

Identification of seabirds of the Southern Ocean

a guide for scientific observers
aboard fishing vessels

Derek Onley and Sandy Bartle

Te Papa Press

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in association with

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on the Conservation of Antarctic

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Preface

Over the past few years a significant decline has been recorded in populations of several species of seabirds, in particular of albatrosses. This decline has been widely attributed to fishing with longlines.¹ Seabirds feed on longline baits, get hooked, and drown. As the first disturbing news about the decline of populations of albatrosses became known, the Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR) joined the international effort to tackle the problem.

CCAMLR was established in 1982. Its Convention requires that the utilisation of marine resources should take into account the impact of fishing on all marine animals in the Antarctic, not only on those fished. In 1991 CCAMLR adopted its first Conservation Measure on the reduction of incidental mortality of seabirds in the course of fishing with longlines. The current version of this Conservation Measure combines a set of very simple techniques which don't restrict fishing activities and don't require any expensive equipment. They are described in detail in *Fish the Sea not the Sky*, recently published by CCAMLR.

The CCAMLR Scheme of International Scientific Observation was established in 1993. The Scheme has an objective to collect accurate biological information from fisheries. The current regulations require that international scientific observers be placed on board all longliners of CCAMLR Member Nations operating in the CCAMLR Convention Area. One of the priority tasks for scientific observers, identified by the CCAMLR Scientific Committee, is observing incidental mortality of seabirds in longline fisheries.

In order to collect the required data, observers use standard methods and formats for recording observations. Guidelines and instructions for seabird observations have been published in the *CCAMLR Scientific Observers Manual*. Identifying seabirds on board vessels is difficult, not least because until now, practical identification manuals for use in Antarctic waters have not previously existed. Many of the birds look much the same, although individuals of the same species vary in appearance with age, so observers without special training in seabird identification need a compact but comprehensive guide to help them.

This seabird identification guide has been written and illustrated especially for fishery observers, and takes into account the requirements of the CCAMLR Scheme of International Scientific Observation. This guide has been published simultaneously in English, French, Russian, and Spanish, and will be available to all national observers of CCAMLR members who work on board fishing vessels in Antarctic waters. It covers the identification of 36 species of birds from the Southern Ocean that have been caught in fishing gear or have been seen feeding from fishing boats. Penguins, cormorants, and some of the most abundant and characteristic Southern Ocean seabirds do not appear here because the book focuses only on scavenging species associated with fisheries.

By carefully following the keys to identification in the text and illustrations of this book, observers should be able to identify most seabirds caught in commercial fisheries, especially longline fisheries, in the Southern Ocean.

This guide covers the Antarctic and subantarctic waters of the Atlantic, Indian, and Pacific Oceans around the Antarctic Continent south of 40° S. Most of the seabird species illustrated are widely distributed, especially in winter, and several can be encountered almost anywhere in the Southern Ocean.

In the main, only species which are easily distinguishable have been included. Recent biosystematic research, including DNA studies, has doubled the number of southern albatross species from 10 to 20.² However, several of these cannot currently be distinguished without detailed study, measurement, and sexing. Only the 15 southern albatross species which can be readily separated by straightforward identification are described here (including all their immature plumage phases).

The species recognised, and the names used for them, differ somewhat from other recent books and lists.³ This is because we have included only species which we think observers can identify with confidence. Some fishery databases combine together several easily recognisable species (e.g. Shy, Salvin's, and Chatham Island Albatrosses). This is not recommended, and we hope that the species and names used here will be adopted widely. For this reason we have used the most familiar names used internationally, except where this leads to ambiguity.

Information in the plates and descriptions of plumages and coloration has been derived principally from specimens in the collections of the Museum of New Zealand Te Papa Tongarewa and from hundreds of fresh specimens received from New Zealand scientific observers for autopsy. All published sources and extensive unpublished sources, including photo archives, were consulted.

Acknowledgements

The initiative to produce this guide came from the Commission of CCAMLR, the international Convention on the Conservation of Antarctic Marine Living Resources. The project was overseen by an Oversight Committee, comprising representatives of the Commission and financial sponsors of the guide. The costs of translation and simultaneous publication in Spanish, Russian, and French were met by CCAMLR. Additional sponsorship was provided by the Worldwide Fund for Nature (in New Zealand, the United Kingdom, and Australia), the United Kingdom Foreign and Commonwealth Office, and New Zealand's Ministry of Foreign Affairs and Trade and Department of Conservation, and we are grateful for their support. Without it this book could not have been produced.

The authors owe some particular debts of gratitude. Sandy Bartle would like to thank the following people, who provided comments and useful information: Fabio Olmos (Brazil), John Croxall (British Antarctic Survey), Eric Woehler (Australia), and Alan Tennyson, Jean-Claude Stahl, and Chris Robertson (New Zealand). Derek Onley would like to thank Otago Museum, Dunedin, for providing access to their collections, and Erena Barker, who was especially helpful.

Sandy Bartle and CCAMLR Oversight Committee

December 1998

Recording birds caught at sea

What to record

For every bird caught, the following **must** be recorded:

- where the bird was caught (latitude and longitude, in degrees and minutes)
- date
- species name (standardised, as here; abbreviated if necessary)

CCAMLR scientific observers should record the fisheries information required as specified in their logbooks. Other observers should record:

- type of fishing gear used
- what part of the equipment the bird was entangled with or caught on
- phase of the fishery operation (setting or hauling)
- vessel's heading (true bearing)

Environmental factors likely to influence seabird catch should be recorded as well, if possible:

- time the bird was caught (use 24-hour clock, local time)
- wind speed and direction (actual, corrected for the ship's course)
- an estimate of the number of each species of seabird around the vessel at time of capture
- cloud cover (in eighths) and visibility (in metres or kilometres, noting mist or squalls)

Record if possible

In order to assess the effect of fisheries on seabird populations, it is also valuable to know (in decreasing order of importance) whether the bird was:

- adult or immature

Immature birds can sometimes be easily identified as first-year juveniles or otherwise. To see how this can be done for some small albatrosses, refer to Plate 12. Other seabirds may have to be dissected to establish their age.

- male or female (note that this important information is available only by dissection)
- breeding

A bare patch clear of down on the belly at the start of the incubation period may indicate that the bird caught was breeding at the time. Dissection of females may show a widened, much curling oviduct, showing that it had, at least, bred in the past.

Record these data in a standard format for every bird caught. For CCAMLR observers these data should be recorded in your official logbook, as laid down in the *CCAMLR Scientific Observers Manual*.

Identification problems

Identification problems are of two main kinds: either the birds of two or more different species look very similar, or individuals of the same species look very different at different ages.

Some species cannot be distinguished easily because they overlap in size and appearance with their close relatives. They have been lumped together into single species in this guide. Sometimes there is no single easily-seen characteristic that will instantly identify a species, and it is necessary to use a combination of characteristics. These are outlined in the keys. The principle on which the keys are based is to look at the bill first, and the plumage second, for the plumages of adults are much more variable than their bills.

The most complicated aspect of identification arises from changes of plumage with age and wear. Many seabirds have dark feathers with paler bases or shafts so that, as the feathers wear away, the bird appears lighter in colour, or even mottled (e.g. Light-mantled Sooty Albatrosses in their non-breeding years). When feathers are wet or twisted the pale feather bases may also be exposed, making a dark bird appear lighter than in life. The black feathers of other birds fade during the summer to brown (e.g. White-chinned Petrels; Sooty Shearwaters) – note that this fading has not been allowed for in the key.

It is the changes with age that are most marked, and cause the most difficulties. Snowy Albatrosses and Kelp Gulls, for instance, both begin life as all-brown birds but, by the time they breed, are distinctively black-and-white. In several species, immature birds may resemble the immatures of *other* species more closely than they do their own adults. Such species gradually diverge in appearance with age. We have illustrated as many as possible of these distinct immature phases, but it must be remembered that, because maturation is continuous, birds of intermediate appearance will occur.

The guide concentrates on characteristics useful for identifying wet specimens on the deck, rather than those of flying birds. Drowned seabirds on deck look very different from the same birds in flight. Features that are very obvious in flight, such as the underwing pattern, are now harder to see. Wet birds generally look smaller and darker than living specimens. On the other hand, key characteristics, such as bill colour and pattern, are easier to see clearly.

There are subtle differences between almost every island population. Albatrosses and petrels, in particular, almost always return to breed on the island where they were hatched, and natural selection ensures that differences will gradually develop between isolated island populations. It would be helpful if the origin of all seabirds involved in fisheries were known, for then the direct effect of fisheries on each population could be measured. However, in only a few cases are individual populations sufficiently distinct for recognition as species, and they are listed separately in this book.

