordinate the implementation of control and management of Asian carps in the United States. Development and maintenance of this web site is supported by the [U.S. Fish & Wildlife Service](#) through a partnership with the [University of Texas - Arlington](#) and contains information and resources derived from a variety of other partners and sources. Permission is granted for the fair use of documents and other materials contained on this web site for personal, academic, scientific, conservation, and natural resource management purposes. None of the materials contained herein may be used for profit.



www.asiancarp.org



United States Environmental Protection Agency

INVASIVE SPECIES

Invasive species means an alien species whose introduction does or is likely to cause economic or environmental harm or harm to human health. Invasive species are one of the largest threats to our terrestrial, coastal and freshwater ecosystems, as well as being a major global concern. Invasive species can affect aquatic ecosystems directly or by affecting the land in ways that harm aquatic ecosystems. Invasive species represent the second leading cause of species extinction and loss of biodiversity in aquatic environments worldwide. They also result in considerable economic effects through direct economic losses and management/control costs, while dramatically altering ecosystems supporting commercial and recreational activities. Effects on aquatic ecosystems result in decreased native populations, modified water tables, changes in run-off dynamics and fire frequency, among other alterations. These ecological changes in turn impact many recreational and commercial activities dependent on aquatic ecosystems. Common sources of aquatic invasive species introduction include ballast water, aqua-culture escapes, and accidental and / or intentional introductions, among others.

www.epa.gov/owow/invasive_species/index.html



Aquatic Species

Aquatic Species includes both aquatic plant and aquatic animal species. Invasive aquatic plants are introduced plants that have adapted to living in, on, or next to water, and that can grow either submerged or partially submerged in water. Invasive aquatic animals require a watery habitat, but do not necessarily have to live entirely in water.

[Legal Definitions - Executive Order 13112](#)

USDA. NAL. National Invasive Species Information Center.

[Invasive Species Definition Clarification and Guidance White Paper \(PDF | 104 KB\)](#)

Submitted by the Definitions Subcommittee of the Invasive Species Advisory Committee (ISAC), Approved by ISAC Apr 27, 2006.

Use our **Aquatic Species Custom Search Engine** to search for invasive species information included in this section of NISIC's site:

www.invasivespeciesinfo.gov/aquatics/main.shtml



Invasive Species: Manager's Tool Kit - Control - Windows Internet Explorer

http://www.invasivespeciesinfo.gov/toolkit/control.shtml

File Edit View Favorites Tools Help

Internet Explorer cannot dis... Suggested Sites Free Hotmail Web Slice Gallery

Invasive Species: Manager's Tool Kit - Control

Search NISIC

- Search all USDA
- Advanced Search
- Search Tips

Browse by Geography

- United States
- International

Browse by Subject

- Aquatic Species
- Plants
- Animals
- Microbes
- Economic Impacts
- Laws and Regulations
- Manager's Tool Kit**
- Resource Library

You are here: Home / Manager's Tool Kit / Control

Manager's Tool Kit

- Control**
- **Control Mechanisms**
Outlines biological, chemical, and mechanical control methods for invasive species.
 - **Decision Support Tools**
Covers risk assessments, ranking systems, and other decision-making tools.
 - **Management Plans by Geography**
Contains invasive species management plans on the national, regional, state and international level.
 - **Management Plans by Species**
Contains invasive species management plans for aquatic species, plants, animals, and microbes.
 - **Policy Development**
Describes guidelines for developing policies, strategies, and other methods of controlling invasive species.

Manager's Tool Kit

- Control**
 - Control Mechanisms
 - Decision Support Tools
 - Management Plans by Geography
 - Management Plans by Species
 - Policy Development
- Early Detection and Rapid Response**
- Education for Professionals**
- Expertise Databases**
- Grants and Funding**
- Monitoring**
- Outreach Tools**
- Prevention**
- Research Projects**
- Restoration**
- Vectors and Pathways**

www.invasivespeciesinfo.gov/toolkit/control.shtml



National Oceanic and Atmospheric Administration Great Lakes Environmental Research Laboratory

GLERL

Great Lakes Environmental Research Laboratory AIS Program

The Great Lakes basin is the aquatic gateway to the heartland of America and a national hot spot for **aquatic invasive species (AIS)** introductions that can reach other sections of the U.S. Records of aquatic species invasions in the Great Lakes start in the early 1800's. By 2005 at least 182 AIS have been reported in the Great Lakes, with more than 40% discovered since 1960. The rate of discovery since 1960 has not been linear, but for illustrative purposes, can be said to average about one new invader every 28 weeks. Nonindigenous species are now a significant component of most trophic levels in the Great Lakes.

Great Lakes Environmental Research Laboratory's research on invasive species targets two key issues:

- The prevention of new aquatic invasive species introductions
- The understanding of the biological and ecological impacts of non-indigenous species in the Great Lakes.

<http://www.glerl.noaa.gov/res/Programs/ais>



GLANSIS

GREAT LAKES
AQUATIC NONINDIGENOUS SPECIES
INFORMATION SYSTEM

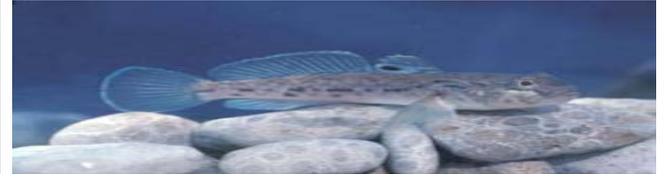
Great Lakes Aquatic Non-Indigenous Species Information (Database) System

The Great Lakes have a long history of aquatic non-indigenous species (ANS) introductions – both intentional and unintentional. As of 2007, over 180 non-indigenous species have been reported to have reproducing populations in the Great Lakes basin, i.e. lakes Superior, Michigan, Huron, St. Clair, Erie, Ontario, and their connecting channels and water bodies within their respective drainages. The two most recent ANS reported and verified established in the Great Lakes basin were viral hemorrhagic septicemia (VHS), and *Hemimysis anomala*.

The number of Great Lakes aquatic non-indigenous species documented in **GLANSIS** must be interpreted as a minimum. Identification depends on our ability to find, recognize, verify, and document new species, which is, in turn, dependent on our ability to adequately sample the Great Lakes ecosystem.



www.glerl.noaa.gov/res/Programs/glansis/glansis.html



Non – Indigenous Aquatic Species Program

The ***Nonindigenous Aquatic Species Program*** tracks the status and distribution of introduced aquatic organisms and provides this information in a timely manner for research, management and education.

Welcome to the **Non-indigenous Aquatic Species (NAS)** information resource for the United States Geological Survey. Located at Gainesville, Florida, this site has been established as a central repository for spatially referenced bio-geographic accounts of introduced aquatic species. The program provides scientific reports, online/real-time queries, spatial data sets, regional contact lists, and general information. The data is made available for use by biologists, interagency groups, and the general public. The geographical coverage is the United States.

Program Goals

- Develop and provide an accurate on-going assessment of the status and distribution of non-indigenous aquatic species nationwide.
 - Identify geographic gaps in knowledge of the distribution of introduced aquatic organisms.
- Gain an understanding of the scope and scale of aquatic introductions in the United States.

<http://nas.er.usgs.gov/>



United States Coast Guard
U.S. Department of Homeland Security

Environmental Standards Division - Aquatic Nuisance Species

Overview

Every day, large quantities of ballast water from all over the world are discharged into United States waters. Carried in this water are plants, animals, bacteria, and pathogens. These organisms range in size from microscopic to large plants and free-swimming fish. These organisms have the potential to become aquatic nuisance species (ANS). ANS may displace native species, degrade native habitats, spread disease, and disrupt human social and economic activities that depend on water resources.

