White-capped Albatross

Thalassarche steadi

Albatros à cape blanche
Albatros capsulado blanco

CRITICALLY ENDANGERED | ENDANGERED | VULNERABLE | NEAR THREATENED | LEAST CONCERN | NOT LISTED

Sometimes referred to as
White-capped Mollymawk
Auckland Shy Albatross
New Zealand Shy Albatross

Photo © David Thompson

TAXONOMY

Order Procellariiformes
Family Diomedeidae
Genus *Thalassarche*
Species *T. steadi*

Thalassarche steadi was historically considered a member of *Diomedea cauta* (Gould 1841), which has since been split into four species: *steadi* (White-capped Albatross), *cauta* (Shy Albatross), *eremita* (Chatham Albatross) and *salvini* (Salvin's Albatross) as recommended by Robertson and Nunn (2004) [1], although the phylogenetic distinction between *T. cauta* and *T. steadi* was not accepted by Brooke (2004) [2] or Onley and Scofield (2007) [3]. The two taxa were recognised as separate species by ACAP's Taxonomy Working Group in 2006 [4], and by BirdLife International [5], based on morphometric, phylogenetic and population genetics studies [6, 7, 8, 9].

CONSERVATION LISTINGS AND PLANS

International

- Agreement on the Conservation of Albatrosses and Petrels – Annex 1 [10]
- 2010 IUCN Red List of Threatened Species – Near Threatened (since 2007) [11]
- Convention on Migratory Species – Appendix II (as *Diomedea cauta*) [12]

Australia

- *Environment Protection and Biodiversity Conservation Act 1999* (*EPBC ACT*) [13]
  - Vulnerable (as *T. cauta steadi*)
  - Listed Migratory Species
  - Listed Marine Species
- Recovery Plan for Albatrosses and Giant Petrels (2001) [14]
- Threat Abatement Plan 2006 for the incidental catch (or bycatch) of seabirds during oceanic longline fishing operations [15]
- Tasmania: *Threatened Species Protection Act 1995* - Vulnerable [16]

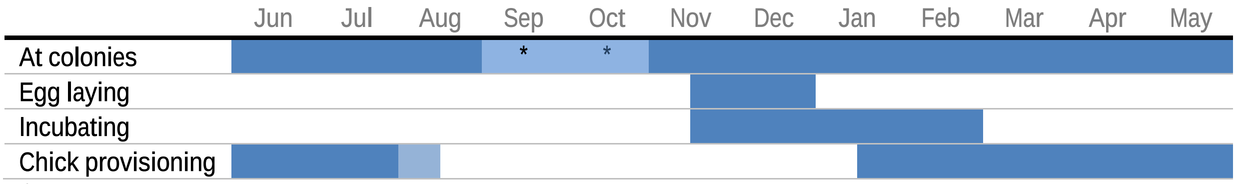
New Zealand

- *New Zealand Wildlife Act 1953* [17]
- Action Plan for Seabird Conservation in New Zealand; Part A: Threatened Seabirds [18]
- New Zealand Conservation Status 2008 – At Risk (Declining) (as *T. cauta steadi*) [19]

BREEDING BIOLOGY

The breeding biology and breeding cycle of *T. steadi* are largely unknown. Birds are colonial and were assumed to nest annually, although recent studies suggest this species is a biennial breeder. A recent study discovered that 75% of adults did not breed following a successful attempt the year before; additionally, about 25% of useable nests were unoccupied, which is atypical in an annually-breeding albatross [20]. Eggs are usually laid in mid-November and hatch in February, although hatching has been recorded as early as 19 January on Disappointment Island [21]. The young were thought to fledge around mid-August (C.J.R. Robertson in [22]) but this would imply a very long fledging period so June-July could be more likely (D. Thompson and P. Sagar pers. comm.). Some adults remain near the colony year-round [23]. Information is needed on dates of return to colonies, incubation periods and shifts, laying and fledging dates, chick growth rates, recruitment, and breeding success and frequency. General information on the breeding cycle is given in Table 1.

Table 1. *Breeding cycle of* T. steadi.



* Birds may be present year round at colonies

BREEDING STATES

Table 2. *Distribution of the global* T. steadi *population among Parties to the Agreement*.