Measurements

Natural selection usually causes differences in island populations, fine-tuning birds to the hazards of life. Often the plumage remains almost the same between populations but average measurements differ – bills, wings, tails, and feet (tarsi and toes) become longer or shorter. Closely-related seabird species tend to be the same size. There are some species in this guide where definite identification may require measurements in combination with other characteristics.

The most useful distinguishing measurements are given in the text. For a full range of measurements of Southern Ocean seabirds from different breeding places you should consult the first three volumes of the *Handbook of Australian, New Zealand and Antarctic Birds* (Melbourne, Oxford University Press, 1990–96). Weights have not been included in this guide as most seabirds caught at sea are waterlogged, and thus much heavier than usual.

Standard measurements of birds not returned for autopsy are valuable records. However, if time is short, measure only those birds whose identity is in doubt. Almost all seabirds can be identified by measurement, provided that you also take a side photograph of the head plus bill. You may also measure a sample to check the measurements against those given here, so as to verify your identifications.

The value of sexing birds

In some species, because of sex differences in size and colour, the identification of birds can be more certain if you know the sex of the individual. In several species the males and females forage in different sea areas. Fishing may therefore have different effects on each sex, and high bird mortality in some areas may lead to an imbalance in the sex ratio at the breeding colony. The sex of the seabird species covered by this guide can often be determined only by dissection, which is best carried out by a specialist.

Leg bands

Several hundred thousand seabirds have now been banded with individually-numbered metal or plastic leg bands at their Southern Ocean breeding grounds. Banding allows detailed life-history and migratory studies of individuals of known age, sex, and breeding place. Many of these birds are recaptured at their breeding grounds each year.

However, the distribution and movements of Southern Ocean seabirds at sea are much less well-known. Recaptures of banded birds from fishing vessels at sea provide valuable and sometimes unique information. If banded birds caught in fisheries are reported, their origin, and often their age, sex, and breeding status can be established from the banding records.

Most nations responsible for the administration of Southern Ocean islands also undertake research programmes on the seabirds that breed there. The leading nations are Australia, Britain, France, New Zealand, and South Africa. Other Antarctic Treaty nations such as the USA also maintain large seabird banding projects. Each band will state the name of the agency, and city and country of origin, e.g. 'Avisé Fish Wildlife Serv., Washington, DC, USA'; 'Inform BTO, British Museum Nat. Hist. London SW7'; 'Send National Museum, Wellington, New Zealand'.

You can either report band recoveries directly to the address given on the band or to the national bird-banding scheme of your own home country. All bird banding schemes collaborate by sending band-recovery data to the country of origin. If you supply your name and address, you will generally receive a letter of acknowledgement, giving details of when, where, and by whom the bird was banded. This can be fascinating to receive by fax when you are far out at sea. No financial reward is offered for returning bird bands.

Please supply the following band information:

- the entire band number
- date of recovery
- position (latitude and longitude)
- how the bird was caught (e.g. 'caught on bluefin tuna longline')
- whether it was dead, or released (injured, or healthy)

Bands should never be removed from live birds. It is not necessary to return the band itself (indeed, it is undesirable), nor indicate the bird species (as this is already known). If you are not sure of your identification, band returns are a good way to check!

Addresses of major seabird banding schemes follow:

Australian Bird and Bat Banding Scheme
GPO Box 8, Canberra ACT 2601
AUSTRALIA

Bird Banding Laboratory
12100 Beech Forest Road, Laurel
Maryland 20708-4037
USA

New Zealand Banding Scheme
Department of Conservation
P O Box 10-420
Wellington
NEW ZEALAND

C.R.B.P.O.
55, Rue de Buffon
75005 Paris
FRANCE

British Trust for Ornithology
The Nunnery
Thetford, Norfolk IP24 2PU
ENGLAND

South African Bird Ringing Unit
University of Cape Town
Rondebosch 7700
SOUTH AFRICA

How to use this guide

This guide is designed so that the plates and facing text work as a consecutive key. By following a series of steps you will identify your bird.

To use the key, start at Plate 2, Key to bills (1). The first question is a yes or no choice, and the answer you choose refers you to the next step for identifying your bird. At times the key requires you to compare or match features or measurements before referring you to the next step. It is important that you follow these instructions carefully. If you go to the wrong place, you will probably be unable to identify the bird and you will then have to go back to Plate 2 and begin again.

Some of the species are difficult to tell apart, and in a few cases identification may not be possible, for example some Southern and Northern Royal Albatrosses. When this is the case, the key will say 'no further identification possible'. Sometimes it is necessary to compare a combination of features. It is worth persisting, however, even with the more difficult species. You will find that with practice and familiarity it becomes easier and you will gain confidence.

Beginners will find that they always have to start at Plate 2. As you gain experience and become familiar with the birds, you will find that you can often place a bird in a particular group and do not have to refer to the Key to Bills. The Plates have been arranged so that birds of similar appearance are grouped together, and you may be able to go the relevant plate without referring to earlier parts of the key.

When you have identified the bird you will be referred to the species description, including measurements, on the same page. Comparing the description with the bird should confirm the identification. Further information about the breeding, population, distribution and behaviour of each species is given in the section following the Plates.

Measurements

Standard **measurements** are given, recorded using the methods shown in Plate 1. For each of the most frequently-taken measurements (length of bill, tarsus, wing, and tail) the mean (or average) appears first, followed by the range (minimum and maximum measurement) in brackets, e.g. 'tarsus 113 (103–122)'. Measurements for males and females are combined, and figures have been rounded to the nearest whole number. The measurements given are of adults from breeding localities. Most measurements are from Marchant and Higgins (1990), but where more than one sample from a locality was available, the largest or most complete set was used. The sample size, locality, and source of measurements is then listed.

Breeding, populations, distribution, and behaviour

Information on **breeding and populations**, **marine distribution**, and **behaviour** can be found in a separate section following the plates, for reasons of space. In the paragraphs on **breeding and populations**, the breeding frequency is given first. Breeding frequency may be assumed to be annual unless described as biennial. Biennial means that the breeding season is so long that most individuals which succeed in raising a chick must moult (replace most of their feathers) in the following year and thus cannot normally breed every year. The usual months of breeding are given, from egg-laying to chick departure. In several species adults may visit the breeding colonies over a more extended period than shown. Island groups where the species breeds are then listed, together with the average number of pairs breeding there each year. In many cases these figures are only rough estimates, rather than actual counts. The most up-to-date figures available to us have been used. The conservation status of each threatened species appears in capitals. It is based on the latest official world list of threatened birds,⁴ which uses the criteria of the International Union for the Conservation of Nature. The conservation status has been updated here to take into account taxonomic changes and new data on population trends.⁵

Under **marine distribution** migrations and favoured habitats are described in relation to the usual limits of distribution. However, you may well catch one of these wide-ranging species outside its usual range. You should not, therefore, use this section to verify your identifications!

The section on **behaviour** is largely confined to the behaviour of the species at sea in relation to ships and to fisheries.

Seabird names used in this book

In this guide we have used standard vernacular and scientific names which have gained wide international acceptance. The scientific names are mostly those used in the *Checklist of Birds of the World* (1979),⁶ with modifications to skua names as in Devillers (1978).⁷ The new feature of this guide is the promotion from subspecies to full species of six albatrosses and one petrel which are distinctive enough for fishery observers to identify. These are: Snowy Albatross, Amsterdam Albatross, Northern Royal Albatross, Salvin's Albatross, Chatham Island Albatross, Northern Black-browed Albatross, and Spectacled Petrel. In this respect the guide partly follows the list of Alexander and others (1997) of albatross species, which is based on very recent DNA studies.⁸ However, not all of the species listed in Alexander are illustrated, as several cannot be reliably separated at sea.

