

Hutton's shearwater

Puffinus buttoni

Status: Endangered.

Population

Endemic to New Zealand, breeds only on Seaward Kaikoura Ranges, northeast South Island, population estimated 94 000 breeding pairs.

Breeding and survival

Annual: August/September to April.

Productivity: 34% fledged from eggs laid.

Age of first return and first breeding: 3 years; 6 years.

Survival from fledging to recruitment: Unknown.

Foraging range

Breeding: Continental shelf and deeper waters mainly east of the South Island from Cook Strait to Otago, especially north of Banks Peninsula.

Fledglings: Unknown, possible dispersal to eastern and southern Australia.

Adolescents (pre-return to breeding site): May remain in Australian waters.

Non-breeding: Migrate to coastal and continental shelf waters off Australia as far as Torres Strait and around the southern and western coasts to northwest Western Australia.

Known incidental capture in fisheries

New Zealand: Have been caught in set nets off Kaikoura.

Overseas: Unknown.

Current research

Population monitoring, spray marking individuals to determine movements at sea.

Assessment of potential risk

Set nets and inshore longline fisheries.

Deficiencies in knowledge

- Distribution of age classes at sea.
- Information on incidental capture and fishing practices in Australia.

Map

Range assessed on band recoveries and published distribution.

Principal references: 5, 86, 92, 137, 143, 199, 319, 320, 370.

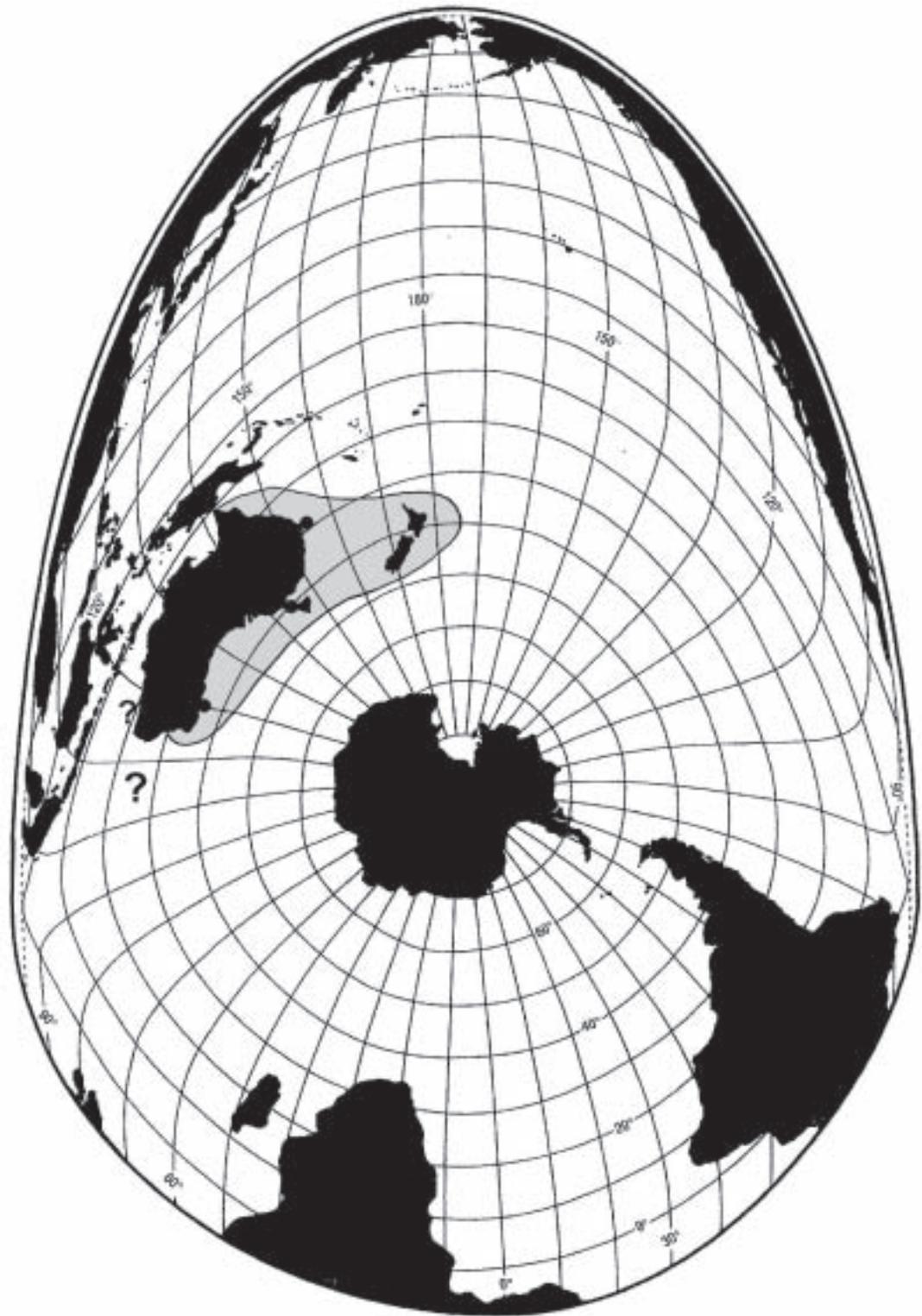


Figure 15. Hutton's shearwater. Grey shaded areas are an assessment of the general distribution range for the bulk of the population. Dots represent known band recoveries outside New Zealand waters. Areas of speculation (?) are based on published sighting material. See text.

Light-mantled sooty albatross

Phoebastria palpebrata

Status: Near Threatened

Population

Breeding range—circumpolar distribution breeding on many subantarctic islands. In New Zealand, breeds on Auckland, Campbell and Antipodes Islands. Local population size poorly known but estimated 6000–8000 breeding pairs.

Breeding and survival

Biennial: October/November to May.

Productivity: 31–50%

Age of first return and first breeding: 5–8 years (Crozet); 8–15 years (Macquarie & Crozet)

Survival from fledging to recruitment: Unknown.

Foraging range

Breeding: New Zealand birds probably at least partly to pelagic waters along Antarctic continent. Birds caught in April fisheries bycatch in 1997 were in area of Bounty Trough.

Fledglings: Unknown

Adolescents (pre-return to breeding site): Unknown.

Non-breeding: Unknown. Indian Ocean and Australian birds have been recorded in New Zealand.

Known incidental capture in fisheries

New Zealand: Infrequently caught by New Zealand pelagic longline fisheries. Most caught in 1997.

Overseas: Unknown for New Zealand birds. Recorded from pelagic longliners in Australian Fishing Zone and in international waters.

Current research

Previously banded at Campbell I. Some population monitoring at Campbell I. during 1990s

Assessment of potential risk

Species listed as Near Threatened, and has been caught on pelagic longliners in Australia and New Zealand.

Deficiencies in knowledge

- Distribution of all age classes at sea.
- Little data on New Zealand population sizes and population dynamics.

Map

Range assessed from published distribution satellite tracking from Macquarie I.

References: 40, 78, 92, 124, 199, 233, 278, 311, 320, 327, 335, 363, 369.

