Western Mussel Atlas Dashboard User Instructions
April 2025

Welcome

Welcome to the **Western Mussel Atlas Data Dashboard**, where you can filter, view and download information from the **Western Freshwater Mussel Database** at the HUC8 watershed level. By filtering records, you can refine the data presented in the map and accompanying tables.

You can also display and access precise eDNA point data to view where eDNA samples have already been collected and tested for different species of western North American freshwater mussel. For precise location data from mussel surveys or observations, please register for an account with the Western Mussel Atlas Data Portal at https://westernmusselatlas.org/access-data/.

Note that this dataset only represents information shared with the Western Mussel Atlas. Additional data may be available through other fish and wildlife databases. Consult with state and local fish and wildlife agencies to inquire about additional data. The data dashboard will update regularly based on updates to the Western Freshwater Mussel Database. Contact mussels@xerces.org for more information.

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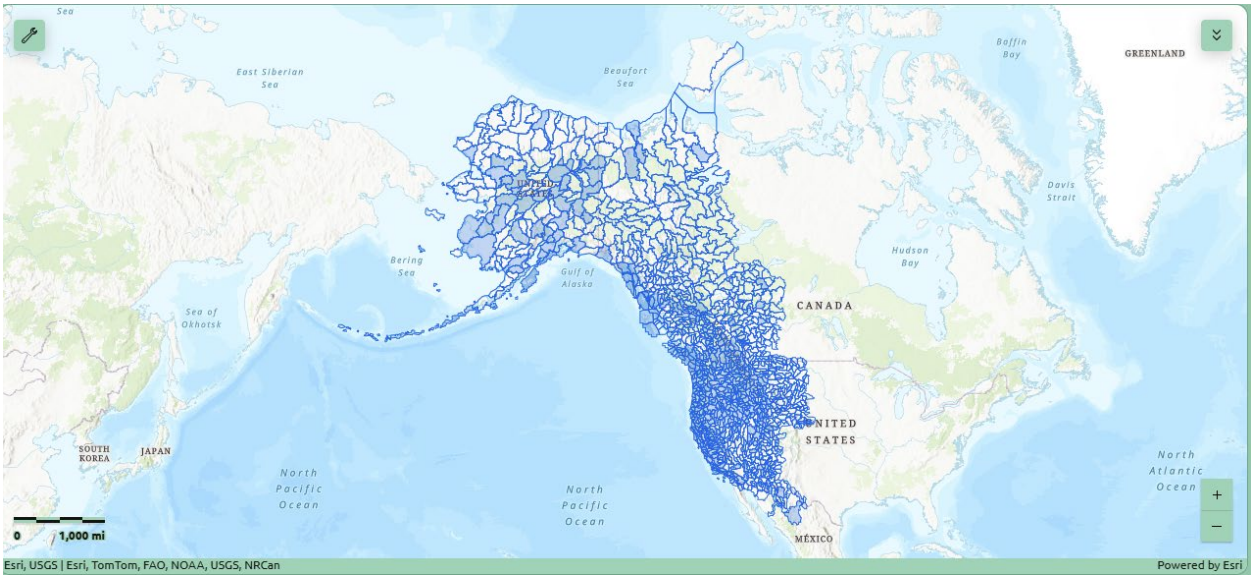
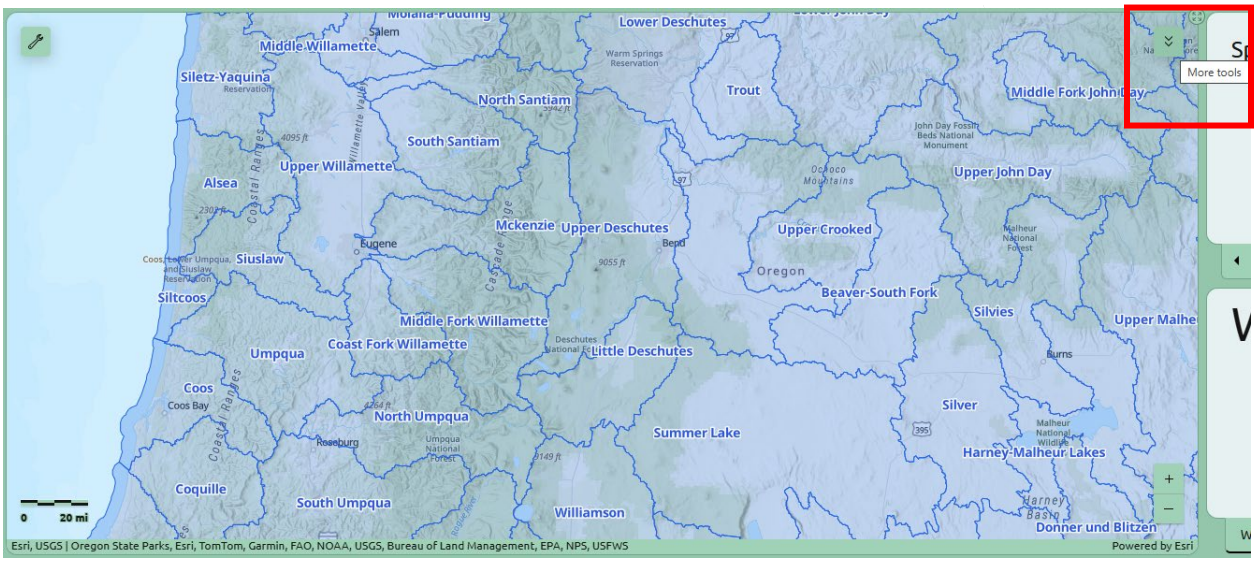
The Data Dashboard Map

