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At sea movement of Macquarie Island giant petrels: Relationships with marine protected areas and Regional Fisheries Management Organisations

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Abstract

Satellite tracking devices were used to examine the at sea movements of southern and northern giant petrels from Macquarie Island during the Austral summers of 2005–06 and 2006–07. Time spent at sea for nine northern giant petrels (four breeding adults, five recently fledged juveniles) and 10 southern giant petrels (three breeding adults, one non-breeding adult, and six recently fledged juveniles) was examined in relation to marine protected areas and fishing activity in the area immediately adjacent to Macquarie Island in 2005–06, and in terms of the jurisdictions of Regional Fisheries Management Authorities (RFMOs) at a broader scale during both seasons. Breeding adult southern

and northern giant petrels spent a large proportion of their time at sea in the Macquarie Island Marine Park (25% and 65%, respectively), primarily during chick rearing. Further from Macquarie Island, the most important foraging areas for adult giant petrels were the Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR) statistical sub-areas 58.4.1 and 88.1, where foraging activity was concentrated around the ice edge and the Polar Frontal Zone. Fledglings of both species spent time in the Marine Park immediately after fledging, before moving into international waters. We found significant temporal and spatial overlap in the areas used by recently fledged juvenile northern giant petrels and the areas utilised by the single trawler that operated in these waters during 2005–06. Adult giant petrels spent little time in RFMO waters other than those under the jurisdiction of CCAMLR, but fledgling southern and northern giant petrels spent considerable time (56% and 78% of total time at sea) on the high seas of the Pacific Ocean, in areas under the jurisdictions of the Commission for the Conservation of Southern Bluefin Tuna (CCSBT), the Western and Central Pacific Fisheries Commission (WCPFC), the Inter American Tropical Tuna Commission (IATTC) and the South Pacific Regional Fisheries Management Organisation (SPRFMO). Band returns indicate that the International Commission for the Conservation of Atlantic Tunas (ICCAT) and the South East Atlantic Fisheries Organisation (SEAFO) areas are likely to be extensively utilised by Macquarie Island giant petrels in the first three years after fledging. Overall, Macquarie Island's giant petrel populations are well protected by marine reserves during the breeding season. However, after fledging birds move into RFMO areas that currently have low standards of observer coverage and by catch mitigation, and where fisheries related mortality is likely to pose a significant risk.



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Keywords

Giant petrels; *Macronectes*; Macquarie Island; Marine protected areas; RFMOs; Satellite tracking

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