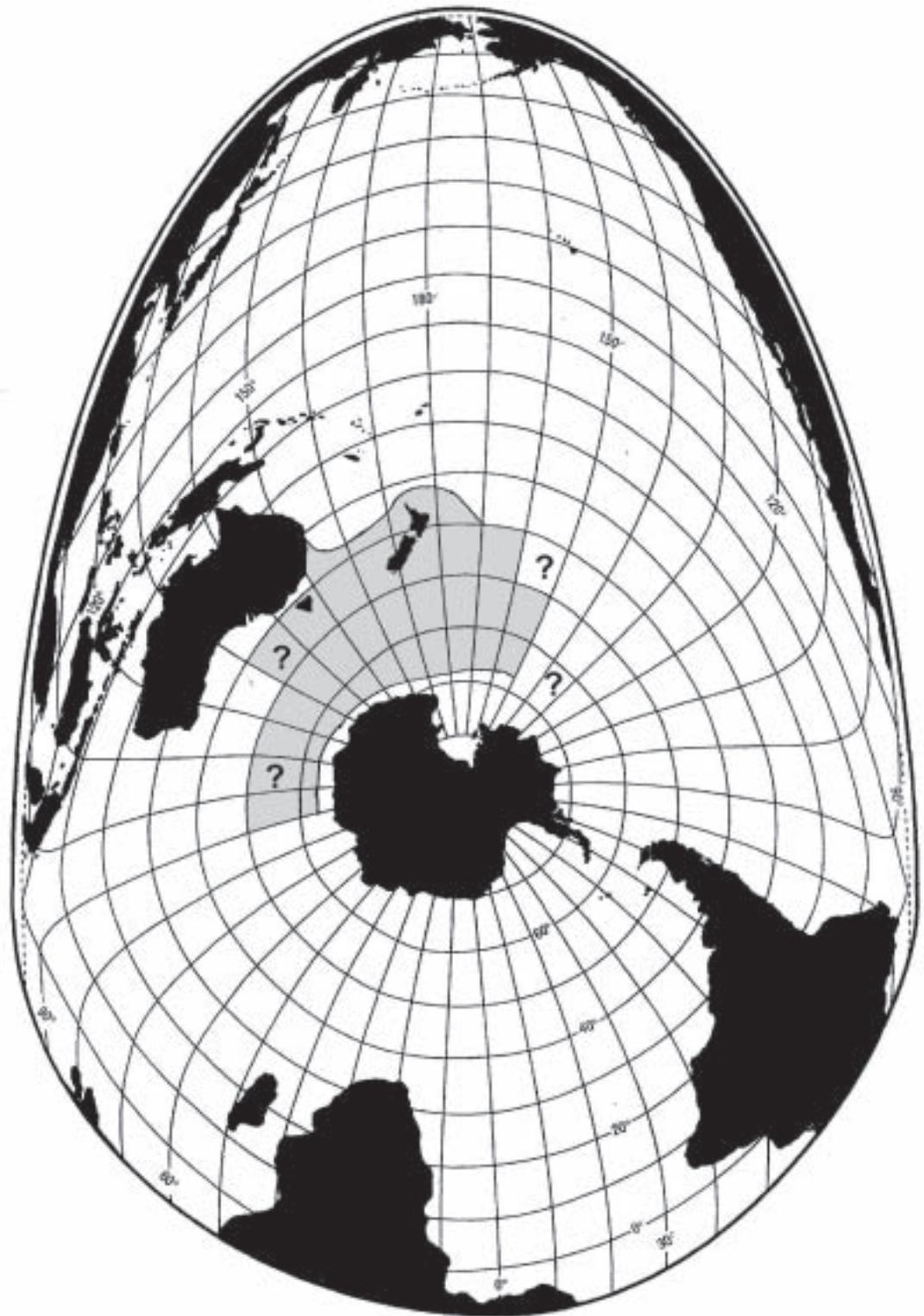


Figure 16. Light-mantled sooty albatross. Grey shaded areas are an assessment of the general distribution range for the bulk of the population. Areas of speculation (?) are based on published sighting material. See text.

Mottled petrel

Pterodroma inexpectata

Status: Near Threatened

Population

Endemic to New Zealand, breeds on islands in southern New Zealand (mainly Solander, Codfish, Big South Cape Islands and The Snares), population estimated at 10 000 breeding pairs.

Breeding and survival

Annual: October/November to May/June.

Productivity: 65% eggs hatched, unknown chicks fledged.

Age of first return and first breeding: Unknown.

Survival from fledging to recruitment: Unknown.

Foraging range

Breeding: Range to southeastern Australia and through subantarctic waters to the pack ice (between subtropical convergence and pack ice), mostly between 60°E and 60°W.

Fledglings: Unknown.

Adolescents (pre-return to breeding site): Unknown.

Non-breeding: Migrate through tropics to North Pacific and concentrate there in subarctic waters and Bering Sea, but also recorded Chile, Galapagos, eastern tropical Pacific and off California.

Known incidental capture in fisheries

New Zealand: None.

Overseas: Unknown. Recorded caught in North Pacific driftnet fishery.

Current research

None.

Assessment of potential risk

North Pacific Ocean drift, gill and set nets.

Deficiencies in knowledge

- Distribution of age classes at sea.
- Information on incidental capture and fishing practices in North Pacific and America.

Map

Range assessed from published distribution.

Principal references: 30, 92, 99, 142, 143, 170, 156, 199, 238, 246, 321, 354.

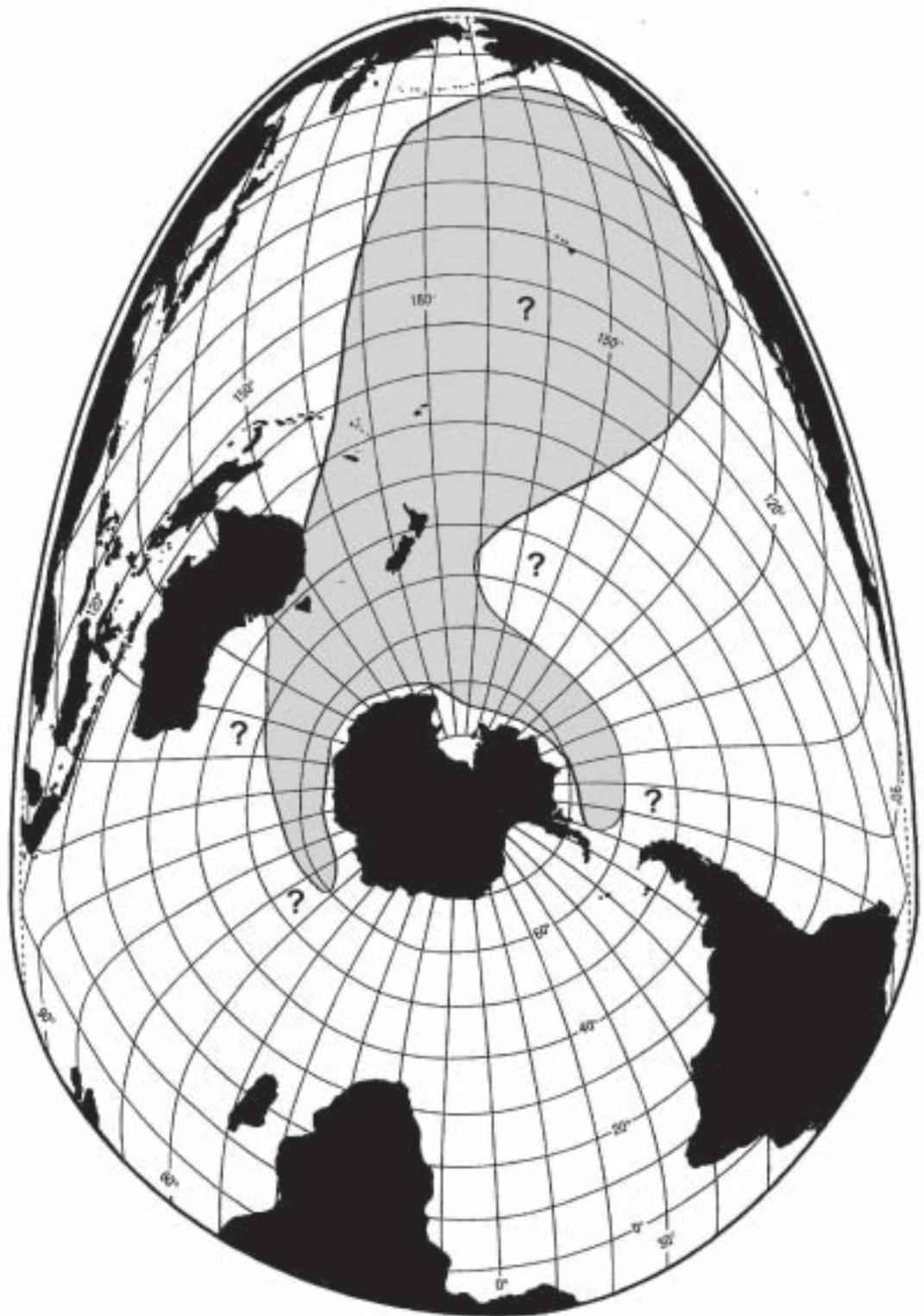


Figure 17. Mottled petrel. Grey shaded areas are an assessment of the general distribution range for the bulk of the population. Areas of speculation (?) are based on published sighting material. See text.

Northern giant petrel

Macronectes balli

Status: Near Threatened.

Population

Circumpolar, breeding on many subantarctic islands. In New Zealand breeds on Chathams (The Sisters and Forty-Fours), Antipodes, Auckland and Campbell Islands, population 2000–3000 breeding pairs.

Breeding and survival

Annual: August/September to February.

Productivity: 25% chicks from eggs laid (Campbell I.).

Age of first return and first breeding: Unknown (3 years; 4–11 years at South Georgia).

Survival from fledging to recruitment: Unknown.

Foraging range

Breeding: Unknown.

Fledglings: Band recoveries suggest possible dispersal to South America.

Adolescents (pre-return to breeding site): Unknown, but probably similar to adults.

