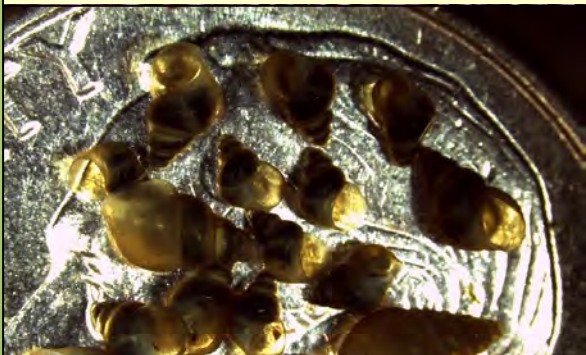




Red-Eared Slider



Purple Loosestrife



New Zealand Mudsnailed



*iMap*Invasives

Tracking Invasive Species with Pennsylvania *iMap*Invasives

Mary Walsh and Amy Jewitt
Western Pennsylvania
Conservancy
March 14, 2015

Invasive Species – Non-native organisms that cause harm to the environment, economy, and human health

Carolina Fanwort

Photo credit: Brian Pilarcik, CCCD



Purple Loosestrife

Photo credit: Cumbria Wildflowers



Round Goby

Photo credit: Glogster.com



Common Reed

Photo credit: Wikimedia Commons



Multiflora Rose

Photo credit: depauw.edu



Quagga Mussel

Photo credit: Amy Benson, USGS



Didymo

Photo credit: Tim Daley, PA DEP

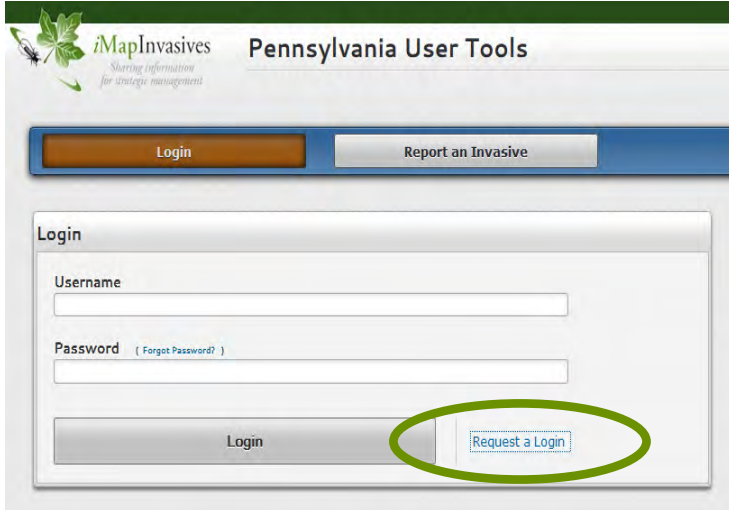


Japanese Barberry

Photo Credit: FNA Nature Search

What is *iMapInvasives*?

- An on-line mapping database used for tracking **location information** on invasive species
- Used as a resource to **visualize** where invasive species are located
- Tool for natural resource professionals working to **manage invasive species**
- Available to **anyone** by signing up for a free user account



The screenshot shows the login interface for iMapInvasives Pennsylvania User Tools. At the top, there is a green header with the iMapInvasives logo and the text "Pennsylvania User Tools". Below the header, there are two buttons: "Login" and "Report an Invasive". The main content area is titled "Login" and contains two input fields: "Username" and "Password (Forgot Password?)". A "Login" button is positioned below the password field, and a "Request a Login" button is located to its right, circled in green.

<http://www.imapinvasives.org/paimi/login>

What is iMapInvasives?

- Currently being utilized in PA as well as the following states/province:
 - NY, OR, AZ, FL, VA, VT, WV, NH and Saskatchewan
- Facilitates early detection and rapid response
- Used to store and retrieve your data (points & polygons; presence and absence)
- Download as “csv” or geodatabase

Who is it for?

- Natural resource professionals
- Citizen scientists
- Land trusts
- Watershed associations
- State agencies
- Schools and volunteer groups
- *Anyone with an interest in invasive species*

Tools for Natural Resource Professionals

Assessments provide detailed information about an observation

Surveys are a planned search of an area to determine the presence or absence of specific invasive species

Treatments are actions taken to control an invasive species population



Tools for Natural Resource Professionals – Treatment Records

Treatments are actions taken to control an invasive species population

Steps to create a Treatment record

1. **Draw polygon around treated area**
2. **Fill in information fields, some of which are highlighted below:**
 - Treatment types
Barrier, Bioagent, Chemical Fire, Mechanical/Manual, etc.
 - Targeted Species
Single or multiple species
 - Treatment goals
Eradication, Containment, Suppression, Experiment, etc.
 - Who
Lead contact, paid/volunteer crew, crew size
 - Observations Affected
 - Treatment Start/End Date

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.

Pennsylvania 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).

What are the Benefits of iMap?



European Frog-bit
Photo credit: Christian Fischer, Wikipedia



Japanese Mysterysnail
Photo credit: B. Lathrop, DEP

- Invasive plant and animal data for Pennsylvania
- Quality controlled
- Data sharing (online accessible)
- 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

Benefits – Early Detection & Rapid Response

- Serves as a source of invaluable EDRR info
- Info on EDRR species can come from both professional and public sources, all captured in iMap
- Email alerts serve as a tool to notify interested individuals of EDRR species present in the state/county/specific area



New Zealand Mudsnail

Photo credit: Robyn Draheim, Center for Lakes and Reservoirs

Benefits – Data Sharing

- Invasive species clearinghouse for data across all of Pennsylvania
- Place to organize and share data with others, both internally and externally
- Alleviates the issue of data being captured only in handwritten notes, individual computers, spreadsheets, etc.



Common Reed

Photo credit: Michael St. Jean,
Flickr photographer

iMapInvasives Partners



Funding for PA iMapInvasives is provided by the USFWS Great Lakes Restoration Initiative

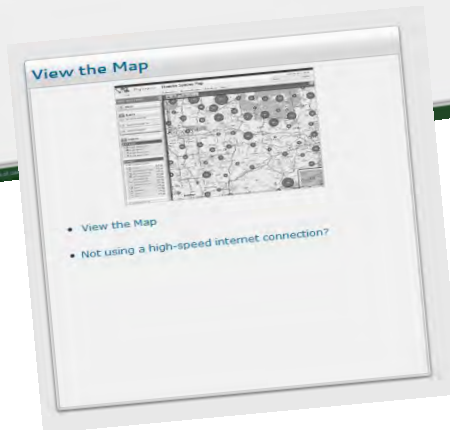
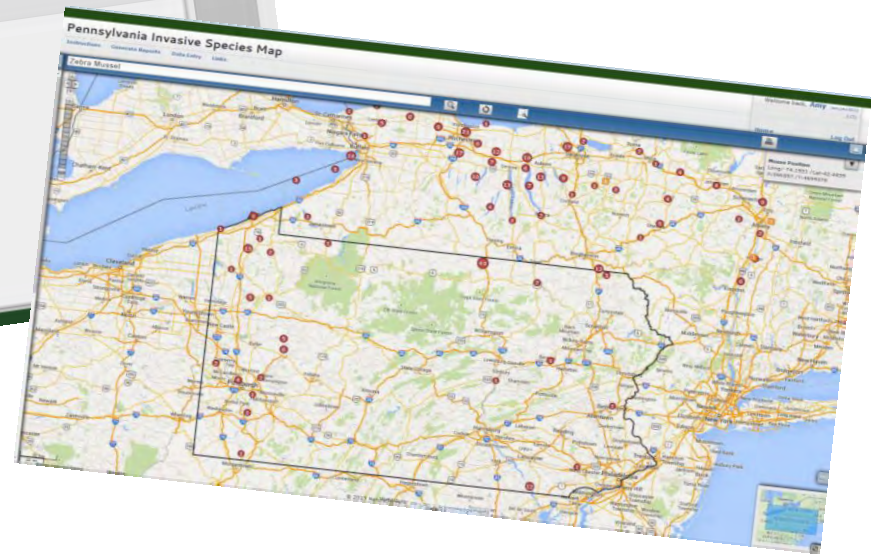
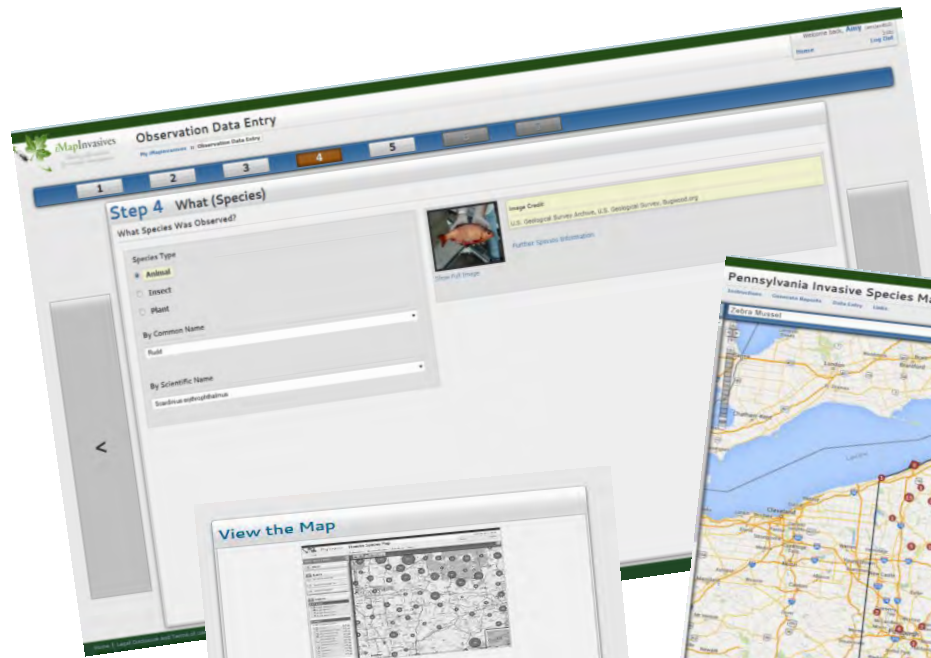
Brand new PA iMapInvasives Homepage

- Contains info about iMapInvasives as well as invasive species
- Highlights include a Gallery of Invaders, Invasive Species in the News, Reference Guides, and more!
- Questions or comments about iMap? Click on the “Contact Us” tab to email or call us.



