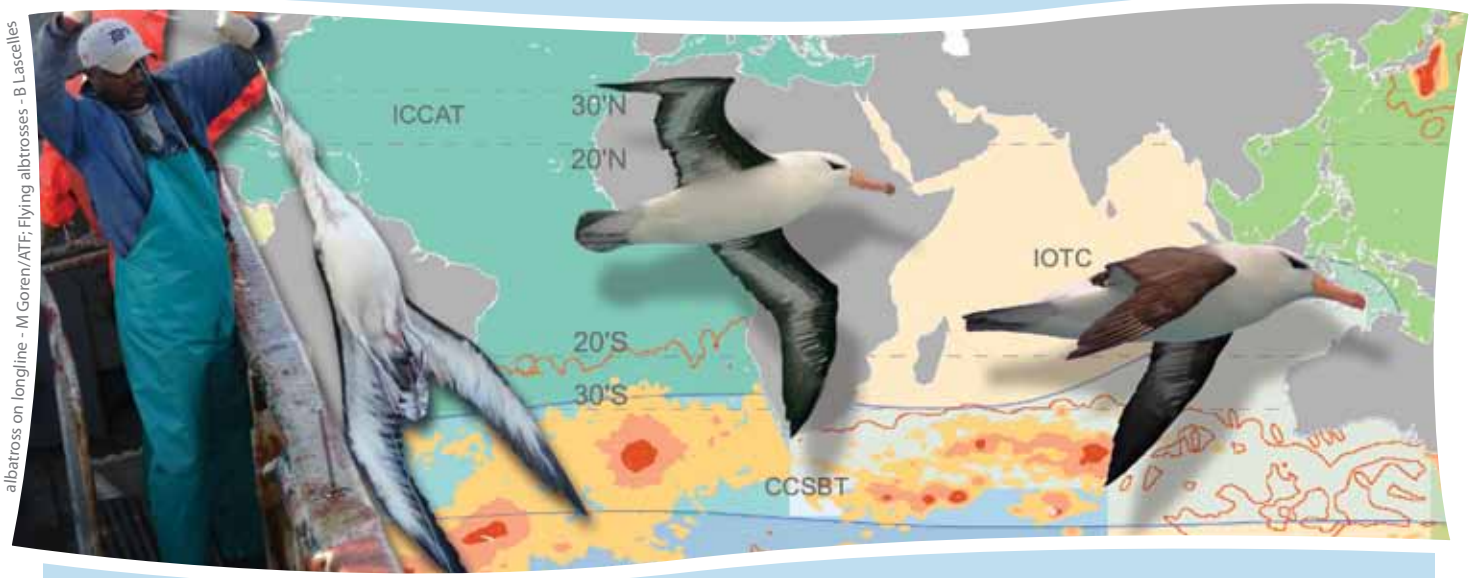
The Third Joint Tuna RFMOs meeting; La Jolla, July 11-15, 2011




albatross on longline - M Goren/ATF; Flying albtrosses - B Lascelles

# Albatross and giant-petrel distribution across the world's tuna and swordfish fisheries

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***More than 90% of albatross and giant petrel global distribution overlaps with the areas managed by the tuna commissions***

***Results emphasise the importance of all tuna commissions and the need for a coordinated approach to seabird conservation.***

## Summary

Albatrosses are vulnerable to bycatch in tuna and swordfish longline fisheries. Remote tracking data provide a key tool to identifying priority areas for seabird bycatch mitigation. This paper presents an updated analysis of the global distribution of albatrosses and giant-petrels using data from the Global Procellariiform Tracking Database. Overall, 91% of global albatross and giant-petrel distribution during the breeding season and 92% of global albatross and giant-petrel distribution during the non-breeding season, overlaps with the areas managed by the tuna commissions. New data available, particularly on non-breeding distributions, emphasises the importance of all five tuna commissions for these threatened species.

**Table 1. The importance of waters managed by tuna and swordfish fisheries to breeding and non-breeding albatross and giant-petrels based on tracking data.**

| | CCSBT | IATTC | ICCAT | IOTC | WCPFC |
|---|---|---|---|---|---|
| % time in RFMO by all tracked birds during breeding | 61 | 5 | 13 | 14 | 47 |
| % time in RFMO by all tracked birds during non-breeding | 56 | 12 | 22 | 21 | 31 |

Albatrosses are found across all five of the world's tuna commissions, predominantly in higher latitudes, but tropical and sub-tropical exceptions include the west coast of South America, the North Pacific (home to the four most tropical albatross species), and waters offshore from Brazil and Namibia.