Non-breeding: Band records have been mainly around New Zealand and in the Tasman Sea, but also on the coast of Argentina. Internationally disperse widely over Southern Ocean between 30°S and 64°S, although most probably forage north of Antarctic Convergence.

Known incidental capture in fisheries

New Zealand: Rarely caught (15 individuals) by demersal and pelagic longliners and fish trawl between 1998 and 2002.

Overseas: Caught in small numbers by pelagic longliners in Australian Fishing Zone and is attracted to trawlers in that area.

Current research

None.

Assessment of potential risk

Species has been caught on demersal and pelagic longliners and trawlers in New Zealand waters and longliners in Australian waters, but unknown whether these are from New Zealand populations.

Deficiencies in knowledge

- Distribution of age classes at sea.

Map

Range assessed from band recoveries and published distribution.

Principal references: 14, 28, 29, 92, 143, 125, 151, 199, 203, 269, 273–275, 279, 321.

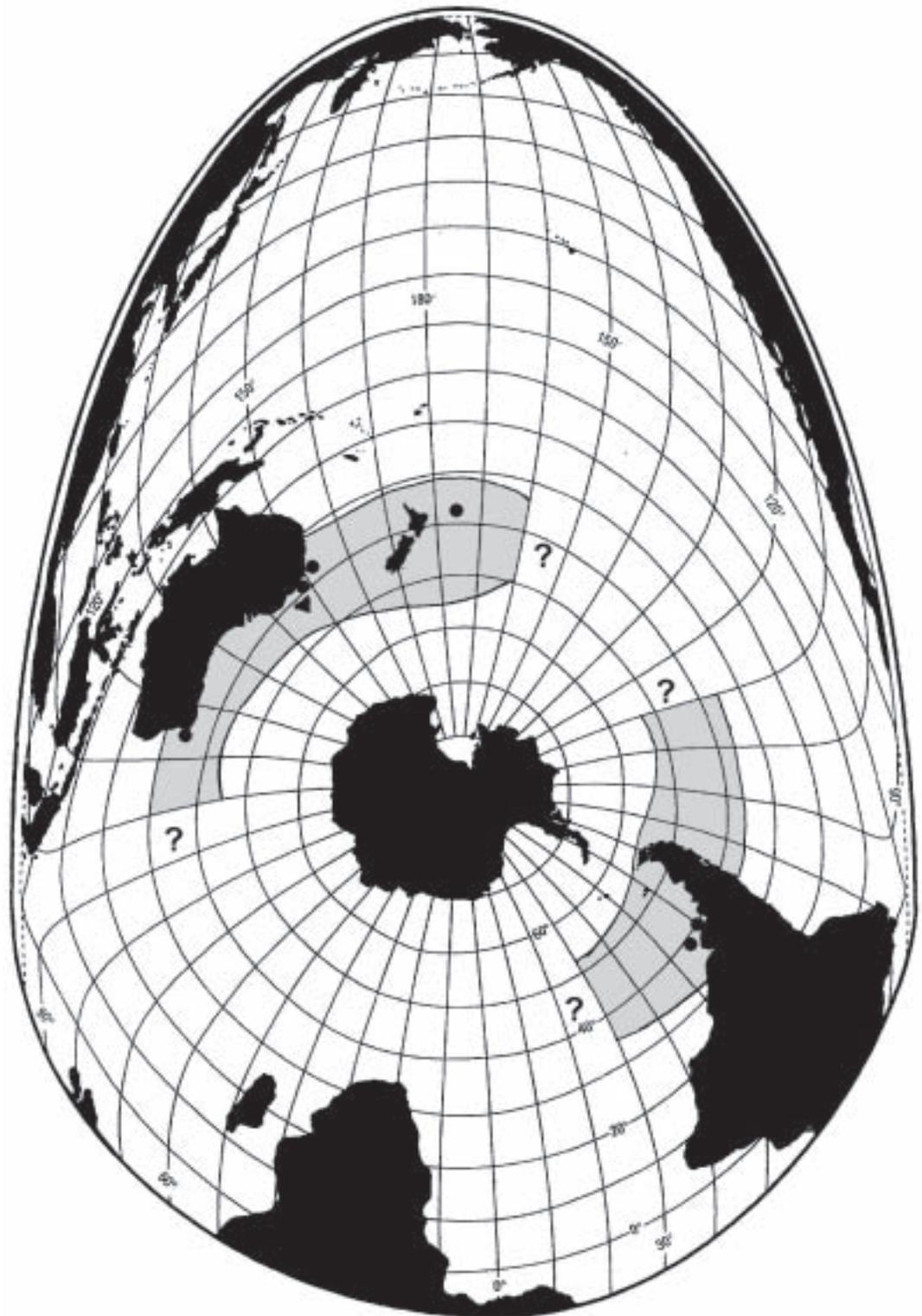


Figure 18. Northern giant petrel. Grey shaded areas are an assessment of the general distribution range for the bulk of the population. Dots represent known band recoveries of New Zealand birds outside New Zealand waters. Areas of speculation (?) are based on published sighting material. See text.

Northern royal albatross

Diomedea sanfordi

Status: Endangered

Population

Endemic to New Zealand, breeds on The Forty-Fours, Big and Little Sister Islands (Chatham Islands, 6500–7000 breeding pairs), Taiaroa Head (Otago Peninsula, 30 breeding pairs), biennial breeder, significant modification of nesting habitat by storms in the Chathams and resultant reduced breeding success suggests decline.

Breeding and survival

Biennial, November to September.

Productivity: 46% at Chathams (up to 70% with management at Taiaroa Head).

Age of first return and first breeding: 3 years; 8 years.

Adult mortality: 5%.

Survival from fledging to recruitment: 50–60%.

Foraging range

Breeding: A few satellite tracks suggest within 1000 km of breeding sites east of New Zealand over shelf or shelf edge.

Fledglings: Unknown, but band returns suggest an easterly movement to South America.

Adolescents (pre-return to breeding site): Satellite tracking and geolocation loggers show circumpolar migration generally between 30°S and 45°S. Some older adolescents may remain in New Zealand waters year-round (loggers).

Non-breeding: Same as adolescents.

Known incidental capture in fisheries

New Zealand: Rarely caught in pelagic longline and fish trawl fisheries.

Overseas: Has been reported in small numbers from Indian Ocean and southern Australia pelagic longline fisheries. One banded bird caught in trawl fishery in Chile.

Current research

Tri-annual air photographic surveys of Chatham populations. Daily monitoring of population at Taiaroa Head. Loggers on pre-breeding sample.

Assessment of potential risk

Species listed as endangered (based on decline predicted by modified nesting habitat and low productivity). May be exposed to fishery practices in South America along continental shelf edge.

Deficiencies in knowledge

- Distribution of pre-breeding age classes at sea.
- Information on incidental catch and fishing practices in South America.

Map

Range assessed from band recoveries and satellite tracking of breeding and non-breeding birds for up to 2 years.

Principal references: 28, 40, 78, 92, 93, 124, 125, 199, 229, 230, 270, 275, 277, 278, 320, 327.