<http://www.naturalheritage.state.pa.us/paimap.aspx>

Overview: Entering and Querying for Data



iMapInvasives Login Page

MapInvasives Pennsylvania User Tools Log In

[Login](#) [Report an Invasive](#)

Login

Username

Password [Forgot Password?](#)

MapInvasives Information

Related Links

- [More Information on MapInvasives](#)
- [Report an Invasive](#)

By entering the site you agree to the [Legal Disclosure and Terms of Use](#) and [Privacy Policy](#)

Additional Information

Technical Requirements
MapInvasives is designed to operate using a high-speed internet connection using a modern, standards based browser such as Firefox, Google Chrome, or Safari. Please also be sure to use a recently released version of the browser.

Important Note
Among other terms found under [Legal Disclosure and Terms of Use](#) and [Privacy Policy](#) permission to use, copy and distribute maps, tables, reports, and other visualizations from the MapInvasives website is hereby granted under the following conditions:

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4. The following citation must be used in any published materials which reference this web site or the Content found within:
/MapInvasives: an online data system supporting strategic invasive species management. © 2013, NatureServe. Available at <http://www.imapinvasives.org>. (Date accessed: Mar 03, 2013.)

Funding
Funding for the PA iMapInvasives Project is provided by the Great Lakes Restoration Initiative through the US Fish and Wildlife Service and the PA Fish and Boat Commission

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Enter Username & Password or
Request Login if accessing for first time

Main Navigation Page

iMapInvasives Pennsylvania User Tools
Location: My iMapInvasives

Welcome back, **Amy** (amy@pa-001) 2:02 PM
[Home](#) [Log Out](#)

[Show Your iMap Stats](#)

My iMapInvasives **Resources** **Data Management** **System Management**

Enter Data

- Observation
- Survey
- Treatment

View the Map

- View the Map
- Not using a high-speed internet connection?

View Table

- All Observations
- Surveys
- Treatments
- Assessments
 - Animals
 - Insects
 - Plants

Query and Reports

- Custom Observation Query
- All Data Summary Report
- All Species by County: Report
- Table
- Infested Lakes: Report
- Table
- Report with Observation IDs
- Active Projects: All Projects
- My Projects with Details

My Personal Information

My Profile

- Edit My Profile
- Change my Password

E-Mail Alerts

- Manage my Alerts

Enter observation data

Visualize data on a map

View data in a list format

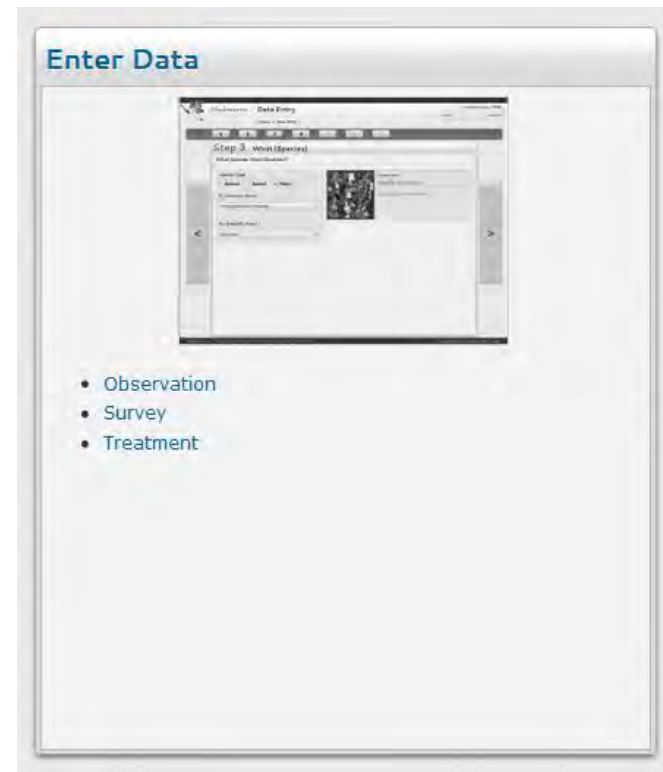
Query for specific data

5 Different Record Types Available

- **Observation** – report of a specific species, at a certain place, on a specific date.
- **Assessment** – provides detailed information about an observation. This can include the intensity of infestation, damage caused by the organism, and details about the surrounding area.
- **Survey** – a planned search of an area to determine the presence *or absence* of specific invasive species.
- **Treatment** – an action taken to control an invasive species population.
- **Infestation Management** – ties together all the info about a managed population over time.

Entering an Observation

- 7-step process
- Simple and easy to use
- Good for entering small amounts of data (1-50 records)
- Bulk datasets can be sent to the state administrator for loading (50+)



Step 1: Adding Photos and Photo Credits

The screenshot displays the 'MapInvasives Observation Data Entry' web application. At the top, there is a navigation bar with steps 1 through 6, where step 1 is highlighted. The user is logged in as 'Amy', with a 'Home' link and a 'Log Out' button. The main content area is titled 'Step 1 Photos (jpg files only. Do not drag from an open document like Word or Powerpoint)'. It contains four photo upload sections:

- Closeup Photo:** Shows a small thumbnail of a plant, a 'Browse' button, the filename 'A_Staufler_JapaneseKnotweed1_092613.JPG', a green progress bar labeled 'Upload Complete', and a text input field for 'Closeup Photo Credits' containing 'Amy Jewitt'.
- Infestation Photo:** Shows a small thumbnail of a plant, a 'Browse' button, the filename 'A_Staufler_JapaneseKnotweed11_092613.JPG', a green progress bar labeled 'Upload Complete', and a text input field for 'Infestation Photo Credits' containing 'Amy Jewitt'.
- Scale Photo:** Shows 'No image', a 'Browse' button, and the text 'No file selected'. There is a text input field for 'Scale Photo Credits'.
- Other Photo:** Shows 'No image', a 'Browse' button, and the text 'No file selected'. There is a text input field for 'Other Photo Credits'.

At the bottom of the page, there is a footer with links for 'Home', 'Legal Disclosure and Terms of Use', 'Privacy Policy', 'Sponsors', and 'Contact your Map Administrator', along with a copyright notice for 2015 NatureServe.

Five categories of photos: Close-up, Infestation, Scale, and Other (2)

Step 2: Who is the Observer?

iMapInvasives *Sharing information for strategic management*

Observation Data Entry

Welcome back, **Amy** (amy@nature.org) 2:03 PM
[Home](#) [Log Out](#)

1 2 3 4 5 6 7

Step 2 Who

Are you entering data you observed?

- Yes, I am the observer
- No, I am entering data for
- No, but the observer is not listed

< >

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1. I am the observer
2. Someone else is the observer
3. Observer is not a registered iMap user – send follow-up info

Step 3: Is this Data part of a Project?

Observation Data Entry

Welcome back, **Amiy** (441/244-108) | Home | Log Out

1 2 3 4 5 6

Step 3 Project

Click here to see the iMapInvasives Projects Guide

Are you entering data for a project?

No, I am not.

Yes, I am entering it for

Select Project

- Select Project
- Southern Laurel Highlands CWMA
- Conewango Creek Watershed Association
- Bear Run - HWA Survey
- Creek Connections
- Pennsylvania Game Lands Management Tool PGLMT
- Aubury Woods Nature Center - BioBlitz
- WPC Stewardship
- County Natural Heritage Inventories
- DEP Lake Data
- Pennsylvania Soil Grant Zebra and Quagga Mussel Database**
- Presque Isle State Park Invasive Treatment
- Wild-Bird project for Project 8
- Wood Warriors
- Naturalist Data
- NHA Invasive Species Mapping in Erie County
- Test
- SIPMA CWMA

header to get added to the project list.

1. No
2. Yes - select project
2a. Contact administrator to create a new project

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Projects provide a way to group data for faster and easier querying

Step 4: What Species was Observed?

MapInvasives
Observation Data Entry

Welcome back, Amy (amy@nsd) 2:08 PM
Home Log Out

1 2 3 4 5 6 7

Step 4 What (Species)

What Species Was Observed?

Species Type

Animal

Insect

Plant

By Common Name

Select A Species

By Scientific Name

Select A Species

1. Select from animals, insects, and plants

2. Ensure that common and scientific names match up

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Step 5: What is the Observation Date?

iMapInvasives Observation Data Entry

Welcome back, **Amy** (amy@nature.org) [Home](#) [Log Out](#)

1 2 3 4 **5** 6

Step 5 When

When was the species observed?

