

Plan Overview

A Data Management Plan created using DMPTool

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Title: Beneath the pond: unraveling the fish community composition and traits configuration seasonally in natural and artificial temporary habitats of the Atlantic Forest

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Template: Digital Curation Centre

Project abstract:

Temporary ponds are ecosystems formed by the joint action of flooding from streams and rainwater and have a high level of endemism, but are extremely vulnerable to human activities. There are few studies that seek to understand the composition of the pond fish community and what are its predictors, especially in the Atlantic Forest and in artificial ponds. In view of this, the present project aims to evaluate ichthyofauna of natural and artificial pools of the Atlantic Forest in the Preto River microbasin, in Itanhaém, São Paulo, together with the monitoring of the volume of these water bodies, distance from the stream and using as predictors physiological, morphometric and trophic traits. The fish will be sampled throughout all the months of 2024, and the abiotic variables will be monitored by pond. After that, up to 10 individuals per species and each season will be tested for their thermal tolerances, and in the laboratory up to 30 individuals per species and season will be randomly selected for analysis of morphometric indices and intraspecific diet variation. We hope to understand not only the composition of pond ichthyofauna, but the processes that shape their abundance and richness, whether there is a taxonomic and functional nesting along the distance from the nearest stream, and whether swimming capacities and thermal tolerance influence the population density of these species and the intraspecific competition for food resources.

Start date: 01-01-2024

End date: 01-01-2027

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Beneath the pond: unraveling the fish community composition and traits configuration seasonally in natural and artificial temporary habitats of the Atlantic Forest

We will collect data on ecological community matrix of temporary habitats fishes, regarding species abundance and site characteristics. We will also collect data on fish functional traits, such as thermal tolerance, swimming capacity and feeding habits.

Data will be collected with field sampling, monthly on 2024. The methodology used will be 15 minutes passes of hand nets by two people in each temporary habitat. After sampling, data will be put in a spreadsheet in the following way:

- Community matrix: sampling sites as rows, species and environmental values as columns.
- Functional traits matrix: species as rows and traits as columns.

The data will be always accompanied by legal permissions to sample the community and will always be described in the doctoral thesis and published articles, mainly the community matrix and functional traits. The data used for data analysis will be tidy format and if any species records is provide to databases will be at Darwin Core format.

All procedures were approved by the Ethics Committee for the Use of Animals at the São Paulo State University “Júlio de Mesquita Filho” – Coastal Campus, Protocol Number 15/2023, and by the Chico Mendes Institute for Biodiversity Conservation (SISBIO Number 90241-1).

All publications resulting from this research will include the indication of the funding institution and acknowledgments in the final version of the Thesis. The data will always be made available for better reproducibility of the work, however due care will be taken to make them available in online repositories only for the beginning of the submission process of each article, report to the environmental body and thesis, and not before preparation of any document. After this, the data will always be available for studies by other researchers to use, as long as the source is cited.

The data will be under the care of those responsible for the project, archived in a notebook for exclusive use for research, in addition to Google Drive cloud storage via the institutional account of the responsible researcher and collaborators if necessary. One or more Git Hub repositories will also be created to facilitate the data analysis process with collaborators, which will also serve as support for the secure maintenance of data. Since fish community data on a regional scale will not be large in size, no other stronger storage units will be needed. In the event of an incident, data can be recovered from the aforementioned sources (Drive and GitHub). It should be noted that before going to the spreadsheet, all data will be written by hand, with the original paper documents being photographed at all times and kept in the laboratory.

The data will be in the exclusive possession of the responsible researchers, in a notebook for exclusive use for research, in addition to Google Drive cloud storage by the institutional account. As for Drive security, only authorized collaborators will have access. Regarding security in Git Hub repositories to facilitate data analysis, the origin of the data in the repository will not be explained - until this material is complete for reports, articles and thesis defense, and the species will be written in a code adopted for each one.

All data collected in this work must be preserved and shared - especially at the end of the research, since these are extremely threatened environments and vulnerable species, it is essential that other researchers and society have access to them and can reuse them. On the computer and Drive, data will be kept for at least 5 to 10 years, and in online repositories for as long as they continue to function. The data will be converted not only for research, but

also into a Field Guide and materials for society. And they will be available in every published article and doctoral thesis.

Git Hub repositories linked to each published article and Institutional Repository of the Universidade Estadual Paulista (UNESP) with the thesis and complete data. Occurrences of species will be sent to Biodiversity platforms, such as SiBBr, to keep these geographical records preserved and available.

The data produced in this research will always be made available together with scientific articles in their respective Git Hub repositories linked to the article's doi. The results of the data produced will be presented in articles, conferences, Field Guide and will also be available (along with all data sets) in the doctoral thesis that will be in the repository of the Universidade Estadual Paulista. We expect the data to be open from the start of the first related article submission. No request to check the data will be necessary, as we consider its availability essential for decision makers on the fish biodiversity in Brazil and for the reproducibility of each article submitted.

There are no restrictions.

The doctoral student responsible for the project: João Henrique Alliprandini da Costa

No additional expertise, hardware or software will be necessary. The data repositories adopted here are free of charge.