Some important terms

- **(bill) ridge** the long horny plate along most of the top of the bill
- **mantle** the upper back
- **fledglings** are chicks whose down has been replaced by feathers and have left their nests for the sea
- **juveniles** are birds in their first year of life (first plumage)
- **immatures** are young birds with non-adult plumage
- **CRITICALLY ENDANGERED** species are restricted to breeding at one site and their relatively small population faces a high risk of extinction in the immediate future
- **ENDANGERED** species face a high risk of extinction as populations are known to be declining
- **VULNERABLE** species can become extinct as they have few breeding sites or may be declining in numbers
- **LOW RISK** species face no known risk of extinction
- **DATA DEFICIENT** means that there is not enough information on population size(s) and trends in numbers to classify by conservation status
- **sea mounts** are isolated deep sea underwater mountains which do not reach the sea surface
- **shelf/continental shelf** are the underwater shelves (generally less than 200 m in depth) adjacent to continents or islands
- **shelf waters** are the shallow seas over such shelves or shallow underwater banks
- **slope/slope waters** extend beyond shelf waters down to depths of up to 2000 m over the underwater slopes of continental land masses and islands
- **front/polar front** are surface boundaries between two water masses of different characteristics. The Polar Front is where Antarctic surface water sinks below warmer subantarctic water
- **Subtropical Convergence** is the oceanographic surface front where subantarctic surface waters meet and sink below warmer subtropical waters

Abbreviations

- Country and locality names may be abbreviated, e.g. NZ (New Zealand), NSW (New South Wales), S America (South America), Tristan (Tristan da Cunha), W and E Africa (West and East Africa).
- Points of the compass are also abbreviated: e.g. (S) South, (SW) Southwest
- Other abbreviations:
 - c. circa,
 - km kilometres,
 - mm millimetres,
 - SBT Southern Bluefin Tuna

The parts of a seabird and how to measure them

This plate shows the standard names used in the guide for the parts of a seabird and the standard methods of taking measurements. All measurements are taken in millimetres. You will need the following equipment:

- large Vernier callipers, as used by engineers (see illustration), preferably extendible to 190 mm, used for bill, tarsus, and mid-toe. You can use a ruler to measure dead birds reasonably accurately, but it is more difficult
- a flexible or folding steel rule, extendible to 750 mm, used for wings and tail.

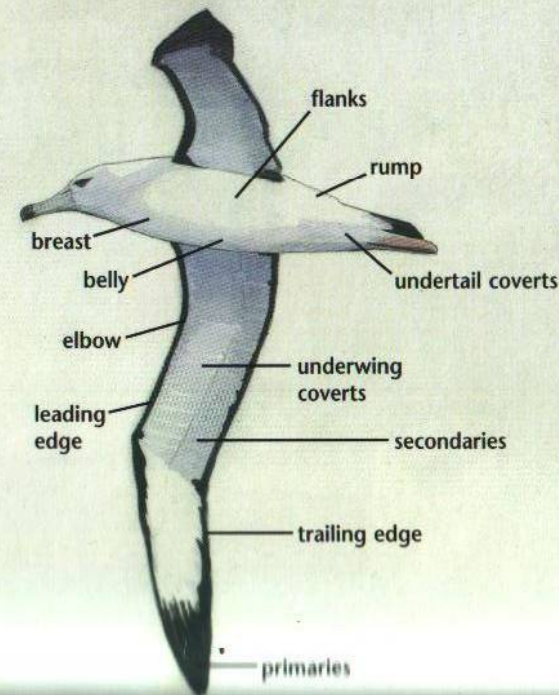
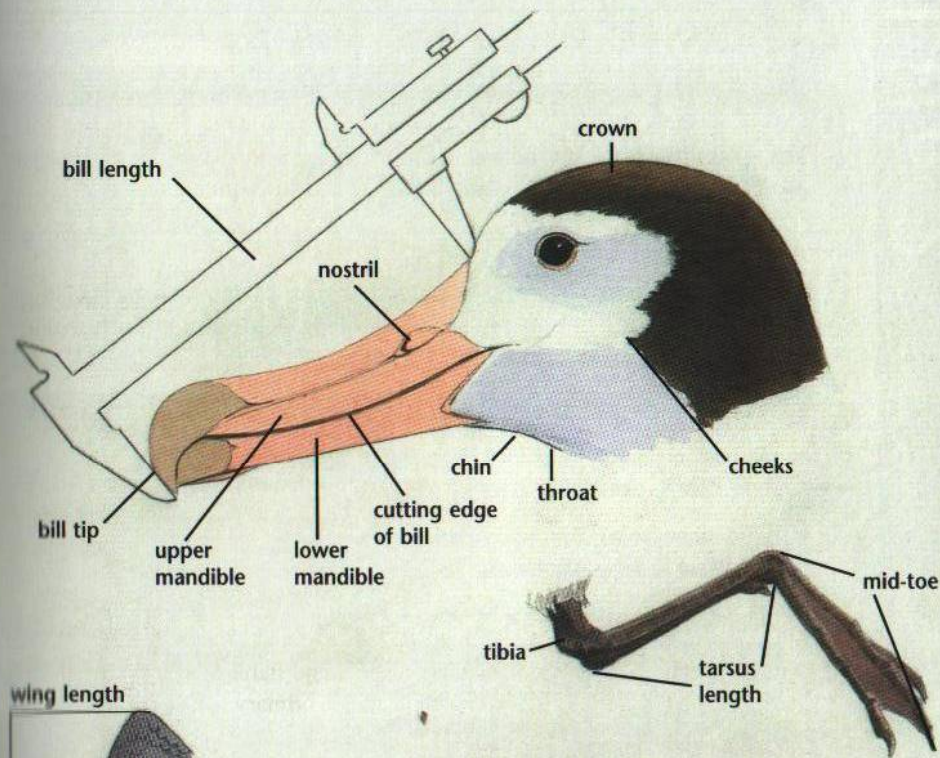
Bill length: measure from the edges of the feathers on top of the bill to the tip of the hook – see illustration.

Tarsus length: bend the leg and foot as illustrated opposite. Measure from the notch where the tibia and tarsus join on the back of the leg to the furthest point on the bend between the tarsus and foot.

Mid-toe: straighten toes and measure from tip of nail on mid-toe to point where toe joins tarsus – see illustration opposite.

Wing length: partly close wing as illustrated and flatten on deck, with topside uppermost. Measure from tip of longest primary feather to first bend on leading edge (carpal flexure).

Tail length: slide ruler between the two central tail feathers and measure from tip of tail to where feathers enter body.



Key to bills (1)

Bill with nostrils in small tubes on side of bill? – see A

Yes – Albatrosses – see below

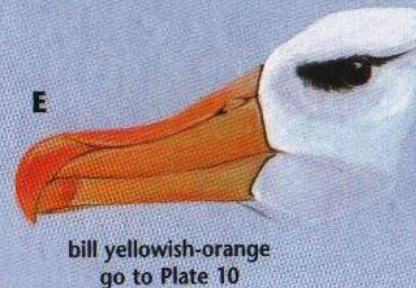
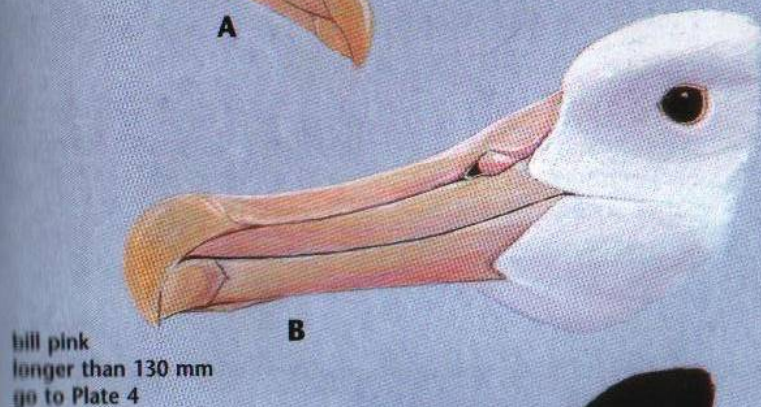
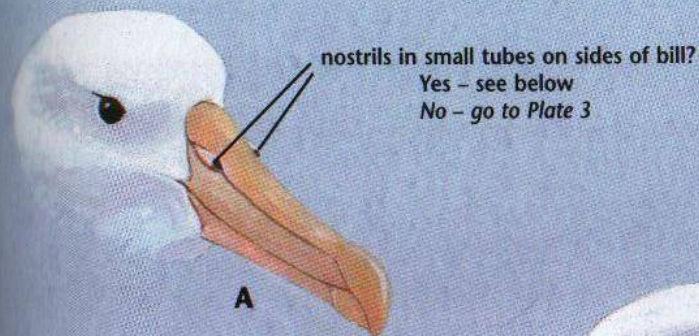
No – go to Plate 3

Albatrosses

Albatrosses are large birds, with bodies longer than 75 cm, wingspans of 2 metres or more, and bills more than 95 mm long. If the bird is much smaller than this, check the nostrils again.

