Fall Meeting November 30, 2010
EB Forsythe National Wildlife Refuge
Oceanville, NJ

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Attendance

Action Items

- Fredrika Moser will work with Panel members from each state to get the following:
    - Access to databases with angler information (email or mail addresses for surveys)

- State contacts to help facilitate the flow of information
- Information on how states educate the public on bait disposal and management
- Information on existing bait dealer/angler surveys performed in states
- External mail reviewers

- The Panel would like SMaC to submit a proposal to MD Sea Grant. Sea Grant is not encouraging anyone specifically to apply, but acknowledges they have a possible mechanism to support SMaC work.

- Panel Chair and Coordinator will circulate a recommendation on ballast and ship fouling, and bring that to the Aquatic Nuisance Species Task Force. *Susan Mangin would like recommendations a month in advance of their May meeting.

- Cathy Martin will provide Delaware's online bait survey to Fredrika Moser.

- David Adams will provide the group with NY's RR framework (see Addendum).

- Panel Coordinator will send a Doodle poll to Panel membership to determine the best date in May for the spring meeting.

- Annual Merit Award Committee will go back into session for 30 days to continue the recommendation process.

- If anyone would like to submit nominations for people to memorialize this award to, please contact the Award Committee.

- Sarah Whitney will research red-eared slider and provide the group with some background information before the Panel votes on its inclusion/exclusion from the Species of Interest list. The group will also vote on Chinese pond mussel and golden algae during the spring meeting.

Welcome

Vinny Turner, E.B. Forsythe National Wildlife Refuge

Vinny introduced the group in attendance to the Refuge providing an overview of history and management activities. The Refuge was originally established in 1939 as the Brigantine National Wildlife Refuge to provide wintering habitat for Atlantic Black Duck and Atlantic Brant. Today, the Refuge's 47,000 acres, 80% being salt marsh, support a variety of shore birds and wildlife, including the federally listed piping plover. Management activities include the use of fire (prescribed burn) to control invasive Phragmites. Chemical treatments using aerial, backpack and sprayer tanks on airboats are additional methods used. Of 600 Refuge acres infested with Phragmites, 75% are currently under control.

Jonathan McKnight, Panel Chair
Jonathan McKnight called the meeting to order and thanked Vinny for his presentation and for hosting the Panel's fall meeting. He reviewed the day's agenda and action items from the spring meeting.

Announcements

- Megan Hession, staffer for the Habitat Goal Implementation Team, shared some brief background information on Executive Order 13508 and directed the group to the Action Plan that was released in September. Action RH 10 is "Combat invasive species that threaten habitat." It has four sub-actions each headed by a federal agency. Sub-action 1 (FWS) calls for collaboration with the Panel on snakehead management plan actions, rapid response work, and other tasks. Panel members are encouraged to tie their work in the coming year to RH 10 in collaboration with those federal agencies.
- Kerrie Kyde will be giving a presentation on regulatory, financial, and other barriers to EDRR to the ISAC. She would like to talk to representatives from the states to get their views on the subject.
- National Invasive Species Week: Feb. 28-March 4, 2011
- Northeast Fish & Wildlife Conference: April 17-19, 2011

National Sea Grant Program 2010 RFP
Fredrika Moser, Maryland Sea Grant
It is well understood that prevention is the key to vector management, but we still struggle with implementation. The Vector Management Workshop aimed to identify gaps in science and policy that need to be addressed in order to make progress in vector management. The workshop yielded a list of recommendations and the report that was distributed to Panel members and other interested parties.
Sea Grant has received two years of funding from NOAA to work on vector management. They have chosen not to focus their efforts on the vector with the highest rates of introductions, but rather to try to generate findings on vector management as a whole. They will be working on the live-bait vector because it is the most manageable. Sea Grant is accepting proposals and hopes to have on selected by mid-March. This process will require interaction with states. Fredrika will need:

- Access to databases with angler information (email or mail addresses for surveys)
- State contacts to help facilitate the flow of information
- Information on how states educate the public on bait disposal and management
- Information on existing bait dealer/angler surveys performed in states
- External mail reviewers

State contacts will not need to do any heavy lifting, just putting the Sea Grant team in touch with the correct people in each state agency. **John Ewart** volunteered to be the DE contact, **Peter Rowe** volunteered for NJ, and **Sarah Whitney and Sara Grise** volunteered for PA. Fredrika noted that there should be a national registry with pertinent information as part of Magnuson Stevens, but the group was unsure of the status of that database. Fredrika said if they cannot find complete angler data, the team will be looking for data from boating licenses. They hope to pull information from existing angler/bait

shop surveys. PA and MD have completed surveys recently. There is a wealth of existing information on the live bait vector; Fredrika hopes to build off of this information instead of duplicating efforts.

Development of an Outreach Campaign using Social Marketing Strategies to Reduce Bait Bucket Introductions in the Mid-Atlantic Region
Kerrie Kyde, Maryland Department of Natural Resources
Last year MAP set aside $5,000 as operating funds for the Social Marketing Committee (SMaC). Social marketing research tells us that top-down regulation, education, and even promotion of a resource user's economic self interests do little to change behavior. Getting commitments from resource users and/or changing the social norm are essential for a successful social marketing campaign. This project aims to influence fresh and saltwater anglers not to release live bait, to be aware of the impacts of AIS, and to believe that their actions make a difference. A major market barrier is the widely held viewpoint that releasing live bait is humane, and supports the resource. Another challenge is that even with a successful social marketing campaign AIS introductions could occur through proper use of live bait. During the fall meeting, the Panel discussed creating an AIS white list.

The group discussed options for the role social marketing could play in the Sea Grant procedure, white list interfacing with SMaC and grant work, and the role that developing a white list could have on proposals. Jonathan said that marketing a white list could prove challenging; people are hesitant to throw live bait into a hot trashcan because it seems inhumane. Peter Rowe shared that MN has a no-release-of-live-bait policy, and said that theirs might be a good model to follow.

Nick Lapointe brought up the problems with interstate bait trade. Anglers and vendors are allowed to collect bait in all seven jurisdictions. We could be mixing genotypes and phenotypes when bait is moved across regions. He suggested surveys to understand where species are being moved about. He also suggested targeting anglers/bait shop owners as well as a bait species. The group could do a trial project with one uncharismatic bait species, and broaden to more species as kinks get ironed out. Peter Rowe suggested targeting certain water bodies.

Another related issue is the introduction of foreign pathogens through the live bait vector. Jonathan mentioned Jim Carleton's work on this topic.

Fredrika shared that MN set up a stop light system to help communicate which bait is best, similar to Monterey Bay Aquarium's system for sustainable fisheries. Fredrika asked the states if they had live bait regulations or campaigns in place.

PA – It is no longer permissible to collect wild bait and move it out of its watershed, and wild bait cannot be sold. (Sarah is not sure this statement is correct, but she has not been able to confirm the actual regulation. She will keep checking).
MD – No commercial harvest of collected bait. Jonathan says this is not enforced.
NY – No commercial harvest. The state has identified 15 species that are allowed to be transported and imported.