- There are **two ways to access the Data Dashboard**. To simply view, filter, and explore the data, you can access a view only version: https://xerces.maps.arcgis.com/apps/dashboards/ec4b06dbf10c4566881dd47672741dc2. To view, filter, explore, and download data, you can access the data dashboard upon filling out your contact information: https://survey123.arcgis.com/share/d84b49f5ea5c468987dab612d822fe1a. Upon accessing either version of the Western Mussel Atlas Data Dashboard, you are presented with an interactive map.
- Watersheds that are **shaded blue** in the map are **by default** all watersheds with mussel occurrences (but see above for limitations to data in the Atlas). When filtering records for watershed, state, waterbody, or common name, the map will change in extent and watershed shading to reflect the filter. See below for information on **filters**.



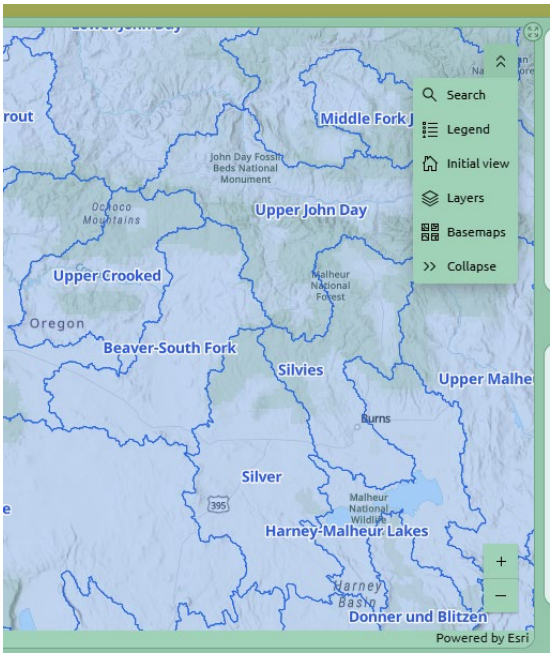
View of the map upon arrival at the dashboard. All shaded blue watersheds have at least one western species of freshwater mussel occurrence reported. Unshaded watersheds have no occurrences reported for western species of freshwater mussel.

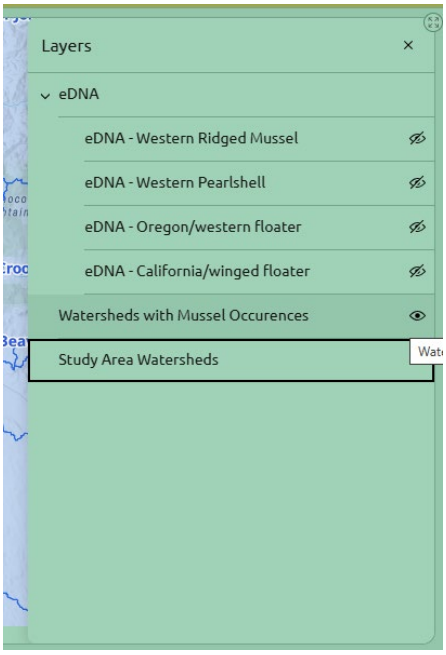
- Zooming in to watersheds will enable the **HUC8 name** to be displayed. **Please be patient** as it takes time to load!



View of the map when zoomed in to see watershed names. If data is downloaded when zoomed in, only data for those watersheds in the current extent will be included in the download. Note the words “more tools” becomes visible when hovering over the two down arrows to access the menu.

