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Abstract

Restocking Trials with Hatchery-Reared Dusky Groupers in a Marine Protected Area of the Southwestern Portuguese Coast †

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Abstract: Marine Protected Areas (MPAs) have played an important role in the protection of endangered species such as the dusky grouper (*Epinephelus marginatus*), and the no-take areas have been particularly crucial for this purpose. Yet, despite the establishment of no-take areas and the legislation banning dusky groupers' catches since 2011 in a southwestern Portuguese MPA (SACVMP—'Sudoeste Alentejano' and 'Costa Vicentina' Marine Park), there is still no evidence of this population's recovery. In the face of this, the present work aimed to monitor the experimental hatchery-reared adult dusky groupers' restocking of two no-take areas of SACVMP with acoustic biotelemetry. In 2019 and 2021, thirty groupers tagged with acoustic transmitters were released in two no-take areas, and the site attachment and their movements were assessed. None of the tagged fish set residency in either of the releasing areas, mostly leaving there at dusk and night. A rarely reported event for this species was also observed, as some individuals moved for more than a hundred kilometers along the Portuguese coast. At least some of those ranging movements were performed close to the rocky shore, which may point out the importance of coastal MPAs in promoting the connectivity of fish species associated with rocky reef habitats. Future studies must focus on the conditions that promote the site attachment and the site fidelity of released hatchery-reared dusky groupers so that large-scale restocking programs can be successfully implemented in MPAs with appropriate habitats.

Keywords: acoustic biotelemetry; *Epinephelus marginatus*; no-take areas; ranging behavior; serranidae

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