	New Zealand
Breeding pairs	100%

BREEDING SITES

Thalassarche steadi is endemic to New Zealand (Table 2) with colonies on Disappointment, Auckland and Adams Islands in the Auckland Islands group, Bollon's Island in the Antipodes Islands group and occasionally on the Forty-Fours in the Chatham Islands group [24]. In addition, a single bird occupied an empty nest on The Pyramid in November-December 2007 and 2008 [25], and a male first recorded at Bird Island (South Georgia/Islas Georgias del Sur) in 2003 [26] paired with a Black-browed Albatross *T. melanophrys* in 2007/08 and 2008/09, and raised a chick to several weeks of age in both seasons (R. Phillips pers. comm.). Neither is considered further in this assessment. An estimated 97,089 pairs bred at Disappointment, Auckland and Adams Islands in 2008, with 91,694 pairs breeding on Disappointment Island alone [27] (Table 3).

Photo © David Thompson

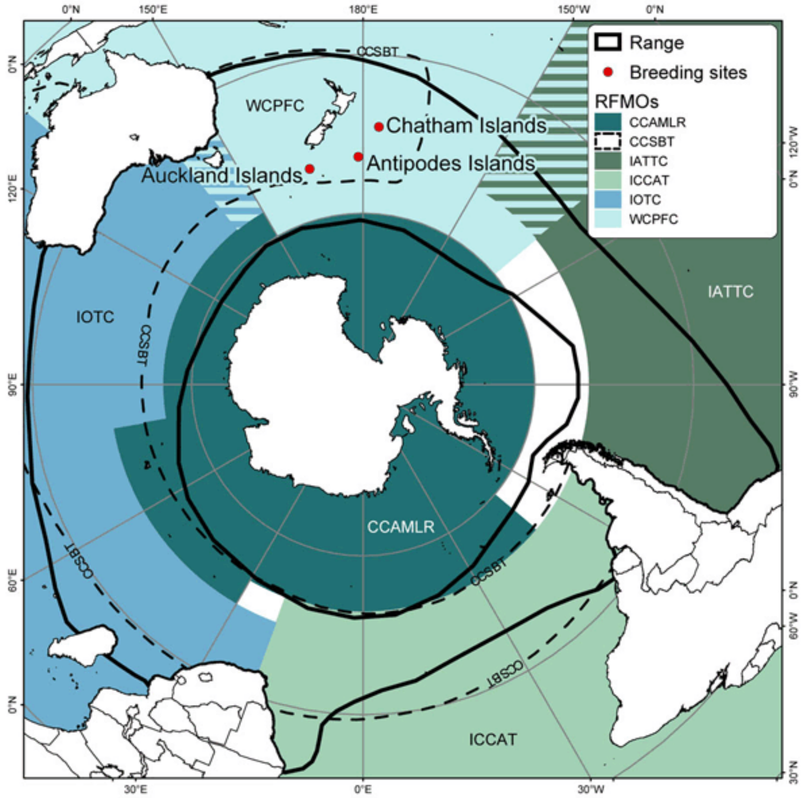


Figure 1. *The main breeding sites and approximate range of* T. steadi. *The boundaries of selected Regional Fisheries Management Organisations (RFMOs) are also shown.*

CCAMLR – Commission for the Conservation of Antarctic Marine Living Resources
CCSBT - Commission for the Conservation of Southern Bluefin Tuna
IATTC - Inter-American Tropical Tuna Commission
ICCAT - International Commission for the Conservation of Atlantic Tunas
IOTC - Indian Ocean Tuna Commission
WCPFC - Western and Central Pacific Fisheries Commission

Table 3. *Monitoring methods and estimates of the population size (annual breeding pairs) for each breeding site.*

Breeding site location	Jurisdiction	Years monitored	Monitoring method	Monitoring accuracy	Annual breeding pairs (95% CI, last census)
Auckland Islands 50° 44'S, 166° 06'E					
Disappointment Island	New Zealand	1972, 1981, 1985, 1990, 1993, 2006-2008	A, D	High	91,694 (91,088-92,300) (2008) [27]
Auckland Island		1993, 2006-2008	A, D	High	5,264 (5,119-5,409) (2008) [27]
Adams Island		1992, 2007-2008	D	High	131 (108-154) (2008) [27]
Total % of all sites					97,089 (96,466-97,712) *c.* 99.9%
Antipodes Islands 49° 41'S, 178° 48'E	New Zealand				
Bollons Island		1995	A	Medium	20 (1995) [28]
Total % of all sites					20 <0.1%
Chatham Islands 44° 00'S, 176° 30'E	New Zealand				
The Forty-Fours		1991, 1993, 1996, 2005, 2007, 2008	A	High	3 (2008) [29]
Total % of all sites					3 <0.1%
Total					*97,111*