Select a date
2015-03-04

4 March 2015

Mo	Tu	We	Th	Fr	Sa	Su
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

< >

1. Navigate the calendar by using the left/right arrows or by clicking on the month/year title bar

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Step 6: What is the Location?

The screenshot displays the 'MapInvasives Observation Data Entry' web application. At the top, a navigation bar shows steps 1 through 7, with step 6 highlighted. The main heading is 'Step 6: Where?' with a red circle around the text 'Where?'. Below this, there are two search options: 'Search by Coordinate' (selected) and 'Search by Location'. The 'Search by Coordinate' section includes input fields for 'Enter Coordinate' (Longitude: -77.63652) and 'Latitude' (41.43306), with an 'Update Map' button. The 'Search by Location' section has a text input field and a 'Go' button. The central part of the interface is a map of the Northeast United States, showing states like Michigan, Ohio, Pennsylvania, New York, New Jersey, Delaware, Maryland, Connecticut, Rhode Island, Massachusetts, and New Hampshire. A red circle highlights the 'Search by Coordinate' dropdown menu. At the bottom, there is a footer with links for 'Home', 'Legal Disclosure and Terms of Use', 'Privacy Policy', 'Financials', and 'Contact your Map Administrator', along with a copyright notice for 2015 NatureServe.

Search by entering coordinates, a specific address, or location name

Step 7: Summary Page

The screenshot shows the 'Step 7: Submit Observation' page on the iMapInvasives website. The page has a navigation bar with steps 1 through 7, where step 7 is highlighted. The main content area is titled 'Submit Observation' and contains a form with the following fields:

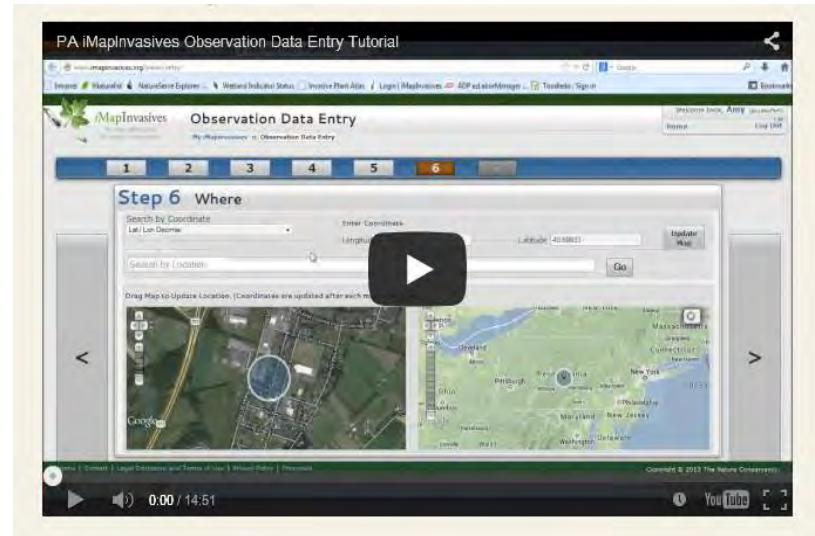
Observer:	I am the observer.
Species:	Amur Peppervine
Project:	Observation is not associated with a project.
Date:	2015-03-04
Location:	Lat / Lon Decimal Longitude: -79.95217 Latitude: 40.44462

Below the form is a 'Submit Observation' button. A red circle highlights the form fields. At the bottom of the page, there is a note: '*NOTE: If using "Submit Another Observation", read the instructions PDF found at the top right of the map (Step 6) to make sure the point is correctly moved to the new location.'

Footer: Home | Legal Disclosure and Terms of Use | Privacy Policy | Financials | Contact your iMap Administrator. Copyright © 2015 NatureServe.

Check accuracy of observation data before submitting

Observation Data Entry Training Video



View PA iMap training video for additional info on how to include more details to an observation record, available on the Homepage and YouTube.

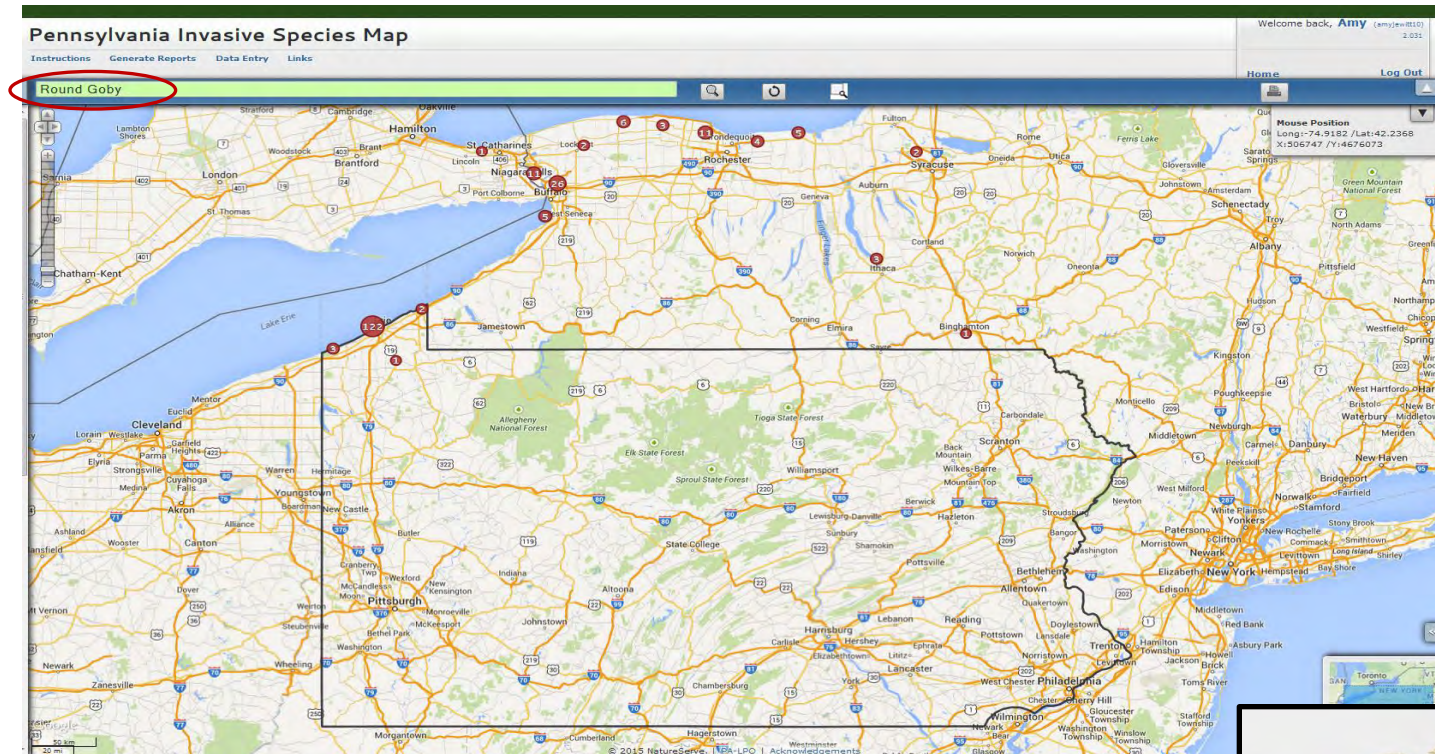
Querying for Data

The image displays three panels from a software interface, each with a red circle around its title and a corresponding screenshot. The first panel, 'View the Map', shows a map with data points and a list of options: 'View the Map' and 'Not using a high-speed internet connection?'. The second panel, 'View Table', shows a data table and a list of options: 'All Observations', 'Surveys', 'Treatments', and 'Assessments' (with sub-links for 'Animals', 'Insects', and 'Plants'). The third panel, 'Query and Reports', shows a query builder interface and a list of options: 'Custom Observation Query', 'All Data Summary Report', 'All Species by County: Report', 'Table', 'Infested Lakes: Table', 'Report', 'Report with Observation IDS', 'Active Projects: All Projects', and 'My Projects with Details'. A red arrow points from the 'Query and Reports' title to the 'Custom Observation Query' option.

