

***Information/Education Strategy for
Aquatic Nuisance Prevention and Control***

**Prepared by: Information/Education Committee,
Great Lakes Panel on Aquatic Nuisance Species**

May 2001

Statement of Purpose: The primary purpose of the Information/Education (I/E) Strategy is to provide regional direction, coordination and evaluation regarding I/E activities on aquatic nuisance species (ANS) among participating agencies, institutions, organizations and other appropriate authorities. The long-term objective of I/E activities is to safeguard the ecological and economic health of the Great Lakes-St. Lawrence region by preventing the introduction and spread of aquatic nuisance species. It is important to note that while some of these activities may be undertaken specifically by the Great Lakes Panel on Aquatic Nuisance Species and associated membership, many of the activities may be underway or taken on by other Great Lakes organizations.

Goal I: The prevention of the introduction and dispersal of aquatic nuisance species into, within and from waters of the Great Lakes-St. Lawrence region through implementation of I/E activities.

Problem: To effectively prevent the introduction and dispersal of aquatic nuisance species in the Great Lakes-St. Lawrence region, there is a need for a stronger awareness/understanding of the problem and/or increased motivation to take action among natural resource users, natural resource personnel and the general public. To cultivate stronger awareness and increased motivation, information on ANS issues must be available on a more accessible, wide-scale basis.

Objective A: Reduce ballast water introductions by facilitating compliance among commercial vessel operators entering the Great Lakes-St. Lawrence region through educational opportunities on voluntary and mandatory ANS preventative measures.

Activity A.1: Commercial Shipping Informational Materials: Maintain and disseminate updated informational materials in multiple languages for ship owners, captains, engineers, and other commercial shipping personnel with the primary purpose of compliance with appropriate ballast management practices. ANS issues to be included: 1) history of the ANS problem in the Great Lakes-St. Lawrence region; 2) sources of the ANS problem (i.e. ballast water discharge, attachment to hulls and anchors); 3) risks posed by the ANS problem; 4) shipping practices that reduce the risk of introducing and dispersing aquatic nuisance species (i.e. guidelines for ballast water discharge); 5) regulations on ballast water exchange and the consequences of noncompliance; 6) ballast water reporting requirements; and 7) updates on the most recent research and technology on ballast water management and control.

Objective B: Raise awareness/understanding within the commercial sector on ANS issues (e.g., problem species and their impacts, species identification, location and range of infestations, regulations). Encourage their promotion of prevention and control actions to interrupt pathways of ANS introduction and dispersal. Commercial businesses associated with products and/or activities posing a risk of ANS introduction/spread include, but are not limited to, aquaculture, bait industry, aquarium/water garden/nursery trade, commercial fishing and biological supply houses.

Activity B.2: Identify Pathways of Introduction and Dispersal: Identify commercial businesses responsible for significant ANS introduction and dispersal; characterize associated risks for spread/release into the wild; and assess how these pathways can be modified to minimize or eliminate risk for introduction/spread and associated impacts mitigated.

Activity B.3: Outreach Program for Commercial Sector: Develop and conduct outreach activities that target commercial businesses in efforts to interrupt pathways of ANS introduction and dispersal.

Activity B.3a: Workshop Series: Develop a series of workshops with supporting materials that can be conducted by local, state and provincial agencies, targeted at specific commercial groups associated with respective pathways of ANS introduction and dispersal. Target audiences should be informed about their role in preventing and reducing their risk for introduction and dispersal of aquatic nuisance species. As part of workshop activities, the targeted audiences should also be trained on how to deliver the “message” to their clientele aimed at prevention.

Activity B.3b: General Information Dissemination: Distribute informational materials and related regulations about ANS prevention and control to various commercial groups. Due to frequent modification of the information and regulations, distribution in each jurisdiction should occur annually or biennially.

Activity B.4: Training for Permittees and Licensees: Train and inform state/provincial permittees and licensees involved in commercial ANS activities (e.g., bait industry, aquaculture operators, aquarium/water garden/nursery trade, commercial fishers) regarding ANS species identification, handling of prohibited species, related regulations and other pertinent information.