CONSERVATION LISTINGS AND PLANS FOR THE BREEDING SITES

International

Auckland Islands and Antipodes Islands

- UNESCO World Heritage List - Inscribed 1998; Criteria (ix) (x) [30]

New Zealand

Auckland Islands and Antipodes Islands

- National Nature Reserve – *New Zealand Reserves Act 1977* [31]
- Conservation Management Strategy. Subantarctic Islands 1998-2008 [32]

The Forty-fours

- None (under private ownership)

POPULATION TRENDS

Although global counts of *T. steadi* have increased from 75,000 breeding pairs in 1993 [33] to a current estimate of 97,089 pairs [27], the estimates are not based on comparable methodologies and therefore population trends cannot be calculated (Table 4). The size of the largest breeding colony at Disappointment Island was reported as 60,000 pairs in 1973 [34], 72,000 pairs in 1993 [33], 110,649 in 2006, 86,550 in 2007 and 91,694 pairs in 2008 [27], however, only the 2006-2008 data were obtained using a standard methodology. The need for accurate trend information is highlighted by the report of an estimated 8,000 albatrosses of this species killed annually as a result of longline and trawl fisheries [35].

Table 4. *Summary of population trend data for* T. steadi*.*

Breeding site	Current Monitoring	Trend Years	% average change per year	Trend	% of population for which trend calculated
Auckland Islands					
Disappointment Island	Yes	-	-	Unknown	-
Auckland Island	Yes	-	-	Unknown	-
Adams Island	Yes	-	-	Unknown	-
Antipodes Islands					
Bollons Island	No	-	-	Unknown	-

No information is currently available on the survival of juveniles and adults (Table 5). Breeding success for a pig-free area of South West Cape on Auckland Island was based on 38 and 45 nests in 2006 and 2007, respectively [20, 36].

Table 5. *Demographic data for the main* T. steadi *breeding sites.*

Breeding site	Mean breeding success (Year)	Mean juvenile survival	Mean adult survival
Auckland Islands			
Disappointment Island	No data	No data	No data
Auckland Island	53-62% (2006/07, 2007/08) [20, 36]	No data	No data
Adams Island	No data	No data	No data
Antipodes Islands			
Bollons Island	No data	No data	No data

BREEDING SITES: THREATS

Feral pigs *Sus scrofa,* introduced to Auckland Island in 1807, have been implicated in reduction of nesting colonies between 1972 and 1982 [37]. Predation of chicks has been recorded to such an extent that pigs were considered to have a "serious impact", at least periodically, except in inaccessible nesting areas on steep cliffs [38] (Table 6). Feral cats *Felis catus* are also thought to kill chicks on Auckland Island, but all remaining areas are free from introduced mammals [18].

Table 6. *Summary of known threats causing population level changes at the main breeding sites of* T. steadi.

Breeding site	Human disturbance	Human take	Natural disaster	Parasite or Pathogen	Habitat loss or degradation	Predation by alien species	Contamination
Auckland Islands							
Disappointment Island	No	No	No	No	No	No	No
Auckland Island	No	No	No	No	No	No [a]	No
Adams Island	No	No	No	No	No	No	No
Antipodes Islands							
Bollons Island	No	No	No	No	No	No	No

[a] The breeding success of albatrosses nesting in areas accessible to pigs remains unquantified.

FORAGING ECOLOGY AND DIET

Thalassarche steadi feeds on fish, cephalopods, crustaceans and tunicates [5]. Birds often follow ships and offal is thought to comprise a significant component of their diet. This species employs surface seizing but also dives to obtain prey [5]. No comprehensive studies have been undertaken on the diet, and any differences by site, gender, age and season are unknown.