Jonathan summarized the discussion, and asked the group if there is a role social marketing could play in the Sea Grant procedure, if a white list could interface with SMaC work, and what effect the development of a white list might have on proposals?

Fredrika and others felt that the white list discussion should continue once they have PIs on board. Kerrie felt that developing a white list would be a long process, and social marketing would be more short-term. Nick Lapointe suggested that the group include the option of completely banning live bait, like Quebec does. Even if it is just a scary extreme, it will make the white list seem more palatable.

Power Point presentation is available here.

CJISST Overview & Review of Emerging Aquatic Invasive Species in New Jersey
Michael Van Clef, Ph.D. & Melissa Almendinger
Central Jersey Invasive Species Strike Team
The CJISST program area is expanding from Central Jersey to the entire state. They focus on preventing the spread of emerging species, rather than eradicating widespread species. Success in this field is a moving target. A group could focus all of their efforts on the eradication of one species and end up removing 10% of it. Is that success? CJISST focuses their efforts on emerging species, which gives them greater ROI. They coordinate efforts of partners on multiple land preserves to achieve regional goals. They find that joint work days are very successful and promote enhanced communication between partners. The group uses GPS tracking and identification for early detection of invasive species. They use a simple volunteer friendly data sheet, and map their data on their website (njisst.org). They use both chemical and mechanical means of eradication in their rapid response. The have a top ten list, with a major focus on plants. They hope to extend to fauna. They use a priority list with multiple stages to target their work.

Kerrie asked if there work took place on public or private lands. They do not turn anyone away, but they do most of their work on public preserved lands. Emma Melvin asked what tools they used for mechanical water chestnut extraction. They use a machine called a Truxor, which is manufactured by Princeton Hydro Company. They rented it for $2300/day. Fredrika asked if they had looked at the effectiveness of high tech vs. manual extraction. They had not done any studies. They choose their approach on a site by site basis.

Power Point presentation is available here.

Invasive Carp Removal & Discovery of Chinese Pond Mussel
Tim Morris, New Jersey Conservation Foundation
Tim presented a major success story that the New Jersey Conservation Foundation had this year. The foundation purchased property to protect the watershed. The land had previously been used for aquaculture; the foundation found big head carp in the aquaculture ponds. They applied rotenone and removed 905 big head carp from the ponds. This is the only occurrence of big head carp in the Mid-Atlantic, so far no big head carp have been identified outside of the property. They planned to salvage viable

fish, but they found Chinese pond mussel on the property. This is the first occurrence of this species in the US. A lifestage of the mussel attaches to fish gills, so all of the fish must be landfilled. The foundation plans to drain each pond on the property, and work with neighbors that have ponds which connect to the infested property.

Jonathan suggested a survey to determine which fish were missed by the rotenone. Tim said that they had performed some follow-up electroshocking and only found fish in a canal which did not have any carp and likely did not contain mussels. Jonathan said that this is a story that should be promoted, it will be considered for the Annual Merit Award.

Power Point presentation is available here.

Estimating Risk of Fish Invaders in the Mid-Atlantic Region
Nick Lapointe, Ph.D., Virginia Polytechnic Institute & State University
Nick presented research assessing the determinants of fish invasions in the Mid-Atlantic. Pathways with the greatest risk of introduction are the release of live bait, and the stocking of private ponds. He obtained nonnative fish distribution from USGS Aquatic Species Database. Regulation varies greatly between states. He found that the number of invasive species establishments rose steeply from the 1940s on, mostly stocked species that matched the invaded environment. Nick also found that Mid-Atlantic watersheds have varying non-native species richness (NNSR), suggesting that "invasibility" varies within the region. He analyzed the relationship between ecosystem characteristics and "invasibility." He found that NNSR varied with elevation; highland watersheds had greater NNSR likely due to those watersheds' increased habitat heterogeneity. Ecosystems with similar NNSR often have different AIS, likely because of differing ecosystem characteristics. He found NW watersheds had lots of small mouth bass, SW watersheds had large mouth bass, and Coastal Plains watersheds had black and white crappie. The least invaded SE region is at highest risk for invasion. Nick hopes that his research can be used in AIS project targeting. Solutions to the live bait problem include outreach, banning live release, and the development of dirty lists. More stringent options include banning live bait, white lists, and stronger penalties for violators, and stronger enforcement.

Kerrie said she might have expected to see some variability because of the riffle, pool, etc. differences. Paul said that this ended up not being a major factor because each HUC 8 has several micro-meso habitats.

Power Point presentation is available here.

MAPAIS Funded Projects Update
Lisa Moss, Panel Coordinator
Lisa Moss presented updates on funded projects for 2010. Full summaries are available in the meeting materials.

Oriental shrimp occurrence in the Chesapeake Bay, Diaz and Roberto Llanzo
Did sampling in summer 2010 using a sweep net, and found very few individuals. However presence/absence doesn't mean it isn't there.

Rapid Response Phragmites Control Protecting Dragon Run and Crow's Nest, VA DCR
In 2010, they met with TNC and presented project updates. TNC owns key parcels with targeted Phragmites on Dragon Run and works in concert with Friends of Dragon Run and other conservation easement holders who will be vital to long-term follow up efforts. VA DCR has conducted county parcel searches, identifying and documenting land owner contact information for each targeted patch, and assessed 16/18 patches on the Dragon/Upper Piankatank to confirm native versus non-native Phragmites status. All patches visited were non-native and thus scheduled for treatment in 2011.

Chinese Mitten Crab, SERC
In 2010 the group continued and expanded their tracking efforts. Research was presented at the November workshop. SERC continues to work on their bi-coastal effort, and the mitten crab watch website.

Pilot Project for Data Driven Nutria Study and Removal from Nags Head Woods Ecological Preserve, TNC NC Chapter
The group has performed outreach to private landowners. In February 2010 they performed site evaluations, and then began trapping nutria in partnership with APHIS. They will continue routing monitoring of trapped areas to check for return of nutria. RNC has presented the work done thus far to the town of Kill Devil Hills with plans for additional presentations once the project is completed. Another round of trapping is scheduled for March 2012.

Emma Melvin and Sara Grise were in attendance and presented updates for their respective funded projects.

AIS Field Guide - Sara Grise, Pennsylvania Sea Grant
The goal of the project is to provide science professionals with a consistent resource for AIS identification and reporting in the form of a field guide. The guide will give an AIS overview and break files down to taxa. This guide will tie into Pennsylvania's Rapid Response Plan, and provide county by county maps of AIS infestation locations. They are currently developing content, finishing first drafts of species profiles, and hiring technical editors. Power Point presentation is available here.

