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Assessment of fisheries activity and importance of estuarine habitat for different ontogenetic phases of fishes: Estuary of Goiana river, Brazil

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This project is an integral part of a suite of other ongoing and past projects of our research group, under development since 2005. Themes approached are fish ecology, plastics and heavy metals pollution, as well as the exploitation of the living resources by the surrounding traditional communities. At present, the research group counts on an extensive and ever growing data bank on the Goiana estuary (Northeast Brazil). In this report, it will be possible to analyze three consecutive years of fishery landing in protect marine area. Therefore, more consistent management practices can be designed in order to protect each and all these regions from local, regional and global changes. The assessment and improvement of water quality in all its aspects, including the concentrations of trace elements and micro-plastics is fundamental to guarantee the performance of ecological services in these estuaries. Among the most important ecological services from rivers to human populations and the other biological species are those offered by their estuarine areas. In addition, the preservation of traditional livelihoods also depends upon these estuaries through the exploitation of fish and shellfish, among other living and non-living resources. From this information, the present study aimed at determining the fisheries productivity of estuaries and the adjacent coastal waters based on data from the artisanal fleet between 2013 and 2015. Also, it is intended to assess the relative importance of the different estuarine habitats to the ontogenetic phases of fish, their movement patterns and feeding ecology through the analysis of stable isotopes of C and N ($\delta^{13}\text{C}$; $\delta^{15}\text{N}$). Bioaccumulation and bio-magnification of pollutants that can be traced along the studied life cycles and food chains will also be approached. All these information will allow subsidies for fisheries management and estuarine conservation at different time scales, guaranteeing fisheries productivity into the future. In addition, traditional and artisanal fishers can benefit from sustainable practices to be suggested. It is also expected that mercury concentration in the different environmental compartments and animal tissues of each area can reflect the patterns of feeding exposure to this and other metals, including humans that consume its fisheries products. The Goiana Estuary has a marine protected area status proclaimed due to its abundant harvest of shellfish *Anomalocardia brasiliensis*. However, since the first investigations, it became clear that more importance should be given to the whole ensemble of resources available, including cultural assets. We understand that the same importance and studies should privilege other productive sites along the Brazilian coast. So, water quality patterns, its effects and consequences for the living resources and sustainability results for surrounding communities can be scientifically determined and better managed. At the Goiana Estuary, data on fisheries production and biological information from a number of species are already available for 2013-2015. Therefore, more consistent management practices can be designed in order to protect each and all these regions from local, regional and global changes.

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Sequence identification and description of the mitochondrial genome of *Abbottina rivularis* (Cypriniformes: Cyprinidae) mitochondrial DNA

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In this study, the complete mitochondrial genome of *Abbottina rivularis* was determined; the phylogenetic analysis with other individuals and closely related species of the gudgeons was carried out. The complete mitogenome of *A. rivularis* was 16,597bp in length which consists of 22 tRNA genes, 13 protein-coding genes, 2 rRNA genes and 2 non-coding regions: (D-loop and OL). The overall nucleotide composition of the *A. rivularis* mitogenome was A: 29.92%, T: 25.75%, G: 17.15% and C: 27.18%, respectively, with an A+T rich feature (57.1%). This study provides useful data to genetics, conservation and evolution study of the gudgeons.

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