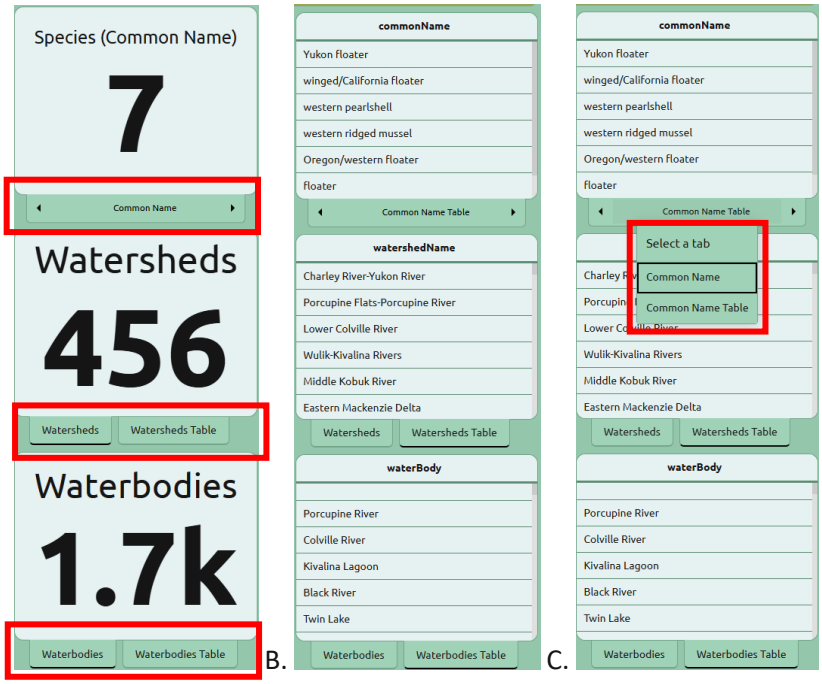
- **<u>Your map extent will affect any datasets you download</u>**. Read below for more information regarding **downloads**.
- Various layers can be found in the **menu** by clicking on the two down arrows in the **top-right** section of the map. When hovered over, the words “more tools” will appear. The **legend** for map items can also be found in this menu and shows symbology for **layers** that are **turned on**.

A. 

B. 

A. Options to display the Legend or Layers are available after clicking on the two arrows. B. After clicking on Layers, the visibility of each layer can be seen and turned on or off in the map.

- On the right side of the dashboard, there are three **indicators** that correlate to **mussel occurrence data**. They represent **counts** and **lists** of watersheds, waterbodies and species represented in the map at the **current extent**. By clicking the arrows underneath each indicator, a user can review a detailed list of the values represented by each count. **Indicators refer only to watershed data, not eDNA data.**



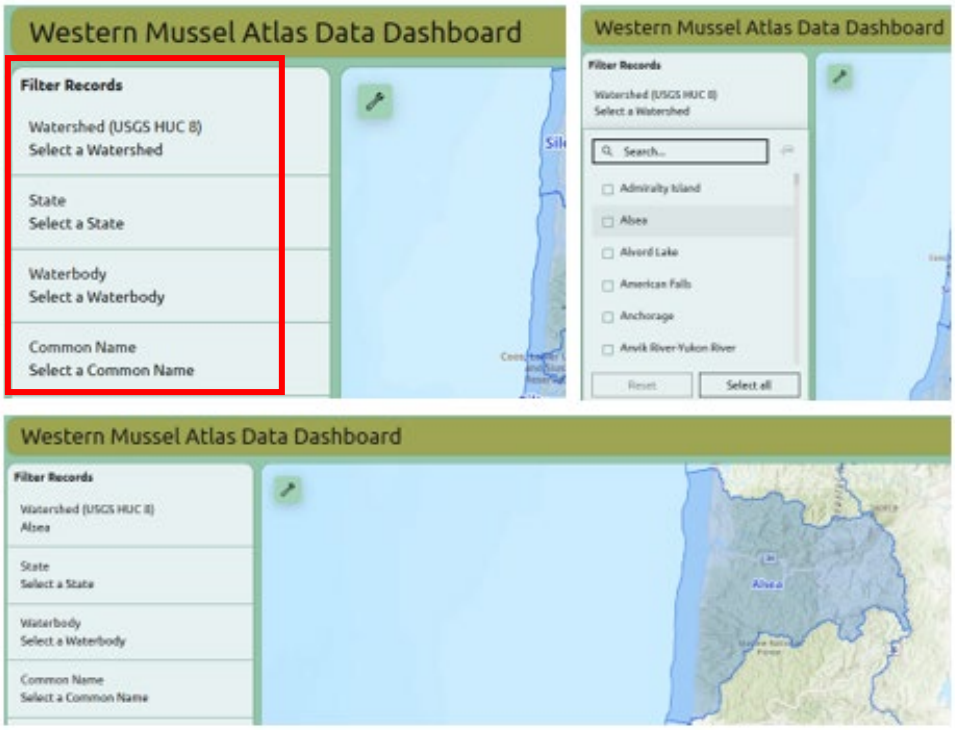
A. B. C.

Indicators can toggle between (A) quantitative summaries and (B) tables with lists of records by clicking arrows or selecting tabs (red boxes). Clicking on the words “Common Name Table” directly (C) will also enable access of the table. Indicators will update as the map extent changes.

