Agreement on the Conservation of Albatrosses and Petrels

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Sub-lethal effects of plastic ingestion in albatrosses and petrels: the Southern Giant Petrel as case study

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SUMMARY

Given the ubiquity of plastics in the marine environment and their potential impacts on wildlife, there is an urgent need to better understand the effects of plastics exposure on marine species. Procellariiform birds are particularly prone to incidental plastic ingestion because they tend to feed on small prey at the water surface. The Southern Giant Petrel (SGP, *Macronectes giganteus*) plays a key role in the Southern Ocean ecosystem as a scavenger and top predator and is one of the seabird species showing highest plastic ingestion in the region. In this study we evaluated the usefulness of selected biomarkers of toxicity and parameters related to health status and body condition to assess the sub-lethal effects of plastic ingestion in Procellariforms, using the SGP as a model. Our results show that plastic ingestion poses a common and direct threat to SGP chicks, as most are fed plastic by their parents. We also identified indirect effects measured by changes in biomarkers of toxicity and parameters related to nutritional state, metabolism and immune function. However, these effects were stronger in younger chicks (~30-day-old) and seemed to be attenuated by the time of fledging (~90-day-old). This study provides additional information on the effects of plastic pollution on SGP chicks, during the period of parental care.