Match the bill with the descriptions below:

- bill pink or mainly pink and longer than 130 mm – see B
go to Plate 4, *Great Albatrosses*
- bill dark and bird completely dark – see C
go to Plate 8, *Sooty Albatrosses*
- bill dark with yellow stripe or stripes – similar to D
go to Plate 9, *Adult Yellow-nosed, Buller's, and Grey-headed Albatrosses*
- bill yellowish orange and head mainly white – see E
go to Plate 10, *Black-browed Albatrosses*
- all other birds with nostrils in small tubes on sides of bill
– see examples F and G
go to Plate 11



Key to bills (2)

Bill with nostrils together in tubes on top of bill? – see A

Yes – petrels and shearwaters – see below

No – gulls and skuas – see below

Petrels and shearwaters

Match the bill and bird with the descriptions below:

- bill large, pale, and longer than 80 mm – see B
go to Plate 13, *Giant Petrels*

All other petrels and shearwaters are relatively small, with bodies less than 55 cm long and wingspans less than c. 1.5 metres. If the bird is much larger than this, go back to Plate 2

- bill black or very dark, shorter than 45 mm and bird dark – similar to C and D
go to Plate 14, *Sooty and Short-tailed Shearwaters; Great-winged Petrels*
- all other birds with nostrils together in tubes on top of bill – see examples E, F, G
go to Plate 15

Gulls and skuas

The nostrils of gulls and skuas are plain openings on the sides of the bill, not in tubes – see H and I.

Match the bill with the descriptions below:

- bill with yellow or yellowish colours
go to Plate 20, *Kelp Gulls*
- bill not yellow or yellowish

compare shape and structure of the bill with H and I

- similar to I
go to Plate 19, *Skuas*
- similar to H
go to Plate 20, *Kelp Gulls*



nostrils together in tubes on top of bill?

Yes – see below B–G

No – see below H–I

A



bill pale
longer than 80 mm
go to Plate 13

B



C



D

bill black shorter than 45 mm, bird dark
go to Plate 14



E

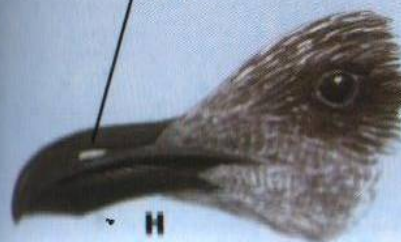


F



G

all others go to Plate 15



H



I

nostrils plain openings on sides of bill – gull or skua

separate by bill shape and structure

Great Albatrosses

Very large birds with pink or mostly pink bills longer than 130 mm

Match the bill with the descriptions below:

- bill pink with thin black line along cutting edge and contrasting greenish tip – see A
Amsterdam Albatross – see description below
- bill pink with thin black line along cutting edge – see C
go to Plate 7, *Royal Albatrosses*
- bill pink (no black line on cutting edge) – see D
go to Plate 5, *Snowy or Wandering Albatrosses*

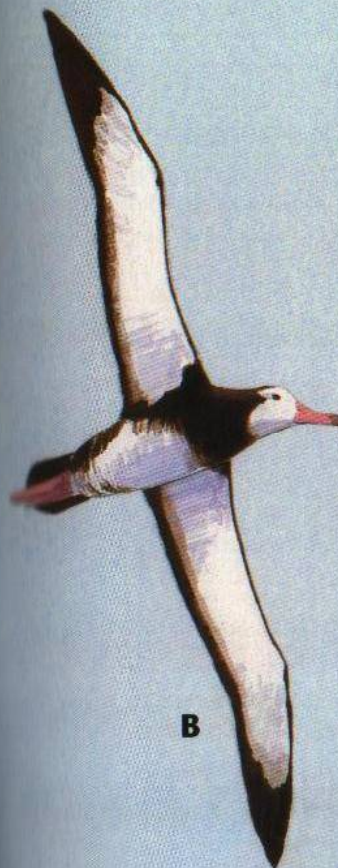
Note: the thin black line along the cutting edge of the bill is not always obvious, especially if the bill is damaged.

Amsterdam Albatross

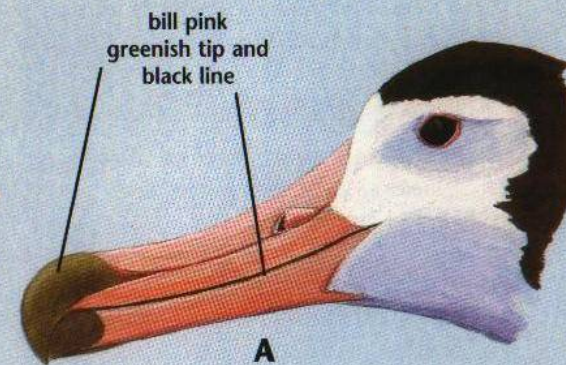
Diomedea amsterdamensis (A, B)

Description: Very large. Upper parts and breast band dark brown (B). Underwing white with narrow dark margins. Face and throat white. Young birds are dark brown on the belly, similar to juvenile Snowy Albatrosses (see Plate 5 E). The belly lightens as the bird gets older (B). Bill pink with thin dark line on cutting edge and greenish tip.⁹

Measurements: Bill 144 (135–156); tarsus 113 (103–122); wing 640 (600–675); tail 204 (190–220); 34 live birds, Amsterdam Island, Indian Ocean.¹⁰



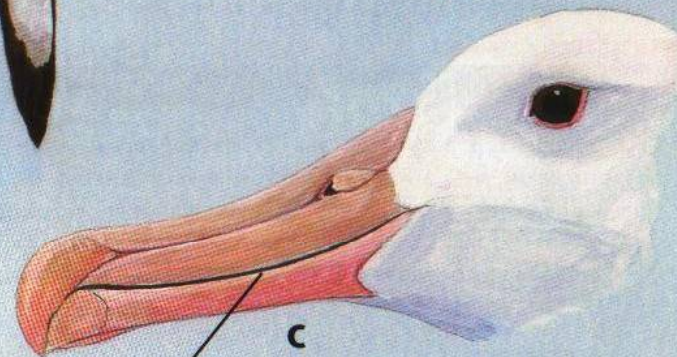
B



bill pink
greenish tip and
black line

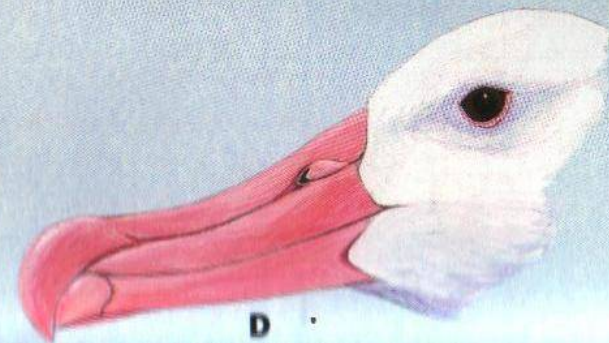
A

Amsterdam Albatross – opposite



C

bill pink
black line on cutting edge
go to Plate 7



D

Snowy and Wandering Albatrosses

Very large birds with plain pink bills

Note: in this guide the great albatrosses that breed on Antarctic islands in the Atlantic and Indian Oceans are called Snowy Albatrosses. Fishery observers may previously have called them 'Wandering Albatrosses'. In this guide the name Wandering Albatross has been retained for the smaller birds that breed on Tristan da Cunha and Gough Islands, and in the New Zealand area.

Match bill length and underparts with descriptions below:

- bill length less than 155 mm – see A
Wandering Albatross – go to Plate 6
- bill length more than 160 mm – see B
Snowy Albatross – see description below
- bill length 155–160 mm and underparts completely white
Wandering Albatross – go to Plate 6
- bill length 155–160 mm and underparts brown (E) or partially brown
Snowy Albatross – see description below

Note: most birds fall into the first two categories. Most Snowy Albatrosses are larger than Wandering Albatrosses and with practice, these birds can be distinguished by sight.