Breeding albatrosses spend most time in the areas managed by (1) CCSBT, (2) WCPFC, (3) IOTC, (4) ICCAT and (5) IATTC. The highest overlaps are with CCSBT and WCPFC, overlapping with 20 and 16 of the 22 albatross species, respectively, and each overlapping with around 50% of global albatross breeding distribution (Table 1). However, all five tuna commissions are highly important (>99% distribution) for individual breeding albatross species. In terms of Critically Endangered albatrosses, IOTC, ICCAT, and IATTC overlap with 100% of the breeding distribution of Amsterdam, Tristan and Waved Albatross respectively.

For non-breeding birds, the relative ranking of the tuna commissions remains the same, but distribution across the tuna commissions is more evenly spread, reflecting the fact that albatrosses are migrating and foraging more widely. ICCAT and IOTC overlap with nearly a quarter each of global non-breeding distribution.

The results highlight the distribution of albatross and giant-petrel species across multiple tuna commissions, emphasising the need for coordinated and harmonised approach to seabird by-catch mitigation and data collection.

## BREEDING SEASON

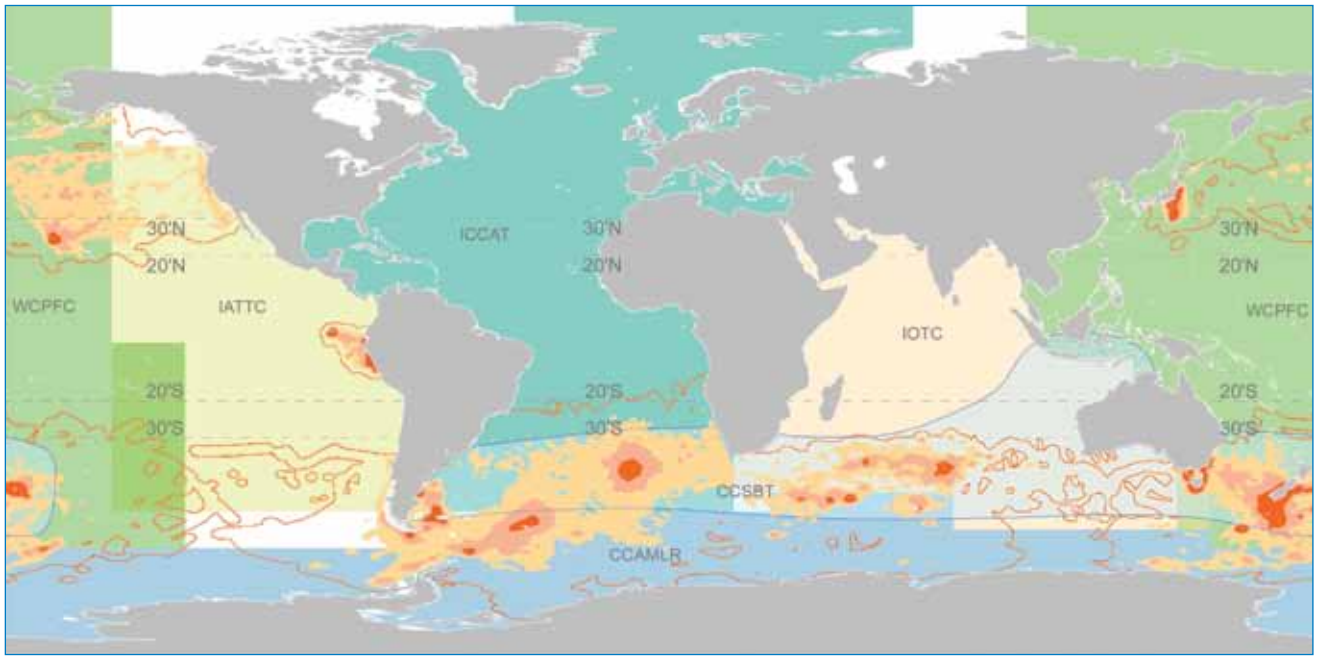


**Figure 1: Global density distribution of albatrosses and giant-petrels during their Breeding season, in relation to the areas managed by the world's tuna commissions.** Red, pink and orange shaded areas indicate the 50, 75, and 95% probability contours of albatross and giant-petrel distribution, and the single line indicates the full range based on data available to these analyses.