In recent years there has been increased international focus on [Ballast Water Management](#) (BWM) due to the ecological, economic, and potential health threats caused by the spread of ANS from ballast water. The United States Coast Guard is responding to these concerns through a comprehensive national BWM program. This program applies to all vessels equipped with ballast water tanks that operate in U.S. waters and are bound for ports or places in the U.S. Highlights of the program are: (1) requires mandatory ballast water management practices for all vessels that operate in U.S. waters; (2) establishes additional practices for vessels entering U.S. waters after operating beyond the EEZ; and (3) requires the reporting and recordkeeping of ballasting operations by all vessels. More information on the BWM program regulations may be found in [33 CFR Part 151](#) Subparts C and D.

www.uscg.mil/hq/cg5/cg522/cg5224/ans.asp



United States Coast Guard
U.S. Department of Homeland Security

Ballast Water Management

Ballast water discharged from ships is one of the **pathways** for the introduction and spread of [aquatic nuisance species \(ANS\)](#). In response to national concerns, the **National Invasive Species Act of 1996 (NISA)** was reauthorized and amended the **Nonindigenous Aquatic Nuisance Prevention and Control Act of 1990 (NANPCA)**. NISA required the Coast Guard to establish national voluntary ballast water management guidelines. If the guidelines were deemed inadequate, NISA directed the Coast Guard to convert them into a mandatory national program. To comply with NISA, the Coast Guard has established both regulations and guidelines to prevent the introduction of ANS.



www.uscg.mil/hq/cg5/cg522/cg5224/bwm.asp



The University of Notre Dame's Center for Aquatic Conservation estimates that the loss of ecosystem services directly attributed to aquatic invasive species is costing the Great Lakes region more than \$200 million per year.

Section 2.



U. S. and Canada Bi-National Agreement Focused Aquatic Invasive Species Programs Serving Michigan

Aquatic invasive plants and animals have spread throughout the entire 200,000 square mile Great Lakes watershed region. The five Great Lakes as well as tens of thousands of smaller inland water bodies have been negatively affected by nearly two hundred aquatic invasive species. AIS infestations pose a major threat to the future economic and social viability of this immense freshwater resource, accordingly, the national, state and provincial governments of the United States and Canada have formed several collaborative programs and agreements to address the aquatic invasive species issue.





The International Joint Commission prevents and resolves disputes between the United States of America and Canada under the *1909 Boundary Waters Treaty* and pursues the common good of both countries as an independent and objective advisor to the two governments.

A Great Lakes solution to aquatic invasive species must be a cooperative effort focused on regional concerns that includes a biologically protective standard for all the Great Lakes; requires technology certification to achieve the standard; requires enhanced measures of ballast management for ships carrying residual ballast water and sediment; promotes ongoing regional cooperation; and develops measures to ensure compliance. This regional approach should be coordinated through a well-defined process that includes key elements highlighted in the sections that follow.

www.ijc.org

International Joint Commission
Canada & United States



Great Lakes Water Quality Agreement - AIS

The International Joint Commission has a long-standing interest in the Aquatic Invasive Species issue, recognizing its ecological and economic implications for the Great Lakes-St. Lawrence Basin. More specifically, the IJC recognizes that the ability of the United States and Canadian federal governments to meet **Great Lakes Water Quality Agreement** objectives will be determined, in part, by the ability of the two nations to successfully design and implement AIS prevention and response protocols at the bi-national level. As such, the IJC identified AIS as one of five focal points for its “near shore priorities” emphasis, and charged a collaborative work group comprised of members of the Water Quality Board, the Science Advisory Board and the Council of Great Lakes Research Managers with the development of a **“Bi-national Aquatic Invasive Species Rapid Response Policy Framework.”**

www.ijc.org

Council of Great Lakes Research Managers



Français



The **Council of Great Lakes Research Managers** has served as the **International Joint Commission's** principal advisor on research programs and research needs since 1984. The purpose of the Council is to enhance the ability of the Commission to provide effective leadership, guidance, support and evaluation of Great Lakes research as it applies to the provisions of the **Great Lakes Water Quality Agreement** of 1978. Membership is evenly divided between the United States and Canada, consisting of individuals managing federal, state and provincial research programs and representatives from academic institutions and private industry.

www.ijc.org/conseil_board/research_greatlakes/en/cglrm_home_accueil.htm



Council of Great Lakes Research Managers

RESEARCH INVENTORY

THE GREAT LAKES - ST. LAWRENCE

Welcome to the Great Lakes-St. Lawrence Research Inventory

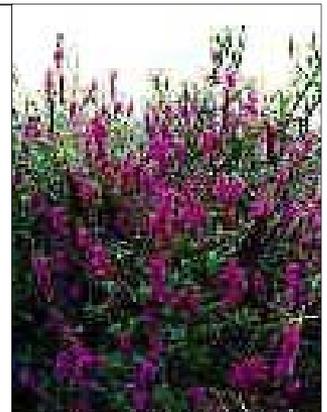
The Great Lakes - St. Lawrence Research Inventory is an interactive, Internet-based, searchable database created as a tool to collect and disseminate up-to-date information about research projects in the Great Lakes - St. Lawrence Region. The Research Inventory allows Great Lakes researchers to identify similar studies, network, share experiences and increase efficiency. It enables managers to examine the impact of research, the interrelationships between research disciplines, the adequacy of research related to government agreements and to link research to policy questions.

<http://ri.ijc.org/>



Great Lakes Aquatic Invasive Species

Preventing the introduction and spread of aquatic nuisance species is a priority for the Great Lakes Commission. Since 1991, the Great Lakes Commission has provided staff support to the [Great Lakes Panel on Aquatic Nuisance Species](#), a bi-national body comprised of representatives from government (state, provincial, federal, tribal), business and industry, universities, citizen environmental groups and the larger user community, that provides guidance on ANS research initiatives, policy development and information/education programs.



**Purple
Loosestrife**

www.glc.org/ans/



Great Lakes Panel on Aquatic Nuisance Species

The panel was officially convened in late 1991 in response to **section 1203 of the Nonindigenous Aquatic Nuisance Prevention and Control Act of 1990**. In establishing the **Great Lakes Panel on Aquatic Nuisance Species**, Congress recognized that providing sound advice to the **ANS Task Force** from experts in a highly-impacted region could make a substantial contribution to the collective management effort at both a regional and national level.

Effective prevention and control efforts in the Great Lakes continue to be the first line of defense in slowing or preventing the spread of aquatic nuisance species to other regions of the country.

The **Great Lakes Panel on Aquatic Nuisance Species** is directed to perform the following tasks:

- Identify Great Lakes priorities
- Assist / Make recommendations to a national Task Force on Aquatic Nuisance Species
- Coordinate exotic species program activities in the region
- Advise public and private interests on control efforts
- Submit an annual report to the federal ANS Task Force describing prevention, research and control activities in the Great Lakes Basin



Great Lakes Fishery Commission

Protecting Our Fishery

The **Great Lakes Fishery Commission** was established in 1955 by the Canadian/U.S. Convention on Great Lakes Fisheries. The commission coordinates fisheries research, controls the invasive sea lamprey, and facilitates cooperative fishery management among the state, provincial, tribal, and federal management agencies.

The **Great Lakes Fishery Commission** was established by the Convention on Great Lakes Fisheries between Canada and the United States in 1955. The Commission has two major responsibilities:

- To develop coordinated programs of research on the Great Lakes, and, on the basis of the findings, to recommend measures which will permit the maximum sustained productivity of stocks of fish of common concern; and
- To formulate and implement a program to eradicate or minimize sea lamprey populations in the Great Lakes.

www.glfc.org



WELCOME TO THE COUNCIL OF GREAT LAKES GOVERNORS



The Council of Great Lakes Governors

The **Council of Great Lakes Governors** is a non-partisan partnership of the Governors of the eight Great Lakes States - Illinois, Indiana, Michigan, Minnesota, New York, Ohio, Pennsylvania, and Wisconsin. In 1983, the region's Governors joined forces to create the Council and tackle the severe environmental and economic challenges then facing the citizens of their States. In more recent years, the Premiers of Ontario and Québec have joined with the Governors in advancing the high performance economy of the Great Lakes region.

