



# Implementing Rapid Response to Aquatic Nuisance Species in the Northeast: Key Components of a Successful Program

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*A workshop held May 3, 2005 in  
Portsmouth, NH by the*





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## **OVERVIEW**

When dealing with aquatic nuisance species, prevention is always the first line of defense. However, when invasions occur, eradication is far more likely if there is a plan in place that allows for early detection and rapid response. In May 2003, the Northeast Aquatic Nuisance Species (NEANS) Panel sponsored a workshop entitled, "Rapid Response to Aquatic Nuisance Species in the Northeast: Developing an Early Detection and Eradication Protocol." This workshop laid the groundwork for developing a rapid response protocol in the Northeast. In May 2005, the NEANS panel sponsored a follow-up workshop entitled, "Implementing Rapid Response to Aquatic Nuisance Species in the Northeast: Key Components of a Successful Program." This workshop offered in-depth information about the key aspects of a successful early detection and rapid response program by featuring presentations on developing a rapid response protocol, model state legislation, obtaining emergency powers, getting legislation passed, alternatives to legislation, and rapid response protocols for other sectors. The workshop concluded with a wrap-up session that allowed states to share their progress in rapid response planning, as well as the successes and failures they have experienced along the way. Workshop participants represented state and federal government agencies, nonprofit organizations, and universities.

## **WORKSHOP PLANNING COMMITTEE**

Jay Baker, Massachusetts Office of Coastal Zone Management

Susy King, New England Interstate Water Pollution Control Commission

Anne Monnelly, Massachusetts Department of Conservation and Recreation

Susan Park, NOAA Fellow hosted at the Massachusetts Office of Coastal Zone Management



# Implementing Rapid Response to Aquatic Nuisance Species in the Northeast: Key Components of a Successful Program

A Workshop Sponsored by the Northeast Aquatic Nuisance Species Panel  
Urban Forestry Center Portsmouth, NH • May 3, 2005

## AGENDA

8:00 - 8:30 AM	<b>Check-in and morning refreshments</b>
8:30 - 8:40 AM	<b>Welcome</b> <i>Anne Monnelly, MA Department of Conservation and Recreation</i> <i>Judith Pederson, MIT and NEANS Panel co-chair, workshop moderator</i>
8:40 - 9:15 AM	<b>Overview of Rapid Response Protocol</b> <i>Susan Park, NOAA Fellow hosted at the MA Office of Coastal Zone Management</i>
9:15 - 10:00 AM	<b>Maine Rapid Response Plan</b> <i>John McPhedran, Maine Department of Environmental Protection</i>
10:00 - 10:15	<b>Break</b>
10:15 - 11:00 AM	<b>Model for State EDRR Legislation</b> <i>Lisa Goldman, Environmental Law Institute</i>
11:00 - 11:45 AM	<b>Emergency Powers: California's EDRR protocol for invasive aquatic plants</b> <i>Lars Anderson, Ph.D., USDA-ARS Exotic and Invasive Weed Research</i>
11:45 AM - 12:30 PM	<b>Lunch (provided to registrants)</b>
12:30 - 1:15 PM	<b>Marketing the Message...Passing Successful Invasive Species Legislation in Maine</b> <i>Shippen Bright, Maine Lakes Conservancy Institute</i>
1:15 - 2:00 PM	<b>Voice and Choice in the Lake Champlain Basin: Alternatives to Legislation and Regulation Based in Voluntary, Cooperative Approaches to Solving Natural Resource Protection Challenges</b> <i>Michaela Stickney, VT Agency of Natural Resources</i>
2:00 - 2:15 PM	<b>Break</b>
2:15 - 3:00 PM	<b>Learning from Other Sectors: The National Incident Management System</b> <i>Roy Nieder, Training Officer, Richard M. Flynn Fire Academy</i>
3:00 - 4:00 PM	<b>Discussion and Wrap-up</b> <i>Judith Pederson</i>

