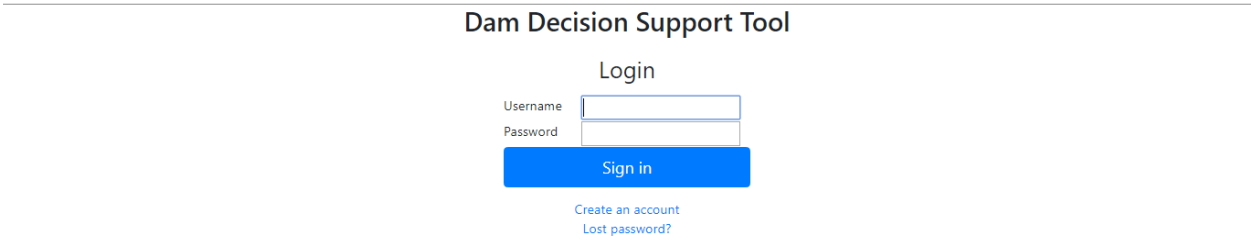
Dam Decision Support Tool Instructions

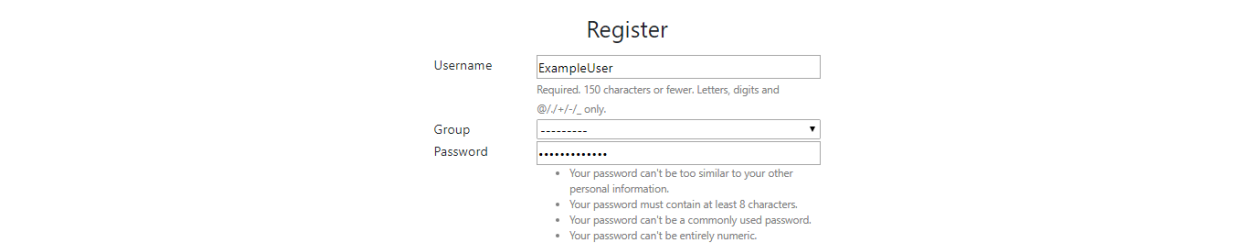
Step-by-Step with Examples

Welcome! This set of instructions is designed to guide the user through the Dam Decision Support Tool and help the user troubleshoot, should problems arise.

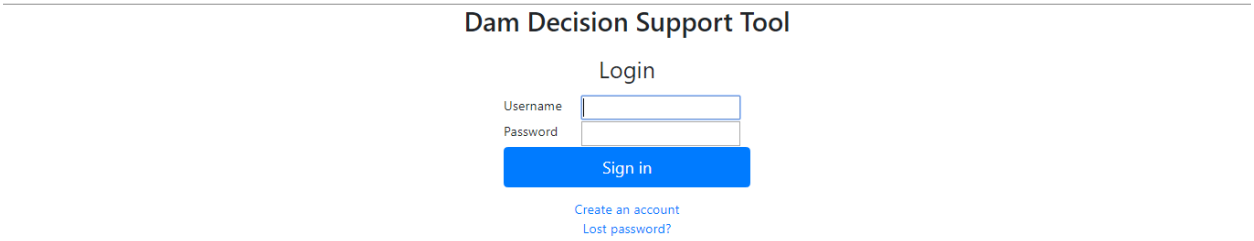
Visit http://dams-mcda.gsscdev.com and you will see the following screen.



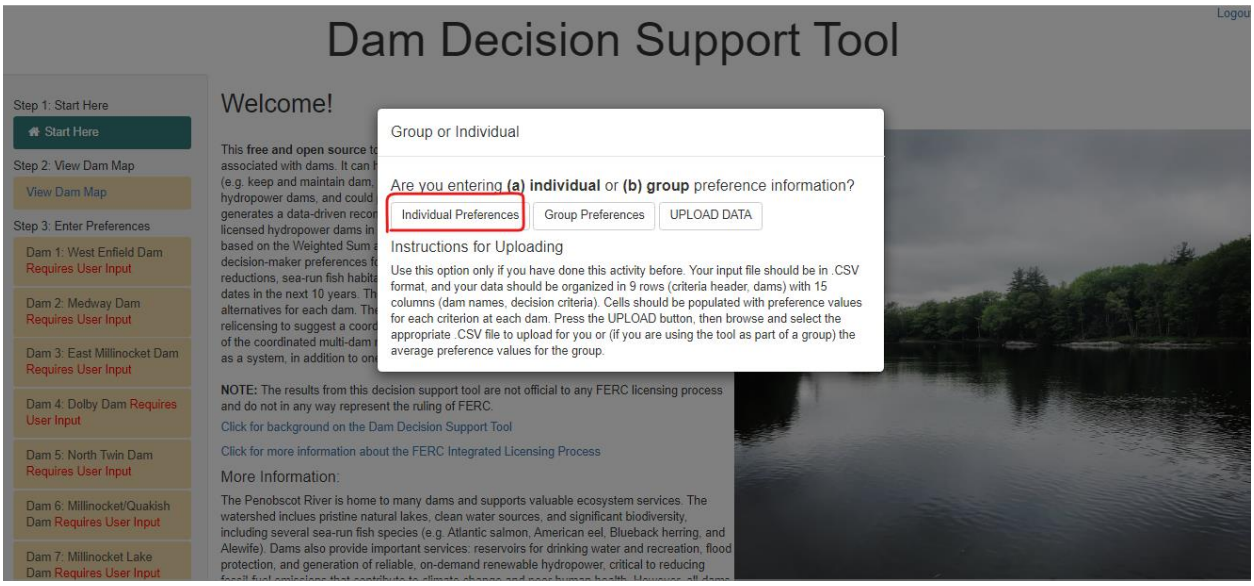
You will need to create an account and password to logon. Clicking “Create an Account” will bring you to the following registration screen (below). **Tips:** Passwords cannot be too close to the username or any personal information. Passwords cannot be entirely numbers.



