

Tracking Invasive Species in the Susquehanna River Watershed

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“On a global basis...the two great destroyers of biodiversity are, first, habitat destruction, and, **second, invasion by exotic species**”
--E.O. Wilson



Currently known threats to the watershed

- Crustaceans: Rusty crayfish, virile crayfish, bigwater crayfish, Chinese mitten crab
- Fish: Rudd, flathead catfish
- Mollusks: Asian clam, zebra mussel, quagga mussel, Chinese mystery snail, European ear snail
- Plants: Parrots feather, hydrilla, Eurasian water-milfoil, water-chestnut

***Invasive species:**
Non-native
organisms that are
harmful to the
environment,
economy, or
human health*

Pennsylvania Invasive Species Management Plan Goals (PISC 2009)

- *Early Detection and Rapid Response:*
Detect new introductions of nonnative invasive species and control or contain target species before they can become permanently established in the Commonwealth or move into areas in which they previously did not exist.
- *Survey and Monitoring:*
Expand **survey and monitoring efforts** of nonnative invasive species in Pennsylvania.
- *Data Management:*
Develop a **statewide invasive species database clearinghouse or information sharing system** linking data from various state, federal, and non-governmental entities.

PA Aquatic Invasive Species Plan (PISC 2006)

- *Priority strategy:*
 - Establish a **simple, coordinated reporting system(s) for AIS** detection and monitoring in Pennsylvania (Strategy 3D and Strategy 5B).
 - Establish a comprehensive process to **identify the aquatic invasive species of greatest concern** that are not yet present in Pennsylvania waters (Strategy 2A).
- *Priority action:*
 - **Engage those conducting field work to be aware of key invasive species** that they may come across. Conduct training for field staff to ensure that they can easily identify aquatic invasive species. **Implement a statewide monitoring network** to assist in the early detection and monitoring of aquatic invasive species (Action 3B1).
 - Partner with AIS management programs in nearby states to **share data and coordinate management activities**. Pay special attention to “upstream” and “downstream” neighboring states to prevent AIS introduction and spread (Action 1C1).

PA aquatic invasive species reporting

Zebra & quagga
mussel
database
PA Sea Grant

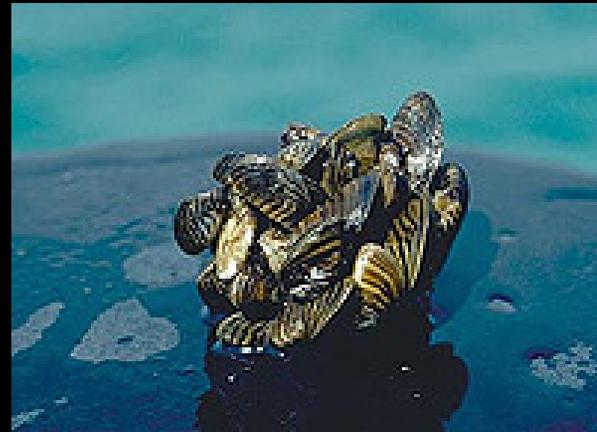
iMap
Invasives
PNHP/WPC

Website
Report link
PA FBC

USGS NAS

What's needed?

- Funding
- Effort
- Coordination



What is iMap?

- State run iMap Invasive programs (PA, OR, FL, AZ, VA, NY, VT, NH, & Saskatchewan)
- System to keep track of invasive distributions or treatments
- Store and retrieve your data (point, polygon; presence and absence). Download as .csv or geodatabase
- Minimum information: Species, date, observer, location



Benefits of iMap

Invasive plant and animal data for Pennsylvania

Location information and species
mapping/queries tool

Quality controlled

www.imapinvasives.org/paimi



iMapInvasives



Pennsylvania Invasive Species Map

[Instructions](#) [Generate Reports](#) [Data Entry](#) [Links](#)

Welcome back, **Mary** (marwalsh) 1.9

[Home](#) [Log Out](#)