Water Chestnut Eradication - Emma Melvin, Perkiomen Watershed Conservancy
The Perkiomen Watershed Conservancy has been working to remove water chestnut from a stretch of otherwise pristine stream located on a Boy Scout preserve. The infestation is too large for hand pulling. They had 99% removal with a pesticide application, but later found seed pods in the creek bed. Seeds move in sediment and float along the water, they are very hard to isolate and remove. The Conservancy is using online maps to coordinate their continuing efforts. Power Point presentation is available here.

Chinese Mitten Crab Workshop Briefing – *Lisa Moss, Panel Coordinator*
The Chinese Mitten Crab Workshop took place in November. The objective was to facilitate communication and collaboration amongst Chinese mitten crab experts in North

America. They discussed the National Management Plan; they are expanding and coordinating their efforts with the east coast. The National Management Plan needs to be made relevant to the Chesapeake Bay. The workshop also featured discussion on Chinese mitten crab reporting systems, and the need for standard methodology for sampling. Identification systems are already in existence; FWS USGS, ANSTF, state agencies, and SERC all have web pages with relevant information.

Power Point presentation is available here.

Aquatic Nuisance Species Task Force Update - *Jonathan McKnight, Panel Chair*
Each year the Panel brings recommendations to the ANSTF. This year the main suggestion was an ad hoc vector group. Panel members are interested in keeping federal feet to the fire on ballast and ship fouling issues, states should not enter into their own regulatory regimes if the federal agencies have not developed a federal regulatory frame. He suggested the Panel continue to look at vector cut off and interception and its present at the next ANSTF meeting. Chair and coordinator will circulate recommendation on ballast and hall/ship and bring that to task force. The ANSTF is also looking to update the recreational guidelines, they would like to make vectors/pathways more visible, and highlighting it in the Prevention Committee. This year's ANSTF meeting will take place in Little Rock, AR in May. Susan Mangin would like to have recommendations one month before the meeting. She mentioned that a priority of the QZAP (Quagga - Zebra Mussel Action Plan for Western U.S. Waters) Coordination Team was to develop a position description for a QZAP coordinator. As of now, though, there is no funding for it. Susan wanted to get a sense for whether or not Panels felt they had enough federal involvement. She mentioned that the Task Force Strategic Plan expires in 2012. She is asking members which performance elements are priorities, so that they can align their new plan.

Members Forum
Sarah Whitney, PA SG
Pennsylvania's Rapid Response plan is now available online with two new sections. They are also working on a goby infestation in an inland pond (gravel pit) in Erie. There are no surface water infestations, but there is a groundwater connection. Chemical treatment has been ruled out, and they are looking at other options.

Lisa Barno, NJ DEP
New Jersey is working on a swamp eel infestation. They are not trying to eradicate the eels at this time because they will re-infest the area; instead they are managing the eels with electroshock sweeps roughly ten times during the summer. They are continuing their water chestnut control in a few sites.

Dave Adams, NY DEC
New York completed its northern snakehead eradication in 2009. In Spring 2010 an Asian clam was collected in Lake George. They are using benthic maps and tools to try to control the spread. There are also efforts underway to control the spread of spiny waterflea, which was identified in a waterbody connected to Lake Champlain through

canals. New York's database initiative is up and running and two AIS bills are in the works (one on organisms and commerce, the other on movement and transportation). NY has a rapid response plan. See addendum.

Steve Minkkinen, FWS
Snakeheads were discovered in Maryland in 2004. The management plan was completed in 2007. There was a recent request to update the management plan; ANSTF may consider endorsing it at their next meeting. Steve has received funding to study snakeheads on Potomac. He has implemented a tagging program which shows that during heavy rains snakeheads shoot up stream. He has tried using telemetry tagging, but finds using acoustics problematic because it does not work well when the fish is in vegetation or burying in sediments. He will be working on a two year survey to look at the effects of snakeheads on the large mouth bass fishery.

Cathy Martin, DE DNREC
Delaware is continuing work on mitten crabs, flathead catfish, and red swamp crayfish. Parrot feather is emerging. Cathy created an online bait survey in partnership with SMaC.

Kerrie Kyde, MD DNR/MISC
Kerrie is representing the Maryland Invasive Species Council (MISC). They have created a bill that aims to ban invasive plants. It will be introduced in the 2011 legislative session. MISC will create an invasive plan advisory council to advise agricultural sector representatives to create assessment risk protocols.

Steve Kendrot, APHIS
The nutria eradication efforts continue. APHIS is working with a New Zealand group to get an external review of the work. They are using low density detection to find the last remaining nutria.

Lisa Moss, FWS
Legislation passed to reauthorize the VA Invasive Species Council, but no meetings have been held to date.

Lisa Moss for Ray Fernald, Va DGIF
DGIF is undergoing major reorganization; Ray is still the aquatic invasive species contact for his agency.

Mike Van Clef, NJISST
NJISC disbanded by the Executive Order, was never funded and is inactive.

Panel Business

MAPAIS Award Nominations & Recipient Selection– *MAPAIS Awards Committee*
The Annual Merit Award Committee (Steve Kendrot, Sarah Whitney, Jonathan McKnight, and Dieter Busch) obtained nominees and established guidelines for recognition. A plaque or other media-friendly award will be given to the recipient at a time and venue that best suits their PR needs. Lisa Moss has purchased several GPS

units with leftover federal funding that can go to the honoree or be made into additional awards for other worthy nominees. Several nominations have been processed and made available to the group in the meeting materials. The Annual Merit Award Committee will go back into session for another 30 days to finalize the process. If anyone would like to submit nominations for people to memorialize this award to, please contact the Award Committee.

Nomination & Vote for Incoming Panel Chair
Sarah Whitney will succeed Jonathan McKnight as Panel Chair.

Changes to the Species of Interest List
The group accepted the modifications to text in the list's introductions which now makes it clear that this includes not only aquatic species, but also terrestrial species that impact aquatic habitats. Panel members accepted the addition of didymo to the list, and had several additional recommendations: red-eared slider, golden algae, and Chinese mussel will be voted on during the spring meeting. Sarah Whitney will research red eared slider and present background information to the group.

Adjourn

ADDENDUM

RAPID RESPONSE FRAMEWORK FOR INVASIVE SPECIES

FINAL DRAFT

21 January 2010

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Planning Coordinator

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SCOPE AND PURPOSE

This document is intended to serve as an aid to resource managers who are responsible for responding to newly discovered invasive species infestations. It has been prepared not just for government agency staff but also for anyone who has responsibility for managing lands or other resources that can be harmed by invasive species. It cannot, and does not attempt to, provide answers or solutions to all of the issues associated with rapid responses. Rather, this document provides a framework to assist any manager in responding thoroughly, professionally and effectively to the many challenges that result from new invasions.

Early detection of new invasions is critical to any rapid response. The value of rapid response is realized only if populations are identified when they are small and manageable. To be most effective, a response to a new introduction should occur quickly. Note that the term "quickly" is subject to the biology and context of each individual invasion. In many cases, the initial stages of rapid response are measured in hours and days, not weeks or months. Conversely, a rapid response could continue for years when a species spreads slowly and can be effectively contained.