The Council of Great Lakes Governors launched the **Aquatic Invasive Species Task Force in 2001**. The goal of this Task Force is to stop the further introduction and spread of aquatic invasive species (AIS) into the Great Lakes--one of the Governors' nine priorities for Great Lakes restoration and protection. Since its inception, the Task Force has coordinated State efforts to combat AIS through advocacy, coordination and the identification of best practices.

www.cglg.org



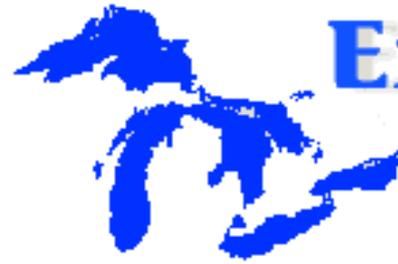
Great Lakes Information Network



Invasive Species in the Great Lakes Region

Exotic species have threatened the Great Lakes ever since Europeans settled in the region. Since the 1800's, more than 180 exotic aquatic organisms of all types - including plants, fish, algae and mollusks - have become established in the Great Lakes. As human activity has increased in the Great Lakes watershed, the rate of introduction of exotic species has increased. More than one-third of the organisms have been introduced in the past 30 years, a surge coinciding with the opening of the St. Lawrence Seaway.

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



Exotic Species

and their effects on the

Great Lakes

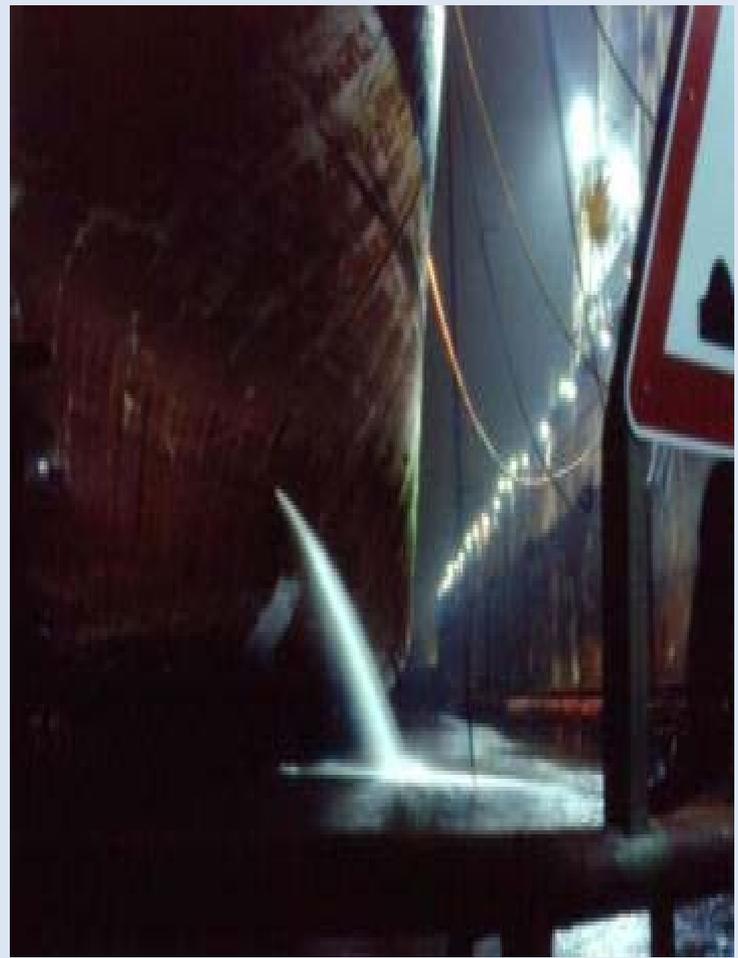
GREAT LAKES SPORT FISHING COUNCIL



Representing the bi-national (United States and Canada) Great Lakes sport fishing community on Congressionally mandated federal Ruffe Control Committee and Great Lakes Panel on Exotics, the Great Lakes Sport Fishing Council recognizes the seriousness of incidentally introduced foreign species (exotics) into our ecosystem. The Council has assembled a series of informational links to help anglers learn more about the invasion of these unwanted exotics.



www.great-lakes.org/exotics.html



Every **hour** an average of more than two million gallons of foreign ballast water are released in U.S. waters. Ballast water is the primary source of aquatic invasive plant and animal species released into United States aquatic ecosystems.

Section 3.

MI Department of Natural Resources and Environment Administered Aquatic Invasive Species Programs



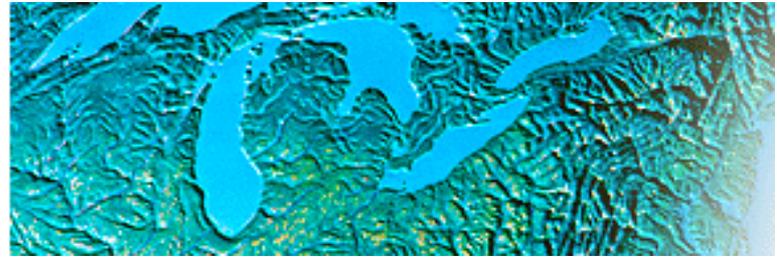
Primary Federal and State Laws Defining MDNRE AIS Activity

- Non-Indigenous Aquatic Nuisance Prevention and Control Act of 1990 (United States)
- National Invasive Species Act of 1996 (United States)
- NREPA of 1994 (Public Act 451) (Michigan), Part 33 – Aquatic Nuisance Species
- NREPA of 1994 (Public Act 451) (Michigan), Part 413 – Transgenic and Non-Native Organisms
- NREPA of 1994 (Public Act 451) (Michigan), Section 3103 – Ballast Water Reporting

The **Michigan Department of Natural Resources and Environment** is tasked with the mission of “conserving, managing, protecting and promoting Michigan’s environmental, natural resource and related economic interests for current and future generations.” Accordingly, the MDNRE is the State of Michigan agency with primary tasking for planning, development, coordination as well as implementation of Michigan’s overall state-wide response to the introduction of nearly two hundred aquatic invasive species waters into Michigan waters.



Department of
NATURAL RESOURCES
and ENVIRONMENT



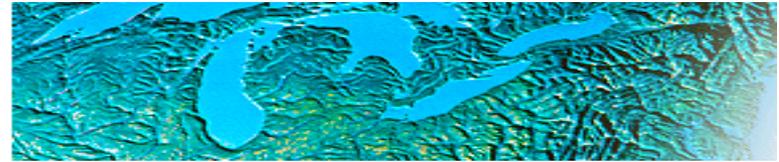
Aquatic Invasive Species

Non-indigenous species, also commonly referred to as nuisance, non-native, exotic, invasive and alien species, are species that did not originate in the Great Lakes ecosystem and have been introduced either intentionally or accidentally. Over 160 species have been introduced into the Great Lakes basin since the 1800's. More than 1/3 of the species have been introduced into the Great Lakes in the last half of the 20th century coinciding with the expansion of the St. Lawrence Seaway in 1959, which allowed greater trans-oceanic shipping traffic. Species, such as the zebra mussel, ruffe, goby, and others also considered aquatic nuisance species (ANS), threaten the diversity or abundance of native species and the ecological stability of infested waters, or commercial, agricultural, aqua-cultural or recreational activity dependent upon the lake. The four primary vectors of entry include ballast water from ocean-going ships, unintentional releases, multiple sources and unknown.

www.michigan.gov/deq/0,1607,7-135-3313_3677_8314-18366--,00.html



Department of
NATURAL RESOURCES
and ENVIRONMENT



Office of the Great Lakes

Primary Mission of the Office of the Great Lakes

Coordinating diversion and consumptive use reviews under the Great Lakes Charter;

