

NYCDEP Invasive Species Working Group Early Detection & Rapid Response Plan

BACKGROUND

In October 2008, DEP's Bureau of Water Supply formed the Invasive Species Working Group (ISWG) comprised of staff members from three Directorates: Watershed Protection Programs, Water Quality, and Operations. The purpose of the ISWG is to form a coordinating body that develops and makes recommendations to Bureau management staff regarding an overarching invasive species plan and related policy issues. The ISWG is also charged with staying abreast of emerging issues and serving as a forum for information exchange, rapid response needs, and budget prioritization. Subcommittees were formed to work on specific tasks with the ultimate product being a comprehensive plan and guidance document on monitoring, preventing, and responding to invasive species threats in the New York City Water Supply Watersheds.

During 2009-2010, the ISWG developed, followed, and updated a long-term workplan that included among its goals and deliverables the creation of recommendations for early detection and rapid response (ED/RR) plans for invasive species. In late 2010, an ISWG subcommittee began to address this task and in January 2011 a scoping memo was submitted that recommended DEP develop and support an ED/RR strategy that focuses primarily on City-owned lands (including water bodies) but includes the ability to collaborate with watershed partners. The recommendation was endorsed and the subcommittee began to research ED/RR plans from across the country and especially those related to watershed programs. The subcommittee created an ED/RR plan outline along with draft recommendations and a proposed timeline that were shared and discussed with the full ISWG in March 2011. The ISWG agreed that the document was ready for submission with a few minor edits.

Therefore, this guidance document – Proposed ED/RR Plan Recommendations – is submitted by the ISWG in fulfillment of the second deliverable of Task 5 in the ISWG Workplan: Create recommendations for ED/RR plans for land and water. This document is intended to serve as a broad strategic roadmap and practical workplan for use by Bureau management staff when discussing invasive species policy issues, allocating budget resources, and deciding upon appropriate actions necessary to achieve DEP goals with respect to monitoring, preventing, and responding to invasive species threats in the New York City Watersheds. Two prominent themes that are critical components of this ED/RR plan will be the importance of clear and timely internal communication and the need for external coordination with partners.

INTRODUCTION & OVERVIEW

An effective invasive species management program includes five strategic elements: (1) prevention; (2) early detection and rapid response; (3) control and management; (4) rehabilitation and restoration; and (5) organizational collaboration. These key elements are supported by the National Invasive Species Council's 2008-2012 National Invasive Species Management Plan (2008), the USDA Forest Service's

National Strategy and Implementation Plan for Invasive Species Management (2004), the Final Report of the New York State Invasive Species Task Force (2005), and many other local, state and national experts.

The first line of defense against invasive species is to prevent their introductions in the first place. However, since it is virtually impossible to prevent all introductions, early detection & rapid response (ED/RR) is considered the second line of defense and one of the most critical components of any invasive species strategy. Early detection requires vigilance and regular monitoring to detect a species at the earliest possible time after an introduction is known or believed to occur. If or when an invasive species is detected, a rapid response is initiated to determine the environmental (and potentially economic or financial) risks, extent of its establishment and distribution, potential for spread, and to evaluate response options.

According to experts, the hallmarks of successful ED/RR efforts typically include:

- a) Potential new threats are identified in time to allow efficient and practical risk mitigation measures to be taken;
- b) Institutional mechanisms are in place to support ED/RR decisions and ensure effective deployment of resources;
- c) Responses to invasions are effective, environmentally sound, and prevent the spread and/or permanent establishment of invasive species;
- d) Adequate and timely information is provided to decision-makers, the broader public, partners, and to affected/interested parties; and
- e) Lessons learned from past efforts are used to guide current and future efforts.

Ideally, eradication of a newly detected invasive species is both practical and achievable. More frequently, however, invasive species are managed to contain or slow their spread. In some cases, ED/RR may trigger no response because the invasive species is determined to be too widespread, potential threats are not considered high priority, and/or the necessary resources are unavailable to ensure successful mitigation. Regardless of the scenario, any delay in supporting ED/RR favors the target pest and significantly increases the costs of implementing a longer-term mitigation program for an established population. With particular respect to the New York City Watersheds, lack of an ED/RR plan could negatively impact water quality, threaten or damage water supply infrastructure, disrupt DEP's Long-term Watershed Protection Program, or potentially result in legal or liability issues not to mention a tarnished reputation if DEP's response to a serious new infestation is deemed slow or ineffectual.