We purposefully did not prepare detailed "response plans" for individual species that have not yet invaded because responses must be guided by case-specific facts. In other words, how a species invades – how many individuals, their distribution on the landscape, proximity to other known invasions, the time of year, nearby land use, and numerous other factors – determines what actions are possible and useful. Instead of pre-determined plans, we chose to rely upon an established process to guide decision-making and response actions for species invasions anywhere in the state. We encourage pre-planning efforts for future invasions, but have also learned that there is a limit to the level of response planning that is useful until an invasion actually occurs. For example, an understanding of possible actions (and real constraints) is very helpful in advance of an invasion. Similarly, establishing communication networks with potential partners and stakeholders can be useful.

The process that we have selected ensures that managers give attention to all of the necessary components of an effective response: coordination, communication, public outreach, planning, science, information management, laws and regulations, resources and logistics. As an example, one of the first steps following verification of any invasion is to plan and implement a "delimitation" survey to determine the geographic extent of the invasion. Whereas a single or very limited invasion may lend itself to complete elimination of the invading population, invasions at numerous locations over a wide area may preclude eradication and allow only for a strategy of spread prevention. The wide range of possible conditions has a correspondingly wide range of possible response actions. They range from the removal of infested and potential hosts to outreach and regulatory efforts, such as quarantines and inspections that are intended to reduce or eliminate the movement of infested materials away from the invaded area. These decisions cannot be made until survey information is available.

Our experiences with snakehead fish, chronic wasting disease (CWD), hydrilla, oak wilt, Asian longhorned beetle (ALB), and emerald ash borer (EAB) in New York State have been used to help develop and refine this framework.

ACKNOWLEDGEMENTS

Special thanks to all the people who reviewed and commented on various drafts of this document including:

Steve Sanford	NYS DEC
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Bernd Blossey	Cornell University
Martin Schlaepfer	SUNY ESF
Troy Weldy	The Nature Conservancy (TNC)
Alan White	The Nature Conservancy (TNC)
Meg Modley	Lake Champlain Basin Program (LCBP)
Hilary Smith	Adirondack Park Invasive Plant Program (APIPP)

* * *

THE RAPID RESPONSE PROCESS

Early Detection & Reporting **-** The most critical step in addressing a new invasive species is to know that it exists. The early detection of new invasions is key and frequently requires a network of well-trained volunteers and professionals who can carry out field surveys, reporting, and when necessary, specimen collection for identification.

The rapid response process begins once a potentially new invasion has been reported to an agency (e.g., state or federal resource agencies, public land managers) or organization (e.g., Partnerships for Regional Invasive Species Management (PRISMs), private land managers) whose mission includes responding to invasions.

Verification **-** The rapid and accurate identification of a new invasive species is an important first step. Suspected sample(s) must be verified by a recognized expert or accredited laboratory before action can be taken. Samples should be vouchered to authenticate suspected sample(s) with physical evidence.

Notification **-** Relevant resource managers should be notified once the reported invasion has been verified. Notification of the news media and the public should occur once the initial verification has been confirmed by a second source.

Rapid Assessment **-** Once a new invasion has been verified, a rapid assessment needs to be completed to determine both the threat(s) posed by the invasion and the potential for an effective rapid response. The first step in a rapid assessment is delimiting the physical extent of the invasion. Another important step is an assessment of the resources (personnel, funds, equipment, supplies, etc.) needed to address the invasion. The rapid assessment will ultimately determine whether responsible agencies or organizations should attempt spread prevention, eradication, control, or no action.

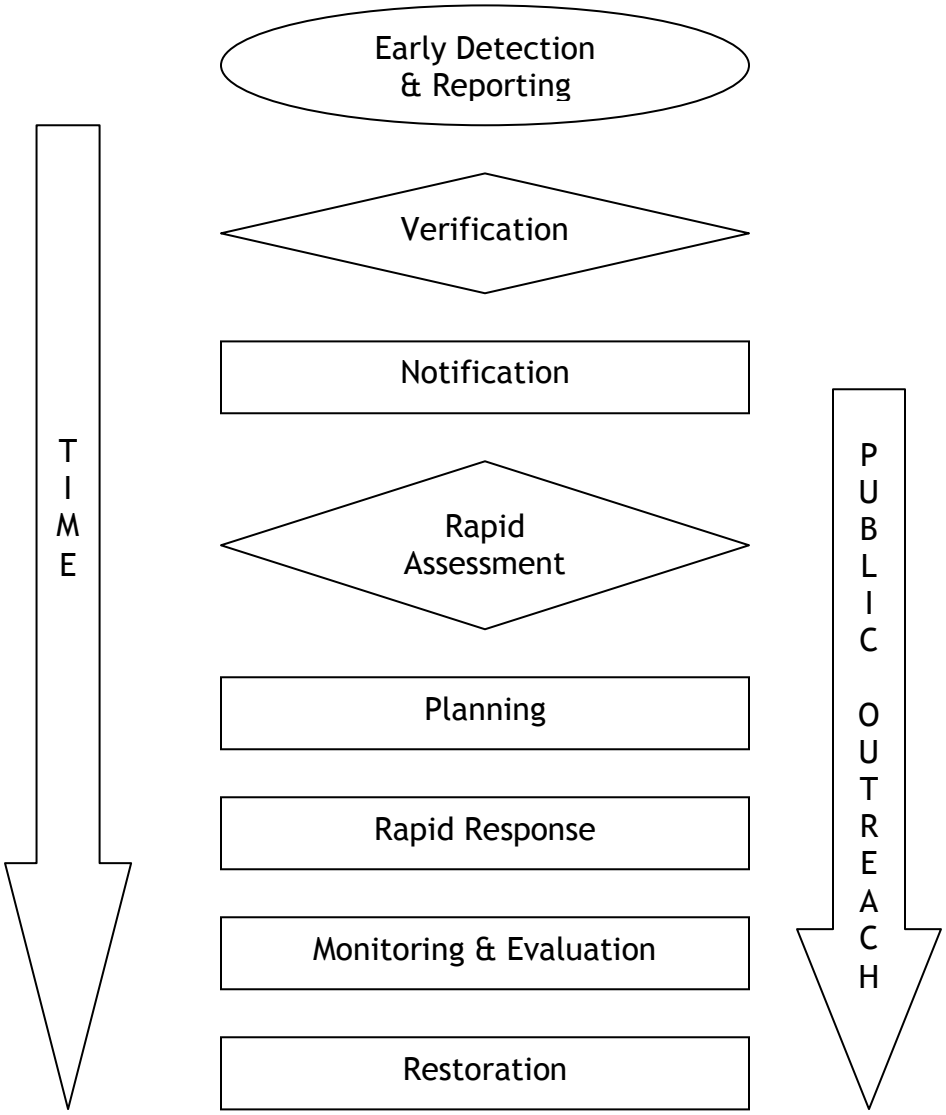
Planning **-** Once a rapid response action has been determined, planning is needed to address roles and responsibilities, coordination, internal and external communications, marshalling resources, spread prevention, decision-making, and implementation. In most instances, a written response plan should be prepared. Such plans can include information from management plans, recommended practices, site conservation plans, and standards and guidelines.

