



Biological parameters of fish species of socioeconomic interest of Senegal marine protected areas (MPA): for a contribution to the analysis of the the MPA efficiency

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Abstract

In Senegal, fishing plays a crucial role in food security, improving livelihoods, local and national economic growth and well-being of communities. However, most of the stocks are in full exploitation situation. Some are even considered as strongly overexploited. This situation is especially critical in a context of free access of the artisanal sector, leading to a continuous increase fishing effort. Marine Protected Areas (MPA) are nowadays considered as an efficient instrument for resource protection and fisheries management. Considering this, Senegal provided in 2014 a strategic national plan for the marine protected Areas (AMP). This study forms part of the project of "Jeune Equipe Associée" at the Research Institute for Development of West Africa Fisheries Ecology Laboratory (LEH -AO) based at the Oceanographic Research Centre of Dakar Thiaroye. This project is entitled "Effectiveness of Marine Protected Areas (MPAs) in the restoration of fisheries resources and habitats in Senegal". This study aims to evaluate the protection effects on life history traits (age and growth, reproduction and diet) of fish species of socio-economic interest in Senegal. Targeted biological models are cutlassfish (*Trichiurus lepturus*, Linnaeus, 1758) at Cayar and catfish species *Arius latiscutatus* (Günther, 1864) and *A. parkii* (Günther, 1864) at Bamboung. These species are nowadays very appreciated for the national consumption and the export. However no study on their biology and their reactions to the reserves is conducted in Senegal to this day. A good knowledge of the biological parameters of these species and their behavior following the MPA establishment is therefore essential for their sustainable management. Monthly sampling during a year will be formed inside and outside of each MPA. This will cover the full life cycle of the cutlassfish (*Trichiurus lepturus*) and two species of catfish *Arius latiscutatus* and *Arius parkii* and to infer their main reproductive periods, their size at first sexual maturity, as well as their fertility their growth validating the seasonal deposits growth marks on the otoliths. Fish will be measured, weighed, sexed. Their otoliths will be taken and stored as well as the stomach contents and mature female gonads. This study should help to understand the biology of these species, the impact of the



reservation on their life history and finally provide scientific advice for their management. Further it will improve the scientific knowledge on MPA effect in general and their efficiency as a fishery management tool.



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Extended book of Abstract

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