MARINE DISTRIBUTION

The geographical range of *T. steadi* is confounded by its resemblance to other albatross species that share its range, mainly *T. cauta.* Although information is limited, during the breeding season *T. steadi* is thought to forage mainly within New Zealand's EEZ, including around the Chatham Islands and south of Auckland Islands [20, 36, 39]. Additionally, chick-rearing birds utilise areas off the south-east coast of Australia and around Tasmania [20] (Figure 4). Juveniles and non-breeding adults are thought to range throughout the waters off southern Australia and South Africa [20, 36, 39, 40] (Figure 5). A report by Thompson and Sagar (2008) [20] confirmed that 11 of 12 geolocator-tagged adults remained in Australasian waters year round, while the remaining bird migrated to waters off southern Africa in two consecutive years. Juveniles and non-breeding adults have also been reported in the south-western Atlantic Ocean off Uruguay and northern Argentina [41]; and an adult has bred in a mixed pair with *T. melanophrys* at Bird Island, South Georgia (Islas Georgias del Sur) [26] (R. Phillips pers. comm.).

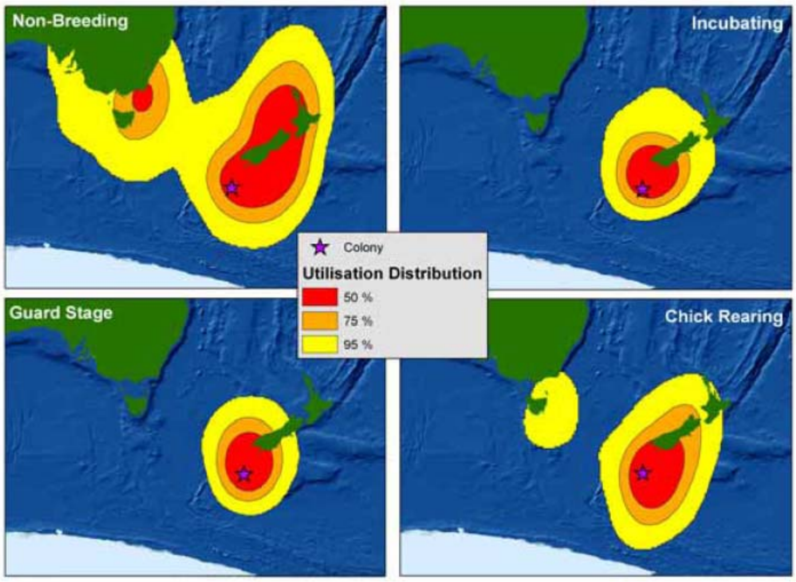


Figure 4. *Utilisation Distributions based on all tracking data from all birds, excepting the single individual making repeat migrations to southern Africa, and by phase of the annual cycle. The smoothing (h) parameter was 300 km and the grid size was 30 km. From Thompson and Sagar 2008 [20], with permission from the New Zealand Department of Conservation.*

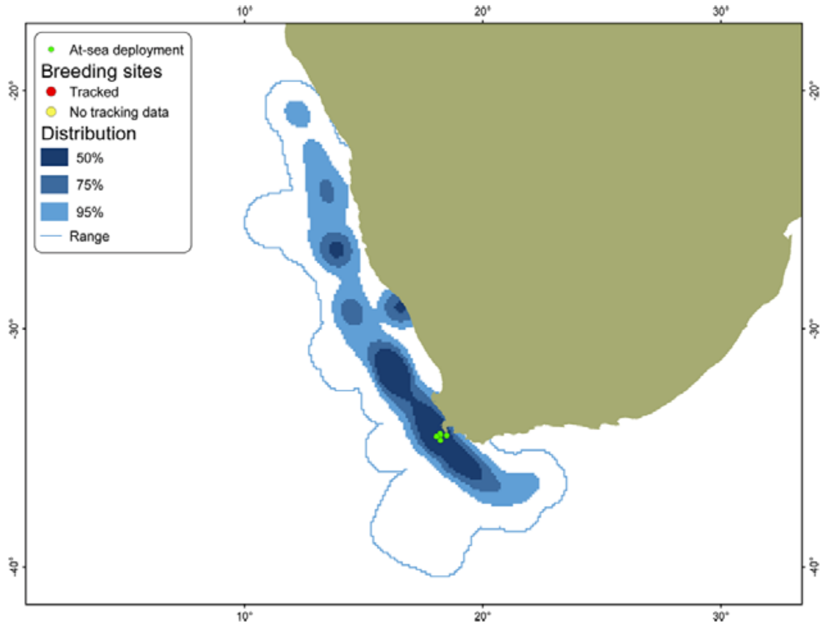


Figure 5. *Satellite-tracking data of non-breeding* T. steadi *in the Benguela Upwelling System (number of tracks =5). Map based on data contributed to the BirdLife Global Procellariiform Tracking Database.*

The breeding and foraging ranges of *T. steadi* overlap with nine Regional Fisheries Management Organisations including CCAMLR, CCSBT, IATTC, ICCAT, IOTC, WCPFC, SIOFA (Southern Indian Ocean Fisheries Agreement), SEAFO (South-East Atlantic Fisheries Organisation) and the yet to be established SPRFMO (South Pacific Regional Fisheries Management Organisation) (Figure 1; Table 7).