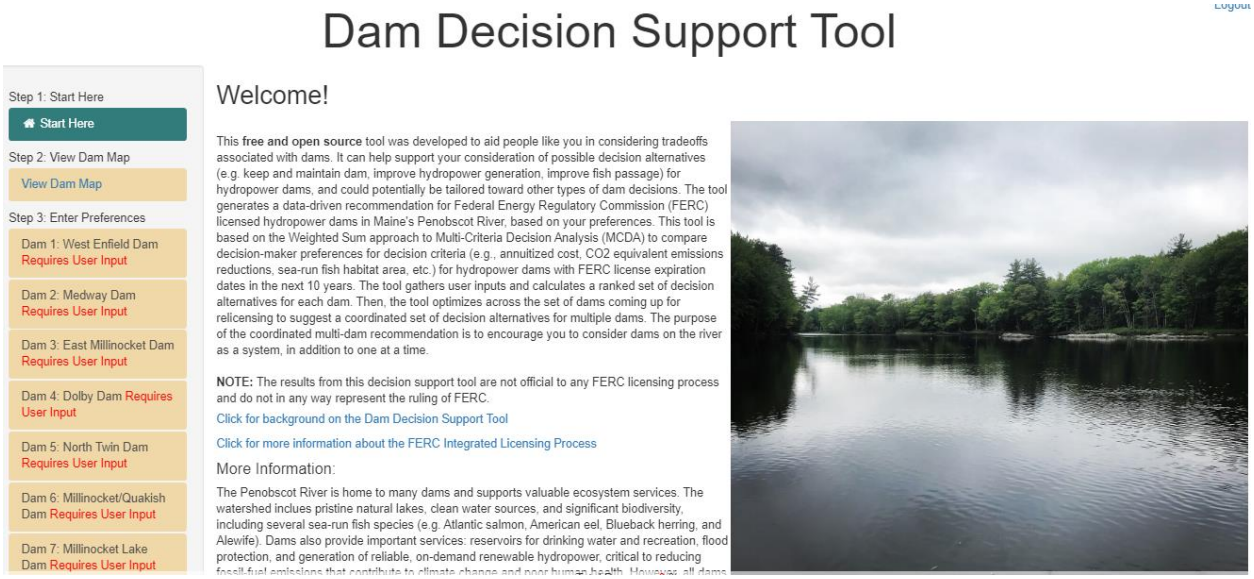
Now that you’ve created an account, you will be asked to log in. Enter your brand new username and password before clicking “Sign In”.



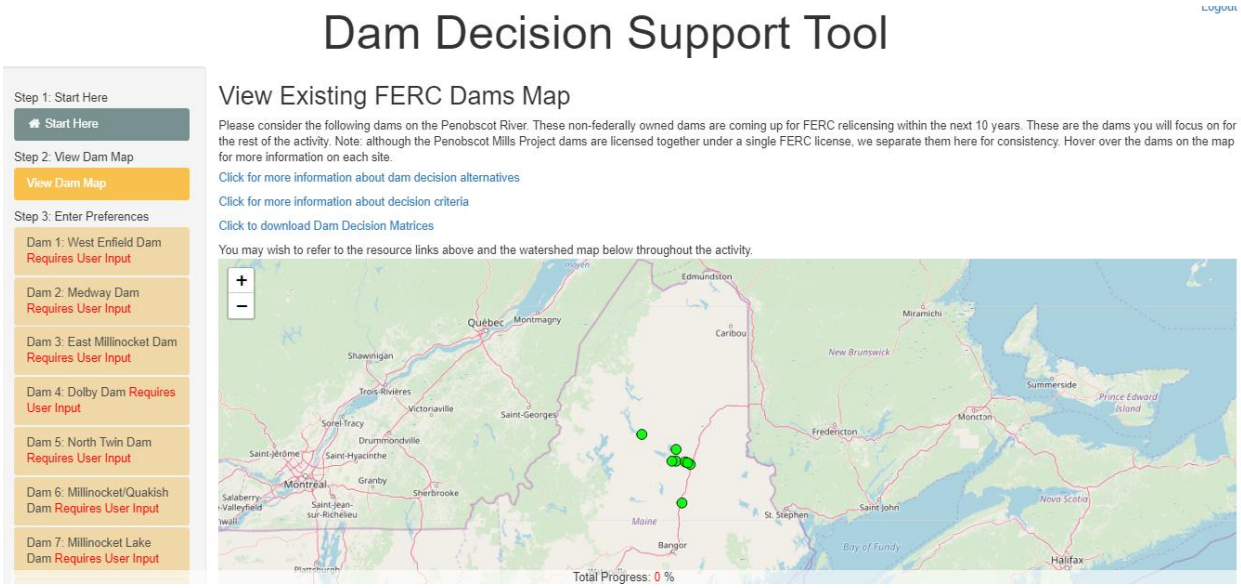
After you are signed in, this is the screen you will see (image below). The dialogue box will ask you whether you are entering individual or group preferences.



