

 <p>Agreement on the Conservation of Albatrosses and Petrels</p>	<p>Eleventh Meeting of the Seabird Bycatch Working Group</p> <p><i>Edinburgh, United Kingdom, 15 - 17 May 2023</i></p> <p>Development of DNA markers to resolve uncertainties of seabird bycatch using feathers collected from dead seabirds</p> <p><i>Andrea Polanowski, Anna J MacDonald, Mike C. Double, Jonathon HS Barrington, Theresa M Burg, Barbara Wienecke, Julie C McInnes</i></p>
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SUMMARY

Incidental mortality in fisheries is a major driver of population changes for albatrosses and petrels globally. However, inaccurate identification of species caught as bycatch can hinder monitoring efforts due to visual similarities between closely related species and/or degradation of specimens. Genetic methods can be powerful diagnostic tools, but require appropriate genetic markers and reference databases to identify the target species. A range of simple and short genetic markers were assessed for the identification of the albatross and petrel species listed in Annex 1 to the Agreement on the Conservation of Albatrosses and Petrels and in Australia's Threat Abatement Plan for the incidental catch (or bycatch) of seabirds during oceanic longline fishing operations. DNA sequences were also generated to improve the coverage of reference databases. Analysis found that the combination of two genetic markers identified 35 of the 36 target seabird species either to species or sister species. Thirty-two specimens were identified to species and three to sister species level. No reference sequences were available for one petrel species. Genetic methods provide a streamlined framework for the molecular identification of seabird bycatch, and are recommended for use in fisheries within and outside Australian waters to improve the resolution of bycatch reporting and to corroborate logbook entries, observer reports and audits of imagery captured by electronic monitoring systems.