



Updated: March 2019

**Rapid Response Plan
and Procedures
for Responding to
Aquatic Invasive
Species in
Pennsylvania**

Pennsylvania Invasive Species
Council



pennsylvania
INVASIVE SPECIES COUNCIL

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Purpose of the plan

This rapid response plan for aquatic invasive species (AIS) is an inter-agency decision support tool designed to aid regulatory agencies ([Appendix A: Authority](#)) in conducting a coordinated and structured response to new AIS infestations. It outlines the steps to follow after receiving a report and serves as a guide for determining when a response is appropriate and what types of responses should be considered. This is a working document and revising it will be an ongoing process. As additional information gaps are identified, they will be incorporated into this document. This document was developed by the Pennsylvania Invasive Species Council Aquatic Working Group Rapid Response subcommittee.

Policy

The Pennsylvania Fish and Boat Commission (PFBC), and other regulatory agencies will coordinate responses to AIS threats while operating under any existing internal agency protocols as necessary and deemed appropriate by the agency initiating the response.

Introduction

Based on the definition from the federal *Nonindigenous Aquatic Nuisance Prevention and Control Act of 1990*, aquatic invasive species (AIS) are defined in this document as non-native species that threaten the diversity or abundance of native species, the ecological stability of infested waters, human health and safety, or commercial, agricultural, aquacultural, or recreational activities dependent on such waters. Invasive species are, with respect to a particular ecosystem, any species, including its seeds, eggs, spores, or other biological material capable of propagating that species, that is not native to that ecosystem (Office of the President of the United States, 1999).

Article 1, Section 27 of the Pennsylvania Constitution states that *the people have a right to clean air, pure water, and to the preservation of the natural, scenic, historic, and esthetic values of the environment. Pennsylvania's public natural resources are the common property of all the people, including generations yet to come. As trustees of these resources, the Commonwealth shall conserve and maintain them for the benefit of all the people.* Pennsylvania has more than 84,000 miles of streams and many in-state lakes, sharing five major watersheds with other states and Canada. All of these waterways have the potential to host aquatic invasive species, therefore creating AIS management implications. Once invasive species become widely established, controlling their spread is both technically difficult and expensive, while eradication can be impossible. Therefore, prevention of new introductions must remain the first priority in fighting aquatic invasions (PA AISMP 2007).

The National Invasive Species Council defines rapid response as “a systematic effort to eradicate, contain, or control a potentially invasive non-native species introduced into an ecosystem while the infestation of that ecosystem is still localized.” To be most effective, a response to an introduction should occur as soon as possible after the introduction is realized, and before the species is established.

When prevention efforts fail to stop the introduction of an aquatic invasive species, it is critical that a process be in place to quickly and effectively address the new infestations. This document is intended for use by Pennsylvania state agencies with authority over or concerns about aquatic invasive species in the Commonwealth ([see Appendix A: Authority](#)). Objective four of the Pennsylvania Aquatic Invasive Species Management Plan (PA AISMP 2007) calls for the development of a rapid response effort to “*Develop a system for early response to eradicate or contain a target species before the species can become permanently established.*” In addition, one of the plan’s priority strategies is to: *Implement a coordinated system for rapid response efforts to contain or eradicate newly detected aquatic invasive species (Strategy 4A).* In response to this mandate, the Pennsylvania Invasive Species Council has developed a process for quickly responding to new AIS infestations in the Commonwealth.

This plan details that process and was designed to address the critical period between the introduction and the establishment of a new AIS when the focus of management must shift rapidly from prevention to eradication and control. In so doing, the ultimate goal of the rapid response plan model is to capitalize on the window of opportunity to stop the establishment of new harmful invasive species shortly after introduction, when prevention has failed (ANSC, 2005).

Procedure:

Instructions for Using the Rapid Response Plan

The Pennsylvania rapid response plan was designed using a three-tiered approach, with each section becoming increasingly more detailed. The action steps described below and diagrammed in [Section 1](#) should be followed chronologically, but the process may end at varying points depending on the details of each situation. This plan is designed to complement and be used in conjunction with other existing response and action plans (e.g., Pennsylvania Fish and Boat Commission’s species-specific action plans—Asian carp, didymo, water chestnut, golden alga, and VHS.)

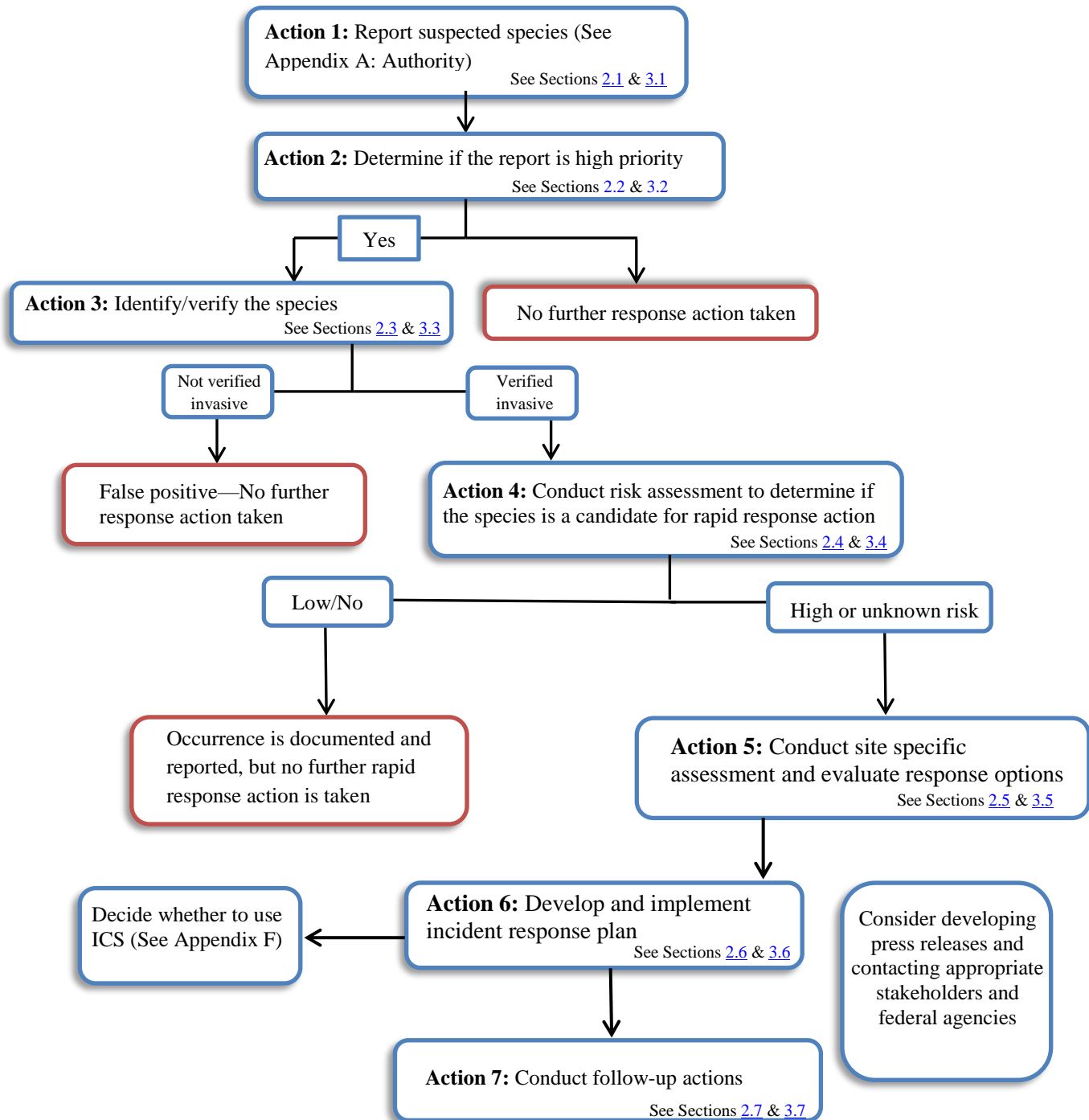
Section 1: Is a decision tree that gives a concise overview of all the action steps that may be needed in the rapid response process. This section is most useful for visualizing the “big picture” of the response. It is intended to accompany the narrative section of the plan, but can also be used as a quick reference summary/overview of action steps when responding to an incident. Supplemental information regarding each step, if available, is referenced in the decision tree and directs users to the areas of Sections 2 and 3 where more detail about that action can be found.

Section 2: Expands on each action item outlined in the decision tree, and includes a brief explanation or a set of directions to help guide the user through each of the steps. This section was designed to be used as a stand-alone document if desired, with a checklist format that is quick and easy to follow.

