

DNA barcoding of larval morphotypes of economically important fish in the Galapagos Marine Reserve and characterisation of their populations

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The waters of the Galapagos Islands have a very rich biodiversity, with 20% endemism [1], at least partially due to the five currents surrounding the island. [2] (Fig.1) The waters contain multiple economically important species, such as sea cucumbers (popular in Asia thanks to their medicinal properties [3]), spiny lobsters and multiple finfish species. In recent years, the economic importance of fishery in the Galapagos Islands has decreased significantly, due to the decreasing population of economically important species. [4] This raises concern about the management of marine protected areas. As an example, densities of sea cucumbers and spiny lobsters are higher in some touristic and fishing areas than in protected areas. [5] [6] A solution would also be improved sustainability of the fishery. However, making these changes happen is impossible without sufficient knowledge about dispersal and population structure of economically important species in the Galapagos Marine Reserve. ⁴ The goal of this study is to determine the taxonomy of fish larvae collected in the Galapagos Marine Reserve, on the islands of Santa Cruz, Floreana, Darwin and Wolf, using COI as a marker using a DNA barcoding approach and to characterise the population structures of the economically important species among them.

References

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