Rapid Response **-** Rapid response is an action or series of actions taken to quickly contain, and if possible, eradicate newly discovered invaders. In some instances, eradication may not be possible, so control or management is the only option.

Monitoring & Evaluation **-** A rapid response is not complete after a management action has been taken. Monitoring after a response is important to determine if management actions were effective. At a minimum, monitoring efforts should focus on treated areas, but should also include adjacent high risk areas when possible. Monitoring results can indicate the need for repeated or additional response actions. Finally, feedback on the efficacy of response actions and the effectiveness of the Rapid Response Plan will enhance long-term preparedness for response to other invasive species introductions.

Restoration **-** Once a response effort is complete, it may be necessary to restore disturbed areas to their natural ecological function. Restoration efforts would typically utilize native species whenever possible to help restore ecosystem resiliency and guard against future re-infestations.

The Rapid Response Process



HOW TO USE THIS DOCUMENT

This document is operational in nature; therefore, the activities outlined below focus on actions that would follow a confirmed introduction. The actions are arranged in the order they should be performed; however, some activities may or should be implemented simultaneously. Some of the tasks identified may already be ongoing, while others will need to be implemented quickly following review and approval. Not all items in this document will be relevant to all invasions. Nevertheless, managers should consider each item as they proceed to plan and implement responses to new invasions.

Successful implementation of this document requires resource managers who are willing to aggressively respond to the particular circumstances of a new infestation. Ideally, this guidance will prompt improvements in response timing, organizational development, permitting efficiencies, funding mechanisms, outreach strategies, and other tools that in turn will allow this document to evolve further over time.

VERIFICATION

Who The individual/organization who receives and accepts responsibility for handling the initial report in coordination with the state, tribal, provincial, and/or federal agency where the initial sighting occurs.

Why The objectives are to confirm the accuracy of the report, determine the condition (age, reproductive status, vigor, etc.) of the sample, and ensure that everyone is handling reports consistently and judiciously.

How

1. Interview the reporter(s) to validate detection.

    a. Record details of the location such as: County, Township, City/Village, name of water body, land unit area, landmarks, highway mile, and land ownership where the suspect invader was found. Get GPS coordinates if possible.

    b. Collect contact information from the reporter(s).

    c. Secure an estimate of the number of the individuals found and the extent of the infestation.

    d. Obtain a digital or other photograph (with scale indicator), if possible.

    e. Secure a sample, if possible.

    f. Document the date and time of sighting(s).

    g. Note other relevant conditions (access limitations, etc.)

2. Validate identification as soon as possible via examination of a physical sample.

    a. When feasible, arrange for a site visit by at least one recognized expert (preferably a small team).

    b. If recognized experts cannot feasibly reach the site within a reasonable time frame, arrange to have samples and/or other evidence (e.g., photographs) sent via express mail service to the most accessible recognized expert.

    c. Prior to shipping samples, obtain guidelines from recognized experts (and use any existing protocols) regarding handling of the sample, desired quantity, where and how to deliver the sample, etc.

NOTIFICATION

Who The individual/organization who accepts the responsibility to verify and confirm the accuracy of the initial report.

Why The objectives are to ensure that all parties that may affect a response decision are quickly engaged and to rapidly inform all other interested parties.

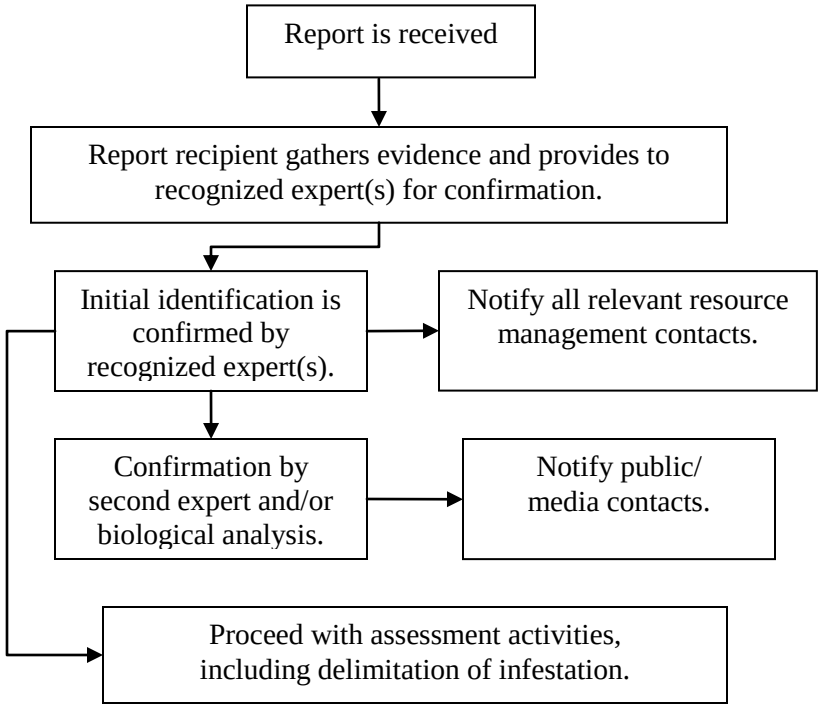
How

1. Within the first 24 hours, or as soon as practical after a physical sample is visually confirmed to be an invasive species by a recognized expert, notify all relevant natural resource managers in Table 1 below. Note that for many organizations, only primary contacts will be notified. Those primary contacts will then be responsible for further internal notification within their organization (i.e., a primary contact for a state agency would be responsible for contacting other key officials within their state agency).

2. Secure verification of notifications to confirm that all relevant contacts did, in fact, receive notification (e.g., Internet list server response confirmation requirement, phone list call-backs, etc.).

3. While proceeding with subsequent response activities described below, obtain a definitive confirmation of the invasive species via a second expert(s) and/or a biological analysis. Note that the general public/media notification (Table 2 below) should not occur until after the second confirmation is achieved.

The Notification Process



4. Disseminate information on definitively confirmed invasions through an easily accessible database and list serve (e.g., iMap Invasives).

The following tables are not comprehensive but provide an initial set of contacts. They presume the identified individuals will directly make further contacts within their organizations. Contact only necessary agencies and organizations.

Table 1. PRIORITY 1 CONTACTS
(Notify within 24 hours of **initial** confirmation or as soon as practical)

State Agencies
NYS Department of Environmental Conservation
- Office of Invasive Species Coordination - Central Office
- Division of Lands and Forests - Regional Office
- Division of Fish and Wildlife - Regional Office
- Division of Public Affairs and Education - Regional Office

NYS Department of Agriculture and Markets
NYS Office of Parks, Recreation and Historic Preservation
NYS Department of Transportation
NYS Canal Corporation
NYS Thruway Authority

Others
Any agencies and partners deemed appropriate from Table 2.