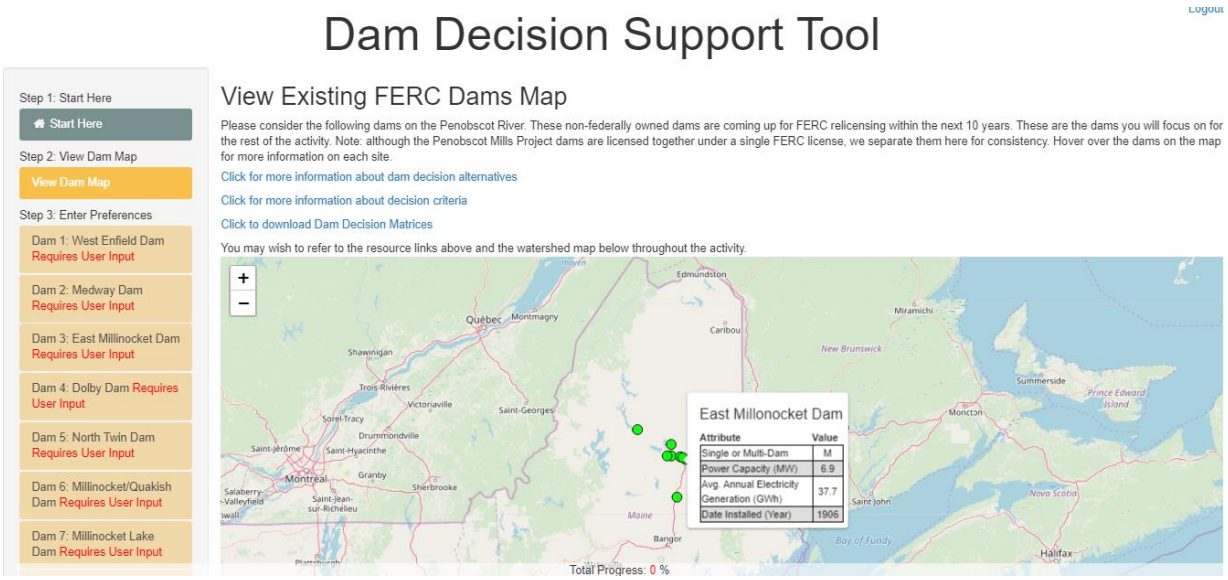
Unless you are working with a group or have done this activity before, you will select “Individual Preferences”. Then, begin with Step 1. Read through the page, click on links to open the Background on the Dam Decision Support Tool document or learn more about the FERC Integrated Licensing Process.



Now, Step 2. Click on “View Dam Map”. This page will orient you to the hypothetical, but realistic, context for the Dam Decision Support Tool in Maine’s Penobscot River. Eight dams, marked on the map in green, are coming up for relicensing in the next 10 years.



Toggle around in the map, zoom in or out, and move your cursor over the individual dam sites (as in the image below) to learn more about the dams.

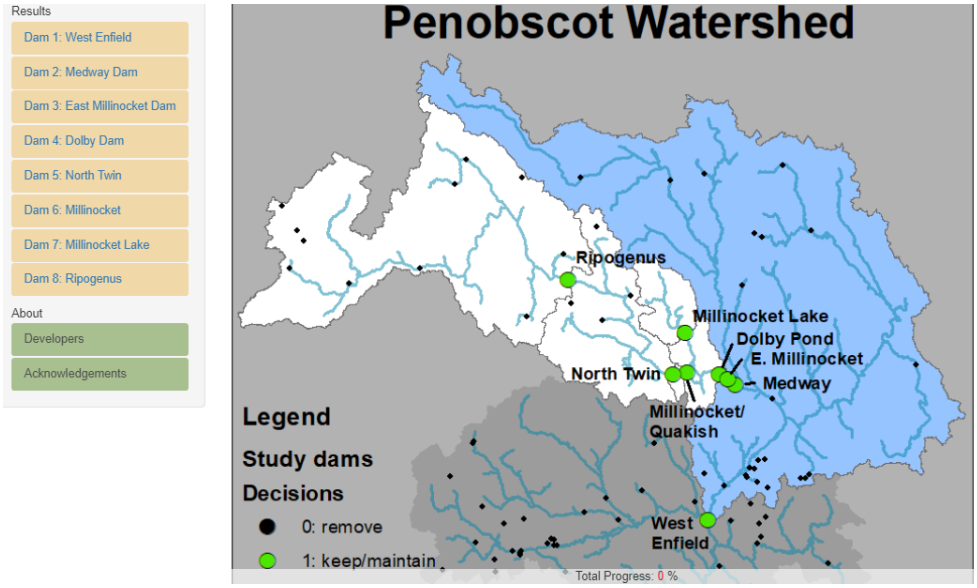


The “Click to learn more” links provide information about the different decision alternatives (e.g. keep and maintain dam, remove dam, improve fish passage), as well as decision criteria (e.g. sea-run fish habitat area, river recreation, annuitized project costs) that you will be asked to consider in Step 3. These PDFs will open in a new tab, where you can read or download the file. It is recommended that you read through these documents closely to learn more about decision criteria and alternatives before proceeding.