Awarding grants under the Michigan Great Lakes Protection Fund to promote Great Lakes research and demonstration projects;

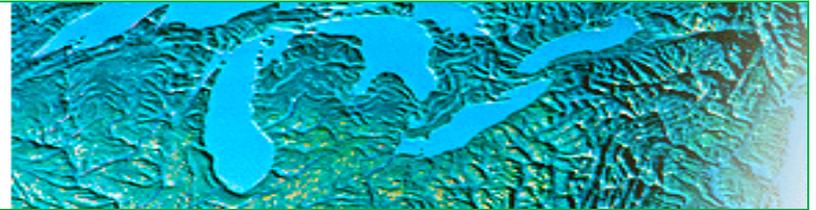
Coordinating ballast water reporting pursuant to Section 3103 of NREPA 1994 Act 451 (Public Act 114 of 2001);

Implementing a comprehensive Aquatic Nuisance Species Control Plan , as developed pursuant to the Nonindigenous Aquatic Nuisance Species Prevention and Control Act of 1990, Public Law 101-646;

Preparing the annual State of the Great Lakes report and monthly electronic activity reports focusing on efforts underway to restore, protect and preserve the Great Lakes ecosystem;

Tracking trends impacting the chemical, physical and biological components of the Great Lakes ecosystem.

www.michigan.gov/deq/0,1607,7-135-3313_3677-80115--,00.html



Office of the Great Lakes

Michigan's Aquatic Nuisance Species State Management Plan Update Prevention and Control in Michigan Waters

Michigan's waters are under assault from aquatic nuisance species. Aquatic nuisance species (ANS) are waterborne, non-native organisms that threaten the diversity or abundance of native species, or the ecological stability of impacted waters, or threaten a commercial, agricultural, aqua-cultural, or recreational activity dependent on waters of the state.

This plan is an update to the **Nonindigenous Aquatic Nuisance Species State Management Plan**, approved in 1996 as Michigan's plan under the auspices of the **National Invasive Species Act**.



www.michigan.gov/documents/deq/deq-ogl-ANSPlan2002_249062_7.pdf



Michigan Hydrilla Rapid Response Plan

The invasive plant Hydrilla (*Hydrilla verticillata*) has yet to grip Michigan waterways, but the potential is there. In response to the possible threat, the **Aquatic Nuisance Species Council** organized a Hydrilla Task Force in 2004. The Task Force, including Sea Grant representatives, created the Michigan's first aquatic invasive species rapid response plan.

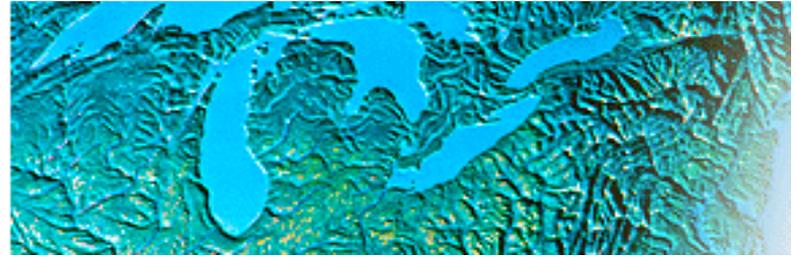
Michigan Sea Grant developed a volunteer Hydrilla Hunt program, including an identification card, to enlist citizen participation in detecting this invasive plant to prevent it from entering the state's waterways. So far, it has been kept at bay. Task Force Partners include: **Great Lakes Panel on Aquatic Nuisance Species, Great Lakes National Program Office, Michigan State University** and the **Office of the Great Lakes of the MDNRE**.



www.miseagrant.umich.edu/ais/rapidresponse.html



Department of
NATURAL RESOURCES
and **ENVIRONMENT**



Aquatic Nuisance Control Office

Roles and Responsibilities of the Aquatic Nuisance Species Office

Enforces Part 33, Aquatic Nuisance Species, of the Natural Resources and Environmental Protection Act of 1994, Public Act 451

Enforces Michigan Aquatic Nuisance Species Administrative Rules

Administers the MDNRE Aquatic Nuisance Control Permit Applications Program

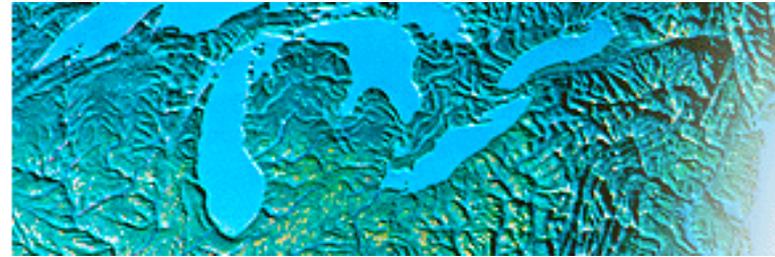
Tracks aquatic nuisance / invasive species infestations and AIS control permit projects

Provides general information to the public regarding Aquatic Nuisance/Invasive Species

www.michigan.gov/deq/0,1607,7-135-3313_3681_3710---,00.html



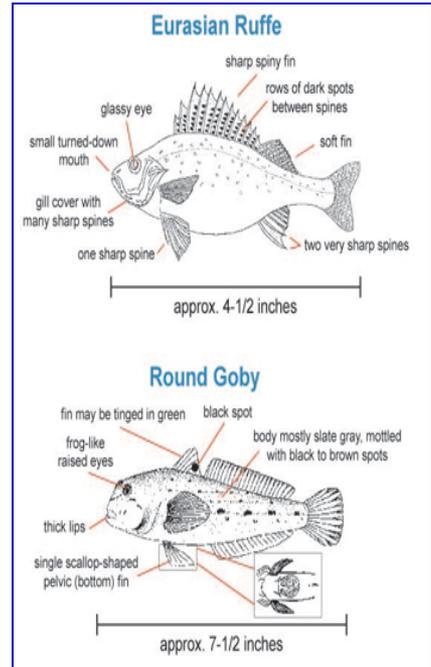
Department of
NATURAL RESOURCES
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Aquatic Invasive Species

Anglers and Boaters: You are an important partner in preventing the spread of fish diseases and other aquatic nuisance species

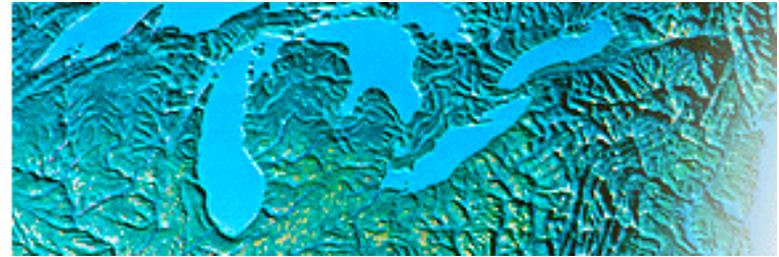
Michigan's waters are threatened by numerous non-native aquatic invasive plants and animals already here, such as the zebra mussel, round goby, sea lamprey, Eurasian ruffe, Eurasian water milfoil, rusty crayfish, and spiny water flea. A number of species also are knocking at the door, including several species of Asian carp coming up the Chicago diversion that could potentially enter Lake Michigan and snakehead fish that already are found in other Midwest states. These species and others are harmful to recreational fishing and do extensive economic and natural resource damage.



www.michigan.gov/dnr/0,1607,7-153-10364-160949--,00.html



Department of
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and ENVIRONMENT



Aquatic Invasive Species

Viral hemorrhagic septicemia (VHS) is a fish disease caused by a virus that has produced large-scale fish kills in aquaculture operations in Europe and in wild herring and pilchard populations along the Pacific Coast of North America. VHS was first identified in the Great Lakes in 2005 and has caused mortalities in a number of fish species in the Michigan waters of Lake Huron, Lake St. Clair, St. Clair and Detroit Rivers, Lake Erie and inland in Budd Lake near Harrison and Base Line Lake near Pinckney. It has been found in Lake Michigan waters of Wisconsin, but not in Michigan waters of Lake Michigan to date.