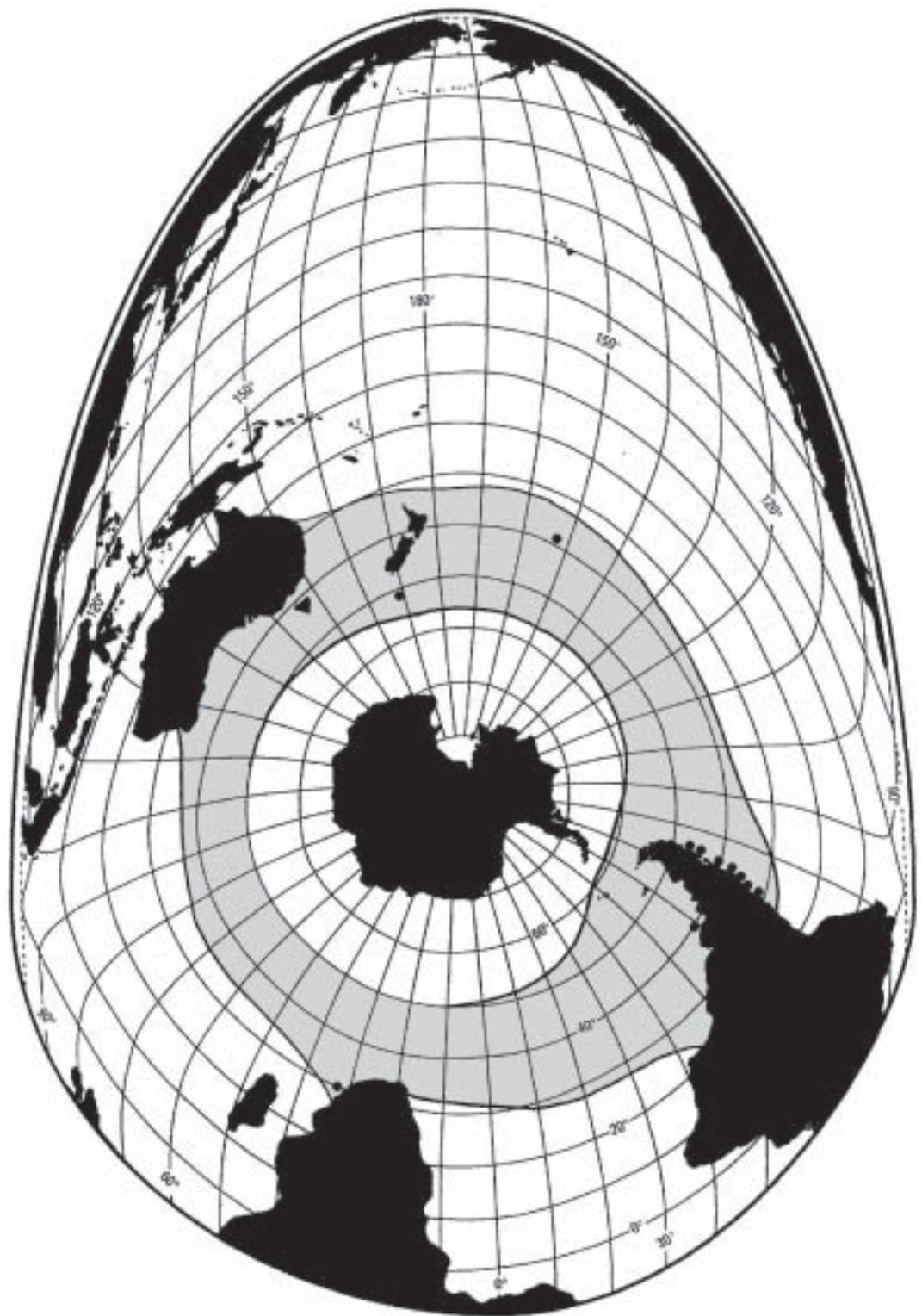


Figure 19. Northern royal albatross. Grey shaded areas are an assessment of the general distribution range for the bulk of the population. Dots represent known band recoveries outside New Zealand waters. See text.

Pacific albatross (Northern Buller's albatross)

Thalassarche (platei) nov. sp.

Status: Vulnerable.

Population

Endemic to New Zealand, breeds only on The Forty-Fours, Big and Little Sister Islands (Chatham Group) and Rosemary Rock (Three Kings Islands), estimated 12 500 breeding pairs, no accurate census except Little Sister (650 breeding pairs), currently assessed as stable.

Breeding and survival

Annual, November to May.

Productivity: 50–60% fledged from eggs laid.

Age of first return and first breeding: Unknown.

Adult mortality: 7% per annum.

Survival from fledging to recruitment: Unknown.

Foraging range

Breeding: Unknown, rarely reported in eastern New Zealand coastal waters, but short incubation stints suggest range within 700 km of breeding site.

Fledglings: Unknown.

Adolescents (pre-return to breeding site): Unknown.

Non-breeding: Unknown, but probably confined to waters east of New Zealand to the South American coast across the Pacific. Differential breeding cycle with Buller's albatross may indicate birds in Chile during winter are from the Pacific species. Has only been recorded once as a beach wreck in New Zealand (on eastern New Zealand coast).

Known incidental capture in fisheries

New Zealand: Rarely recorded as caught. Caught on pelagic and demersal longliners and scampi trawl fisheries.

Overseas: Unknown.

Current research

Analysis of museum and fresh material to assist identification of incidental catch.

Assessment of potential risk

Species listed as vulnerable. Has been caught on a range of fishing practices in New Zealand. Anecdotally regularly caught by coastal small boat fisheries in the Chatham Islands.

Deficiencies in knowledge

- Distribution of age classes at sea.
- Information on incidental bird capture and fishing practice in Chile.
- DNA techniques to assist in determining differences between Buller's and Pacific albatross found in incidental catch.

Map

Range assessed on possible similarity to Buller's albatross east of New Zealand.

Principal references: 28, 40, 78, 93, 124, 199, 233, 270, 279, 312, 320, 327.

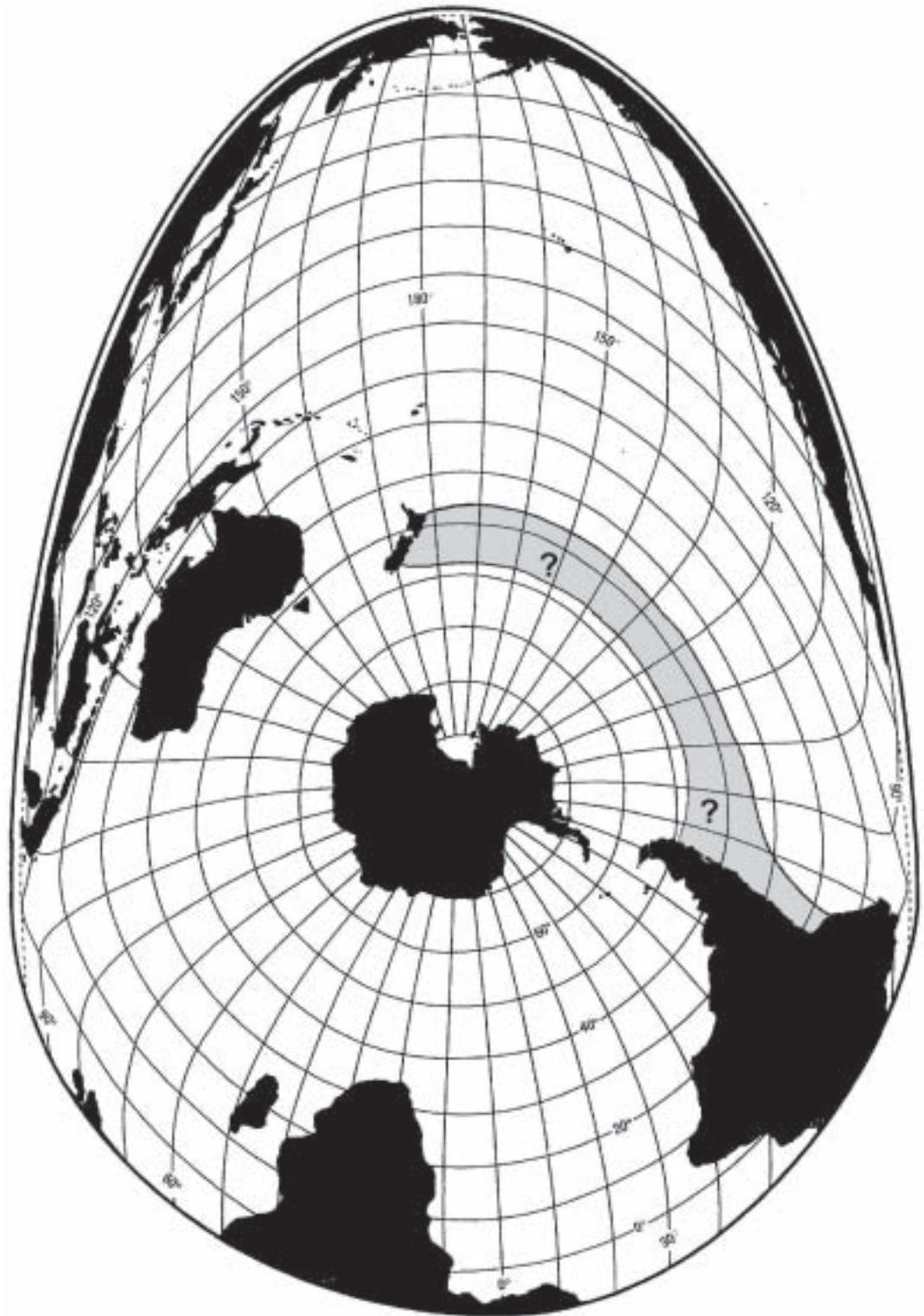


Figure 20. Pacific albatross. Grey shaded areas are an assessment of the general distribution range for the bulk of the population. Areas of speculation (?) are based on similarity to Buller's albatross. See text.

Salvin's albatross

Thalassarche salvini

Status: Vulnerable.

Population

Primarily endemic to New Zealand, breeds on Bounty Is, Western Chain (The Snares) and possibly The Pyramid (Chatham Is). Four pairs have bred on Ile des Pingouins (Crozet I.). Estimates of breeding numbers range between 30 000 and 76 000 breeding pairs, currently assessed as stable, but possibility of decline.