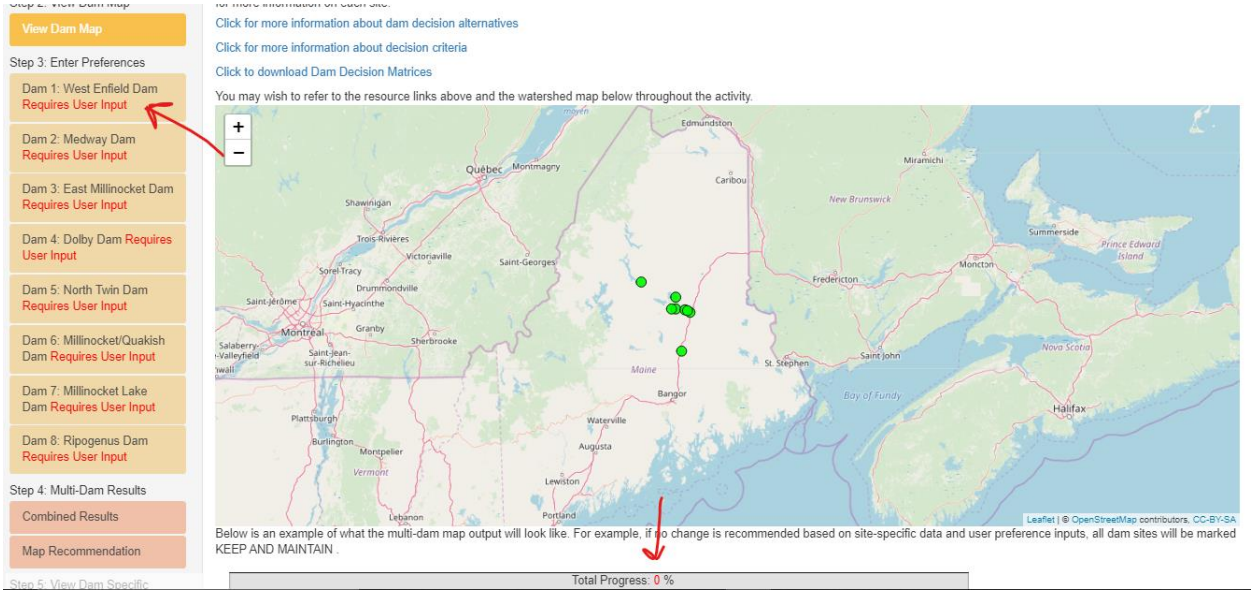
There is also a “Click to download” link that will download a Microsoft Excel Workbook (.xlsx) with data for each dam. This “Decision Matrices” file has a data value for each of 5 decision alternatives under each of 14 decision criteria. The Metadata tab in the workbook describes where the data come from

(e.g. social/cultural criteria values are collected from a survey) or are calculated (e.g. reservoir storage is calculated using the cone volume method[1]).

Scroll down on the page.

