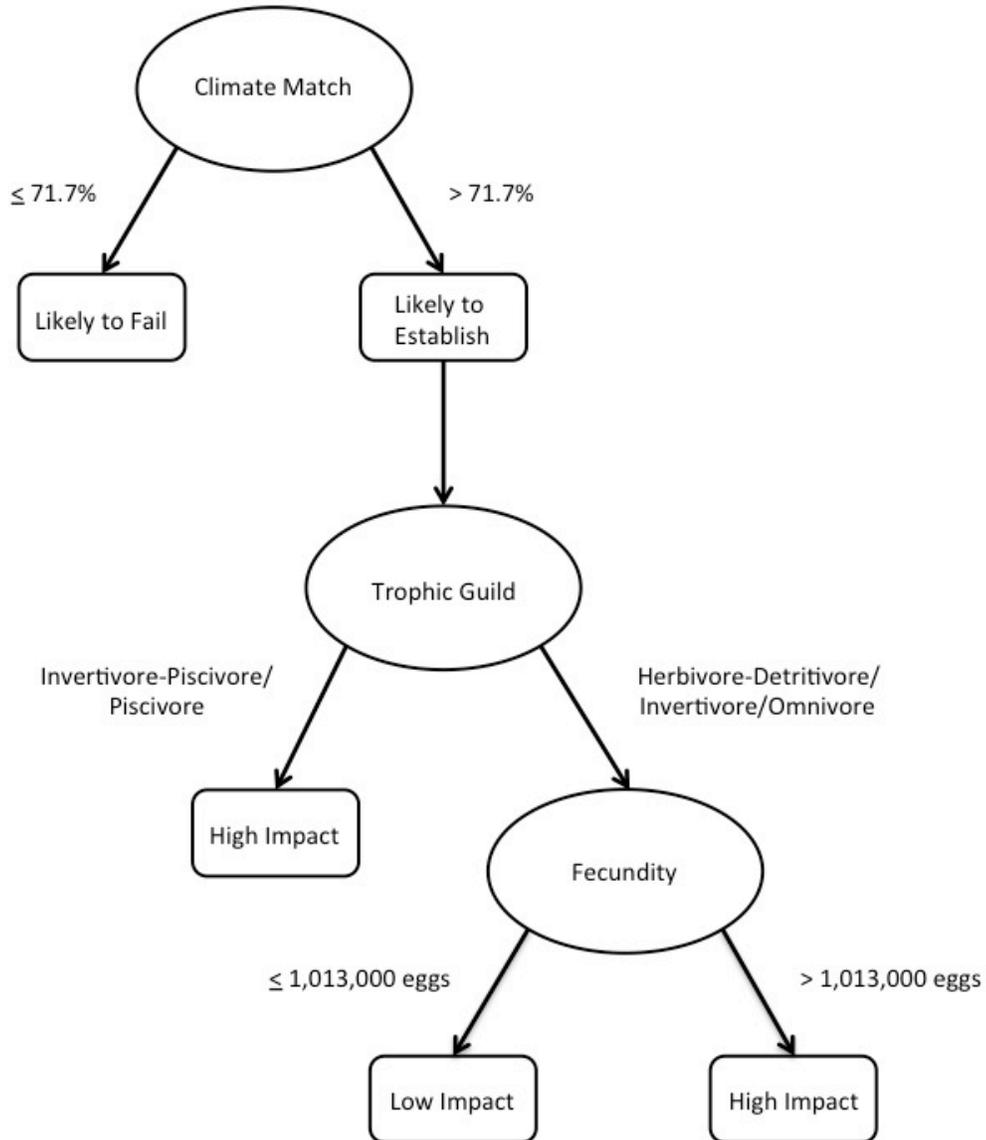# Notre Dame's STAIR*fish*

For each species being assessed, follow the decision tree to the appropriate endpoint. Climate match can be determined using the methods below. FishBase can provide information on trophic guild and fecundity of most fishes.

Calculating Climate Match

These methods were adapted from "Standard Operating Procedures for Rapid Screening of Species Risk of Establishment and Impact in the U.S." by the U.S. Fish and Wildlife Service, which were based on work conducted and published by Bomford *et al.* in 2010. Words in bold correspond to specific options or wording within the climate matching program.

I) Open CLIMATCH

A) Select **Source Region** tab at left.
1) Select **Map Navigation** and zoom into a source region using the zoom tool.
2) Select **Select Stations.**
(a) Create a polygon that corresponds to locations where the species is known to be established. The *freehand* select tool might prove most useful. (Left clicking while creating the polygon or reselecting the freehand tool can help if the freehand tool isn't drawing correctly or allowing disengagement.)
(i) Stations selected should encompass all those where the species is known to be established. These location data can be gathered from the Global Biodiversity Information Facility, the U.S. Geological Survey Nonindigenous Aquatic Species website, FishBase, scientific publications and other reliable sources. Record and cite your sources.
(ii) Selected stations will appear as red pixels.
(iii) Save map as a *.png file using disk icon at bottom left of center panel. (Optional)

B) Select **Target Region** tab at left.
1) Select **World Stations** from **Data Set** dropdown menu.
2) Select **Map Navigation** and zoom into Great Lakes region using the zoom tool.
(a) Create a polygon that includes all locations in the Great Lakes Basin. The *freehand* select tool might prove most useful.
(i) Save map as a *.clm file. (Optional)
- This optional step provides easy, repeated selection of the Great Lakes Basin as the target region. When needed, click on the lower-left icon next to **Select Stations** and select your saved .clm file of the Great Lakes Basin.

C) Select **Run Match** at bottom of left panel.
1) Do not change the default settings.
2) Save target map as a .png file using disk icon at bottom left of center panel.
3) Save scores as a .csv file by selecting the hyperlink under the **Results** table.
4) Paste scores into an Excel file.

D) Calculate percent climate match.
1) Sum all scores ≥ 6.
2) Divide this sum by the sum of all scores and multiply this quotient by 100.
(a) Use this percentage for the first decision of STAIR*fish*.