Objective C: Raise awareness/understanding among recreational associations and/or recreational user groups on ANS issues (e.g., problem species and their impacts, species identification, location and range of infestations, regulations). Encourage their promotion of prevention and control actions to interrupt pathways of ANS introduction and dispersal. Recreational users include, but are not limited to, boaters, anglers, waterfowl hunters, sea plane operators, SCUBA divers, recreational angler/bait harvesters and others.

Activity C.5: Identify Pathways of Introduction and Dispersal: Identify recreational resource users responsible for significant ANS introduction and dispersal; characterize

associated risks for spread/release into the wild; and assess how these pathways can be modified to minimize or eliminate risk for introduction/spread and associated impacts mitigated.

Activity C.6: Outreach Program for Recreational Users: Develop and conduct outreach activities that target recreational user groups in efforts to interrupt pathways of ANS introduction and dispersal.

Activity C.6a: I/E Product Dissemination: Distribute existing I/E resources on ANS prevention and control targeted to recreational boaters utilizing the network established by the Great Lakes Panel and associated membership.

Activity C.6b: Standardized Signs and Billboards: Promote the development and distribution of standardized signs and billboards to deliver the “message” on aquatic nuisance species at boat accesses, waterfront areas and along major transportation routes used by boaters and other water recreational resource users.

Activity C.6c: Recreational Activities Guidelines: Assist in the design and implementation of a dissemination strategy for the *Recommended Voluntary Guidelines for Preventing the Spread of Aquatic Nuisance Species Associated with Recreational Activities* as developed by the Recreational Activities Committee of the ANS Task Force. As part of this initiative, develop under the auspices of the Committee a pamphlet/template that will help promote the guidelines.

Activity C.6d: Boat-wash Demonstrations and Inspections: Implement boat-wash demonstrations as an educational tool to instruct boaters on how to prevent the spread of aquatic nuisance species. When appropriate and feasible, give demonstrations on how to inspect and clean or wash watercraft at boat shows, high traffic water access areas, fishing tournaments, marinas and regattas. Implement boat inspections and ANS removal to impede the spread to inland waters in areas where there is high traffic between Great Lakes-St. Lawrence region and inland waters. Priority should be placed on inspection and removal efforts that target high-traffic public accesses or infested waters.

Activity C.6e: Fishing Regulations: Disseminate information about ANS prevention in state/provincial fishing regulations. Include identification information as well as jurisdictional laws concerning possession or transport of aquatic nuisance species. Where appropriate, include a list of infested waters as it applies to a jurisdiction or region.

Activity C.6f: Factsheets and ANS ID Cards: Develop and disseminate species ID cards and factsheets on species of greatest concern. These outreach products should include a color photograph or quality line art, with a description of identifying characteristics. Information should also include a contact number, and information as to where potential sightings can be reported and preserved

specimen (frozen or in rubbing alcohol) submitted for positive identification, including information on what recreational users can do to prevent the introduction and spread of ANS in the region.

Activity C.6g: Educational Materials for Recreational Boat Manufacturers: Increase awareness, by conducting workshops and disseminating educational materials, of the pathways of spread associated with recreational boats.

Activity C.6h: Boater/Angler Survey Evaluation: Use boater/angler surveys (refer to multi-state model sponsored by Sea Grant) to assess the following: boater/angler awareness of ANS issues; the most effective sources of ANS informational and educational materials; and the degree to which boater/angler behavior has been changed or impacted as a result of ANS information/education outreach programs.

Activity C.6i: Presentations on ANS Topics: Convey information on ANS prevention and control and related issues through personal presentations using the support of multi-media techniques.

Objective D: Provide natural resource personnel (affiliated with federal, state, provincial, local and Sea Grant agencies) with the information needed to develop and implement ANS prevention and control programs to interrupt pathways of introduction and dispersal.

Activity D.7: ANS Identification: Develop and disseminate appropriate resources to natural resource personnel that promote ANS species identification as a critical component of ANS prevention and control programs. Tools are needed for ANS identification that will support implementation of early detection and monitoring programs, and cost-effective management and containment of infestations.