Choose to query for data using the Map, the Table, or create a Custom Observation Query

Custom querying guide available on Homepage

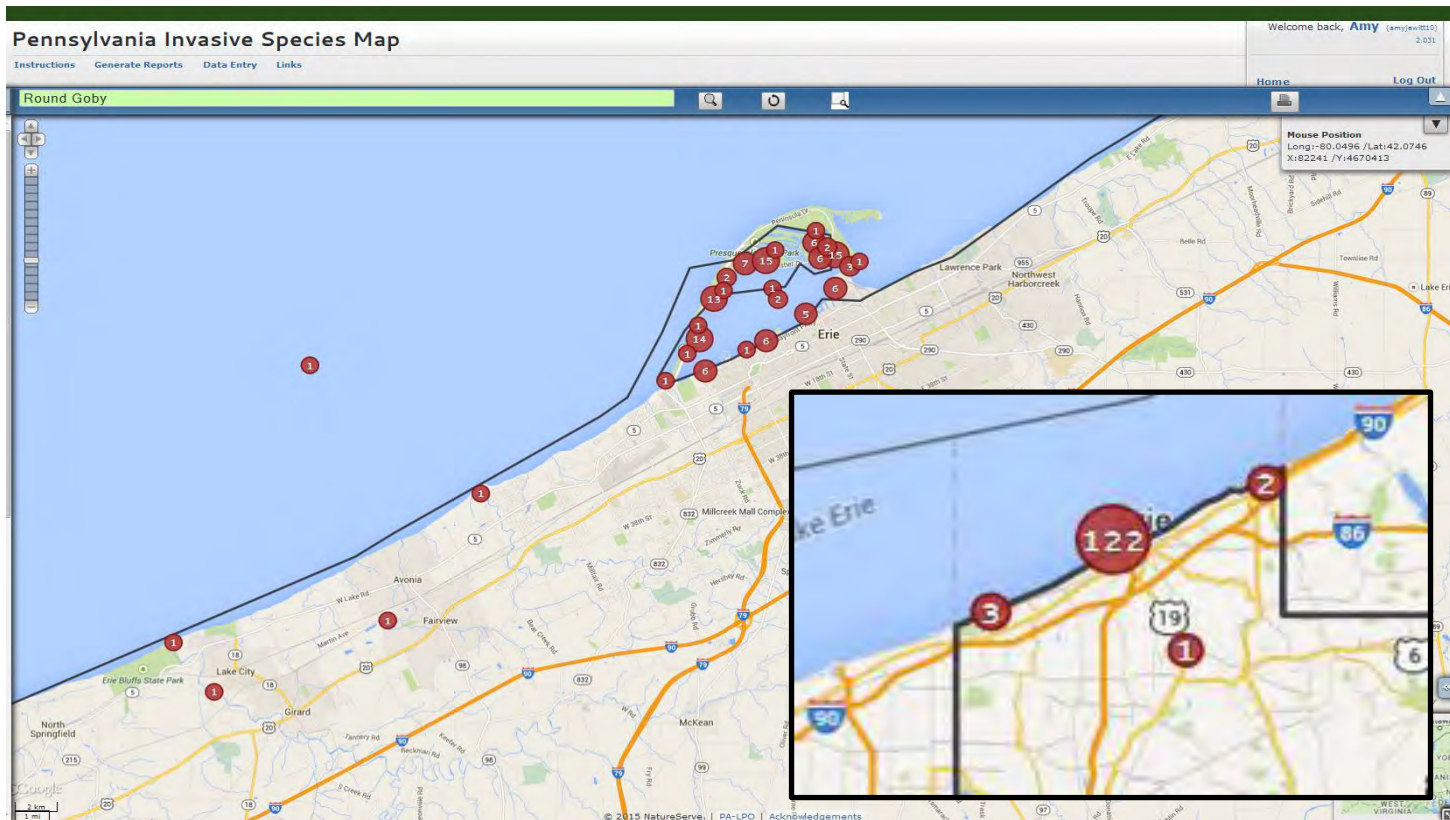
Querying with the Map



- Search by Species Name – ex. Round Goby
- Notice NY records appear too (another iMap state)



Querying with the Map



- Zoom in to see more precise locations of records
- Notice numbers in circles get smaller as you zoom in

Querying with the Map

14 Observations

ID	Scientific Name	Common Name	Organization	County	Observed	Data Status
PA-1166	<i>Neogobius melanostomus</i>	Round Goby	Pennsylvania Fish and Boat Commission		2000-05-02	Partner Data
PA-1130	<i>Neogobius melanostomus</i>	Round Goby	Pennsylvania Fish and Boat Commission		2004-08-02	Partner Data
PA-1151	<i>Neogobius melanostomus</i>	Round Goby	Pennsylvania Fish and Boat Commission		2002-08-12	Partner Data
PA-1152	<i>Neogobius melanostomus</i>	Round Goby	Pennsylvania Fish and Boat Commission		2003-08-12	Partner Data
PA-1153	<i>Neogobius melanostomus</i>	Round Goby	Pennsylvania Fish and Boat Commission		2005-08-12	Partner Data
PA-1155	<i>Neogobius melanostomus</i>	Round Goby	Pennsylvania Fish and Boat Commission	Erie	2006-08-23	Partner Data
PA-1136	<i>Neogobius melanostomus</i>	Round Goby	Pennsylvania Fish and Boat Commission	Erie	2005-08-12	Partner Data
PA-1154	<i>Neogobius melanostomus</i>	Round Goby	Pennsylvania Fish and Boat Commission		2006-08-23	Partner Data
PA-305U	<i>Neogobius melanostomus</i>	Round Goby	Pennsylvania Fish and Boat Commission		2001-08-08	Partner Data
PA-306U	<i>Neogobius melanostomus</i>	Round Goby	Pennsylvania Fish and Boat Commission		2001-08-08	Partner Data

House Position
Long: -80.2423 / Lat: 42.1271
X: 74921 / Y: 4676701

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- Click red circles to view associated observations
- ID #s link directly to specific record and related details

Querying with the Map

The screenshot displays the 'iMapInvasives' web application interface. At the top, the title 'Pennsylvania Invasive Species Map' is visible. A search bar in the top navigation area contains the text 'Lake LeBeouf', which is circled in red. The main map area shows a satellite view of Lake LeBeouf with several red circular markers indicating observation points. On the left side, there are several panels: 'Zoom', 'Invasive Species' (with 'Locations' and 'Active Query' sections), 'Layers' (with 'Base Layers' and 'Overlays' sections), and 'Invasive Species Observations'. A red arrow points to the 'Overlays' section, specifically to the 'Combined' checkbox, which is checked. The 'Invasive Species Observations' section lists various filters such as 'Partner Data', 'Nonindigenous Aquatic Species (USGS-NAS)', 'Confirmed', 'Unconfirmed', 'Approximate', 'Problem', and 'Deleted'. The bottom right corner of the map shows a small inset map of Pennsylvania and a 'Mouse Position' box with coordinates: Long: -79.9830 / Lat: 41.9369, X: 86860 / Y: 4654793.

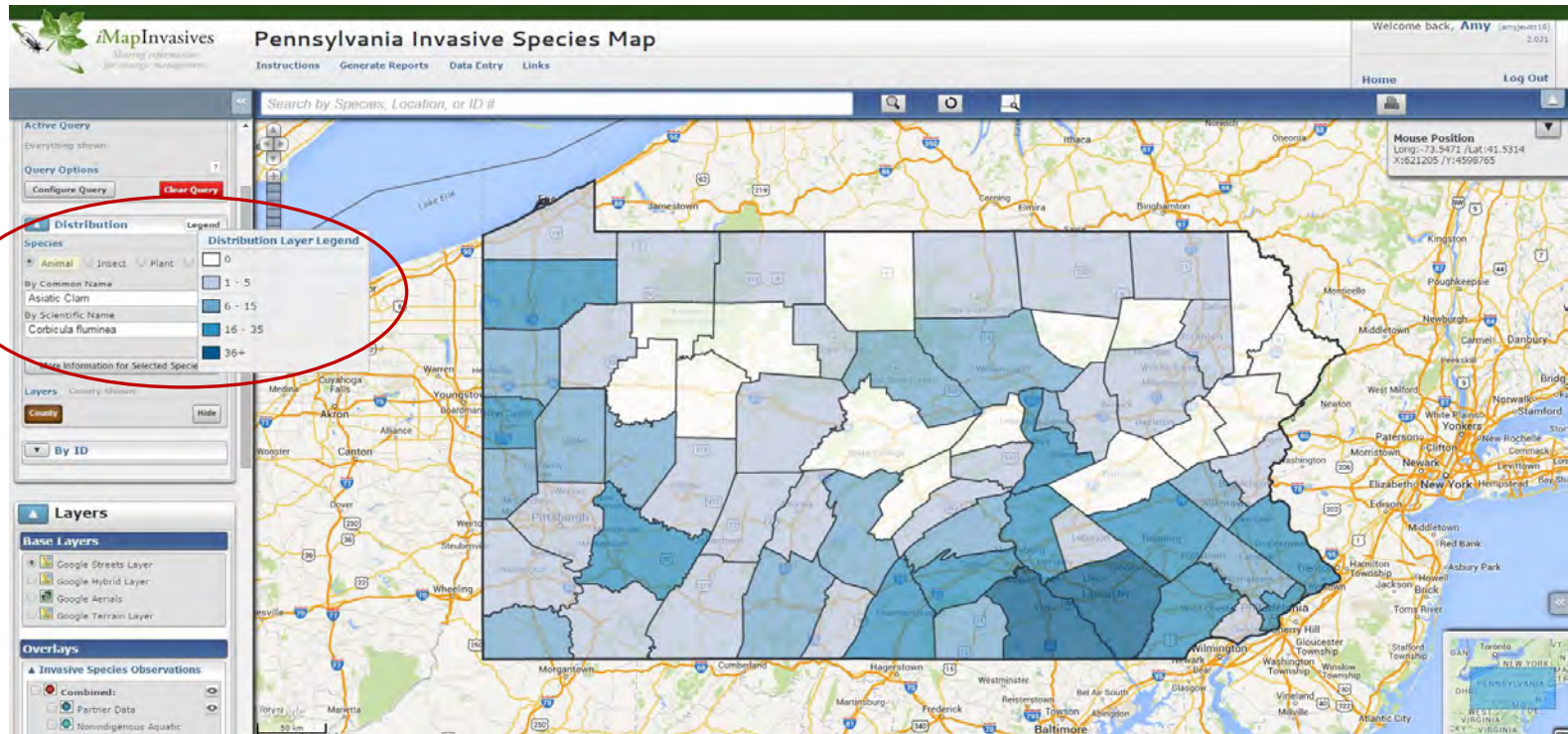
- Search by location – Ex. Lake LeBeouf

Querying with the Map

The screenshot displays the 'iMapInvasives' web application interface. The title bar reads 'Pennsylvania Invasive Species Map'. A search bar at the top contains the text 'Lake LeBoeuf', which is circled in red. The map shows Lake LeBoeuf with several red arrows pointing to specific locations. Four species are identified with text labels and small images: 'Zebra Mussel' (top left), 'Round Goby' (middle left), 'Eurasian Water-Milfoil' (top right), and 'Curly-Leaf Pondweed' (bottom right). The left sidebar contains navigation and query options. A red arrow points to the 'Overlays' section, which includes 'Invasive Species Observations' with sub-options like 'Combined', 'Partner Data', 'Nonindigenous Aquatic', 'Confirmed', 'Unconfirmed', 'Approximate', 'Problem', and 'Deleted'. The top right corner shows a user profile for 'Amy' and a 'Mouse Position' box with coordinates.