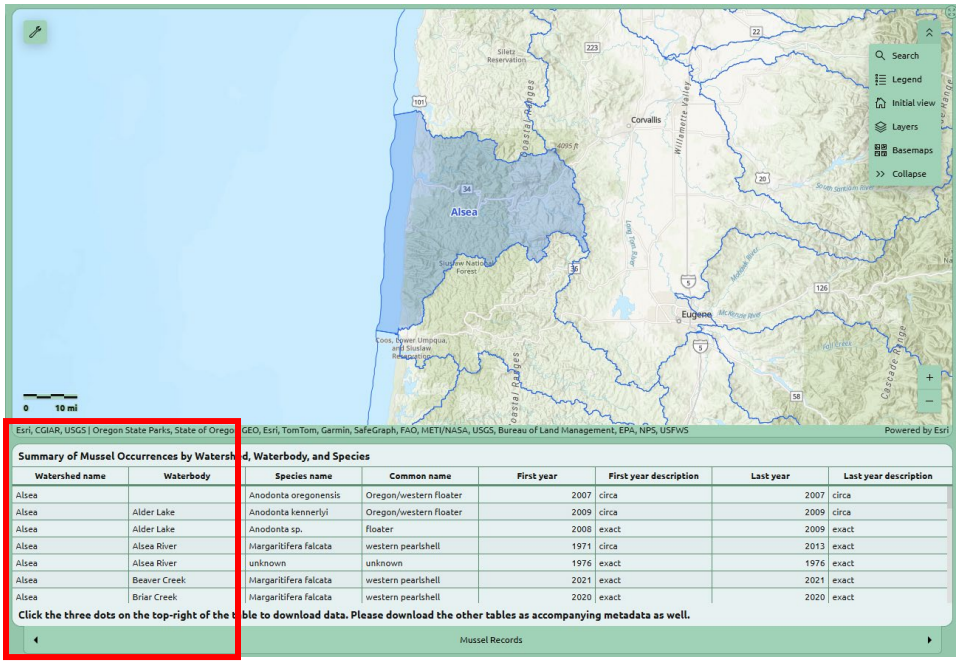
The Watershed Data Set

- The watershed data set includes **positive occurrence data for western freshwater mussels** by waterbody and visualized by USGS HUC8 watershed, as reported to the **Western Freshwater Mussel Database**. This includes positive eDNA results, but see below for more information on eDNA data viewing and download in this dashboard.
- Species are represented in the dashboard by Common Name. For details on common names, refer to the Common Name Reference table by navigating using the arrows at the bottom of the dashboard (see figure below).
- Filtering options are available **at left** on this dashboard. The **top four filters** on the sidebar filter **watershed data** while the remaining filters affect eDNA data (see below). Each set of filters operates independently.
- When filtering records for watershed, state, waterbody, or mussel common name, the map will change in extent and watershed shading to reflect the filter. When selected, **all filters** actively limit data regardless of whether layers are turned off or on in the map. **Ensure only the filters you wish to use are selected before viewing the table or downloading data (described further below).**
- To view tables providing information on the species by waterbody **within the watershed(s) you have filtered and within the current map extent**, navigate to the correct table using the arrows at the bottom of the dashboard (see figure below). Note that the data file download will have additional information not visible in the dashboard table.

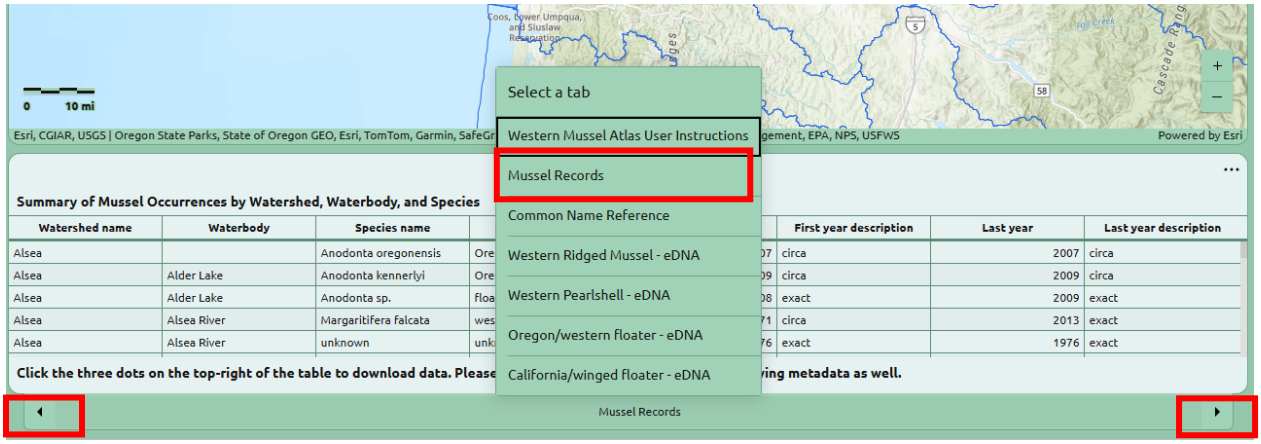
A.