Search by Species, Location, or ID #

Go

Layers

By ID

Base Layers

- Google Streets Layer
- Google Hybrid Layer
- Google Aerials
- Google Terrain Layer

Overlays

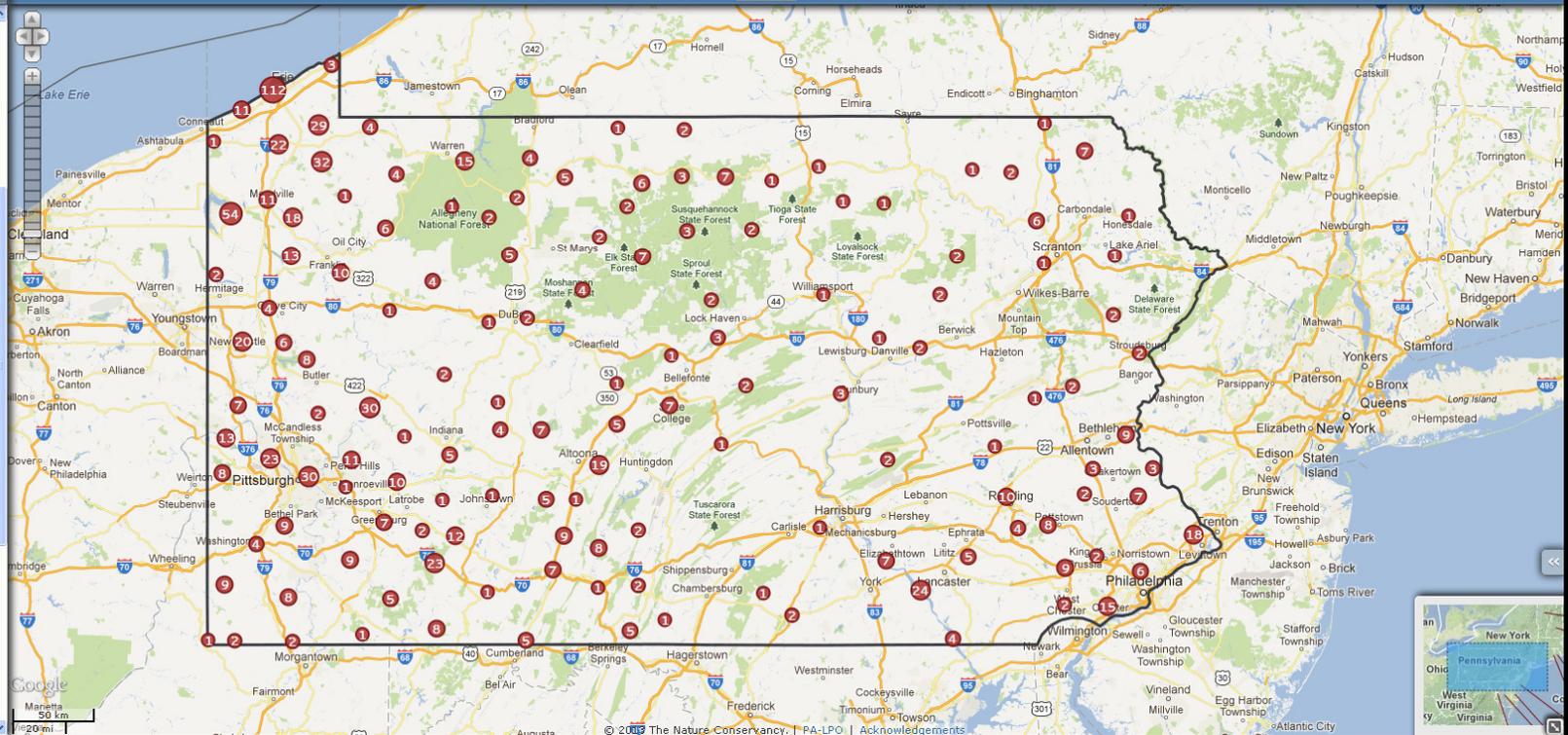
Invasive Species Observations

- Combined
- Partner Data
- Nonindigenous Aquatic Species (USGS-NAS)
- Confirmed
- Unconfirmed
- Problem
- Deleted