Section 3: Provides comprehensive information about each of the action steps that may be needed to assist in developing the response. In addition to in-depth information, this section contains contact information for federal and state agencies, interested parties, and others who may need to be included in the response effort, and includes interactive tools such as the [Response Options template](#) and the [Incident Response Plan template](#) that can be used to aid in the decision-making process.

The process of responding to newly introduced species, or species that have expanded their ranges to new locations in Pennsylvania, will operate under the assumption that “all it takes is one.” This means that a single occurrence of an individual invasive species (i.e., one specimen), if deemed a significant threat, can be sufficient to trigger a rapid response.

SECTION 1: Overview of Rapid Response Actions



This decision tree provides a quick reference to the rapid response process and should not be used as a stand-alone document. References provided in the boxes indicate important information that should be referenced during the response process.

SECTION 2: RAPID RESPONSE ACTIONS CHECKLIST

This section of the rapid response plan can be utilized as a stand-alone document to address the aquatic invasive species rapid response procedure in Pennsylvania. For more detailed supplemental information about each action step, references to the appropriate section of the rapid response plan are given.

Action 1: Report suspected AIS

completed

Reports of invasive species may come from a wide variety of sources including the general public, partner organizations, and state agencies. The agency or organization receiving the report will immediately report the possible new AIS occurrence to the Pennsylvania invasive species council (PISC) coordinator by submitting an online AIS report form at <https://webforms.bd.psu.edu/report-pa-aquatic-invasive-species> ([Appendix D](#)). (See [Section 3.1](#) and [Table 2](#)). The council coordinator will then facilitate the report to the agency with jurisdictional authority over the species.

Action 2:

Determine if the report is high priority

completed

Based on a preliminary investigation and best professional judgment, the agency with jurisdictional authority will determine if the report is credible and in need of further action. If no action is necessary, the observation will be documented and reported according to internal agency protocol, but other than periodic monitoring, no further action is recommended. If yes, move on to Action 3. ([See section 3.2](#))

Action 3:

Identify/verify the species

completed

Once the appropriate jurisdictional agency (as identified in [Appendix A](#)) has received the report and decided further action is appropriate, they will facilitate identification and verification of the species (See [Table 1](#)). Once verified, they will follow internal agency protocols for reporting the occurrence; for example, if the species impacts federal resources, state park lands, or private property, the appropriate contacts should be notified at this time (See [Section 3.3](#) and [Table 2](#) for a list of federal agencies and their contact information). Sightings should also be reported to mapping and tracking initiatives such as [iMAP invasives](#),

[USGS Nonindigenous Aquatic Species database](#), or [EDDmaps](#), as appropriate.

As necessary, identification and verification of the species can be assisted by following the guidance provided in [Appendix C: Protocols for Reporting and Collecting Specimens](#), which includes detailed steps on how to:

- ***Gather information***
- ***Collect specimens***
- ***Contact outside resources for identification***

Action 4:

Conduct risk assessment to determine if the species is a candidate for rapid response action

completed

Confirming a new priority AIS in the state or watershed will result in a risk assessment of the invasion and specific situation. The following steps can serve as guidelines for the jurisdictional agency in deciding if further action is required. Assistance from external experts may be needed to aid in this decision. ([See Section 3.4](#)).

Step 1: Is this the first time this species has been detected in Pennsylvania?

YES or Unknown- go to Step 3.

NO- go to Step 2.

Step 2: If a population of the species is already present in this state is the species' population increasing and/or is the species new to the location of this latest occurrence?

YES or Unknown- go to Step 3.

NO- species is designated low risk; continue monitoring the population and evaluate the feasibility of "low-hanging fruit" control and management actions. If necessary, report to other appropriate state and federal authorities.

Step 3: Is the species known to cause significant impacts in its native range, and/or has the species become invasive anywhere outside of its native range? (Invasiveness is determined by known or potential impacts to the ecology of an area, to the economy, or to human health)

YES OR UNKNOWN- this species is designated high risk and is a candidate for further scientific assessment to determine response options. Continue to Action 5.

NO- species is designated low risk; continue monitoring the population and evaluate the feasibility of "low-hanging fruit" control and management actions. If necessary, report to other appropriate state and federal authorities.

Action 5:

Conduct site specific assessment and evaluate response options

completed

Once the specimen has been classified as high or unknown risk, additional information will be needed to help identify possible response options. Examples of the kind of information needed for the site specific assessment are outlined in [Section 3.5](#). Once the necessary information is gathered, the [Response Options Template Tool](#) can be used to help determine priority objectives and develop response options to meet those objectives. Response options may include (but are not limited to) chemical, mechanical or biological controls, law enforcement, education and outreach, closing or limiting access, monitoring, etc. The template can then be used to determine the most feasible response options based on available and needed resources, pertinent laws, regulations, and available funding.

Action 6:

Develop and implement incident response plan

completed

To ensure all response objectives are met, an incident response plan will be developed to provide the framework and basic organizational structure for the chosen response action. The incident response plan worksheet can be found in [Section 3.6](#) and will identify critical areas and roles of the response such as:

- Identification of the best qualified individuals to fill leadership roles
- Definition of time frame
- Identification of funding mechanisms
- Identification of constraints and limitations
- Confirmation of available resources
- Details of the equipment and personnel needed to implement the response
- Identification of any areas of the response that require legal approval or permitting

The first step in planning a response is to determine if an Incident Command System (ICS) structure is appropriate (See [Appendix F](#)). Once the response action has been chosen, other agencies, organizations, commercial entities, neighboring states and other stakeholders that have a vested interest in the rapid response process should be contacted. Timely information should be dispensed to stakeholders, colleagues, conservation organizations, watershed associations, and others impacted by the infestation. For a partial list of suggested contacts see Section 3, [Table 3](#).

A press release informing the public of the situation and proposed actions should also be considered at this time.

Action 7:

Conduct follow-up
actions

completed

During and after the implementation of the action plan, the jurisdictional agency will be responsible for follow-up to the incident. Follow-up will include education and outreach, a survey and monitoring plan to prevent or document recurring infestations, and a post incident evaluation to review the strengths and weaknesses of the response actions. As appropriate development of a restoration plan for the area is also encouraged. Detailed information on follow-up actions can be found in [Section 3.7](#).

SECTION 3: Rapid Response Planning, Procedures, and Supplemental Information

An AIS rapid response requires many steps and significant coordination and analysis. It is critical that state agencies are prepared to act when the need for rapid response is warranted. The process of responding to newly introduced species, or species that have expanded their range to new locations in Pennsylvania, will operate under the assumption that “all it takes is one.” This means that a single occurrence of an individual invasive species (i.e., one specimen), if deemed a significant threat, can be sufficient to trigger a rapid response. The following are the detailed steps needed to respond to a typical incident.

Action 1: Report suspected AIS

State agencies may not be the first entity to find a new infestation. On-the-ground personnel or members of the public may initially discover the infestation and report it to a non-governmental agency or organization most familiar to them such as a watershed conservancy, conservation district, trout unlimited, etc. The entity receiving the report should immediately submit the online AIS reporting form ([Appendix D](#)).

Include the following in an AIS sighting report:

- Name and contact information (phone and e-mail) of reporter and/or data collector
- Date of observation
- The exact location of the discovery including the latitude and longitude (decimal degrees) if possible
- Driving directions to the nearest site access
- Clear, **close-up**, digital photographs from different angles of the unknown specimen(s) as well as general photos of the immediate environment where the specimen was found. Include key landmarks to assist in finding the site.
- Notes about the location, habitat, and environmental conditions of the discovery site

Note to State, Federal, and Non-Governmental Organizations: If you are the first to receive notification from the public, but you are not the authority responsible for that taxon, please gather the information outlined in the [AIS Sighting Report Form \(Appendix D\)](#) and immediately forward the information to the Pennsylvania Invasive Species Council Coordinator. If the suspected sighting is a federally regulated species or a joint federally and state regulated species, the state agency with regulatory authority should immediately contact the federal authorities responsible for that taxon. Specimens should be handled in compliance with state and federal regulations regarding the transport of prohibited species.

Action 2: Does the report warrant further action?

Once the report has been made, the agency with jurisdictional authority over the AIS in question will conduct a preliminary investigation and use best professional judgment to determine if the report is credible and if further action is necessary. In some cases, a confirmed report will be labeled low priority for one or more of the following reasons:

1. The species is already known from the area;
2. The species will not be able to survive Pennsylvania's climate;
3. For that location, there is an existing report of a higher risk species, to which resources will be allocated.

Low priority reports should be reported within the agency and to other agencies, organizations, and mapping and tracking initiatives according to internal protocol and kept on file.

