

## **OPTIMIZED FORAGING STRATEGY FOR SOUTH AFRICAN CAPE GANNETS (*MORUS CAPENSIS*)**

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Predator-prey relationships result from interactions occurring across different spatial and temporal scales. Predators have to develop a spatial foraging strategy for dealing with the multi-scale patterns of distribution of their prey. In the ocean, the distribution of fish (as prey) is generally patchy and unpredictable; this implies for seabirds (as predator) to have to adopt a strategy for searching patchy resource landscapes. In the highly productive upwelling area located off South Africa, Cape Gannets mainly prey upon sardine and anchovy. During the breeding period, adult birds perform daily foraging trips in order to provide frequent meals to their chick. For the years 2001-2007, we conjointly analysed about 300 foraging trips of Cape Gannet recorded with GPS, with the densities of sardine and anchovy that were recorded along acoustical transects; we investigated the relationship between the spatial behaviour of birds and the distribution of fish. We use the fractal dimension to describe on the one hand the degree of spatial exploration by birds, and on the other hand the degree of patchiness of fish aggregations. Here we show that the fractal dimension of the gannet movement and the fish distribution are correlated. This suggests that Cape Gannets have developed an optimal strategy for searching prey.