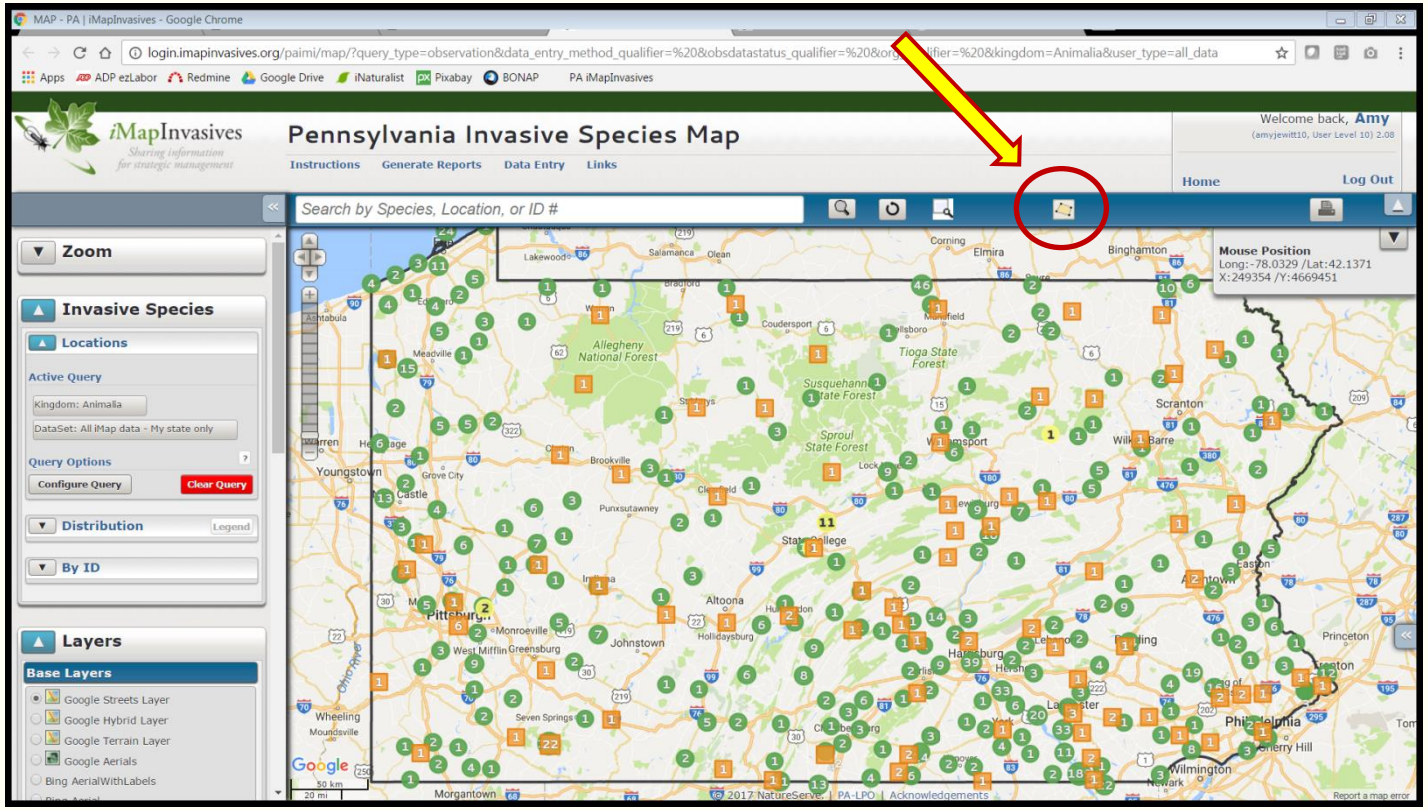
LASSO TOOL

Better understand species distributions when using the map.

Lasso Tool

The lasso tool provides a faster and more effective way to understand which species have been found in a certain area on the map.

How to access the lasso tool?

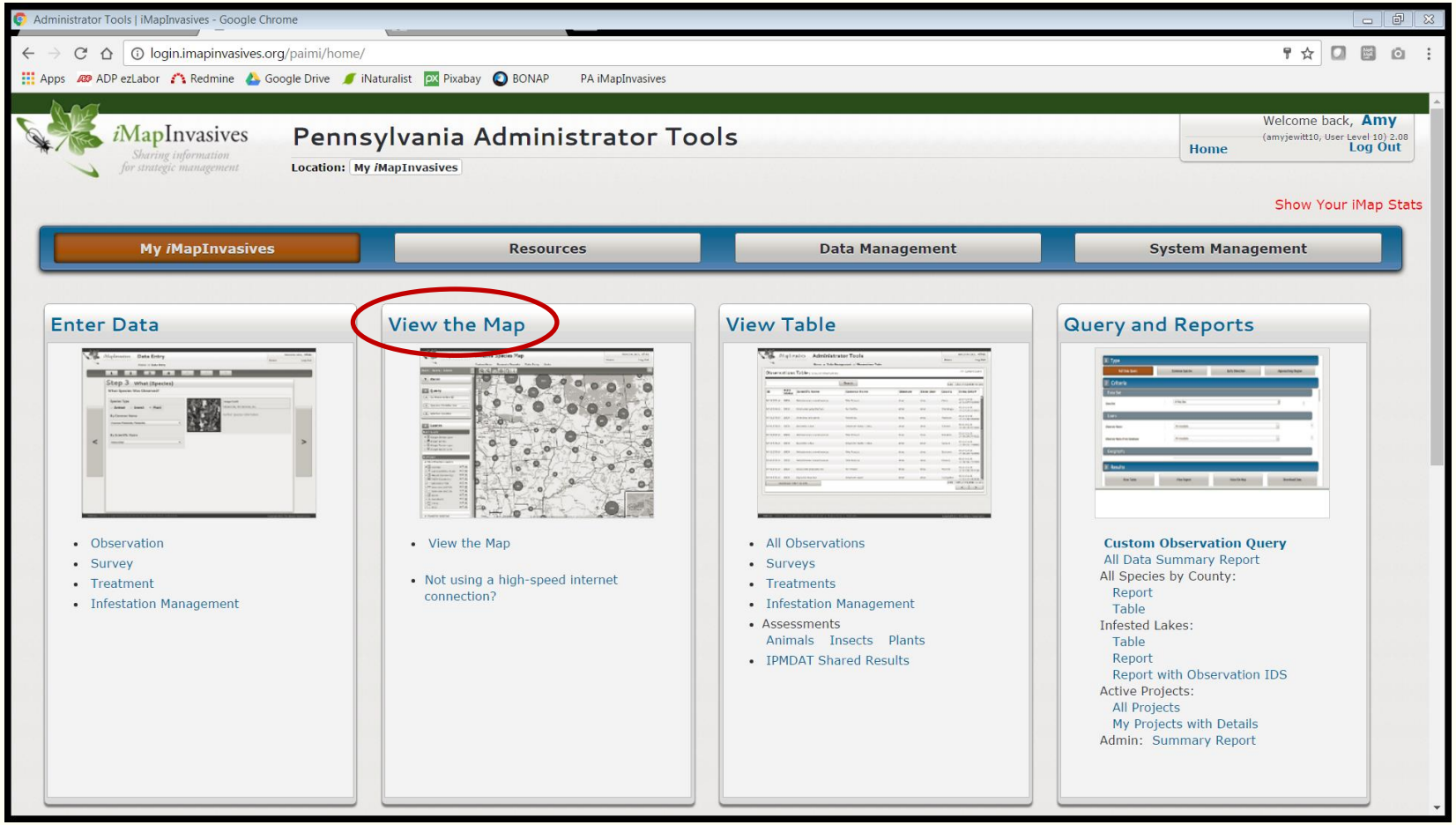


Based on symbology alone, it is impossible to know which species are being represented on the map in this screenshot. With the lasso tool, this task is made possible.

Example of Using the Lasso Tool

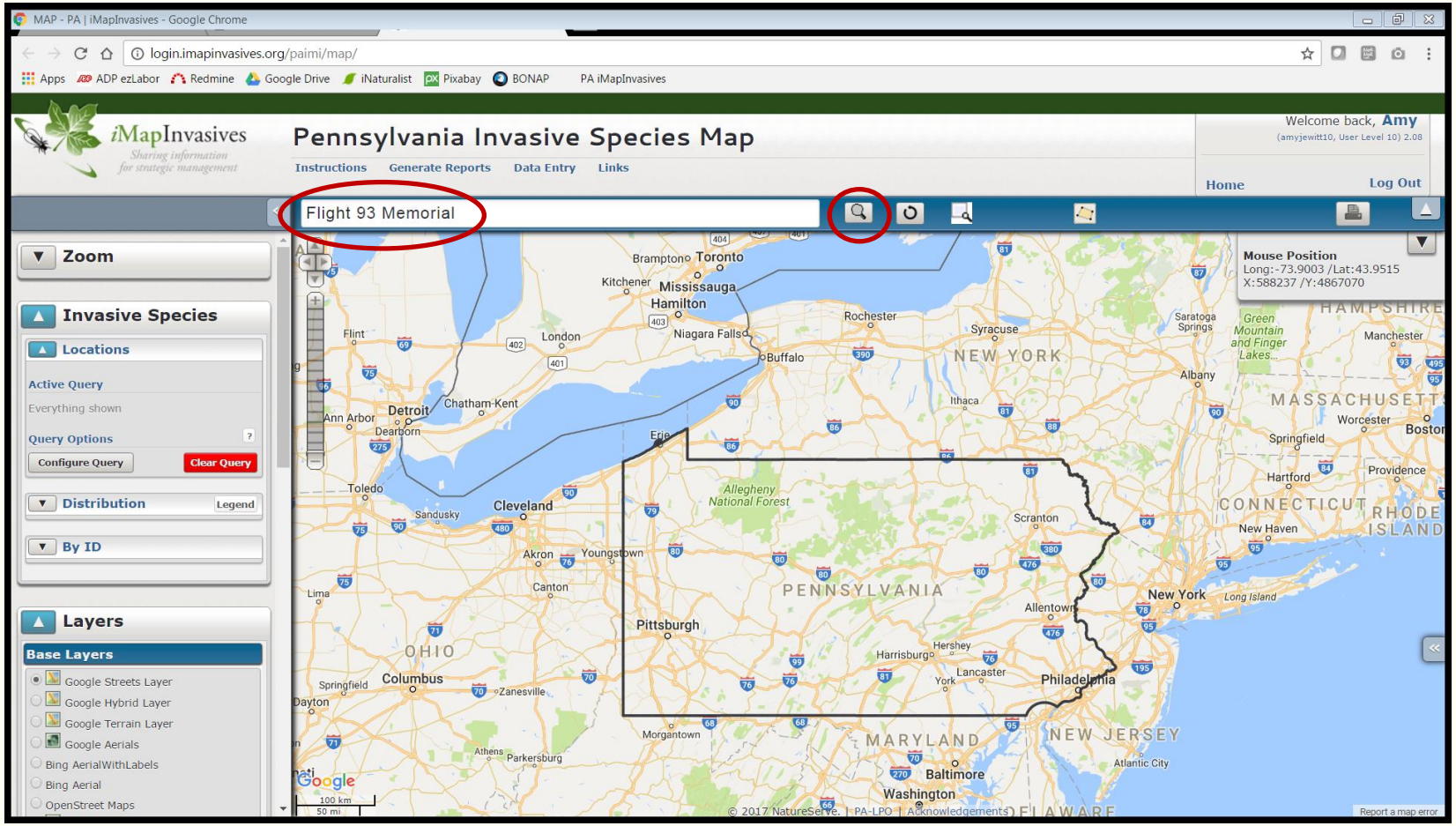
I want to see all the invasive species findings reported at the Flight 93 National Memorial in iMapInvasives.

Lasso Tool – Flight 93 National Memorial Example



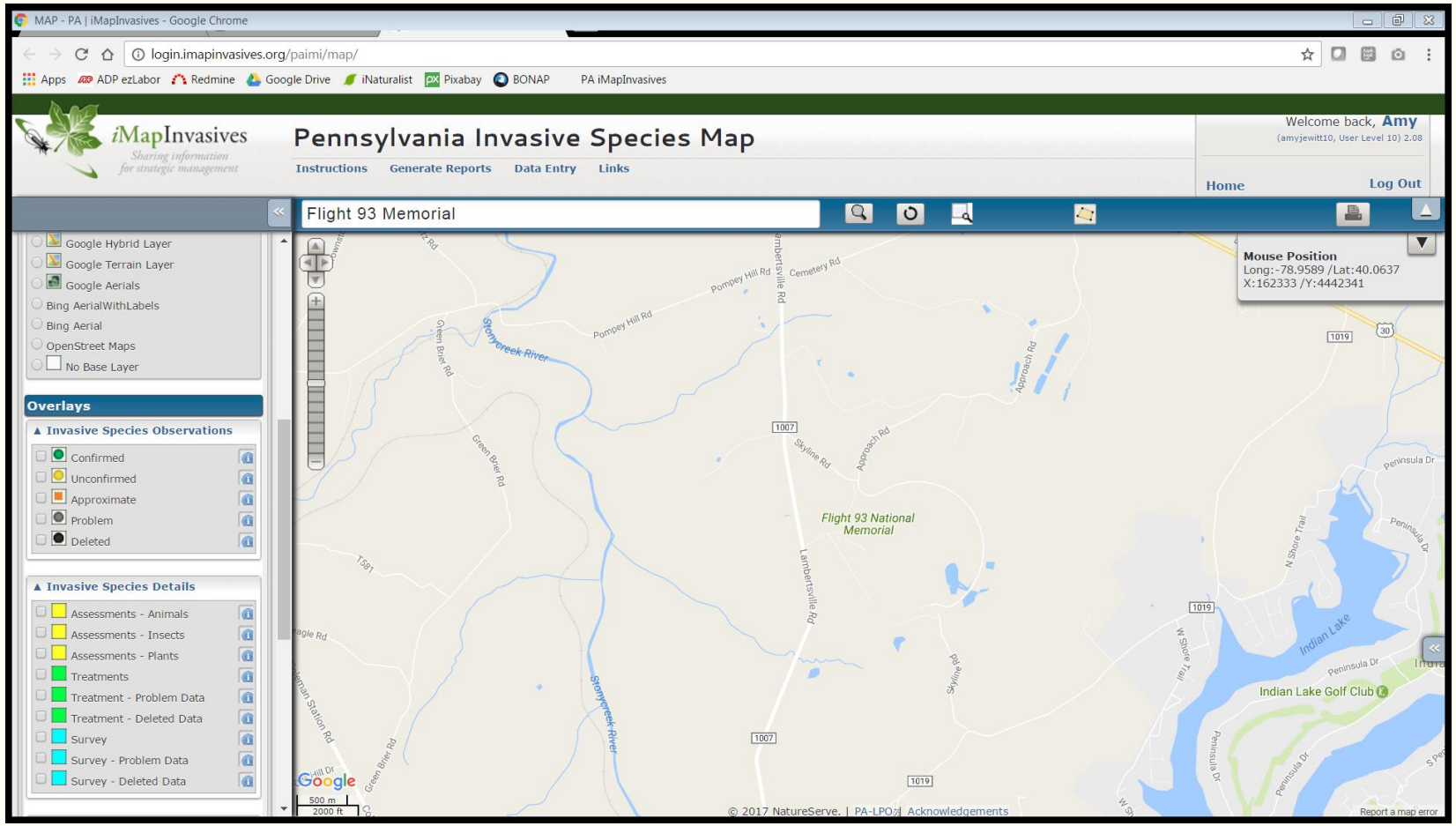
1. Open the map from the main navigation page.

Lasso Tool – Flight 93 National Memorial Example



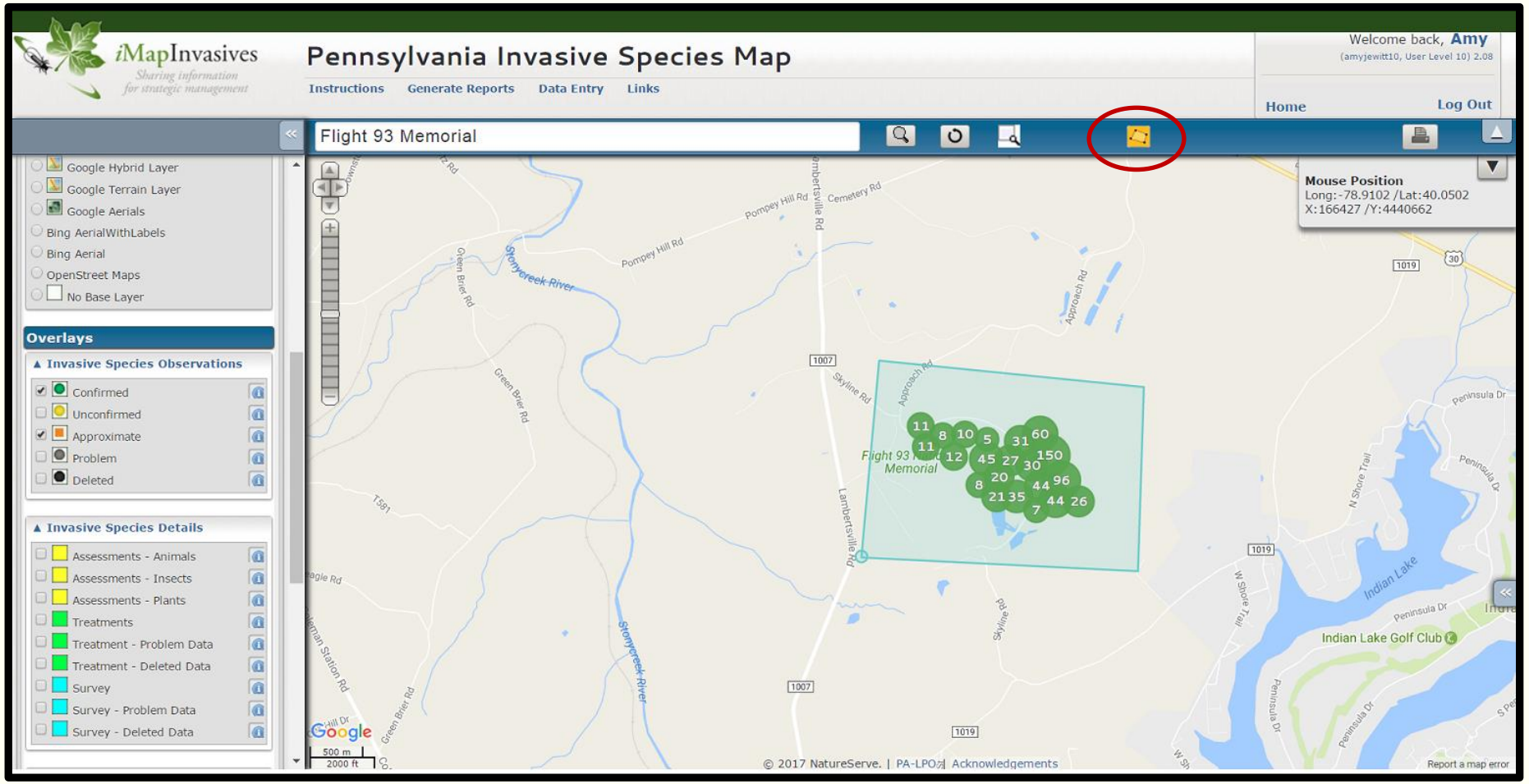
2. Zoom to the desired area using the zoom ladder (left side of map) OR use the search bar by typing “Flight 93 Memorial” and clicking the magnifying glass to search.

Lasso Tool – Flight 93 National Memorial Example



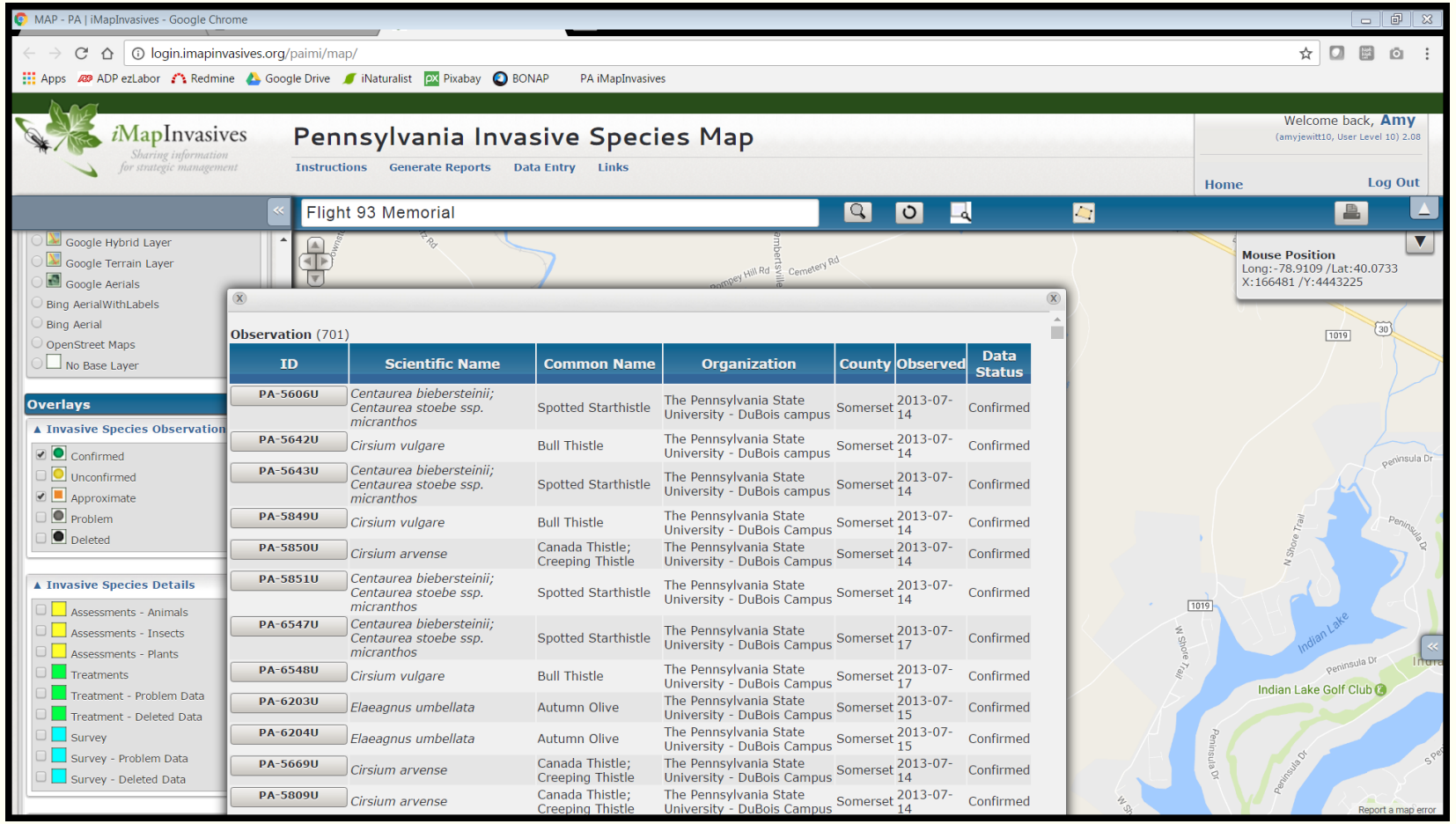
3. Turn on the "Confirmed" and "Approximate" data layers. (This may take a few moments.)
Do not turn on "Unconfirmed" data as this data has not been reviewed by the Administrator.

Lasso Tool – Flight 93 National Memorial Example



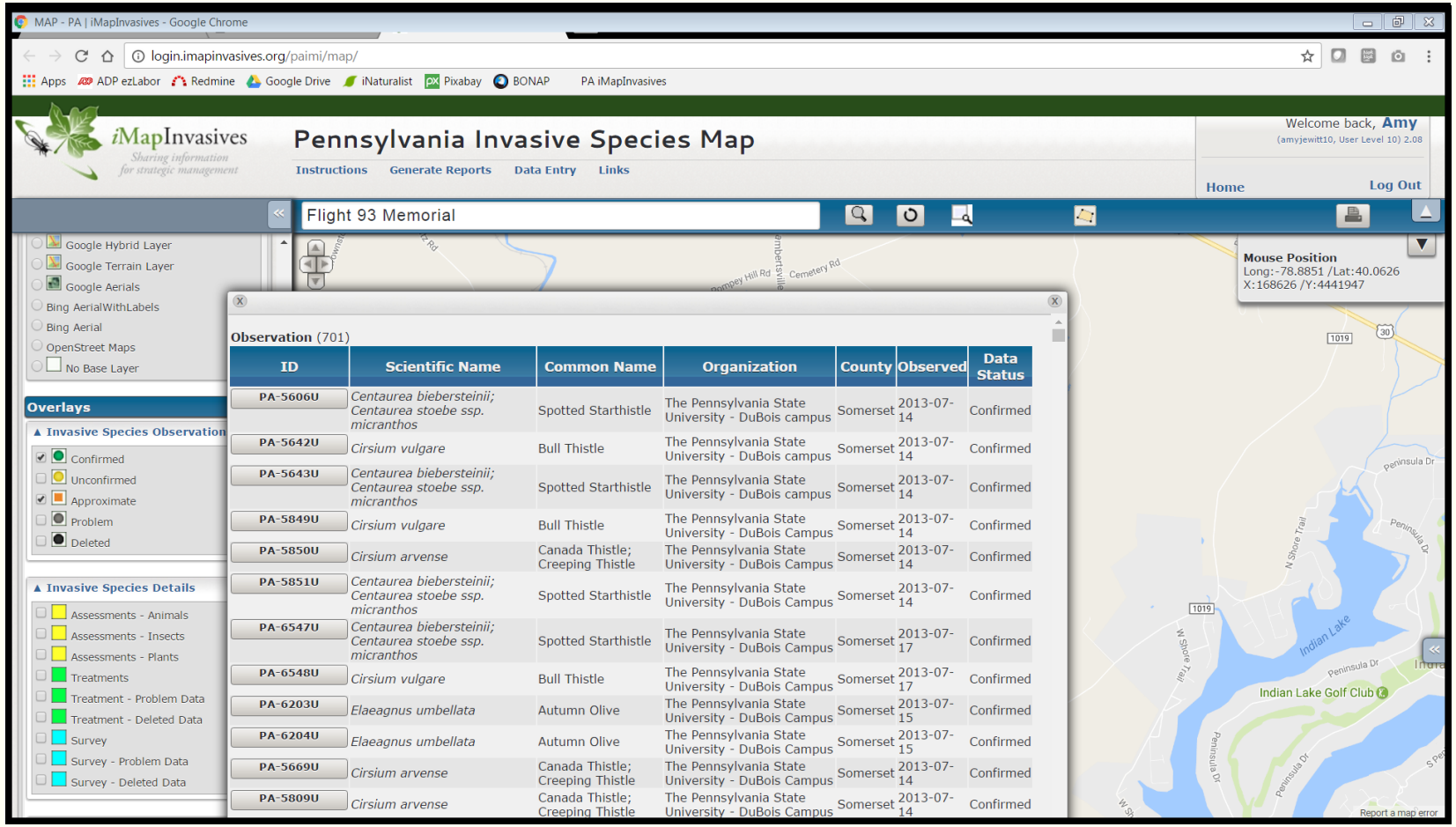
4. Click the lasso tool and draw a box around the data you wish to analyze. Double click to finish drawing your polygon.

Lasso Tool – Flight 93 National Memorial Example



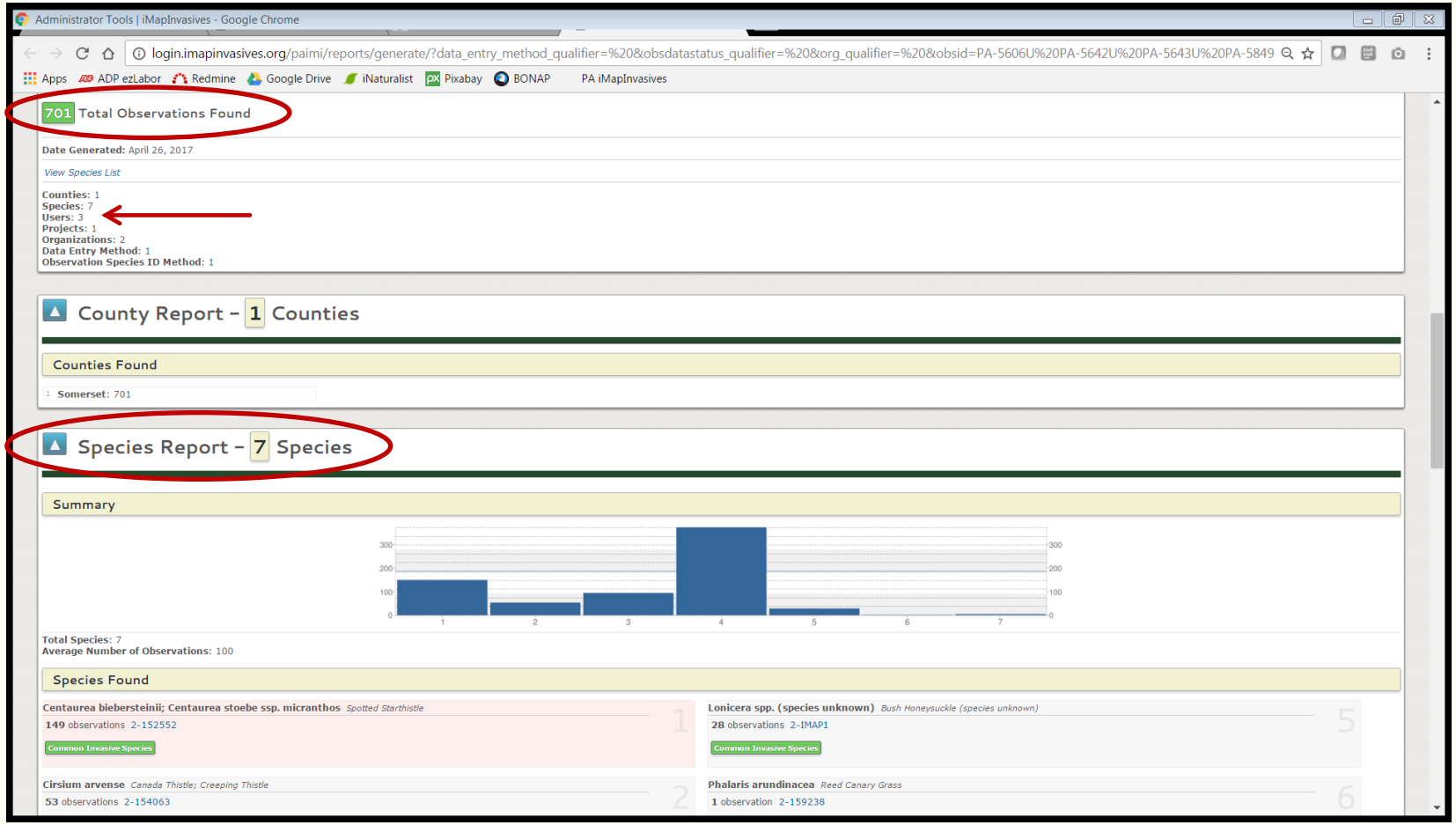
5. Watch as a window appears, detailing all the selected records.