Breeding and survival

Annual, September to April.

Productivity: Unknown.

Age of first return and first breeding: Unknown.

Adult mortality: Unknown.

Survival from fledging to recruitment: Unknown.

Foraging range

Breeding: Unknown, possibly confined to eastern New Zealand EEZ.

Fledglings: Unknown.

Adolescents (pre-return to breeding site): Unknown.

Non-breeding: Unknown, but extensively recorded in Chile and Peru in the winter. Straggles to South Africa and southwest Atlantic Ocean.

Known incidental capture in fisheries

New Zealand: Caught on pelagic and demersal longliners; squid, fish and scampi trawl fisheries. Catch is principally in the demersal longline fisheries, especially those discharging offal.

Overseas: Unknown.

Current research

Nil.

Assessment of potential risk

Species listed as vulnerable. Has been caught on wide range of fishing practices in New Zealand. Close relative Chatham albatross caught in Chile and Peru.

Deficiencies in knowledge

- Distribution of age classes at sea.
- Information on incidental capture and fishing practice in Chile and Peru.
- Estimation of population size, breeding dynamics and survival rates.

Map

Range assessed on published distribution.

Principal references: 28, 40, 63, 78, 92, 124, 199, 233, 252, 269, 273-275, 278, 280, 312, 320, 327, 395.

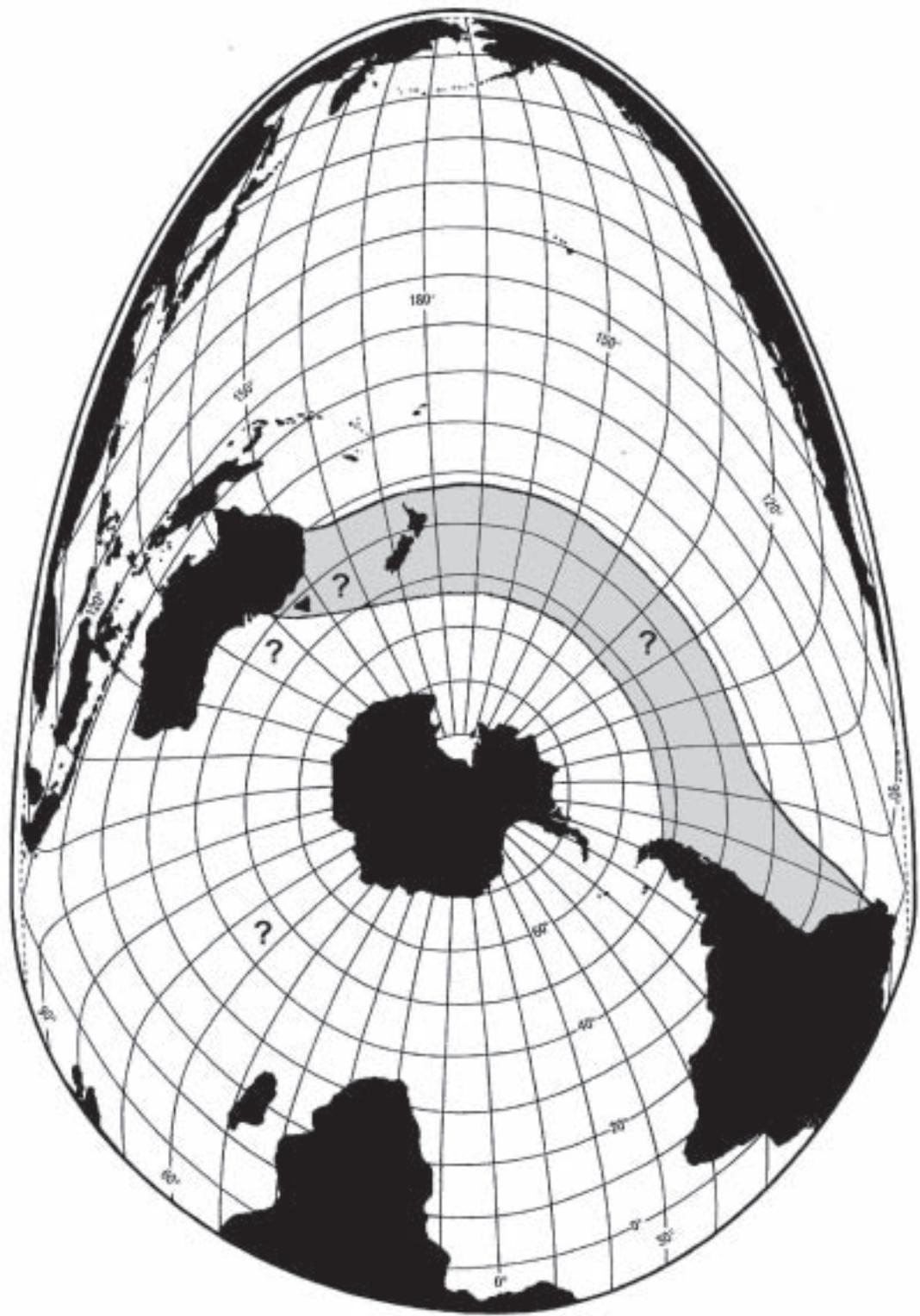


Figure 21. Salvin's albatross. Grey shaded areas are an assessment of the general distribution range for the bulk of the population. Areas of speculation (?) are based on published sighting material. See text.

Sooty shearwater

Puffinus griseus

Status: Lower Risk - Least Concern

Population

Circumpolar, widely dispersed throughout New Zealand islands and main colonies are off Stewart I., The Snares, Auckland, Campbell and Chathams Islands, New Zealand population estimated 20 000 000 individuals, but recent analyses based on beach-cast birds and island studies suggest a decline as great as 60+% since 1960.

Breeding and survival

Annual: September/October to April/May.

Productivity: c. 60% chicks from eggs laid.

Age of first return and first breeding: 3 years; 6 years

Survival from fledging to recruitment: Unknown

Foraging range

Breeding: Forage widely throughout New Zealand seas, mainly over continental shelf and deeper waters off southern New Zealand and west to Tasmania, and possibly south to the pack ice.

Fledglings: Migrate to the North Pacific.

Adolescents (pre-return to breeding site): Unknown.

Non-breeding: Migrate to the North Pacific, north over a broad front including west coast of Americas to subarctic waters between Japan and west coast of North America. Some reach Gulf of Alaska.

Known incidental capture in fisheries

New Zealand: Caught by demersal longliners, but mainly squid and fish trawl with some scampi trawl between 1996 and 2002.

Overseas: Few caught on pelagic longlines in Australian Fishing Zone, driftnet capture historically large in North Pacific.

Current research

Colonies around New Zealand and cultural harvest monitored, satellite tracking.

Assessment of potential risk

Species has been caught on wide range of fishing practices in New Zealand waters, caught in large numbers in driftnet fisheries.

Deficiencies in knowledge

- Distribution of age classes at sea.
- Information on incidental capture and fishing practices in North Pacific.

Map

Range assessed from breeding season satellite tracking, band recoveries and published distribution.

Principal references: 28, 49, 50, 92, 99, 143, 170, 199, 261, 269, 273-275, 321, 333, 355, 356, 394.