## ABSTRACTS

### **Overview of Rapid Response Protocol**

#### ***Susan Park, NOAA Fellow hosted at the MA Office of Coastal Zone Management***

The negative impacts of aquatic invasive species are becoming increasingly evident to coastal resource managers, and while we recognize that prevention is the most effective means of minimizing these impacts, new species may still invade. Therefore, an early detection and rapid response (EDRR) plan will be necessary to manage these incipient invaders. In May of 2003, the Northeast Aquatic Nuisance Species Panel (NEANS Panel) hosted a workshop entitled "Rapid Response to Aquatic Nuisance Species in the Northeast: Developing an Early Detection and Eradication Protocol." During this workshop, several key elements of an EDRR plan were identified: detection, delineation, quarantine, assessment, implementation, and monitoring. These elements have both pre- and post-invasion components. For a full description, please see the workshop proceedings, which can be downloaded at [http://www.northeastans.org/rr\\_proceedings\\_9.2003.pdf](http://www.northeastans.org/rr_proceedings_9.2003.pdf).

As a follow-up to the workshop, the Massachusetts Office of Coastal Zone Management, in conjunction with the NEANS Panel, is working towards a model rapid response plan for the state and the Northeast region. Objectives of this plan include:

- (1) Establishing a bioinvasion reporting and verification network;
- (2) Developing a risk assessment protocol for potential new invaders;
- (3) Developing an advisory list of rapid response trigger species; and
- (4) Developing generic and species-specific rapid response plans.

The final deliverable of the project will be a web-based resource that will allow managers to quickly and effectively respond to new aquatic invaders. The plan will serve as a model rapid response protocol for aquatic invaders that will be transferable to other states and regions.

## **Maine Rapid Response Plan**

***John McPhedran, Maine Department of Environmental Protection***

The Maine Departments of Environmental Protection and Inland Fisheries and Wildlife are nearing completion of a Rapid Response Plan for Aquatic Species in Maine. This administrative plan will guide agency response and interaction when new introductions are discovered, in keeping with existing state laws and policies, and sound professional practice. The plan is composed of three parts, including an introduction and separate protocols for plants (Part 1) and fish and other fauna (Part 2). Consultants worked with the departments to prepare the draft, relying upon information available from other states and jurisdictions found on the Internet, in our files, or from staff.

The goal is to mobilize and deploy to control a new illegal introduction as quickly as possible. To achieve rapid response, the agencies will follow the principles listed below. Rapid response initiatives will:

1. reflect sound biology;
2. facilitate eradication or management;
3. facilitate fast action and interagency decision-making at the lowest level possible;
4. be a priority for staff attention so that water use restrictions may be lifted as soon as possible;
5. minimize infringement on public access, parks, and other facilities;
6. be fair and safe to all users; and
7. facilitate efficient use of personnel and resources.

This talk will outline the rapid response steps laid out in Maine's draft plan and will focus on response to new introductions of invasive aquatic plants.









**Marketing the Message...Passing Successful Invasive Species Legislation in Maine**  
***Shippen Bright, Founder and Executive Director of the Maine Lakes Conservancy Institute, Current Chair of the United States Federal Invasive Species Advisory Committee, and founding Director of Save Maine's Lakes, a political action committee***

In a hard fought battle the Maine legislature passed invasive aquatic plant prevention legislation in April of 2001. By *one vote* "An Act to Prevent The Infestation of Invasive Aquatic Plants and Other Species" was signed into law despite an initially indifferent Executive branch and hostile political interests over its dedicated funding mechanism.

The law was constructed around a bill that Save Maine's Lakes introduced in the Maine Legislature. We'll talk about the challenges and the opportunities of raising awareness at the political and decision-making levels. This is a story of grassroots activism that fought against indifference, ridicule, and hostility to the measure. It shows that one can prevail with credible *data*, the ability to *craft a message* designed for "the people," and *perseverance* in a system that is purposely designed to make the passage of new laws difficult.

Legislative response was heavily influenced by the use of environmental and economic arguments for support of the bill. Since the legislation was enacted there has been overwhelming public support for the program with a 91% public approval rating of the Milfoil Sticker program.