Lasso Tool – Flight 93 National Memorial Example



6. Scroll to the bottom of the window. There you'll see buttons which allow you to view this data in a Report or Table format.

Lasso Tool – Flight 93 National Memorial Example



Species include:

Spotted starthistle
Canada thistle
Bull thistle
Autumn olive
Bush honeysuckle
Reed canary grass
Multiflora rose

7. Here's what the data would look like in a report. We can quickly see that there are 701 observations, 7 invasive species being reported on, and 3 observers.

EMAIL ALERTS

Quickly find out about new invasive species findings that are relevant to you.

Benefits of Using Email Alerts

EMAIL ALERTS THAT ARE ACTUALLY USEFUL

- Stay informed of recent invasive species findings.
- Prioritize your organization's survey and treatment efforts based on information provided in alerts.
- Take action to prevent the spread of rare invasive species or species recently discovered in Pennsylvania for the first time.

Note: There are 3 alert types are available in iMapInvasives. Make use of the alert(s) that best suit your needs.

Take action based on data from email alerts!

Volunteers participating in a water chestnut pull.
Photo credit: www.timesunion.com

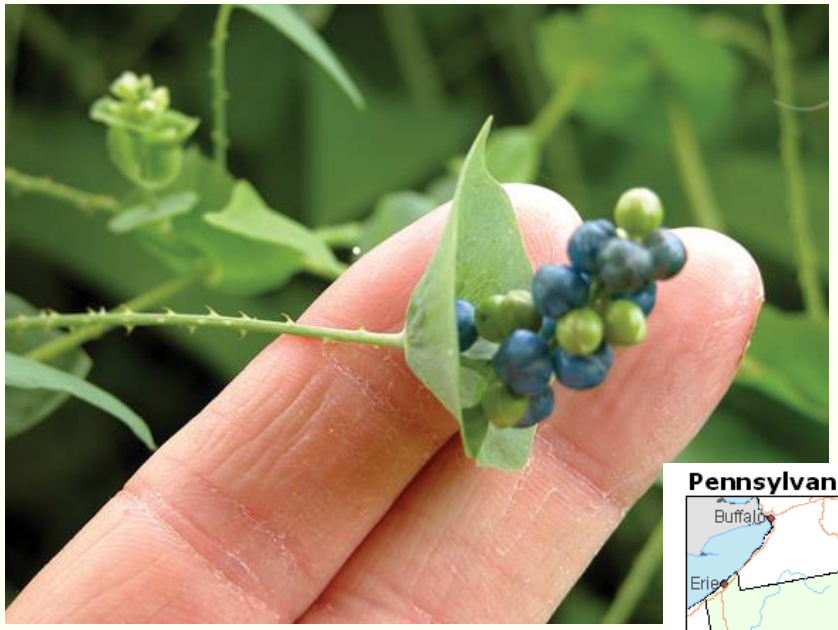
Alert #1: Continual Alert

- Puts a focus on:
  - Any one species, or group of species, which you have an interest in staying aware of.
- You choose an area of interest such as:
  - County
  - CWMA
  - Waterbody
  - All of Pennsylvania
- Which observations trigger this alert?
  - Observations found one year ago or sooner.

This is the most basic alert type and is useful in staying informed of invasive species findings that are important to you.

Example:

Alert me every time Mile-a-minute vine is found in the town of Murrysville, Pennsylvania.



Mile-a-minute vine
Photo credit: Connecticut Gardener

Other Examples of a Continual Alert

1. Alert me any time Callery Pear is reported in Valley Forge National Historic Park.

Photo credit: The Daily South – Southern Living

Photo credit: Maryland Biodiversity Project

2. Alert me any time Bog bulrush is reported in Philadelphia County.

3. Alert me any time Water chestnut is reported anywhere in Pennsylvania.

Photo credit: Chesapeake Bay Program

Alert #2: Early Detection Alert

- Puts a focus on:
  - Species that are rare or not yet found in Pennsylvania.
- You choose an area of interest such as:
  - County
  - CWMA
  - Waterbody
  - All of Pennsylvania
- Which observations trigger this alert?
  - Observations found one year ago or sooner.
- Note: iMapInvasives considers a species "Early Detection" if there are three or fewer observations for that species in a specified geography.
  - Example: Only **two reports** for wavy leaf basketgrass have been reported in **York County**, making this species an "Early Detection" species.

This alert type is useful in "raising a red flag" when new or rare species are found in Pennsylvania (to aid in Early Detection and Rapid Response efforts).

Example:

Alert me if Wavyleaf basketgrass is found anywhere in Pennsylvania.

Other Examples of an Early Detection Alert

Photo credit: Wikipedia

Water solider
(*Stratiotes aloides*)

Not yet found in Pennsylvania – First report would trigger ED alert.

Photo credit: Pixabay

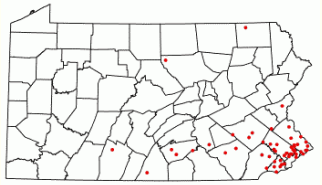
Policeman's helmet
(*Impatiens glandulifera*)

Not yet found in Pennsylvania – First report would trigger ED alert.

Photo credit: per.aasen/Flickr

Pond water-starwort
(*Callitriche stagnalis*)

Rare in Pennsylvania – Additional reports would trigger ED alert.



Alert #3: New to Geography Alert

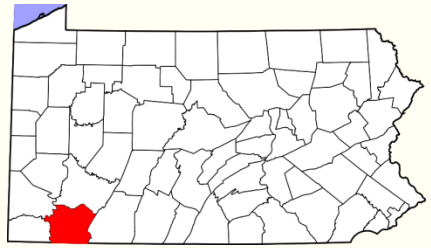
- Puts a focus on:
  - A group of species (*i.e., not individual species*).
  - Species found in an area where they've never been found before.
- You choose an area of interest such as:
  - County
  - CWMA
  - Waterbody
  - All of Pennsylvania
- Which observations trigger this alert?
  - Observations reported up to 200 years ago.

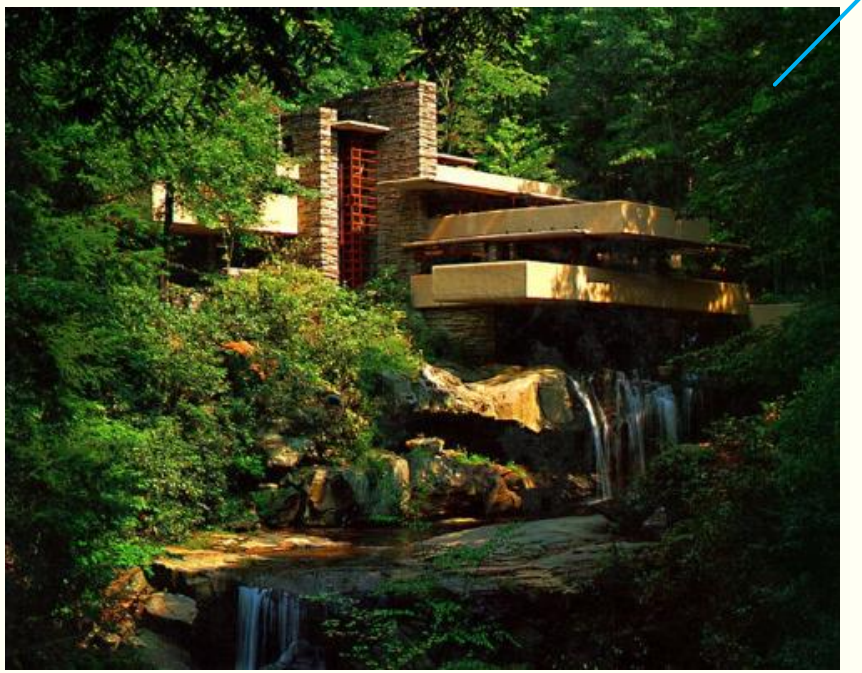
This alert type is useful if you already know the species that are found in a particular place, and you want to be notified when a species never reported there before is found for the first time.

(Different from an early detection alert.)

Example:

Alert me when any **NEW** terrestrial plant is reported in Bear Run Nature Reserve (Fayette County).

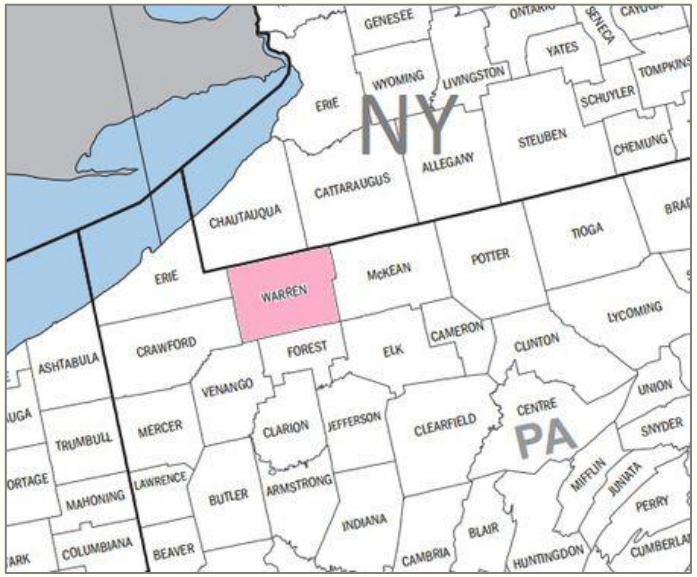




Bear Run Nature Reserve is home to the famous Fallingwater house, owned and operated by the Western Pennsylvania Conservancy.
Photo credit: archimess.tumblr.com

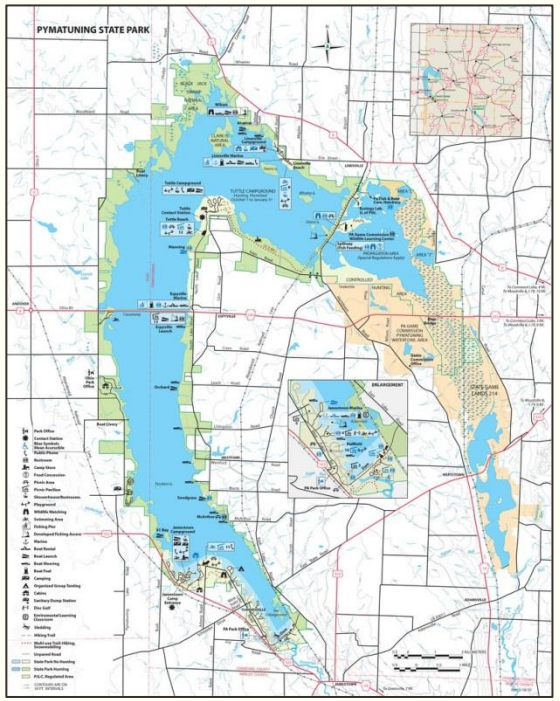
Other Examples of a New to Geography Alert

1. Alert me when any NEW plant species is reported in Warren County.



Geography Type = County

Geography Type = Waterbody



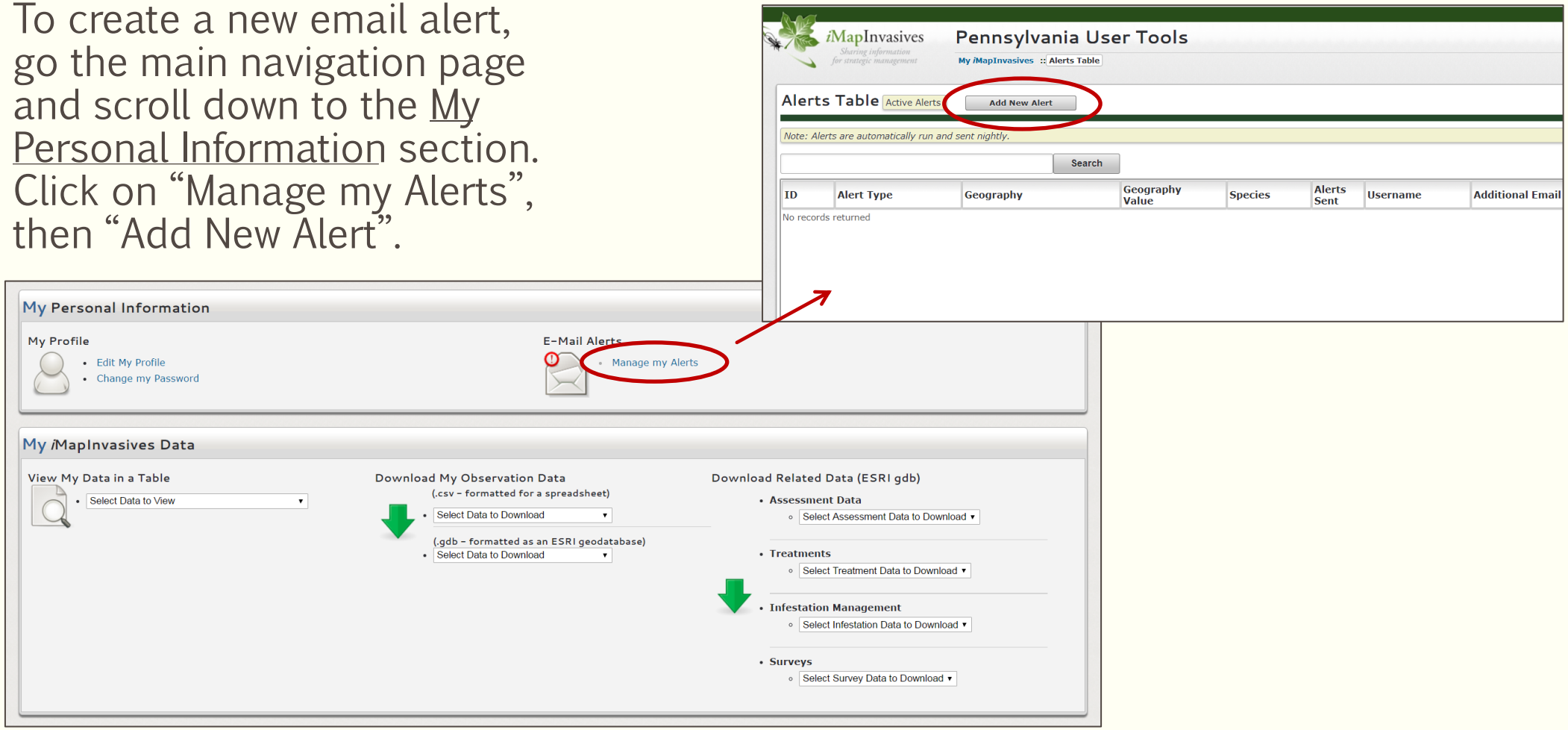
2. Alert me when any NEW aquatic animal is reported in the Pymatuning Reservoir.

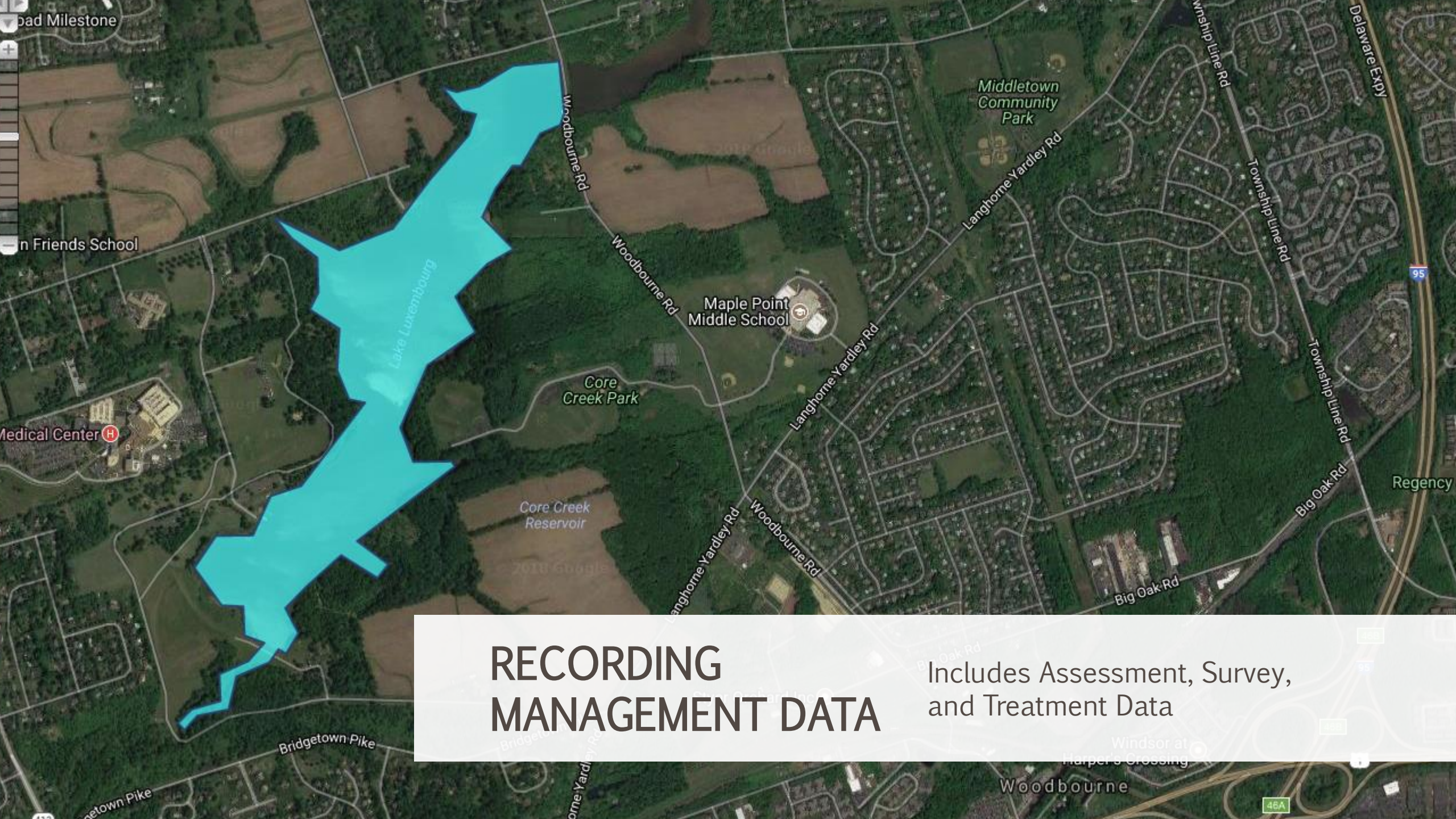
3. Alert me when any NEW terrestrial plant species is reported in Bucktail State Park.

Geography Type = Conservation Lands

Email Alerts

- To create a new email alert, go the main navigation page and scroll down to the My Personal Information section. Click on “Manage my Alerts”, then “Add New Alert”.





RECORDING MANAGEMENT DATA

Includes Assessment, Survey, and Treatment Data

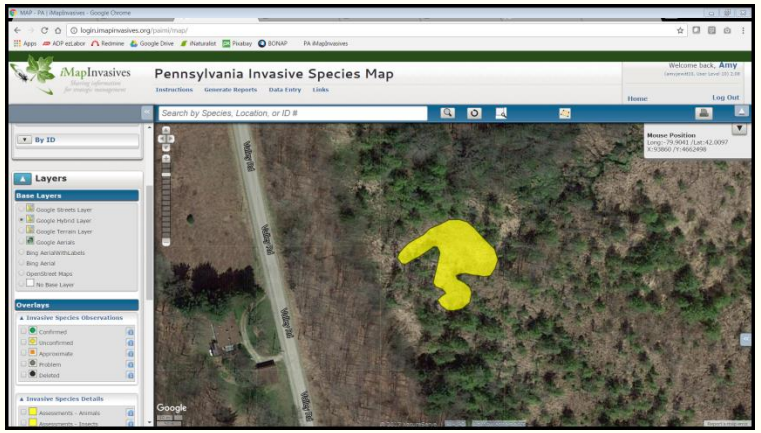
Assessment Data

Useful in documenting efforts to better understand the impacts caused by an invasive species at a specific location.

Reasons for capturing assessment data:

- Document size of infestation
- Understand what the threats are to a certain area
- Intensity of infestation
- Damage done to a location
- Pre- and post-treatment planning and evaluations

Example: This infestation of purple loosestrife is best documented in iMapInvasives as an assessment record. An assessment allows a user to accurately record population size, damage being caused to the surrounding landscape, and plans for action in the future.



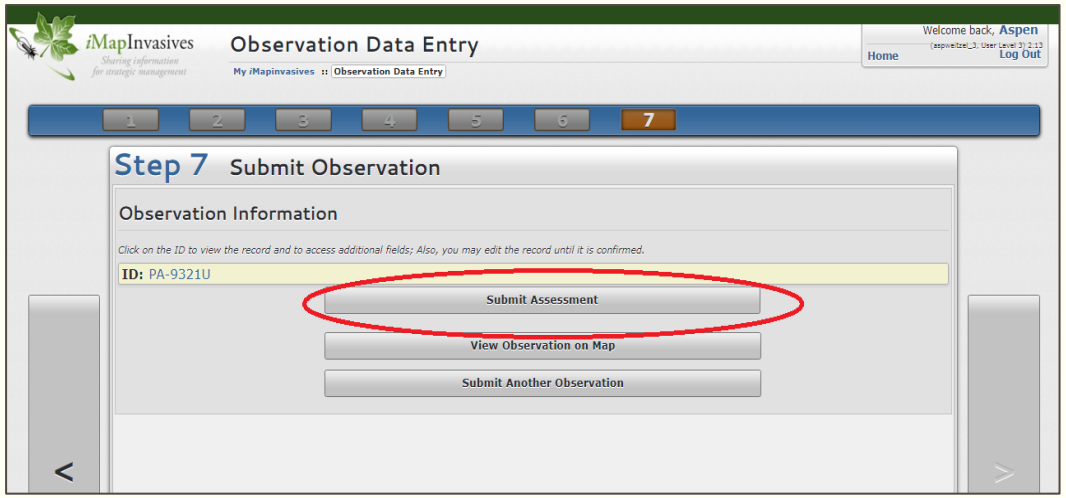
How to Enter an Assessment

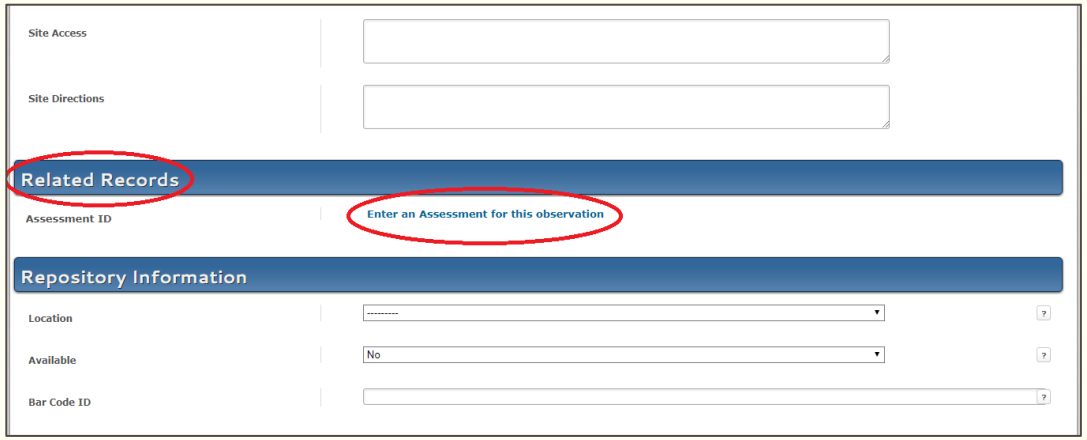
Two ways to enter an Assessment:

- Create a new observation record. After creating a new record, click on "Submit Assessment" button in Step 7.

OR

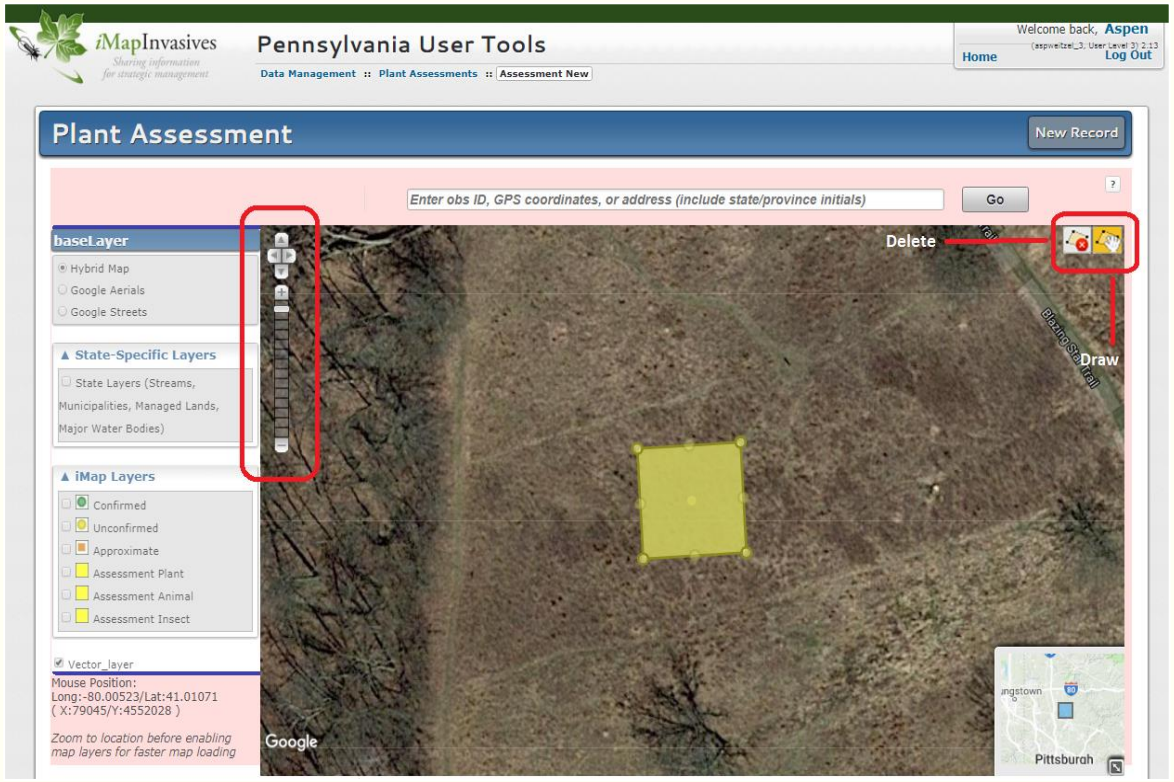
- Open existing observation record that you've created. Scroll to Related Records section; click on "Enter an Assessment for this observation" hyperlink.

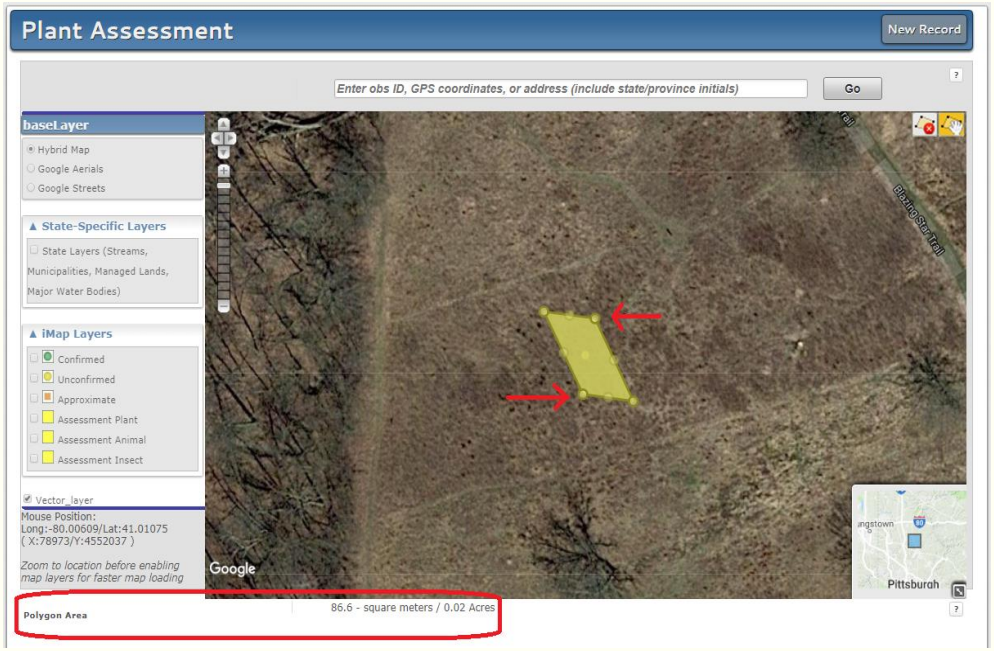




How to Enter an Assessment

Create polygon around infested area using drawing tools on map.