Table 2. PRIORITY 2 CONTACTS
(Notify within 24 hours of **second** confirmation or as soon as practical)

State Agencies
NYS Department of State (DOS)
Adirondack Park Agency (APA)
NYC Department of Environmental Protection (DEP)

Federal Agencies
US Department of Agriculture (USDA)
- APHIS
- Forest Service - Northeastern Area Office
- Natural Resource Conservation Service

National Oceanic and Atmospheric Administration (NOAA)
- National Estuarine Research Reserve System (NOAA - NERRS)
- National Marine Fisheries Service (NOAA - Fisheries Service)
- National Marine Sanctuaries (NOAA – NMS)
- National Sea Grant (NOAA – Sea Grant)

National Park Service (NPS)
US Army Corps of Engineers (COE)
US Coast Guard (USCG)
US Environmental Protection Agency (USEPA)
- National Estuary Program (USEPA – NEP)

Table 2. PRIORITY 2 CONTACTS
(Notify within 24 hours of **second** confirmation or as soon as practical)

US Fish and Wildlife Service (USFWS)
US Geological Survey (USGS)

Local Government
Town Supervisor
Mayor
Other key elected officials

Non-Government Organizations (NGOs)
Adirondack Council
Adirondack Mountain Club (ADK)
Association of Landscape Architects
Audubon NY
Cary Institute of Ecosystem Studies
Catskill Center for Conservation and Development
Cornell Cooperative Extension
Cornell University, Department of Natural Resources
Empire State Forest Products Association
Empire State Marine Trades Association
Lake Champlain Basin Program (LCBP)
Local Lake Associations
Native American Tribes
NY Association of Conservation Districts
NY Farm Bureau
NY Forest Owners Association
NY Sea Grant
NYS Association of Towns
NYS Conservation Council
NYS Flower Industries, Inc.
NYS Forest Owners Association
NYS Nursery and Landscape Association
NYS Turfgrass Association
NYS Urban & Community Forestry Council
PRISM (Partnerships for Regional Invasive Species Management)
Protect the Adirondacks
SUNY College of Environmental Science and Forestry
The Nature Conservancy (TNC)
Wildlife Society (NYS Chapter)
Other key constituents

Media
Local Newspapers
Local Television Stations
Local Radio Stations
Other local media outlets

RAPID ASSESSMENT

Step I – Delimiting Invasion

Who The appropriate lead agency with authority where the initial sighting(s) occurred, in partnership with federal, state and local governments as well as non-government organizations.

Why The objective is to rapidly provide information to guide subsequent management decisions, including survey design.

How

1. Determine the geographic extent of the infestation. The Incident Command System (ICS) may be used depending on the size of the area to be surveyed and the resources needed. ICS is a standardized organizational and operational structure for managing emergency responses, and integrating and coordinating multiple organizations and agencies. Survey efforts should follow existing regional or national protocols.

2. Determine demography of infestation (e.g., age structure). These efforts should follow existing regional or national protocols. Where possible, surveys should assess maturity and reproduction condition of the infested site(s).

3. Identify and survey nearby facilities, habitats or resources (e.g., campgrounds, wetlands, beaches, etc.) that are especially vulnerable to invasion.

4. Identify any nearby facilities, habitats or resources (e.g., nearest known population, ports, terminals, boat launches, railheads, vendors, etc.) that could serve as a source or pathway of invasion.

5. Ensure that field surveys are completed and the results are reported using agreed upon methods.

6. Identify threat(s) to the State's economic, ecological, and recreational resources.

7. Determine if financial resources are available for response activities.

Step II – Defining Roles and Responsibilities

Who Lead Agency/Organization, as defined below.

Why The objective is to activate a predetermined response management system that expedites decision-making, information sharing, avoids duplication, and minimizes authority conflicts, while preserving flexibility for adaptive management.

How

1. The appropriate Lead Agency or organization with authority where the initial sighting(s) occurred convenes a meeting of all relevant managers and selects a Management Team and Lead Coordinator. At a minimum, this meeting should involve all organizations that have jurisdiction within the infestation area. The Management Team will assess the risk and analyze all potential management options. The Lead Coordinator will coordinate all management activities. Note that the Lead Coordinator will not be the primary decision-maker or have veto power regarding response strategies; he or she simply will serve as a primary point-of-contact for resolving coordination and logistical problems. Response actions within the boundary of lands, waters, or structures owned/administered by a particular individual, organization, or jurisdiction will be overseen by that owner/administrator unless they concede responsibility to another entity.

The Management Team will:

   a. Determine the extent of the infestation and pathways for potential spread.

   b. Determine the risk to the environment, human health, economy, etc.

   c. Identify constrains and limitations, including jurisdictional issues, legislative authority, funding, permitting, personnel training, access to private lands, gaps in knowledge, and ecological uncertainties.

   d. Determine if eradication/control is possible and select the appropriate method(s) to be employed.

The Lead Coordinator will:

   a. Coordinate interagency "response team" notification operations.

   b. Facilitate creation of a response management system involving lead representatives of each local, tribal, state, provincial, and/or federal government that has legal authority over the response.

   c. Represent (i.e., be the spokesperson for) the Management Team.

   d. Facilitate a collaborative decision-making process that considers cascading levels of authority within individual agencies.

   e. Facilitate development of response priorities.

2. The above actions should take into account the roles, relationships, and inter-agency agreements among:

   a. All affected states (e.g., Governor, state agencies, ANS Coordinator, etc.)

b. Federal agencies (e.g., USFWS, USDA, NOAA , USACOE, etc.)

c. Canada

d. Tribes

e. Local governments

f. Other interested parties, such as NGOs, universities, nurseries, marinas, etc.

3. The local response team should draw upon technical experts from outside the region to help advise response operations when appropriate.

Step III - Planning Internal and External Communications

Who Lead Coordinator

Why The objective is to develop a joint information center to ensure consistent and effective communication to resource managers and interested external stakeholders, including the media and public.

How

1. Notify and educate the affected landowners, and where appropriate, secure written permission to gain access to their properties for response activities.

2. Notify and educate potentially affected landowners and other users.

3. Develop a response management system as needed. The Incident Command System (ICS) may be used depending on the size and type of response needed.

4. Develop a public information strategy (consider a formal, written plan) including: press releases, information packets, and public meetings. Provide information to affected publics as early as possible. Ideally, public outreach should begin before response decisions are made. Key messages should include: 1) being a "host community" to an invasion is a burden; 2) the risks from the invasion; 3) the available response options; 4) the considerations to be used in decision-making; and 5) the process forward.