Activity D.7a: Informational Resources: Develop and disseminate informational resources on ANS identification for agency field staff. Resources should include, among others, ANS species bulletins, identification cards and field guides on ANS plants and animals. When available, provide preserved ANS specimens of highest concern for resource managers to use for identification purposes and as a public outreach tool.

Activity D.7b: Confirming Identification: Establish list of ANS experts where samples can be sent for positive identification.

Activity D.7c: Slide Library: Maintain an accessible slide library that provides a source of slides, prints or digital images for use by natural resource personnel for purposes such as a state/provincial listings of prohibited species. Application of computer technology is recommended for this activity to include an on-line, down-loadable collection of ANS related computer graphics.

Activity D.8: Assessment and Dissemination of Management Strategies: Disseminate information on best management strategies for ANS prevention and control to appropriate resource managers and other appropriate natural resource personnel.

Activity D.9: Local Training: Conduct local ANS training for natural resource personnel to raise awareness and share information on new species identification, associated problems/impacts, and strategies on ANS prevention and control, including messages on public outreach.

Activity D.10: Internet Communication: Promote use of the Internet in outreach efforts involving natural resource personnel responsible for ANS issues.

Activity D.10a: ANS Web Site: Establish and maintain an ANS web site targeted for natural resource personnel that is maintained with pertinent information on ANS issues.

Activity D.10b: Internet List Serve: Establish communication network among natural resource personnel using the list serve function on the Internet.

Objective E: Raise awareness on the problems caused by ANS invasions among the general public to promote appropriate behavior patterns that prevent ANS introduction and dispersal as well as building broad based political support for prevention and control programs.

Activity E.11: Radio and Television Public Service Announcements: Develop and distribute radio and television public service announcements about aquatic nuisance species, such as those aired in Minnesota, to raise awareness on the issues and provide precautions that boaters and other recreational water users should take to prevent further spread.

Activity E.12: Tourism Materials: Collaborate with tourism related industries, such as travel agencies and resorts, regarding the information on ANS prevention and control available for distribution and/or posting.

Activity E.13: Documentary Videos: Produce documentary videos and related informational programs to raise the regional and national profile of aquatic and terrestrial invasive species. These media productions can be designed for broadcast on television/cable networks that can reach households nationally, such as the invasive species videos recently developed by Information Television Network. Recommended topics to be featured are economic and ecological impacts, legislative and policy programs, technology and management initiatives, scientific research, intergovernmental and public/private sector cooperation, prevention and control opportunities for government, industry and other stakeholders (refer to G.18).

Objective F: Encourage understanding and support for ANS control measures in the Great Lakes-St. Lawrence region.

Activity F.14: ANS Control Outreach Program: Develop an outreach program to promote public understanding and support for proposed ANS control measures. As part of this outreach effort, there is a particular need for public education on the benefits and risks of using various control options, such as chemical, physical, biological controls and integrated pest management. A balanced, accurate presentation of this information is critical in assisting decision-makers as well as public and private stakeholders in making sound choices for ANS control programs.

Goal II: Regional coordination of the development and dissemination of information regarding ANS issues in the Great Lakes-St Lawrence region, including impacts, biology, prevention and control management, monitoring, research, education and policy.

Problem: I/E program development, stakeholder participation, activities/products and information transfer regarding ANS issues in the Great Lakes-St. Lawrence region is not always effectively coordinated within/among government agencies, tribal authorities, academic institutions, business, industry and other entities. The coordination and communication of ANS information development/dissemination needs to be improved to avoid duplication of efforts, unnecessary expenditures of financial resources, and inconsistencies/confusion in the “message” being delivered.

Objective G: Provide I/E programming that is coordinated and non-conflicting within the Great Lakes-St. Lawrence region by strengthening lines of communication and increasing information transfer within and among appropriate entities (as listed in the above problem statement). The membership of the Great Lakes Panel should play an instrumental role in this process based on approval of state, provincial, federal, tribal and other appropriate authorities.

Activity G.15: I/E Inventory and Evaluation: Conduct and maintain an I/E inventory to determine new products, eliminate outdated products, and identify unmet needs and gaps in outreach programming. Assess the effectiveness of various outreach methods and products in terms of facilitating regional coordination of information dissemination. Based on inventory findings, provide guidance to agencies, institutions and organizations that: 1) support coordination of existing outreach resources; 2) assist in planning efforts to address identified needs regarding the development of future outreach programming; and 3) promote broad distribution of the inventory to ANS outreach coordinators and other appropriate natural resource personnel regionally and beyond.