B.



A. When the watershed data is filtered (using the top four options at left in the dashboard) for the Alsea watershed, the map extent will zoom in just to this watershed. You can click “Reset” on the filter to return to the original extent. B. Downloadable watershed data will only include the Alsea during this filter (as seen in the table below the map).

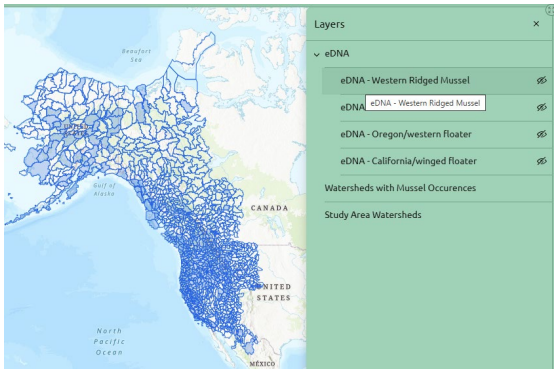


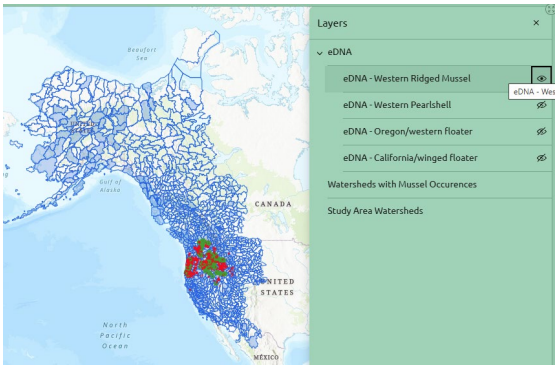
You can to the Mussel Records table using tools at the bottom of the dashboard. To download table data, refer to the section on **Downloading Data** below.

- If, for example, you filter your records by state (OR) and species (western ridged mussel), but then zoom to just a portion of the state, you will only see western ridged mussel records located in watersheds within the current extent in the accompanying table, not for the entire state of Oregon.

The eDNA Data Set

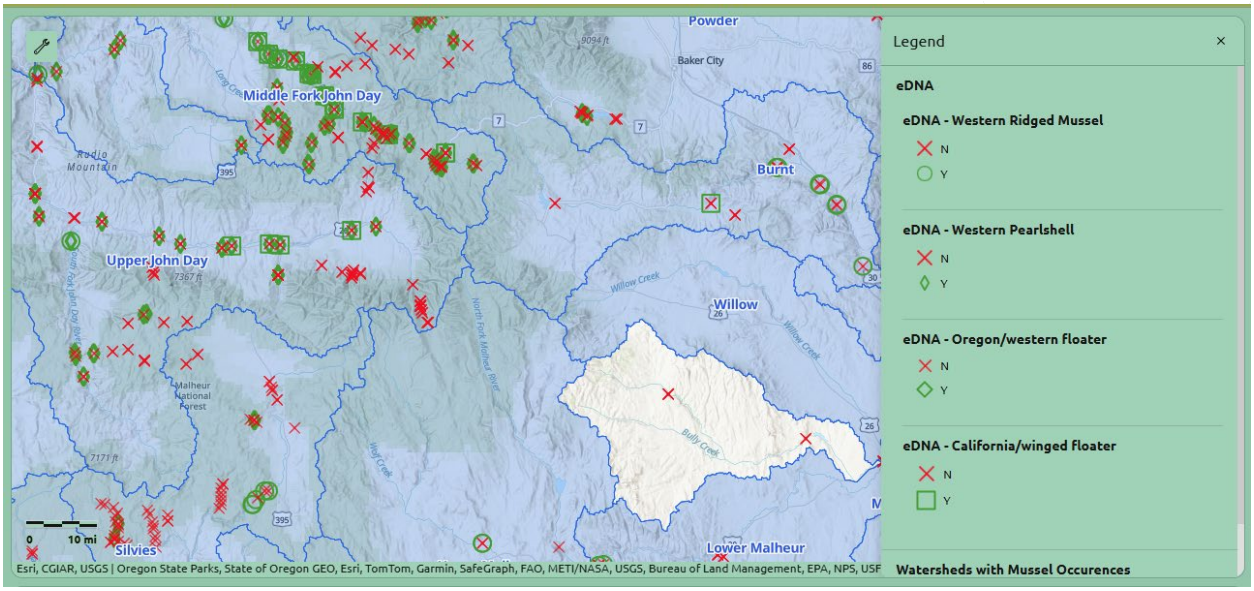
- These eDNA records represent data shared with the Western Freshwater Mussel Database, or publicly available eDNA data sets. **Only samples tested for freshwater mussels are included. Positive eDNA data is also reflected in the watershed table results as mussel species occurrences.** Therefore, if an eDNA sample in this data set was positive for western ridged mussel in the Tualatin River, there will also be an entry for that species in that river in the watershed data. Negative samples are not reflected in that table. For point-based eDNA samples, including positive and negative samples with associated coordinates, you can work directly with the eDNA data set. Note that the data file download will have additional information not visible in the dashboard table.
- By default, **eDNA layers** for four mussel species are turned off. eDNA data can be used to view **points where samples have been tested for specific species** by: 1) expanding the menu, 2) clicking "Layers," 3) clicking the **arrow** next to eDNA, 4) clicking the **eye symbol** for each species.