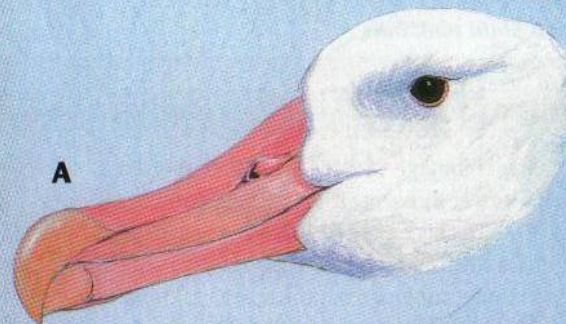
Snowy Albatross

Diomedea chionoptera (B–E)

Description: Very large. Plumage variable. Juveniles are dark brown above and below, with a white face, throat, and underwings (D, E). Birds become whiter as they get older, similar to the Wandering Albatross illustrated in Plate 6 A–G. Old males can be completely white except for black on the tips and trailing edges of wings (C). Bill plain pale pink, longer than 154 mm in juveniles and 160 mm in adults.¹¹

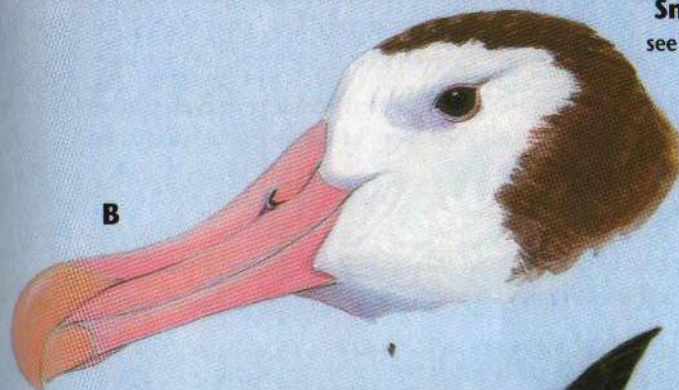
Measurements: Bill 164 (155–181); tarsus 122 (110–132); wing 661 (618–710); tail 217 (193–246); 70 live birds, from South Georgia and Macquarie Islands.¹²

bill shorter than 155 mm
Wandering Albatross
go to Plate 6

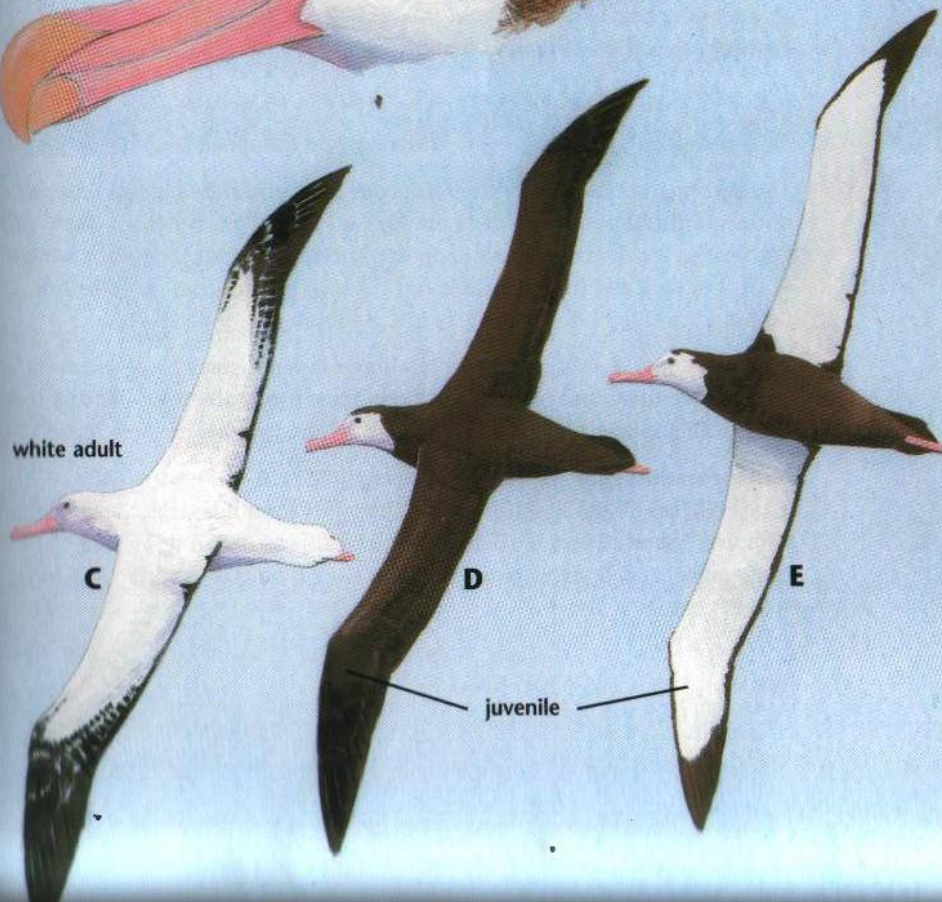


A

bill longer than 160 mm
Snowy Albatross
see below and opposite



B



white adult

C

juvenile

D

E

Wandering Albatross

Very large birds with plain pink bills

Wandering Albatross

Diomedea exulans (A–G)

Description: Very large. Plumage variable. Juveniles are dark brown above and below with a white face, throat, and underwing (similar to Snowy Albatross, Plate 5 D, E). Birds become whiter as they get older but not all birds go through all the stages illustrated opposite (see below). The belly lightens first (B), then the rest of the underparts and back (C, D), and finally the wings (E–G). Most birds retain brownish crowns (C, E) and a few dark tail feathers (G). Even the palest birds (G) usually have very fine, grey, wavy lines (vermiculation) on the white feathers.

Females are usually darker than males, often breeding in dark plumages like A and B, and can remain dark all their lives. Males are more likely than females to become as white as G.

Three forms are recognised:

D. exulans exulans — breeding on Inaccessible and Gough Islands, and formerly on Tristan da Cunha Island.

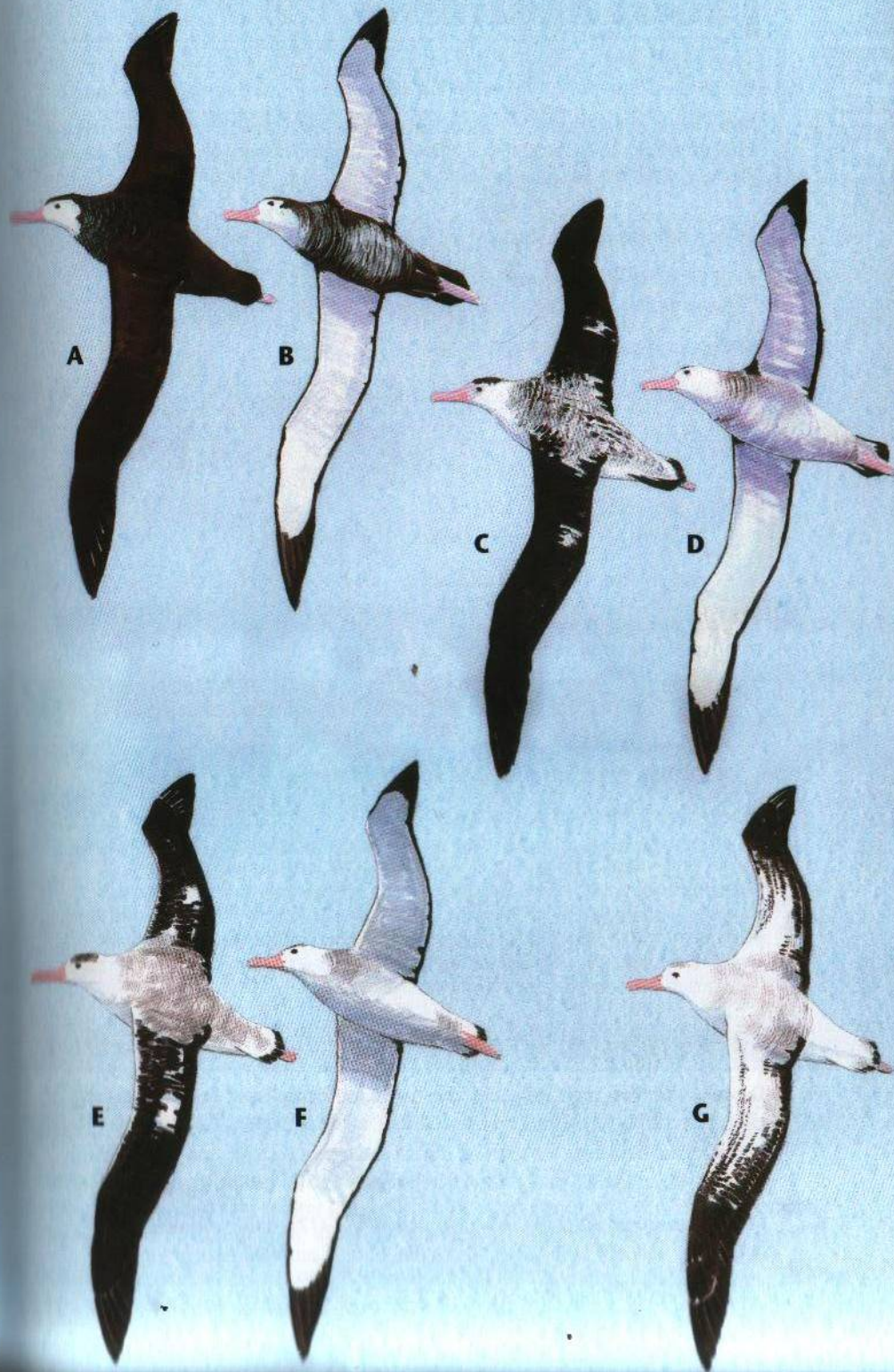
D. e. gibsoni — breeding on Auckland Islands.