Invasive Species Details

- Assessments - Animals
- Assessments - Insects
- Assessments - Plants
- Treatments
- Survey

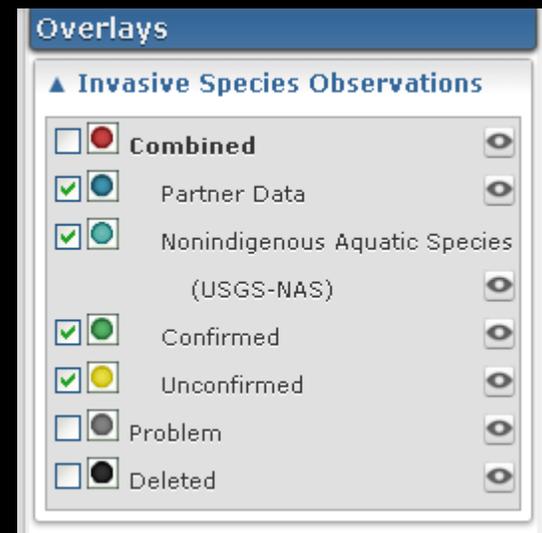
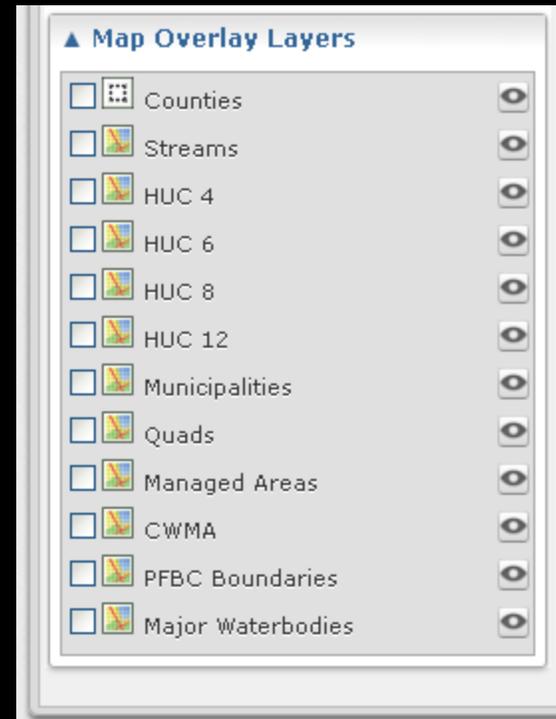
Map Overlay Layers



Mapping

- Municipality,
- Watershed name,
- County,
- State forest,
- state
- park, & gameland,
- Cooperative
- weed
- management area

Data type



Search by species

▲ Distribution Legend

Species

Animal Insect **Plant** All

By Common Name

All Plants ▼

By Scientific Name

All Plants ▼

More Information for Selected Species

Layers County Shown

County Hide

▼ By ID



iMap Invasives information types

- Observation
 - A species, at a specific place, on a specific date (point)
- Assessment
 - Detailed information about a specific observation (polygon)
- Survey
 - Presence or absence of specific invasive species (polygon)
 - Forms for
 - Aquatic (systematic) or lacustrine (aquatic simple)
 - Terrestrial
 - Cerceris wasp
 - Host tree
- Treatment (polygon)
 - Treatment method and details
- Infestation management (polygon)
 - Spatial grouping of related observations for a managed invasive species population



Joy Viola, Northeastern University, Bugwood.org

Potential collaboration

- Informing SRBC projects about invasive threats
- NY & PA
- Data upload to iMap via bulk upload or website entry



How iMap can help

- Publicize invasive species & tracking
- Bring together agencies and organizations w/ invasive species interests
- Inform policy, planning and control efforts
- Work with regional and national tracking efforts by collating PA data



Partners



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Initiative**



www.imapinvasives.org/paimi