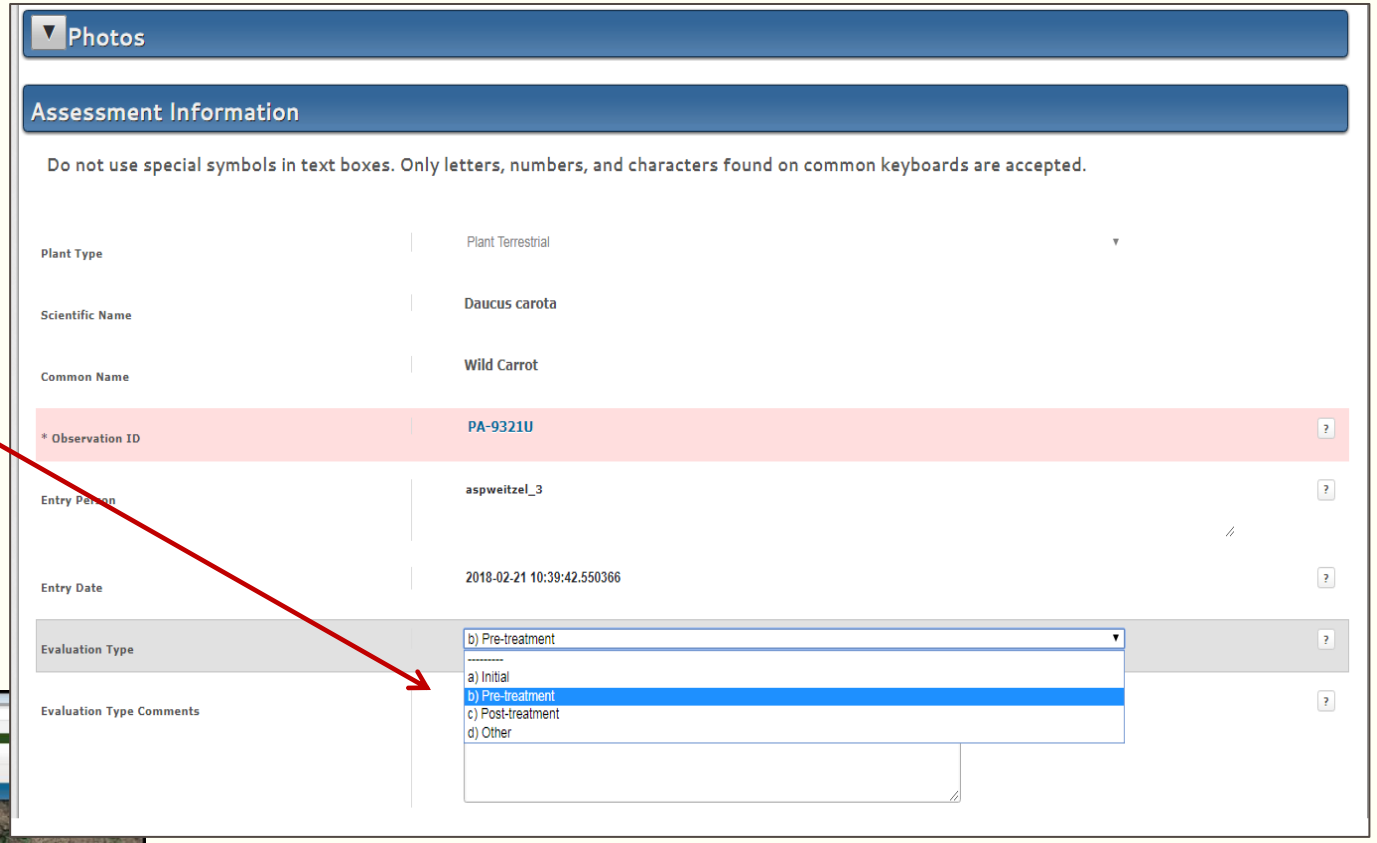


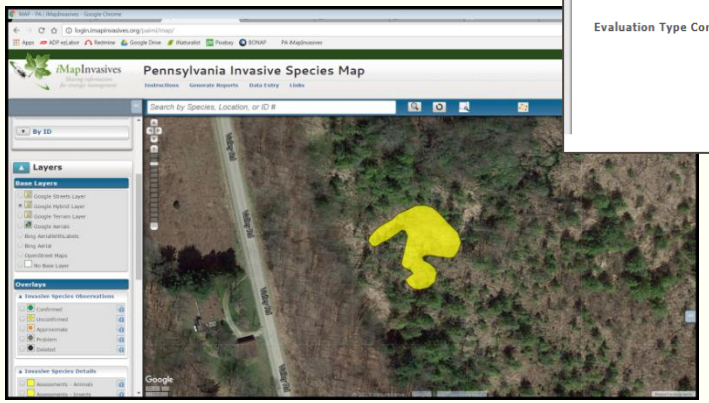


How to Enter an Assessment

Next, fill in data fields including:

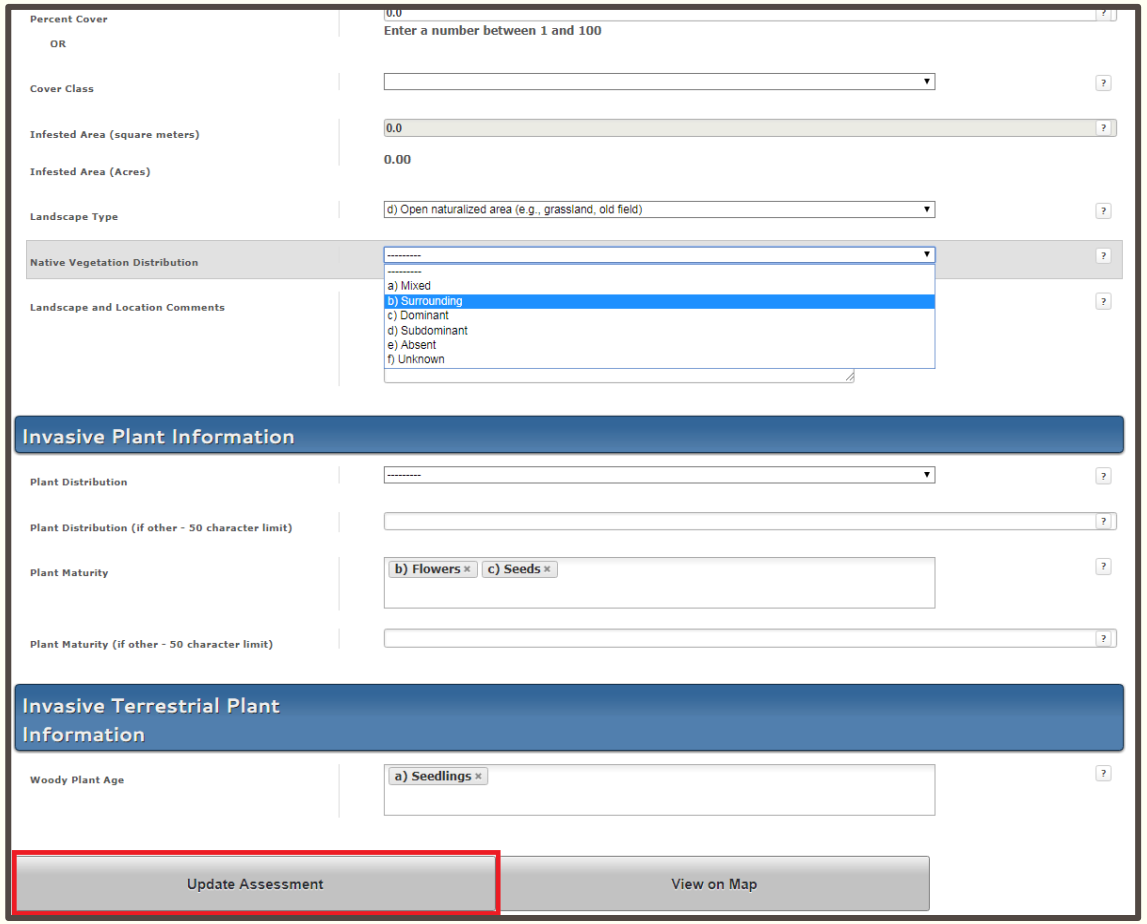
- Evaluation type
  - Pre-treatment
  - Post-treatment
  - Other
- Plant distribution
- Plant maturity
- Landscape type
- Cover class and/or percent cover





How to Enter an Assessment

When finished, click Update Assessment to submit the record.



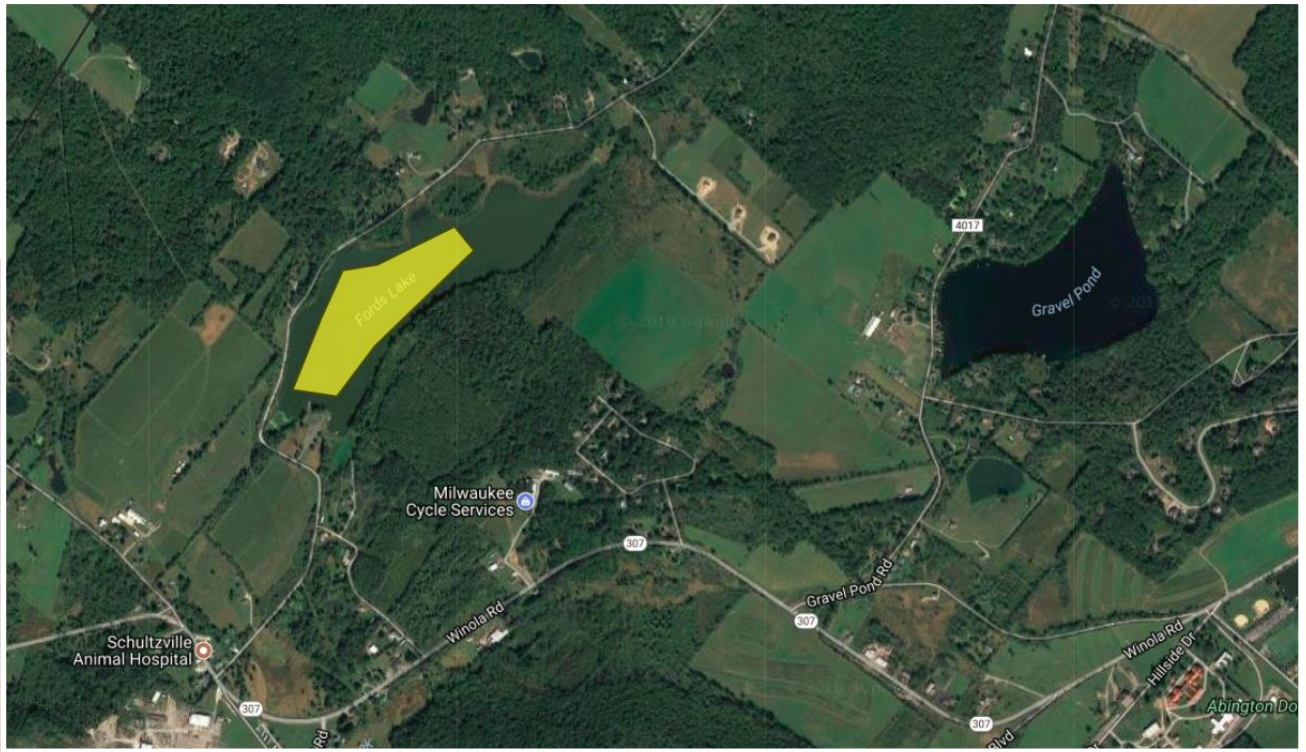
Examples of Assessment Data

- #1: Severe infestation of water chestnut (*Trapa natans*) at Bradford Reservoir in Bucks County.
  - Entered by a citizen scientist who participated in the 2017 Water Chestnut Chasers Challenge

Total infested area = 17.58 acres

Examples of Assessment Data

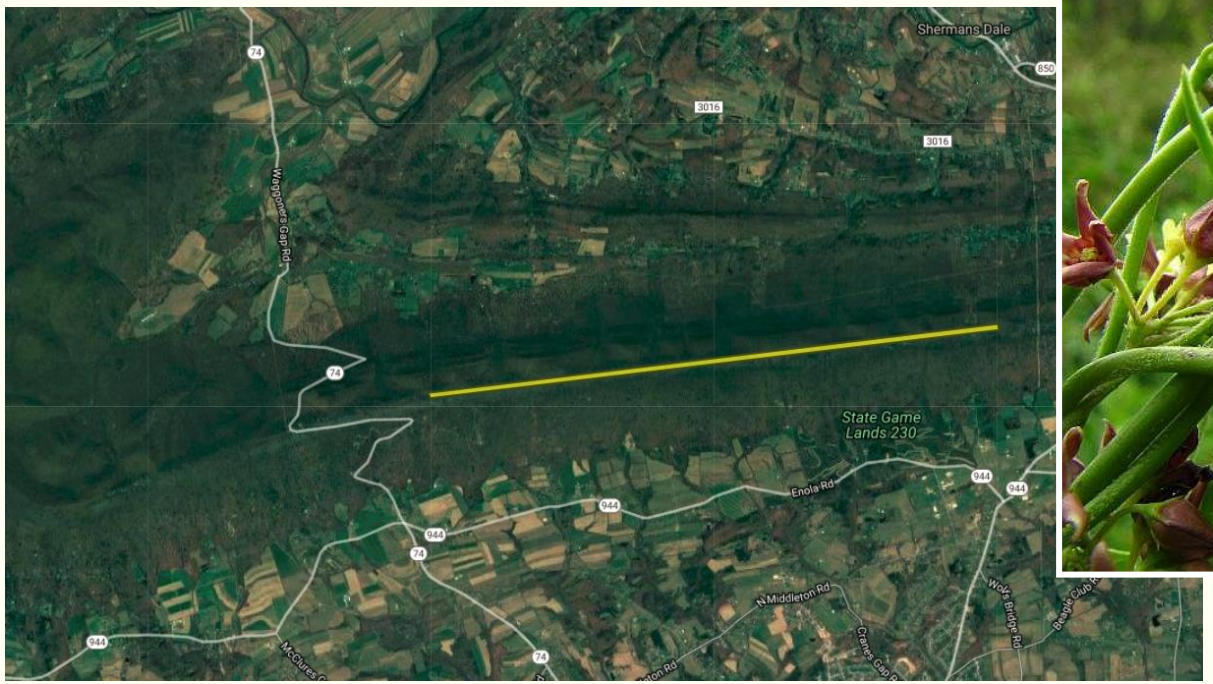
- #2: Population of curly-leaf pondweed in Fords Lake in Lackawanna County.
  - Entered by PA DEP employee.



Total infested area = 25.86 acres

Examples of Assessment Data

- #3: Sporadic patches of swallowwort species along ridgeline near SGL 230 in Cumberland County.
  - Entered by DCNR BOF employee.



Total infested area = 149.29 acres

Survey Data

Conduct a planned search of an area to determine the presence or absence of specific invasive species.

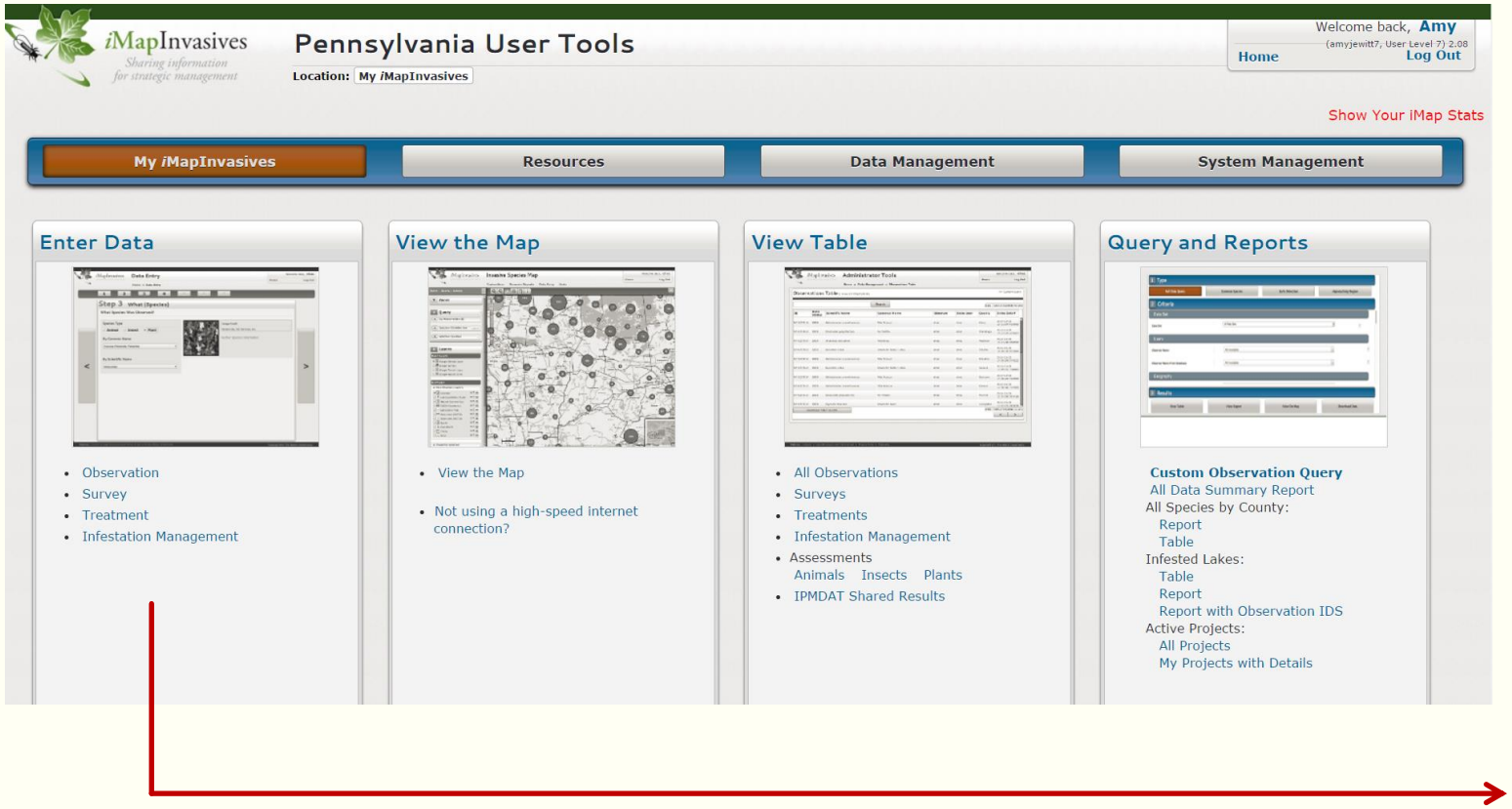
Examples for why to document survey data:

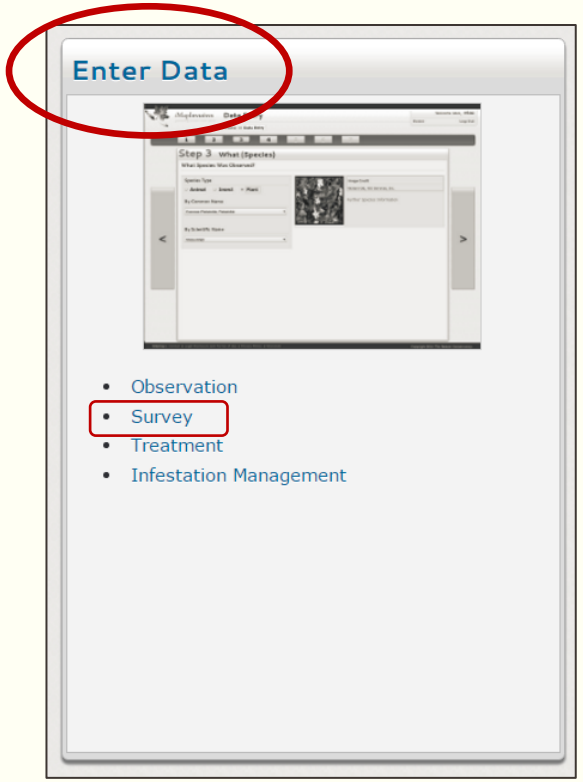
- Capture data collected at a BioBlitz
- Conduct academic research on the distribution of a single species
- Community group in charge of maintaining a park
- Accurately document land stewardship activities
- Record negative/absence data
  - Only method available in iMapInvasives to record where an invasive species **wasn't found**.

Use of glass-bottomed bucket to survey for underwater invasive species. Photo credit: adkinvasives.com

How to Enter a Survey

On main navigation page, click on “Survey” in the Enter Data section.

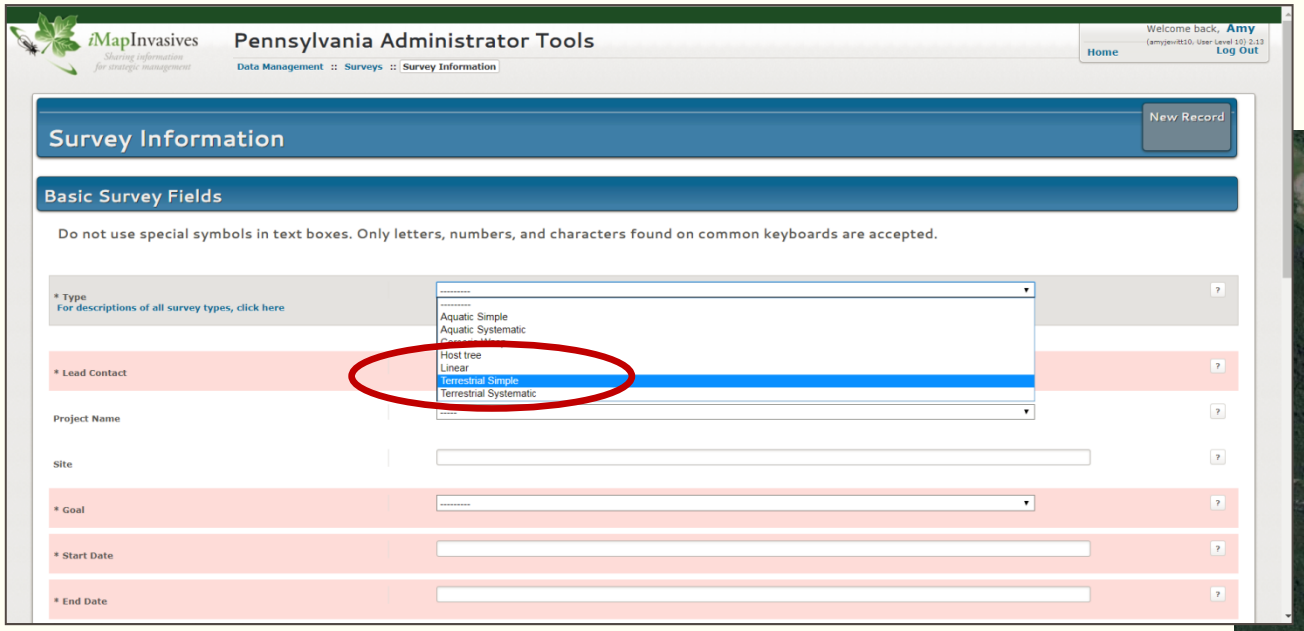




How to Enter a Survey

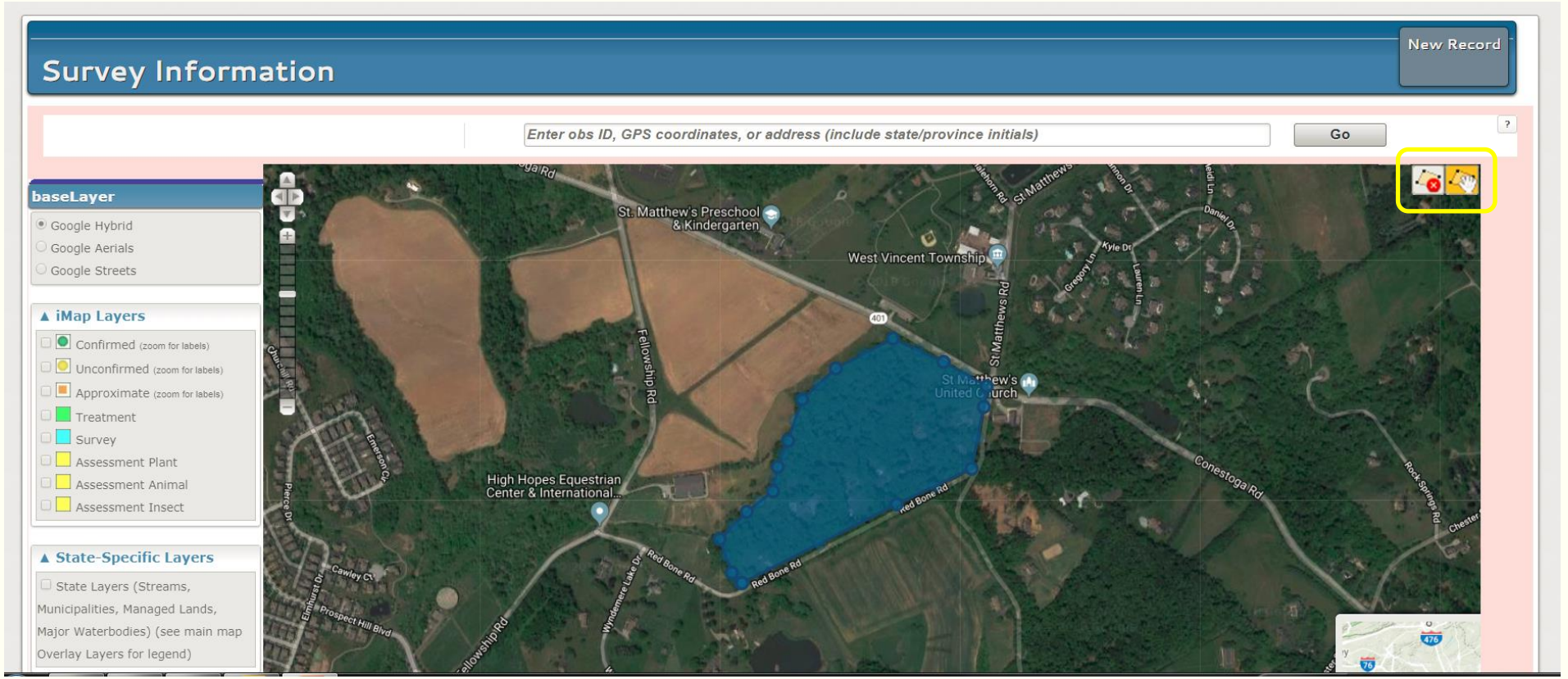
Choose the type of survey you'd like to create. Various options are available, and each will populate specific fields to fill in.

- For this example, I'll choose Terrestrial simple.



How to Enter a Survey

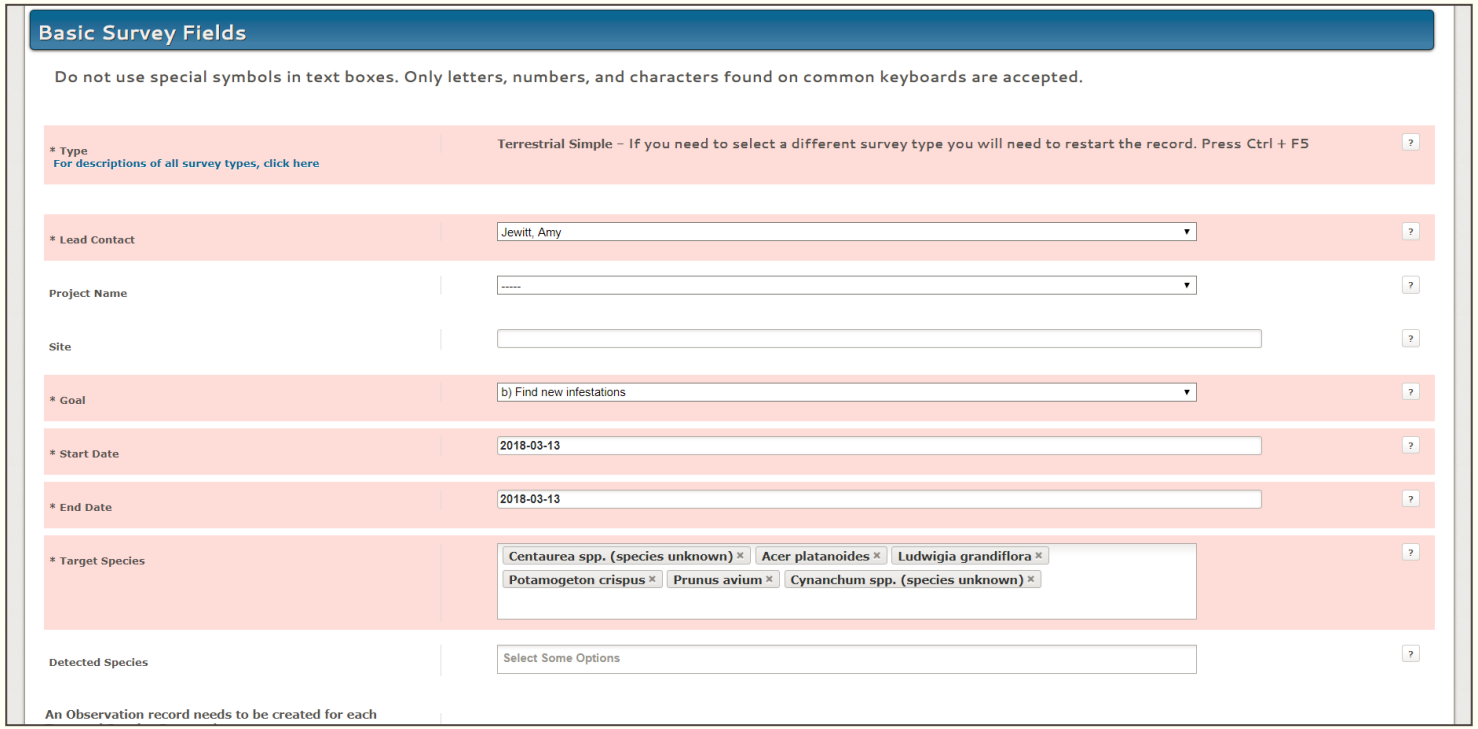
Create a polygon around the area surveyed using drawing tools on map.



How to Enter a Survey

Next, fill in data fields.
Fields highlighted in pink are required.

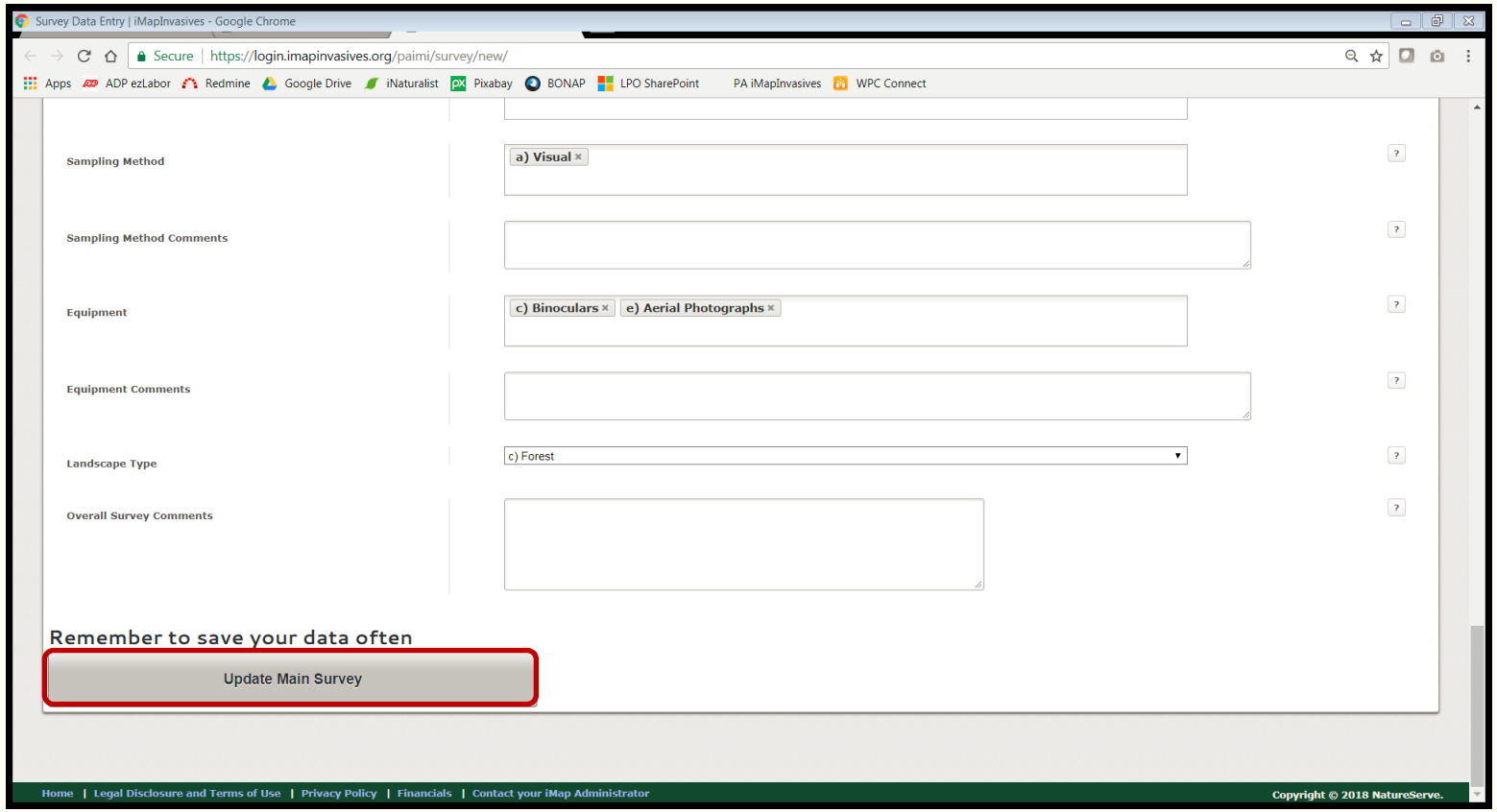
- Goal
- Start/end date
- Target species
- Focus area of survey
- Sampling method
- Equipment
- Landscape type



Here I've selected myself as the Lead Contact; Goal is to find new infestations, Start and end dates are the same (March 13, 2018), and the species that I will be searching for are listed.