- Find out what species have been reported in Lake LeBeouf

Querying with the Map for County Distribution Info



- View species distribution in PA counties
- Distribution density is shown as color goes from light to dark
- Ex. Asian clam distribution across state (based on current data)

Querying with the Table

iMapInvasives **Pennsylvania Administrator Tools**

Welcome back, **Any** (any,pa@i10) 2/2/15
[Home](#) [Log Out](#)

Observations Table [Custom Data Query](#)

Active Custom Query

Data Set = all_data [Clear Query](#)

0 - 25 of 4,697 results

ID	Status	Scientific Name	Common Name	Observer	Obs Date	County	Entry Date	Photo
PA-3904U	Confirmed	<i>Dreissena polymorpha</i>	Zebra Mussel	steadams	2014-09-24	Lancaster	2015-02-27 12:48:06	1
PA-3901U	Confirmed	<i>Trapa natans</i>	Water Chestnut	ronkeaney	2014-07-13	Warren	2015-02-13 11:17:16	1
PA-3902U	Unconfirmed	<i>Frangula alnus</i>	Glossy False Buckthorn	tanmeyer	2011-08-05	Elk	2015-02-09 15:45:15	0
PA-3892U	Unconfirmed	<i>Berberis thunbergii</i>	Japanese Barberry	zacgoodrich	2014-09-24	Monroe	2015-01-21 16:56:00	1
PA-3891U	Unconfirmed	<i>Phragmites australis ssp. australis</i>	Common Reed	zacgoodrich	2014-09-16	Luzerne	2015-01-21 16:43:25	1
PA-3890U	Unconfirmed	<i>Phragmites australis ssp. australis</i>	Common Reed	zacgoodrich	2014-09-16	Luzerne	2015-01-21 16:38:06	1
PA-3889U	Unconfirmed	<i>Phragmites australis ssp. australis</i>	Common Reed	zacgoodrich	2014-09-16	Luzerne	2015-01-21 16:28:28	1
PA-3888U	Unconfirmed	<i>Berberis thunbergii</i>	Japanese Barberry	zacgoodrich	2014-09-16	Luzerne	2015-01-21 16:19:19	1
PA-3887U	Unconfirmed	<i>Berberis thunbergii</i>	Japanese Barberry	zacgoodrich	2014-09-16	Luzerne	2015-01-21 16:09:45	1
PA-3886U	Unconfirmed	<i>Centaurea biebersteini</i> ; <i>Centaurea stoebe ssp. micranthos</i>	Spotted Starthistle	zacgoodrich	2014-08-13	Luzerne	2015-01-21 15:51:20	1
PA-3885U	Unconfirmed	<i>Berberis thunbergii</i>	Japanese Barberry	zacgoodrich	2014-09-16	Luzerne	2015-01-21 15:37:55	1
PA-3884U	Unconfirmed	<i>Berberis thunbergii</i>	Japanese Barberry	zacgoodrich	2014-09-22	Carbon	2015-01-21 12:16:56	1
PA-3883U	Confirmed	<i>Polygonum cuspidatum</i> , <i>Fallopia japonica var. japonica</i>	Japanese Knotweed	zacgoodrich	2014-07-29	Lackawanna	2015-01-20 17:07:37	1
PA-3882U	Confirmed	<i>Hydrilla verticillata</i>	Hydrilla	brilarcik	2014-07-21	Crawford	2015-01-08 10:55:27	1

0 - 25 of 4,697 results

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Search all observations

Querying with the Table - Search by Species

The screenshot shows the 'Observations Table' interface. At the top, there is a navigation bar with 'MapInvasives' and 'Pennsylvania Administrator Tools'. A red circle highlights the 'Data Set' dropdown menu, which is currently set to 'all_data'. A red arrow points from this dropdown to the search input field below, which contains the text 'rudd'. The search results table displays 14 rows of data for the species 'Rudd'.

ID	Status	Scientific Name	Common Name	Observer	Obs Date	County	Entry Date	Photo
PA-2684U	Confirmed	Scardinius erythrophthalmus	Rudd	jmgrazio	2004-05-24		2014-06-06 09:56:36	0
PA-2683U	Confirmed	Scardinius erythrophthalmus	Rudd	jmgrazio	2010-10-08		2014-06-06 09:42:28	0
PA-2679U	Confirmed	Scardinius erythrophthalmus	Rudd	marlethaby	2003-05-01		2014-06-06 09:00:12	0
PA-271U	Partner Data	Scardinius erythrophthalmus	Rudd	bobmorgan	2012-05-04		2013-05-30 13:05:50	0
PA-270U	Partner Data	Scardinius erythrophthalmus	Rudd	bobmorgan	2012-05-03		2013-05-30 13:02:36	0
PA-269U	Partner Data	Scardinius erythrophthalmus	Rudd	bobmorgan	2012-05-01		2013-05-30 12:57:18	0
PA-268U	Partner Data	Scardinius erythrophthalmus	Rudd	bobmorgan	2012-05-01	Erie	2013-05-30 11:43:12	0
PA-267U	Partner Data	Scardinius erythrophthalmus	Rudd	bobmorgan	2012-04-06		2013-05-30 11:12:28	0
PA-266U	Partner Data	Scardinius erythrophthalmus	Rudd	bobmorgan	2012-04-06		2013-05-30 11:08:51	0
PA-265U	Partner Data	Scardinius erythrophthalmus	Rudd	bobmorgan	2012-04-04		2013-05-30 11:04:35	0
PA-264U	Partner Data	Scardinius erythrophthalmus	Rudd	bobmorgan	2012-04-04		2013-05-30 11:00:59	0
PA-263U	Partner Data	Scardinius erythrophthalmus	Rudd	bobmorgan	2012-04-03		2013-05-30 10:51:26	0
PA-1221	Partner Data	Scardinius erythrophthalmus	Rudd	bobmorgan	1991-04-29	Wyoming	2012-12-21 00:00:00	
PA-1220	Partner Data	Scardinius erythrophthalmus	Rudd	bobmorgan	1991-05-01	Wyoming	2012-12-21 00:00:00	

Search by species – Ex. Rudd
(Search by common name or scientific name)

Querying with the Table – Search by Observer Name

The screenshot displays the 'Observations Table' interface. At the top, the 'MapInvasives' logo and 'Pennsylvania Administrator Tools' are visible. The user is logged in as 'Amy' (amy@pa-rs10). The 'Active Custom Query' section shows 'Data Set = all_data'. A search input field contains 'bobmorgan', which is circled in red. A red arrow points from the search input to the 'Observer' column in the table below. The table lists 296 results, showing columns for ID, Status, Scientific Name, Common Name, Observer, Obs Date, County, Entry Date, and Photo. The 'Observer' column consistently shows 'bobmorgan' for all entries.

