

Background

- Length-weight relationships provide foundational knowledge for managing fisheries populations (Murphy et al. 1991; .
- However, there are many species where the length-weight relationships are not widely understood. The Flier (*Centrarchus macropterus*; Fig. 1) is one species where there is a lack of information regarding its length-weight relationship and spatial variation associated with this relationship.
- A new study was needed to assess the length-weight relationship for this species.

Objectives of Study

- Objective 1:** Determine the length-weight relationship of Fliers in the Moro Creek Watershed.



FIGURE 1: A Flier (*Centrarchus macropterus*) collected from Moro Creek.

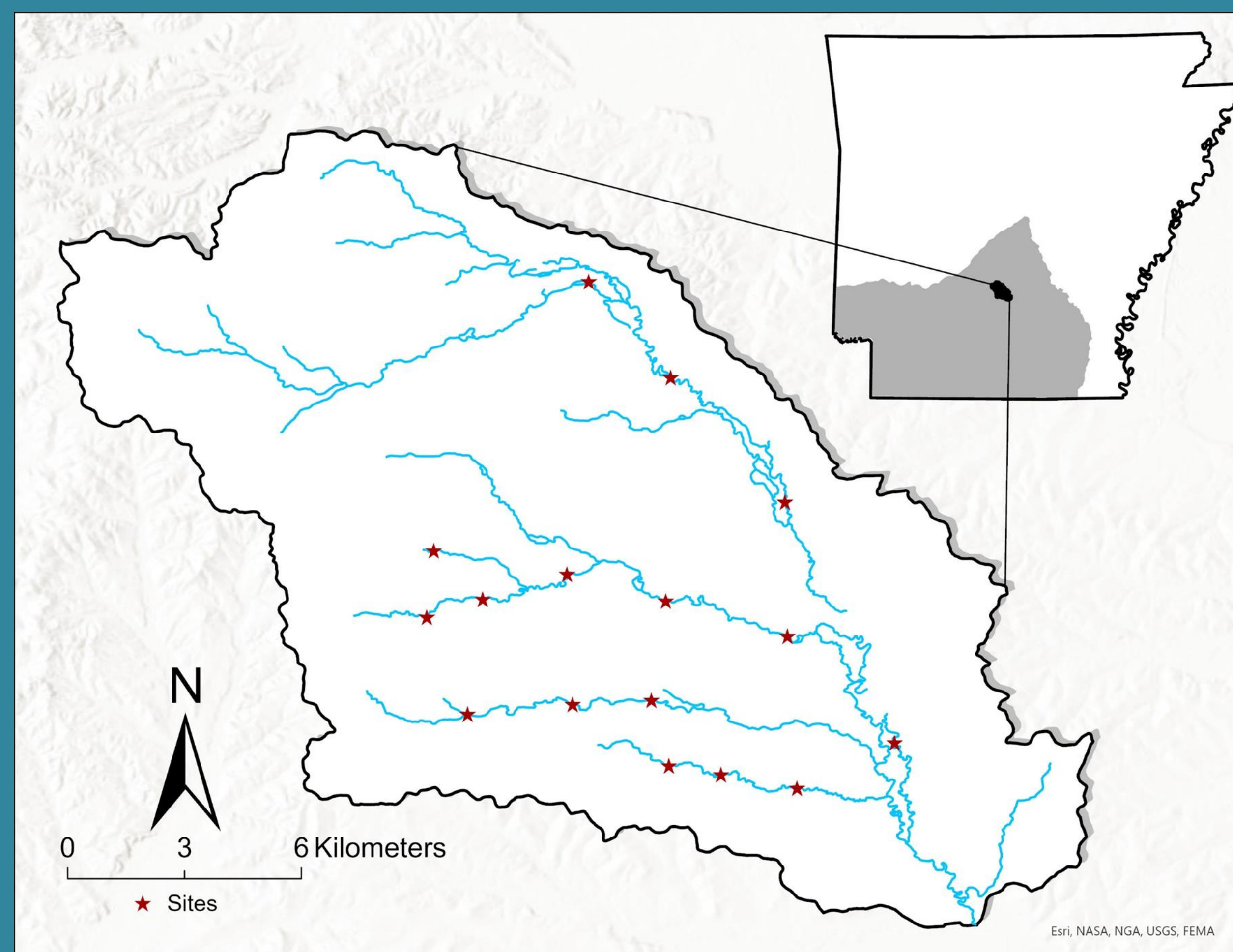


FIGURE 2: Map of the 16 sites sampled for Fliers.

Methods

- Fliers were sampled from sites in the upper Moro Creek during October 2023 (Fig. 2).
- Multiple gears (backpack electrofishing and seining) were employed to increase detection of this species (Bonar et al. 2009).
- Length (mm), and weight (g) were recorded for every individual observed and used to develop a length-weight equation.
- Multiple condition factors were estimated for Fliers: Fulton's condition factor (K), LeCren's relative condition factor (Kn), and mean relative weight (Wr; Pope et al. 2001).