**Keep Our
Waters
Great!**



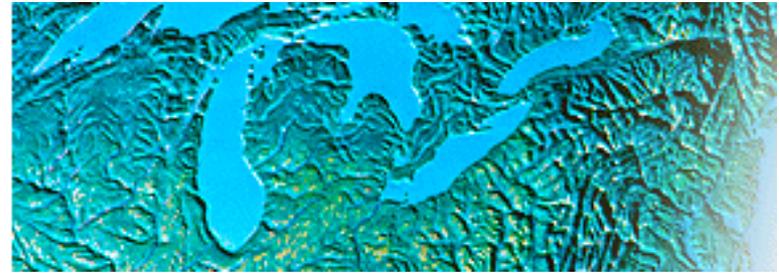
Don't Dump Your Bait!

*Fish diseases like Viral Hemorrhagic Septicemia (VHS)
can be transferred in your bait bucket!*

www.michigan.gov/dnr/0,1607,7-153-10364_52259_10950_46202-194062--,00.html



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and ENVIRONMENT



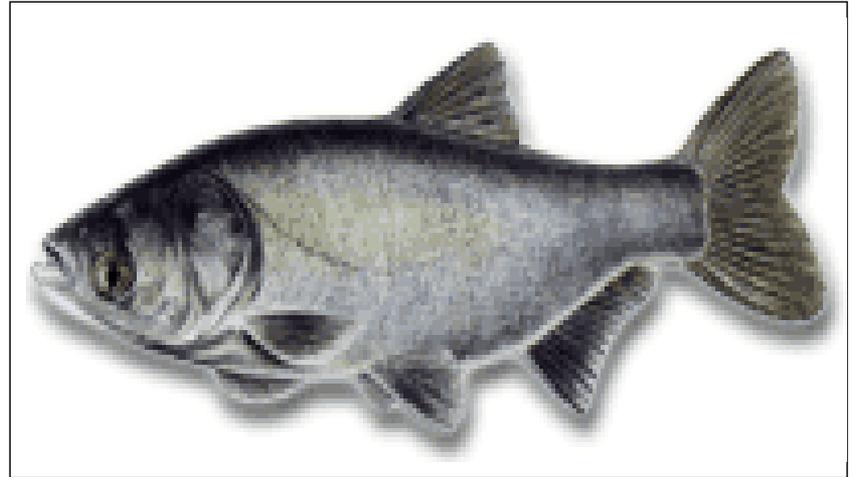
Angler Monitoring Network in Michigan

The **Angler's Monitoring Network** for detecting new introductions of non-native fish species in Michigan has been established. The network acts as an additional 1.3 million sets of eyes (number of licensed anglers in Michigan) to monitor for new invasions. The network is an informal system of information, education and reporting that provides a way for all anglers in the state to report on any new introduction of non-native fish to Michigan waters.



www.michigan.gov/deq-anglers-monitoring-network

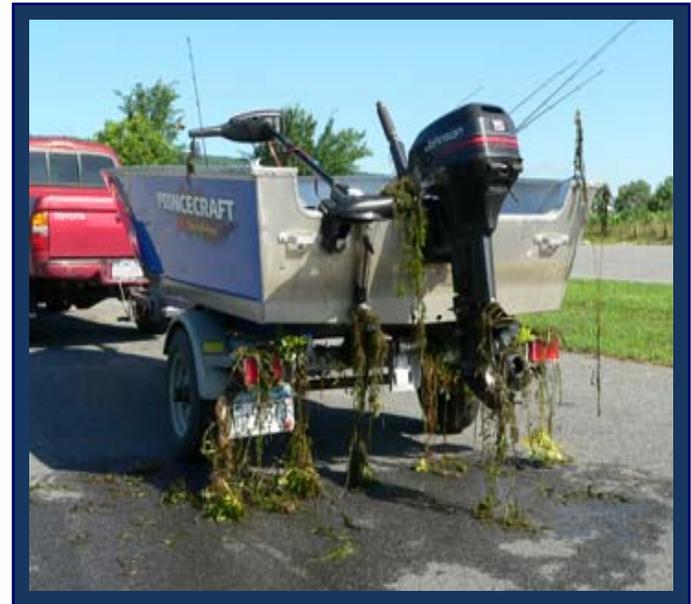
“A number of other aquatic invasive species are also knocking at the door, including several species of Asian carp coming up the Chicago diversion that could potentially enter Lake Michigan and snakehead fish that are already found in other Midwest states. These species and others are harmful to recreational fishing and do extensive economic and natural resource damage.” - MDNRE Web Site



Section 4.

A Michigan State Law Written to Prevent the Spread of Aquatic Invasive Species

One way in which invasive species are transported into Michigan and, subsequently, between different bodies of water within the State, is via watercraft. Invasive aquatic plants, such as the Eurasian Water Milfoil, are transferred from one lake to another when they cling to boats and associated equipment. Once introduced, invasive species can have a devastating effect on the environment, public health and safety, and the economy. Michigan Public Act 91 was enacted to help prevent the spread of aquatic invasive plants within Michigan waters by making it illegal to launch a watercraft with aquatic plant material attached.



Michigan Public Act 91 of 2009

An Amendment to NREPA Public Act 451, Part 413 (MCL 324.413 et seq)

Sec. 41325.

- (1) A person shall not place a boat, boating equipment, or boat trailer in the waters of this state if the boat, boating equipment, or boat trailer has an aquatic plant attached.
- (2) A law enforcement officer may order the owner or operator of a boat, boating equipment, or boat trailer to remove aquatic plants from the boat, boating equipment, or boat trailer. The owner or operator shall obey such an order.
- (3) The department shall prepare a notice that contains a summary of subsections (1), (2), (4), (5), and (6) and shall make copies of the notice available to owners of public boating access sites. The department shall include the notice in relevant department publications and post the notice on its website.
- (4) The owner of a public boating access site shall post and maintain the notice described in subsection (3).
- (5) A person who violates subsection (1), (2), or (4) is responsible for a state civil infraction and may be ordered to pay a civil fine of not more than \$100.00.
- (6) As used in this section:
 - (a) "Aquatic plant" means a submergent, emergent, or floating-leaf plant or a fragment or seed thereof. Aquatic plant does not include wild rice (*Zizania aquatica*).
 - (b) "Boat" means a vessel as defined in section 80104, and "boating" has a corresponding meaning.

Section 5.

Aquatic Invasive Species Programs Designed to Enable and Support Direct Voluntary Citizen Participation

Many of the federal, state and local government as well as non-governmental organization based programs created to help thwart the spread of aquatic invasive species have recognized that direct citizen involvement is critical to the success of these initiatives. Unique programs designed to harness, focus and organize the good will, passion and energy of citizen volunteers have become an effective means of combating the spread of aquatic invasive plants and animals throughout Michigan and the entire Great Lakes region.





United States Coast Guard
U.S. Department of Homeland Security

Voluntary Recreational Activities Guidelines

To help reduce accidental ANS introductions, in December of 2000 the Coast Guard published **Voluntary Guidelines on Recreational Activities** to Control the Spread of Zebra Mussels and Other Aquatic Nuisance Species, [65 FR 82447-82451](#). The guidelines are based on the recommendations presented to the Coast Guard by the **Recreational Activities Committee of the ANS Task Force** as required by the National Invasive Species Act of 1996.

