

## **REFERENCE POINTS TO DETERMINE THE STATUS OF MOST IMPORTANT COMMERCIALY EXPLOITED STOCKS OF THE SMALL-SCALE FISHERIES IN THREE MACARONESIAN ARCHIPELAGOS**

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**Abstract:** Fish stocks should be maintained at levels that can produce the maximum sustainable yield (MSY); however, for many stocks, the available biological and fisheries information is not enough for such estimations. Although catch statistics are the most widely accessible fisheries data, very few stocks have reliable biomass assessments. Additionally, standardized data are not available for many fisheries, which prevents using catch per unit effort (CPUE) as an actual indicator of changes in abundance. This makes extremely difficult the estimation of strong biological and exploitation limits. Here, we describe a method for stock assessment of data-poor fisheries, including thirty-one representative species of the Macaronesian region, either because of the volume of their catches or because of their biological importance. The results obtained allow a preliminary evaluation of the status of these stocks based on the  $F/F_{MSY}$  and  $B/B_{MSY}$  criteria, which refer to the ratio of actual fishing mortality (F) to the level that would provide maximum sustainable yield ( $F_{MSY}$ ) and the ratio of observed biomass (B) to the biomass that would provide maximum sustainable yield ( $B_{MSY}$ ), respectively. The results suggest that almost all the stocks assessed are overexploited. However, they should be interpreted in the context of each Macaronesian archipelago in combination with other indicators wherever possible. This is because the model has limitations and uncertainties, and the robustness of the results therefore depends on the input data.

**Key words:** Data-poor fisheries, Canary Islands, Madeira, Azores, MSFD, Stock assessment.

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