D. e. antipodensis — breeding on Antipodes and Campbell Islands.

The breeding population on the Antipodes Islands has the highest proportion of dark birds. Most females there are dark (A, B) and males lighter, like C or D. Both males and females breeding on the Auckland Islands tend to be whiter (C–F), but dark and light (G) birds can occur in both of these populations. Both dark and light birds breed on Inaccessible and Gough Islands.

The wings of *D. e. exulans* tend to be shorter (see measurements). However, all the measurements and plumages of these three forms are so similar that it is not possible to identify an individual bird as one or other of these forms.

Measurements: Bill 147 (132–160); tarsus 112 (105–127); wing 640 (615–680); tail 192 (180–210); 43–161 live birds from Auckland, Antipodes and Campbell Islands,¹³ and 6–10 dried specimens from Tristan da Cunha, Inaccessible, and Gough Islands.¹⁴ Tristan-Gough birds, wing 615 (580–645), 9 specimens.¹⁵



Royal Albatrosses

Very large birds, pink bills with thin black line on cutting edge

Note: Southern and Northern Royal Albatrosses are similar and it is not always possible to identify every bird. The plumage differences described below may not always be easy to see on dead, wet, or damaged birds.

Match upperwing and back with descriptions below:

- upperwings partly white – see A
Southern Royal Albatross – see description below
- upperwings dark, back white – see B

match crown and tail with descriptions below:

- crown with dark spots – see C
Northern Royal Albatross – see description below
- crown and tail white – see B
Northern Royal Albatross – see description below
- crown white and tail dark-tipped – see F
either Northern or Southern Royal Albatross; no further identification possible
- upperwings dark, back with dark spots – see D and E

match crown with descriptions below:

- crown white
Southern Royal Albatross – see description below
- crown with dark spots – see C
either Northern or Southern Royal Albatross; no further identification possible

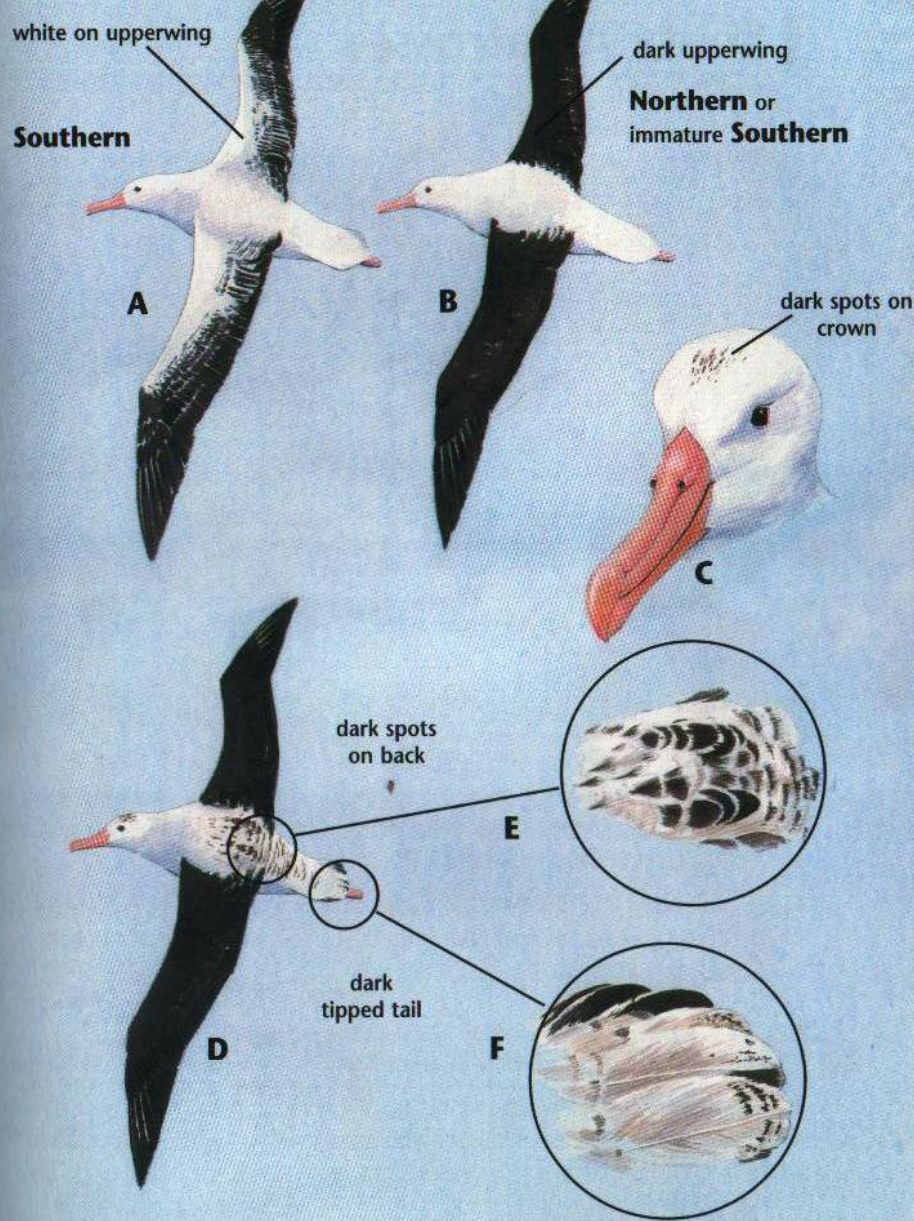
Note: Northern Royal Albatrosses are smaller on average than Southern Royal Albatrosses. A bird with a tarsus length of less than 122 mm is likely to be a Northern, while a bird with a tarsus length of more than 122 mm is likely to be a Southern. However, this difference is based on few measurements, and should be used in conjunction with the plumage key, above.

Southern Royal Albatross

Diomedea epomophora (A–F)

Description: Very large. Fledglings have dark upper wings. Body, head, and tail are white with variable dark spots on crown, back, and tip of tail (D). As the birds get older, the back becomes white, the spots on the tail and crown decrease, and the upperwing becomes whiter (A). Bill pale pink with a thin black line on cutting edge (C).

Measurements: Bill 173 (165–190); tarsus 131 (123–138); wing 685 (647–707); tail 211 (196–224); 10–52 live birds, Campbell Island.¹⁶



Northern Royal Albatross

D. sanfordi (B–F)

Description: Very large. Fledglings similar to Southern Royal (D). As the birds get older, the body becomes whiter but some birds retain dark spots on the head and tail. Upperwings stay dark as in B. Bill pale pink with a thin black line on cutting edge (C).

Measurements: Bill 164 (154–172); tarsus 116 (111–120); wing 638 (614–669); tail 190 (175–197); 40 live birds, Tiaroa Head, New Zealand.¹⁷

Sooty Albatrosses

Bill dark and bird dark

Match the bill with the descriptions below:

- thin coloured line on bill, light blue – see A
Light-mantled Sooty Albatross – see description below
- thin coloured line on bill, orange – see B
Sooty Albatross – see description below
- thin coloured line on bill indistinct or grey

match the back with the description below:

- back pale grey – see C and E
Light-mantled Sooty Albatross – see description below
- back dark brown – see D and F
Sooty Albatross – see description below

Light-mantled Sooty Albatross *Phoebastria palpebrata* (A, C, E)

Description: One of the smaller albatrosses. Grey-brown with a paler grey back. Thin white crescent behind eye. Bill dark, with a thin, pale blue line when adult (A), grey or indistinct line when immature. Extent of pale grey on the back varies with feather wear (C, E).

