

Understanding connectivity and movement patterns of angel sharks (*Squatina squatina*) in the Canary Islands

Eva Meyers^{1,2}, Joanna Barker³, David Jimenez Alvarado², Ricardo Haroun², Dennis Rödder¹

¹ZFMK, Zoologisches Forschungsmuseum Alexander Koenig, Adenauerallee 160, 53113 Bonn, Germany

²ULPGC, Universidad Las Palmas de Gran Canaria, 35001 Las Palmas de Gran Canaria, Spain

³ZSL, Zoological Society of London, Regent's Park, London, NW1 4RY, UK

The critically endangered angel shark (*Squatina squatina*) has suffered a vast fragmentation of its former distribution range, leaving the Canary Islands as a unique “hotspot”. Here, angel sharks are present all year around, showing a spatial abundance gradient from the easternmost towards the westernmost islands of the archipelago. Local recreational SCUBA divers have reported seasonal encounters of all life stages through an online database. However, the movement patterns, connectivity and habitat use of angel sharks in the Canary Islands are still poorly understood. We have developed an underwater and land-based tagging and tissue sampling methodology to investigate connectivity and movement patterns of this species within and between islands. So far, we have successfully tested the underwater tagging methodology and tagged 54 adult and juvenile angel sharks in 4 islands using colour and numbered coded T-bar Floy Tags. Most sharks were detected and tagged at night. Tagging efforts have focused on the main aggregation sites identified in a previous study, particularly in nursery areas. Recaptures in dedicated surveys and re-sightings of tagged sharks have revealed that some individuals remained in the area for a period of time. We suggest that angel sharks show a temporal site fidelity to certain sites, e.g. nursery areas at a certain life stage and then most probably move on the vertical axis to deeper areas. Understanding movement patterns and connectivity of populations is crucial for the implementation of conservation strategies for this critically endangered shark species.

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