**Table 2. Percentage time spent at sea within waters managed by different tuna and swordfish RFMOs during breeding for all albatross species and two species of giant petrel.**

| | Threat status[1] | % global pop tracked[2] | CCSBT | IATTC | ICCAT | IOTC | WCPFC |
|---|---|---|---|---|---|---|---|
| Albatrosses | | | | | | | |
| Amsterdam | CE | 100 | 100 | - | - | 100 | - |
| Antipodean | V | 97 | 91 | 2 | - | 1 | 97 |
| Atlantic Yellow-nosed | E | 20 | 98 | - | 100 | 1 | - |
| Black-browed | E | 71 | 49 | 4 | 18 | - | - |
| Black-footed | E | 95 | - | 21 | - | - | 78 |
| Buller's | NT | 44 | 88 | - | - | 1 | 88 |
| Campbell | V | 100 | 59 | - | - | - | 72 |
| Chatham | V | 100 | 99 | - | - | - | 99 |
| Grey-headed | V | 38 | 31 | 1 | 4 | 9 | 14 |
| Indian Yellow-nosed | E | 70 | 100 | - | - | 100 | - |
| Laysan | NT | 100 | - | 14 | - | - | 84 |
| Light-mantled | E | 30 | 2 | - | 1 | 1 | 8 |
| Northern Royal | E | 100 | 98 | - | - | - | 98 |
| Salvin's | V | 4 | 85 | - | - | - | 91 |
| Short-tailed | V | 89 | - | - | - | - | 97 |
| Shy | NT | 100 | 82 | - | - | 81 | 81 |
| Sooty | E | 52 | 75 | - | 47 | 5 | - |
| Southern Royal | V | 99 | 98 | - | - | - | 98 |
| Tristan | CE | 100 | 97 | - | 100 | - | - |
| Wandering | V | 100 | 90 | - | 7 | 24 | - |
| Waved | CE | 99 | - | 89 | - | - | - |
| White-capped | NT | 99.9 | 92 | - | - | 11 | 92 |
| Southern Giant-petrel | LC | 21 | 25 | - | 24 | - | 13 |
| Northern Giant-petrel | LC | 51 | 16 | - | 15 | 1 | 28 |

[1] not threatened, NT: near threatened, V: vulnerable, E: endangered, CE: critically endangered (IUCN 2011)
[2] The proportion of the global breeding population represented by the breeding pairs at each site for which tracking data were available

## Analysis of albatross and giant petrel remote tracking data

Many new datasets have been collected since the original analysis of the Global Procellariiform Tracking Database (BirdLife International, 2004). Here we analyse the database to assess the overlap between tuna commission areas and (i) the distribution of albatrosses during the breeding season, when adult birds are constrained by the need to return to the colony to feed their chick, and (ii) the distribution of non-breeding albatrosses, which includes juvenile birds and the proportion of adults not breeding in any given year, as well as adults during the non-breeding months when they may forage more widely or undertake circumpolar migrations. Methods follow those used in BirdLife International (2004). Multi-species summaries were created by weighting each species equally, regardless of population size. Data gaps exist for certain colonies, and no attempt was made to estimate distribution from these colonies. These gaps need to be considered when interpreting results. Data were available for all 22 albatross and 2 giant-petrel species during the breeding season and for 18 of the 22 albatross and both giant-petrel species during the non-breeding season.