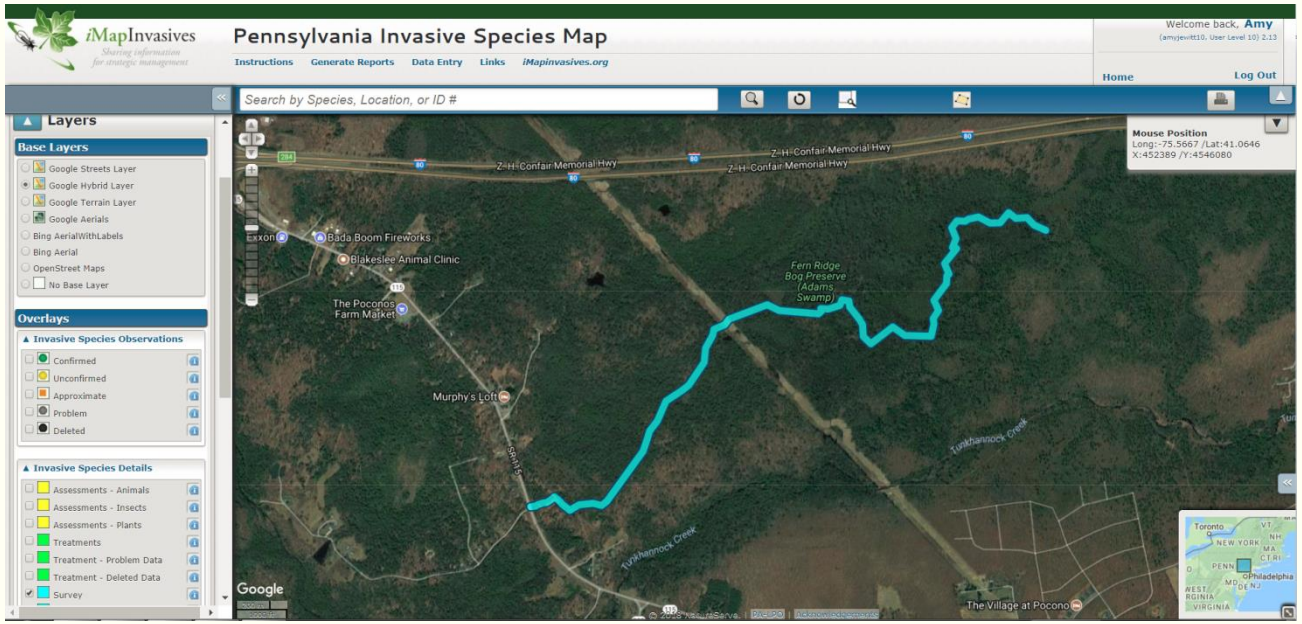
How to Enter a Survey

When finished, click Update Survey to submit the record.



Examples of Survey Data

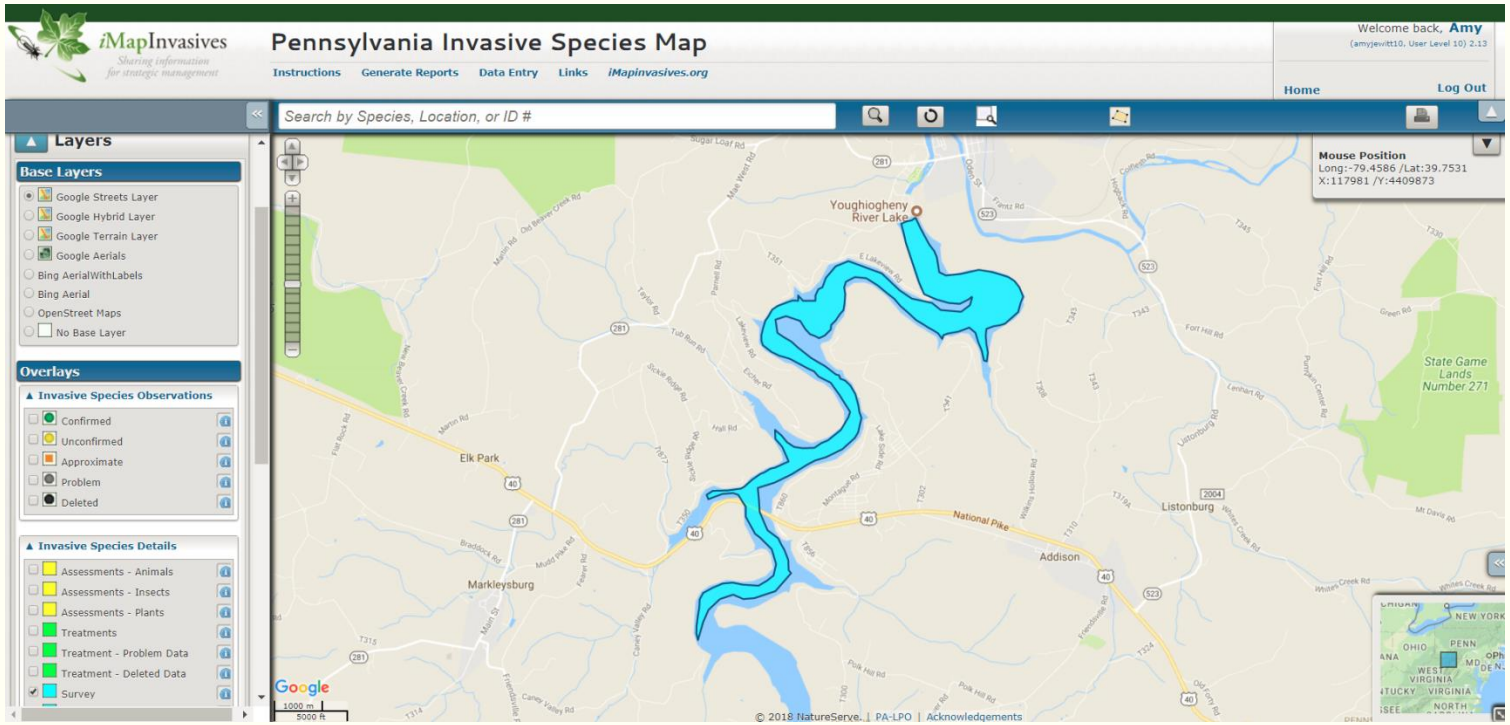
- Area surveyed near Fern Ridge Bog Preserve in Monroe County.
- Survey of trail for various terrestrial and wetland species including:
  - Japanese barberry
  - Honeysuckle spp.
  - Purple loosestrife
  - Common reed
  - Japanese knotweed
  - Multiflora
- Detected species = Japanese barberry
- Entered by a staff member of The Nature Conservancy.



Total area surveyed = 37.78 acres

Examples of Survey Data

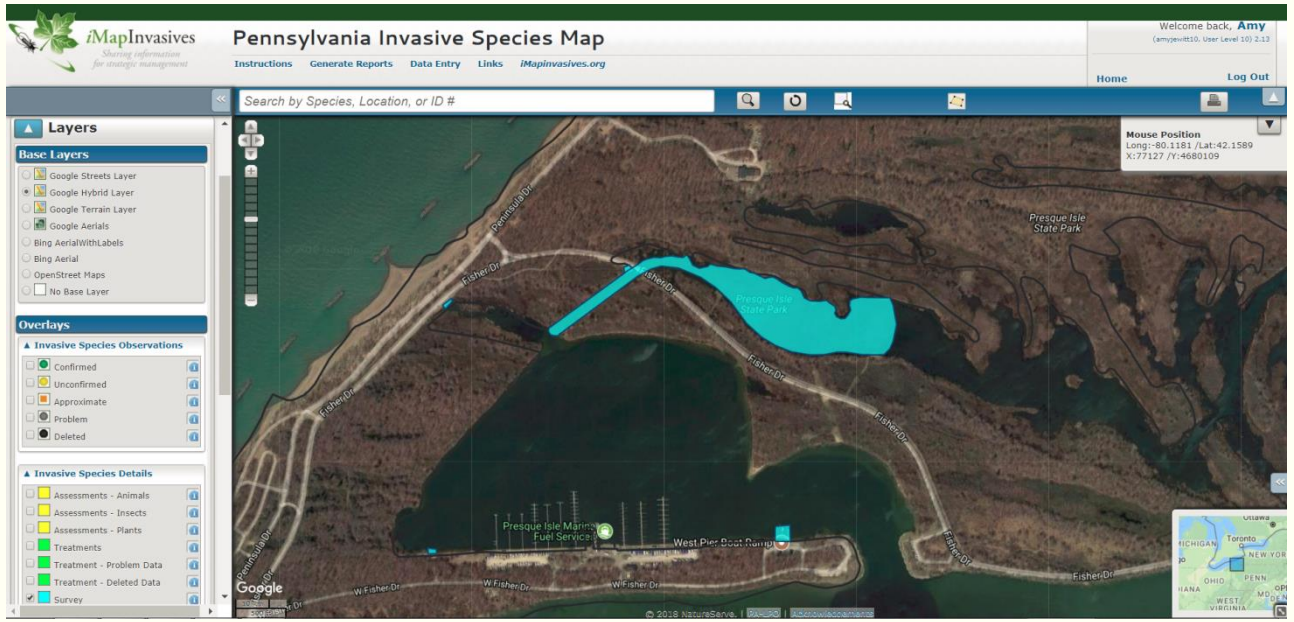
- Area surveyed in the Youghiogheny River for the presence of water chestnut. None found. Survey record indicates absence data.
  - Entered by a USACE staff member who participated in the 2017 Water Chestnut Chasers Challenge



Total area surveyed = 1,149.63 acres

Examples of Survey Data

- Survey in 2015 at Presque Isle lagoons for starry stonewort, a rare invasive species in PA. Species found; showed a significant expansion from previous survey in 2012.
  - Entered by PA DEP employee.



Total area surveyed = 15.71 acres

Treatment Data

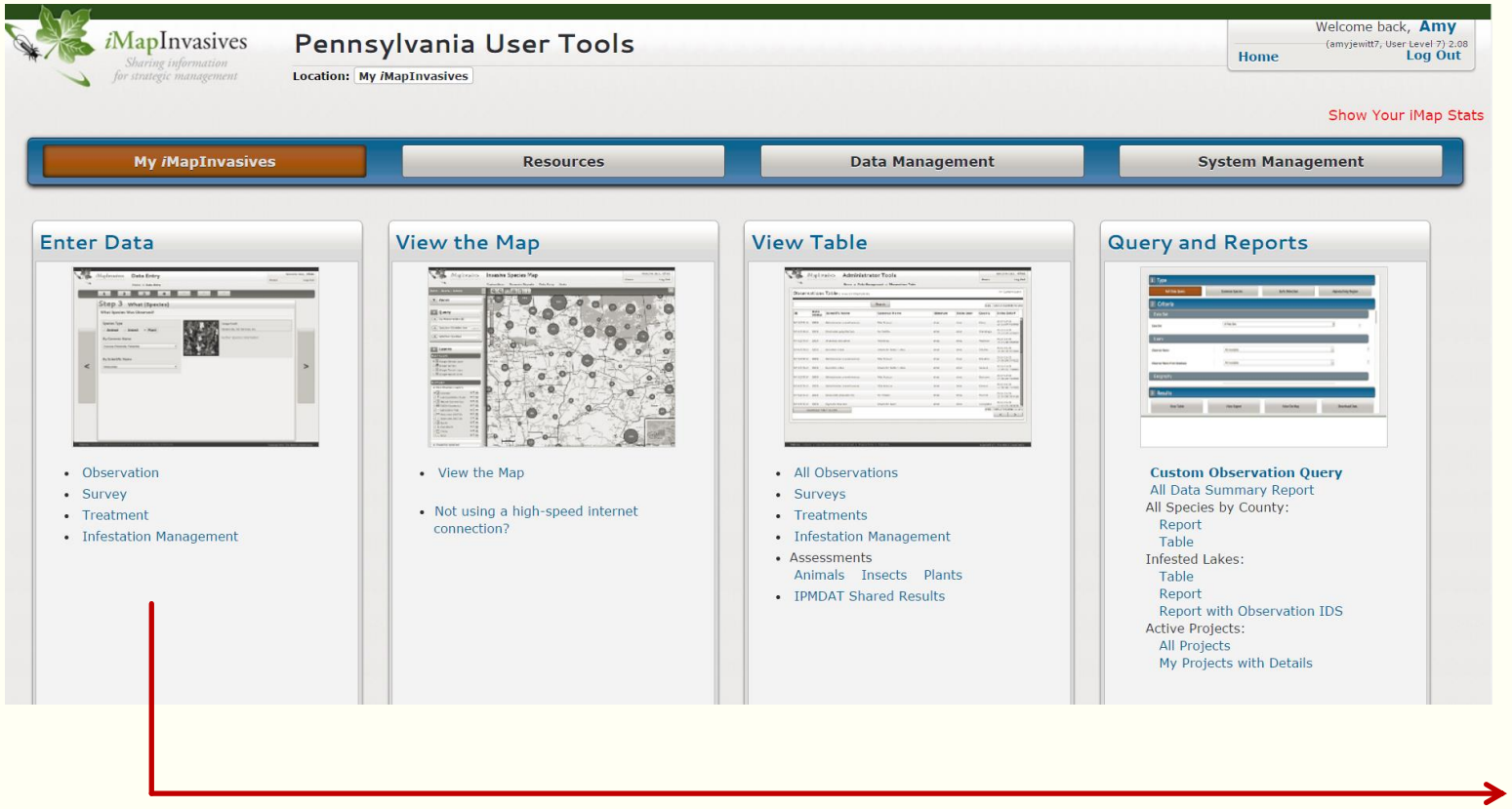
Document efforts to eradicate, control, and suppress invasive species populations.

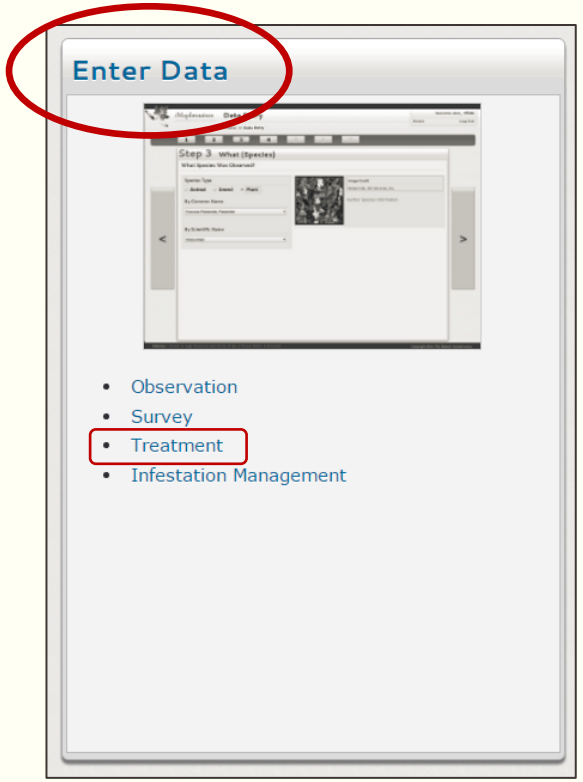
Examples of treatment measures include:

- Chemical
- Hand pulling
- Grazing (goats)
- Prescribed burning
- Barrier (something to block sunlight)
- Bio-agent (insects used as suppression agents)
- Organized hunt

How to Enter a Treatment

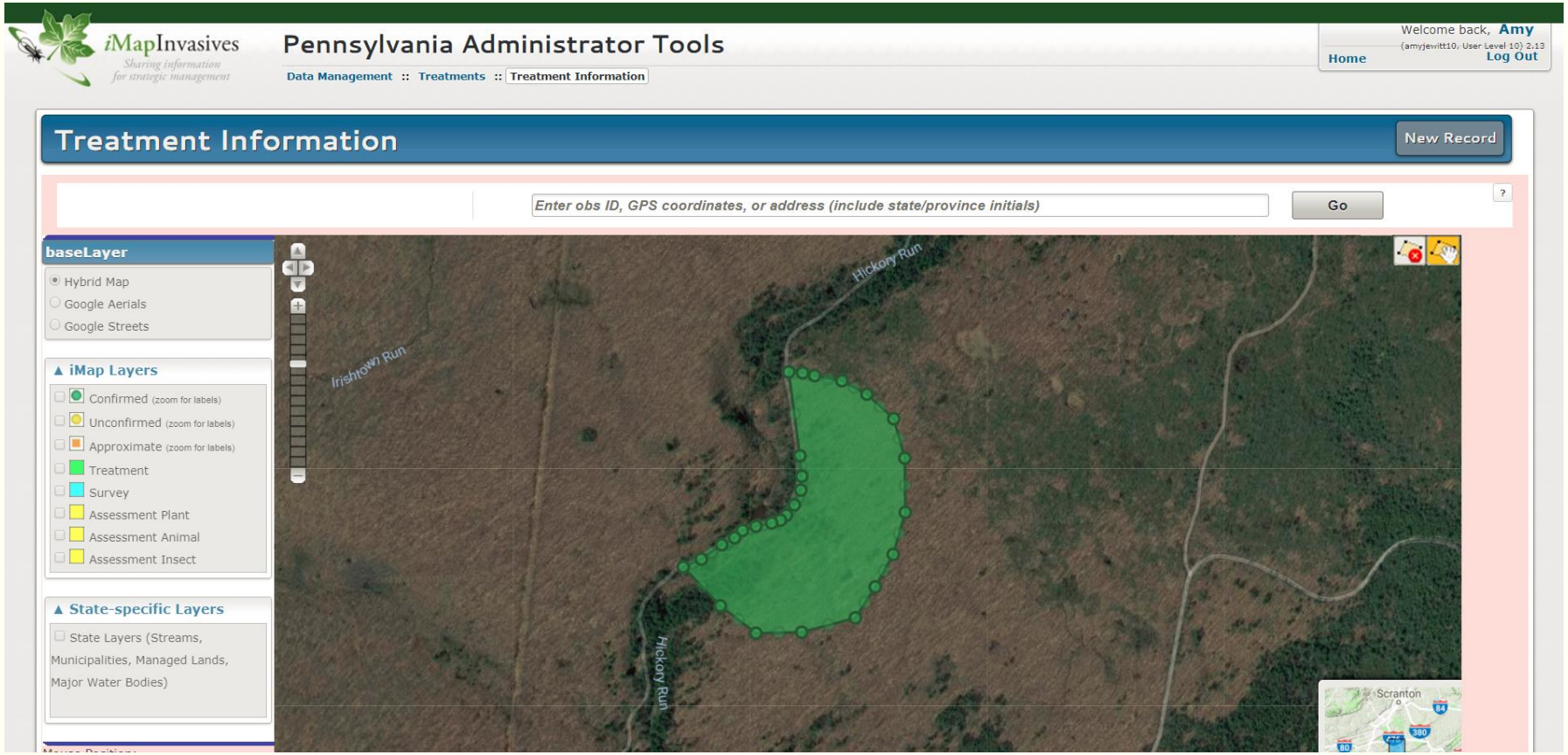
On main navigation page, click on “Treatment” in the Enter Data section.





How to Enter a Treatment

Create polygon around treated area using drawing tools on map.

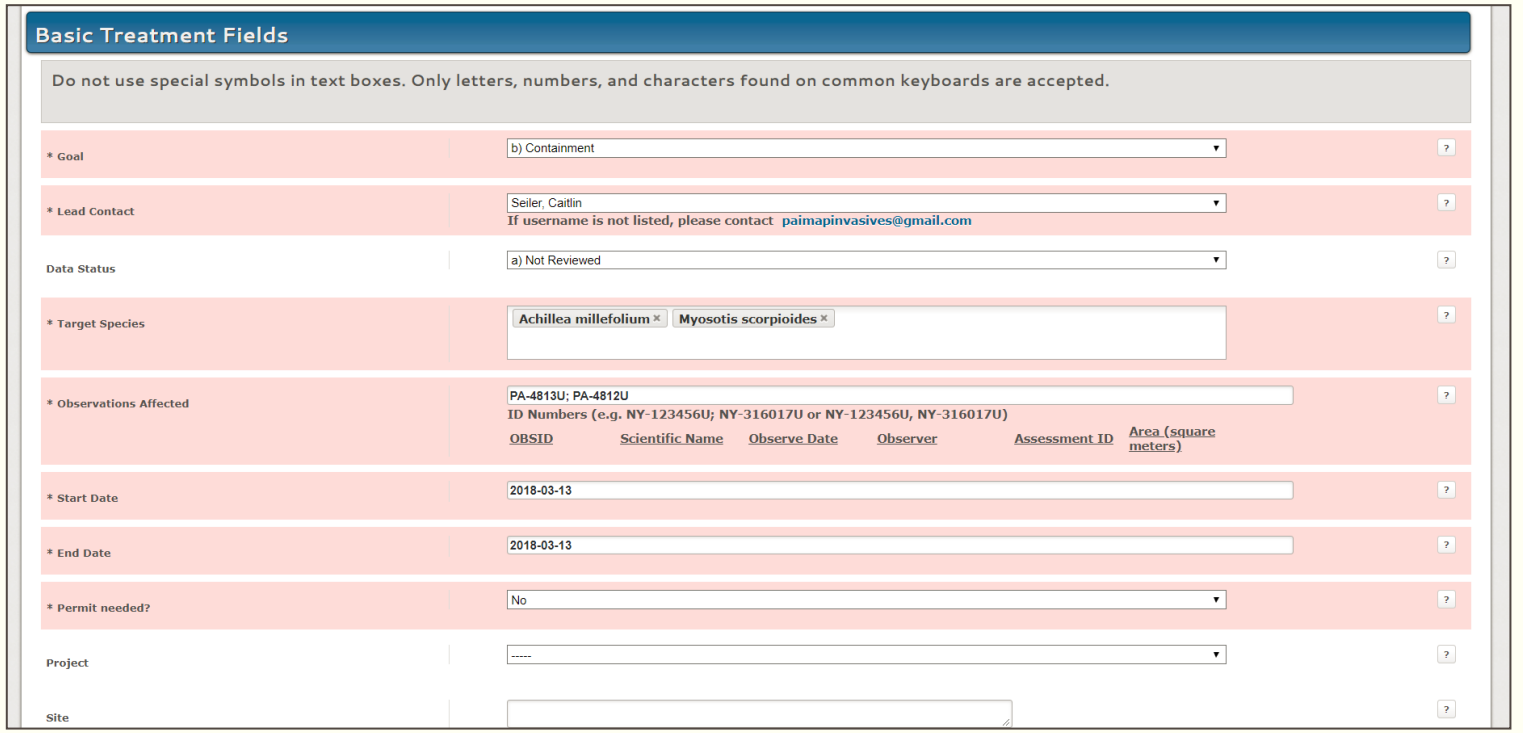


How to Enter a Treatment

Next, fill in data fields. Fields highlighted in pink are required.

- Goal
- Lead contact
- Target species
- Start/end date
- Permit needed?

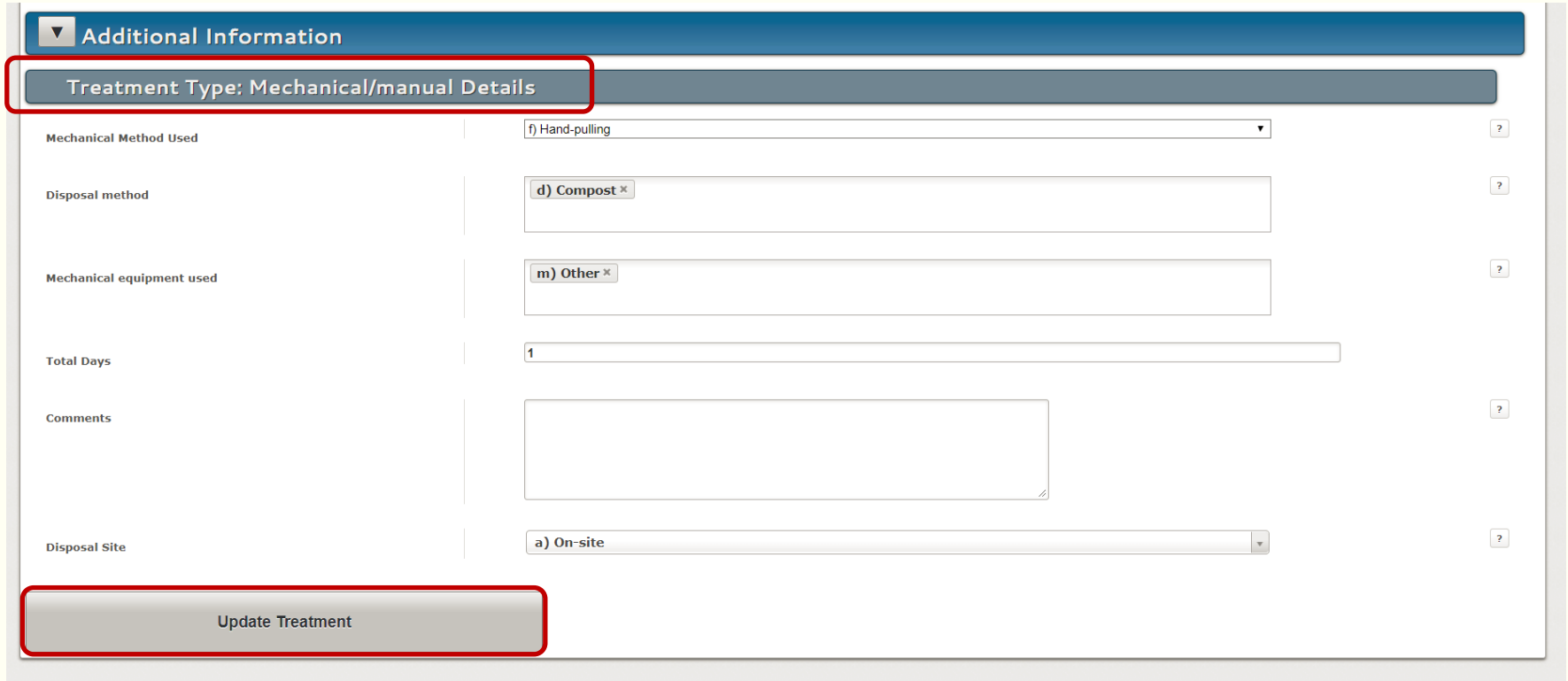
*To be a treatment lead contact, send a request to the iMapInvasives administrator.



Here I've selected a coworker as the Lead Contact; the goal is Containment, Start and end dates are the same (March 13, 2018), and I've filled in the species that will be treated.

How to Enter a Treatment

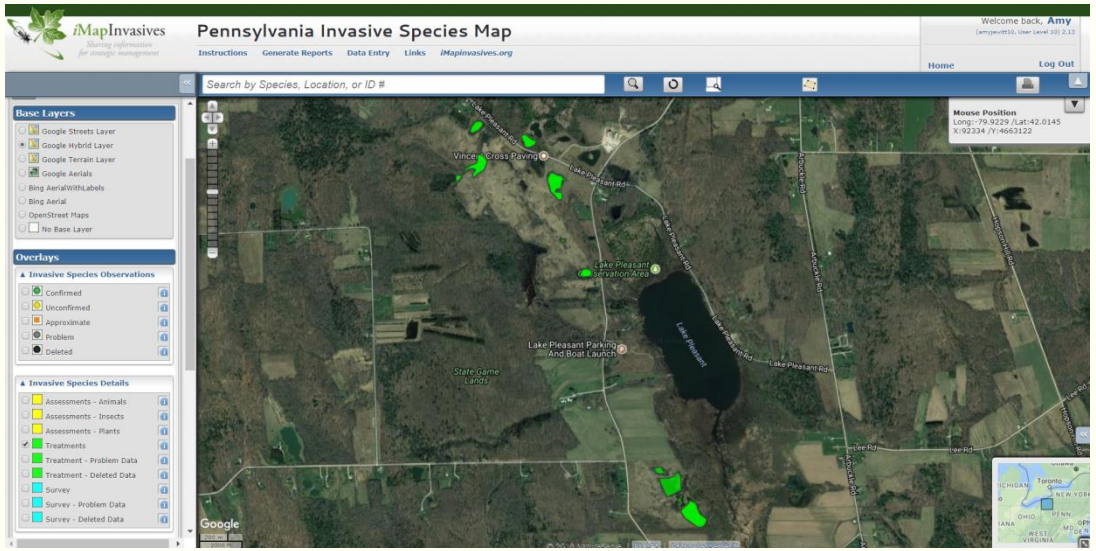
Choose your treatment type. Data fields will populate, based on the type selected. In this example, I've chosen mechanical/manual. When finished, click Update Treatment to submit the record.



Examples of Treatment Data

Chemical treatment of gravel ponds in Erie County near Lake Pleasant by staff at the Western Pennsylvania Conservancy.

- Species treated include Eurasian water-milfoil and curly-leaf pondweed.