ID	Status	Scientific Name	Common Name	Observer	Obs Date	County	Entry Date	Photo
PA-2437U	Partner Data	Channa argus	Northern Snakehead	bobmorgan	2014-05-12	Bucks	2014-05-16 15:37:23	1
PA-321U	Partner Data	Channa argus	Northern Snakehead	bobmorgan	2004-07-21	Philadelphia	2013-06-04 09:51:30	0
PA-320U	Partner Data	Channa argus	Northern Snakehead	bobmorgan	2004-07-20	Philadelphia	2013-06-04 09:47:14	0
PA-319U	Partner Data	Channa argus	Northern Snakehead	bobmorgan	2005-08-11	Philadelphia	2013-06-04 09:41:35	0
PA-318U	Partner Data	Neogobius melanostomus	Round Goby	bobmorgan	2012-05-03		2013-06-03 16:56:15	0
PA-317U	Partner Data	Neogobius melanostomus	Round Goby	bobmorgan	2012-04-06		2013-06-03 16:53:31	0
PA-316U	Partner Data	Neogobius melanostomus	Round Goby	bobmorgan	2012-04-06		2013-06-03 16:49:37	0
PA-315U	Partner Data	Neogobius melanostomus	Round Goby	bobmorgan	2012-04-06		2013-06-03 16:46:48	0
PA-314U	Partner Data	Neogobius melanostomus	Round Goby	bobmorgan	2012-04-05		2013-06-03 16:44:03	0
PA-313U	Partner Data	Neogobius melanostomus	Round Goby	bobmorgan	2012-04-03	Erie	2013-06-03 16:41:13	0
PA-312U	Partner Data	Neogobius melanostomus	Round Goby	bobmorgan	2012-04-03		2013-06-03 16:37:56	0
PA-311U	Partner Data	Neogobius melanostomus	Round Goby	bobmorgan	2001-08-08	Erie	2013-06-03 16:35:29	0
PA-310U	Partner Data	Neogobius melanostomus	Round Goby	bobmorgan	2001-08-08		2013-06-03 16:33:02	0
PA-309U	Partner Data	Neogobius melanostomus	Round Goby	bobmorgan	2001-08-08	Erie	2013-06-03 16:29:52	0

- Search by Observer Name (i.e. User Name) – Ex. “bobmorgan”

Querying with the Table – Search by County

Observations Table

Active Custom Query

Data Set: all_data [Clear Query](#)

Showing: **York** [Clear](#) [Search](#)

ID	Status	Scientific Name	Common Name	Observer	Obs Date	County	Entry Date	Photo
PA-3528U	Approximate	Adelges tsugae	Hemlock Woolly Adelgid	forest_pest_mgmt	1980-01-01	York	2014-12-03 14:12:00	0
PA-1920	Partner Data	Corbicula fluminea	Asiatic Clam	amywilliams	2013-05-17	York	2014-06-30 00:00:00	
PA-1981	Partner Data	Pylodictis olivaris	Flathead Catfish	srbc	2012-09-05	York	2014-06-30 00:00:00	
PA-1972	Partner Data	Orconectes obscurus	Allegheny Crayfish	srbc	2011-08-08	York	2014-06-30 00:00:00	
PA-1349	Partner Data	Corbicula fluminea	Asiatic Clam	amywilliams	1996-09-23	York	2014-06-30 00:00:00	
PA-1940	Partner Data	Corbicula fluminea	Asiatic Clam	amywilliams	2013-08-22	York	2014-06-30 00:00:00	
PA-1946	Partner Data	Corbicula fluminea	Asiatic Clam	amywilliams	2013-08-22	York	2014-06-30 00:00:00	
PA-1928	Partner Data	Corbicula fluminea	Asiatic Clam	amywilliams	2013-06-19	York	2014-06-30 00:00:00	
PA-1959	Partner Data	Corbicula fluminea	Asiatic Clam	amywilliams	2013-10-21	York	2014-06-30 00:00:00	
PA-1932	Partner Data	Corbicula fluminea	Asiatic Clam	amywilliams	2013-07-25	York	2014-06-30 00:00:00	
PA-1547	Partner Data	Corbicula fluminea	Asiatic Clam	amywilliams	2005-08-30	York	2014-06-30 00:00:00	
PA-1347	Partner Data	Corbicula fluminea	Asiatic Clam	amywilliams	1996-09-23	York	2014-06-30 00:00:00	
PA-1594	Partner Data	Corbicula fluminea	Asiatic Clam	amywilliams	2006-08-17	York	2014-06-30 00:00:00	
PA-1978	Partner Data	Cyprinus carpio	Common Carp	srbc	2012-09-05	York	2014-06-30 00:00:00	
PA-1923	Partner Data	Corbicula fluminea	Asiatic Clam	amywilliams	2013-06-19	York	2014-06-30 00:00:00	

[Download Table as CSV](#)

0 - 25 of 90 results

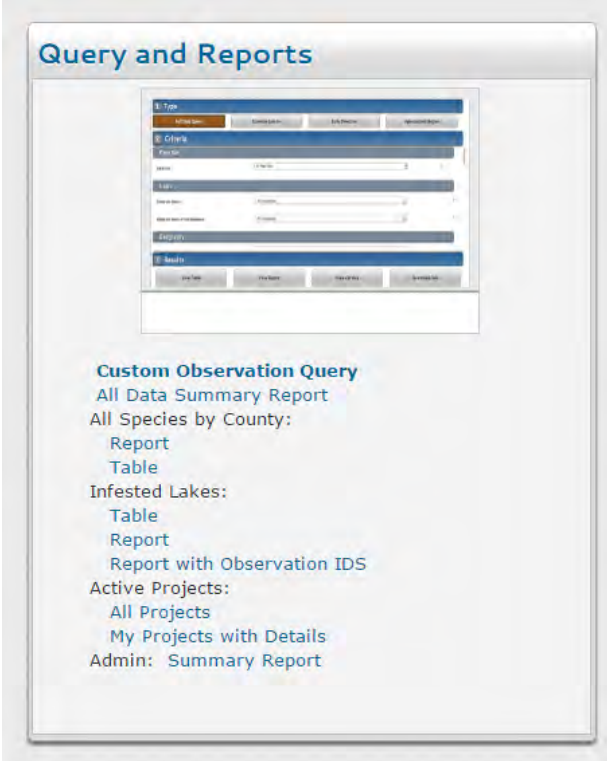
- Search by County – Ex. York County

Create a Custom Observation Query

The screenshot displays the 'iMapInvasives Pennsylvania User Tools' interface. The page is titled 'Custom Query' and features a navigation bar with 'Full Data Query', 'Common Invasive Species', 'Early Detection', and 'Approaching Region' buttons. The main content area is divided into three sections: '1 Type', '2 Criteria', and '3 Results'. The 'Criteria' section includes a 'Data Set' dropdown menu set to 'All iMap Data - My State Only', a 'Geography' section with a 'Geography Type' dropdown set to 'All' and a 'Geography Value' field, and a 'Species' section with radio buttons for 'Animal', 'Insect', and 'Plant' (the 'Plant' option is selected). Below the radio buttons are two dropdown menus for 'By Common Name' and 'By Scientific Name', both set to 'Select A Species'. There is also a 'Genus Name' dropdown set to 'All' and a 'Use that to select MULTIPLE species' dropdown set to 'Select Same Options'. The 'Results' section at the bottom has four buttons: 'View Table', 'View Report', 'View On Map', and 'Clear All Queries'. The 'View Table', 'View Report', and 'View On Map' buttons are circled in red. The footer contains the text 'Reid maps.gdatic.com' and 'Copyright © 2015 NatureServe'.

- Choose to filter by any number of categories – many available!
- View query results in a table, report, or on the map.

Examples of Custom Data Queries and Ways to View the Results



The screenshot displays a web application interface titled "Query and Reports". It features a central panel with a "Custom Observation Query" section. This section includes several filter fields: "Type" (with a dropdown menu), "Status" (with a dropdown menu), "Date" (with a date range selector), "Location" (with a dropdown menu), "Species" (with a dropdown menu), and "Project" (with a dropdown menu). Below these filters are buttons for "Run Query", "Refresh", "Clear All", and "Cancel".

Below the query interface, a list of report options is provided:

- Custom Observation Query**
- All Data Summary Report
- All Species by County:
 - Report
 - Table
- Infested Lakes:
 - Table
 - Report
 - Report with Observation IDS
- Active Projects:
 - All Projects
 - My Projects with Details
- Admin: Summary Report

Create a Custom Query

*View Results in a Table

MapInvasives
Pennsylvania Administrator Tools

Welcome back, Amy (amy@nature.org) 2:22 PM
Home Log Out

My iMapInvasives Custom Query Observations Table

Observations Table

Active Custom Query

Data Set = all_data | Waterbody = Lake Pleasant (ERIE) [Clear Query](#)

[Search](#) 0 - 7 of 7 results

ID	Status	Scientific Name	Common Name	Observer	Obs Date	County	Entry Date	Photo
PA-3464U	Confirmed	Potamogeton crispus	Curly-leaf Pondweed	amyjewitt10	2014-07-24	Erie	2014-09-03 14:46:32	0
PA-2645U	Confirmed	Cipangopaludina chinensis, Bellamya chinensis	Chinese Mysterysnail	marlethaby	2011-10-08	Erie	2014-06-05 10:45:13	0
PA-453U	Confirmed	Phragmites australis ssp. australis	Common Reed	chrtracey	2013-08-15	Erie	2013-08-20 13:43:36	1
PA-340U	Confirmed	Cipangopaludina chinensis, Bellamya chinensis	Chinese Mysterysnail	mlstrosfky	2002-09-01	Erie	2013-07-15 14:47:40	0
PA-995	Partner Data	Potamogeton crispus	Curly-leaf Pondweed	stevegrund	2001-07-12	Erie	2012-12-21 00:00:00	
PA-10	Partner Data	Acorus calamus	Sweetflag, Calamus	andyhoff	2001-08-17	Erie	2012-12-21 00:00:00	
PA-11	Partner Data	Acorus calamus	Sweetflag, Calamus	brosbradley	2007-08-03	Erie	2012-12-21 00:00:00	