These guidelines provide specific **steps** that can be taken **to prevent or minimize the transport of ANS through recreational activities**. The activities addressed in the guidelines include SCUBA, waterfowl hunting, recreational angler bait harvest, boating, and the operation of seaplanes and personal watercraft.



www.uscg.mil/hq/cg5/cg522/cg5224/vrag.asp



“Clean Boats, Clean Waters” Program

Through the “**Clean Boats, Clean Waters**” program, volunteers will organize and conduct a boater education program in their community. Adult and youth teams will educate boaters about where they are most likely to find invasive species on their recreational watercraft.



www.miseagrant.umich.edu/cbcw/



Clean Marina Program

As participants in the **Michigan Clean Marina Program**, marinas voluntarily pledge to maintain and improve Michigan's waterways by reducing or eliminating releases of harmful substances and phasing out practices that can damage aquatic environments. To date, there are nearly 80 total program participants – more than 40 marinas have pledged to work toward certification and more than 30 marinas have been awarded certification. In the past year, 13 marinas were awarded certification and 7 were re-certified.

Achieving Clean Marina Status

In order to receive official certification as a Michigan Clean Marina, participants need to complete a 10-step process, including training, a self-evaluation checklist and a site visit. Certified marinas strive for continuous improvement in daily environmental stewardship practices.

www.miseagrant.umich.edu/cmp/index.html



Cooperative Lakes Monitoring Program

Exotic Plant Watch Program

During 2007, the **Cooperative Lakes Monitoring Program (CLMP)** introduced a new monitoring project to train volunteer citizen monitors to identify and map exotic invasive aquatic plants. **Early detection** and **management** of aquatic invasive plants can greatly reduce their impact on lake ecosystems as well as reduce management costs. This monitoring project will teach you to “watch” for curly-leaf pondweed, Eurasian milfoil, and hydrilla in your lake. Participants will learn to identify these aquatic invasive plants and distinguish them from similar looking native plants. This is a less intensive plant monitoring project than the Aquatic Plant Mapping program, during which volunteer monitors identify and map all plants in their lake.

www.micorps.net/documents/ExAqPIWatch.pdf

Michigan Lake & Stream Associations



Public Boat Launch Voluntary VHSv Disinfection Stations Program

Michigan Lake and Stream Associations, Inc. recognizes the threat posed to inland lake and stream fisheries by Viral Hemorrhagic Septicemia (VHS), a water borne virus that causes internal bleeding and mortality in fish. The VHS virus has infected all of the Great Lakes as well as several Michigan inland lakes. In 2008, ML&SA sought and gained approval from the Michigan Department of Natural Resources and Environment Fisheries Division to deploy (MDNRE permit approval contingent) Virkon Aquatic (an aquatic ecosystem friendly, broad spectrum disinfectant) based voluntary disinfection stations at public boat launches.



www.mlswa.org/DisinfectionStation/Disinfection_Station.htm

“No matter how comprehensive and aggressive our statewide prevention effort, chances are, some invasive organisms will slip through the cracks. In such cases, it is crucial that the invaders are detected as early as possible, before they have had an opportunity to cause significant damage or to spread to other water bodies. Early detection provides the best (and sometimes only) hope of eradication.

If we truly want to have an effective, statewide early detection system we must act swiftly, vigorously and with unprecedented commitment to the "long haul." Not only must millions of acres of underwater habitat be screened by trained eyes, these same vast acres must be visited and revisited on a frequent and ongoing basis, indefinitely.”¹

¹ Maine Volunteer Lake Monitoring Program Web Site

www.mainevolunteerlakemonitors.org



Section 6.

Michigan Non-Governmental Organizations (NGO) Providing Support to Local Aquatic Invasive Species Management Projects

Michigan based non-governmental organizations (NGO) play a critical role in aquatic invasive species management. These organizations are often strategically positioned at the state, regional or local level and possess the scientific, technical, financial and administrative resources necessary to effectively assist organizations and/or groups working to create and implement local aquatic invasive species education, awareness, monitoring, prevention and management programs. Local groups taking the initiative to launch pro-active aquatic invasive species programs have achieved significant success due in large part to the direct assistance and support provided to them by non-governmental organizations.



Grant and Technical Assistance Program

Freshwater Future (formerly Great Lakes Aquatic Habitat Network and Fund) builds effective community-based citizen action to protect and restore the water quality of the Great Lakes basin. We work toward this goal by providing financial assistance, communications and networking assistance and technical assistance to citizens and grassroots watershed groups throughout the Great Lakes basin. Through these efforts we work with over 1,800 grassroots watershed groups and citizens to protect and restore the rivers, lakes and wetlands in their communities. **Freshwater Future, Inc.** is a non-profit, 501(c)(3) tax-exempt organization.

Purpose of the Grants Program: The goal of Freshwater Future grants program is to provide financial support to advocacy activities that strengthen the role of individuals and community groups working locally to protect and restore shorelines, inland lakes (including projects to control aquatic invasive species), rivers, wetlands, and other aquatic habitats in the Great Lakes Basin. Advocacy work, as defined here, involves local community members actively promoting aquatic habitat protection by influencing community and/or individual behavior or opinion, corporate conduct, and/or public policy.

<http://freshwaterfuture.org>



Michigan Chapter, North American Lake Management Society (McNALMS)

Protecting and Managing Michigan's Inland Lakes

McNALMS

- **Encourages cooperation and interaction among lake and watershed professionals, practitioners and managers to address problems impacting Michigan's lakes.**
- **Promotes the sharing of information and experiences on scientific, financial, administrative, legal, and legislative aspects of lake and watershed management.**
- **Fosters the development of lake restoration and protection programs at local, state, and national levels.**
- **Promotes wise lake management by enhancing public awareness through education.**
- **Provides a forum for citizens and managers to share ideas and promote common objectives.**

www.mcnalms.org



Tip of the Mitt Watershed Council is here to protect the future of these waters. The rich character of Northern Michigan can be preserved forever, and future generations will appreciate the unspoiled character of the north – a tradition built around our magnificent waters.

The **Tip of the Mitt Watershed Council** is working to preserve your heritage. The Tip of the Mitt Watershed Council, founded in 1979, celebrated its 30th year in 2009 as the lead organization for water resources protection in Antrim, Charlevoix, Cheboygan, and Emmet Counties.

The **Watershed Council** works on many fronts when it comes to **aquatic invasive species**. We have programs to monitor the spread of invasive species, such as the Aquatic Invasive Species Patrol, which is described in more detail below. Beyond monitoring and management, the Watershed Council works to combat the aquatic invasive species problem on the policy front; encouraging and supporting legislation that addresses the spread of invasive species.

www.watershedcouncil.org/learn/aquatic%20invasive%20species/



Huron Pines

Conserving the Forests, Lakes and Streams of Northeast Michigan

Welcome to Huron Pines !

Huron Pines is a not-for-profit conservation organization that serves the 11 county region of Northeast Michigan and works to achieve its mission through projects such as river restoration, watershed management, conservation leadership and land stewardship.

Involvement in projects coordinated through Huron Pines always is a great opportunity for matching the skills, interests and resources of local government, area residents and the private sector. For Huron Pines, it's all about turning good ideas into good results.



www.huronpines.org



Huron Pines

Conserving the Forests, Lakes and Streams of Northeast Michigan

INVASIVE SPECIES REMOVAL PROGRAM

Invasive species are an international problem and have already cost our state millions of dollars. They adversely affect the habitats they invade by displacing native species, disrupting ecosystems and damaging commercial and natural resources.

In the past, we have worked with a number of groups to address invasive species issues in their area. As the issue has become more pressing, we have created an Invasive Species Program to better address this serious concern.

Our program is centered around an **early detection and rapid response approach** to control the spread of invasive species.

COST SHARE FUNDING

AVAILABLE: A cost share program to private landowners in Iosco and Alcona counties for removal of phragmites is now available.