Action 3: Identify/verify the species

Once it has been determined that the species is high threat or priority, the jurisdictional agency will facilitate verifying the identity of the species. The following procedures should be followed to evaluate the situation and ensure proper handling of potential samples and specimens:

A. Gather Information

When a potential invasive species is found in the field, document the find in as much detail as possible so the specimen can be positively identified and the location can be found again. If possible, record the latitude and longitude (decimal degrees) of the discovery, provide driving directions to the nearest access point, and make notes about the location, habitat, and environmental conditions of the discovery site. Tools such as digital cameras, GPS units, notebooks, and the [PA AIS field](#) guide can be helpful to accurately document the find. Additional tips for gathering information are below:

- If a plant species, take note of the size of the plant and how large an area it covers
- If unsure of the identification of the specimen, write down a detailed description (color, size, shape, distinguishing features, etc.)
- Take several clear, **close-up** digital photographs from different angles of the specimen(s)
- Include something of commonly known size in the photo to establish a scale (for example, a coin, eyeglasses, or a camera lens cover)
- Take photos of the immediate environment where the sighting occurred and key landmarks to assist in finding the site

B. Specimen Collecting Information

If a sample specimen is needed to assist in identification, it is important to keep the specimen contained to avoid possible spread of the AIS, or any organisms that might be attached to it.

Because it can violate state regulations to live transport or live possess many AIS, contact

the agency with jurisdictional authority for the species as soon as possible for permission and guidance on how to properly handle the specimen ([Appendix A](#)).

C. Identifying and Reporting:

Newly reported AIS must be verified by an expert who is recognized by the responding agency. When possible and deemed necessary, specimens should be verified by a second expert and voucher specimens should be retained and stored properly for future analysis. Specimens should be handled in accordance with 58 PA Code 71.6 and 73.1 (See [Appendix B: Legislation](#)). As a reference for jurisdictional agencies, a list of potential outside experts and institutions which may be able to aid in the identification of the species is included below in Table 1. In some cases the specimen may need to be mailed; contact the recipient for specific shipping instructions. (See [Appendix C](#))

Table 1: List of experts to assist with specimen identification

Name	Contact/ Department	Phone/E-mail	Web Address
Academy of Natural Sciences, Philadelphia	Library and archives	215-299-1040 archives@ansp.org	http://www.ansp.org/
Carnegie Museum of Natural History	Bonnie Isaac Collection Manager	412-622-3253 isaacb@carnegiemnh.org	https://carnegiemnh.org/researcher/specimen-artifact-identification/
Cleveland Museum of Natural History	Dr. Jim Bissel, Curator of Botany and Director of Natural Areas	216-231-4600 x3219 jbissel@cmnh.org	https://www.cmnh.org/research-collections
Pennsylvania Department of Environmental Protection	Jim Grazio, Great Lakes Biologist	814-217-9636 jagrazio@pa.gov	http://www.depweb.state.pa.us/dep/site/default.asp
Pennsylvania Department of Health	Dr. Ram Nambiar	717-787-3350 anambiar@pa.gov	http://www.dsf.health.state.pa.us/health/site/default.asp
Pennsylvania Sea Grant	Sara Stahlman, Extension Leader	814-217-9011 ext. 109 sstahlman@psu.edu	www.seagrant.psu.edu
The Aquatic Invasive Species Experts Database	Expert contact information is located within the database	N/A	http://anstaskforce.gov/experts/search.php

Tom Ridge Environmental Center Natural History Museum	Mark Lethaby, Museum curator	814-833-7215 mlethaby@verizon.net	http://dynamicdunes.bd.psu.edu/aboutus.aspx
Western Pennsylvania Conservancy	Steve Grund, Botanist	412-586-2350 sgrund@paconserve.org	http://www.paconserve.org/

If species identification is verified, initial communication with key partners, stakeholders, and other appropriate entities should be considered during this action. For example, if the reported AIS has been verified on federal lands, in areas that impact federal resources, or is found to be an invasive plant species regulated under the federal noxious weed list, or an injurious species regulated under the Lacey Act, the U.S. Department of Agriculture and/or the U.S. Fish and Wildlife Service should be notified.

Entities with jurisdictional and/or management authority for the location of the infestation, or property owners may need to be contacted for permission so that verification can occur. A press release or other public notification should also be considered after positive verification has occurred to help facilitate additional detections, aid in containment, limit the spread of the invasion, and raise awareness about the issue.

A list of state and federal agencies that may need to be contacted can be found in [Appendix A](#) and [Table 2](#) in [Section 3.5](#). It is also recommended to report sightings to mapping and tracking initiatives such as [iMAP invasives](#), [USGS Nonindigenous Aquatic Species database](#), or [EDDmaps](#), as appropriate.

Action 4: Conduct a risk assessment to determine if the species is a candidate for rapid response action

Because the rapid response process will operate under the assumption that “all it takes is one” to trigger a rapid response, it is not necessary at this stage to know the density of the population or the extent of the infestation. It is far more critical to assess the potential threat the introduced species poses. The jurisdictional agency, with assistance from other sources as needed, will conduct the following risk assessment:

Step 1: Is the species a new invasion to the state or geographic location or to the waterway, watershed, or ecosystem?

YES- go to *Step 3*.

NO- go to *Step 2*.

Step 2: If a population of the species is already present in the state or geographic location or in the waterway, watershed, or ecosystem, is the species’ population increasing, and/or is the species new to the location of this latest occurrence?

YES- go to *Step 3*.

NO- species is designated low risk; continue monitoring the population and evaluate the feasibility of “low-hanging fruit” control and management actions. If necessary, report to other appropriate state and federal authorities.

Step 3: Is the species known to cause significant negative impacts within its native range, and/or has the species become invasive anywhere outside of its native range? (Invasiveness is determined by known or potential impacts to the ecology of an area, to the economy, or to human health)

YES OR UNKNOWN- this species is designated high risk and is a candidate for further scientific assessment to determine response options. Continue to Action 5.

NO- species is designated low risk; continue monitoring the population and evaluate the feasibility of “low-hanging fruit” control and management actions. If necessary, report to other appropriate state and federal authorities.

If the species is designated low risk, and is not a candidate for action, then the occurrence should be noted and reported but no further rapid response action is needed. These low risk species will need to be monitored to ensure the population does not undergo significant expansion. If changes occur in the population, the infestation should be put through the risk assessment process once again to determine if action is necessary.

If the species is designated high or unknown risk, it is a candidate for potential action, and an incident response plan will be developed. Results from this action may be communicated to relevant partners and stakeholders at the discretion of the responding agency. Nearby property owners, municipalities, and other relevant parties should be considered, as many of these entities may be valuable resources in conducting the risk assessment and may be able to provide information that might not otherwise be available to the responding agency.

Action 5: Conduct site specific assessment and evaluate response options

To determine appropriate response options, the jurisdictional agency will gather information on the species and the infestation level. The specific details of a particular occurrence or invasion will inform the decision about whether a rapid response is feasible and necessary. The assessment conducted as a part of Action 5 is intended as an information gathering process to determine the potential environmental, economic, or human health threat, and evaluate if the AIS and the particular details of the occurrence make it a candidate for a rapid response. There are some quantitative and concrete criteria that can be used for the assessment; however, best professional judgment of the circumstance will be used to determine if a response is appropriate to minimize threat. It should be noted that, because of the urgency involved, it will sometimes be necessary to evaluate response actions without optimal information being available. In these cases, agency personnel will need to rely on best professional judgment or advice from external sources. Examples of information necessary to determine response actions include, but are not limited to:

- Geographic extent and abundance of the invading species (i.e., local and regional range, sources of inputs, the waterway's drainage area, receiving stream or river, boat launch sites, and other points of public access, and any other obvious pathways for potential spread)
- Origin of the AIS
- Evidence of reproduction, e.g. multiple age classes present in the infestation site
- Determination of whether there is need for law enforcement action or if any additional form of investigation is needed
- Determination of additional location specific risk factors or impacts that should be considered for this species (e.g. to the environment, human health, economy, etc.) in this location

Once the necessary information is gathered, the scientific assessment template tool below can be used to determine the priority response objectives, and examine response options necessary to meet those objectives. Response options may include (but are not limited to) chemical, mechanical or biological controls, law enforcement, education and outreach, monitoring, etc. The template can then be used to determine the most feasible response options based on available and needed resources, pertinent laws, regulations, and available funding.

The leading response agency should also consider a press release during this action to raise awareness for the issue and stay in front of misinformation, rumors, and general questions. The press release should include mention of the initial report, confirmation of the species identification, biological information, and appropriate results from the risk assessment. Lastly, the press release should also give a general description of the next steps (assess response options, etc.) and provide a point of contact for questions and additional information.

Response Options Template

1. Response Objectives

List the goals and objectives for the response to this infestation. Objectives should be achievable, measurable, and flexible.