## NON BREEDING SEASON

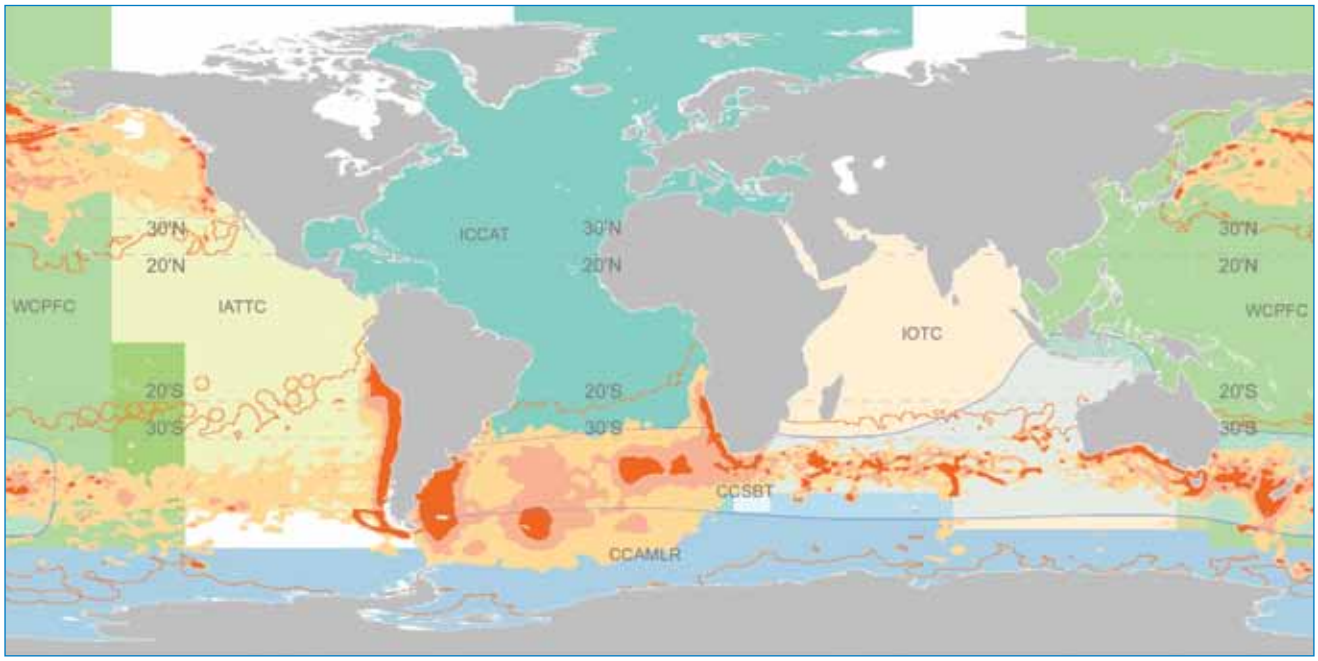


**Figure 2: Global density distribution of albatrosses and giant-petrels during their Non-Breeding season, in relation to the areas managed by the world's tuna commissions.** Red, pink and orange shaded areas indicate the 50, 75, and 95% probability contours of albatross and giant-petrel distribution, and the single line indicates the full range based on data available to these analyses.

**Table 3. Percentage time spent at sea within waters managed by the different tuna and swordfish RFMOs during non-breeding for all albatross species and two species of giant petrel.**

| | Threat status[1] | % global pop tracked[2] | CCSBT | IATTC | ICCAT | IOTC | WCPFC |
|---|---|---|---|---|---|---|---|
| Albatrosses | | | | | | | |
| Amsterdam | CE | 100 | 100 | - | 2 | 98 | - |
| Antipodean | V | 97 | 80 | 6 | - | 12 | 84 |
| Atlantic Yellow-nosed | E | 20 | 84 | - | 98 | 2 | - |
| Black-browed | E | 50 | 68 | 2 | 58 | - | - |
| Black-footed | E | 95 | - | 43 | - | - | 50 |
| Buller's | NT | 44 | 59 | 36 | - | 7 | 63 |
| Chatham | V | 100 | 14 | 77 | - | - | 27 |
| Grey-headed | V | 23 | 10 | 9 | 7 | 2 | 1 |
| Indian Yellow-nosed | E | 65 | 100 | - | - | 93 | - |
| Laysan | NT | 99 | - | 1 | - | - | 97 |
| Northern Royal | E | 100 | 57 | 24 | 40 | 4 | 14 |
| Salvin's | V | 4 | 48 | 41 | - | - | 56 |
| Shy | NT | 100 | 100 | - | - | 100 | 46 |
| Short-tailed | V | 89 | - | 2 | - | - | 93 |
| Sooty | E | 34 | 58 | - | 53 | 9 | - |
| Tristan | CE | 100 | 93 | - | 84 | 13 | - |
| Wandering | V | 55 | 93 | 2 | 5 | 73 | 10 |
| White-capped | NT | 99 | 95 | - | 47 | 5 | 47 |
| Northern Giant-petrel | LC | 51 | 32 | 6 | 24 | - | 17 |
| Southern Giant-petrel | LC | 18 | 30 | 1 | 27 | 1 | 9 |