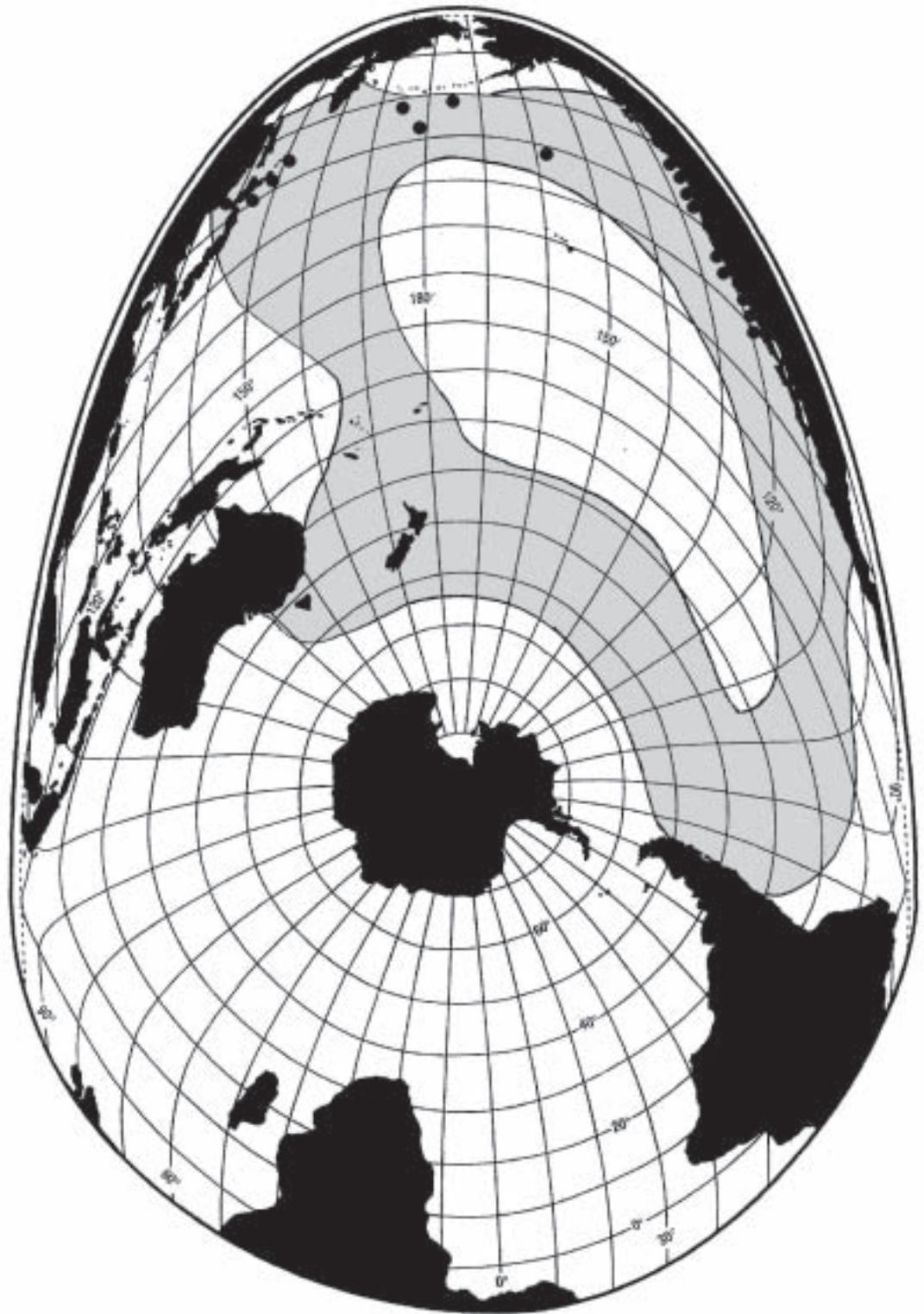


Figure 22. Sooty shearwater. Grey shaded areas are an assessment of the general distribution range for the bulk of the population. Dots represent known band recoveries of birds bred in New Zealand outside New Zealand waters. See text.

Southern royal albatross

Diomedea epomophora

Status: Vulnerable.

Population

Endemic to New Zealand, breeds on Campbell I. (8000–9000 breeding pairs), Adams, Enderby and Auckland Islands (Auckland Islands group, 120 breeding pairs), assessed to be stable, possibly increasing.

Breeding and survival

Biennial, December to October.

Productivity: 58–75%.

Age of first return and first breeding: 3–4 years; 6+ years.

Adult mortality: Unknown.

Survival from fledging to recruitment: Unknown.

Foraging range

Breeding: A few satellite tracks to south and east of New Zealand principally along the self edges.

Fledglings: To Chile and Argentina. One band recovery in West Australia and one extra-limital band recovery at 21°S (Central South Pacific).

Adolescents (pre-return to breeding site): Principally throughout the Southern Hemisphere and Oceans between 35°S and 65°S.

Non-breeding: Circumpolar migration in areas similar to adolescents.

Known incidental capture in fisheries

New Zealand: Occasionally caught by pelagic longline, squid and fish trawl fisheries.

Overseas: Seems most vulnerable to incidental capture with pelagic longlines on homeward migration route in Indian Ocean and southern Australia. Band records from longline fisheries in Atlantic and Indian Oceans, southern Australia and Tasman Sea. Has been caught in trawl fisheries in Australia.

Current research

Periodic monitoring of population on Campbell Island.

Assessment of potential risk

Species listed as vulnerable. Has been caught by a range of fishing practices. Has a circumpolar range transiting a number of Nation States.

Deficiencies in knowledge

- Distribution of pre-breeding age classes at sea.
- Information on incidental bird capture and fishing practices in South America.

Map

Range assessed principally from 200+ band recoveries and one satellite tracking study during breeding season.

Principal references: 28, 40, 78, 92, 124, 125, 199, 218, 233, 265, 269, 270, 273–276, 278, 320, 327, 359.

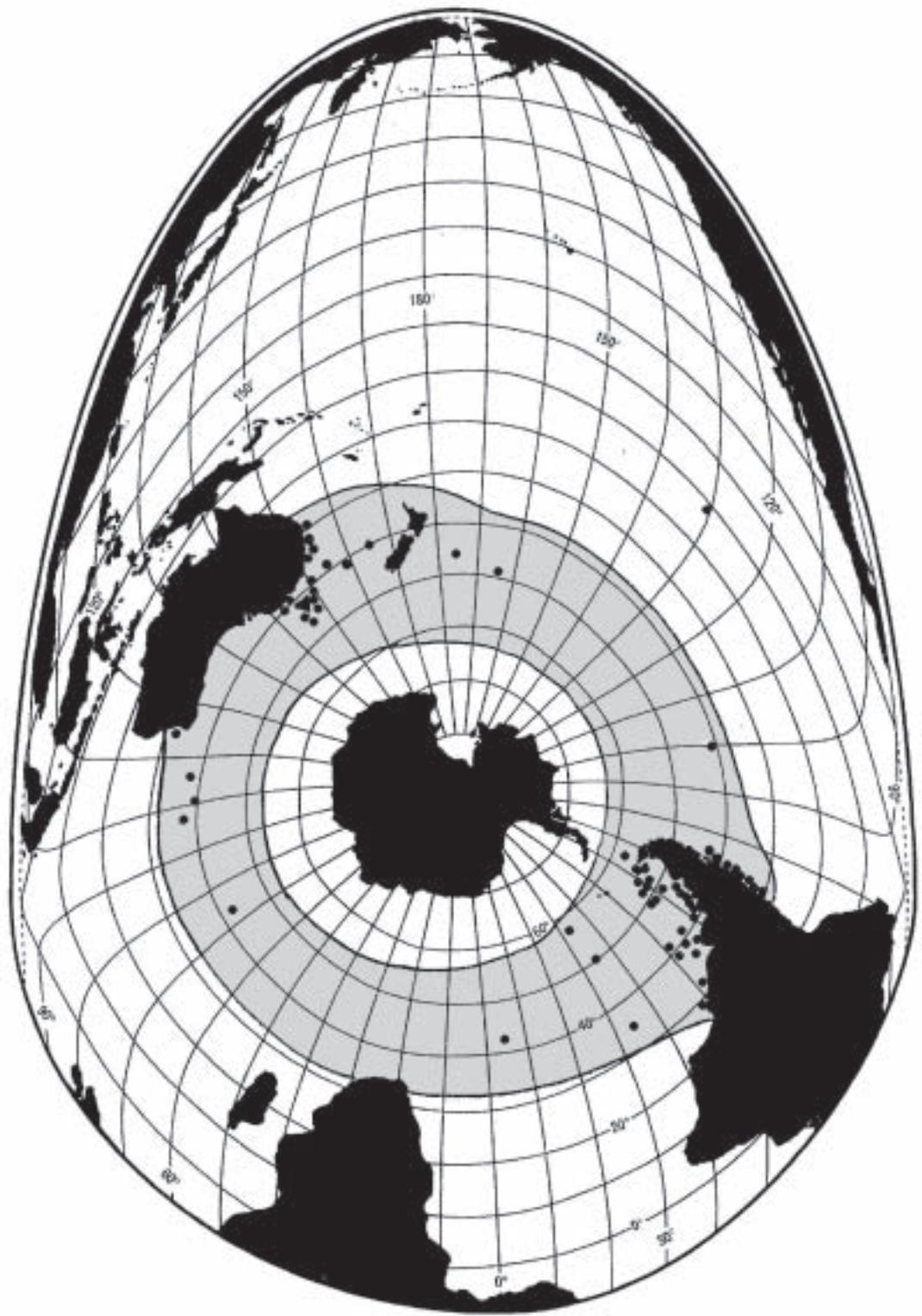


Figure 23. Southern royal albatross. Grey shaded areas are an assessment of the general distribution range for the bulk of the population. Dots represent known band recoveries outside New Zealand waters. See text.