Measurements: Bill 106 (98–113); tarsus 84 (79–95); wing 551 (520–570); tail 288 (261–308); 18 live or freshly-dead birds; Crozet, Macquarie, Campbell, Antipodes, and Auckland Islands.¹⁸

Sooty Albatross

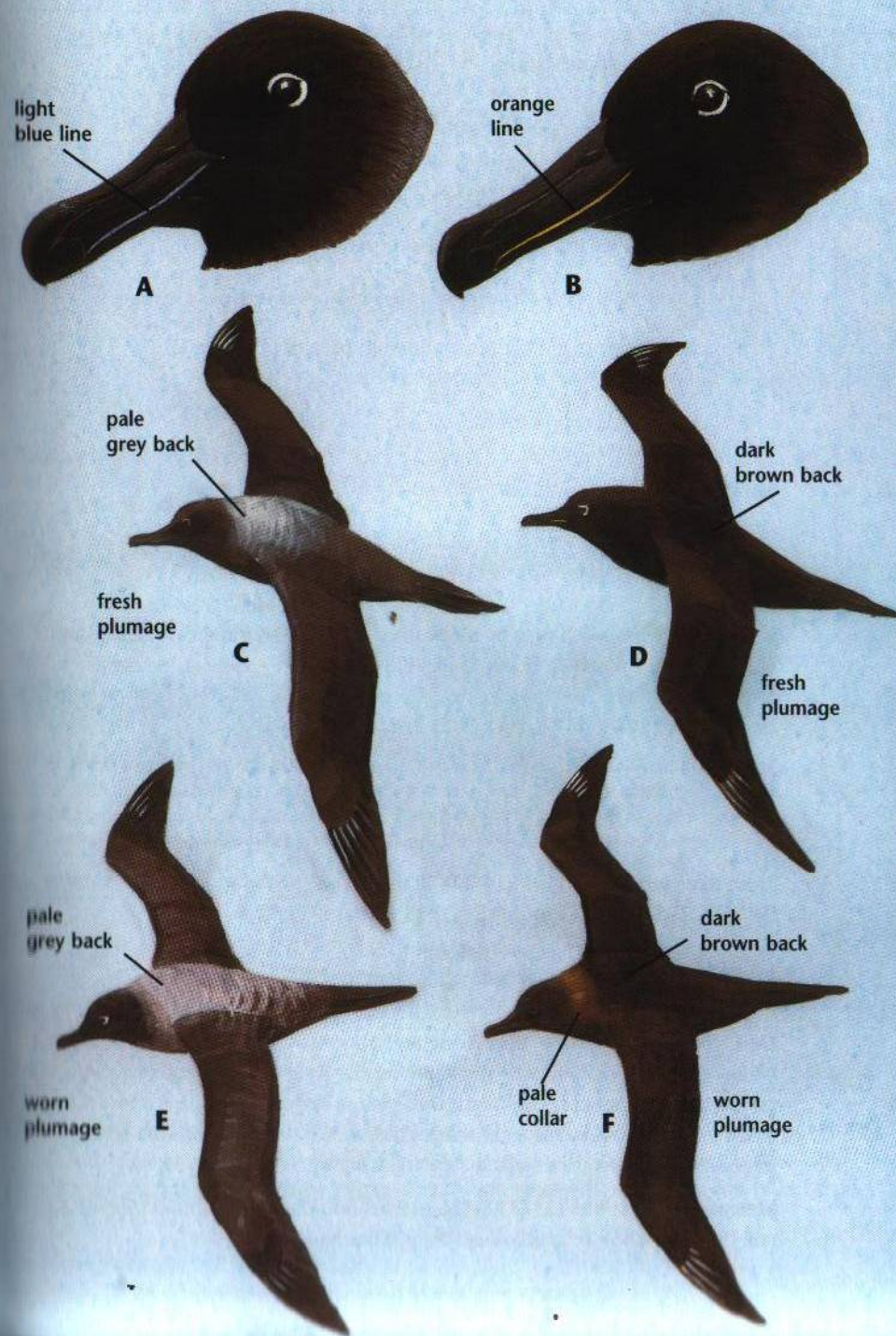
P. fusca (B, D, F)

Description: One of the smaller albatrosses. Dark grey-brown all over. Thin white crescent behind eye. Bill dark with a thin yellow or orange line when adult (B), grey or indistinct line when immature. May have a pale collar (F) when feathers are worn.

Measurements: Bill 112 (100–120); tarsus 83 (78–90); wing 517 (490–551); tail 266 (245–294); 101–212 live birds from Prince Edward Island.¹⁹

Light-mantled Sooty Albatross

Sooty Albatross



Adult Yellow-nosed, Buller's, and Grey-headed Albatrosses

Bill dark with yellow stripes

Compare yellow stripes on bill, as viewed from the side:

- yellow stripe on top only – see B
Yellow-nosed Albatross – see description below
- yellow stripe on top and also below – see E, H

compare shape of stripe on top of bill, viewed from above:

- yellow stripe is broad and rounded at base of bill – see D
Buller's Albatross – see description below
- yellow stripe tapers towards base of bill – see G
Grey-headed Albatross – see description below

Note: Juveniles and immatures of these species are described on Plate 12.

Yellow-nosed Albatross *Diomedea chlororhynchos* (A, B, C)

Description: Body white, upperwing and uppertail dark grey-brown. Underwing white with narrow black margins, slightly wider on the leading edge (C). Black patch in front of eye. Bill black with yellow stripe on top only. Indian Ocean birds have white heads (B), Atlantic Ocean birds light grey heads and necks (C) which become whiter as feathers wear.

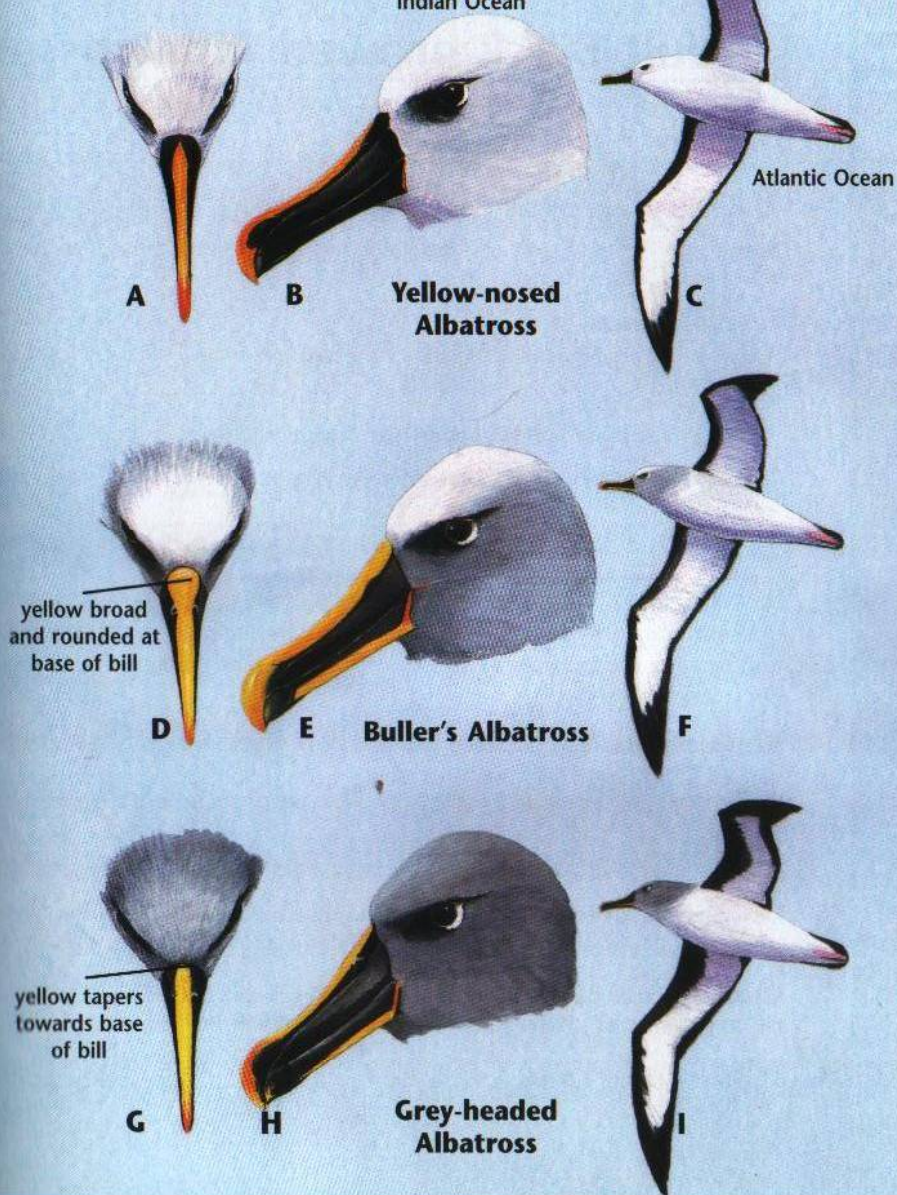
Note: Museum specimens and photographs show that differences between these two forms, especially in pattern of yellow on bill, are less obvious than many publications suggest. Also, if the grey on the head of the Atlantic form is worn, it may not be obvious on dead, wet birds. We don't think that observers will always be able to distinguish between these forms using these features.