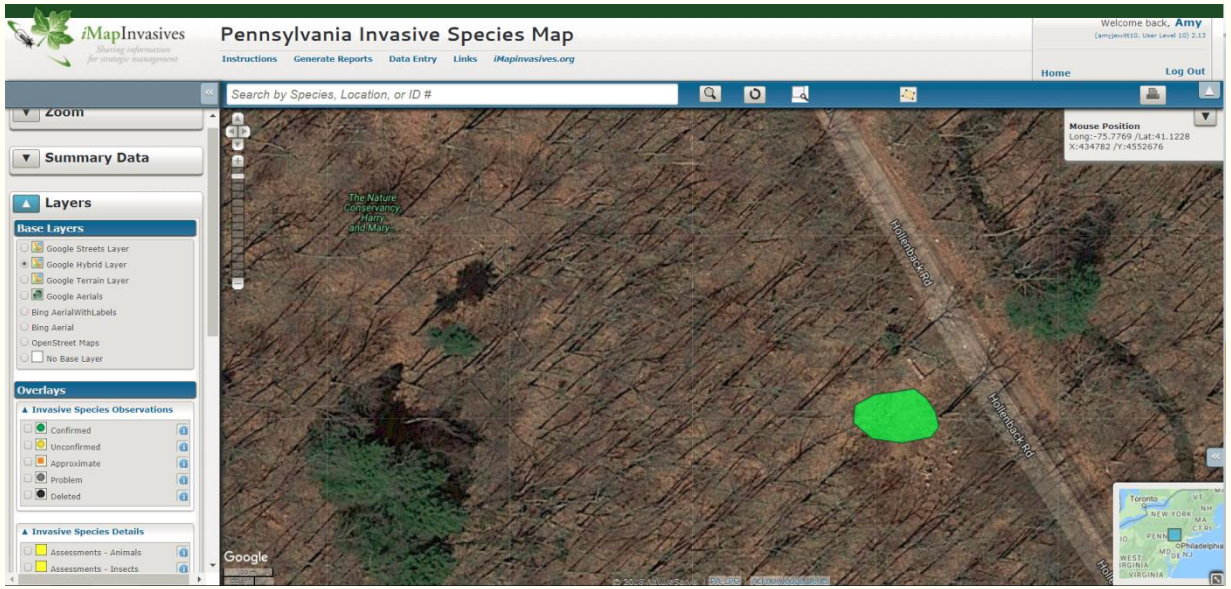


# of ponds treated = 18

Examples of Treatment Data

Manual pulling of spotted knapweed in area owned by the Nature Conservancy in Luzerne County. All pulled plants were left on site to compost.

- Entered by TNC employee.



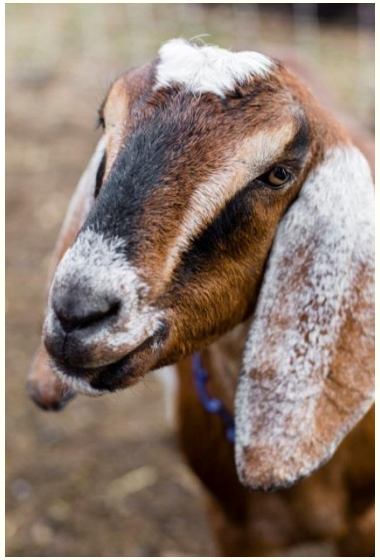
Total treated area = 0.02 acres

Examples of Treatment Data

Area near Pittsburgh infested with oriental bittersweet and Japanese knotweed; treated by allowing goats to graze the area and eat the invasives.

- Treatment conducted by Steel City Grazers (now called Allegheny Goatscape) and the Western Pennsylvania Conservancy.

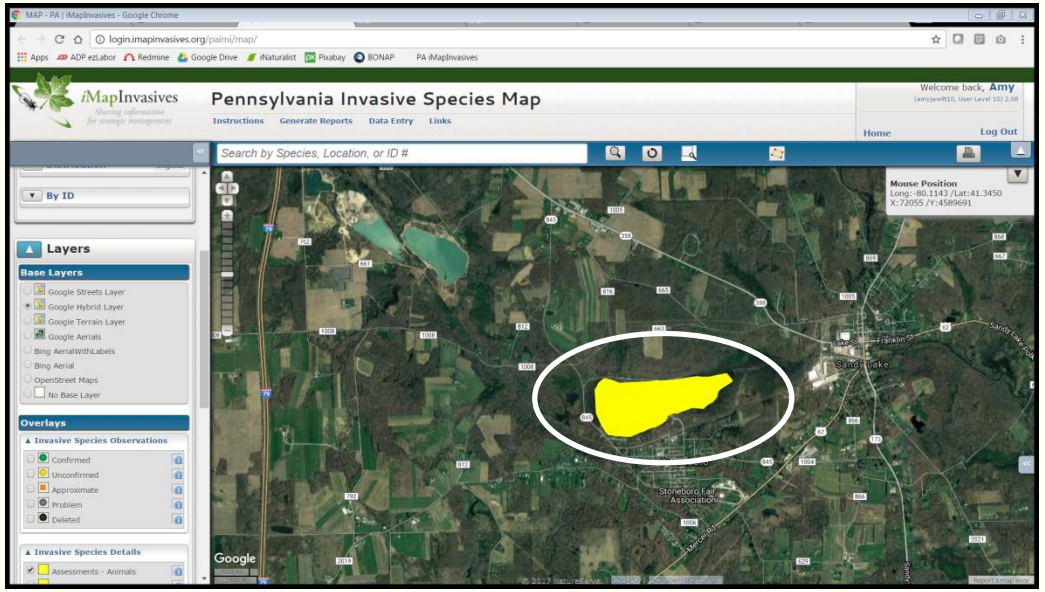
Total infested area = 0.20 acres



Reuben, one of 10 goats (and one donkey) at Allegheny Goatscape

QUERYING FOR ADVANCED DATA

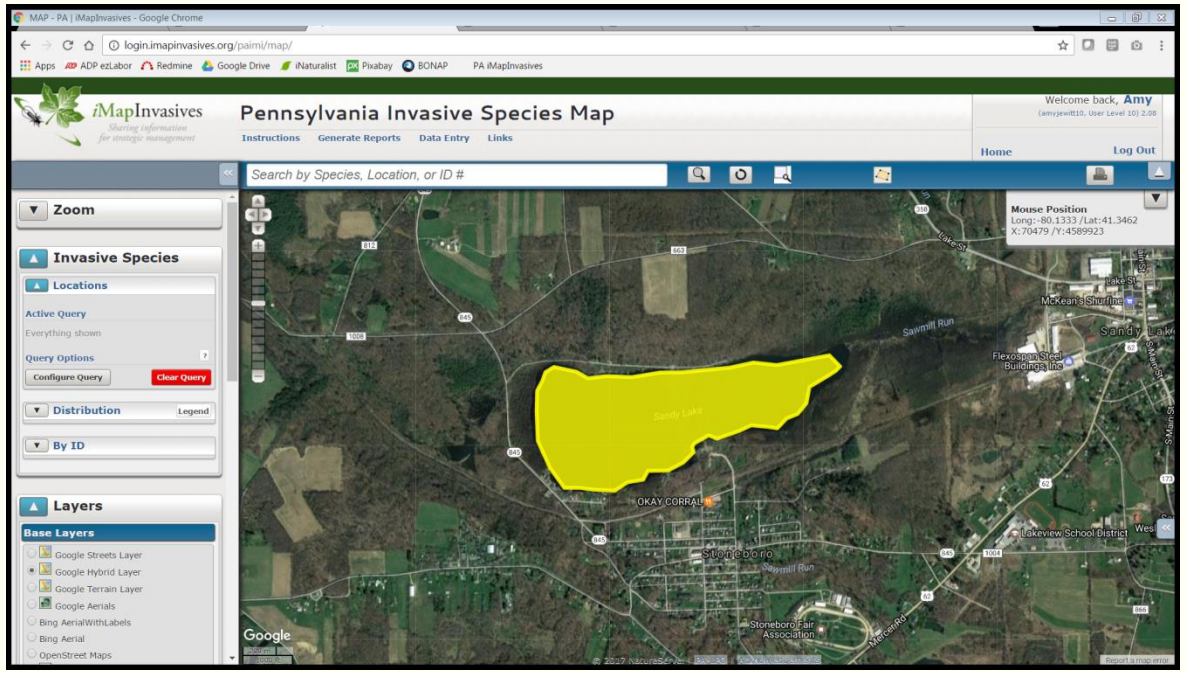
Learn how to find the data you're looking for.
This includes your data and data from others.



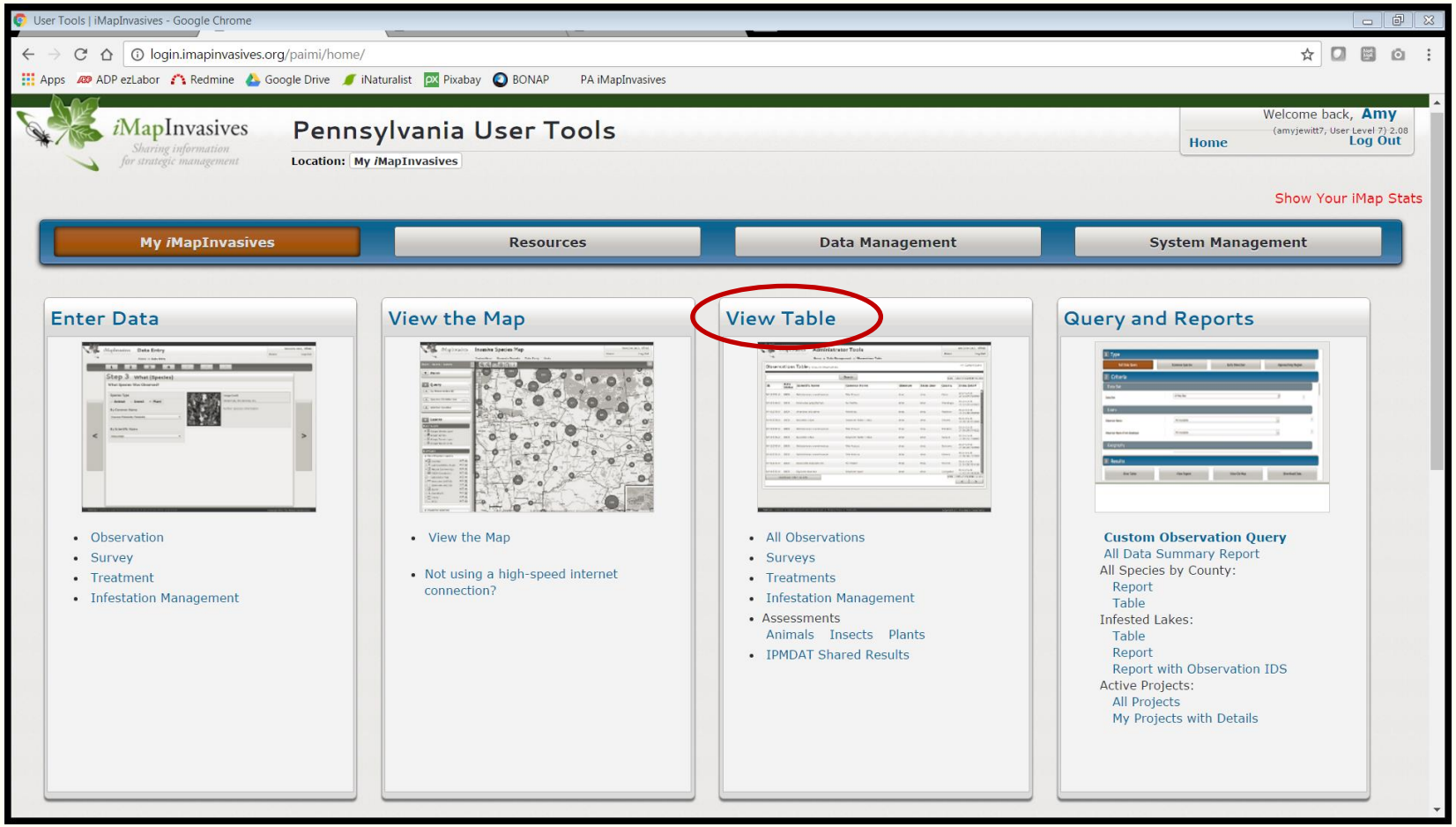
Querying for Advanced Records

Okay, so you just finished entering an **Assessment** record. How do you go back into iMap and retrieve it?

- Option 1: Find the affiliated observation
- Option 2: Use the map
- Option 3: Custom data query

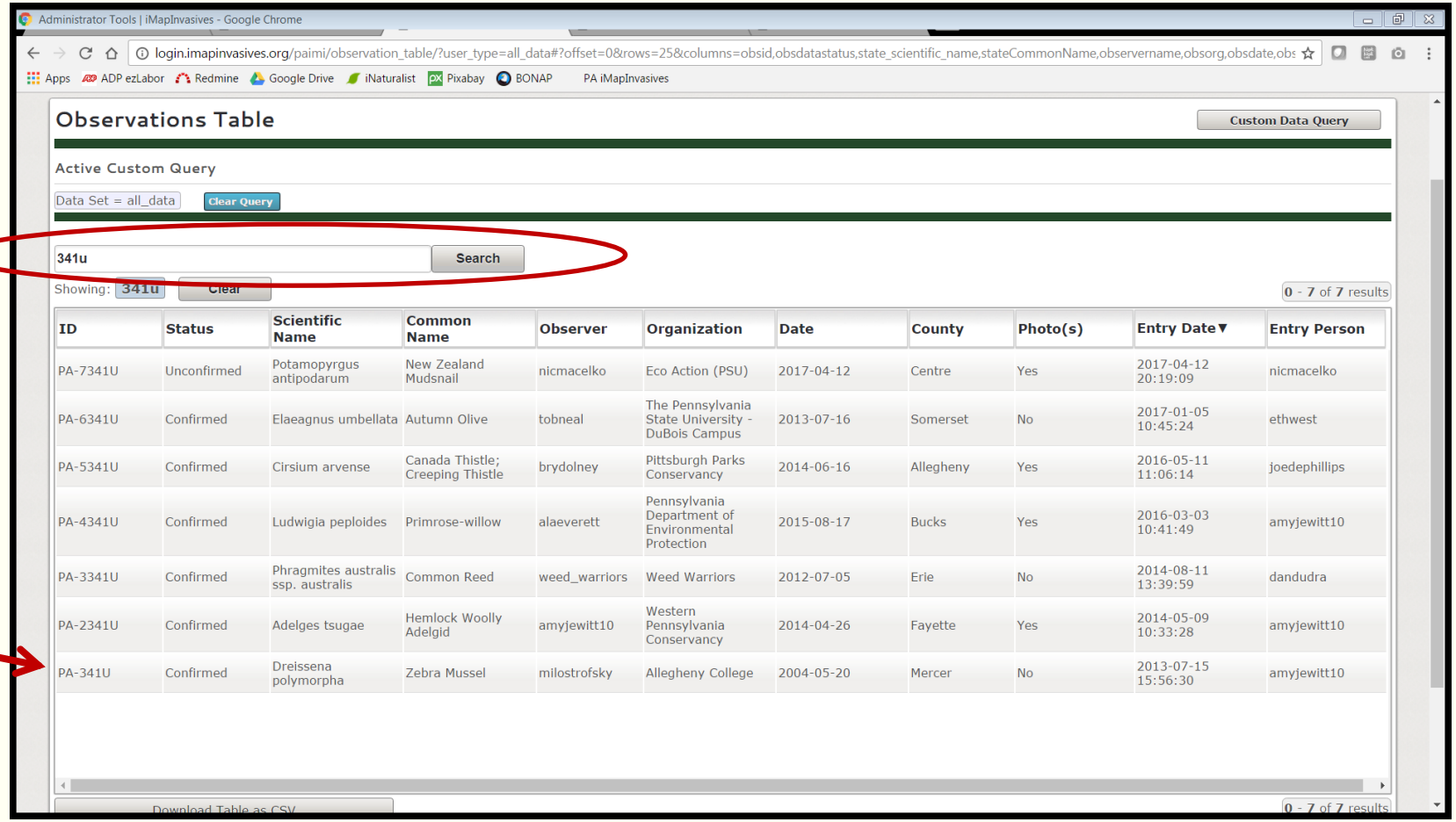


Advanced Data Query:
Option 1: Find the Affiliated Observation



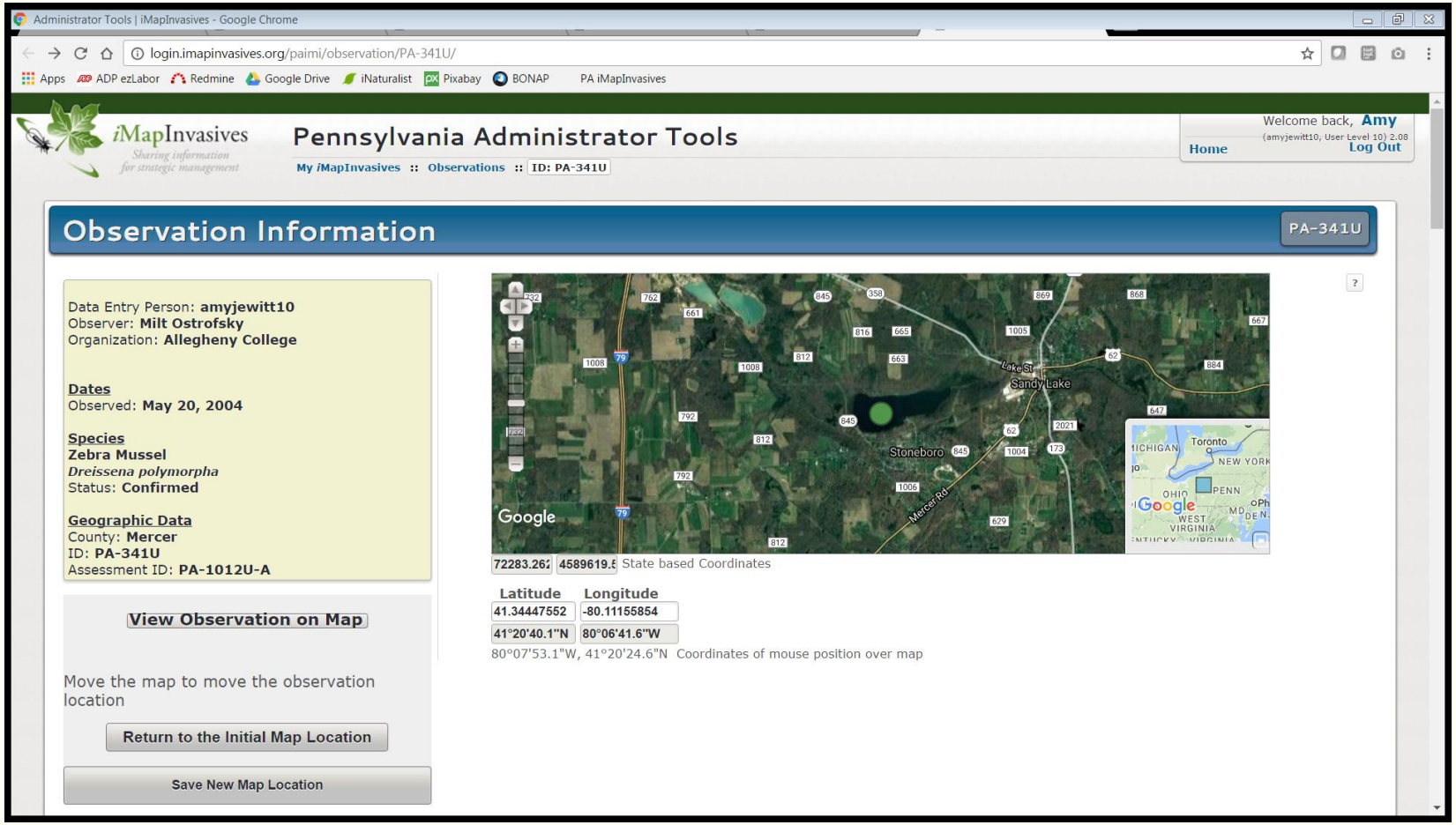
Step 1: Click on “View Table” from the main navigation page.

Advanced Data Query:
Option 1: Find the Affiliated Observation



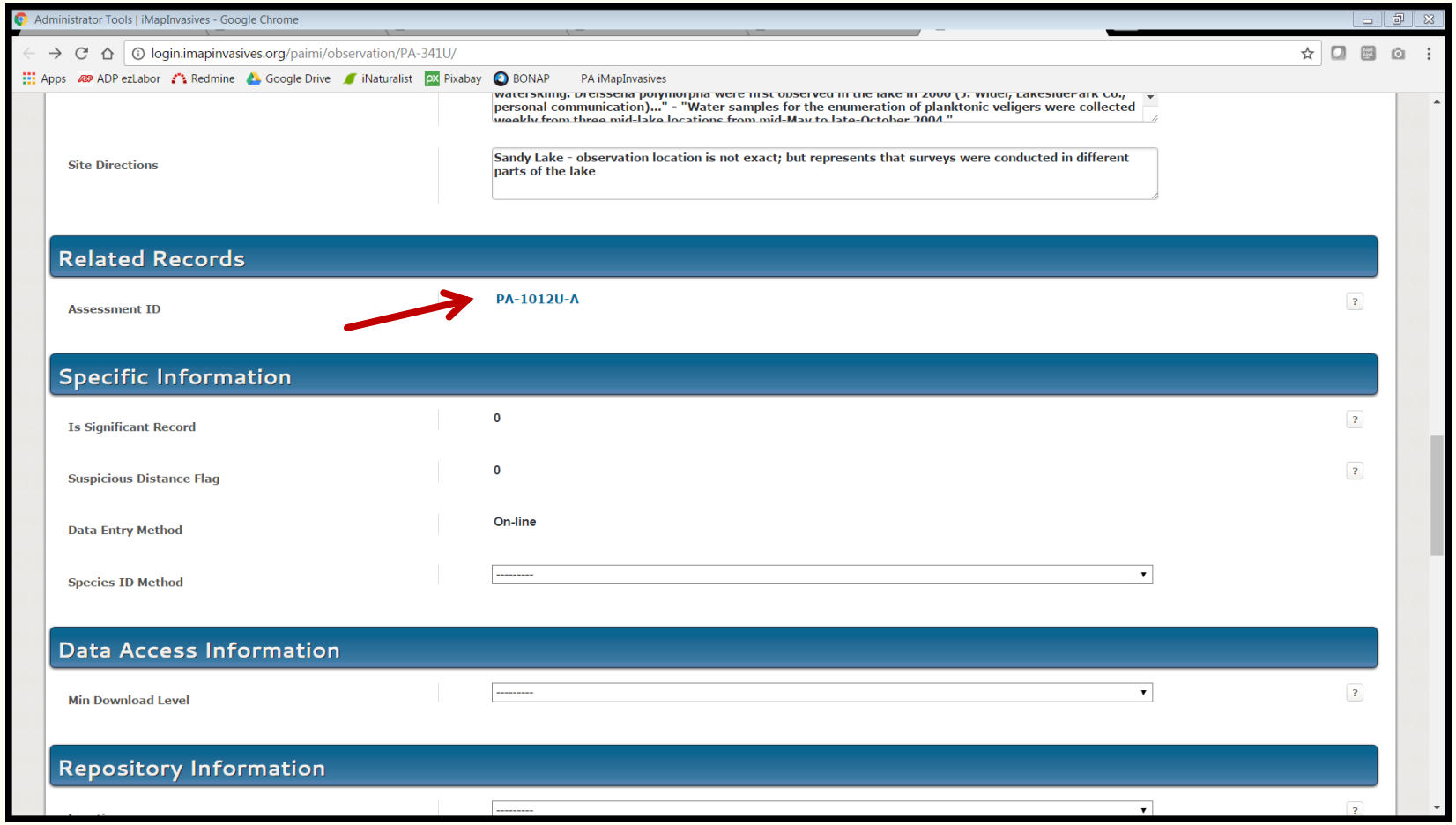
Step 2: Locate and open the appropriate observation record by using the search bar near the top of the page.

Advanced Data Query:
Option 1: Find the Affiliated Observation



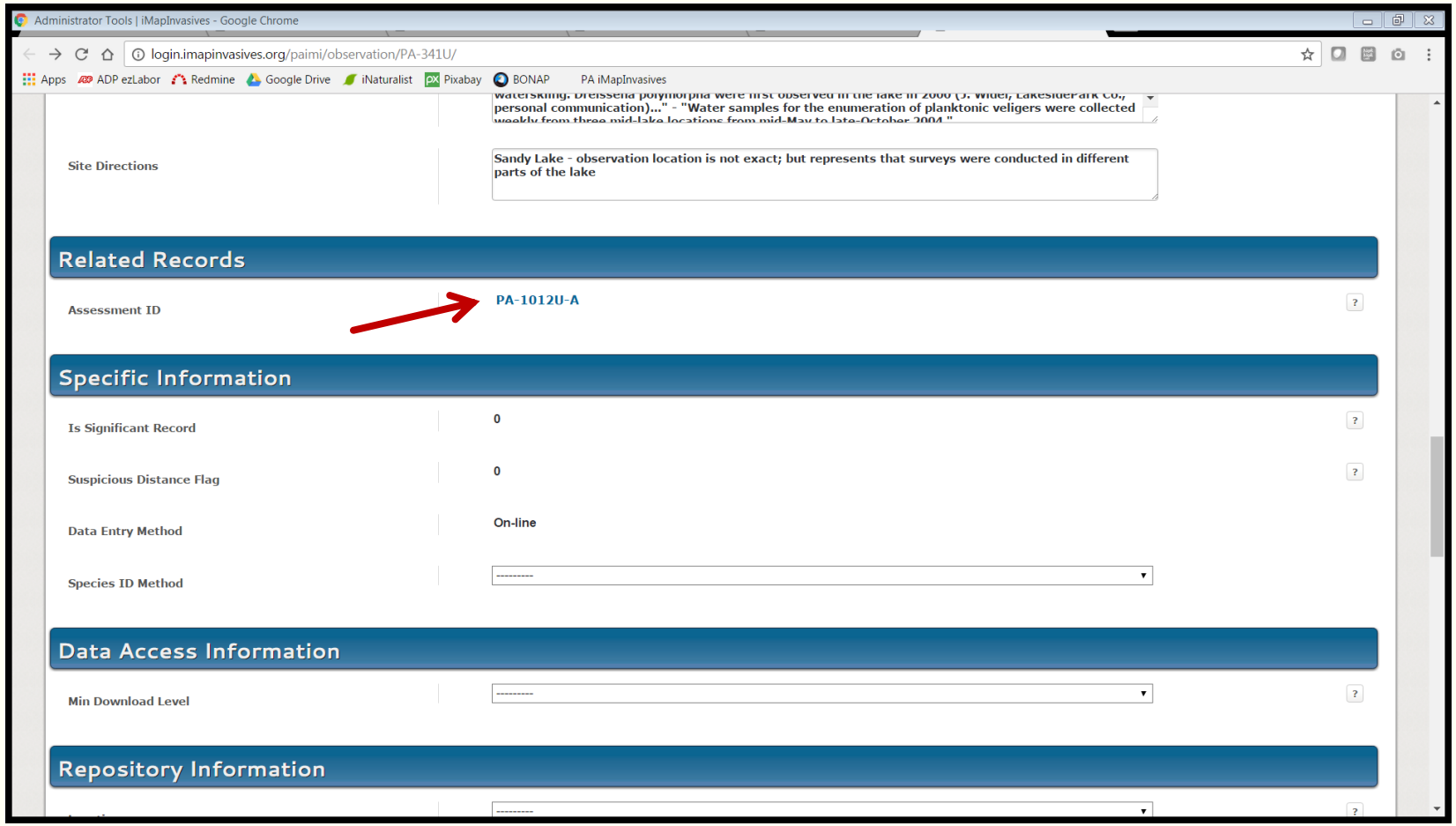
Step 3. Once the observation record is open, scroll down to the Related Records section.

Advanced Data Query:
Option 1: Find the Affiliated Observation



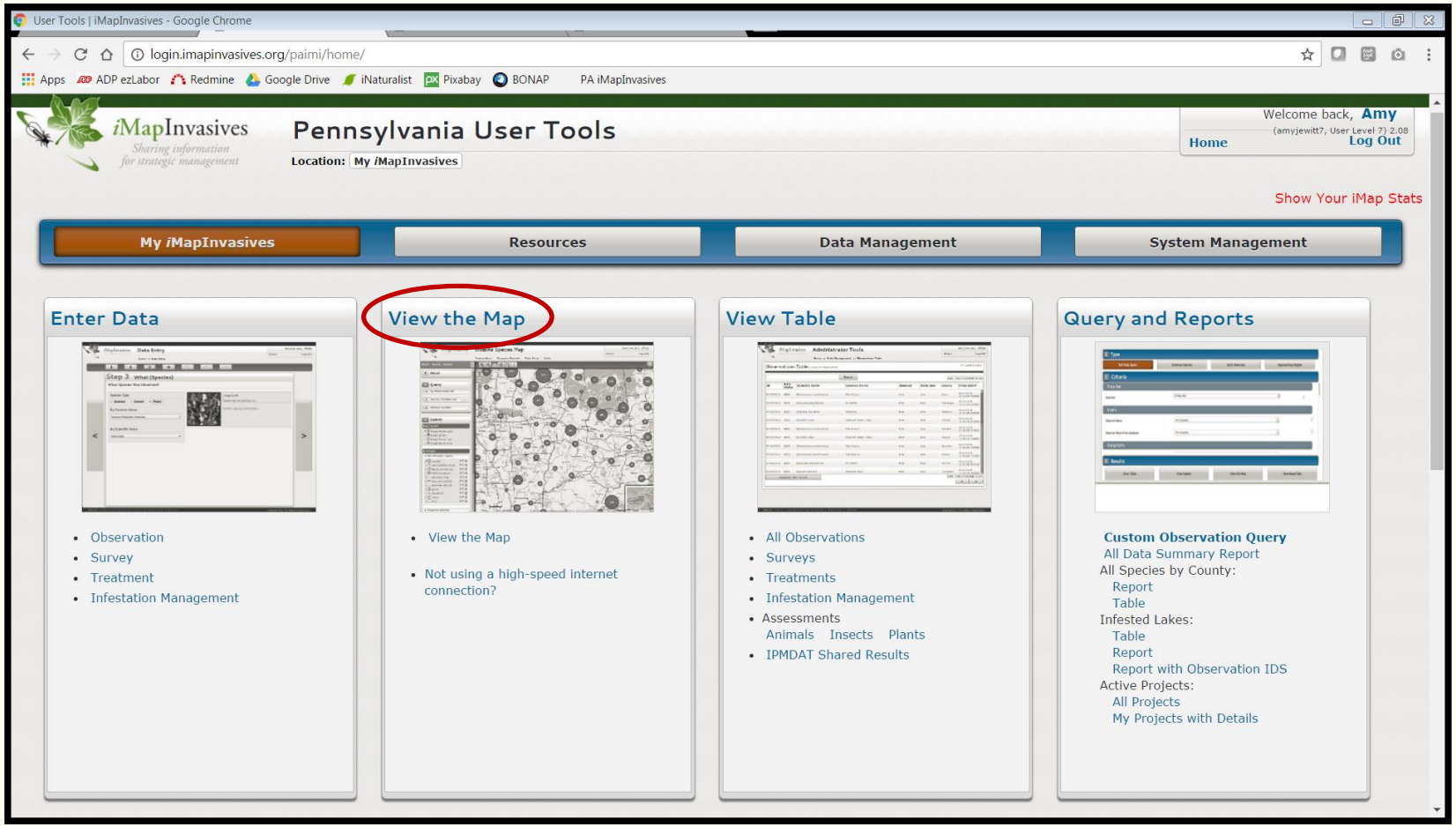
Step 4. Note that when an observation has an affiliated assessment record “tied to it”, the record ID number will appear as a hyperlink.