PLAN SUMMARY: GOAL, OBJECTIVES & METRICS

This ED/RR Plan focuses on City-owned lands and reservoirs but includes the ability to coordinate and collaborate with other stakeholders and especially the Catskill Regional Invasive Species Partnership (CRISP), of which DEP is an active member and serves on the Executive Steering Committee. CRISP is a fully functioning and state-funded entity that is coordinated locally by the Catskill Center for Conservation & Development through a five-year contract with the New York State Department of Environmental Conservation (DEC). With respect to the East of Hudson Watershed, DEP should also be

involved with the Lower Hudson PRISM (Partnership for Regional Invasive Species Management) which is similar in purpose and function to CRISP but not quite as organized and also not yet funded by the DEC.

Although water supply reservoirs and City-owned lands are clearly the highest priority for DEP in terms of ED/RR efforts, it is important to recognize that the CRISP and Lower Hudson PRISM framework provides DEP with the opportunity to build and enhance internal ED/RR capacity through staff training opportunities, secure access to reliable and up-to-date scientific information (including early notification of new detections or approaching species of concern that are not already known by DEP), potentially gain access to state or federal funding, leverage regional efforts and ensure widespread public participation in watershed activities pertaining to invasive species.

The overarching goal of this ED/RR Plan is to prioritize and then minimize both potential and direct threats to water quality, water supply infrastructure, and the watershed's green infrastructure, as well as to reduce budgetary impacts and potential liability issues on City-owned watershed lands, that could result from the establishment and spread of non-native invasive species within the Catskill/Delaware and Croton Water Supply Systems.

To achieve its overarching goal, this ED/RR Plan is divided into three main components – (1) Risk Assessment, (2) Early Detection, and (3) Rapid Response – and it comprises the following primary objectives that are embedded within the three plan components:

1. Ensure new invasive species are identified and their risks assessed promptly.
2. Ensure early reporting of new invasive species occurrences/infestations both internally within DEP and externally with watershed partners.
3. Define decision-making responsibilities and response protocols.
4. Establish and maintain capacity to act.
5. Incorporate adaptive management in plan implementation.

In addition, it will be necessary for the ISWG to identify potential qualitative and quantitative metrics that are tied to the various objectives and actions/tasks so that the performance and success of this ED/RR Plan can be measured, tracked and evaluated on a regular basis. Initial metrics for consideration as part of this plan might include:

- New occurrences of invasive species are detected promptly
- No new infestations (established populations) on City-owned watershed lands
- Known infestations on City-owned lands are contained (slow the spread)
- Number of rapid assessments performed/completed
- Actions/outcomes are achieved as per rapid assessments
- Number of times an invasive species has been reported to DEP via specific methods (phone, email, website, personal contact, other)
- Number of DEP staff trained to support ED/RR (also number of trainings held)

- Percentage/acreage/miles of City-owned lands actively monitored and/or treated for invasive species control each year
- Number of boats steamed cleaned on water supply reservoirs annually
- Extent of DEP’s outreach and communication message regarding invasive species
- Increased knowledge about invasive species as measured in specific target audiences
- Timely completion of ED/RR actions and tasks based on established deadlines

#1 Risk Assessment

1. Priority List

Compile and maintain a prioritized DEP-specific “unwanted invaders” list of invasive species including:

- a. Species already known to occur in the watershed
- b. Species that are not yet known to exist in the watershed but are considered an imminent threat to water quality or the water supply.

This “unwanted invaders” list should be widely publicized at all DEP facilities/locations in order to promote and facilitate public awareness.

NOTE: The ISWG has developed an invasive species threat matrix that will be utilized along with other existing priority species list developed by CRISP, Lower Hudson PRISM, and other entities.

Status: List developed – “Unwanted Invaders” Communication is needed. List will be updated as needed

2. Reporting Program

Establish a centralized reporting system and accompanying set of procedures for reporting suspicious species found on City-owned lands and to facilitate tracking and documentation of confirmed sightings.