Funds provided by the **U.S. Fish & Wildlife Service** will cover 75% of the total project removal costs up to \$1,000; with the remainder being covered by the landowner.

www.huronpines.org/project/83



Michigan Inland Lakes Partnership

Promoting collaboration to advance stewardship of Michigan's inland lakes.

Goal I. of the Michigan Inland Lakes Partnership Strategic Plan:

Manage Aquatic Invasive Species

1. Objective: Improve access to invasive species education.
2. Objective: Improve monitoring and management of AIS.
3. Objective: Improve the effectiveness of AIS management in Michigan.

www.michiganlakes.msue.msu.edu

Michigan Lake & Stream Associations



Michigan Lake and Stream Associations, Inc. is a non-profit, state-wide volunteer organization dedicated to the preservation, protection and conservation-based management of Michigan's vast treasure of inland lakes and streams. We are a partnership oriented organization that recognizes and leverages the power of collaboration in fulfilling our mission and accomplishing our goals. Our members include lake and stream associations, individuals, corporations and various non-profit advocacy groups that share our reverence for Michigan's freshwater bounty and associated natural resources.

- Provides planning and technical assistance to lake associations and riparian communities working to develop plans to fund aquatic invasive species management projects.
- Serves as the Program Administrator for the MiCorps Cooperative Lakes Monitoring Program.
- Pro-actively distributes current information regarding aquatic invasive species to membership and concerned citizens.
- Promotes aquatic invasive species education and awareness at the ML&SA Annual Conference, fall seminars, membership meetings and special events.
- Provides technical assistance to counties, townships, lake associations and individuals seeking to deploy Viral Hemorrhagic Septicemia (VHSv) disinfection stations at inland lake public access boat launch sites.

www.mlswa.org

Section 7.

A Michigan Inland Lakes Services Industry Association Providing Direct Support to Aquatic Invasive Species Management Projects

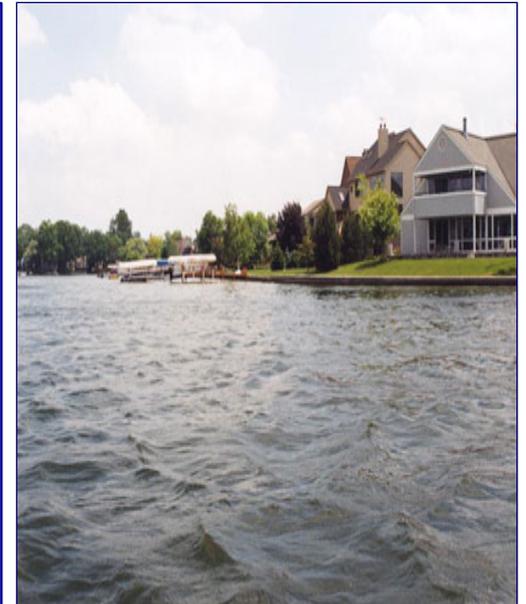
Michigan hosts a robust inland lakes management industry that fulfills a critical need in implementing locally funded aquatic invasive species management projects. Commercial inland lake services companies represented by the **Michigan Aquatic Managers Association** offer a wide range of limnology based services as well as a variety of aquatic invasive plant species control technologies and project management services. These businesses play a critical role in the successful implementation of thousands of township and **Inland Lake Improvement Board** Special Assessment District funded and administered aquatic invasive species management projects each year.



Michigan Aquatic Managers Association

Dedicated to the Professional Management of Michigan's Aquatic Resources

The purpose of the **Michigan Aquatic Managers Association** shall be to assist in promoting the management of aquatic (nuisance and invasive) vegetation, to provide for the scientific and educational advancement of members, to encourage scientific research, to promote an exchange of information among members, to extend and develop public interest in the discipline, and to participate in any Legislative procedures at any level of government that oversees the use and / or enforcement of the laws, regulations, policies, guidance, and funding governing the use of aquatic pesticides or other forms of aquatic plant management in the waters of the State of Michigan.



www.mamagroup.org



Michigan Aquatic Managers Association

Inland Lake Focused Aquatic Nuisance / Invasive Plant Management Companies

The **Michigan Inland Lakes Partnership** is a diverse partnership of state agencies, public universities, Native American tribes, non-governmental organizations, private businesses and their respective industry associations dedicated to promoting collaboration to advance stewardship of Michigan's inland lakes.

While the **Partnership** recognizes the important role performed by Michigan's inland lakes commercial services sector in implementing local aquatic invasive species management plans and/or projects, **the Partnership does not provide (explicit or implicit) endorsement of any of the private companies listed as members on the Michigan Aquatic Managers Association web site.** Reference to the **Michigan Aquatic Managers Association** and its respective membership has been provided on an "information only" basis of providing readers of this document a broad perspective in understanding the full scope of aquatic invasive species management programs serving Michigan.

www.mamagroup.org/membership.html

Section 8.

Funding Local Aquatic Invasive Species Management Projects through the Existing Michigan Compiled Law

Michigan Public Act 188 of 1954, Public Improvements and Inland Lake Improvements, Part 309 of the Michigan Natural Resources and Environmental Protection Act (Public Act 451) of 1994, based **Special Assessment Districts** have become Michigan's most frequently deployed and effective mechanism for funding local aquatic invasive species management projects. There are approximately two thousand **Special Assessment Districts** levied and administered for the purpose of managing aquatic invasive species by townships under the provisions of the Public Improvements Act (Public Act 188) or by Inland Lake Improvement Boards (PA 451, Part 309) throughout the state of Michigan.

Township Improvements Act 188

Public Improvements

Act 188 of 1954

MCL 41.721 *et seq.*

Amended in 1994 to allow funding for a wider range of inland lake management related projects, Public Act 188 has been invoked by hundreds of townships throughout the State of Michigan who have deployed this equitable and effective funding mechanism to foster the implementation of critical inland lake improvements including aquatic nuisance or foreign invasive aquatic plant control projects.

“An act to provide for the making of certain improvements by townships; to provide for paying for the improvements by the issuance of bonds; to provide for the levying of taxes; to provide for assessing the whole or a part of the cost of improvements against property benefited; and to provide for the issuance of bonds in anticipation of the collection of special assessments and for the obligation of the township on the bonds.”

www.legislature.mi.gov/

Michigan Natural Resources and Environmental Protection Act
Act 451 of 1994 Part 309
INLAND LAKE IMPROVEMENTS
MCL 324.309 *et seq.*

Inland Lake Improvement Boards

Part 309, Inland Lake Improvements, of the Natural Resource and Environmental Protection Public Act 451 of 1994, as amended, is an act that provides for the improvement of certain inland lakes, including aquatic (invasive) plant control, authorizes the dredging and removal of undesirable materials from lakes; and authorizes the raising of money by taxation and special assessment.

“The local governing body of any local unit of government in which the whole or any part of the waters of any public inland lake is situated, upon its own motion or by petition of 2/3 of the freeholders owning lands abutting the lake, for the protection of the public health, welfare, and safety and the conservation of the natural resources of this state, or to preserve property values around a lake, may provide for the improvement of a lake, or adjacent wetland, and may take steps necessary to remove and properly dispose of undesirable accumulated materials from the bottom of the lake or wetland by dredging, ditching, digging, or other related work.”

www.legislature.mi.gov/



Recognizing the need to effectively manage Houghton Lake, the Houghton Lake Improvement Board was established in 2000 under provisions of Michigan's Natural Resources and Environmental Protection Act, Part 309. In accordance with state law, the lake board is composed of a representative of each of the four townships that border the lake, a county commissioner, the county drain commissioner, and a lakefront property owner. Several members of the Houghton Lake Improvement Board are lake residents. The Lake Board has made the coordinated management of Houghton Lake possible.

www.houghtonlakeboard.org

In an era marked by sharply declining general revenue with which to fund worthy local projects, township or Inland Lake Improvement Board administered Special Assessment Districts serve as a fair and equitable means of funding inland lake focused aquatic invasive species management projects.