Examples may include, but are not limited to:

- Maintain economic value of a resource
- Avoid ecological harm
- Prevent further spread
- Contain or eradicate invasive species in known areas of infestation
- Protect human health
- Establish early rapport with the public through education and involvement
- Further evaluation

2. Examine all Feasible Response Options

Based on the information gathered in the site specific assessment, list possible response actions that may be feasible to address this infestation:



Examples of potential actions to consider include, but are not limited to:

- Chemical controls
- Containment
- Mechanical controls
- Outreach to user groups
- Biological controls
- Implementation of boat/bait bucket checks
- Targeted signage

3. Decision Making: Comparing Options

Take the response options in Step 2 of this response options template and complete the following table for each option to compare and contrast the best possible action for this infestation. Add more pages as necessary.

	Response Option 1	Response Option 2	Response Option 3	Response Option 4
What resources would be needed to implement this control strategy? (if appropriate, insert the quantities of each)	<input type="checkbox"/> Personnel <input type="checkbox"/> Equipment: <input type="checkbox"/> Power Boats <input type="checkbox"/> Kayaks/Canoes <input type="checkbox"/> Nets <input type="checkbox"/> Fishing poles <input type="checkbox"/> Electrofishing gear <input type="checkbox"/> Waders <input type="checkbox"/> Pesticides and applicators <input type="checkbox"/> Transportation	<input type="checkbox"/> Personnel <input type="checkbox"/> Equipment: <input type="checkbox"/> Power Boats <input type="checkbox"/> Kayaks/Canoes <input type="checkbox"/> Nets <input type="checkbox"/> Fishing poles <input type="checkbox"/> Electrofishing gear <input type="checkbox"/> Waders <input type="checkbox"/> Pesticides and applicators <input type="checkbox"/> Transportation	<input type="checkbox"/> Personnel <input type="checkbox"/> Equipment: <input type="checkbox"/> Power Boats <input type="checkbox"/> Kayaks/Canoes <input type="checkbox"/> Nets <input type="checkbox"/> Fishing poles <input type="checkbox"/> Electrofishing gear <input type="checkbox"/> Waders <input type="checkbox"/> Pesticides and applicators <input type="checkbox"/> Transportation	<input type="checkbox"/> Personnel <input type="checkbox"/> Equipment: <input type="checkbox"/> Power Boats <input type="checkbox"/> Kayaks/Canoes <input type="checkbox"/> Nets <input type="checkbox"/> Fishing poles <input type="checkbox"/> Electrofishing gear <input type="checkbox"/> Waders <input type="checkbox"/> Pesticides and applicators <input type="checkbox"/> Transportation
List any other resources that may be needed to address this infestation				
Of the needed resources, which are readily available?				
What is the cost estimate for this response option?				
Do any regulations or permitting restrictions apply to this action?				
How feasible is it to meet your response objectives using this response option?				

If a control or eradication option is being considered, additional points to discuss may include:

- An assessment of the potential environmental, political, social, and economic impacts of the control and/or eradication method.
- The availability and feasibility of the control or eradication method.
- Analysis of precedents for using an eradication/control methodology with this species or similar species.

- Assessment of the potential to achieve success in the eradication effort
- Timetable to achieve objectives.

Based on the information in the above table, list the chosen response action. Action could range from “no action” to “only education and outreach” to “containment” to “control” or “eradication” depending on the cost, resource availability, feasibility of success, etc.



The results of Action 5 should be shared with appropriate partners, federal agencies, local municipalities, property owners, and other relevant entities to ensure consistent and accurate sharing of information.

Table 2: Federal Entity Contacts

Federal Entity	E-mail and Phone	Web Address	
National Park Service (NPS): Northeast Region Exotic Plant Management Team ERMN Early detection network	Betsy Lyman (betsy_lyman@nps.gov) Jamie Myers (Jamie_myers@nps.gov) Doug Manning Penn State University	<u>Exotic Plant Management Team:</u> http://www.nature.nps.gov/biology/invasivespecies/EPMT_teams.cfm	<u>ERMN Early Detection Network:</u> http://science.nature.nps.gov/im/units/ermn/monitoring/EarlyDetection.cfm
U.S. Army Corps of Engineers			
U.S. Department of Agriculture Animal and Plant Health Inspection Service (USDA APHIS)	Contact local APHIS office	http://www.aphis.usda.gov/services/report_pest_disease/report_pest_disease.shtml	
U.S. Coast Guard	Contact local USCG office	http://www.uscg.mil/hq/cg5/cg522/cg5224/ans.asp	
U.S. Environmental Protection Agency	Bill Bolen (bolen.bill@epa.gov) 312-353-6316	http://water.epa.gov/type/oceb/habitat/invasive_species_index.cfm	
U.S. Fish and Wildlife Service	Sandra Keppner (sandra_keppner@fws.gov) 585-948-5445 ext. 7039	http://www.fws.gov/northeast/lowergreatlakes/	
U.S. Geological Survey (USGS)	Pam Fuller (pfuller@usgs.gov)	http://nas.er.usgs.gov/SightingReport.asp	

Action 6: Develop and implement incident response plan

If a decision is made to respond, the next step is to create an incident response plan. First, determine if an Incident Command System (ICS) structure is appropriate for the incident. Certain response scenarios may benefit from a highly coordinated and structured format, such as ICS. See [Appendix F](#) for more information on ICS and how to implement the system for AIS rapid response. If ICS is not appropriate for the incident, continue with Action 6.

The purpose of the incident response plan is to provide a framework for actions while ensuring that all involved entities work together. Successes and failures of the planned response will be continuously monitored and actions will be adjusted as needed. The incident response plan is for use by the agency with regulatory authority, but may also involve other agencies and organizations who will play a role in implementing actions. In addition to direct actions, education and outreach plays a key role in the implementation process. Ensuring that stakeholders and public entities are informed and engaged is important for obtaining buy-in on proposed actions, as well as encouraging added caution when working

in affected areas, or participating in activities that could spread species or further exacerbate the issue (examples of organizations that may play a role in the implementation process include Pennsylvania Sea Grant [can provide outreach materials, trainings, pathway-specific outreach programs, etc.]; the Pennsylvania Invasive Species Council [offers an informational website on invasive species, etc]; and local clubs, organizations, and NGOs.

Name: [redacted] Date: [redacted]
Agency: [redacted] Phone Number: [redacted]

1.) Current Situation Assessment

A. Infestation Location

City/ Town: [redacted]
County: [redacted]
Nearest Street Address: [redacted]
GPS Coordinates: [redacted]

B. Extent of Infestation

Was there more than one age class identified at the infestation site? Yes No

If yes, does the population appear to be established? Yes No

What is the approximate size of the impacted area?

[redacted]

Is the body of water connected to any other body of water by in/out flows, canals, tributaries, etc.? Yes No

Is the body of water used for recreational activities? Yes No

If yes, list the activities (fishing, power boating, swimming, jet skiing, etc.):

[redacted]

Is this body of water privately or publicly owned? Are there any impediments to accessing the site?

[redacted]

2.) Current Actions

Are any response actions currently taking place at the infestation site? (These could include education, containment, control, bait bucket/boat checks, etc.)

3.) Management

A. Planned action

Describe the response action that was chosen for this infestation:

B. Resources

What resources are needed for the chosen response?

What resources are readily available?

How can needed resources be obtained which are not readily available?

C. Personnel

List the names of all agency personnel that should be involved in the rapid response action:

Who will be the responsible lead in charge of overseeing the entire response action?

Name(s): Contact info:

Who will be responsible for acquiring the needed resources?

Name(s): Contact info:

Who will be responsible for overseeing outreach and communication to specific user groups and organizations?

Name(s): [Redacted] Contact info: [Redacted]

If appropriate, who will be responsible for seeing that necessary permits are acquired?

Name(s): [Redacted] Contact info: [Redacted]

If appropriate, who will be responsible for overseeing boat and bait bucket checks?

Name(s): [Redacted] Contact info: [Redacted]

List any other individuals involved in this response and their roles:

Name(s): [Redacted] Role: [Redacted]

D. Time-Frame

What is the estimated time-frame to complete the response action from start to finish?

[Redacted]

4.) Regulatory Actions

A. Involvement of State and Federal Agencies

Which state and federal entities should be notified of this response option? (Individual agency contact information can be found in Table 1, 2, and 3)

- EPA
- USFWS
- NPS
- USGS
- PFBC
- DEP
- DCNR
- PDA
- PGC
- USDA APHIS
- PDH
- Other: [Click here to enter text.](#)

[Redacted]

Define the responsibilities of each individual agency involved during the response (consult with any developed or existing MOU's to reinforce understanding of these responsibilities):

[Redacted]

B. Permitting

Are there any permits required for the planned response actions? (Emergency permits or executive orders may be in place, or required for the necessary response actions to take place):

Yes No

If yes, list the permits that need to be obtained:

C. Legal

Does the planned rapid response action conform to all pertinent Pennsylvania and federal regulations and laws? ([Consult Appendix B for a summary of Pennsylvania AIS legislation](#)).