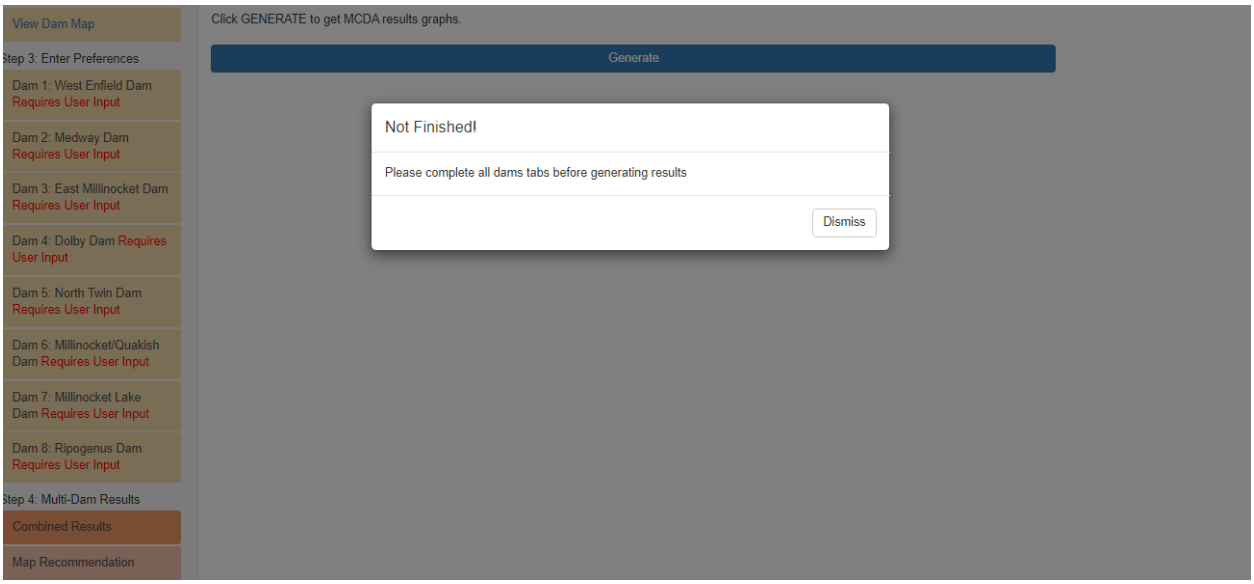


This map is an example of the kinds of output maps you will see in the results tabs to the left. Right now, the dams are marked "Keep and Maintain" because this is the "business as usual" case. Scroll back up to the first map (image below).

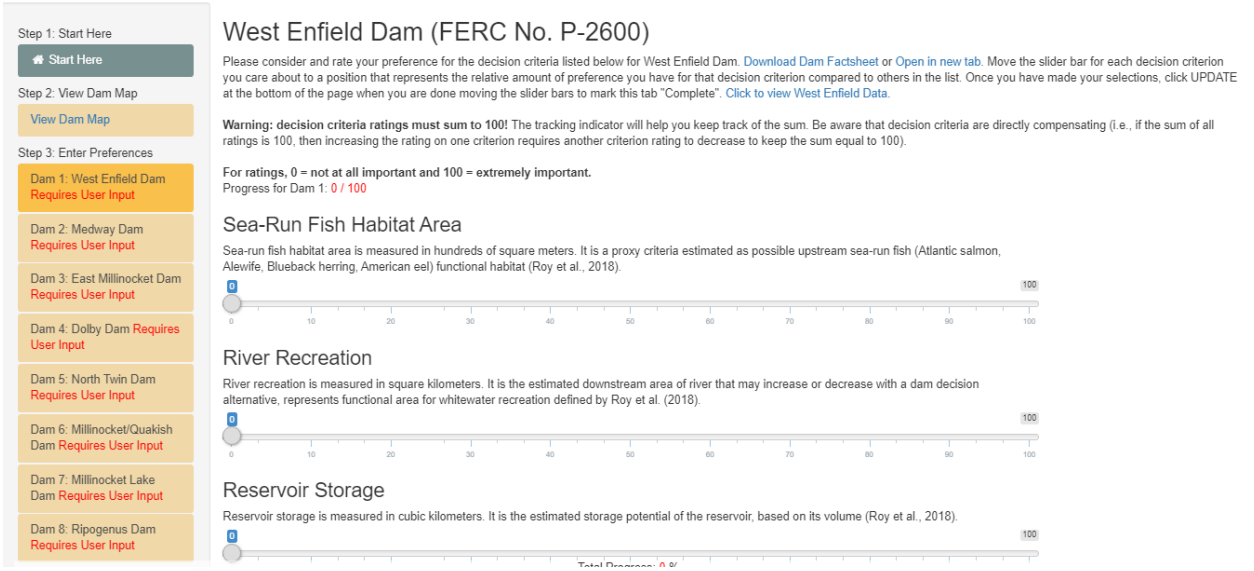


Notice the red arrows. Toward the left-hand side of the page are the individual dam tabs in Step 3. They are marked with red text that reads "Requires User Input". As you enter your preferences for Dams 1-8, the Total Progress tracker at the bottom of the page will get closer to 100% (right now it is marked 0% because no preferences have been filled out), and the text that reads "Requires User Input" to "Complete". You will need to complete all dam tabs before generating your results under Step 4. If you

try to generate the results without filling out preferences for all dams, you will see the following error message:



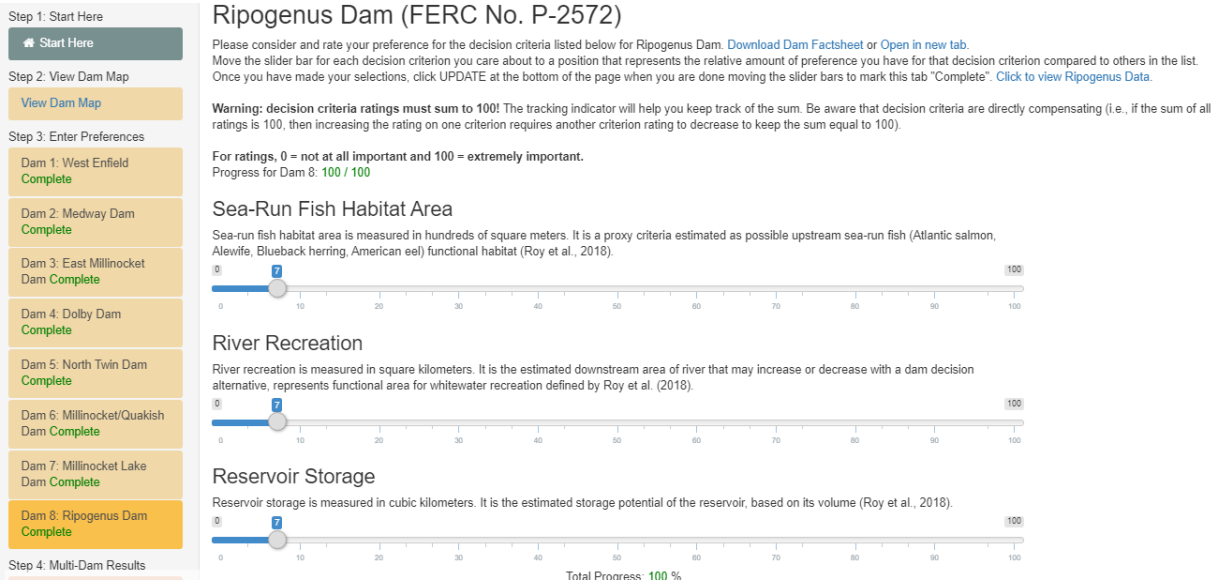
Moving on to Step 3, click Dam 1: West Enfield.