- If necessary, compile an “on-call expert” list of taxonomy specialists who are willing to make positive identifications inside their areas of expertise, as well as taxonomic generalists who can assist the ISWG with rapid assessments.
- Establish a central ISWG contact person through which external sightings are reported and documented, requests are submitted to experts (when necessary), and responses are received/confirmed.

NOTE: The ISWG represents the core DEP team of internal invasive species experts, with DEP also having access to external expertise through participatory involvement with CRISP, Lower Hudson PRISM, and the NYS Invasive Species Advisory Council.

Status: WaLIS report form exists but is not functional

3. Formal Risk Assessments

Develop and utilize a risk assessment methodology, including a set of general guidelines and protocols to be used in assessing potential risks/threats.

NOTE: The ISWG is already conducting rapid risk assessments on several priority species of concern to DEP and will continue to conduct rapid risk assessments for new species detected on City-owned lands as well as those located on non-City watershed lands or in proximity to the New York City Watersheds and representing a likely future invasion.

Status: Risk assessments have been done and are saved in several locations

#2 Early Detection

1. Active Monitoring Network

Design an active DEP monitoring plan/network for those invasive species of highest concern/threat/risk to water quality and water supply/green infrastructure. Active monitoring should initially focus on likely points of entry and other high risk locations, such as reservoir boat launches, popular recreational areas, and City-owned lands that are in proximity to known infestations.

- This task will require internal training of DEP field staff regarding highest priority species (top 5-10) that may be encountered during the course of routine watershed field work (see #5 below).
- This task will also require clear and direct channels of internal communication to ensure timely reporting and documentation of invasive species detections.

NOTE: DEP's ongoing response to the current emerald ash borer infestation (and related collaboration with DEC regarding monitoring/tracking activities) should be reviewed and assessed for its efficacy and strengths/weaknesses as part of this task.

Status: Some informal training has taken place

2. Passive Monitoring Network

Design and implement a passive monitoring plan/network for specific invasive species of particular concern to water supply reservoirs and City-owned lands in order to supplement DEP's active monitoring plan/network. This task will require active coordination and collaboration with CRISP and Lower Hudson PRISM (re: potential volunteer support and other forms of capacity-building) as well as a broad public education and outreach component that allows DEP to utilize external audiences (boaters, hikers, loggers, contractors, etc.) to capitalize on additional chance discoveries on DEP's wide portfolio of properties. This task will also require clear and direct channels of internal and external communication to ensure timely reporting and documentation of invasive species detections.

Status: Work has begun on a communications plan to be discussed with Outreach working group, ED network has been established through CRISP contract with CCE, iMapinvasives has a reporting form that can be used for common species

3. WaLIS Invasive Species Tracking Database
Develop WaLIS database tools for documenting/tracking known infestations on City-owned lands and recording/tracking the status, progress and efficacy of DEP management actions. It will be important for DEP's reporting system to be linked with CRISP, Lower Hudson PRISM, and other state/federal databases and also include an around-the-clock (24/7) invasive species reporting hotline.

Status: WaLIS tools are developed but not functional and are not currently shared

4. Invasive Species Webpage
Work with BCIA to modify existing DEP Watershed Protection website to include a special webpage and/or hot links for invasive species reporting (especially early detection efforts). Any DEP website reporting mechanism should be linked to the ED/RR centralized reporting system established pursuant to this workplan.
5. Invasive Species Training Program
Identify appropriate staff and develop and begin to implement an internal training program for DEP watershed field staff, including necessary training materials for both office and field use, to raise their awareness of priority invasive species from the priority list that they may encounter during their routine field work and to solicit their assistance with ED/RR efforts where appropriate (in order to increase the likelihood of early detections).
6. Communications Plan
Develop an invasive species outreach and communication strategy that educates watershed constituents and targeted stakeholders (especially recreational users of City-owned lands) about the importance of ED/RR and who they should contact/where they should turn for immediate reporting purposes. This task will incorporate the use of CWC reservoir kiosks, appropriate signage at key recreational areas, DEP recreation newsletters, DEP website, displays/exhibits at public events (county fairs, watershed festivals, etc.), DEP press releases, and other modes of communication.

NOTE: This task dovetails with the efforts of the WPP Outreach Working Group and as such should be incorporated into that group's workplan, if appropriate.

