

A GLOBAL DATABASE ON THE PREY-PREDATOR INTERACTIONS OF FISHES

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ABSTRACT

Information on the feeding interactions of fishes is scattered across published papers, gray literature, open datasets, and in never publicized materials, making it challenging to assess the current knowledge on the prey-predator interactions carried out by fishes and fully utilize this data for understanding the structure of food webs and making well-informed predictions. We are tackling this issue by synthesizing existing information on the feeding interactions of fishes across the globe to build a global database of trophic interactions. To achieve such a goal we will carry out a systematic literature review including information on the diet of fishes in multiple environments and using a diverse array of techniques, such as gut content analysis and behavioral trials. The database will encompass several variables to describe the assessed populations, the interactions, and the applied methods, including information as habitat type, prey identity, and strength of the interaction. Currently, the dataset includes the diets of 204 species based on 101 articles from four scientific journals in Portuguese, English, and French. It comprises 412 population-level observations, detailing 13,673 records of 5,423 unique prey-predator interactions. Of these interactions, 4,418 are with autochthonous prey, 749 with allochthonous prey, and 256 of unknown origin. Notably, 4,351 interactions involve animal-based items, 584 involve plant-based items, and 488 are of unknown origin. The dataset records 1,935 unique prey items, though prey names still require standardization. In the future, this dataset will be publicly accessible via platforms like Zenodo or Mangal, fostering research on fish feeding ecology and its impact on ecosystem functioning. In addition to the literature

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search, we expect to attract collaborators for building a data consortium to also include primary data in the database, then expanding the potential uses of this database.

Key words: Database, feeding interactions, food webs, macroecology, trophic ecology.