Section 9.

Michigan Township Aquatic Invasive Species Prevention and Management Focused Ordinances

Michigan Public Act 246 of 1946 , Township Ordinances, passed “to authorize township boards to adopt ordinances and regulations to secure the public health, safety and general welfare...”, allows township boards to pass effective and enforceable local ordinances to help prevent the spread of aquatic invasive species in water bodies within the jurisdiction of Michigan townships.

**Glen Arbor Township
Aquatic Nuisances Ordinance
No. 1-2007**

**Empire Township
Aquatic Nuisances Ordinance
No. 2-2007**

It shall be unlawful for any person to launch any watercraft/trailer or related equipment into any water body in the Glen Lake-Crystal River Watershed in Glen Arbor and/or Empire township unless such watercraft has been washed in such a manner so as to clear it of any aquatic nuisances (invasive, non-native plants or organisms); watercraft / trailer or related equipment which has been out of any water bodies for the ten days immediately preceding such launching do not have to be washed before launching into a township water body so long as any live wells and bilges have been cleaned and water has been blown out of the engine of any such watercraft.

A courtesy watercraft wash station is provided by the Glen Lake Association. It is located at the Day Forest Road DNR boat launch and operates seasonally.

It shall be unlawful for any person to empty any bait box or aquarium into any of the waters in the Glen Lake-Crystal River Watershed within Glen Arbor and Empire Township.

A violation of this ordinance is a municipal civil infraction and any person or firm found responsible for such violation shall be subject to a maximum civil fine of \$500.00 plus costs. Commencing thirty days after receiving notice of a violation, unless said violation is abated, each day the violation continues shall constitute a separate violation of this ordinance.

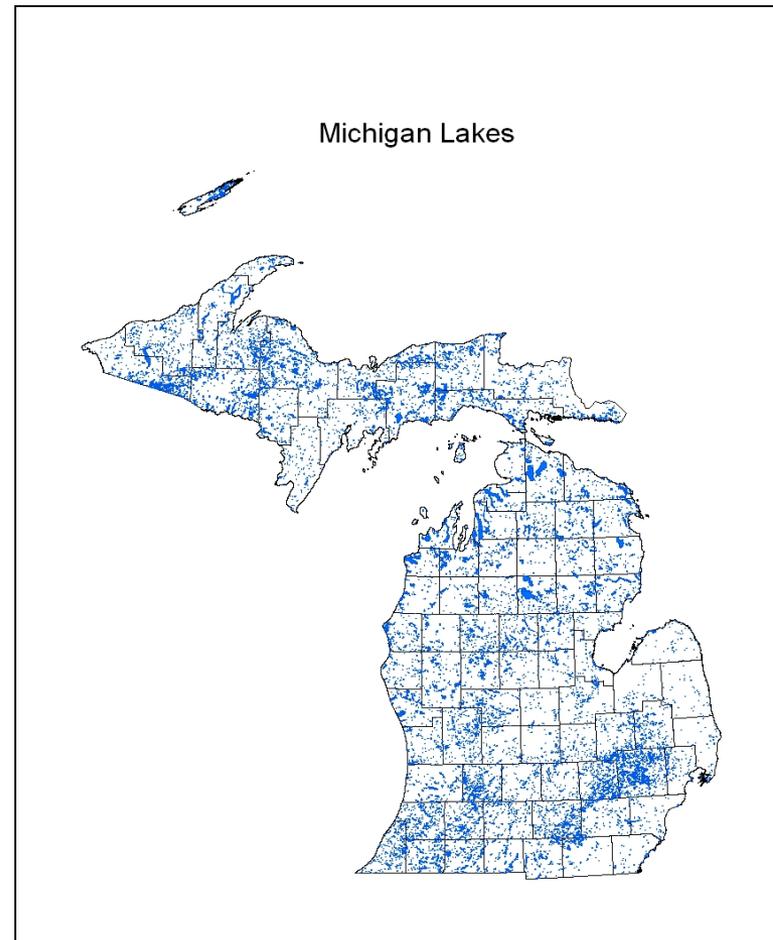
PENINSULA TOWNSHIP

Ordinance No. 37 of 2009

AN ORDINANCE PURSUANT TO ACT 246 OF THE PUBLIC ACTS OF 1946, AS AMENDED, TO PROVIDE PROCEDURES INTENDED TO COMPLY WITH FEDERAL AND STATE DUE PROCESS REQUIREMENTS BEFORE INCLUDING PRIVATE PROPERTY ALONG THE GRAND TRAVERSE BAY LAKE MICHIGAN SHORELINE IN A PHRAGMITES ERADICATION ZONE

The purpose of this Ordinance is to provide procedures intended to comply with federal and state due process requirements so that all property along the Grand Traverse Bay Lake Michigan shoreline with a Phragmites infestation can be included in a Phragmites eradication zone and can receive effective Phragmites treatment. By including all property along the Grand Traverse Bay Lake Michigan shoreline with a Phragmites infestation in the Phragmites eradication zone, this Ordinance will help maximize the effectiveness of the Phragmites treatment, thereby eliminating or reducing the adverse impacts of a Phragmites infestation.

Michigan hosts over 11,000 inland lakes that remain highly vulnerable to the ravages of aquatic invasive plant and animal species. The vast majority of these inland lakes lie within the political jurisdiction of Michigan's 1,242 townships. Township governments are ideally positioned to support, facilitate and encourage community-based programs to prevent and/or manage aquatic invasive species.



Section 10.

Michigan Lake Association and Citizen Group Initiated Aquatic Invasive Species Prevention Programs

Pro-active voluntary citizen's groups, including lake associations, provide an effective means of preventing the spread of aquatic invasive species. Through the implementation of community-based AIS education and awareness initiatives, lake associations and concerned citizen groups play an instrumental role in the prevention, early detection and timely management of aquatic invasive plants and animals in Michigan's inland lakes.

Glen Lake Association



The **Glen Lake Association** through its members, riparian and non-riparian, works in conjunction with the **Michigan Lake and Stream Associations**, and other environmental groups, to maintain the pristine quality of the Glen Lake Watershed. The association was created in 1954 and currently counts as its members, over 1/2 of the total riparian owners around the lakes and the Crystal River, as well as many other watershed supporters.

The Glen Lake Association's Invasive Species Committee has evolved from its initial charter to prevent the spread of Zebra Mussels into our lake. The committee sponsored a number of initiatives to accomplish this task. For years they have provided voluntary spray down of boats and flushing of outboards and out drives at the boat launch on Little Glen to help preclude the entry of Zebra Mussels into the lake.

www.glenlakeassociation.org



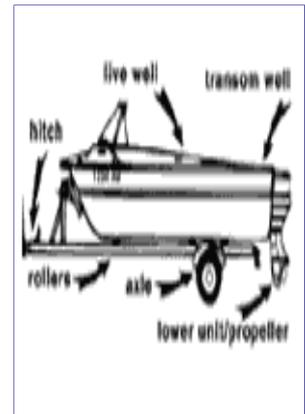
Watersmeet Lakeguards

Invasive Species Control Coalition of Watersmeet

MISSION STATEMENT

To assure that waterways and lands in Watersmeet Township, State of Michigan, are environmentally sound, free of invasive species and suitable for a variety of recreational uses for the benefit of residents of the community at large.

ISCCW Historical Information: Eurasian Water Milfoil is an exotic, invasive aquatic plant that has been present for years both in Michigan's Lower Peninsula and throughout Wisconsin. This pervasive species forms dense surface canopies which cause adverse environmental, recreational, economic and aesthetic problems. It was not discovered in Watersmeet Township until 2000, when concerned citizens noticed an infestation in Clearwater Lake on the Cisco Chain.



www.isccw.org

"Never doubt that a small group of thoughtful, committed people can change the world. Indeed, it is the only thing that ever has."

Margaret Mead