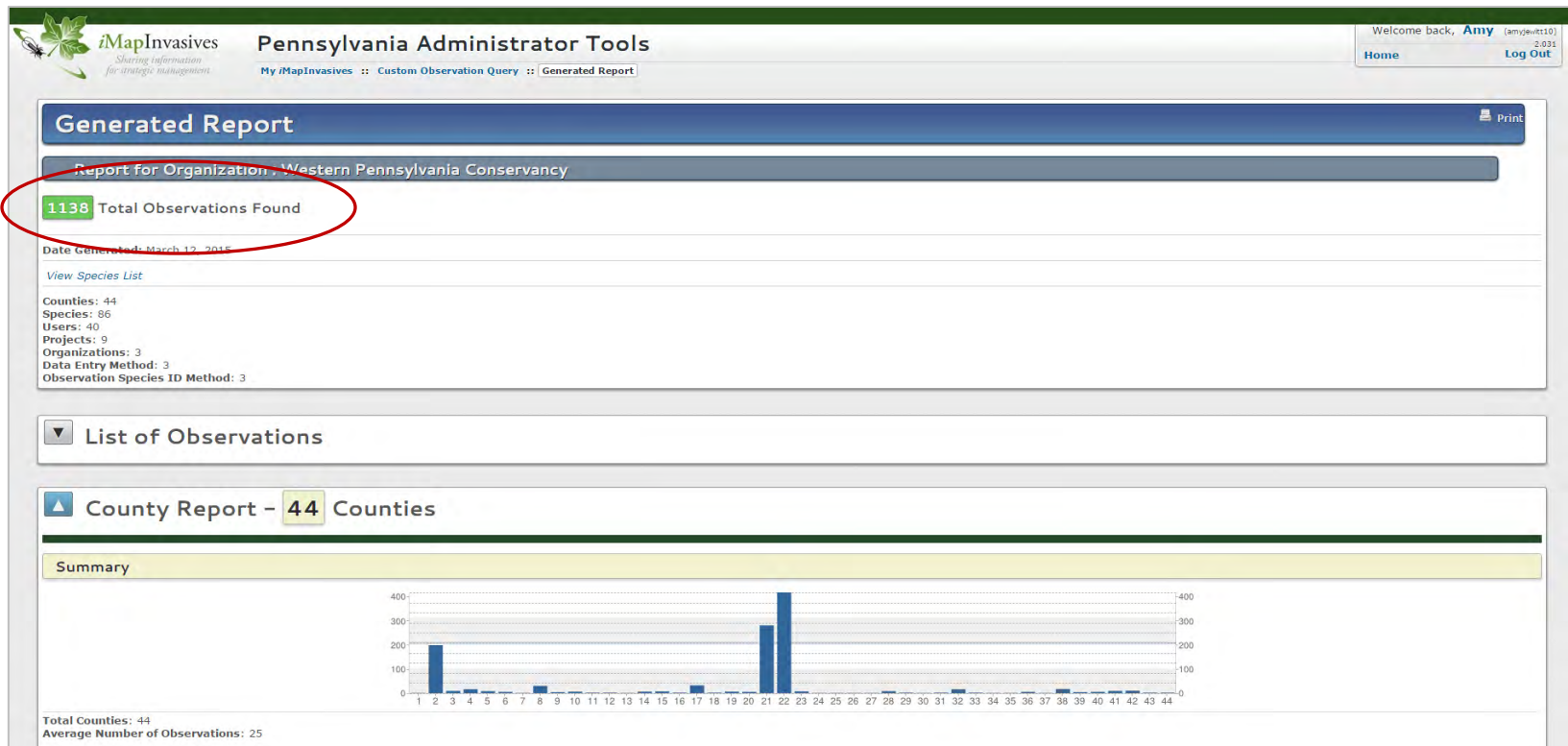
[Download Table as CSV](#) 0 - 7 of 7 results

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- Ex. What invasive species have been found in Lake Pleasant (Erie County)?
- Answer: Curly-leaf pondweed, Chinese Mysterysnail, Common Reed, and Sweetflag (according to present data)

Create a Custom Query

*View Results in a Report



- Ex. What data is currently in iMap from my organization? (Western PA Conservancy)
- Answer: 1138 observation records (MUCH more info available in report!)

Create a Custom Query

*View Results on the Map

The screenshot shows the Pennsylvania Invasive Species Map interface. The search bar contains the text "New Zealand Mudsnaill". Below the search bar, a table displays two observations. A red circle highlights the "Common Name" column in the table.

ID	Scientific Name	Common Name	Organization	County	Observed	Data Status
PA-1673U	<i>Potamopyrgus antipodarum</i>	New Zealand Mudsnaill	Pennsylvania Department of Environmental Protection	Centre	2013-04-17	Confirmed
PA-2631U	<i>Potamopyrgus antipodarum</i>	New Zealand Mudsnaill	College of Charleston (SC)	Centre	2010-10-07	Confirmed

- Ex. What aquatic animals are located in Centre County?
- Answer: New Zealand Mudsnaill (according to present data)

Infested Lake Report

Infested Lake Report

Species reported in (or bordering) lakes and ponds.
Lakes covering multiple counties may have species listed more than once.
Please use the search function (Ctrl-F) to find a particular waterbody.

Lake Name	Species
Beaver Run Reservoir (WESTMORELAND) - (Westmoreland):	1 - Myriophyllum spicatum (Eurasian Water-milfoil) 1 - Potamogeton crispus (Curly-leaf Pondweed)
Big Bass Lake (LACKAWANNA) - (Lackawanna):	1 - Cabomba caroliniana (Carolina Fanwort, Fanwort)
Blue Marsh Lake (BERKS) - (Berks):	6 - Pylodictis olivaris (Flathead Catfish)
Canoe Creek Lake (BLAIR) - (Blair):	1 - Myriophyllum spicatum (Eurasian Water-milfoil) 3 - Najas minor (Brittle Naiad) 2 - Potamogeton crispus (Curly-leaf Pondweed)
Cherry Run Lake (INDIANA) - (Indiana):	1 - Potamogeton crispus (Curly-leaf Pondweed)
Clear Lake (CRAWFORD) - (Crawford):	1 - Myriophyllum spicatum (Eurasian Water-milfoil) 1 - Potamogeton crispus (Curly-leaf Pondweed)
Colver Reservoir (CAMBRIA) - (Cambria):	1 - Viviparus georgianus (Banded Mysterysnail)
Concourse Lake (PHILADELPHIA) - (Philadelphia):	1 - Cipangopaludina chinensis, Bellamya chinensis (Chinese Mysterysnail)
Conneaut Lake (CRAWFORD) - (Crawford):	6 - Cabomba caroliniana (Carolina Fanwort, Fanwort) 1 - Corbicula fluminea (Asiatic Clam) 1 - Dreissena polymorpha (Zebra Mussel) 3 - Myriophyllum spicatum (Eurasian Water-milfoil) 1 - Najas minor (Brittle Naiad) 3 - Potamogeton crispus (Curly-leaf Pondweed)
Eagles Mere Lake (SULLIVAN) - (Sullivan):	1 - Cipangopaludina japonica (Japanese Mysterysnail)
Edinboro Lake (ERIE) - (Erie):	6 - Dreissena polymorpha (Zebra Mussel) 5 - Myriophyllum spicatum (Eurasian Water-milfoil) 2 - Najas minor (Brittle Naiad) 5 - Potamogeton crispus (Curly-leaf Pondweed)

Query and Reports

- Custom Observation Query
- All Data Summary Report
- All Species by County:
 - Report
 - Table
- Infested Lakes:
 - Table
 - Report
 - Report with Observation IDS
- Active Projects:
 - All Projects
 - My Projects with Details

Great tool for natural resource professionals!

- This report is a quick and easy way to view a list of infested lakes and their associated invasive species. Available Under the Query and Reports section on the Main Navigation page.

Email Alerts

- Access email alerts from the Main Navigation page
- 3 types of alerts available
- Keeps you informed of latest info reported to iMapInvasives
- Invaluable EDRR tool
- Reference guide available on the Homepage



Zebra Mussels
Photo credit: Becky Bochaty, Flickr user



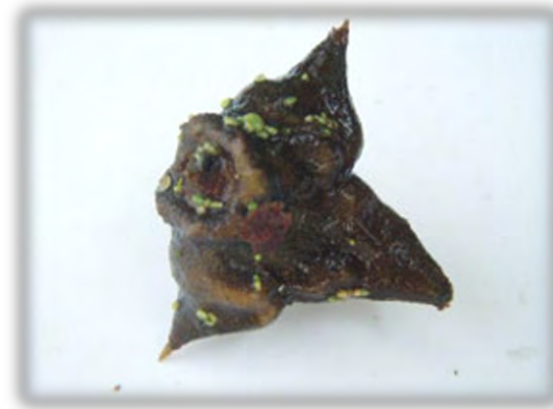
Black Swallow-Wort
Photo credit: www.fws.gov

Continual Alert

- Most basic type of email alert available
- This alert will send you an email whenever its conditions are met, until the alert is deactivated



Water Chestnut
Photo credit: eattheweeds.com



Water Chestnut (Nutlet)
Photo credit: Dave Donachy, PA Game Commission

Example of a Continual Alert

Alert type = Continual

Geography Type = State

Geography Name = PA

Species Name = Trapa natans

The screenshot displays the 'Alert Information' form in the 'iMapInvasives Pennsylvania Administrator Tools' interface. The form is titled 'Alert Information' and includes a note: 'Note: Once an alert is created, it cannot be edited (but it can be deactivated). Note: As a level 9 and above user, your email alerts will trigger on unconfirmed observations.' The form is divided into a 'Basic' section with the following fields:

Field	Value
Alert type	Continual
Geography Type	State
Geography Name	Pennsylvania
Buffer Distance (meters)	
Species By	Species Name
Species Name	Trapa natans
Alerts requested	∞ (You must manually deactivate the alert to stop receiving emails)
# of Observations	0
Additional Email Contact	additional_email@your.com
Active	True

The 'Species Name' field is circled in red, and the text 'To receive alerts: all species reported in your selected geography, select Species Name = Any Species.' is visible below it.