Yes No

If no, please revisit step 4B “permitting” to determine the appropriate permits necessary to allow the planned action to take place.

5.) Funding

What is the estimated level of funding needed to implement this rapid response?

What funding sources can be used to support this response effort?

Who will be responsible for securing funding for this response effort?

6.) Education and Outreach

A. Stakeholder Involvement

Create a list of stakeholders and concerned entities to contact with information about this incident and any actions planned:

Develop a communication strategy to ensure coordination with stakeholder groups remains intact throughout the duration of the response action. Be sure to list who is in charge of communications with stakeholders.

B. Public Involvement

The following checklist is a list of actions that should be taken to ensure education and outreach on the response is adequately disseminated to the public.

- Identify available resources to use for public education on AIS and the risks associated with their introduction- create new resources if gaps regarding this species exist
- Invite local watershed associations, environmental groups, and the general public to participate in the response action in order to promote citizen stewardship
- Develop news articles and press releases to be disseminated to the public
- Work with water conservation officers (WCOs) to distribute information to the public
- Hold public informational meetings

7.) Follow-up Actions

The following components of the action plan are vital and should be addressed as soon as possible after the response action has taken place.

A. Surveying and Monitoring

To determine accurate AIS population size and distribution information, create a monitoring plan for detection of recurring infestations and existing populations within the infested site.

B. Evaluation

Using the information obtained in the monitoring plan, what was the impact of the rapid response effort on the population?

What aspects of the response didn't go well and how could the process be improved for future response actions?

What aspects of the response worked well?

Use the information listed above to assist in making future decisions on addressing invasive species issues.

C. Restoration

If appropriate, develop a restoration plan.

Check any of the following restoration options that may be appropriate for the infestation site:

- Waterway survey
- Waterway quality assessment
- Waterway restoration projects
- Others:

List other restoration options for this infestation site:

Contact stakeholder groups and other interested entities

When a response action is being planned, it is important to identify and contact other agencies, organizations, commercial entities, and neighboring states who have a vested interest in the process. Timely information and a coordinated message should be dispensed to stakeholders, colleagues, conservation organizations, watershed associations, conservation districts, community groups, local police, municipalities, non-profits etc., as well as local, state, and federal agencies impacted by the infestation. Partnerships with these groups and organizations can help develop on-the-ground campaigns against the invader, which includes carrying out the developed action plan, monitoring results, and conducting education and outreach. Early warning and rapid response communication strategies will need to be developed between involved agencies, local officials, lake associations, stakeholders, and others to ensure easy flow of communication between all participating entities. Individual contact information for some (but not all) entities is also included below in [Table 3](#), which acts as supplemental information to the above action plan.

Table 3: Action Planning- Interested entities that may be included in a rapid response

Interested Entity	Name	Telephone	Email Address
DCNR	Nick Decker	717-787-6674	ndecker@pa.gov
DEP	Jim Grazio	814-217-9636	jagrazio@pa.gov
PA Lake Management Society	Nick Spinelli	570-226-3865	info@palakes.org
PDA	Trilby Libhart	717-787-7204	tlibhart@pa.gov
PDH	Dr. Ram Nambiar	717-787-3350	anambiar@pa.gov
PennDOT	Joseph Demko	717-783-9453	jodemko@pa.gov
Penn State University	Beth Brantley	814-865-1906	dam37@psu.edu
Pennsylvania Sea Grant	Sarah Whitney	610-304-8753	swhitney@psu.edu
PFBC	Chris Urban	814-359-5113	curban@pa.gov
PGC	Bryan Burhans	717-787-4250	bburhans@pa.gov
PISC	Trilby Libhart	717-787-7204	tlibhart@pa.gov
The Nature Conservancy	Keith Fisher	717-232-6001 ext. 213	mdephilip@tnc.org
University of Pennsylvania	Lisa Murphy	610-925-6217	murphylp@vet.upenn.edu
USDA APHIS	Coanne O'Hern	717-241-0143	cohern@aphis.usda.gov
Western Pennsylvania Conservancy	Charles Bier	412-586-2306	cbier@paconserve.org
Local Governments			
Local and State Police			

Action 7: Conduct follow-up actions

Follow-up actions, such as evaluation, education and outreach, monitoring, and restoration are included as part of the incident response plan and will be completed during, or after completion of the response.

The jurisdictional agency will evaluate, at a minimum, the following components of the rapid response process:

- Successful areas of the response – were the response objectives met?
- What gaps or areas of improvement were needed in this response effort?
- What modifications needed to the processes before the next effort?

This information may be obtained through monitoring, surveying, and evaluating response objectives defined in the action plan. Feedback from the evaluation process should then be used to improve and revise future rapid response efforts and enhance long term preparedness for responses to other AIS infestations.

Appendices

Appendix A: Authority

Agency contacts and information: State Agencies with Jurisdictional Authority over Invasive Species in Pennsylvania

TAXA	JURISDICTIONAL AGENCY	AGENCY CONTACT	ADDRESS	PHONE	E-mail
State noxious aquatic weeds¹ and Federal noxious aquatic weeds	Pennsylvania Department of Agriculture (PDA)	Trilby Libhart Interim Invasive Species Council Coordinator	2301 North Cameron Street Harrisburg, PA 17110	717-787-7204	tlibhart@pa.gov
Other non-regulated obligate aquatic plants, amphibians, reptiles, mollusks, crustaceans, and fish	Pennsylvania Fish and Boat Commission (PFBC)	Chris Urban Chief, Natural Resources Division	450 Robinson Lane Bellefonte, PA 16823	814-359-5113	curban@pa.gov
Other invertebrates	PDA (terrestrial)	Trilby Libhart	See above	See above	See above
	PFBC (aquatic)	Chris Urban	See above	See above	See above
Mammals	Pennsylvania Game Commission (PGC)	Bryan Burhans Executive Director	2001 Elmerton Avenue Harrisburg, PA 17110	717-787-4250	bburhans@pa.gov
Pathogens³	PFBC	Chris Urban	See above	See above	See above
	PDA	Trilby Libhart	See above	See above	See above
	Pennsylvania Department of Health (PDH)	Dr. Ram Nambiar Director, Division of Infectious Disease Epidemiology	625 Forster Street, 9 th Floor Harrisburg, PA 17120	717_787-3350	anambiar@pa.gov
AIS on State Park Lands	Department of Conservation and Natural Resources (DCNR)	Nick Decker PA Bureau of State Parks	400 Market Street Harrisburg, PA 17101	717-787-6674	ndecker@pa.gov
Permitting	Pennsylvania Department of Environmental Protection (DEP)	Jim Grazio Great Lakes Biologist	301 Peninsula Drive, Suite 4 Erie, PA 16505	814-217-9636	jagrazio@pa.gov

1. A list of terrestrial Pennsylvania state-listed noxious weeds can be found in [Appendix B: Legislation](#) (7 PA Code 110.1).
2. Please use this link < http://www.aphis.usda.gov/plant_health/permits/organism/federal_noxious_weeds.shtml> to access the most recent Federal Noxious Weed List.
3. Please refer to [Appendix E](#) for guidance on which regulatory agency should be contacted for aquatic invasive pathogen

Agency Descriptions

Pennsylvania Fish and Boat Commission: is charged with ensuring the protection, propagation, and distribution of game fish, fish bait, baitfish, amphibians, reptiles, and aquatic organisms and managing recreational boating in the Commonwealth. PFBC has the authority to do the following: promulgate regulations to manage fish species (legislatively defined as fin fish, amphibians, reptiles, and all other aquatic organisms) and fishing; issue lists of species approved for propagation, live bait operations, and transportation; prohibit transfer of fish into state watersheds; inspect for species composition and disease; permit tropical fish imports unless there is a perceived threat to native species; prohibit introduction of non-native reptiles and amphibians into the environment; issue a list of species (jointly with PDA) approved for open-system propagation and to license unlisted species if there is no threat of water discharge or release of live fish or eggs; issue permits (jointly with DEP) for use of algacides, herbicides, and fish control chemicals that may cause disturbances to waterways and watersheds. PFBC also has developed regulations to address the potential risk of species introductions from bait and bait fish. In addition, PFBC has conducted educational and public information programs on aquatic invasive species in Pennsylvania, including surveys and outreach to boaters in cooperation with DEP and PASG (PA AISMP 2007).

