

Synopsis - UFAW

## **Seabird Feeding Associations and Plastic Pollution in the Hauraki Gulf**

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Plastic pollution is a problem affecting ecosystems, population of a range of species and individuals world wide. Sea birds are amongst those groups of organisms at risk of entanglement, ingestion and toxic accumulation. Repercussions associated with ingestion of plastics include blockage of enzyme secretion, lowered feeding stimulus, and reduced hormone levels of steroids as well as delayed ovulation and reproductive failure, all of which may fundamentally affect the welfare and longevity of wild birds (Azzarello and Van Vleet, 1987). Literature shows that the particular feeding behaviour of seabirds affects their risk of ingestion of plastic. Pursuit divers and surface feeding birds have a higher incidence of ingested plastic than plungers or piracy feeders (Day, as cited in Azzarello & Van Vleet, 1987).

The plastic which contaminates the sea is generally classed into two categories; industrial and user. Industrial plastic includes small pellets which are manufactured and melted down then remolded into the shapes of products we use today; the user plastics (Azzarello & Van Vleet, 1987). Once plastic waste is discarded into the ocean; for example from fishing fleets or rivers and drainage (Pruter, 1987, Derraik, 2002), it is carried and redistributed around the world via surface currents and wind patters (Shaw and Mapes, as cited in Derraik, 2002), and accumulates in convergences and gyres (Shaw & Day, cited in Moore, Moore, Leecaster & Weisberg, 2001). Once they enter the marine environment as a direct consequence of human activity, such plastics may be mistaken for food items by foraging seabirds, with associated impacts on their welfare status.

This project aims to assess the nature of plastic pollution associated with small scale convergence zones within the Hauraki Gulf of New Zealand. The project will also attempt to describe the seabird species most frequently associating with such convergence zones and, therefore, potentially at higher risk of encountering plastics and having sub-optimal welfare. Specific objectives are focused on identifying the amount and type of plastics occurring within convergence zones, looking at the size variations and colour, comparison of the seabird community associated with convergence lines with communities of seabirds outside of these zones. Utilizing dead seabirds collected as part of the New Zealand Ornithological Society's beach patrol scheme, internal plastic load of a range of seabirds will be assessed.

New Zealand is a globally important area for seabirds with 10% of the world's seabird species breeding in its waters. An assessment of the potential impact of plastic pollution on biology and welfare of its seabirds may provide an important rationale to reduce local sources of pollution.