Westland petrel
Procellaria westlandica

Status: Vulnerable

Population

Endemic to New Zealand, breeding on coastal foothills of Paparoa Range, Westland, South Island, population 2000–5000 breeding pairs, assessed as stable.

Breeding and survival

Annual: May to December.

Productivity: 20–63% (chicks from eggs laid).

Age of first return and first breeding: 5 years; 12 years.

Survival from fledging to recruitment: Unknown.

Foraging range

Breeding: Mainly over continental shelf between Cape Egmont and Fiordland and through Cook Strait to between East Cape and Banks Peninsula.

Fledglings: Banding suggests dispersal to Chile and southern Peru.

Adolescents (pre-return to breeding site): Unknown.

Non-breeding: Probably east of New Zealand beyond the Chathams to South America. Rare visitor to south east Australian waters.

Known incidental capture in fisheries

New Zealand: Infrequently reported caught by pelagic longline and trawl fisheries.

Overseas: One record returned from pelagic longliners in Australian Fishing Zone.

Current research

Long-term study since 1969, annual population monitoring, satellite transmitter tracking, assessment of mortality rates and productivity.

Assessment of potential risk

Species listed as vulnerable, and has been caught on pelagic longliners in Australia and New Zealand.

Deficiencies in knowledge

- Distribution of age classes at sea in Peru and Chile.
- Information on incidental capture and fishing practices in Peru and Chile.

Map

Range assessed from breeding season satellite tracking, band recoveries and published distribution.

Principal references: 21, 22, 25, 40, 49, 65, 92, 119–122, 143, 153, 199, 218, 320.

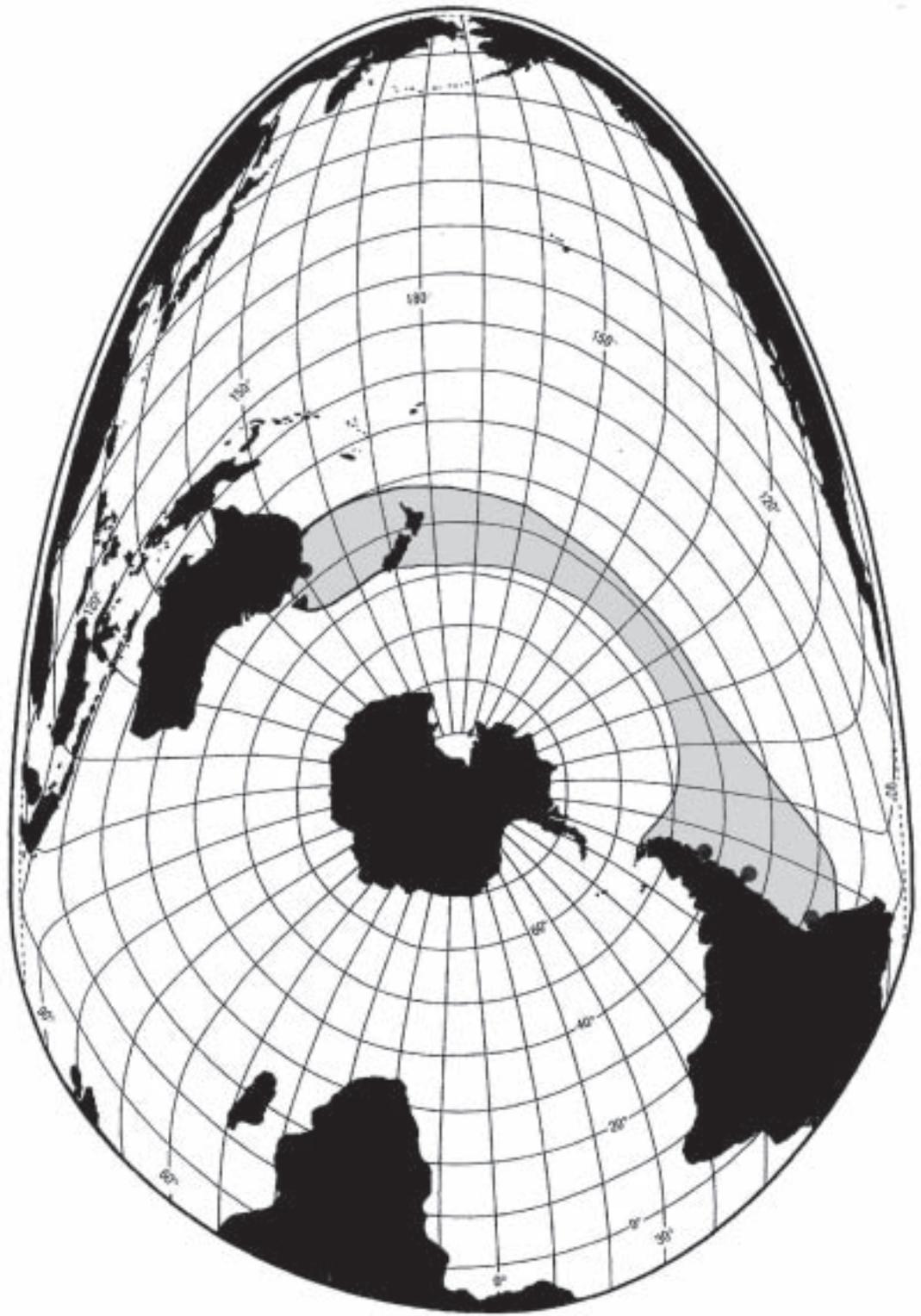


Figure 24. Westland petrel. Grey shaded areas are an assessment of the general distribution range for the bulk of the population. Dots represent known band recoveries outside New Zealand waters. See text.

White-capped albatross

Thalassarche steadi

Status: Vulnerable.

Population

Endemic to New Zealand, breeds only on Disappointment, Adams and Auckland Islands (Auckland Islands group), Bollons I. (Antipodes Islands), The Forty-Fours (Chatham Islands), estimated 70 000 to 80 000 breeding pairs, no accurate census, currently assessed as stable or increasing.

Breeding and survival

Annual, November to July.

Productivity: Unknown.

Age of first return and first breeding: Unknown.

Adult mortality: Unknown.

Survival from fledging to recruitment: Unknown.

Foraging range

Breeding: Unknown, possibly confined within New Zealand EEZ.

Fledglings: Unknown, but museum specimens collected in South African waters.

Adolescents (pre-return to breeding site): Unknown, but specimens from Southern Australia and South Africa.

Non-breeding: Unknown, but birds banded from a fishing vessel in the Canterbury Bight during breeding season have been recovered in South Africa and Namibia.

Known incidental capture in fisheries

New Zealand: Caught by pelagic and demersal longliners; squid, fish and scampi trawl fisheries. Catch is principally in the trawl fisheries, especially those discharging offal.

Overseas: Has been reported from longline fisheries in Southern Australia and South Africa. Current reports based on DNA analysis, but confirmed by authors viewing of Australian material. Most of these birds seem to be sub-adult.

Current research

Morphological and DNA work to enable identification of incidentally caught specimens overseas.

Assessment of potential risk

Species listed as vulnerable. Has been caught on wide range of fishing practices in three countries.

Deficiencies in knowledge

- Distribution of age classes at sea.
- Information on incidental capture and fishing practice in South Africa.
- Estimation of population size, breeding dynamics and survival rates.

Map

Combination of band recoveries of birds captured at sea, and incidental capture fisheries specimens.

Principal references: 28, 40, 64, 78, 92, 124, 125, 199, 218, 269, 270, 273–275, 278, 293, 320, 327.