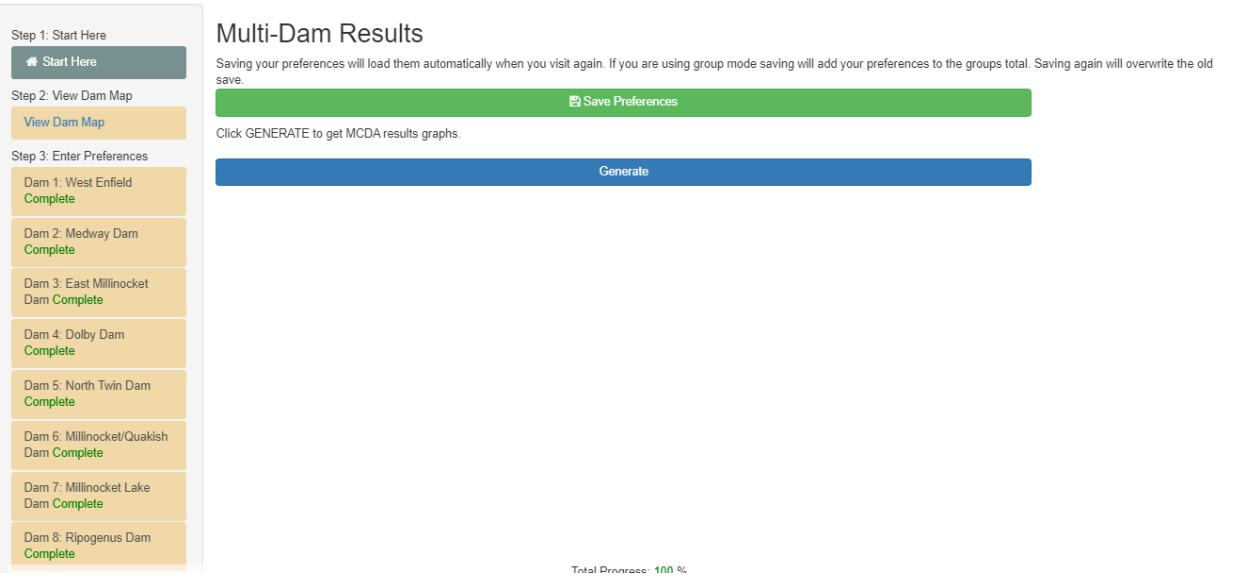
Move the slider bars to indicate your preference for the decision criteria for each given dam. You should set the slider bar to a position that represents the relative amount of preference you have for each decision criterion compared to others in the list. Once you have made your selections, click UPDATE at the bottom of the page when you are done moving the slider bars to mark this tab "Complete". Decision criteria ratings must sum to 100. The tracking indicator will help you keep track of the sum. Be aware that decision criteria are directly compensating (i.e., if the sum of all ratings is 100, then increasing the rating on one criterion requires another criterion rating to decrease to keep the sum equal to 100). For ratings, 0 = not at all important and 100 = extremely important.

For example, if you care only about fish habitat, move that slider bar to 100, and leave all others at zero. If you care about fish habitat and hydropower generation equally, move the slider bar for each to 50. Use the decision matrix for each dam to help you think about the importance of each decision criterion in the context of the specific dam site. The data matrix includes information on how the actual value of each decision criterion (for example, the actual sea-run fish habitat area) may change if different decision alternatives were implemented at the specific dam site. Whether these changes would be small or large may help inform how you choose to represent your preferences below with the slider bars. For example, if you are not sure how much importance you should put on Number of Properties, and the decision matrix shows Number of Properties will not change much for any of the decision alternatives, you may choose to put less or no importance on this criterion when moving the slider bars. **Click UPDATE at the bottom of each page to make sure your slider bar values get submitted for results generation in-app.**

In this example (image below), we have used equal preferences, or preference values that are evenly distributed (100 percentage points) across each of 14 decision criteria. Notice the Tracking Indicator, marked 100/100, and all dams marked Complete.