Table 7. *Summary of the known ACAP Range States, non-ACAP Exclusive Economic Zones and Regional Fisheries Management Organisations that overlap with the marine distribution of* T. steadi.

	Resident/ Breeding and feeding range	Foraging range only	Few records - outside core foraging range
Known ACAP Range States	New Zealand	Argentina Australia South Africa Uruguay	Brazil Chile France Peru UK
Exclusive Economic Zones of non-ACAP countries	-	Namibia	Angola Madagascar Mozambique
Regional Fisheries Management Organisations[1]	CCSBT WCPFC	CCAMLR ICCAT IOTC SIOFA SEAFO SPRFMO[2]	IATTC

[1] See Figure 1 and text for list of acronyms
[2] Not yet in force

MARINE THREATS

Fisheries bycatch is a major threat to most albatrosses, including *T. steadi* [33]. Within the New Zealand Exclusive Economic Zone, it was the most common albatross species observed killed in 2004-2007, with 297 of the 373 mortalities recorded in the squid trawl fishery [42]. Annual estimates of total captures in major New Zealand trawl fisheries (accounting for 36-57% of trawl fishing effort) over 2000-2006 varied from 222 to 837 birds [43]. Previous mortality estimates of 2,300 breeding adults were documented in the squid trawl fishery in 1990 alone, mostly as a result of collision with netsonde cables [44] which were phased out in 1992 [18]. This species has also been observed caught by pelagic and demersal longliners in New Zealand's EEZ [42].

Outside of New Zealand waters, risk of fishery-related bycatch mortality remains significant. A recent review estimated over 8,000 *T. steadi* were killed annually as a result of trawl and longline fisheries throughout the Southern Ocean [35]. In the waters off southern Africa, this is the most frequently reported species caught in the pelagic tuna longline fishery, with a total of 7,000-11,000 killed in 1998-2000 by the South African pelagic longline fishery alone [45]. Additionally, observer data from the South African trawl fishery reported about 7,700 'shy-type' albatrosses killed annually; a subset of these birds was later confirmed by mtDNA analysis to be exclusively *T. steadi* [6]. Tracking of adult and immature birds in the Benguela Upwelling System off the continental shelf of southern Africa revealed that 85% of their time is spent in these trawl grounds [40]. Juvenile *T. steadi* have been observed killed in the Uruguayan pelagic longline fleet in the south-western Atlantic, and a large percentage of "shy-type" albatrosses present in the area could in fact be *T. steadi* [41]. The pelagic fishing fleets of Japan, Taiwan and Korea are also known to kill significant numbers of 'shy-type' albatrosses, but reliable estimates are not available. Observer coverage in these and most other fisheries are currently either non-existent or inadequate to determine accurate bycatch rates, yet are critical for effective mitigation and conservation measures [35].

No information exists on the potential effects of contaminants, oil spills or marine debris on this species.

KEY GAPS IN SPECIES ASSESSMENT

This albatross is not well studied and much remains to be documented about its biology and ecology. Although further photographic counts of *T. steadi* on Auckland Islands, and work on demography, including breeding, are planned for 2009 and 2010 (B. Baker and J. Pierre pers. comm.), data deficiencies for this species include: breeding cycle (particularly regarding annual or biennial breeding), diet, population dynamics and trends, and at-sea distribution, movement, dispersal and risk of fishery bycatch.

Photo © Tui De Roy, not to be used without photographer's permission

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PHOTOGRAPHS

Tui De Roy, The Roving Tortoise Worldwide Nature Photography,
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RECOMMENDED CITATION

Agreement on the Conservation of Albatrosses and Petrels. 2011. ACAP Species assessment: White-capped Albatross *Thalassarche steadi.* Downloaded from http://www.acap.aq on 1 February 2011.

GLOSSARY AND NOTES

(i) Years.