A. 

B. 

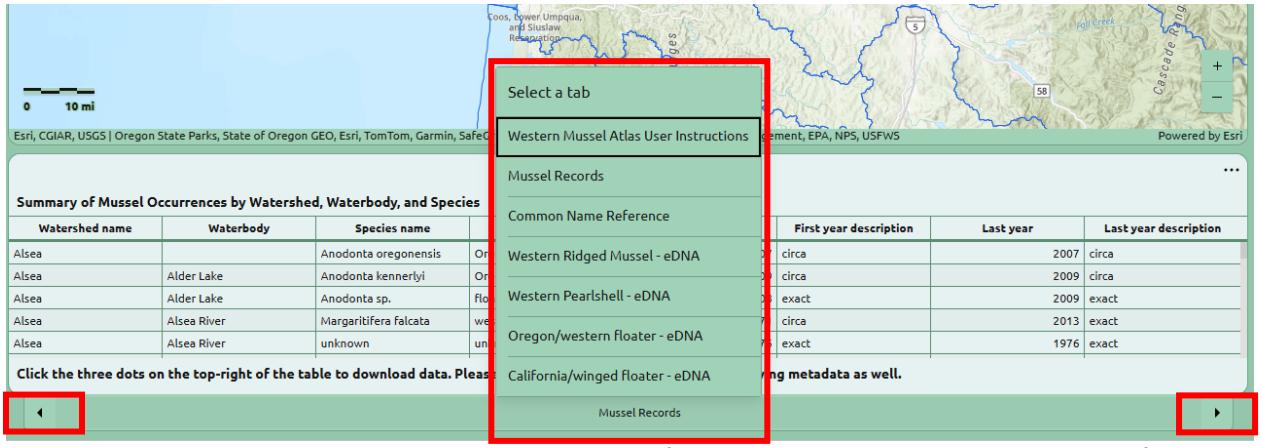
The map before (A) and after (B) turning on eDNA point data.

- The four eDNA datasets have different symbols representing **positive eDNA samples**. All **negative** samples are a **red X** for all four datasets. To see **all locations where eDNA samples have been tested for a freshwater mussel**, turn on all eDNA layers. Zoom in to view the different symbols representing different species.



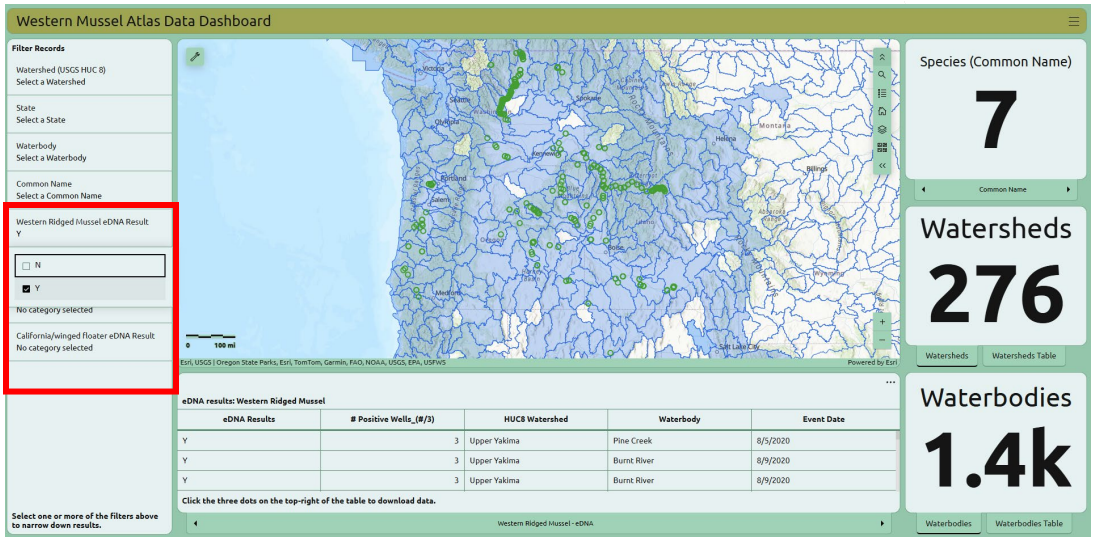
Example view of different symbology for positive eDNA samples for each species when all layers are turned on.