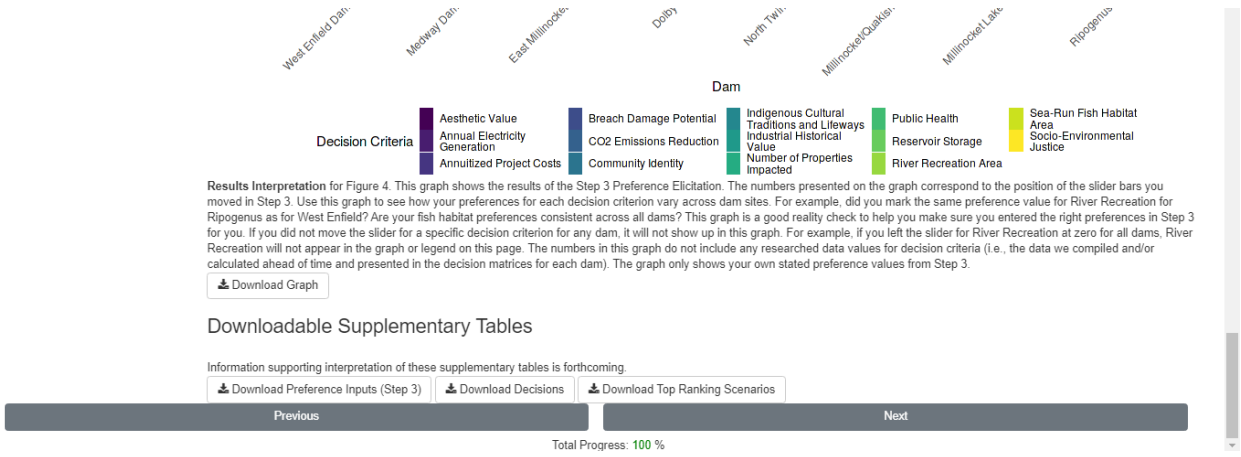
Now that all dam tabs in Step 3 are complete, you may move on to Step 4: Multi-Dam Results, where you can generate the results. First, you should click on the “Save” button to save your preferences. This option is helpful if you plan to use the Dam Decision Support Tool as a part of a group. Be advised that pressing “Save” a second time will overwrite your previous save. Click “Generate” to view the multi-dam results.



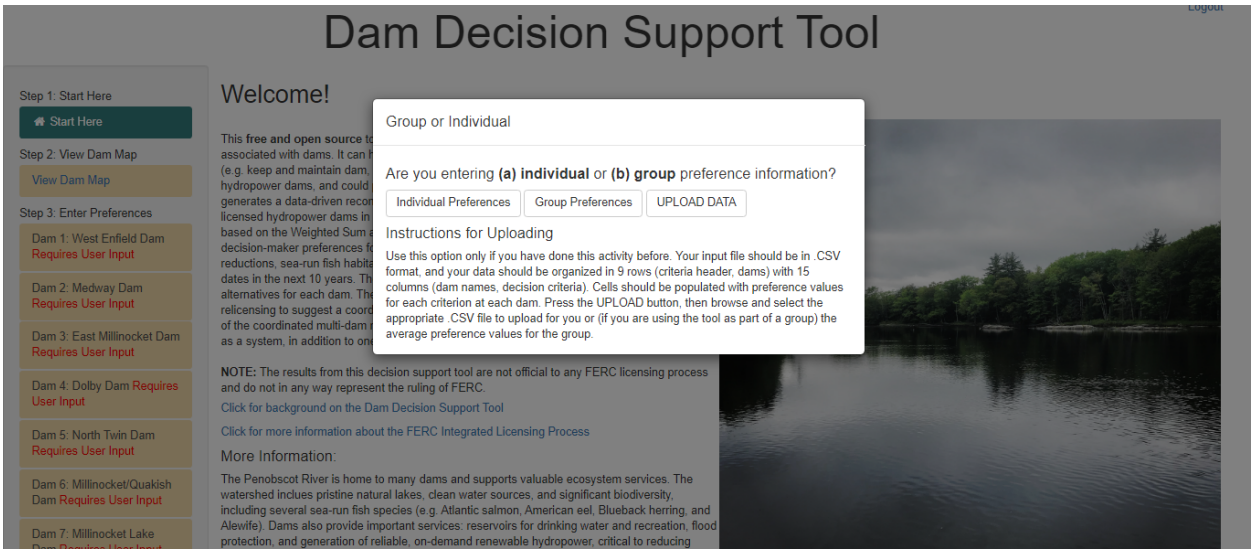
Results

Troubleshooting tips: If the results are really unexpected, or your preference values does not look familiar, go back to Step 3 and check your slider bar values for the appropriate dam. Remember, if you go back to change the slider bar values at any time, you will need to click UPDATE at the bottom of the dam page in Step 3. Then, navigate back to Step 4: View Multi-Dam results, Combined Results and click GENERATE to re-run the model.

