Agreement on the Conservation of Albatrosses and Petrels

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Using super-high resolution satellite imagery to census threatened albatrosses

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SUMMARY

This study is the first to utilize 30-cm resolution imagery from the WorldView-3 (WV-3) satellite to count wildlife directly. We test the accuracy of the satellite method for directly counting individuals at a well-studied colony of Wandering Albatross Diomedea exulans at South Georgia, and then apply it to the closely related Northern Royal Albatross Diomedea sanfordi, which is near-endemic to the Chatham Islands and of unknown recent population status due to the remoteness and limited accessibility of the colonies. At South Georgia, satellite-based counts were comparable to ground-based counts of Wandering Albatross nests, with a slight over-estimation due to the presence of non-breeding birds. In the Chatham Islands, satellite-based counts of Northern Royal Albatross in the 2015/2016 season were similar to ground-based counts undertaken on the Forty-Fours islands in 2009/2010, but much lower than ground-based counts undertaken on The Sisters islands in 2009/2010, which is of major conservation concern for this endangered albatross species. We conclude that the ground-breaking resolution of the newly available WV-3 satellite will provide a step change in our ability to count albatrosses and other large birds directly from space without disturbance, at potentially lower cost and with minimal logistical effort.

Full paper:

Fretwell, P. T., Scofield, P. and Phillips, R. A. 2017. Using super-high resolution satellite imagery to census threatened albatrosses. *Ibis* **159**: 481–490. doi:10.1111/ibi.12482