3 Define internal decision-making responsibilities and response protocols.

1. Rapid Response Protocol
Utilize the ISWG to develop rapid response action protocols that provide clear direction, internal accountability, points of contact, and proper chain of command, including necessary decision-making, actions, and reporting requirements both internally and with external agencies/partners (CRISP, Lower Hudson PRISM, DEC, USDA, etc.). These protocols should minimally address the following:

- a. Mandatory training and emergency response drills for DEP staff with invasive species monitoring and control responsibilities, including any necessary certifications or permits for capture, possession, or destruction/disposal of nuisance invasive species.
- b. Guidelines for proper destruction/disposal of nuisance invasive species.
- c. Approved formats for any/all reports that are required to be submitted.
- d. Appropriate feedback loop that keeps ISWG and DEP management well-informed about key external decisions made locally by watershed partners (CRISP, Lower Hudson PRISM) and regionally by state and federal agencies (especially those with regulatory and/or enforcement responsibilities).
- e. Potential capacity for dispute resolutions.

Note: DEP should explore utilizing or adapting the Incident Command System (ICS) that is available to all levels of government as well as not-for-profit and private organizations. ICS is a standardized, flexible, on-scene, all-hazards incident management approach that is applicable to all disciplines and facilitates coordinated activities in five functional areas: Command, Operations, Planning, Logistics, and Finance/Administration. The DEC has used ICS for responding to Oak Wilt in Albany County as well as the recent Emerald Ash Borer outbreak in the Hudson Valley.

Status: Draft protocol has been developed

#4 Establish and maintain capacity to act

1. Rapid Response Fund

Establish a stable internal fund to support annual rapid response efforts, including the possible designation of a DEP emergency fund to be accessed under specific high priority conditions and a regular fund to be requested annually for certain ongoing invasive species management projects. Another key task will be to work closely with CRISP and Lower Hudson PRISM to pursue DEC grant funding (especially monitoring and eradication funding) and other non-City grant opportunities as they arise.

NOTE: One potential model to explore for DEP emergency funding is the \$5,000 reserved each year through Natural Resources Management/Fisheries for responding to fish kills.

Status: \$30,000 for three years has been requested for invasive species control work.

2. Regulatory Hurdles Checklist

Develop a rapid response checklist of regulatory constraints, permitting obligations, preferred management implementation tasks, and jurisdictional boundaries and ensure that any barriers or constraints are identified and removed, if possible (i.e., pesticide application on City lands). In particular, the SEQRA process and other internal permitting processes should be examined to avoid potential disruption of short-term emergency responses should a particular invasive species infestation warrant immediate and/or drastic DEP management or control action.

NOTE: DEP should also consider potential watershed-specific regulatory actions to be implemented if/when necessary, such as the potential banning of felt-soled hip waders to help control the spread of Didymo (rock snot) from currently infested streams, or the requirements for steam cleaning boats to prevent the introduction of zebra mussels.

3. Species Response Plans

Develop model response plans for specific invasive species from the priority invasive species list that include defined protocols, response procedures, long-term action planning, and generic monitoring and assessment requirements to be incorporated into control projects. Potential response options to be considered based on degree of infestation and threats/risks might include: (1) eradication, (2) slow the spread, (3) continued monitoring, or (4) no response.

NOTE: This task will produce potential response scenarios tailored to individual priority species and as such will require advanced discussions with Bureau management staff about policy and potential funding implications should certain scenarios occur.

4. Rapid Response Training

Develop and conduct regular training for rapid responders to ensure they understand reporting procedures and are familiar with highest priority threats.

NOTE: In 2010, the DEC conducted an Asian Long-horned Beetle case study (emergency response exercise) to simulate local response to a potential (fictitious) infestation. This exercise could be replicated by DEP for other invasive species.

5. Literature Library

Compile eradication and control libraries that can be shared with watershed partners (CRISP, Lower Hudson PRISM) and necessary state/federal regulatory agencies.

#5 Incorporate adaptive management into ED/RR plan implementation

1. Evaluation

Review plan implementation and associated procedures at least annually to evaluate and improve both policy decisions and on-the-ground management activities. Measure success based on achievable and realistic metrics that will also be evaluated.

2. Ammendments

Amend ED/RR plan and metrics/procedures to reflect new technologies and lessons learned and to continually define/refine measures of success.