

## “FISHING” DNA IN RIVER BASINS AT SOUTHERN BRAZIL

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### RESUMO

Environmental DNA has emerged as an efficient framework for detecting freshwater fish biodiversity, to answer questions since species composition within a river basin to the ecological aspects of communities. In 2012, a project named "Campos Sulinos" was initiated, with the primary objective of understanding the ecology and species composition of fish in the state of Rio Grande do Sul/Brazil, which resulted in approximately 156 species (cataloged at the UFRGS collection). Recently, a proposal to incorporate eDNA into this long-term project was accepted, allowing the comparison of the two main basins that are recognized in Rio Grande do Sul: the Laguna dos Patos river basin and the Uruguay river basin. A COI and 12S gene library is currently under construction for the species, with specimens collected at the same field sites that will be sampled for eDNA analyses. For the species studied so far, considering our lab work plus sequences deposited in public databases, we have obtained 92% of COI sequences and 7.3% of 12S sequences for the fish species in the Tramandaí river basin. For the Laguna dos Patos river basin, we have 42.1% of COI sequences and 13.1% of 12S sequences from the total species recognized in the basin. The Uruguay library contains 33.9% of COI sequences and 4.5% of 12S sequences from the total fish species registered in this basin. The UFRGS fish collection includes 95% of all the species needed to complete the libraries datasets, and the water sampling protocol is already established for prospective field work. This project represents a promising study in the eDNA field, as it will allow the comparison of ecological datasets obtained through the years with new molecular data, impacting in our understanding of landscape changes occurring in Rio Grande do Sul and their consequences in biodiversity richness.

**Palavras-chave:** Rio Grande do Sul, eDNA, fish species, DNA Libraries, biodiversity richness.

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