Pennsylvania Department of Agriculture, in cooperation with PFBC, has regulatory authority for aquaculture facilities and issues permits for the artificial propagation and sale and distribution of live aquatic animals. PDA also is responsible for addressing federal and state noxious weeds; it prohibits the propagation, sale and movement of any plant on the Pennsylvania Noxious Weed Control List (currently 13 species). Although the list deals primarily with agricultural pests, aquatic species are eligible to be added to the list (PA AISMP 2007).

Department of Environmental Protection has authority to issue permits needed for pesticide or herbicide use in the Commonwealth. They work with networked agencies to assist in preventing AIS from being introduced into, spread within, or transferred out of the coastal zones to other waters/watersheds, and to facilitate eradication where environmentally appropriate through its Office for River Basin Cooperation and Coastal Zone Management Program (PA AISMP 2007).

Department of Conservation and Natural Resources has the authority to control invasive species in its natural areas if they threaten the feature for which the area is designated (PA AISMP 2007).

Pennsylvania Game Commission is authorized to adhere to USFWS guidance on mute swans, and establishes a statewide maximum population goal of 250 mute swans. PGC also has the authority to prohibit the introduction, sale and release of certain wildlife, for example nutria (PA AISMP 2007).

Appendix B: Legislation

This section provides a general summary for the specific legal information available concerning aquatic invasive species and is intended to be used as guidance. In the event of a rapid response event, **please reference the exact legislation.**

FEDERAL

1. **EPA Authorities for Rapid Response Management Plans**

Clean Water Act (CWA)

CWA Section 312(p)-Uniform Standards for Discharges Incidental to Normal Operation of Vessels: The Uniform National Discharge Standards (UNDS) set national performance standards that require the use of marine pollution control devices (MPCDs) to control discharges incidental to the normal operation of Armed Forces vessels. The EPA and the Department of Defense (DOD) are given authority, under Section 312 of the Clean Water Act, to develop these standards.

CWA Section 404 Permits to Discharge Dredged or Fill Material: establishes programs to regulate the discharge of dredged and fill material into waters of the United States, including wetlands.

Consult the appropriate USACE District office when planning AIS rapid response control actions to determine if these actions require a Federal Section 312 or 404 permit.

Amendments to CWA:

Clean Boating Act (CBA)

The CBA provides that recreational vessels shall not be subject to the requirement to obtain a Clean Water Act permit to authorize discharges incidental to their normal operation. It instead directs EPA to evaluate recreational vessel discharges, to develop appropriate management practices for the discharges and to promulgate performance standards for those management practices. The CBA then directs the U.S. Coast Guard to promulgate regulations for the use of the management practices developed by EPA. Finally, the law requires recreational boater compliance with such practices.

Federal Insecticide, Fungicide, and Rodenticide Act

FIFRA Section 18-Emergency Exemptions: allows states to use a pesticide for an unregistered use for a limited time if EPA determines that emergency condition exists.

FIFRA Section 24(c) –Special Local Need Registrations: authorizes states to register an additional use of a Federally-registered pesticide product or a new end use product to meet a special local need.

National Environmental Policy Act (NEPA)

The National Environmental Policy Act of 1970 (NEPA, 42 U.S.C. §§4321 et seq.), as amended, established a national policy to protect the environment. 29 Federal agencies are required to comply with NEPA and consider the environmental impacts, including invasive species, of an agency's actions.

2. National Oceanic and Atmospheric Administration (NOAA)*Nonindigenous Aquatic Nuisance Prevention and Control Act*

The Nonindigenous Aquatic Nuisance Prevention and Control Act of 1990 (NANPCA; 16 U.S.C. §§4701, et seq.) established a federal program to prevent the introduction of, and to control the spread of, unintentionally introduced aquatic nuisance species,

3. U.S. Fish and Wildlife Service*Lacey Act*

The Lacey Act of 1900 (18 U.S.C. §§42-43; 16 U.S.C. §§3371-3378) addresses illegal wildlife trade to protect species at risk and bars importing species found to be injurious to the United States. Under the Lacey Act, it is unlawful to import, export, sell, acquire, or purchase fish, wildlife or plants that are taken, possessed, transported, or sold: 1) in violation of U.S. or Indian law, or 2) in interstate or foreign commerce involving any fish, wildlife, or plants taken possessed or sold in violation of State or foreign law.

STATE**4. Pennsylvania Department of Agriculture (Bureau of Plant Industry)**

Controlled Plants and Noxious Weeds, Act 46 (October 30, 2017)

This act establishes two broad categories of regulated and banned plants: controlled plants and noxious weeds.

Class A Noxious Weeds - Preventing new infestations and eradicating existing infestations of noxious weeds in the class is high priority. The following are Class A noxious weeds:

- *Amaranthus palmeri* s. Watson (commonly known as palmer amaranth).
- *Amaranthus rudis* (commonly known as common waterhemp).
- *Amaranthus tuberculatus* (commonly known as tall waterhemp).
- *Avena sterilis* l. (commonly known as animated oat).
- *Cuscuta* spp., except for native species (commonly known as dodder).
- *Galega officinalis* l. (commonly known as goatsrue).
- *Heracleum mantegazzianum* sommier & levier (commonly known as giant hogweed).

- *Hydrilla verticillata (l.f.) royle* (commonly known as hydrilla).
- *Oplismenus hirtellus (l.) P. Beauv. Subsp. Undulatifolius* (commonly known as wavyleaf basketgrass).
- *Orobancha* spp., except for native species (commonly known as broomrape).
- *Pueraria lobate (willd.) Ohwi* (commonly known as kudzu).

Class B Noxious Weeds - The department may require control of Class B weeds to contain an injurious infestation, or may provide education or technical consultation. The following are Class B noxious weeds:

- *Carduus nutans l.* (commonly known as musk thistle).
- *Cirsium arvense l.* (commonly known as canada thistle).
- *Cirsium vulgare l.* (commonly known as bull thistle).
- Exotic *Lythrum* species, including *Lythrum salicaria l.* (commonly known as purple loosestrife), the *Lythrum salicaria* complex and *Lythrum virgatum l.* (commonly known as European wand loosestrife), their cultivars and any combination thereof.
- *Persicaria perfoliata (l.) H. Grass* (formerly known as *Polygonum perfoliatum l.*) (commonly known as mile-a-minute weed).
- *Rosa multiflora l.* (commonly known as multiflora rose).
- *Sorghum bicolor l.* Moench (commonly known as shattercane).
- *Sorghum halepense (l.) Pers.* (commonly known as johnson grass).
- *Conium maculatum l.* (commonly known as poison hemlock).

Class C Noxious Weeds - Class C noxious weeds are any federal noxious weeds listed in 7 CFR 360.200 (relating to designation of noxious weeds) not established in Pennsylvania which are not referenced above.

5. Pennsylvania Department of Agriculture (Bureau of Animal Health and Diagnostic Services)

Act 100-Domestic Animal Act

Provides authority to create programs to recognize, contain, and eliminate invasive species of diseases or pests that would adversely affect livestock health.

Aquaculture Development Law, 3 Pa C.S. Chapter 42; 58 Pa Code 71.2

The Bureau of Fisheries will maintain a list of species by watershed for which the Department of Agriculture may issue registrations for artificial propagation and registrations for dealers of live aquatic animals.

MOU with USDA APHIS

Provides authority to establish mutual cooperation on animal health issues

6. Department of Conservation and Natural Resources

State Park Natural Areas Policy, 17 Pa Code 17.4

Provides authority to administer and operate natural areas; to provide control if feature for which area is designated is in jeopardy; to manage insect pests and diseases on a case-by-case basis.

Conservation of Natural Resources, 17 Pa Code 44.4

Provides authority to actively manage conservation areas to protect natural resources

7. DCNR (Bureau of Forestry, Division of Forest Pest Management)

Wild Resource Conservation Act, 32 P.S. 104, Sections 5301-5314

Provides authority to protect native flora of Pennsylvania. DCNR with cooperation from taxonomists, biologists, botanists, and other interested persons conduct investigations on wild plants in order to ascertain information relating to population, distribution, habitat needs, limiting factors, and other biological and ecological data to classify plants and to determine management measures necessary for their continued ability to sustain themselves successfully.

Conservation and Natural Resources Act, 71 P.S. 1340 Sections 101-1103

Provides authority to survey and control forest pests

8. DCNR (Bureau of Forestry, Ecological Services Section)

Conservation of Pennsylvania's Native Wild Plants, 17 Pa Code, Chapter 45

Provides authority to protect vulnerable and endangered native wild plants from potential threats to habitat or self-proliferation.

9. DCNR (State Parks)

*State park waters**17 Pa Code Section 11.203*

Describes the jurisdiction of DCNR over bodies of water such as lakes, impoundments, and other bodies of water that are wholly owned by the Department or completely surrounded by State park land; Presque Isle State Park, and Pymatuning State Park.