In summary, the environment and the economy are inseparable and the use of economic data is the foundation of public education and galvanizes support for natural resource conservation efforts. This presentation is about empowerment of the individual to make a difference on a large scale for the common good. While good science is necessary for good public policy it is most often not sufficient.



## PRESENTER BIOGRAPHICAL SUMMARIES

### **Lars Anderson, U.S. Department of Agriculture, Agricultural Research Service, RS Exotic And Invasive Weed Research, Weed Science Program, UC Davis**

Dr. Anderson has 30 years' experience in research on the biology and management of invasive aquatic weeds, including two years with the US Environmental Protection Agency and 28 years with the US Department of Agriculture. He is currently Lead Scientist for the USDA-ARS Exotic and Invasive Weed Research Laboratory on the UC Davis campus.

Current research projects include: (1) responses of plant canopy structure to neighboring plants; (2) development of cost-effective herbicide application systems for management of invasive aquatic weeds in tidal waters of the Sacramento-San Joaquin Delta; (3) eradication of *Caulerpa taxifolia* in California; (4) rapid response/early detection of aquatic invasive species; (5) explorations in South America for biological control agents for *Egeria densa* (2005). Lars's other involvements include the Editorial board of *Aquatic Nuisance Species Digest*; Hydrilla Control Technical Advisory Committee; Waterhyacinth Technical Advisory Committee; Egeria Control Technical Advisory Committee; Chair, Salvinia Science Advisory Committee (1999); Chair, *Salvinia molesta* Advisory Committee, APHIS/CDF, (1999); and Chair, Technical Committee, Southern California Caulerpa Action Team (2000-present). He has received the USDA Unit Distinguished Service Award (1989), a team award for biological control of Hydrilla in Imperial Irrigation District).

Dr. Anderson is Co-founder of the Western Aquatic Plant Management Society (WAPMS)-1985; Past President, Aquatic Plant Management Society; Past President, Western Aquatic Plant Management Society; Past President of the California Weed Science Society (2001); and Past President, current trustee of Explorit Science Center (Davis). He holds a BA from the University of California, Irvine, Biology, 1967; MA-San Diego State University, Biology, 1970; and a Ph.D.-University of California, Santa Barbara, Biology 1974.

### **E. Shippen "Ship" Bright, Executive Director, Maine Lakes Conservancy Institute**

Ship is the Executive Director and Founder of the Maine Lakes Conservancy Institute [MLCI], a 501(c)(3) nonprofit environmental education organization devoted to understanding, preserving, and sustaining the health and values of Maine's freshwater natural resources. He presently is Chairman of the US Federal Invasive Species Advisory Committee and has made presentations before Congress, around the United States to various organizations, and at International conferences. Ship served as Deputy Commissioner for the Maine Department of Conservation under two Governors (one Republican and one Independent), where he managed the legislative and political program. After graduating from Bates College in 1978, Ship served for five years as a United States Naval Officer. After his Honorable Discharge he owned and operated a real estate company. Ship has an MBA from Southern New Hampshire University and an MPA from Harvard's John F. Kennedy School of Government. He is married to Sarah Stiles, they have four children and live on Pemaquid Lake in Midcoast Maine. He is a registered Maine Guide and a certified Ski Instructor.

### **Lisa Goldman, Staff Attorney, Environmental Law Institute**

Lisa Goldman is a staff attorney at the Environmental Law Institute (ELI), where she is working on invasive species issues as part of ELI's Invasive Species Project. She is currently conducting a review and analysis of federal invasive species authorities for the National Invasive Species Council, and is leading a new project on state invasive species programs and global climate change for EPA's Global Change Research Program. She has given presentations on state invasive species tools, based on ELI's publication *Halting the Invasion*, to the Mid-Atlantic Regional

Panel on Aquatic Nuisance Species, the New Jersey Invasive Species Council, and the Maryland/DC chapter of The Nature Conservancy. Ms. Goldman received a BA in Human Biology from Stanford University, a JD from the University of Pennsylvania, and an LL.M. from the Georgetown University Law Center.