Activity G.16: Educator Training: Identify existing and prospective opportunities to work with educators/information providers in the classroom and non-formal settings. Such training sessions should be designed to provide ANS educational curricula and support materials to appropriate educators. These educators should then teach students about the importance of the ANS issue, how to prevent introduction/spread and mitigate impacts.

Activity G.17: Newsletter Inserts: Maintain production of a one page (two-sided) newsletter insert developed under the auspices of the Great Lakes Panel for inclusion in the many existing ANS-related newsletters published both in the region and nationwide. Evaluate the usefulness as an informational source of the newsletter by its readership to maintain effective content.

Activity G.18: Informational Programs: Disseminate informational programs (e.g., slide shows, documentaries and other informational videos) to raise awareness among Great Lakes-St. Lawrence stakeholders on various aspects of the ANS issue. Regional entities, such as the membership of the Great Lakes Panel on Aquatic Nuisance Species along with other federal, state, provincial and tribal representatives, should play an integral role in developing the “message” for informational programs to ensure that the presentation is balanced and consistent, both within the region and other regions in the U.S. and Canada. The production of such programs, such as documentary videos, should be designed for broadcast on network television to facilitate wide-scale dissemination (refer to Activity E.13).

Activity G.19: Computer Access to ANS Information: Disseminate ANS information through national and regional electronic information systems that are established and maintained under the guidance of the Great Lakes Commission, Sea Grant and other agencies, institutions and organizations. These sites (such as the Great Lakes Information Network (GLIN), the National Sea Grant Nonindigenous Species Site (SGNIS) and the National Aquatic Nuisance Species Clearinghouse at New York Sea Grant, among others) link data, information and individuals in key agencies and organizations in the Great Lakes -St. Lawrence region, Washington, D.C., and Canada through the Internet.

Activity G.20: Coordination of ANS Research Network and Inventories: Coordinate and promote the use of ANS research inventories (such as International Joint Commission’s (IJC) Great Lakes-St. Lawrence Research Inventory, the Great Lakes Panel’s Research Guidance and Descriptive Inventory and those conducted by the Great Lakes Fisheries Commission. These inventories can be used to determine how the research network can be strengthened to advance coordination and communication among researchers, managers and policymakers. This exercise should be done in collaboration with the IJC.

Activity G.21: Computerized Contact Information Exchange: Develop a database of ANS contacts and their roles from all agencies, institutions and other organizations participating in ANS prevention and control. Provide interested parties access to the database through the Great Lakes Information Network (GLIN), a computer information system that will also allow questions to be addressed “on line.”

Activity G.22: Maintenance of Regional Information Clearinghouse Services: Through discussions with existing clearinghouses, determine the current level of operation, types of services, funding base and unmet needs. On the basis of this investigation, the Great Lakes Panel can act to help ensure the availability of needed services on a long-term basis.

Activity G.23: Coordination of Fish and Wildlife Entities: Disseminate pertinent information about ANS prevention and control to natural resource personnel dealing with the protection and restoration of fish and wildlife populations and habitat.

Activity G.24: Model Management Strategies: Disseminate and facilitate effective implementation of model management strategies that have been established on the basis of regional consensus, including, among others:

- *Information/Education Strategy for Aquatic Nuisance Prevention and Control;*
- *A Model Comprehensive State Management Plan for the Prevention and Control of Nonindigenous Aquatic Nuisance Species;*
- *Legislation, Regulation and Policy for the Prevention and Control of Aquatic Nuisance Species: Model Guidance for Great Lakes Jurisdictions;*
- *A Great Lakes Action Plan on the Prevention and Control of Nonindigenous Aquatic Nuisance Species.*

This activity should be designed to promote interjurisdictional coordination of management regarding ANS prevention and control. A library of existing state, interstate and regional ANS plans accessible on-line would help assist in this effort.

Goal III: Awareness and support of ANS prevention and control programs by Great Lakes-St. Lawrence regional policymakers and resource user groups.

