

## Predator-Prey length simulation guide.

### Individual(s) simulation:

1. Select the “Individual(s)” tab on the top of the screen

Predator-Prey Total Length Simulation: Individual(s) Population

Select the tabs above to switch between individual and population-level simulations

Cite as: Gaeta, J.W., Ahrenstorff, T.D., Diana, J.S., Fetzer, W.W., Jones, T.S., Lawton, J.H., McInerney, M.C., Santucci, V.J., and Vander Zanden, J.M. (in review). Go big or ... don't? A field-based diet evaluation of freshwater piscivore and prey fish size relationships.

**Predator Settings:**

Units of Total Length: Metric (mm) | Predator Species: Muskellunge | Prey Shape:  All Prey,  Fusiform (torpedo; e.g., bass),  Laterally compressed (flattened; e.g., bluegill)

Predator Total Length(s): insert total lengths seperated by commas

**Predator-Prey Length Relationship:**

Error: 'x' contains missing values

Figure: Predator total length-specific kernel density distributions (i.e., relative frequency) of ingested prey total lengths. Kernel densities at a given predator length were derived by estimating prey lengths from percentile regressions of every percentile from the 1st to the 99th (Gaeta et al. in review). The modes of each kernel density distribution (i.e., the most common prey length per predator length) are shown along the bottom axis as gray symbols.

Download Plot | Download Data

2. Adjust the Predator Settings:
  - a. Select the **Units of Total Length** dropdown and select desired input units (Standard or Metric)

**Predator Settings:**

Units of Total Length: Metric (mm) | Predator Species: Muskellunge | Prey Shape:  All Prey,  Fusiform (torpedo; e.g., bass),  Laterally compressed (flattened; e.g., bluegill)

Predator Total Length(s): insert total lengths seperated by commas

b. Select **Predator Species** dropdown and select desired input species

**Predator Settings:**

Units of Total Length: Metric (mm)

Predator Species: Muskellunge (dropdown menu open with options: Muskellunge, Northern Pike, Walleye, Largemouth Bass, Smallmouth Bass, Rock Bass, Crappie)

Prey Shape: All Prey (selected), Fusiform (torpedo; e.g., bass), Laterally compressed (flattened; e.g., bluegill)

Predator Total Length(s): insert total lengths separated by commas

c. When applicable (i.e., for muskellunge, largemouth bass, and walleye), select **Prey Shape**.

**Predator Settings:**

Units of Total Length: Metric (mm)

Predator Species: Muskellunge

Prey Shape: All Prey (selected), Fusiform (torpedo; e.g., bass), Laterally compressed (flattened; e.g., bluegill)

Predator Total Length(s): insert total lengths separated by commas

d. Select **Predator Total Length(s)** input and insert desired lengths separated by commas. *End inserted text with a number, not a comma.*

**Predator Settings:**

Units of Total Length: Metric (mm)

Predator Species: Muskellunge

Prey Shape: All Prey (selected), Fusiform (torpedo; e.g., bass), Laterally compressed (flattened; e.g., bluegill)

Predator Total Length(s): 300, 650, 1000

## Population simulation:

1. Select the "Population" tab on the top of the screen

Predator-Prey Total Length Simulation: Individual(s) **Population**

Select the tabs above to switch between individual- and population-level simulations

Cite as: Gaeta, J.W., Ahrenstorff, T.D., Diana, J.S., Fetzer, W.W., Jones, T.S., Lawson, Z.J., McInerney, M.C., Santucci, V.J., and Vander Zanden, J.M. (in review). Go big or ... don't? A field-based diet evaluation of freshwater piscivore and prey fish size relationships.

### Predator Settings:

**Units of Total Length**  
Metric (mm) ▾

**Predator Species**  
Muskellunge ▾

**Prey Shape**  
 All Prey  
 Fusiform (torpedo; e.g., bass)  
 Laterally compressed (flattened; e.g., bluegill)

**Choose a CSV File**  
Browse... No file selected

Select a .csv file with a single column of predator lengths

2. Adjust the Predator Settings:

- a. Select the **Units of Total Length** dropdown and select desired input units (Standard or Metric)
- b. Select **Predator Species** dropdown and select desired input species
- c. When applicable (i.e., for muskellunge, largemouth bass, and walleye), select **Prey Shape**.
- d. Load a .csv data file.
  - i. The data file must be a csv file and have 1 column with predator lengths

	A	B	C
1	total_length_mm		
2	820		
3	945		
4	370		
5	370		
6	565		
7	830		
8	366		
9	348		
10	541		
11	333		
12	302		
13	338		
14	566		
15	447		