The public information/participation strategy should:

a. Identify who the various interests are that may be affected based on the early identification of issues. Examples include:
   - Individuals or groups known to be affected;

- People who may be affected and people who think they may be affected; and
- People whose support is needed.

b. Establish and maintain two-way communication between management team and identified interests. State how staff will maintain on-going communication with identified interests using frequent telephone calls, email, work sessions and one-on-one meetings.

c. Draft press releases to announce significant events and progress.

d. Conduct a public scoping session/informational meeting to present the problem and identify issues.

e. Summarize information and comments gathered at public scoping and other meetings and write responses to the comments.

5. Develop and implement general public education and outreach. In situations where a variety of educational materials exist, ensure coordination and agreement on which materials will be used.

Step IV - Marshalling Resources

Who Lead Coordinator in partnership with all other involved organizations

Why The objective is to provide sufficient resources (personnel, equipment, materials, contractors, funding) to initiate control actions and associated activities, including acquisition of required permits.

How

1. Develop estimates for staffing needs, facilities and equipment, and funding.

2. Identify potential sources for staffing, facilities, equipment, and funds.

3. Secure commitments for needed staff, facilities and equipment, and funds.

4. Ensure mechanism for dispersal of funds is in place, and when funds are needed, the flow of dollars occurs expeditiously.

Step V – Preventing Spread

Who Lead Coordinator and Management Team

Why The objective is to minimize all vectors that might further spread the original infestation.

How

1. Identify dispersal vectors (including movement by humans, fish and wildlife, water traffic, water flow, and other physical processes) and pathways and evaluate associated risks.

2. Restrict dispersal pathways where feasible, including:

    a. Quarantine infested areas as needed to prevent spread.

    b. Assess the likely movement of infested vehicles, equipment, and materials to identify risk and inspection needs at other vulnerable areas.

    c. Establish wash and inspection requirements on vehicles and equipment, if needed.

    d. If feasible, determine and eliminate the likely source of inoculation (e.g., infested firewood) as warranted.

    e. Ensure that invasive species "alert" signs are adequately deployed.

    f. Begin outreach to alert the public of the risks of spreading the new infestation.

    g. Develop and implement Hazard Analysis and Critical Control Point (HACCP) plans to ensure that response personnel do not further spread the original infestation. Work with Joint Information Center (see RAPID ASSESSMENT Step III – Planning Internal and External Communications) to design and implement educational outreach programs using print, electronic media and other avenues.

    h. Install physical barriers, if needed.

PLANNING

Step I – Exploring Alternatives

Who Lead Coordinator and Management Team

Why The objective is to evaluate all the available information and then decide which response action (eradication or containment/mitigation) and which management action (hand-pulling, dredging, herbicide, etc.) is appropriate.

How

1. Decide if eradication is possible based on rapid analysis of specific nature of invasion, including population dynamics and pathways of spread. Consider the following:

    a. Risk to environment, human health, economy, etc.

    b. Anticipated cost of eradication effort (relative to available funding).

    c. Available resources (personnel, equipment, etc.).

    d. Distribution – single vs. multiple, continuous vs. patchy, isolated vs. widespread.

    e. Landscape context – upstream vs. downstream, edge vs. interior, etc.

    f. Age of infestation.

    g. Neighbors' actions/inaction.

    h. Other available management or response plans.

    i. Pathways/source – identified, controlled, eliminated, etc.

    j. Species track record of eradication/control.

    k. Survey and assessment confidence.

    l. Habitat type(s).

    m. Life stage(s) present.

    n. Time of year in relation to reproduction, migration, etc.

    o. Land ownership – public vs. private, willing landowner vs. unwilling landowner.

p. Amount of water in the system to be treated. Consider the following:

1) Potential for drawn down or flows reduced before treatment.
2) Flow sources, including springs, and the potential to regulate that flow.

q. Land use patterns.

r. Presence of state or federally listed rare, threatened or endangered species.

s. Presence of critical or significant habitats.

t. Special status, including:

1) Water use designation (e.g., drink water)
2) Wild, Scenic or Recreational River designation
3) Forest Preserve lands
4) Adirondack or Catskill Park lands
5) Wilderness
6) Historic sites
7) Cultural resources
8) Department of Defense or other restricted access areas
9) Tribal lands

u. Other considerations.

2. Consider potential management actions.

a. Terrestrial Systems

1) Physical/Mechanical Activities

Hand-pulling
Trapping/Netting/Capturing
Burning/Prescribed Fire
Shooting/Depopulation
Flooding
Cutting/Chopping/Mowing
Burying
Excavating/Digging
Physical Barriers (creation & removal)
Cultivation
Grazing

2) Biological Activities (Biocontrols)

Insects
Mammals
Micro-organisms

3) Chemical Activities

Herbicides: Application method (granular, truck spray, hand spray, aircraft, soil drench, stem injection)
Pesticides

4) Regulatory Activities

Statute
Regulation
Policy
Quarantine

b. Aquatic Systems

1) Physical/Mechanical Activities

Hand-pulling
Suction Harvesting
Trapping/Netting/Capturing
Mechanical Harvesting (cutting/mowing)
Benthic Barriers (matting)
Hydroraking/Rotovating
Dredging
Draining/Drawdown
Surface Covers
Physical Barriers (creation & removal)

2) Biological Activities (Biocontrols)

Insects
Mammals
Fish
Micro-organisms

3) Chemical Activities

Herbicides: Contact, Systemic, Shading – chemical dyes
Pesticides

4) Regulatory Activities

Statute
Regulation
Policy
Quarantine

3. Assess potential impacts of management actions. Consider the following:

    a. Air Quality
    b. Soils
    c. Cultural Resources
    d. Water Resources
    e. Fish and Wildlife including threatened, endangered and sensitive species
    f. Human Health
    g. Social Environment
    h. Vegetation diversity including threatened, endangered and sensitive plant species.
    i. Economic Conditions
    j. Visual Resources and Recreation
    k. Effectiveness of various treatment methods.

Step II – Making Decisions

Who Lead Coordinator and Management Team

Why The objective is to seek a decision on which response action (eradication or containment/mitigation) and which management action (hand-pulling, dredging, herbicide, etc.) to undertake.

How

1. Identify decision-makers and observe decision-making protocols. Propose a single course of action or offer alternatives to decision-makers. Brief in writing or in person as needed.

2. Develop a response plan. The response plan ensures that everyone is working in concert toward an agreed upon goals. The plan should provide a coherent means of communicating the overall response objectives in the context of both operational and support activities. At the simplest level, the plan must have the following three elements:

    a. What do we want to do?
    b. Who is responsible for doing it?
    c. How do we communicate with each other?

Step III – Securing Permits

Who Lead Coordinator and Management Team

Why The objective is to satisfy all regulatory requirements, including permits, licenses, certifications, concurrence, etc.

How

1. Consider Commissioner Emergency Order. A formal determination of emergency can facilitate numerous aspects of regulatory processes.

