Aquatic Restoration Mapper Tutorial
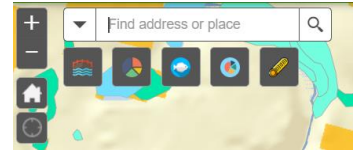
1) Open ARM Mapper:
   http://nhdes.maps.arcgis.com/apps/webappviewer/index.html?id=21173c9556be4c52bc20ea706e1c9f5a
2) Explore the different functions with the layout.
   a. Zoom in and out using the -/+ symbols in the upper left corner.
   b. Type in an address in the upper left corner.

3) Click on legend icon in the upper right panel.
   a. View the layers currently turned on and what the symbology represents.
4) Click on the layers icon.
   a. See what different layers available to view and turn them on/off with the blue check box.
   b. Expand the layer (small grey arrow) to see the symbology
   c. Click on the three small grey-dots to the right of the layer name and click on "View in Attribute Table" to open the data table for that layer.
   d. Look at the tables for a few layers and understand what information is presented. Look at the "Options" menu in the upper left corner.
   e. From here you can set additional filters, export the raw data as a .csv, or hide fields.
5) Click on elements in the map
   a. View the pop-up windows for the different data layers
6) Hover over each of the tools in the upper right corner to understand
   a. Town filter, Printing tool, Measurement tool, paint/map markup tool
   b. Layers and legend tabs
   c. Change the "Base Layers" view to aerials or road maps
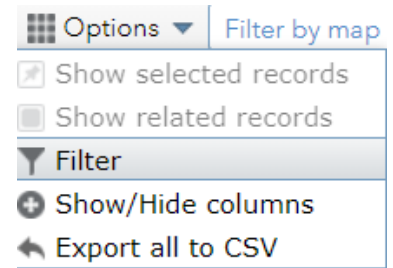
Finding Land Conservation Opportunities

7) Turn off all stream layers on the right hand side.
   a. Turn off stream crossing data layers and flood hazard records.
8) Turn on the NH Fish and Game WAP layer.

9) Click on Town filter icon.
   a. Filter by Town name.
10) Turn on the NWI layer.
   a. Click on any NWI area to see the wetland types.
   b. Click on any stream to see fisheries presence.
11) Turn on the "Conservation Land Parcels", "NH Parcel Mosaic", "National Wetlands Inventory", and "Aquifer Transmissivity" layers.
   a. Zoom in on parcels adjacent to and connecting existing Conservation Lands.
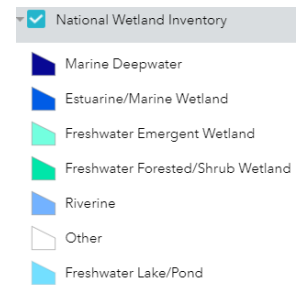
b. Also consider where the WAP Tier 1 (pink) and Tier 2 (green) locations are relative to conservation lands. Areas overlapping NHFG WAP are higher priority for conservation!

    c. Look for areas that also overlap with aquifer high-yield transmissivity (>2,000/day).

12) Locate the parcels that meet as many of the criteria described above.

    a. Turn on aerial imagery and get an idea of what the parcel is like in terms of vegetation and infrastructure.

    b. Is it wooded? Does it have a house on it?

13) Use the "Print" tool to export a PDF of your targeted location.

Questions:

- What is the level of involvement in the community for land conservation?
- Does the town have a connection with the local land trust?
- What are the development pressures in the Town or zoning to understand future land changes?
- Consider the identified parcel relative to the level of threat from future development i.e. subdivision, commercial/industrial pressures, or is it isolated and not under threat.

Stream Crossing Barrier Removal Opportunities

14) Turn on all of the stream crossing layers and fish habitat layers.

15) Filter by Town name.

16) Use the pie chart tools on the upper left-hand side to review summary statistics and pie charts for the stream crossing data in your focal area.

    a. What percent of stream crossings in your town are a barrier to aquatic organisms (i.e. "reduced passage" or "no passage")?

   b. What percent of stream crossings have poor geomorphic compatibility?

17) Now use the "Stream Crossing Summary" tool in the upper right hand corner.

    a. Review the status of the stream crossing scores and select a few that seem to be the "worst".

18) Filter the stream crossing data by Aquatic Organism Passage (AOP).

    a. Review crossings/barriers ranked as having "No Passage" or "Reduced Passage".

    b. Search for crossings/barriers on streams with high-quality fish habitat.
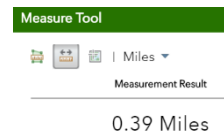
19) Turn on the "NHFG WAP" and "Conservation Parcels".

    a. Look for crossing that are disrupting landscape connectivity.

20) Turn on the "Flood Hazard Records" data.

    a. Click on black flags for crossings/barriers known to flood which may be a priority.

21) Target a potential crossing/barrier to consider removing.

    a. Use the measure tool to determine the length of upstream and downstream of habitat regained if culvert was replaced *Note to turn on dams layer for this!

Measure Tool

Miles ▼

Measurement Result

0.39 Miles

Questions:
- What aquatic species would benefit from replacing this culvert?
- Due to the issues with the crossings and its location, can you think of potential partners for this project (i.e. NHFG, HSEM, a land trust, the town DPW department).