- Zooming in to view point data in a subset of watersheds **will limit the eDNA data provided in the table** (**only visible eDNA records in the current extent will be listed in the table and be downloadable**).
- At the default dashboard extent (when the dashboard first loads), the eDNA data is also by default for all data and all species. **To view and download all eDNA data, remain at the default extent** and navigate to the eDNA tables using the left and right arrows at the bottom of the dashboard or by clicking directly on the table name, which will reveal a popup list from which you can select a particular table.



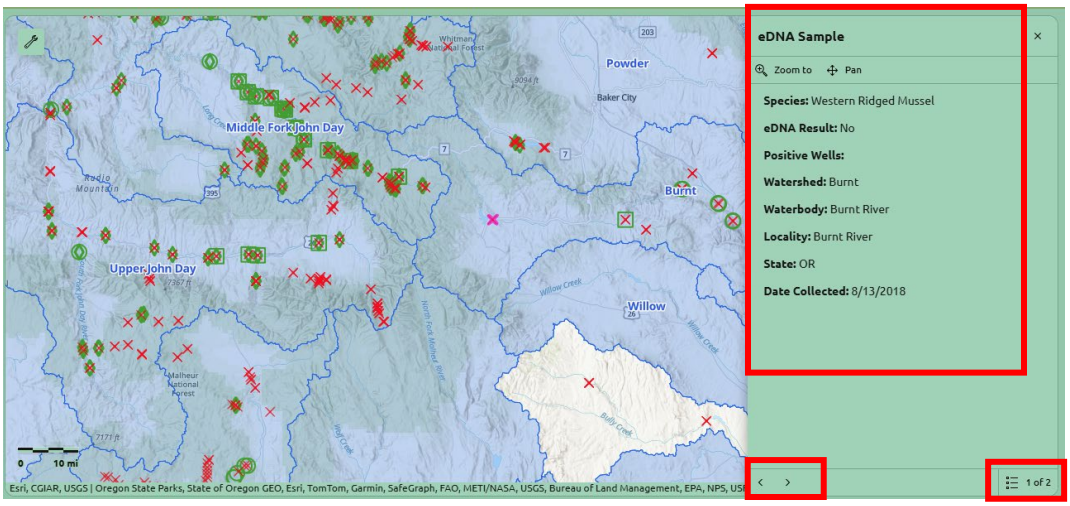
You can navigate between tables using tools at the bottom of the dashboard. To download table data, refer to the section on **Downloading Data** below.

- To **filter** downloadable eDNA data, use the four filters **at left**. eDNA data points **do not need to be visible** (see above) to be filtered, and filtering eDNA records will not make the layers visible. For best results, ensure the species' eDNA data layer is turned on before filtering. **Filtering watershed data will not filter eDNA results or vice versa.**



The four filters (one for each species for which we have eDNA sample data), can be filtered at left. In this example, western ridged mussel data is filtered only for positive results. **The corresponding table, and thus download, will only include positive eDNA samples within the current map extent. Note that the Indicators at right still only refer to watershed information** based on the current map extent, not the filtered eDNA data results.

- Clicking on a point will bring up an **attribute box** with information on the sample. If the point represents **more than one species' sample or multiple samples for a species**, you will see left and right arrows at the bottom of the attribute box to view information for each sample. You can also click on the option at the bottom right to see the list of species with records and select each one of interest to view individually. Note that there could be multiple samples for a single species with the same coordinates but collected on a different date.



In this example, a western ridged mussel sample appears on the first click of the pink X in the Burnt watershed. Clicking either of the two navigators in the bottom of the attribute box will reveal a western pearlshell sample result.

- Note that if you select a point and a large number of records appears in the bottom right of the attribute box (i.e., “1 of 100”), you can zoom in closer to that point and reselect it. This should reduce the number of records selected, unless 100 records were indeed collected and tested at a single location.