Advanced Data Query:
Option 1: Find the Affiliated Observation



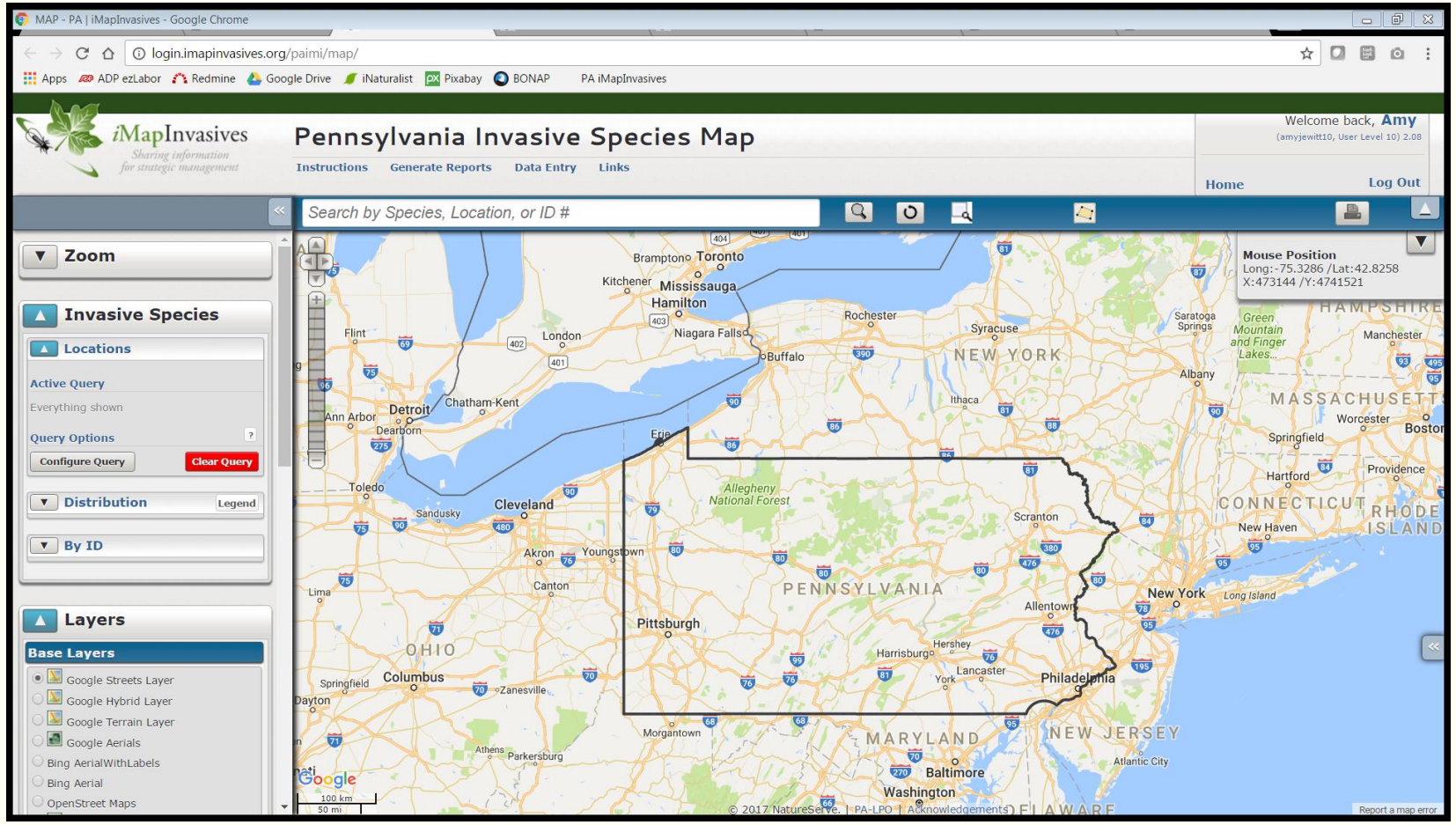
Step 5. By clicking on this hyperlink, you will be “transported” directly to the related assessment record.

Advanced Data Query: Option 2: Use the Map



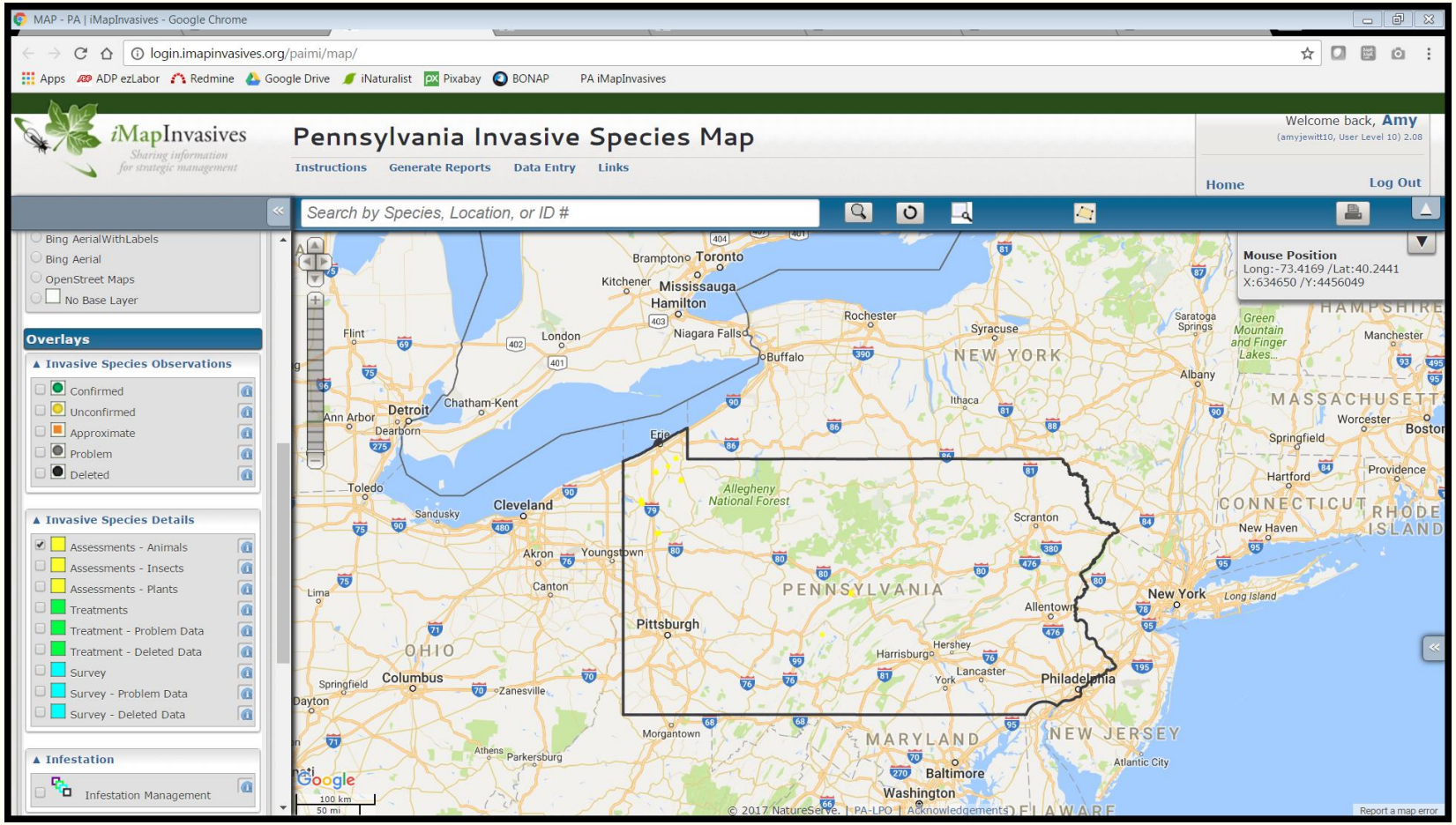
Step 1: Click on “View the Map” from the main navigation page.

Advanced Data Query: Option 2: Use the Map



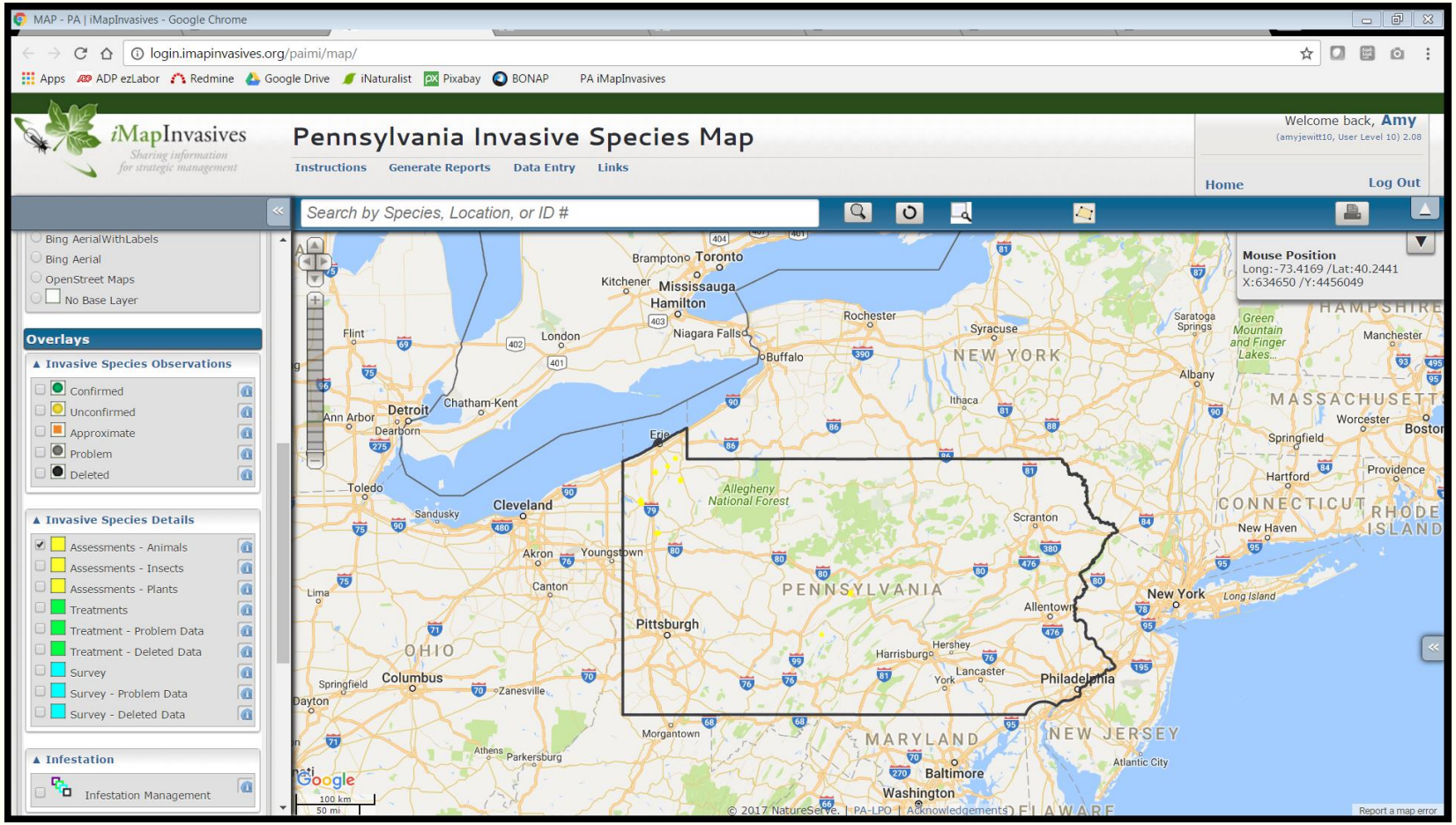
Step 2: In the Legend on the left side of the page, scroll down to the “Invasive Species Details” section.

Advanced Data Query:
Option 2: Use the Map



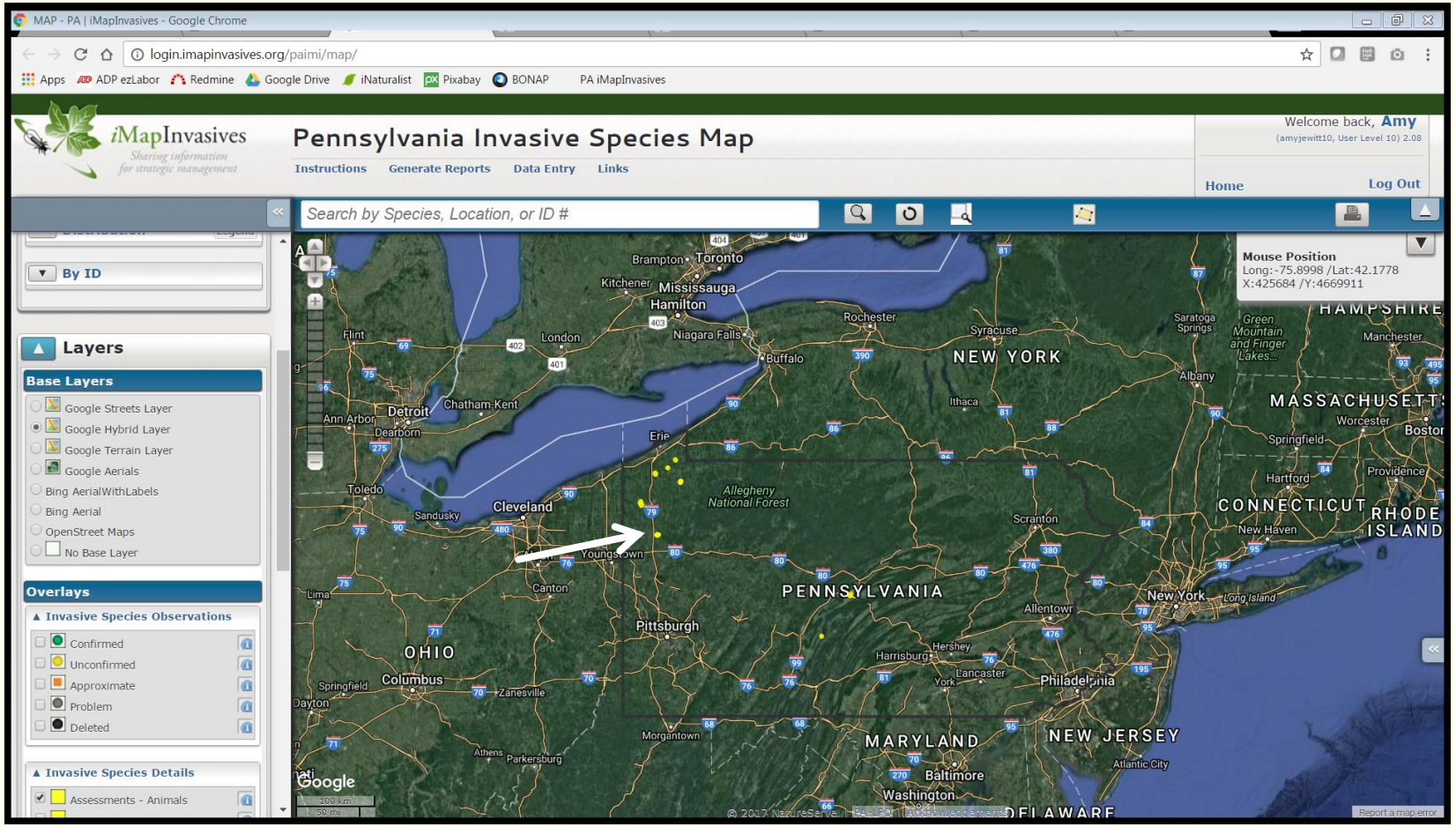
Step 3: Check the box next to the type of assessment you are looking for. Options include Animals, Insects, and Plants. (I will choose animals.)

Advanced Data Query:
Option 2: Use the Map



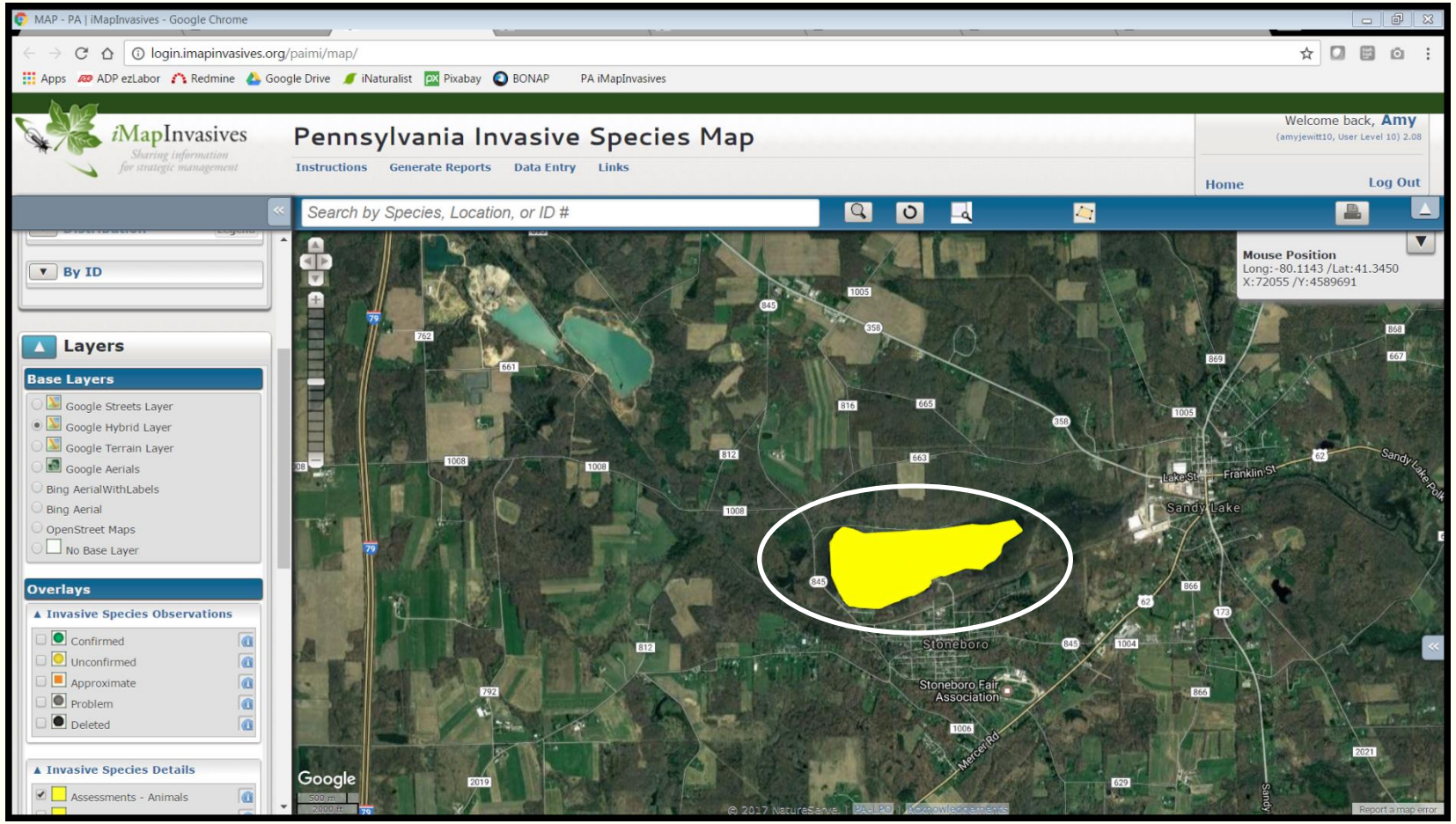
Step 4: Change the background of the map to better view the assessment polygons.

Advanced Data Query:
Option 2: Use the Map



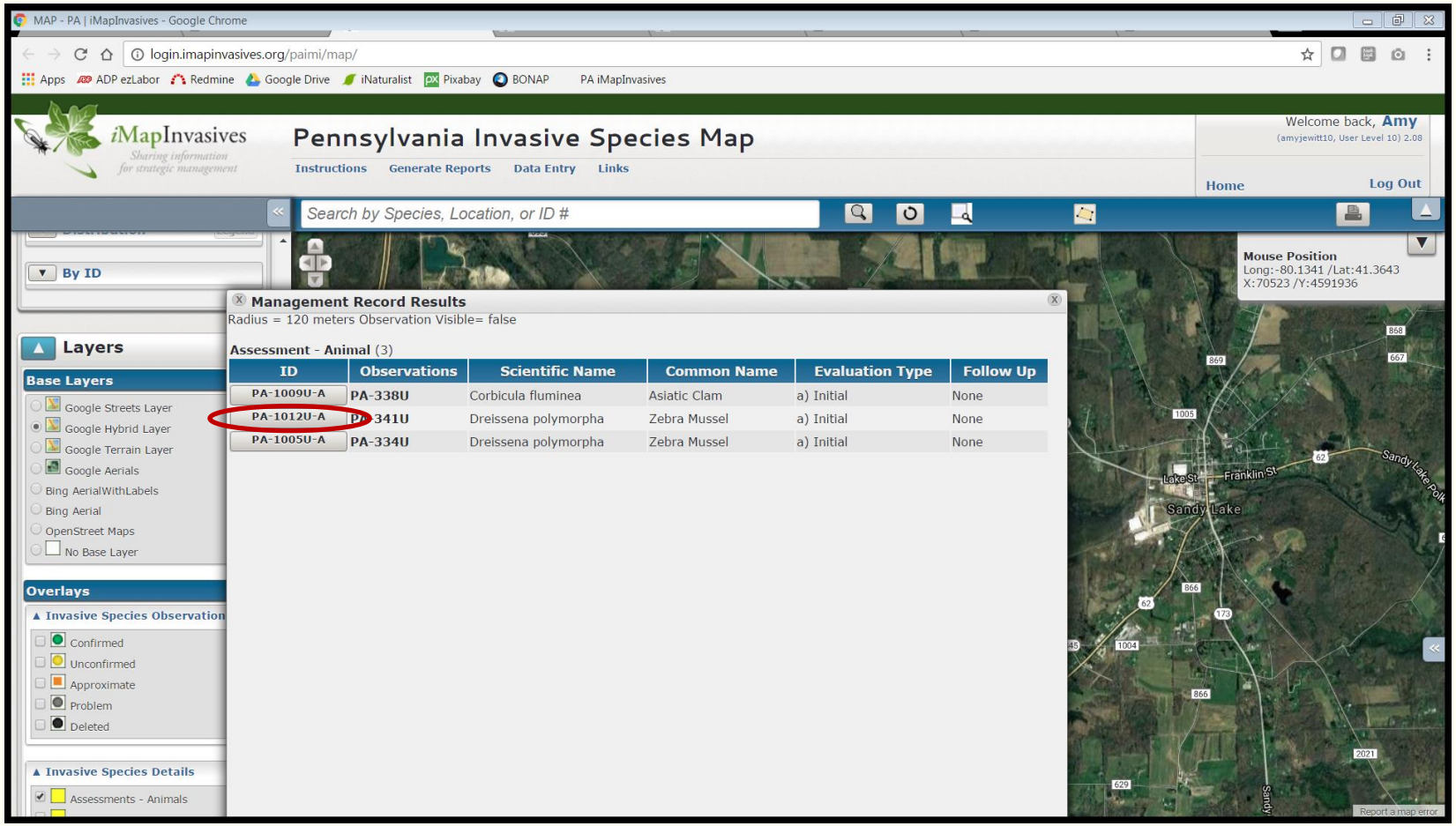
Step 4: Hold down the shift key while drawing a box around an area that includes the assessment you're looking for.

Advanced Data Query:
Option 2: Use the Map



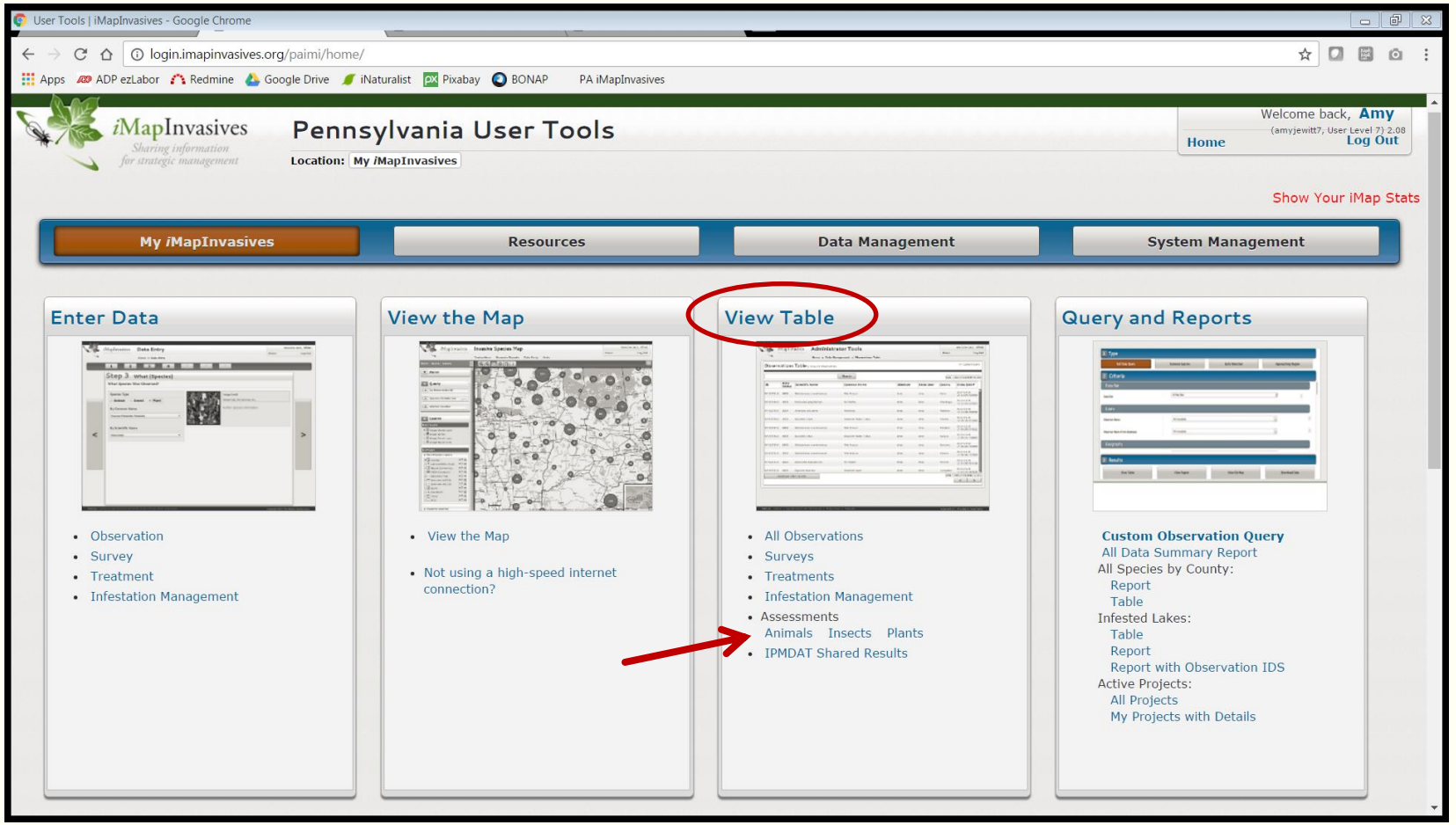
Step 5: Click on the yellow assessment polygon. Note that a window called "Management Record Results" will appear.

Advanced Data Query: Option 2: Use the Map



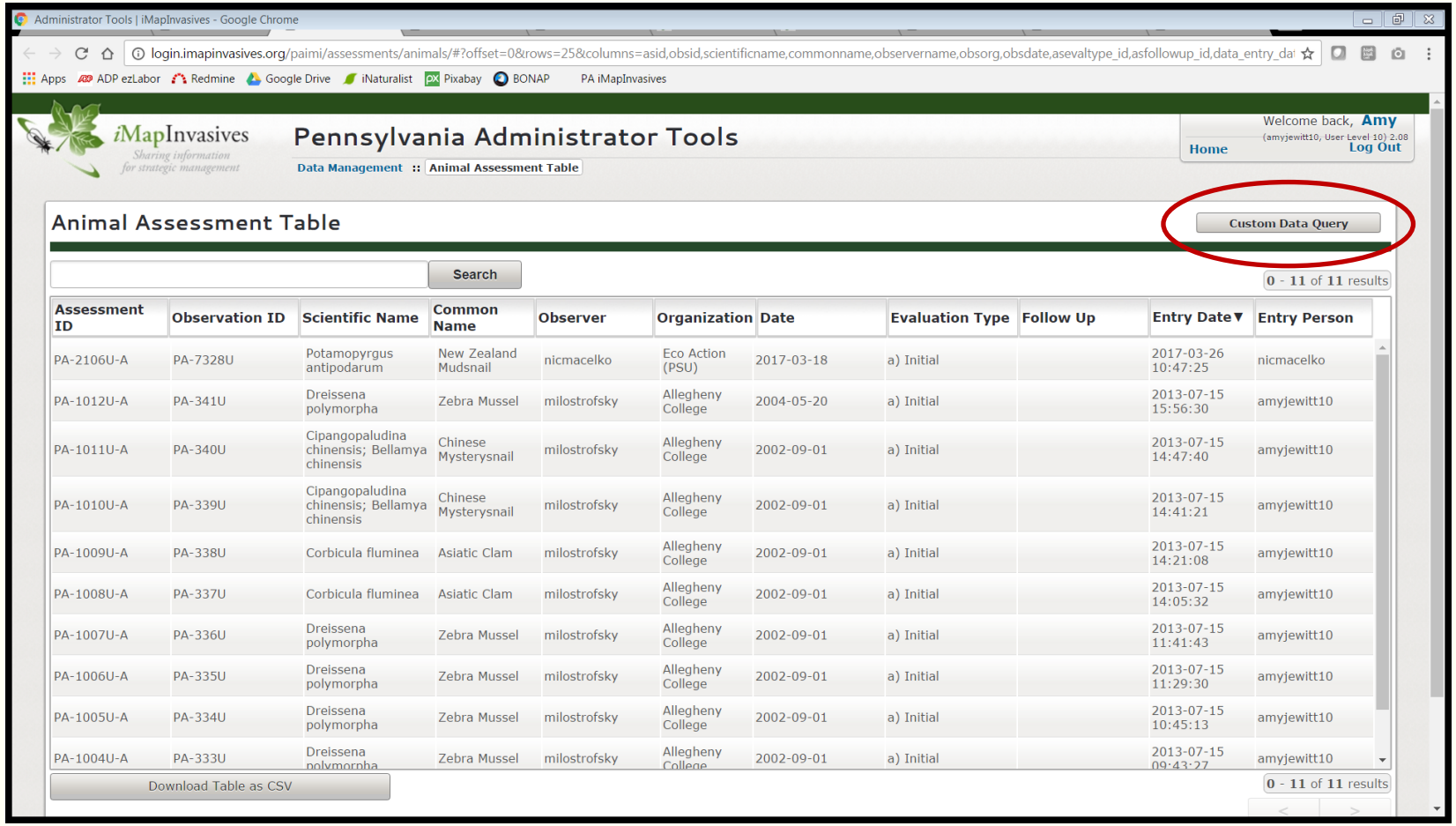
Step 6: Click on the appropriate record to bring up the record's details.