*Application of Fish and Boat Commission rules and Game Commission rules**17 pa Code Section 11.204*

Title 58 Pa. Code Parts II and III (relating to Fish and Boat Commission; and Game Commission) applies in State parks to activities under the jurisdiction of the Fish and Boat Commission and the Game Commission. To the extent that this chapter is more restrictive than 58 Pa. Code Part II or III, this chapter applies.

Miscellaneous activities

17 pa Code Section 11.209

Describes activities that are prohibited without written permission of the Department, including Bringing an animal, other than a pet as provided in § 11.212 (relating to pets), and other than a horse as provided in § 11.216 (relating to general recreational activity; horses; snowmobiles; all terrain vehicles; mountain bikes), into a State park.

*Natural resources**17 pa Code Section 11.211*

Describes activities that are prohibited except with written permission of the Department, or except as provided in subsection (b) such as releasing an animal that was brought into a State park.

10. Department of Environmental Protection (Office of Watershed Management)*Clean Streams Law, 35 P.S. 691.1 et seq*

Provides authority to protect water supply for consumption, recreational use, and aquatic life; prohibits pollution of state waters that alters biological properties

Water Resources, 25 Pa Code 91.38

Provides authority, with joint approval by PFBC and DEP to control aquatic plants and manage fish populations with approved algicides, herbicides, and piscicides.

11. DEP (Office for River Basin Cooperation , Coastal Resources Management Program)*Program Policy in CRM's FEIS; Interagency MOU with PFBC*

Provides authority to work with networked agencies to assist in preventing ANS from being introduced into, spread within, or transferred out of the coastal zones to other waters/watersheds, and to facilitate eradication where environmentally appropriate; to provide funding and technical assistance

12. Federal Highway Administration (Environmental Quality Assurance Division, District offices)*Executive Order 13112; DOT Policy on Invasive Species from Federal Highway Administration (FHWA)*

Provides guidelines from FHWA to prevent introduction and control spread of invasive plants in highway rights-of-way during construction and maintenance programs; requires NEPA analysis to identify invasive animals or plants (terrestrial or aquatic) based on PA Noxious Weeds list; recommends that state DOTs participate in state interagency invasive species councils as they are established.

13. Department of Transportation (Bureau of Project Delivery)*Design Manual*

Prohibits use of noxious weed seeds in roadside mixes; recommends use of regionally native plants for landscaping.

Publication 408-Section 800

Roadside development information.

Publication 756- Invasive Species Best Management Practices

Covers best management practices for design, construction, and maintenance of the transportation system.

14. Department of Transportation (Bureau of Maintenance)

Publication 23-Maintenance, Chapter 13

Provides the right to retain research to manage and control noxious and invasive weeds.

Act of June 1, 1945, P.L. 1242 (36 P.S. 670-410) as amended July 7, 1972 P.L. 738 Act No. 173

Provides the right to control noxious and invasive weeds from state right-of-ways especially where traffic safety is an issue.

Maintenance Manual and the Act of June 1, 1945, P.L. 1242 (36 P.S. 670-410)

Provides the right to remove hazardous trees from the right-of way.

Publication 461-Roadside Planting Guidelines

Roadside planting guidelines.

15. Pennsylvania Fish and Boat Commission

58 Pa Code 71.6 & 73.1

List of aquatic species banned in Pennsylvania (sale, barter, possession or transportation)

1. Bighead carp (*Hypophthalmichthys nobilis*)
2. Black carp (*Mylopharyngodon piceus*)
3. European rudd (*Scardinius erythrophthalmus*)
4. Quagga mussel (*Dreissena bugensis*)
5. Round goby (*Neogobius melanostomus*)
6. Ruffe (*Gymnocephalus cernuus*)
7. Rusty crayfish (*Orconectes rusticus*)
8. Silver carp (*Hypophthalmichthys molitrix*)
9. Snakehead (all species)
10. Tubenose goby (*Proterothinus marmoratus*)
11. Zebra mussel (*Dreissena polymorpha*)

58 Pa Code 63.44

Prohibits use or possession of Goldfish, comets, koi, or common carp as baitfish while fishing

58 Pa Code 63.46

Prohibits sale, purchase, offer for sale, or bartering of live snakehead species, asian carp species (Black, bighead, silver), zebra and quagga mussels, round and tubenose gobies, rudd, rusty crayfish, and Eurasian ruffe.

58 Pa Code 65.25

Executive order banning the transfer of live fish out of the PA portion of the Lake Erie watershed.

58 Pa Code 71.2

Prohibits grass carp or white amur introductions without triploid certification; provides authority to issue list of species approved for propagation, live bait operations, and transportation permits

58 Pa Code 71.3

Authorizes introduction, importation, or transportation of USFWS approved grass carp with permit; prohibits propagation

58 Pa Code 71.6

Prohibits grass carp (except for research purposes), and tilapia introductions in state waters; prohibits possession, introduction, or importation of live snakeheads, asian carp species (Black, bighead, silver), zebra and quagga mussels, round and tubenose gobies, rudd, rusty crayfish, and Eurasian ruffe.

58 Pa Code 71.7

Provides authority jointly with PDA to list species approved for closed system propagation, and to license unlisted species if no threat of water discharge, or release of live fish or eggs

58 Pa Code 73.1

Provides authority to prohibit transfer of fish into state or non-native watersheds, to inspect for species composition and disease, and to permit tropical fish imports unless perceived threat to native species. Prohibits transport of live snakehead species, asian carp species (Black, bighead, silver), zebra and quagga mussels, round and tubenose gobies, rudd, rusty crayfish, and Eurasian ruffe.

58 Pa Code 73.2

Provides authority to issue a list of species authorized for transport permits

58 Pa Code 77.7

Prohibits introduction of non-native reptiles and amphibians

58 Pa Code 51.61

Provides authority to issue permits (jointly with DEP) for use of algicides, herbicides, and fish control chemicals that may cause disturbances to waterways and watersheds

Fish and Boat Code, PA CS 21 Chapter

Authorizes PFBC to make regulations managing fish and fishing, transport, etc

12. Game Commission (Bureau of Wildlife Management)

Game and Wildlife Code, PA C.S. 34 Chapter 1.103

Provides authority to manage wild birds and mammals

Atlantic Flyway Management Plan

Authorizes PGC adhere to USFWS guidance on migratory birds (mute swans). Authorizes depredation permits; establishes statewide maximum population goal of 250 mute swans

58 Pa Code 137.1

Provides authority to prohibit introduction, sale, and release of certain wildlife, e.g. nutria

58 Pa Code 137.2

Prohibits the release of any animal” that is a member of the Family *Suidae* into the wild

13. Game Commission (Bureau of Land Management)

Game and Wildlife Code, PA C.S. 34 Chapter 7

Provides authority to manage SGL’s and manipulate vegetation for propagation and management of game, wildlife, and habitat

Appendix C: Protocols for Reporting and Collecting Specimens

Reporting a sighting

Take the following steps to ensure proper early detection and response for potential new AIS discoveries:

Carry documentation tools to accurately document your finding in the field:

- a. Digital camera
- b. Map, GPS, or other method to identify the latitude/longitude of the location
- c. Notebook and pen
- d. Identification guides such as “Pennsylvania’s Field guide to Aquatic Invasive Species”, and “Plant Invaders of Mid-Atlantic Natural Areas”, etc.

Gather and document information accurately:

- Note the exact location of the discovery and include information about the habitat and environmental conditions of the discovery site.
- Take note of species size and the extent of the area it covers.
- Write down a detailed description of unknown specimen(s).
- Take detailed, close-up, digital photographs from different angles of the unknown specimen(s) as well as general photos of the immediate environment where the species was found. Include key landmarks to assist in finding the site.
- Include commonly known items (coins, eyeglasses, or a camera lens cover etc.) in the photo to provide scale.
- Use identification guides to help identify the species

Verify identification and submit report:

- Collect as much information as possible and contact the Pennsylvania Invasive Species Council Coordinator by phone (717-787-7204) email (tlibhart@pa.gov) or submitting the Pennsylvania AIS reporting form ([Appendix D](#)).
- Remember, the more detailed you can be, the easier it will be for others to locate your find.

Collecting a Specimen

Detailed (high resolution) close-up digital photos often are sufficient for experts to make preliminary specimen identification. Before collecting a specimen, always consult with the jurisdictional agency for instructions. When a sample specimen is needed to assist in identification, it is important to **keep the specimen secure to avoid spreading the collected species, or any organism that might be attached to it.** Please keep a record with the specimen of the location and date that it was collected. Be aware that animal specimens may carry disease organisms. Use appropriate prophylactic measures (gloves, handling with forceps, etc.).

*Please note: It is currently illegal to possess or transport certain **live** aquatic invasive species in Pennsylvania. Please review the Pennsylvania Fish and Boat Commission's list of regulated species before handling or transporting (<http://fishandboat.com/ais.htm>).