Downloading Data

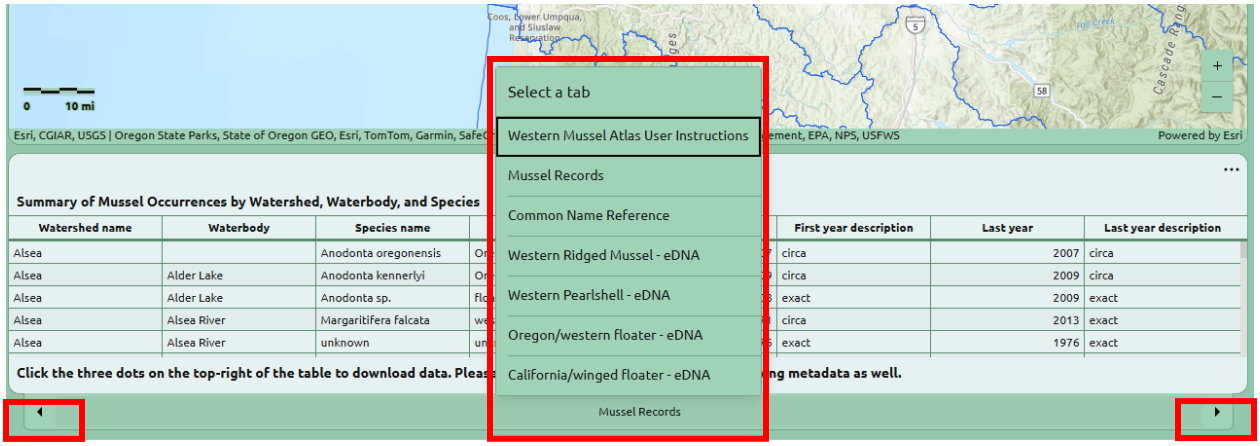
- **To download data, you must submit your contact information to access the downloadable data set: https://survey123.arcgis.com/share/d84b49f5ea5c468987dab612d822fe1a.**
- When you are ready to download data, decide on the final filters to apply and the final map extent. **Remember, altering the extent of the map through filters or zoom will limit your download only to visible watersheds or eDNA records for a species located within the current extent. Filtering eDNA data will not change watershed shading or watershed download data. However, filtering eDNA data will affect eDNA data downloads.**
- You must download watershed data as a single file. You must download eDNA data for each species as a separate data file. Files will download as .csv. Each data file download will have additional information not visible in the dashboard table.
- When you have confirmed your filters and map extent, wait until the **Indicators** update with the correct number of species, watersheds, and waterbodies included in the filter or zoom. **Please be patient as this may take a moment.** After they update, the data is ready for download.

A.

B.

Example of updated indicators updating from unfiltered (A) to filtered (B) for the Alsea watershed.

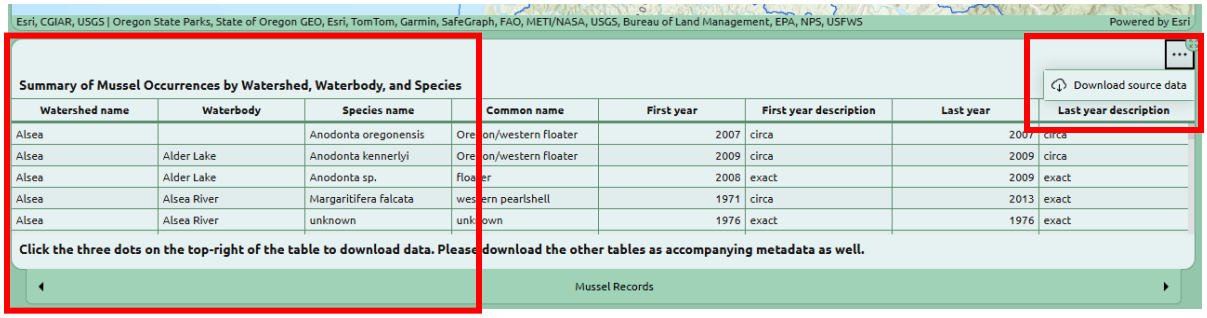
- To download the data for watersheds, navigate among viewable tables using the left and right arrows at the bottom of the dashboard or by clicking directly on the table name, which will reveal a popup list from which you can select a particular table.



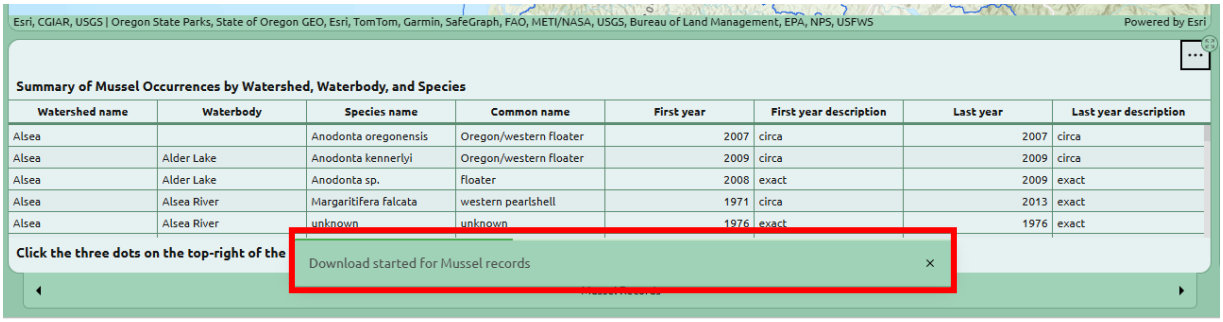
You can navigate between tables using tools at the bottom of the dashboard. To download table data, refer to the section on **Downloading Data** below.

- When you arrive at the table for "Summary of Mussel Occurrences by Watershed, Waterbody, and Species," click the three dot buttons on the top right of the table to see a download option. Upon clicking "Download source data" you will see a notification that a csv file download has started.

A.



B.



After the data has filtered, a csv file is selected for download.

Questions?

Contact: mussels@xerces.org