- For this continual alert, I will be notified whenever Water Chestnut (*Trapa natans*) is reported anywhere in Pennsylvania.

Early Detection Alert

- This type of alert is only active for the first few confirmed reports in your area of interest as a way to notify you of a new species coming into your area.
- Once there are many confirmed reports, you will stop getting notices as this species would now be considered **established** rather than an **early detection** species.

Example of an Early Detection Alert

MapInvasives Pennsylvania Administrator Tools

Welcome back, Any (username) 2/2/11
Home Log Out

Alert Information New Record

Note: Once an alert is created, it cannot be edited (but it can be deactivated).
Note: As a level 9 and above user, your email alerts will trigger on unconfirmed observations.

Basic

Alert type	Early Detection
Geography Type	Waterbody
Geography Name	Ice Pond (MONROE)
Buffer Distance (meters)	
Species By	Species Name
Species Name	Dreissena polymorpha <small>To receive alerts for all species reported in your selected geography, select Species Name = Any Species.</small>
Alerts requested	3 <small>(Number of observations that will trigger alert. Limit 10)</small>
# of Observations	0
Additional Email Contact	additional_email@gmail.com
Active	<input checked="" type="checkbox"/>

Alert type =
Early Detection

Geography Type =
Waterbody

Geography Name =
Ice Pond (Monroe)

Species Name =
Dreissena polymorpha

Alerts requested = 3

- For this Early Detection alert, I will be notified the first three times that Zebra Mussel (*Dreissena polymorpha*) is reported in Ice Pond in Monroe County. The fourth and subsequent observations will not generate an alert.

New to Geography Alert

- This type of alert will notify you when an area of interest you specify receives a report for a new species never reported there before.
This can be for any species, not necessarily an early detection species.
- From this alert, EVERY new record for the specified geography is automatically sent to the user, though only one alert per species is sent.
- This alert is tailored around many species, not just a single species (Continual and Early Detection alerts are better for that purpose).

Example of a New to Geography Alert

Alert Type = New to Geography

Geography Type = Conservation Lands

Geography Name = Rothrock State Forest

Species by = Assessment Type

Assessment Type = Plant Terrestrial

The screenshot shows the 'Alert Information' form in the Pennsylvania Administrator Tools. The form is titled 'Alert Information' and includes a 'Basic' tab. The 'Alert Type' is set to 'New to Geography', 'Geography Type' is 'Conservation Lands', and 'Geography Name' is 'ROTHROCK STATE FOREST'. The 'Assessment Type' is set to 'Plant Terrestrial', which is circled in red. The 'Alerts requested' checkbox is checked, and the 'Additional Email Contact' field is empty. The 'Create Alert' button is at the bottom.

- For this New to Geography alert, I will be notified whenever a new terrestrial plant is reported in Rothrock State Forest, until I deactivate the alert.

Test Your *iMapInvasives* Knowledge!

Correct answers will be rewarded with candy 😊



Question 1

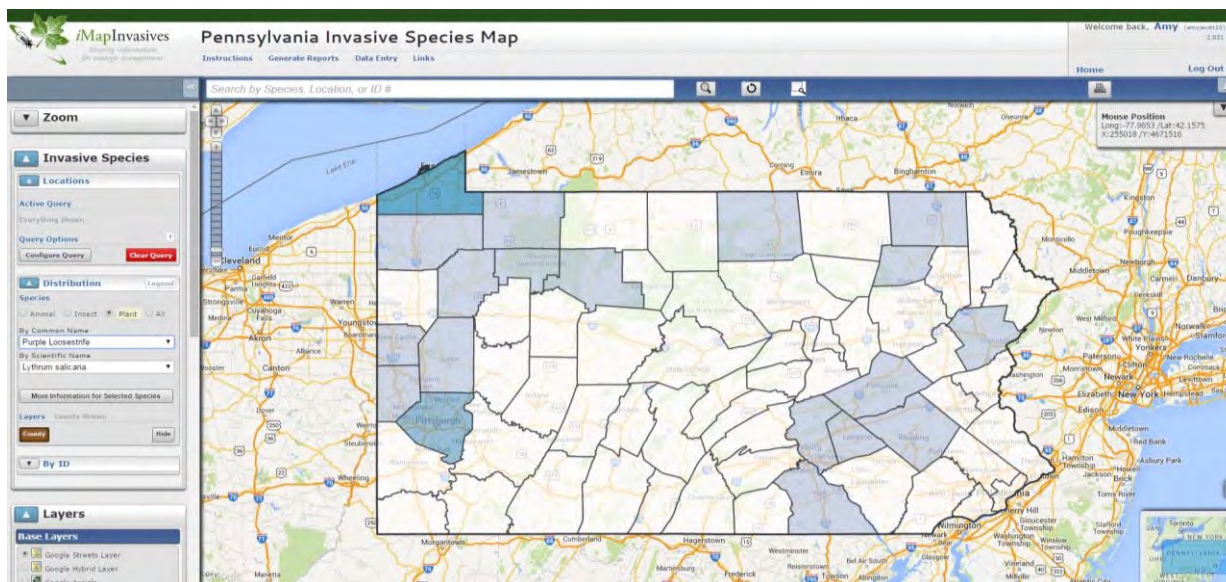
- What are the 5 different types of records you can create in iMapInvasives?
- Answer: Observation, Assessment, Survey, Treatment, and Infestation Management.

Question 2

- When entering an observation record, what are 3 ways you can select the observation location?
- Answer: GPS coordinates, specific address, and location name.

Question 3

- In general, what is this map depicting?



- Answer: County distribution of a species across the state (based on current data in iMapInvasives)

Question 4

- When entering an observation record that was observed by someone else, how do I record that person's name as the observer if they don't have a iMap login account?
- Answer: You can't. Even though you can enter an observation record for someone else, that person must first have an iMap login account to properly record him/her as the observer. A login account can be created by sending the person's name and email address to the iMap administrator.

Question 5

- What happens when I click on a red “observation” circle on the map?

The screenshot displays the 'MapInvasives' web application for Pennsylvania. The main map shows the Erie region with numerous red circular markers representing observations of 'Common Reed'. A pop-up window titled '5 Observations' is overlaid on the map, displaying a table of observation records. The table includes columns for ID, Scientific Name, Common Name, Organization, County, Observed, and Data Status. The data shows five records for 'Phragmites australis' in Erie County, all confirmed observations from 1999 to 2012.

ID	Scientific Name	Common Name	Organization	County	Observed	Data Status
PA-21421	Phragmites australis ssp. australis	Common Reed	Weed Warriors	Erie	2012-07-25	Confirmed
PA-32833	Phragmites australis ssp. australis	Common Reed	Weed Warriors	Erie	2012-06-11	Confirmed
PA-30120	Phragmites australis ssp. australis	Common Reed	Weed Warriors	Erie	2000-07-28	Confirmed
PA-30140	Phragmites australis ssp. australis	Common Reed	Weed Warriors	Erie	2000-06-15	Confirmed
PA-30100	Phragmites australis ssp. australis	Common Reed	Weed Warriors	Erie	1999-07-15	Confirmed

Answer: A concise list of all associated observations appears and provides a link to each individual observation record found in the list.

Question 6

- What is the function of an early detection email alert?
- Answer: An early detection alert provides a way to notify you of a new species coming into your area. Once there are many confirmed reports for a certain species, you will stop getting alerts as this species would now be considered **established** rather than an **early detection** species.

Question 7

- What is an iMapInvasives project?
- Answer: A project in iMap is a way to group certain data together for easier and more efficient querying later on.

Question 8

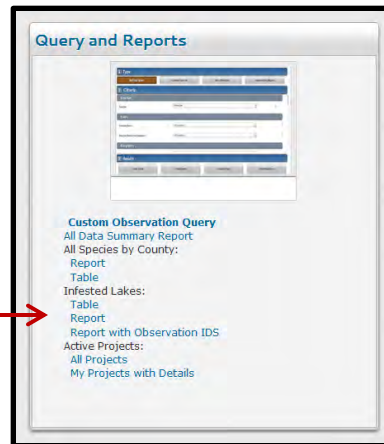
- If I wanted to set a customized filter to view only aquatic invasive animals found in Montgomery County, what tool would I use?
- Answer: The Custom Observation Query tool found on the Main Navigation page under the Query and Reports section.

Question 9

- True or False: When entering a survey record, only presence data can be entered.
- Answer: False; surveys in iMapInvasives allow users to record both presence and absence data.

Question 10

- What is the name of the tool which allows you to view a specific report about invasive species infesting Pennsylvania's lakes?



- Answer: The Infested Lakes Report located on the Main Navigation page under the Query and Reports section.

Bonus Question!

- What should I do when I have a question on how to use the iMapInvasives database (and where can this info be found)?
- Answer: Send an email to imapinvasives@paconserve.org or call 412-586-2305. You can find this info on the new PA iMapInvasives Homepage.

Please be in touch with any questions or comments...

Mary Walsh

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