Advanced Data Query:
Option 3: Custom Data Query



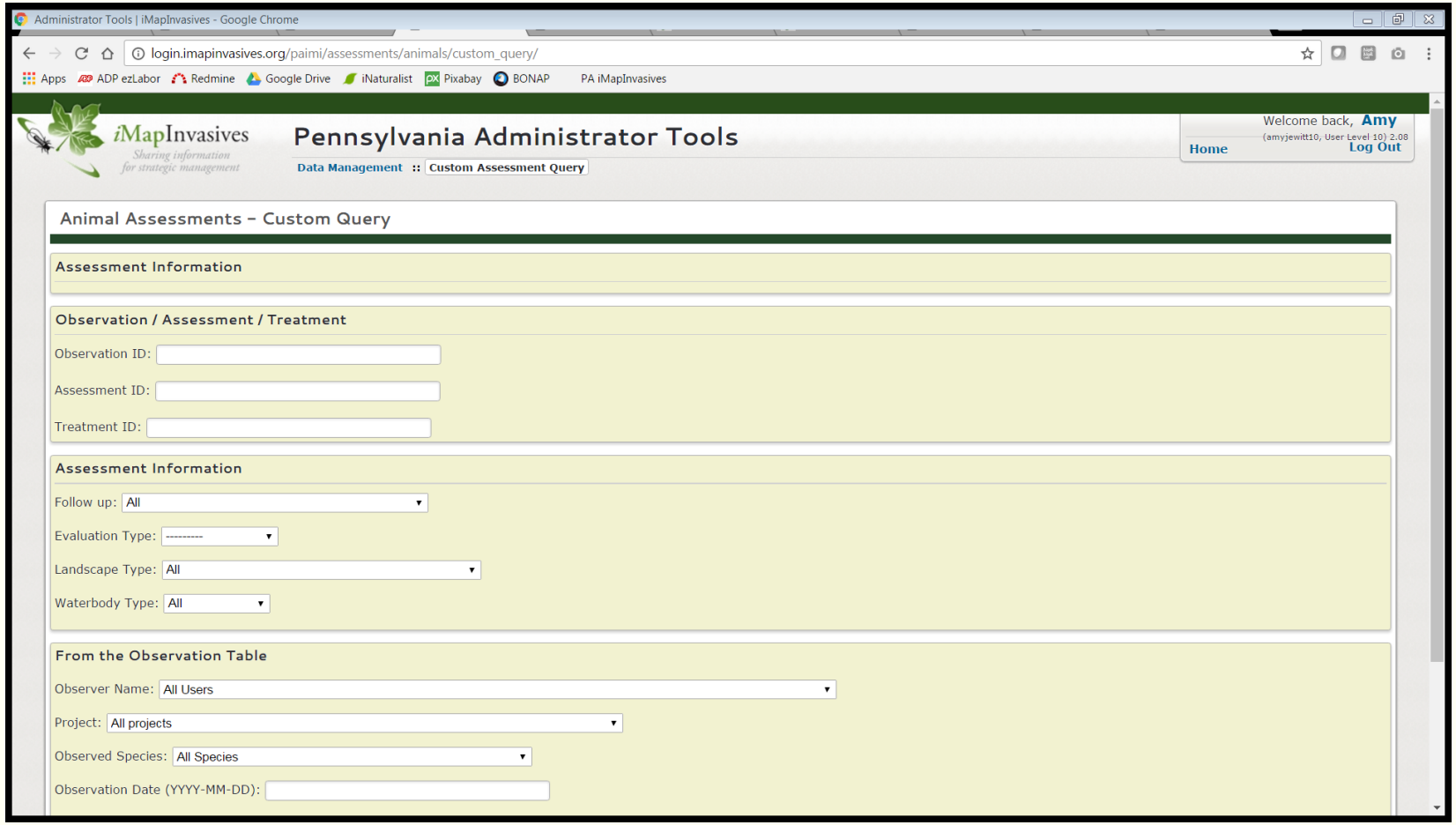
Step 1: On the main navigation page in the “View Table” area, locate the Assessment section and click on the type of assessments you would like to view (animals, insects, or plants). I’ll choose animals.

Advanced Data Query:
Option 3: Custom Data Query



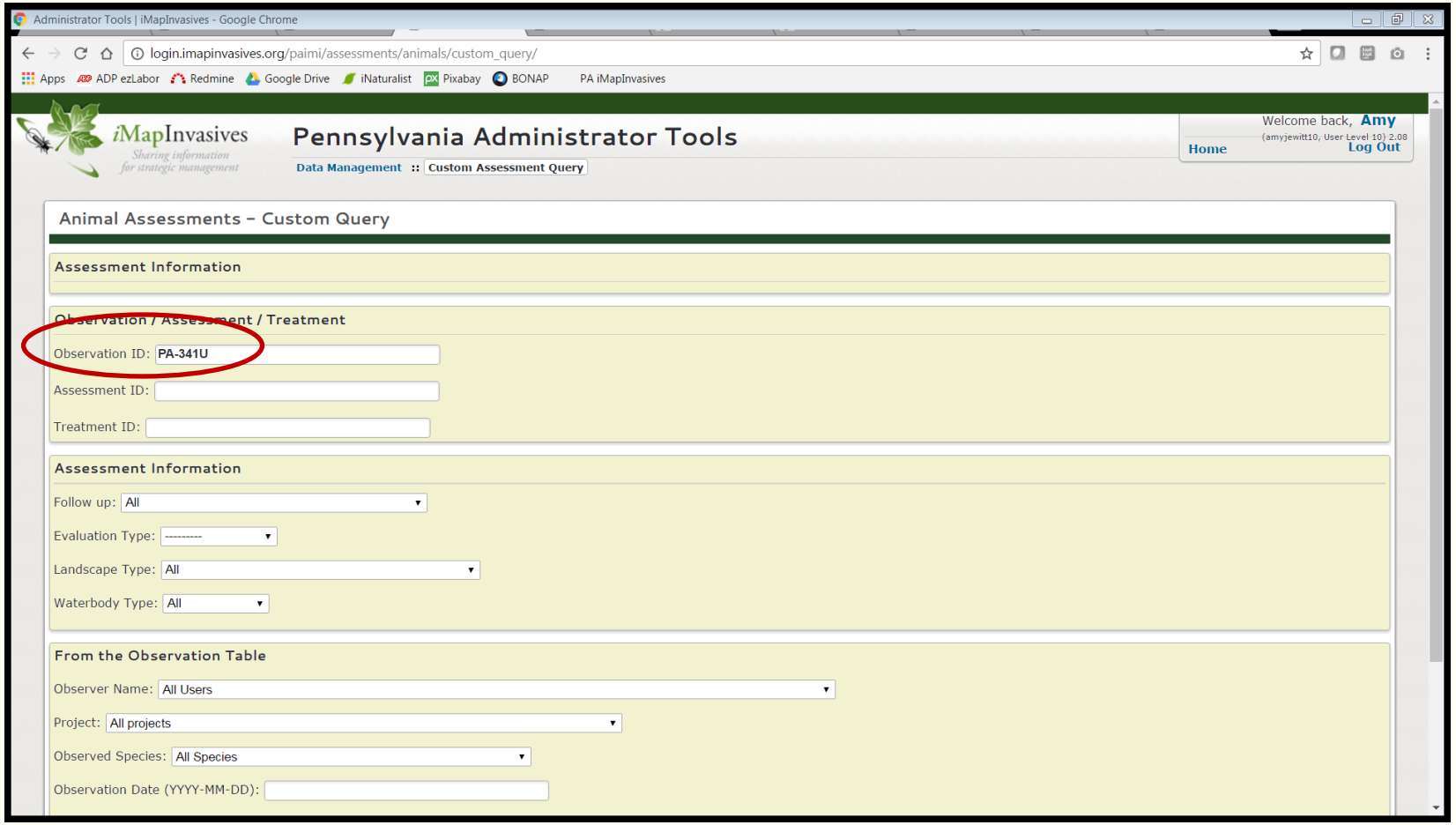
Step 2: Click on the “Custom Data Query” button in the upper right corner.

Advanced Data Query:
Option 3: Custom Data Query



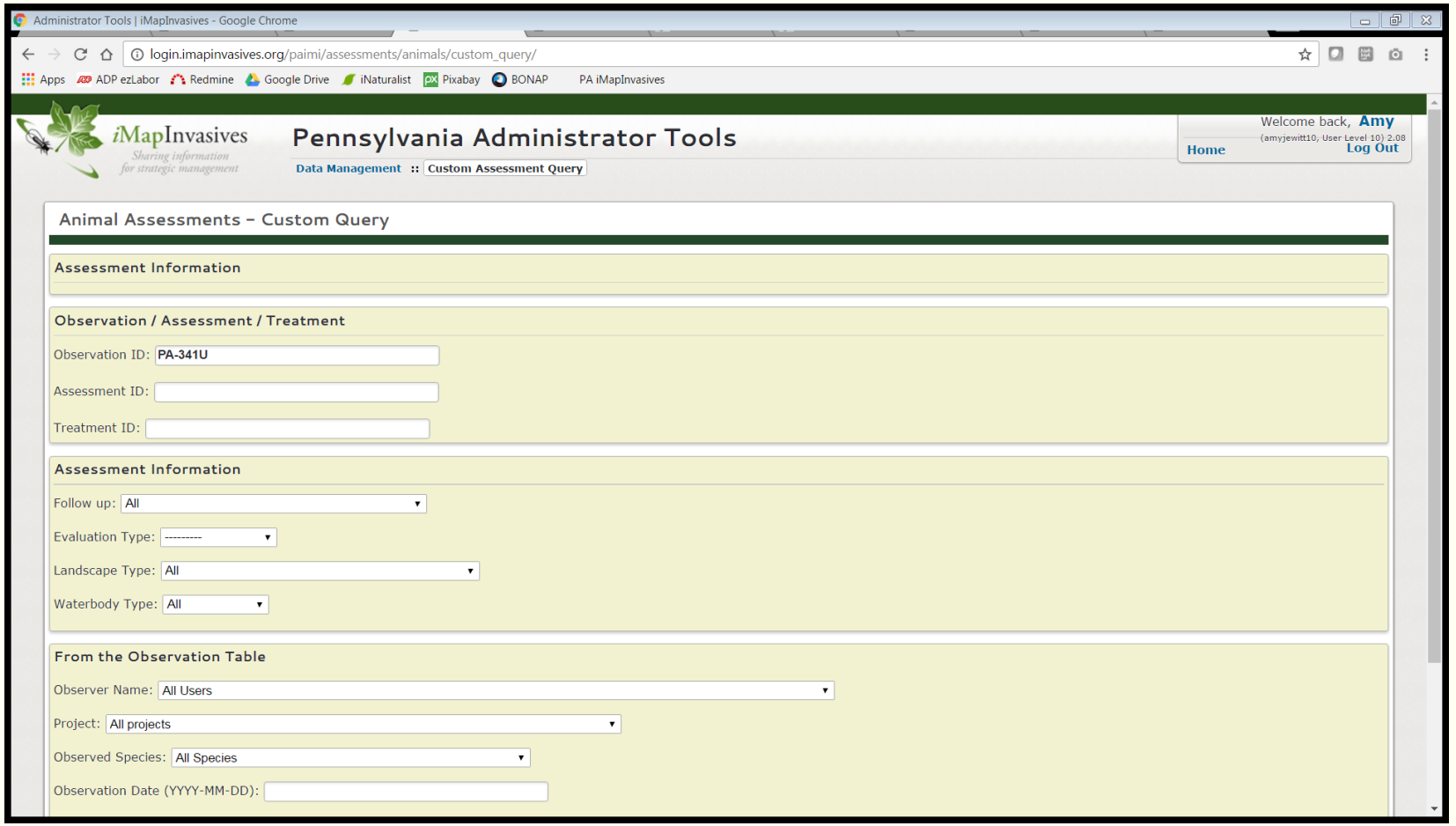
Step 3: Filter for a specific assessment record by filling in information in various data fields. There are eleven data fields to choose from for an assessment query. Select the field that makes the most sense to search on, based on what you know about the assessment record.

Advanced Data Query:
Option 3: Custom Data Query



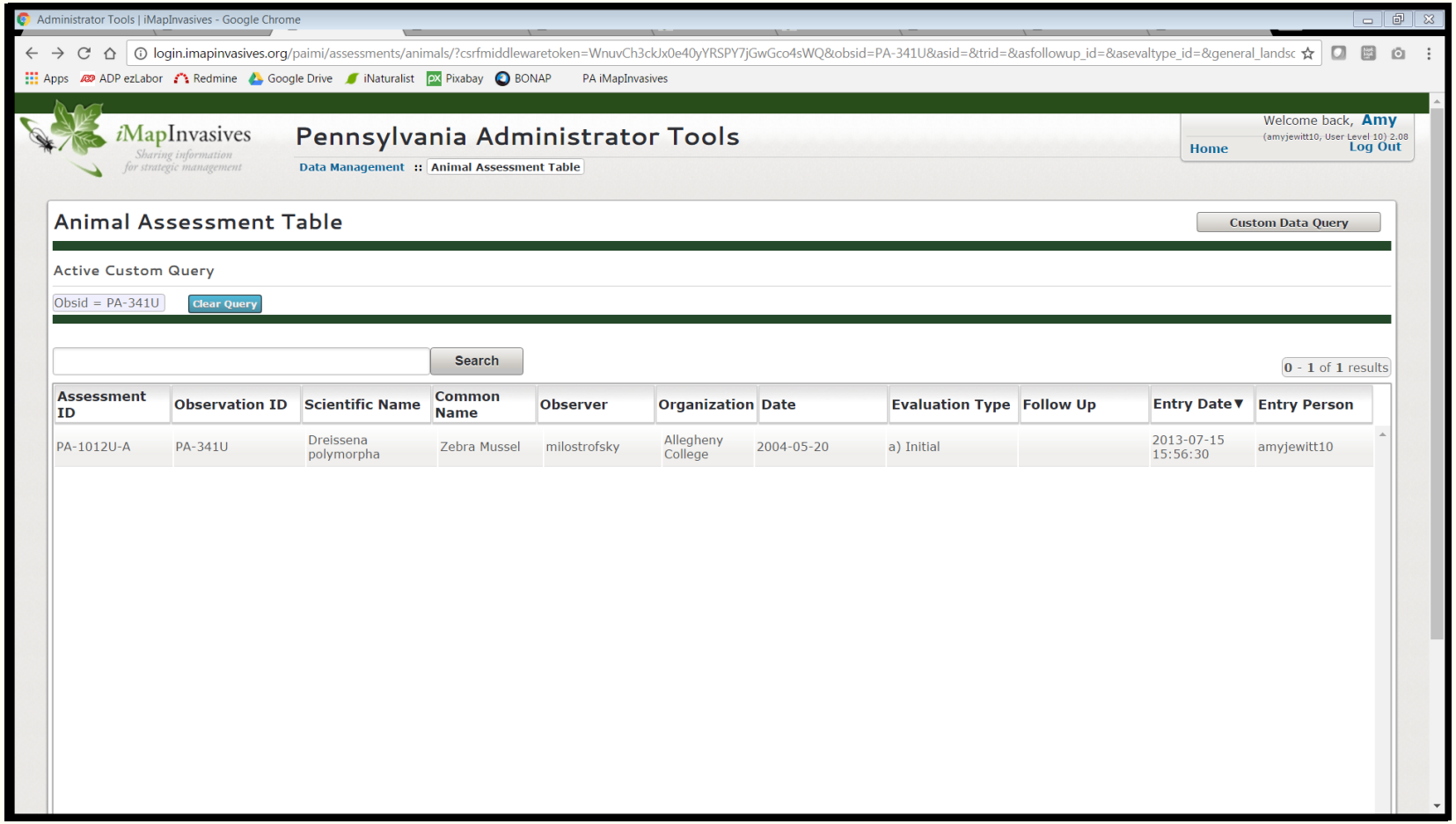
Step 4: In this example, I know the observation record ID# associated with the assessment record I'm trying to find, so I'll enter that. (PA-341U).

Advanced Data Query:
Option 3: Custom Data Query



Step 5: Scroll to the bottom of the query page and choose to view your results in a Table or on the Map. (I'll choose the table.)

Advanced Data Query:
Option 3: Custom Data Query

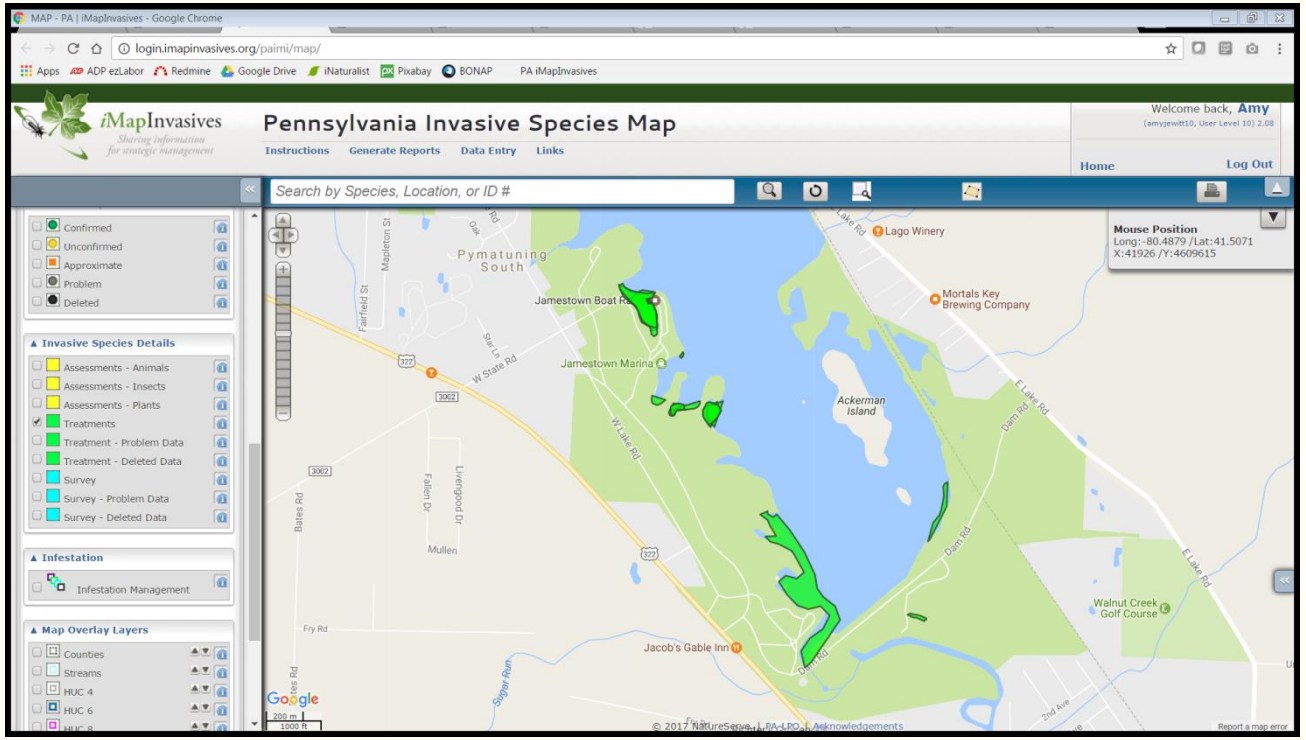


Step 6: Here are my query results in a table format. Now to view the record, I just click on the row to bring up the assessment details.

Querying for Advanced Records

To query for Survey and Treatment, records, use the following two methods:

- Option 2: Use the map
- Option 3: Custom data query
- Note: Option 1: Find the affiliated observation" only works for querying Assessment records.



Screenshot of treatment records in iMapInvasives.

QUERYING FOR PROJECT DATA

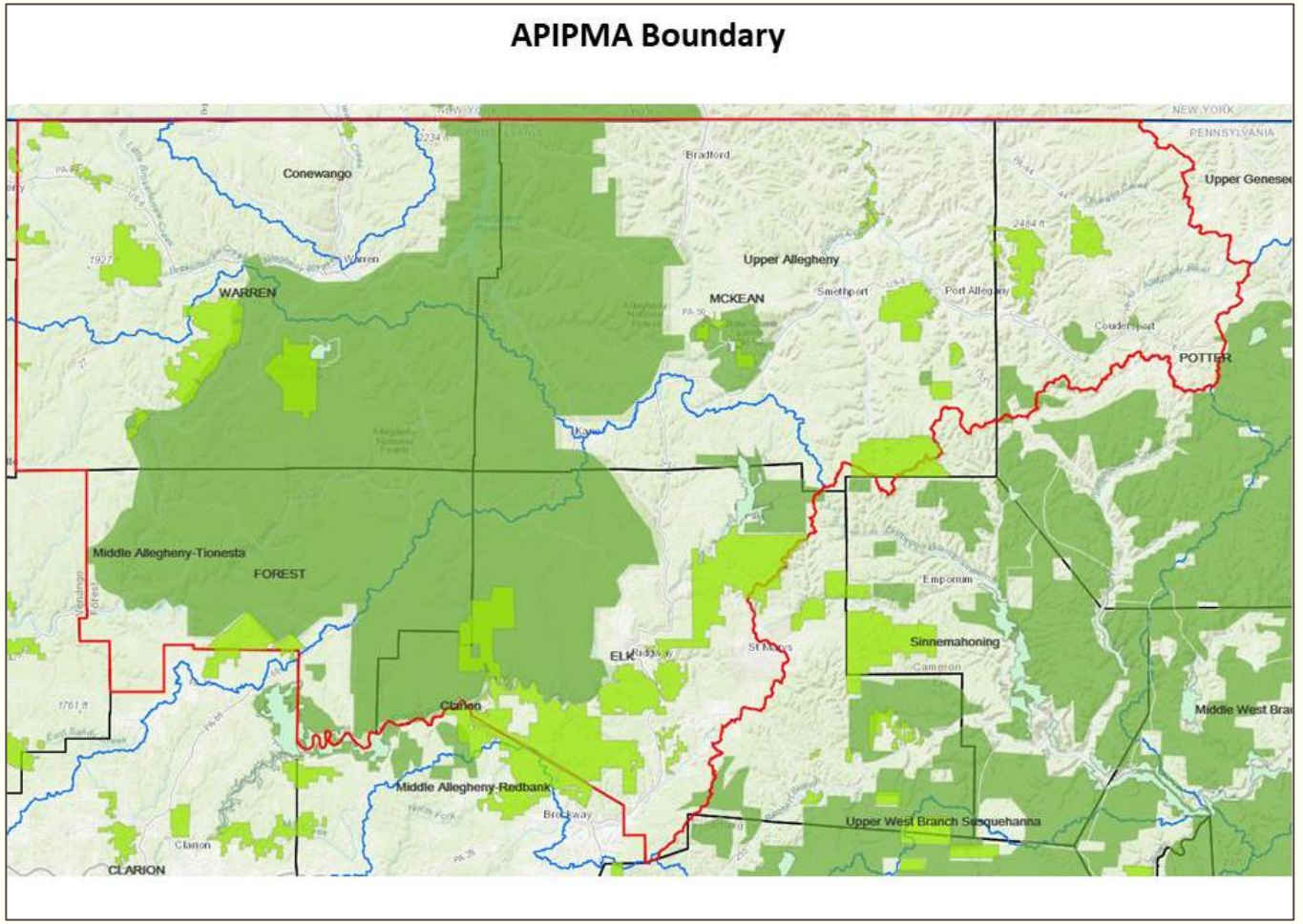
How to find data submitted in the APIPMA project.
Who can do this?

Querying for Project Data

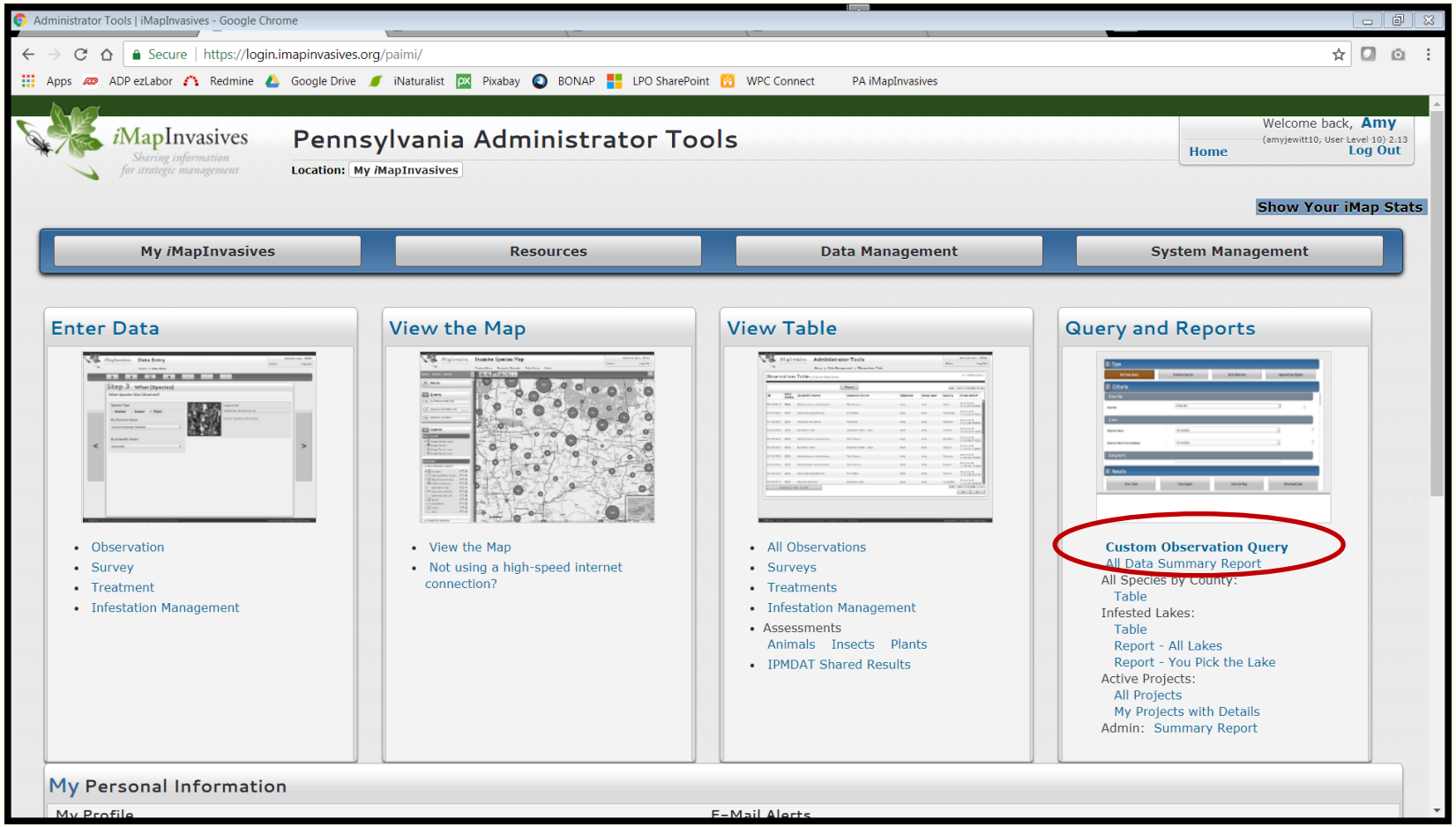
How do you retrieve and view all data in the APIPMA project?

- Step 1: Create a custom query
- Step 2: Search by project name
- Step 3: Choose to view the data in a table, report, or map form.

You must be a member of the APIPMA project to contribute data to it.