Problem: Policymakers may not be fully aware of the economic and irreversible ecological and social damage caused by aquatic nuisance species. As a result, the ANS issue may not be a high priority issue on the agenda of some policymakers.

Objective H: Raise awareness/understanding of the economic, environmental and social impacts caused by the infestation of aquatic nuisance species, and how these impacts will affect various areas in the Great Lakes-St. Lawrence region.

Activity H.25: Economic Cost Evaluation of ANS Invasions: A team comprised of ANS Task Force members, Great Lakes Panel members and economists will design, conduct, and evaluate surveys of appropriate Great Lakes water users and other associated commercial and recreational groups interested in the region susceptible to ANS invasions. Surveys will yield information on economic costs associated with ANS problems and an assessment of costs resulting from not taking action and potential benefits from taking preventative action (benefit-cost analysis). The findings of this economic cost evaluation should be disseminated to appropriate policy makers and resource user groups.

Activity H.26: Informational Brochure Targeted at Federal and State/Provincial Legislators, Tribal Authorities and Other Policy Makers: Develop and maintain an updated informational brochure targeted at legislative leadership and policy makers throughout the binational Great Lakes-St. Lawrence region. Information in the brochure should be presented in a concise, comprehensive manner, illustrating concepts with use of graphics when appropriate (e.g., distribution maps indicating ANS infestations). The objective of the brochure is to apprise legislators and other policy makers of the magnitude and urgency of the issue, economic and environmental aspects, current legislative and program initiatives, and agencies and individuals to contact for more information. As part of the discussion, the brochure should present success stories on ANS prevention and control, such as the sea lamprey control program. Most importantly, it should present recommendations of the Great Lakes Panel, providing guidance on action that might include legislative programs and budget needs. The brochure should be periodically updated when necessary.

Problem: There is a need to generate a sense of urgency among policymakers to take timely action to facilitate the allocation of funding needed to effectively support implementation of ANS prevention and control programs.

Objective I: Provide compelling evidence to decisionmakers as to why the severe, ongoing economic and environmental impacts resulting from ANS infestation in the Great Lakes should be considered a priority, including justification for the need for significant increased funding to support prevention and control programs, including mitigation of impacts.

Activity I. 27: Policymaker Outreach Program: Develop and implement an outreach strategy that will raise the profile of ANS issues with officials and policymakers pivotal in establishing the legislative mandates and funding pertinent to ANS issues. An important step in developing this strategy is determining the type of economic, ecological and social information that would gain the support of policymakers in their decisions regarding ANS issues. Information should also be provided indicating entities that need funding for implementation. In addition, consideration should be given to the legislative cycles, such as reauthorization of the National Invasive Species Act and other acts as they may relate such as the Endangered Species Act, Lacey Act or the Clean Water Act.

Activity I.28: Regulatory Approach to Prevention and Control: Publicize and disseminate the document *Legislation, Regulation and Policy for the Prevention and Control of Nonindigenous Aquatic Nuisance Species: Model Guidance for Great Lakes Jurisdictions*, as a tool to guide policy for ANS prevention and control.

Activity I.29: Congressional/Parliamentary Dialogue and Related Initiatives at the National/Binational Levels: Pursue a series of distinct, yet related events (primarily in Washington, D.C.) designed to elevate and maintain the policy profile of ANS issues, and associated legislative, program and budgetary needs. Specifically this will entail:

Activity I.29a: Maintaining ANS Component: The Great Lakes Commission co-sponsors the congressional/parliamentary dialogue, on behalf of the Panel, to

ensure that ANS issues are addressed and included in any “action agenda” that might result. The dialogues, held in Washington, D.C. every few years since 1985, typically attract 8-12 members of Congress and Parliament with environmental/resources management responsibilities.

Activity I.29b: Congressional Hearing: Working with appropriate members of the Great Lakes Congressional Delegation and members of the relevant committees, the Panel can request a hearing on ANS issues, either Great Lakes specific or national in scope. Testimony would reflect Panel recommendations in all areas of its responsibility, and would be disseminated to legislators and other high-level policy makers to promote awareness on the ANS issue and the need for support.