**John McPhedran, Maine Department of Environmental Protection**

John has a long-standing connection to Maine lakes, first from summers on Little Sebago starting at nine months of age and later growing up on Maranacook Lake, west of Augusta. He came to working on aquatic plants in a roundabout way, working on municipal land use plans in New Hampshire and Vermont, and later on water quality monitoring and watershed management in Maine. Graduate work in botany at the University of Vermont led to consulting work conducting botanical inventories and, in December 2001, to his current position coordinating the invasive species program at Maine DEP. At the DEP John conducts aquatic plant inventories, manages plant control projects, and oversees the state's plant monitoring and boat inspection programs.

**Anne Monnelly, Massachusetts Department of Conservation and Recreation**

Anne received her Masters Degree in Aquatic Ecology from the University of Michigan, School of Natural Resources and Environment. She has over ten years of experience in the field of water resources protection and management. Anne joined the Massachusetts Department of Conservation and Recreation (DCR), Office of Water Resources, in September 2001 as an aquatic ecologist with the Lakes and Ponds Program. Anne's work with DCR includes managing a grant program for lake and pond restoration, and providing statewide technical assistance, policy development, and education/outreach on water resource protection, restoration and management issues including lake watershed management, AIS prevention and control, stormwater management, and water conservation.

**Roy Nieder, FEMA Federal Emergency Management Agency State Training Office, New Hampshire Bureau of Emergency Management**

Roy Nieder is the FEMA State Training Officer for the New Hampshire Bureau of Emergency Management (BEM) and is the state coordinator for the Civilian Corps program in New Hampshire. Roy resides in Bow, New Hampshire and began his public service as a Field Representative for BEM in 1992 after having operated his own business for 29 years. A Field Representative functions as the liaison between BEM and New Hampshire communities and State Agencies. Since being appointed as the State's Training Officer in 1998 Roy has been teaching courses throughout New Hampshire and New England.

**Susan Park, NOAA Coastal Management Fellow, Massachusetts Office of Coastal Zone Management**

Susan Park is currently a NOAA Coastal Management Fellow for the Northeast Aquatic Nuisance Species Panel and the Massachusetts Office of Coastal Zone Management. During her two-year fellowship, she will be working with the Panel and MA CZM on an Early Detection and Rapid Response Protocol for Massachusetts and the Northeast Region. Before coming to Boston, she attended the University of Delaware where she received her Ph.D. in oceanography. The focus of her dissertation research was the larval transport and range expansion of the invasive shore crab *Hemigrapsus sanguineus*. Susan obtained her B.A. in biology and M.A. in conservation biology from the University of Pennsylvania.





## WRAP-UP DISCUSSION

### Discussion questions

1. How prepared is your jurisdiction to conduct EDRR?
2. What is currently in place?
3. What is lacking?
4. What are your next steps to implement EDRR/what approach is appropriate?
5. Please provide a case history of an RR.

### Connecticut

1. The CTDEP and other groups have been trying to respond to Hydrilla but none have authority to regulate the plant on private lands. Another challenge is presented in different departments having responsibility for different species.
2. CT is developing a state aquatic invasive species management plan for both freshwater and marine species.
3. There is no dedicated funding or staff. There is no database for tracking, verifying, and responding to reported sightings. Although the state is working on a comprehensive state plan, it is still waiting for federal and dedicated funding.
4. Overall, CT needs to build capacity and coordination to respond. An ad-hoc committee or network of monitors should be created to conduct surveys and identifications.
5. There is varying progress in different regions of the state. The southeastern CT population has received no action. The southwestern part of the state has two populations: one that has been treated with no tubers found. Another is waiting on a plan that involves cooperation from a private landowner.