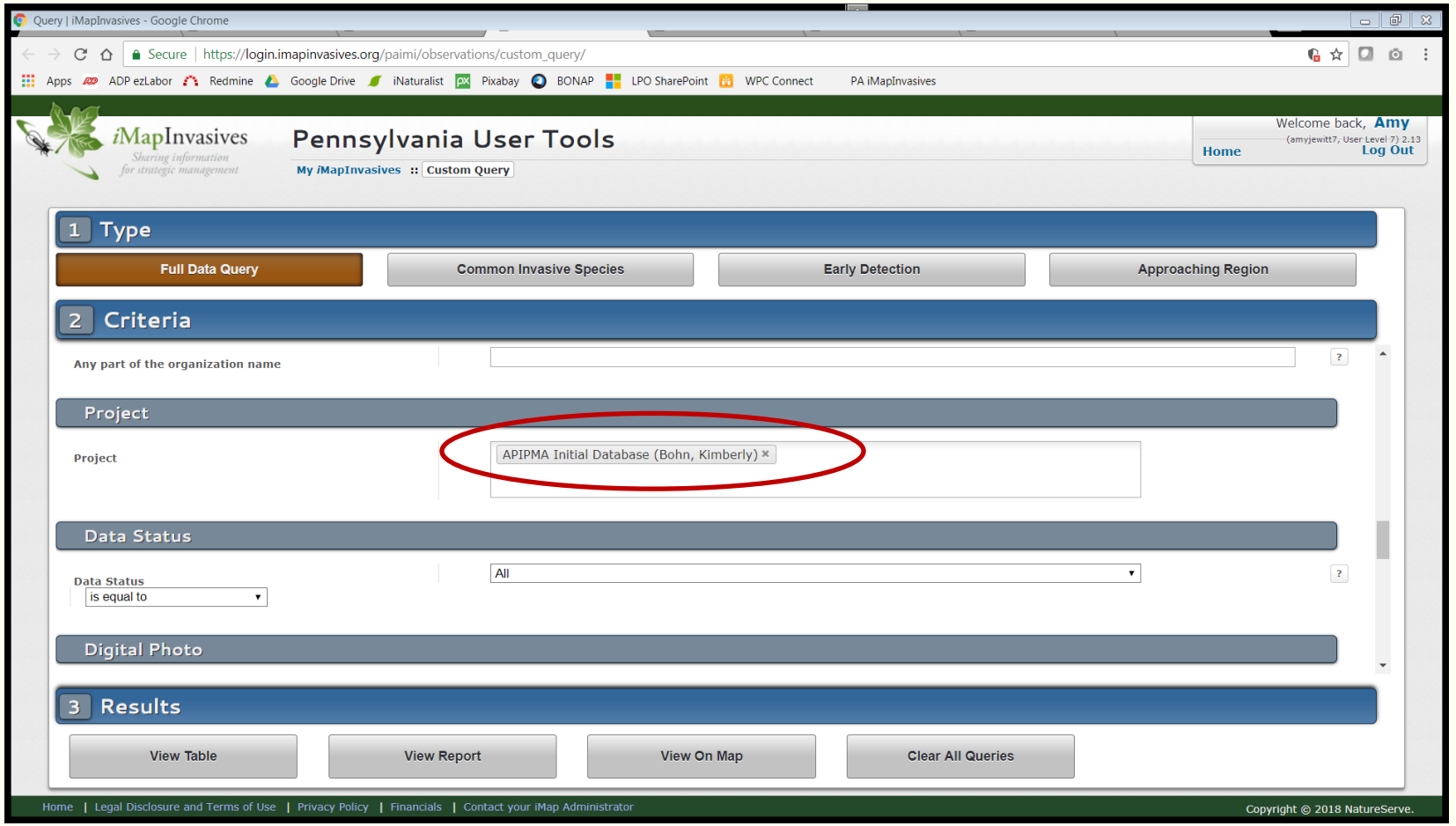


Querying for Project Data



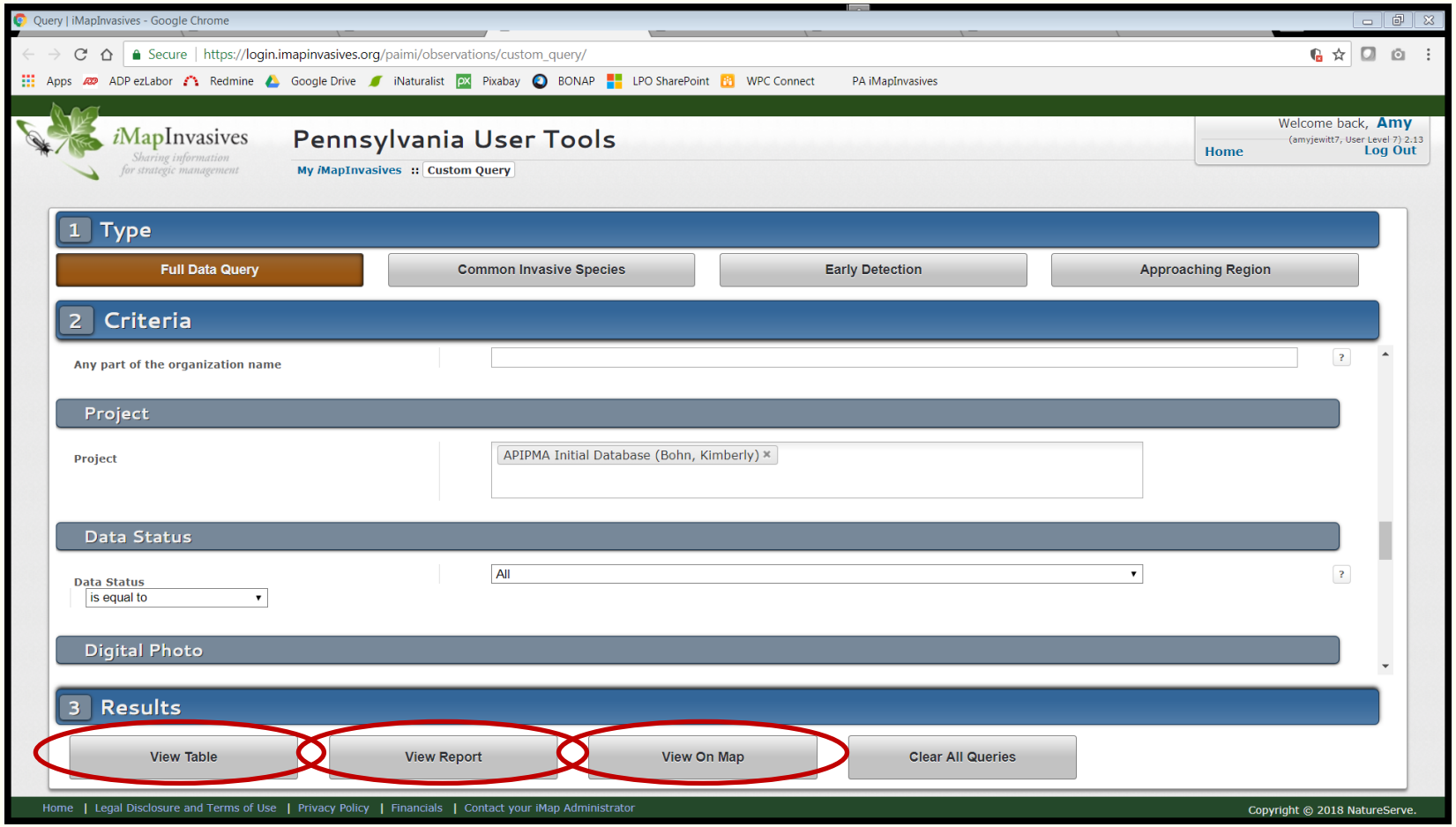
Step 1: From the main navigation page, choose “Custom Observation Query” in the Query and Reports section.

Querying for Project Data



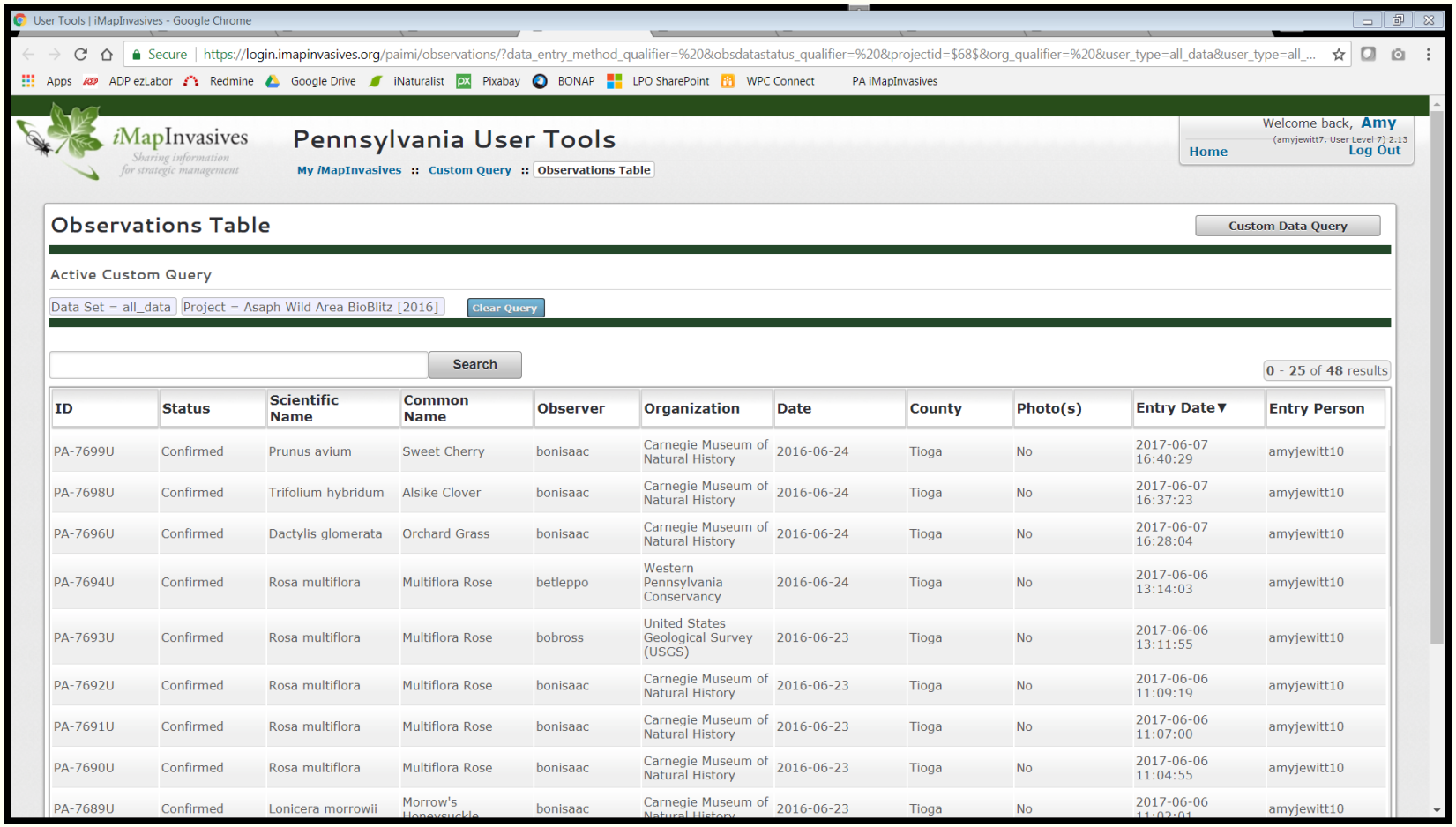
Step 2: Scroll down to the “Project” section and choose “APIPMA Initial Database”.

Querying for Project Data



Step 3: Choose which format to view your custom query in.

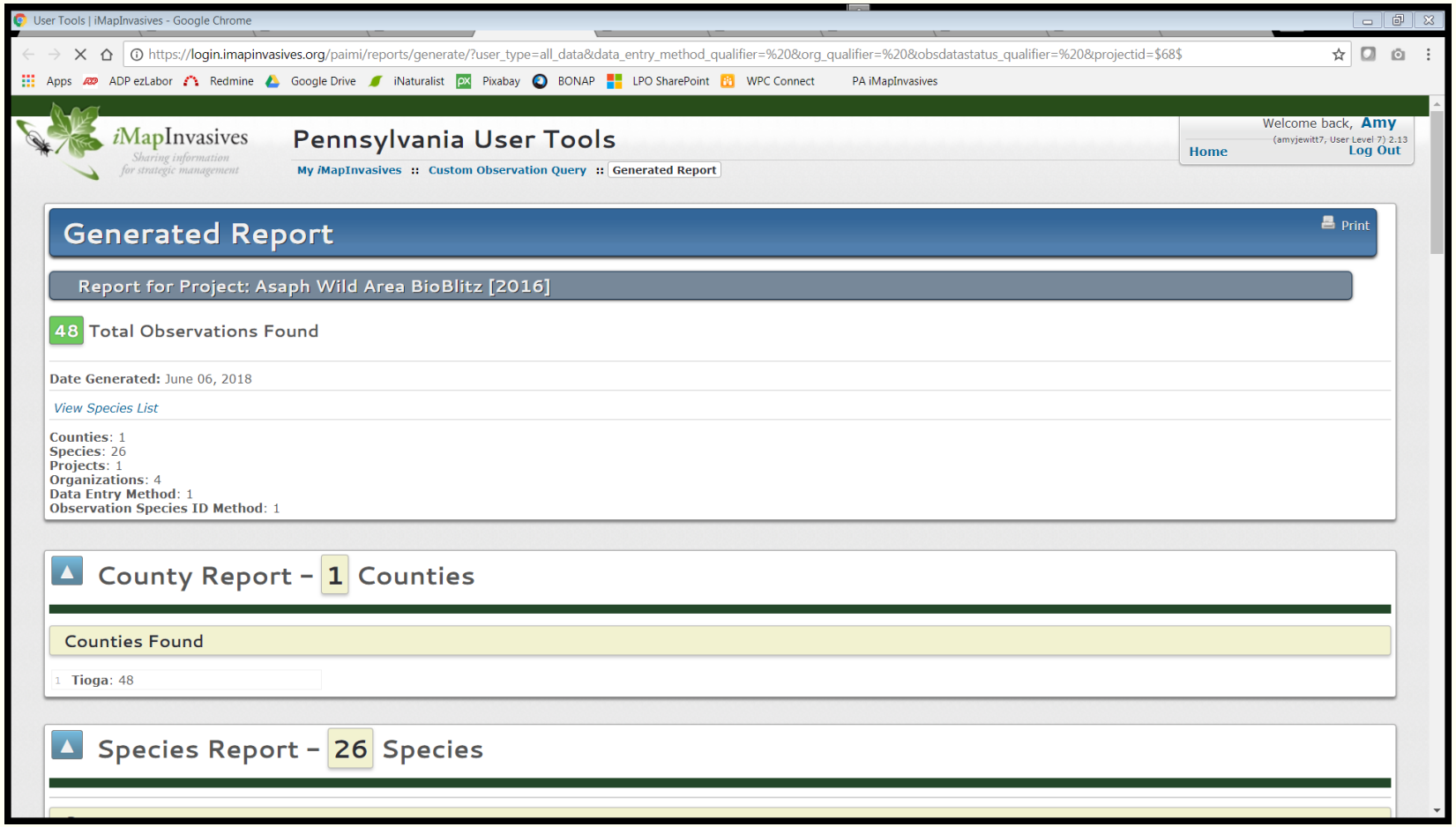
Querying for Project Data



ID	Status	Scientific Name	Common Name	Observer	Organization	Date	County	Photo(s)	Entry Date▼	Entry Person
PA-7699U	Confirmed	Prunus avium	Sweet Cherry	bonisaac	Carnegie Museum of Natural History	2016-06-24	Tioga	No	2017-06-07 16:40:29	amyjewitt10
PA-7698U	Confirmed	Trifolium hybridum	Alsike Clover	bonisaac	Carnegie Museum of Natural History	2016-06-24	Tioga	No	2017-06-07 16:37:23	amyjewitt10
PA-7696U	Confirmed	Dactylis glomerata	Orchard Grass	bonisaac	Carnegie Museum of Natural History	2016-06-24	Tioga	No	2017-06-07 16:28:04	amyjewitt10
PA-7694U	Confirmed	Rosa multiflora	Multiflora Rose	betleppo	Western Pennsylvania Conservancy	2016-06-24	Tioga	No	2017-06-06 13:14:03	amyjewitt10
PA-7693U	Confirmed	Rosa multiflora	Multiflora Rose	bobross	United States Geological Survey (USGS)	2016-06-23	Tioga	No	2017-06-06 13:11:55	amyjewitt10
PA-7692U	Confirmed	Rosa multiflora	Multiflora Rose	bonisaac	Carnegie Museum of Natural History	2016-06-23	Tioga	No	2017-06-06 11:09:19	amyjewitt10
PA-7691U	Confirmed	Rosa multiflora	Multiflora Rose	bonisaac	Carnegie Museum of Natural History	2016-06-23	Tioga	No	2017-06-06 11:07:00	amyjewitt10
PA-7690U	Confirmed	Rosa multiflora	Multiflora Rose	bonisaac	Carnegie Museum of Natural History	2016-06-23	Tioga	No	2017-06-06 11:04:55	amyjewitt10
PA-7689U	Confirmed	Lonicera morrowii	Morrow's Honeysuckle	bonisaac	Carnegie Museum of Natural History	2016-06-23	Tioga	No	2017-06-06 11:02:01	amyjewitt10

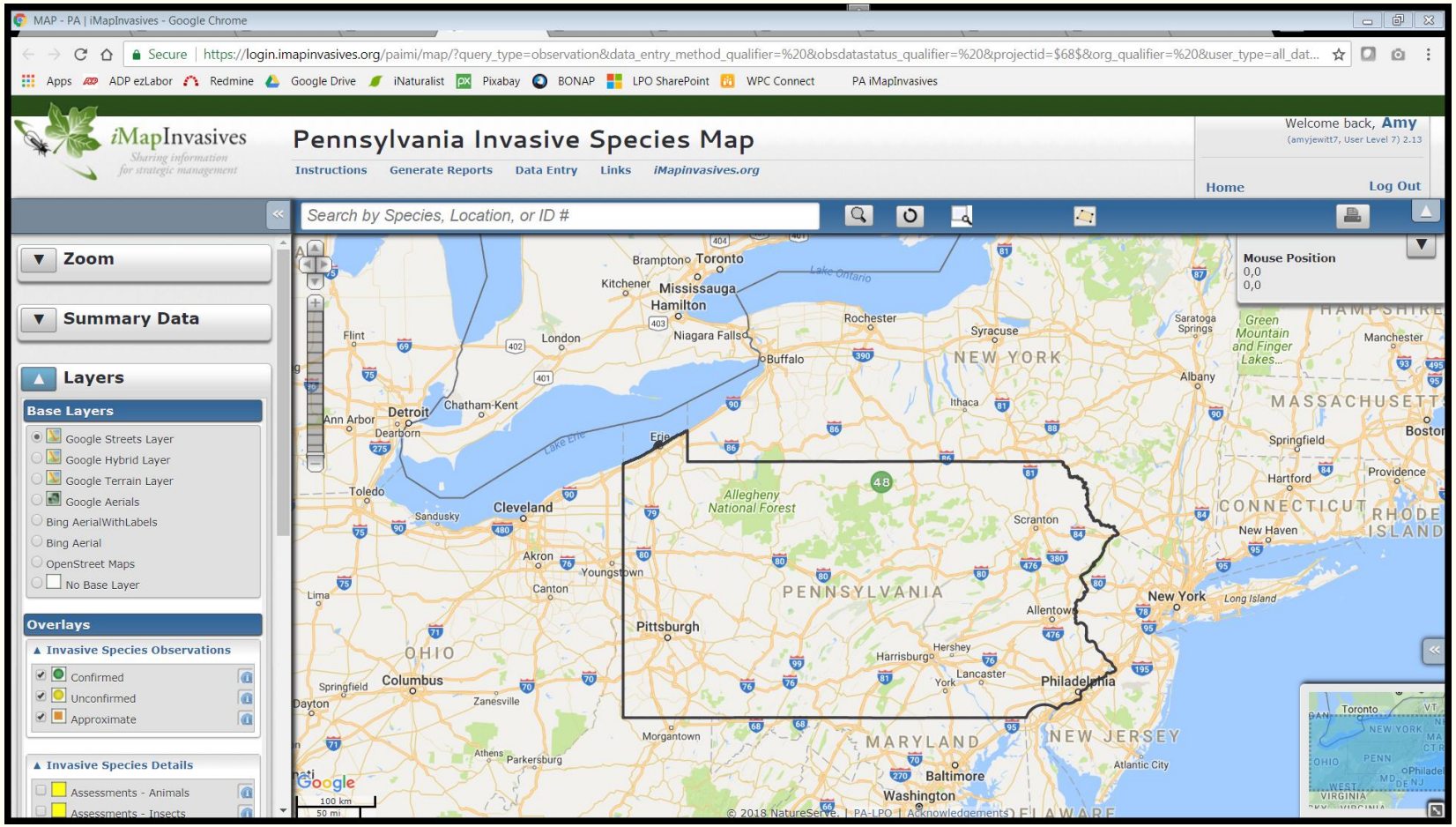
Table View Example

Querying for Project Data



Report View Example

Querying for Project Data



Map View Example

PUTTING DATA TO USE FOR YOU!

Make management decisions based on information entered into iMapInvasives by yourself and by others.

Data Analysis:
Who's Working in My Area?

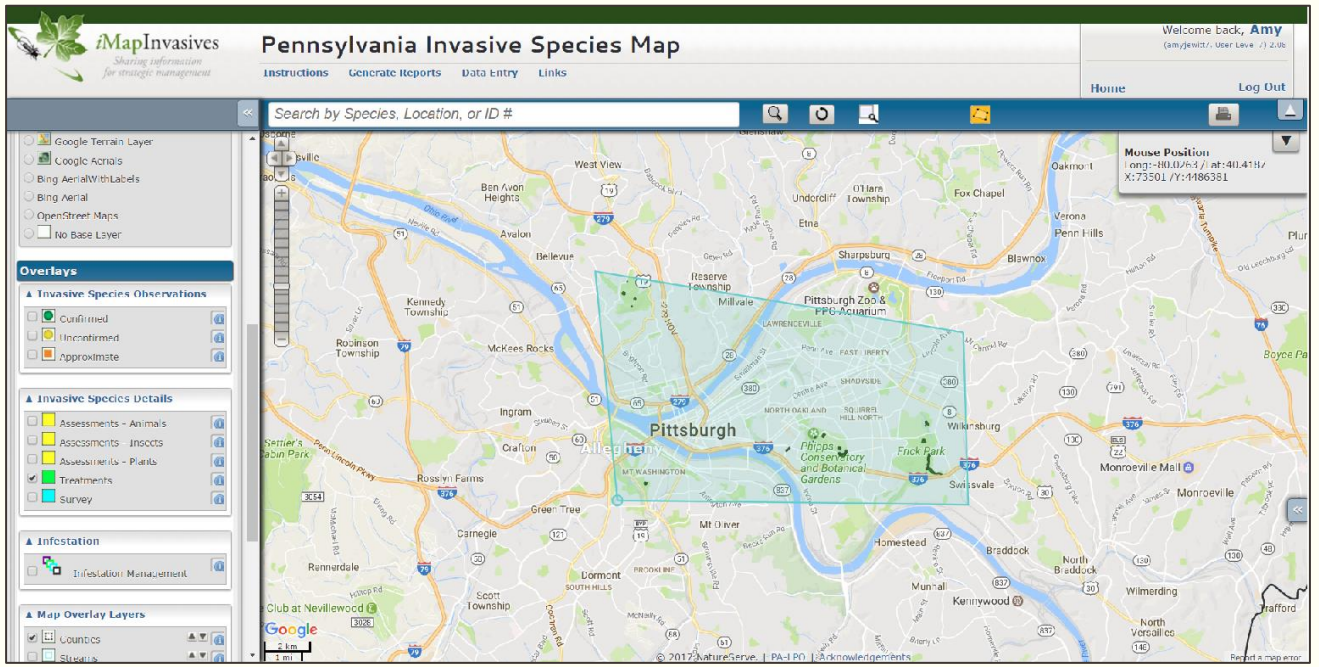
You're the Stewardship Manager at a local land trust in Allegheny County and want to see who's managing invasive species in your region.

Example: Use the Lasso tool to show me all the organizations who are conducting treatment efforts in the Pittsburgh region.

Photo credit: Conservation Land Stewardship

Data Analysis: Who's Working in My Area?

- Go to the Map from the main navigation page.
- Turn on the County layer and zoom to Allegheny County.
- Turn on the Treatment layer and zoom in as necessary.
- Use the Lasso tool to group together the data you're interested in viewing.
- View record details to find which groups are active in invasive species management (date of control activity and name of organization).



Use of Lasso tool in iMapInvasives

*Data results: Organizations conducting treatment in the Pittsburgh region include the Pittsburgh Parks Conservancy, Bartlett Tree Experts, and Steel City Grazers (i.e., Allegheny Goatscape).

Data Analysis:
Prioritize Survey and Treatment Efforts

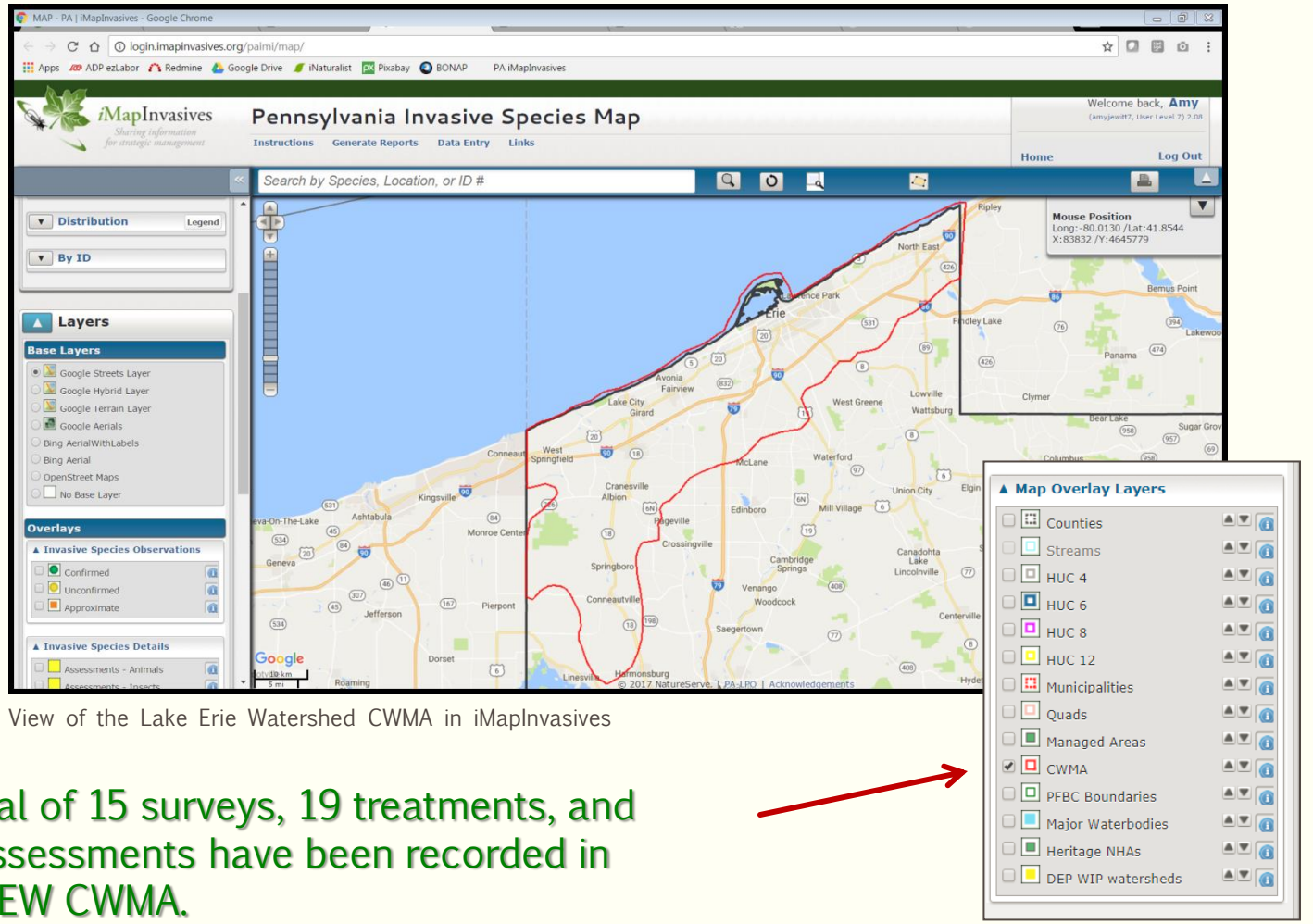
You're the leader of the Lake Erie Watershed CWMA and want to know what management efforts are currently underway or have already been completed in the region you manage. This data will help to prioritize future survey and treatment efforts.

Example: Use the Lasso tool to show me all the assessment, survey, treatment, and infestation management records documented in the LEW CWMA.

Tom Cermak (standing), Coordinator of the LEW CWMA controlling invasive weeds.

Data Analysis:
Prioritize Survey and Treatment Efforts

- Go to the Map from the main navigation page.
- Turn on the CWMA layer in the Map Overlay Layers section of the legend.
- Zoom into the LEW CWMA (Erie County region).
- Turn on the assessment, survey, and treatment layers.
- Use the lasso tool to group all data together and analyze as appropriate.



View of the Lake Erie Watershed CWMA in iMapInvasives

A total of 15 surveys, 19 treatments, and 66 assessments have been recorded in the LEW CWMA.

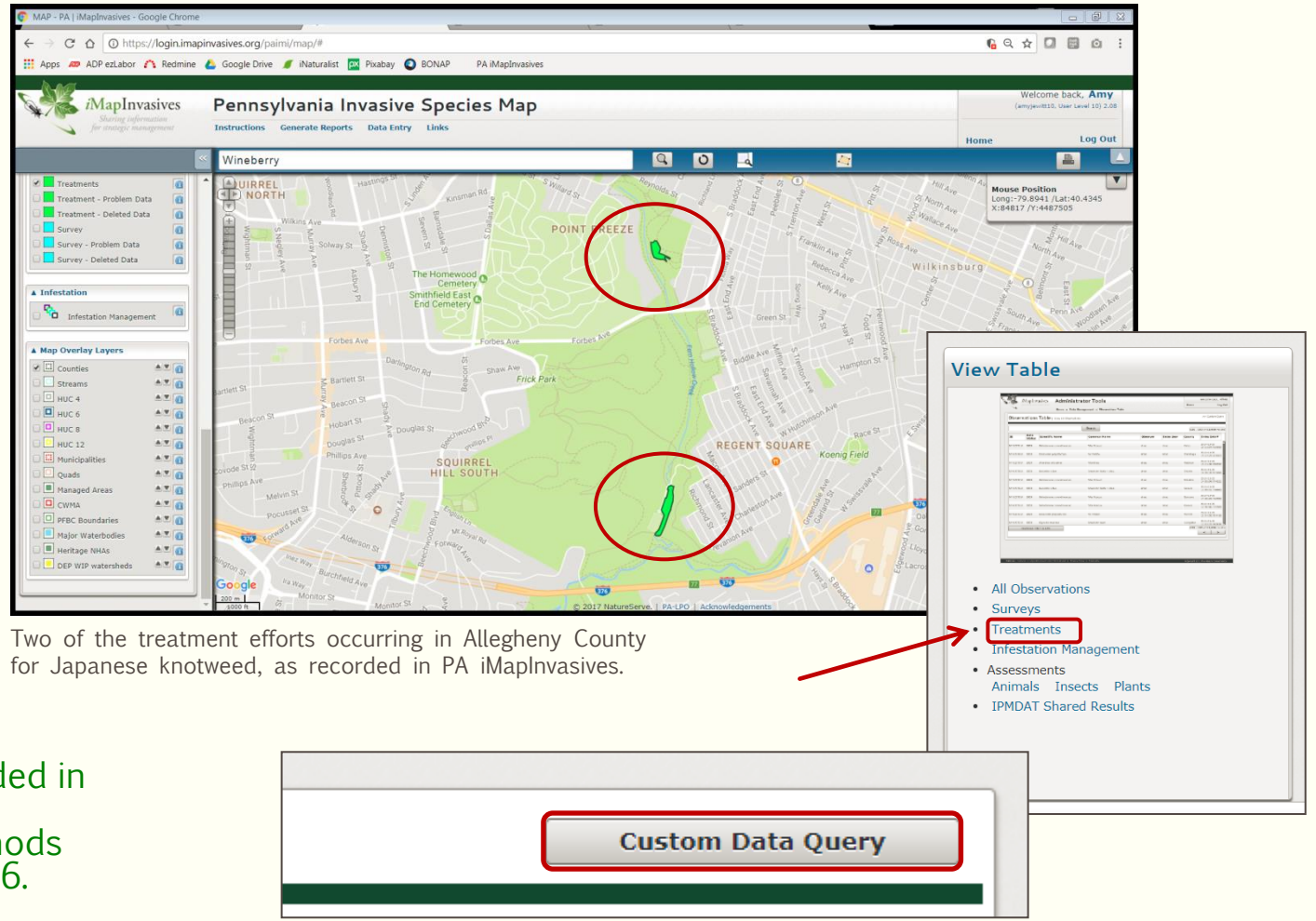
Data Analysis:
Search for Similar Management Efforts

- You are a land stewardship manager in Centre County and want to find out who else in Pennsylvania has done work to control a particular species you are interested in treating.
- Additional questions:
  - What were their treatment methods?
  - Were the treatment efforts recent?

Example: Use the Treatment Custom Query Tool to search for treatments done for Japanese knotweed all across Pennsylvania.

Data Analysis:
Search for Similar Management Efforts

- From the Main Navigation page, click on "Treatments" from the View Table section.
- Click on Custom Data Query.
- Choose "*Polygonum cuspidatum*" from the Target Species drop-down list.
- Choose to view the query in a Table.



Two of the treatment efforts occurring in Allegheny County for Japanese knotweed, as recorded in PA iMapInvasives.

***Data results:** A total of 9 treatment efforts involving Japanese knotweed have been recorded in iMapInvasives. Of those efforts, chemical, mechanical/manual, and grazing were all methods used. Treatment dates range from 2010 to 2016.

Questions?

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412-586-2305

www.paimapinvasives.org

iMapInvasives

PNHP
Pennsylvania Natural Heritage Program

Western Pennsylvania Conservancy