[1] not threatened, NT: near threatened, V: vulnerable, E: endangered, CE: critically endangered (IUCN 2011)
[2] The proportion of the global non-breeding population represented by the pairs at each site for which tracking data were available

## Highlights for each tuna commission

- **CCSBT:** the CCSBT area has the highest degree of overlap with southern hemisphere albatrosses, with a total of 62% of global albatross and giant-petrel breeding distribution falling within its area.
- **WCPFC:** In the southern WCPFC area, highest concentrations of albatrosses occur around southeast Australia and New Zealand including the Tasman Sea. Tracking data for the three north Pacific species emphasise their wide dispersal across the entire northern ocean basin to around 15°N (ACAP 2008a).
- **IOTC:** The Critically Endangered Amsterdam Albatross is entirely distributed within the IOTC region and the area is also highly important for Indian Yellow-nosed, Wandering and Shy Albatross. Core breeding distribution is concentrated below 30°S, but non-breeding and juvenile birds forage in areas up to 20°S (Delord & Weimerskirch 2009).
- **ICCAT:** The ICCAT area has very high overlap with the three albatross species breeding on Tristan da Cunha and with non-breeding birds including those from the south Atlantic, New Zealand and Australia. Albatross forage up to 20°S and up to 10°S along the coast of Namibia (ACAP, 2010).
- **IATTC:** Non-breeding data highlight the importance of the IATTC area to albatross species migrating from New Zealand, such as Buller's, Chatham and Salvin's Albatross, as well as non-breeding Black-footed Albatrosses from Hawai'i. No non-breeding remote tracking data were available for Waved Albatross, however based on ring recoveries and other sightings, this species is thought to remain in the East Pacific during the non-breeding season, which would therefore add to the importance identified for IATTC (ACAP, 2008b).

## Implications for conservation

Remote tracking data play an important role in highlighting areas and seasons of high overlap with tuna and swordfish longline fisheries. Where bycatch data are sparse or lacking, remote tracking data offer insight into priority areas for seabird bycatch mitigation measures and increased coverage by onboard observer programmes.

In 2004, when the first analysis of albatross and petrel distribution in relation to RFMO areas was undertaken, CCAMLR was the only RFMO to have in place comprehensive measures to reduce seabird mortality. Since then, tuna commissions have taken initial steps to reduce seabird by-catch in their longline fisheries, including requirements by WCPFC, IOTC and ICCAT for longline vessels to use two seabird by-catch mitigation measures in areas overlapping with albatross distribution. WCPFC and IOTC have also established requirements for their longline fisheries to implement onboard observer programmes which, among other functions, will record standardised data on by-catch, albeit from only a sample (5%) of the longline fishery. ICCAT and IATTC are in the process of adopting similar programmes. Current priorities to make progress are focused on (i) improving existing tuna commission bycatch mitigation measures to reflect evolved knowledge of best practice, (ii) increasing coverage and reporting from onboard observer programmes, (iii) improving outreach to fishermen and monitoring of implementation.

The data presented here highlight the importance of all 5 tuna commissions in relation to the distribution of albatross and giant-petrel species, and that for many species, coordination of conservation measures between tuna commissions is vital for them to be effective at the species level.

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The Global Procellariiform Tracking Database is a collaboration between scientists from around the world and coordinated by BirdLife International. Holding over 6,300 tracks, of 36 seabird species the database has been used to provide the world's tuna commissions with data on vulnerable areas for seabird by-catch, identifying areas and seasons of highest overlap with longline fishing effort, and inputting to Ecological Risk Assessments.

**Further information available at www.seabirdtracking.org or contact:**

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BirdLife International is a partnership of 117 national conservation organisations and the world leader in bird conservation. BirdLife's unique local to global approach enables it to deliver high impact and long term conservation for the benefit of nature and people.

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