Ignasi Arranz, Bertrand Fournier, Nigel P. Lester, Brian J. Shuter, and Pedro R. Peres-Neto. Species compositions mediate biomass conservation: the case of lake fish communities. Ecology.

Appendix S2. Length-weight relationships for the fish species

We estimated weight using length-weight relationships (LWs) given that not all fish species were weighted *in situ* as opposed to length. To do this, we considered which species were most abundant in the data, and how much many fish were sampled for weight. We then grouped fish species into six isometric groups according to the morph shape (inspected by the linear intercept across all species) for assigning weight based on length (Table S1). We finally estimated weight in each isometric group using simple linear regressions where the log of fish length was the predictor and the log of fish weight was the response variable (Fig. S1).

**Table S1.** Table shows the number of the isometric group with the group name, the total richness and the intercept parameter from the simple linear regression.

|  |  |  |  |
| --- | --- | --- | --- |
| **Isometric**  **Group** | **Group**  **Name** | **a \* 103** | **Number**  **of Species** |
| 1 | Pike, Sturgeon, Smelt | 0.006764 | 7 |
| 2 | Percid | 0.010771 | 7 |
| 3 | Minnow, Other | 0.012004 | 50 |
| 4 | Salmonid | 0.012377 | 11 |
| 5 | Suckers | 0.014337 | 10 |
| 6 | Centrarchid, Catfish | 0.017092 | 17 |



Weight (grams)

Fork length (mm)

**Pike, Sturgeon, Smelt Percid**

**Minnow, Other fish species Salmonid**

**Suckers Centrarchid, Catfish**

**Figure S1.** Length-weight relationships (LWs; Weight (grams) = a \* L3 (mm)) of each fish group.