Results

- A total of 85 Flier were sampled from four sites (out of 16) in the upper Moro Creek watershed during October 2023.
- The average (\pm SE) length was 75.7 (\pm 1.8) mm and average weight was 8.5 (\pm 0.7) g.
- The length-weight equation for Flier in upper Moro Creek was $\text{Log}(W) = -4.2 + 2.7\text{Log}(L)$, $R^2 = 0.83$ (Fig. 3).
- Mean (\pm SE) Fulton's condition factor (K) was 1.7 (\pm 0.1), mean LeCren's relative condition factor (Kn) was 1.0 (\pm 0.1), and mean relative weight (Wr) was 100.5 (2.9).

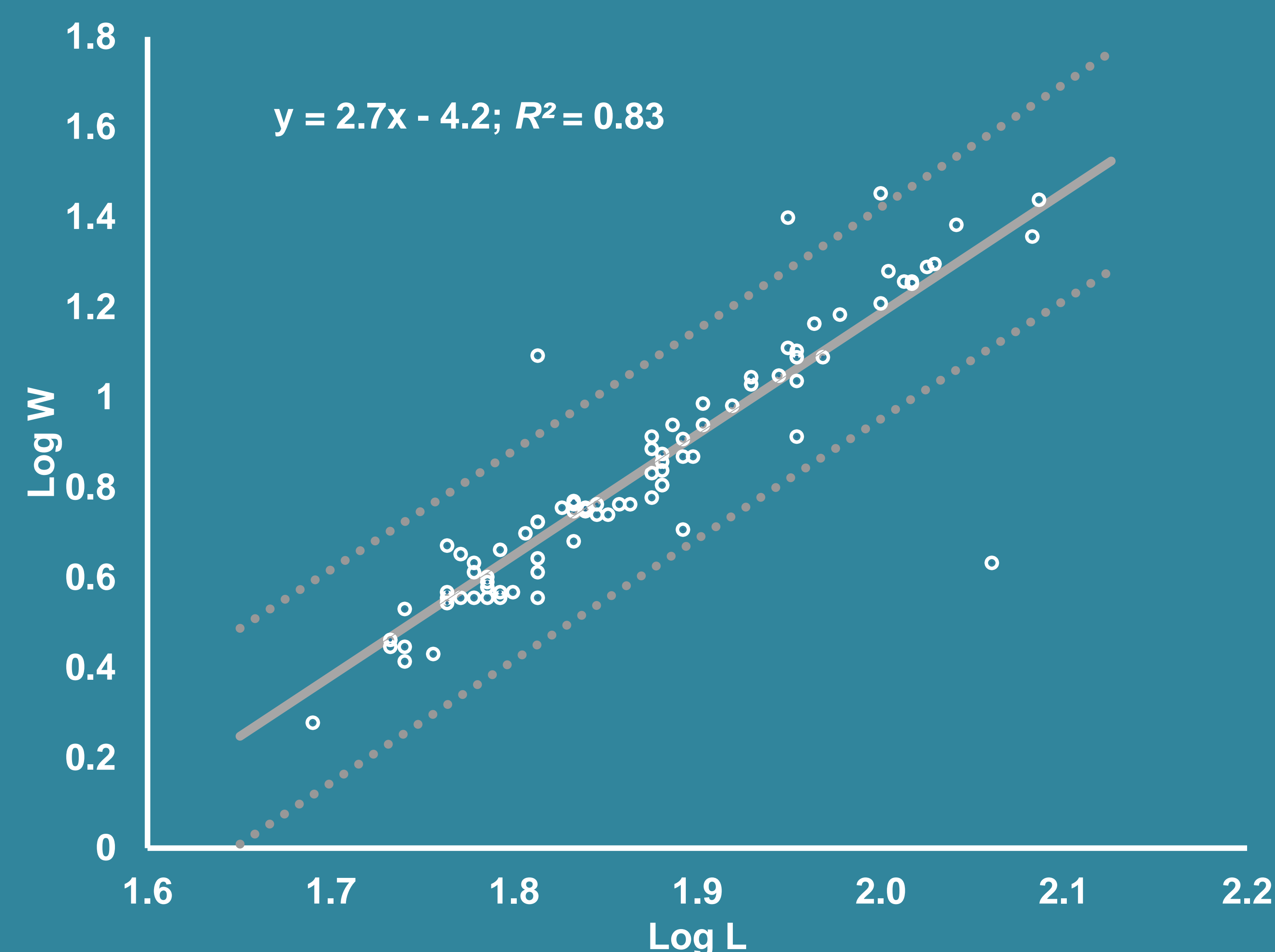


FIGURE 3: The length-weight relationship and equation for Fliers (dotted lines represent the 95% confidence intervals).

Discussion

- Our estimates of condition on this species are similar to other estimates of condition for this species in other waterbodies (Swingle 1965).
- However, it is apparent that our data displays some sampling bias to older (larger) individuals in this population, which may have influenced our ability to accurately estimate the length-weight relationship of this species.
- This research provides a foundation of knowledge on the length-weight relationship of Fliers in a predominantly lotic ecosystem in Arkansas.

Literature Cited

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