Activity I.29c: Congressional Staff Briefing: Convene key congressional staff for one or more briefings directed at Panel recommendations on legislative, program and budget needs. This can encourage interaction between individual Panel members and congressional staff, and strengthen communications to ensure that staff members fully utilize regional information provided by the Panel on a continuing basis.

Activity I.29d: National Coalitions: Identify various professional, trade and related associations that might engage cooperatively in information/education activities directed at congressional administrative officials. This can be accomplished in various ways, including a Great Lakes Panel sponsored meeting involving such groups, presentations by a Panel member to meetings of these groups, direct one-on-one contact: or combinations of the above. Much of this activity can also be facilitated by the Great Lakes Commission, with the assistance of its Great Lakes Washington Office.

Activity I.30: Great Lakes Panel Annual Report: Design, print and distribute an Annual Report, as called for in the federal Nonindigenous Aquatic Nuisance Prevention and Control Act of 1990. Carefully targeted presentations by the Panel or its members, most notably to the national Aquatic Nuisance Species Task Force, will be useful in highlighting legislative program and budgetary needs determined via deliberations of the Panel membership.

Goal IV: Effective implementation of the Great Lakes Panel’s *Information/Education Strategy for Aquatic Nuisance Prevention and Control* through adequate resource allocation and effective use and evaluation by appropriate ANS stakeholders.

Problem: Funding is limited to achieve effective implementation of the I/E strategy and associated initiatives.

Objective J: Support efforts to facilitate congressional appropriations of funds, authorized in National Invasive Species Act (NISA), to implement the I/E strategy.

Activity J.31: Funding of I/E Strategy: Through briefings, prepared materials and inquiry responses as appropriate, ensure that policy leaders are informed of I/E strategies, associated benefits of strategy implementation and the costs of not taking action, and funding requirements that might be addressed through NISA.

Objective K: Support efforts to ensure that authorities holding responsibility for ANS prevention and control and mitigation of ANS impacts allocate the financial resources and/or in-kind services to implement portions of the I/E strategy.

Activity K.32: Collaborative Implementation: Under Great Lakes Panel leadership, identify prospective agency collaborators to assist in the implementation of each I/E strategy element. In consultation with those collaborators, develop a scope of work for appropriate activities to maximize access to available financial resources and/or in-kind contributions.

Objective L: Facilitate collaboration and partnerships with the private sector and environmental non-governmental organizations to support implementation of the I/E strategy.

Activity L.33: Private Sector Program Development: Develop and implement a fund-raising strategy and associated partnerships targeted for private business and organizations (i.e. lake associations, industrial trade associations, marine and tackle manufacturers) concerned with ANS issues to promote public awareness programs.

Activity L.34: Conservation/Environmental Groups and Related Program Development: Coordinate ANS outreach programming with conservation and environmental groups concerned with the impact of invasive species on native species populations, biodiversity and outdoor sporting and recreational activities. Raising awareness on the ANS issues could provide the basis for leveraging future fund raising strategies to support ANS prevention and control.

Problem: Agencies, institutions, and organizations involved with ANS prevention and control are not fully aware of the I/E strategy and associated activities, thus impeding strategy implementation by appropriate stakeholders.

Objective M: Foster implementation of the I/E strategy and facilitate coordinated distribution and marketing of I/E products.

Activity M.35: I/E Strategy Dissemination and Implementation: Disseminate and encourage implementation of the I/E strategy by regional, state/provincial task forces or other working groups formed from agencies, institutions, and organizations involved with ANS prevention and control issues.

Activity M.36: I/E Strategy Evaluation and Update: Develop and implement a timeline for the Great Lakes Panel to update activities and evaluate the I/E strategy (e.g., every 3 years). As part of this initiative, evaluate the overall effectiveness of I/E efforts over a 5-year time period.

Activity M.37: Marketing Strategy: Develop a marketing strategy that will facilitate coordinated, cost-effective distribution of the I/E products as developed under the I/E ANS prevention and control strategy. As part of this marketing strategy, a working group should be established to market information, news releases, I/E outreach products to targeted audiences (e.g., media, legislators, policy makers, natural resource personnel, and recreational users).