The "split-year" system is used. Any count (whether breeding pairs or fledglings) made in the austral summer (e.g. of 1993/94) is reported as the second half of this split year (i.e. 1994).

The only species which present potential problems in this respect are *Diomedea* albatrosses, which lay in December-January, but whose fledglings do not depart until the following October-December. In order to keep records of each breeding season together, breeding counts from e.g. December 1993-January 1994 and productivity counts (of chicks/fledglings) of October-December 1994 are reported as 1994.

If a range of years is presented, it should be assumed that the monitoring was continuous during that time. If the years of monitoring are discontinuous, the actual years in which monitoring occurred are indicated.

(ii) Methods Rating Matrix (based on NZ rating system)

METHOD

A Counts of nesting adults (Errors here are detection errors (the probability of not detecting a bird despite its being present during a survey), the "nest-failure error" (the probability of not counting a nesting bird because the nest had failed prior to the survey, or had not laid at the time of the survey) and sampling error).

B Counts of chicks (Errors here are detection error, sampling and nest-failure error. The latter is probably harder to estimate later in the breeding season than during the incubation period, due to the tendency for egg- and chick-failures to show high interannual variability compared with breeding frequency within a species).

C Counts of nest sites (Errors here are detection error, sampling error and "occupancy error" (probability of counting a site or burrow as active despite it's not being used for nesting by birds during the season).

D Aerial-photo (Errors here are detection errors, nest-failure error, occupancy error and sampling error (error associated with counting sites from photographs).

E Ship- or ground- based photo (Errors here are detection error, nest-failure error, occupancy error, sampling error and "visual obstruction bias" (the obstruction of nest sites from view from low-angle photos, always underestimating numbers)

F Unknown

G Count of eggs in subsample population

H Count of chicks in subsample population and extrapolation (chicks x breeding success - no count of eggs)

RELIABILITY

1 Census with errors estimated

2 Distance-sampling of representative portions of colonies/sites with errors estimated

3 Survey of quadrats or transects of representative portions of colonies/sites with errors estimated

4 Survey of quadrats or transects without representative sampling but with errors estimated

5 Survey of quadrats or transects without representative sampling nor errors estimated

6 Unknown

(iii) Population Survey Accuracy

High Within 10% of stated figure;

Medium Within 50% of stated figure;

Low Within 100% of stated figure (eg coarsely assessed via area of occupancy and assumed density)

Unknown

(iv) Population Trend

Trend analyses were run in TRIM software using the linear trend model with stepwise selection of change points (missing values removed) with serial correlation taken into account but not overdispersion.

(v) Productivity (Breeding Success)

Defined as proportion of eggs that survive to chicks at/near time of fledging unless indicated otherwise

(vi) Juvenile Survival

defined as:

1 Survival to first return/resight;
2 Survival to x age (x specified), or
3 Survival to recruitment into breeding population
4 Other
5 Unknown

(vii) Threats

A combination of scope (proportion of population) and severity (intensity) provide a level or magnitude of threat. Both scope and severity assess not only current threat impacts but also the anticipated threat impacts over the next decade or so, assuming the continuation of current conditions and trends.

		Scope (% population affected)			
		Very High (71-100%)	High (31-70%)	Medium (11-30%)	Low (1-10%)
Severity (likely % reduction of affected population within ten years)	Very High (71-100%)	Very High	High	Medium	Low
	High (31-70%)	High	High	Medium	Low
	Medium (11-30%)	Medium	Medium	Medium	Low
	Low (1-10%)	Low	Low	Low	Low

(viii) Maps

The satellite-tracking maps shown were created from platform terminal transmitter (PTT) and global-positioning system (GPS) loggers. The tracks were sampled at hourly intervals and then used to produce kernel density distributions, which have been simplified in the maps to show the 50%, 75% and 95% utilisation distributions (i.e. where the birds spend x% of their time). The full range (i.e. 100% utilisation distribution) is also shown. Note that the smoothing parameter used to create the kernel grids was 1 degree, so the full range will show the area within 1 degree of a track. In some cases the PTTs were duty-cycled: if the off cycle was more than 24 hours it was not assumed that the bird flew in a straight line between successive on cycles, resulting in isolated ‘blobs’ on the distribution maps. It is important to realise that these maps can only show where tracked birds were, and blank areas on the maps do not necessarily indicate an absence of the particular species.