Collecting specimens:

Aquatic and terrestrial vascular plants:

- Specimens should include the stem with intact leaves, and if available, intact flowers and/or fruits and roots.
- Be very careful when collecting a plant specimen, as fragmentation could result in spreading the plant to other areas.
- Wash the plant in clean water to remove all debris (washing over land is best to prevent fragments from going down the drain); do not allow the plant to dry out, and keep cool if possible.
- Use care when handling, as some plants may cause skin and other ailments.
- Fill out specimen label with date, location, collectors name, etc. (If possible, put decimal degree coordinates on back of label).

Didymo (and other algae) non-vascular plants:

- Pinch off a small amount of alga- for didymo, try to get the outer part of the mass containing the cells which are crucial for identification.
- Place in a small vial containing formalin (Note: alcohol destroys the cell structure). Formalin is a potential carcinogen and should only be used by those experienced with its proper usage. For others, algae samples may be carefully dried flat on an absorbent material such as paper towels (use caution, bright light and high heat can deteriorate the specimen). Dried specimens will be easier to ship if necessary and will not require the precautions in the next step below.
- Place small vial in larger containment jar and insert paper toweling to absorb any stray formalin.
- Fill out specimen label with date, location, collectors name, etc. (If possible, put decimal degree coordinates on back of label).

Invertebrates (shellfish, worms, or insects):

- Store specimens in a closed vial or jar with enough rubbing alcohol to keep the tissues moist. If alcohol is not available, freeze the specimen in a tightly closed plastic bag.

Vertebrates (fish):

- Seal securely in double plastic bags and freeze

Shipping Specimens:

When instructed to do so, refer to the following guidelines for shipping. Note these are general guidelines and may need modification under certain circumstances.

Vascular Plants:

-
- Place the plant in a water-tight plastic bag (such as a Ziploc bag) with enough water to cushion the plant and keep it wet.
 - Place the tightly sealed bag in a small box with newspaper packing. Padded envelopes do not work well.

Non-vascular Plants

- Dried specimens can be shipped in a padded envelope with cardboard to stiffen the sides of the envelope.
- Wet specimens should be packaged securely in a small box with plenty of packing materials to ensure the jars or bags are not broken. Packing materials should be absorbent in case of leakage.

Invertebrates:

- Package the specimen securely in a small box with plenty of packing materials to ensure the jars or bags are not broken. Packing materials should be absorbent in case of leakage.

Vertebrates:

- The United States Postal Service has specific standards and requirements regarding the shipment of hazardous materials such as formalin and dry ice. If shipment to a taxonomic expert is necessary for identification, work with the recipient and the postal service to determine the best and safest method for shipping the specimen.

BE SURE TO PROVIDE CONTACT INFORMATION

With the package, always include your name, address, E-mail address, telephone number, and a copy of the notes you made when collecting the specimen in the mailed package.

Appendix D: AIS Sighting Report Form

(visit <https://webforms.bd.psu.edu/report-pa-aquatic-invasive-species>)



Report Aquatic Invasive Species in Pennsylvania

Please use this form to report potential aquatic invasive species in Pennsylvania. Fill out as much information as possible. Data collected will be submitted to Pennsylvania Sea Grant.

Observer Contact Information

First Name _____
 Last Name _____
 Affiliation _____
 Street Address (Line 1) _____
 Street Address (Line 2) _____
 City _____
 State _____ Zip code _____
 Phone (include area code) _____ E-mail _____

Observation Details

Observation Date (mm/dd/yyyy) _____
 Time of day (approximate) _____
 Common name (if unknown, please provide species type, e.g. fish, frog, mussel, etc.) _____
 How many specimens were observed at this site?
 (Enter an approximate number. Or, you may specify amounts using the greater than or less than symbol. Example: >100) _____

Additional Information about the sighting

Pennsylvania Sea Grant



Appendix E: Pathogens

Pennsylvania Department of Health should be contacted in the instance that the pathogen has a direct or indirect effect on human health. Example: West Nile virus.

Pennsylvania Department of Agriculture should be contacted in the instance the pathogen has a direct or indirect effect on agriculture, aquaculture, or the artificial propagation, sale, or distribution of live aquatic mammals in the Commonwealth. Example: Viral Hemorrhagic Septicemia.

Pennsylvania Fish and Boat Commission should be contacted in the instance the pathogen has a direct or indirect effect on the protection, propagation, or distribution of fish, fish bait, baitfish, amphibians, reptiles, and aquatic organisms, or managing recreational boating in the Commonwealth. Example: Spring Viremia of Carp, Viral Hemorrhagic Septicemia

Appendix F: Incident Command System for Invasive Species Rapid Response

The Incident Command System (ICS) is a standardized, on-scene, all-hazards incident management approach that:

- Allows for the integration of facilities, equipment, personnel, procedures, and communications operating within a common organizational structure.
- Enables a coordinated response among various jurisdictions and functional agencies, both public and private.
- Establishes common processes for planning and managing resources.

Certain AIS response scenarios may benefit from a highly coordinated and structured format, such as ICS. It is flexible and allows users to adopt an integrated organizational structure to match the complexities and demands of single or multiple incidents at varying scales. In AIS rapid response situations, ICS provides a systematic approach to guide departments and agencies at all levels of government, NGOs, and the private sector to work together.

This section of the Pennsylvania AIS rapid response plan will give a brief overview of the organizational structure and function of the ICS process. If it is determined that ICS is appropriate for an AIS incident in Pennsylvania, please visit <http://www.fema.gov/incident-command-system> for more information.

The ICS organizational structure has five major functional elements—command, operations, planning, logistics, and finance and administration. As deemed necessary, the Incident Commander (IC) may appoint “Command Staff” which may consist of a Legal Advisor, Science Advisor, Safety Officer, Liaison Officer, and Public Information Officer (PIO). The “General Staff” may consist of an Operations Chief, a Planning Chief, a Logistic Chief, and a Finance\Administrative Chief, or any necessary combination of these positions. The IC is ultimately responsible for establishment and expansion of the ICS organization, based on needs and requirements of the response.

Incident command is accomplished using one of two approaches. For example, when a new priority AIS invasion occurs within a single jurisdiction, and without jurisdictional or functional agency overlap, a single IC is designated with overall incident management responsibility by the appropriate jurisdictional authority. However, when a rapid response involves multiple jurisdictions, a single jurisdiction with multiagency involvement, or multiple jurisdictions with multiagency involvement, establishment of a Unified Command (UC) allows agencies with different legal, geographic, and functional authorities and responsibilities to work together without affecting individual agency authority, responsibility, or accountability. A UC is essentially the shared responsibility of command among several Incident Commanders.

If the following questions can be answered with “yes”, then a UC is appropriate:

- Does my organization have jurisdictional authority or functional responsibility under a law or ordinance for this type of incident?
- Is my organization specifically charged with commanding, coordinating, or managing a major aspect of the response?
- Does my organization have the resources to support participation in the response or organization?
- Does the incident or response operation impact my organization’s area of responsibility?

The systematic operation of AIS rapid response actions may require a repetitive schedule to promote internal and external continuity during and following staffing transitions. During each operational period, situation reports (SITREP) help staff understand the incident situation and responders' efforts. The Incident Action Plan (IAP) establishes goals for future operational periods. Figure 1 illustrates the initial typical ICS initial operational cycle ("Planning P"). Subsequent cycles skip the initiation procedures and resources are continuously identified and distributed based on guidance from the IC, Operations Section Chief, and the IAP.

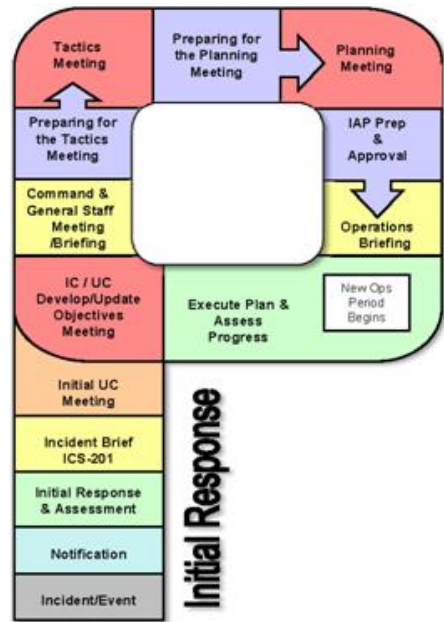


Figure1: ICS "Planning P"

An IAP is the central tool for conveying planning and operational instructions for all response participants and should provide a clear statement of objectives and actions, a basis for measuring work effectiveness and progress, and a record of accountability.

For more information on the ICS please go to: <http://www.fema.gov/incident-command-system>

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