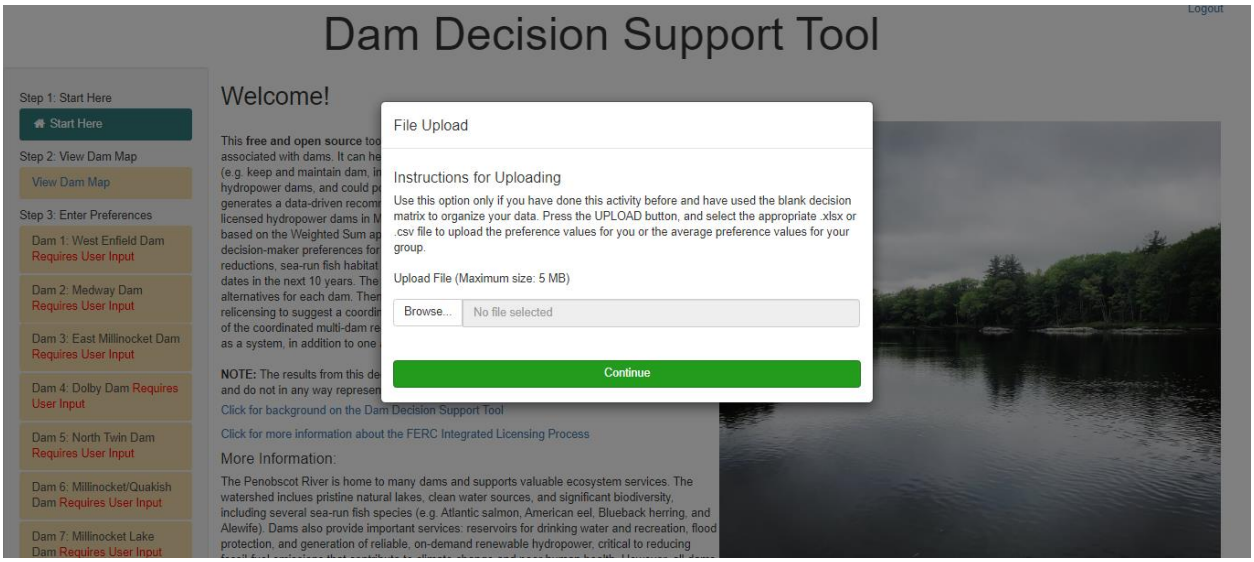
Pro tip: If saving does not work, you may wish to refresh the page. Be aware that refreshing will erase all of your preference values you entered in Step 3 if the values are not saved. To make the preference-entry process faster, scroll to the bottom of the Step 4: Multi-Dam Combined Results and click "Download Preference Inputs (Step 3)".



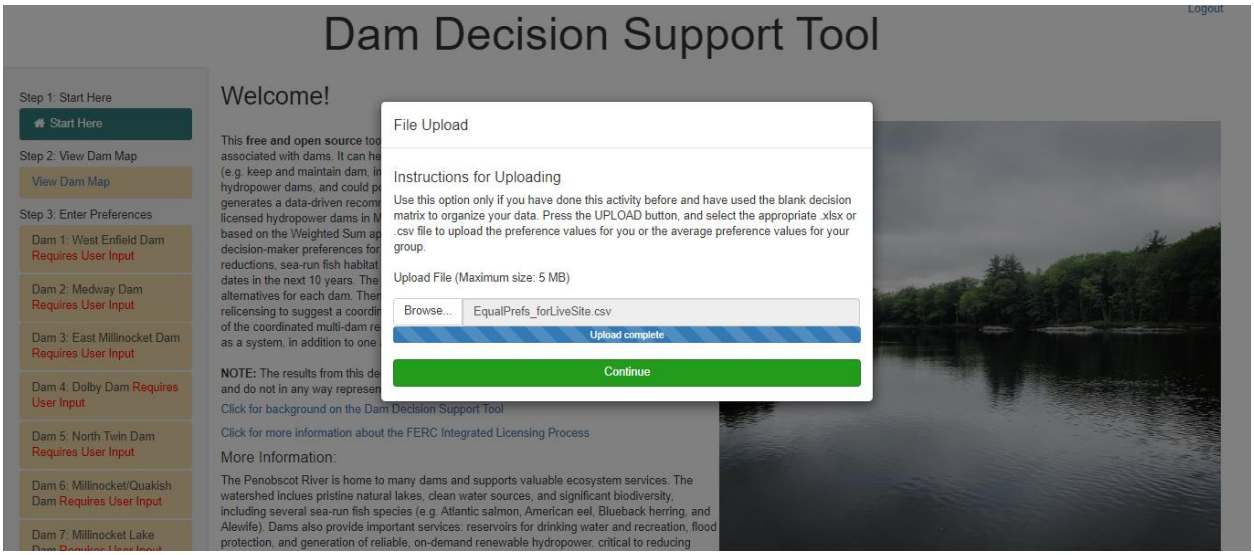
Then, refresh the page. Refreshing will return you to this screen, where you will select "UPLOAD DATA" (image below).



In the new dialogue box, select “Browse” and select the file.



If you saved the preference inputs file you downloaded, locate the file on your computer and upload it now. Then, click “Continue”.



When you upload your file with preference information, all of the tab labels will change from "Requires User Input" to "Complete" automatically.

Pro tip: If you are interested in exploring the impacts of different model inputs on the results, save your preference input file on your computer (e.g. UserPrefs1) and then modify your preference input values directly in the file, saving again with a new file name (e.g. UserPresfs2).

Resources

[1] Hollister J, Milstead WB (2010) Using GIS to estimate lake volume from limited data. *Lake Reserv Manag* 26(3):194–199.