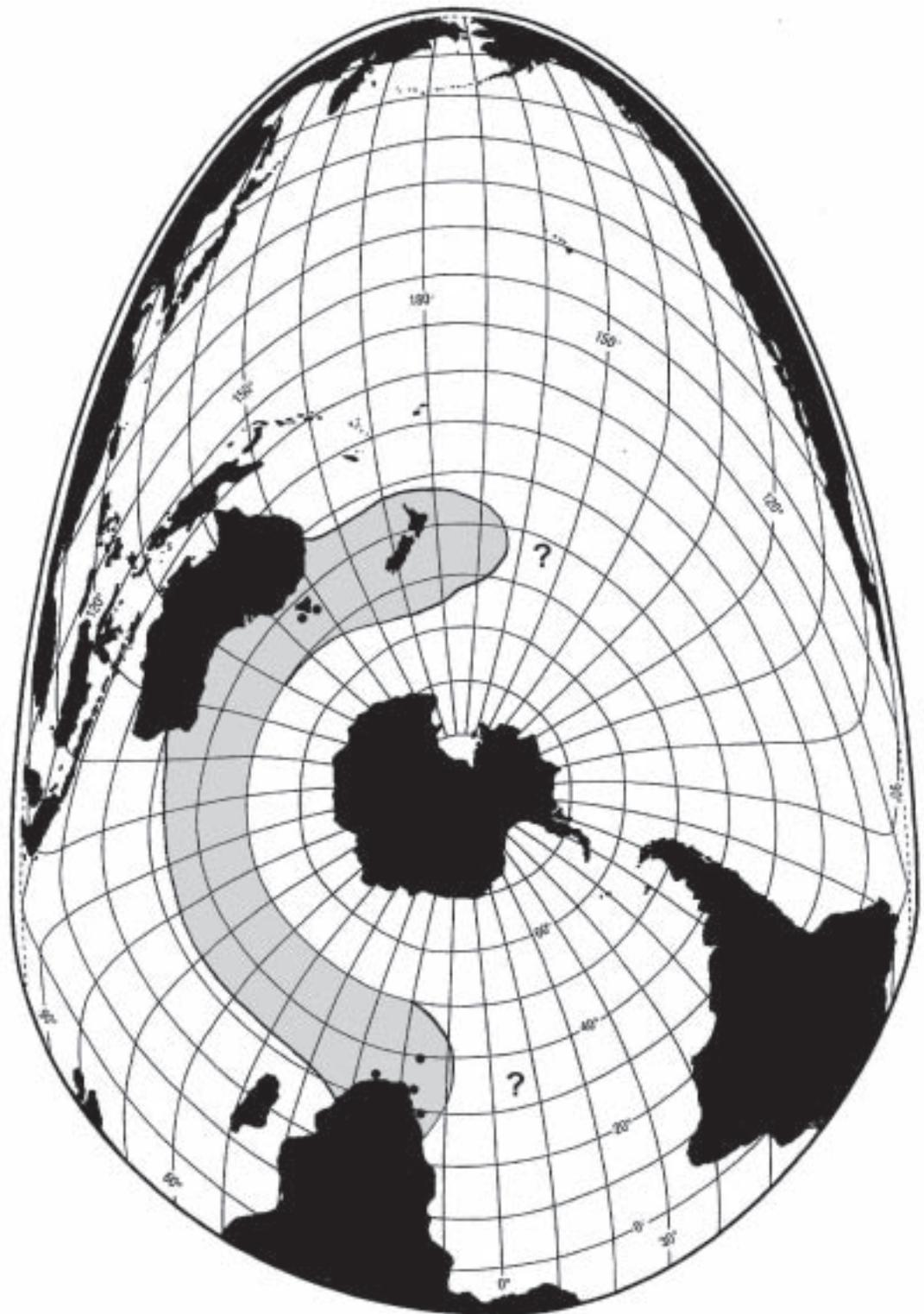


Figure 25. White-capped albatross. Grey shaded areas are an assessment of the general distribution range for the bulk of the population. Dots represent known band recoveries outside New Zealand waters. Areas of speculation (?) are based on published possible sighting material. See text.

White-chinned petrel
Procellaria aequinoctialis steadi

Status: Vulnerable (International)

Population

Circumpolar, breeding on many subantarctic islands. Taxa *steadi* endemic to New Zealand, breeds on Antipodes, Auckland and Campbell Islands, population estimate 200 000 breeding pairs.

Breeding and survival

Annual: November to May.

Productivity: Unknown for New Zealand. 30–43% fledged from eggs laid (South Georgia/Crozet).

Age of first return and first breeding: Unknown.

Survival from fledging to recruitment: Unknown.

Foraging range

Breeding: *steadi* unknown.

Fledglings: *steadi* unknown.

Adolescents (pre-return to breeding site): *steadi* unknown.

Non-breeding: *steadi* unknown. Internationally range widely over deep water between 30°–65°S, but up to 10°S off the western coasts of South America and Africa.

Known incidental capture in fisheries

New Zealand: Most extensively caught species caught in New Zealand fisheries (over 700 returned from 1996–2002 in demersal and pelagic longline fisheries, squid and fish trawl).

Overseas: *steadi* unknown. Internationally commonest species attending longline vessels and trawlers off southeast Brazil, high level of bycatch in South African hake longline fishery, estimated hundreds caught annually in Patagonian toothfish fishery, 56 returned in Australian Fishing Zone 1988–95.

Current research

None.

Assessment of potential risk

Species has been caught on wide range of fishing practices in New Zealand waters and related taxa commonly caught in most fisheries throughout the world.

Deficiencies in knowledge

- Little known on New Zealand colonies (few banded).
- Distribution of age classes at sea.

Map

Range assessed on published distribution.

Principal references: 26, 28, 40, 48, 92, 125, 143, 153, 154, 165, 171, 199, 235, 254, 269, 373–375, 291, 320, 352, 353.

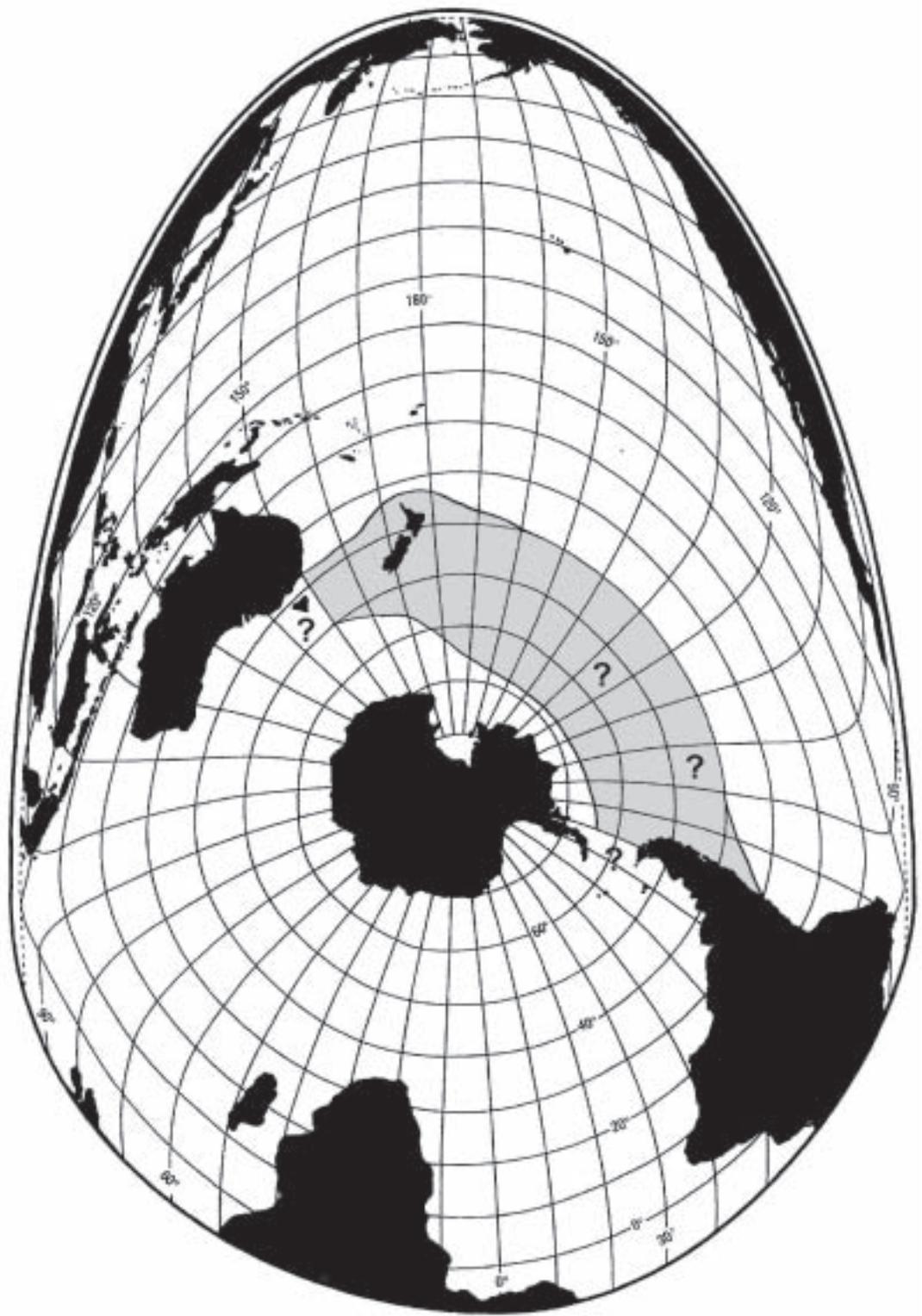


Figure 26. White-chinned petrel. Grey shaded areas are an assessment of the general distribution range for the bulk of the population. Areas of speculation (?) are based on published sighting material. See text.