### Rhode Island

1. For the most part, RI is not prepared to conduct EDRR for ANS.
2. A structure is in place but requires coordination. Most responses have been ad-hoc. The RI Emergency Management Agency is designed for RR in emergencies. A capacity for response has been demonstrated with their oil spill response group. They could develop an ecosystem management capacity. The CRMC has some capacity for response. Its staff has responded to emergencies such as hurricanes where they distributed emergency permits for those whose homes had been damaged by the storm. There have been reports that RIDEM has been working on an invasive species response but this was not confirmed at the workshop, indicating a need for increased communication. RI Sea Grant has an oil response group that has responded to barge spills. There is a RI Monitoring Collaborative and Narragansett Bay Rivers and Watersheds Commission collaboration. The RI Natural History Survey is the lead for invasive species. They are strong on terrestrial and freshwater aquatics but not as much with marine species. The RI Invasive Species Council has some educational and training materials and has a good framework for outreach.
3. A comprehensive plan is needed: an intern is currently working on a draft. Funding is lacking as is personnel and storage for voucher specimens.
4. RI should develop a comprehensive Aquatic Invasive Species Plan and secure funding to implement it.
5. No RI case study was provided





3. There is a need for enabling legislation that provides the authority to implement the necessary elements of RR and to execute MOAs. The authority needs to include emergency powers and general permits.
4. The state should get better representation from its agencies and formal recognition of lists and advisory groups. Lead agencies should be identified and permitting processes streamlined. MA should work with agencies, NGOs, and regional groups to form an invasive species council and work together on monitoring, prevention, and eradication.
5. Hydrilla is 90% eradicated in the areas that it has been found. One snakehead fish has been found. There are active populations of Eurasian water milfoil and water chestnut.

## **Maine**

1. For freshwater plant systems, ME is well prepared. There is in place a good ED system. The system for fauna needs improvement. The status for marine systems response would be characterized as unprepared.
2. ME has a statute that charges its DEP to develop a plan that may include ED and RR and has in place a draft RR plan. The Marine Invasive Working Group is in place and growing. It has educational materials and baseline data and is planning a monitoring system. The group is identifying issues and species. A pamphlet has been created and distributed. Rapid assessment in Cobscook Bay.
3. ME needs to revise its current plan and refine the technical section that includes tools and species-specific response. The plan should also enable general permits for herbicides in the marine area. More funding, personnel (including a central staff), and baseline data are needed. Interstate plans and a framework for cooperation/collaboration are needed. There is a bill in the legislature that directs all the natural resource agencies to work together to prevent IS (the language is broad but it informs the legislature). There is no general permit for Rotenone. For marine invasions, the agency is not prepared for EDRR—the science is good but the necessary framework is not there.
4. ME should finish its plan (a contractor is working on general permit). The enabling legislation will likely pass so the next step will be to work with MEDEP.
5. Hydrilla in Limerick was discovered late in the year. This allowed time for consulting with other states. It was treated for two years with herbicides (90% kill rate) and a third year is planned. Back in the 1950s, there was a response to the green crab invasion but it has not been successful. On the marine side, there has been some success with green crabs.

## **Participant Observations**

- Lars Anderson (USDA ARS) noted the many similarities between states and the reciprocity between them.
- Cynthia Boettner (USFWS) noted the regional cooperation opportunities.
- Larry Harris (UNH) indicated the need to improve coordination in marine systems.
- Les Mehrhoff (UConn) said that RR efforts must be by a government or landowner and that efforts with aquatics are out in front of those for terrestrial species. ED should be separated from RR.
- Ralph Bathelt (U.S. Coast Guard Auxiliary) said that the Coast Guard has priorities other than EDRR but the Auxiliary might be able to help with monitoring and other EDRR efforts.
- Judy Pederson (MIT Sea Grant) noted the need for improvement in the planning process, keeping open the lines of communication, having relationships with politicians, and that there were few marine examples of EDRR.



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## NOTES

## **Cover images**

From left to right: Sea Lamprey, Great Lakes Sea Grant exotic species graphics library; Hydrilla, California Department of Food and Agriculture; Green Crab, University of California Sea Grant; Water Chestnut, VT Department of Natural Resources; and Zebra Mussel, US Fish and Wildlife Service.



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