2. Identify all State/Federal regulatory requirements, including any applicable emergency provisions. A partial list of State/Federal permits and regulatory reviews that may apply include:

    a. US Army Corps of Engineers Section 10 permit for any work in, over, or under navigable waters of the United States.

    b. US Clean Water Act Section 404 permit from the US Army Corps of engineers for the discharge of dredged or fill material into waters of the United States.

    c. US Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Section 18 authorizes the Environmental Protection Agency (EPA) to allow states to use a pesticide for an unregistered use in the Untied States for a limited time if EPA determines that emergency conditions exist. The uses are requested for a limited period of time (no longer than 1 year), to address the emergency situation only. If the need is immediate, a state agency may issue a crisis exemption that allows the unregistered use for 15 days. Under FIFRA, registrations and product labeling may restrict uses of pesticides. Each registration specifies the plants/sites on which it may be applied. Restricted-use pesticides are limited to use by pesticide applicators who are certified, or to people under supervision of a certified applicator.

    d. US Endangered Species Act Section 7 consultations with the National Marine Fisheries Service (NMFS) for marine and anatropous species, or the U.S. Fish and Wildlife Service (FWS) for fresh-water and wildlife, for any “action” that may affect listed species or their designated habitat in the United States.

    e. NYS Environmental Conservation Law (ECL) Article 15 Aquatic Pesticide permit from DEC for the use of a pesticide to control an aquatic pest in New York State.

    f. NYS Environmental Conservation Law (ECL) Article 15 Protection of Waters permit from DEC for the disturbance of the bed or banks of a protected stream or other watercourse; the construction, reconstruction or repair of dams or other impoundment structures; the construction,

reconstruction or expansion of docking and mooring facilities; the excavation or placement of fill in navigable waters and their adjacent contiguous wetlands; and water quality certification for placing fill or undertaking activities resulting in a discharge to waters of the United States.

g. NYS Environmental Conservation Law (ECL) Article 24 Freshwater Wetlands permit from DEC for any action in or within 100 feet of a mapped wetland in New York State.

h. NYS Environmental Conservation law (ECL) Article 25 Tidal Wetlands permit from DEC for any action in or within 300 feet (150 feet within New York City) of a mapped tidal wetland in New York State.

i. NYS Executive Law Article 27 Freshwater Wetlands permit from the Adirondack Park Agency (APA) for any action in a wetland over one acre in size or any size wetland adjacent to open water within the Adirondack Park of New York State.

j. NYS Environmental Conservation Law (ECL) Article 11 Liberation of Fish and Wildlife permit from DEC for the release of fish, wildlife, insects and other invertebrates in New York State.

k. NYS Environmental Conservation Law (ECL) Article 8 State Environmental Quality Review (SEQR) environmental impact assessment for projects or actions proposed by a state agency or unit of local government, and all discretionary approvals (permits) from NYS agency or unit of local government, in New York State. Emergency permits are a Type II action so are effectively exempt.

l. NYS Environmental Conservation Law (ECL) Article 19 Restricted Burning permit from DEC for burning of land clearing and/or demolition materials consisting of wood, trees, tree trimmings, leaves, or brush, generated by land clearing or demolition for the erection of any structure in New York State.

3. Identify all local regulatory requirements, including any applicable emergency provisions.

4. Identify any cooperative agreements with other agencies/organizations (e.g., MOUs, MOAs, AANRs, etc.).

5. Assign lead person from each regulatory agency to facilitate permit approval in a timely manner within their respective agency.

6. Consult with DEC to determine if an environmental assessment or environmental impact statement is required.

7. Determine timeframe necessary for meeting all regulatory requirements.

RAPID RESPONSE

Who Lead Coordinator and Management Team

Why The objective is to implement the eradication or control strategies.

How

1. Lead Coordinator facilitates implementation of the response plan developed by the Management Team.

2. Continue public outreach efforts. Make sure the public is well informed on response activities and progress by providing information updates as needed.

3. Ensure compliance with emergency rules and regulations, quarantines, or wash and inspection requirements. Identify loop-holes and additional regulatory needs.

4. Agencies collaborate to coordinate and deploy field resources; implement ICS if needed.

5. Management Team monitors eradication/control progress and the impacts of selected methods on the environment and other organisms.

6. Establish a schedule for frequent Management Team meetings to resolve operational issues that cross jurisdictional interests.

7. Adjust eradication/control methods based on new information. Selected methods may be adjusted to improve effectiveness and/or to reduce or minimize impacts.

MONITORING & EVALUATION

Who Lead Coordinator and Management Team

Why The objective is to provide information and data on treatment success and ecosystem recovery.

How

1. Design a monitoring program to evaluate the status of the invasive species population. Monitoring activities should be carried out in coordination with other program field operations.

2. Select ecological indicators and term for monitoring as needed to assess the status and trends in environmental conditions. Potential ecological indicators may include:

    a. Forests
        1) The health of forest plants.
        2) Habitat quality for birds and deer.
        3) Woodland productivity for forest products.

    b. Streams
        1) The chemical characteristics of stream water that help determine how water can be used by plants and animals.
        2) The kind and number of living things, other than fish, in a stream.
        3) The kind, number, and edibility of fish present in the stream.

    c. Landscapes
        1) The environment's ability to provide habitat for different kinds of wildlife, including game and rare species.
        2) The environment's ability to resist and recover from a variety of disturbances.
        3) The environment's ability to filter and maintain water quality, and to reduce flooding.
        4) The diversity and pattern of land cover types (forest, water, agriculture, etc.) and which land cover type is dominant.

3. Disseminate findings through an easily accessible database and list serve (e.g., iMap Invasives).

4. Conduct a follow-up evaluation of response organizations and other interest groups to identify opportunities for improving rapid response capacity. Disseminate "lessons learned" to other interested organizations.

5. Revise the rapid response plan and associated documents/guidelines based on evaluation and long-term monitoring results.

6. Determine the need for long-term funding for the current management effort and seek funding as warranted.

RESTORATION

Who Management Team/Lead Coordinator.

Why The objective is to restore disturbed areas back to their natural ecological function.

How

1. Collaborate with partners to share existing restoration protocols, Best Management Practices (BMPs) and contract specifications relating to invasive species. Are natural recolonization/succession processes sufficient?

2. Develop a site restoration plan to restore damaged areas (e.g., roads, lawns, boat launches, staging areas, etc.) and ecosystem functions.

Illustrative Examples of Restoration Efforts

Snakehead fish eradication, Orange County - treated waters were restocked with fish to restore native fish communities.

Oak wilt eradication, Schenectady County - homeowner lawns damaged during tree removal were graded and re-seeded.

3. Identify plant and animal species that should or should not be used within particular ecosystems.

4. Monitor restoration projects to track the control of invasive species and the re-establishment of native species. See Monitoring & Evaluation section item #2.

5. Ensure that restoration projects "do not spread" or "do not establish" invasive species by using appropriate native species to the greatest extent possible.

6. Promote an ecosystem approach to restoration projects.