



Agreement on the Conservation
of Albatrosses and Petrels

**Joint Twelfth Meeting of the Seabird Bycatch
Working Group and Eighth Meeting of the
Population and Conservation Status Working Group**

Lima, Peru, 8 August 2024

**Understanding behavioral responses to
climate change to forecast eco-evolutionary
dynamics of albatross populations**

**Sarah Becker^{*1,2}, Cassandra Brooks^{1,2}, Stephanie
Jenouvier³, Christophe Barbraud⁴, Timothée
Bonnet⁴, Julien Collet⁴, Karine Delord⁴, Marika
Holland⁵, Samantha Patrick⁶, Etienne Rouby³, Joanie
Van De Walle⁷, Francesco Ventura³, Henri
Weimerskirch⁴**

*sarah.becker-2@colorado.edu

¹Department of Environmental Conservation, University of Colorado
Boulder, Boulder, Colorado, United States of America,

²Institute of Arctic and Alpine Research, University of Colorado Boulder,
Boulder, Colorado, United States of America,

³Biology Department, Woods Hole Oceanographic Institution, Woods
Hole, Massachusetts, United States of America,

⁴Centre d'Etudes Biologiques de Chizé, CNRS & La Rochelle Université,
Chizé, France,

⁵National Center for Atmospheric Research,

⁶School of Environmental Sciences, University of Liverpool, Liverpool,
United Kingdom,

⁷Department of Fisheries and Oceans Canada

A password is required to view the full text document

SUMMARY

The accelerating pace of climate change creates urgency to understand and predict climate impacts on populations and ecosystems to enable decision-making for conservation and resource management. Such a capacity requires a clear understanding of ecological and evolutionary (eco-evo) mechanisms in the context of dynamic environmental conditions. Here we introduce a project which examines the eco-evolutionary mechanisms for modifying foraging behavior that may compensate for the impact of climate change for two species of albatross: the wandering albatross (*Diomedea exulans*) and the black-browed albatross (*Thalassarche melanophris*). Specifically, we seek to characterize the eco-evolutionary linkages between foraging effort and fitness at the organismal level with population dynamics, while accounting for microevolutionary phenotypic plastic responses

to environmental changes through natural selection. Equipped with this knowledge, we will evaluate the eco-evolutionary conditions sustaining populations of these two ocean sentinel species to improve the reliability of our forecasting and contribute to predict the long-term response of marine ecosystems. Here, we share information about the project overview, preliminary work, and future efforts with the intention to invite input and feedback into this process.