Measurements: Bill 119 (111–124); tarsus 82 (79–87); wing 488 (465–499); tail 197 (185–210); 15 live birds, Prince Edward Island.²⁰

Buller's Albatross *D. bulleri* (D, E, F)

Description: Body white, upperwing and uppertail dark grey-brown. Underwing white with black margins, slightly wider on the leading edge (F). Head and neck grey, whiter on crown (E). Bill dark with yellow stripes on top and below (E). Stripe on top of bill broad and rounded at base (D). Chatham Islands birds, sometimes described as a separate species, have the darkest grey heads.

Measurements: Bill 121 (111–126); tarsus 86 (82–89); wing 519 (505–533); tail 199 (195–206); 6 freshly-dead birds, Chatham Islands.²¹



Grey-headed Albatross *D. chrysostoma* (G, H, I)

Description: Body white, upperwing and uppertail dark grey-brown. Underwing white with black margins, wider on the leading edge and broader at the elbow (I). Head and neck grey. Bill dark with yellow stripes on top and below (H). Stripe on top of bill tapers towards base (G).

Measurements: Bill 112 (102–120); tarsus 87 (83–94); wing 519 (485–541); tail 211 (195–223); 28–41 live birds, Crozet and Macquarie Islands.²²

Adult Black-browed Albatrosses

Bill yellowish-orange, head mainly white

Look at the eye colour:

Note: Sometimes the eye colour is difficult to see on dead birds if the eyes are sunken or damaged.

- iris dark brown – see B
Southern Black-browed Albatrosses – see description below
- iris yellow – see E
Northern Black-browed Albatrosses – see description below

Note: Juveniles of these species are described on Plate 12.

Southern Black-browed Albatross *Diomedea melanophrys* (B, C)

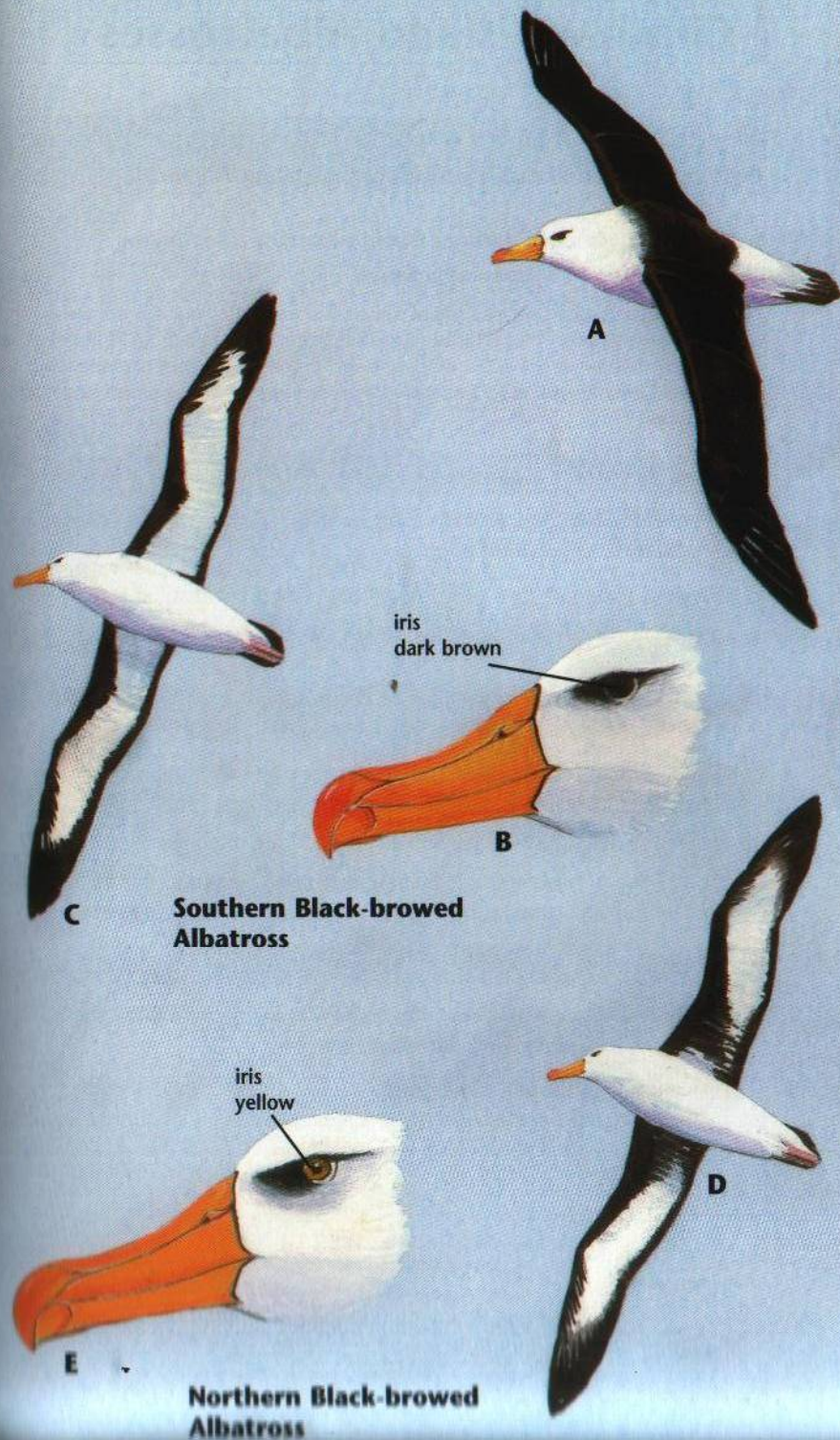
Description: Body and head white, upperwing and uppertail black or brownish-black (A). Underwing white with black margins, wider on the leading edge, and broadest at the elbow (C). Black patch around eye. Eye dark. Bill yellowish-orange (B).

Measurements: Bill 118 (108–124); tarsus 83 (76–89); wing 535 (510–560); tail 216 (202–236); 23–30 live birds, South Georgia and Kerguelen Islands.²³

Northern Black-browed Albatross *D. impavida* (D, E)

Description: Like Southern Black-browed Albatross except iris yellow, black patch around eye slightly larger (E), and underwing often slightly darker (D).

Measurements: Bill 111 (105–118); tarsus 83 (75–88); wing 520 (490–540); tail 211 (200–229); 45 live birds, Campbell Island.²⁴



Shy, Salvin's, and Chatham Island Albatrosses

Bill with thin black lines from head to nostrils, and usually with an orange or yellow line at base of lower mandible? – see A

Yes – Shy, Salvin's or Chatham Island Albatross – see below

No – go to Plate 12 – young albatrosses

Note: Shy, Salvin's, and Chatham Island Albatrosses are similar and it is not always possible to identify every bird. This key uses differences in bill colour and the extent of white on the underwing tip. These differences are not always obvious in young birds, and you may need to look at and compare several before you feel confident of your identifications.

Compare bill with descriptions below:

- bill pale grey with pale yellow on tip – see C
Shy Albatross – see description over
- bill yellow with dark tip – see D, or bill duller than D but still distinctly yellow
Chatham Island Albatross – see description over
- bill not as above

compare underside of wing tips and second primary with E–H:

- underside of inner web of 2nd primary is white with a narrow darker border as in F, and underwing tip is whiter as in E
Shy Albatross – see description over
- underside of inner web of 2nd primary has a broad dark border fading to white near the quill, as in H, and underwing tip is darker as in G

look at bill:

- bill pale grey with a dark tip, mainly on lower mandible – see I
Salvin's Albatross – see description over
- bill not as above – similar to J
young Salvin's or Chatham Island Albatross; no further identification possible

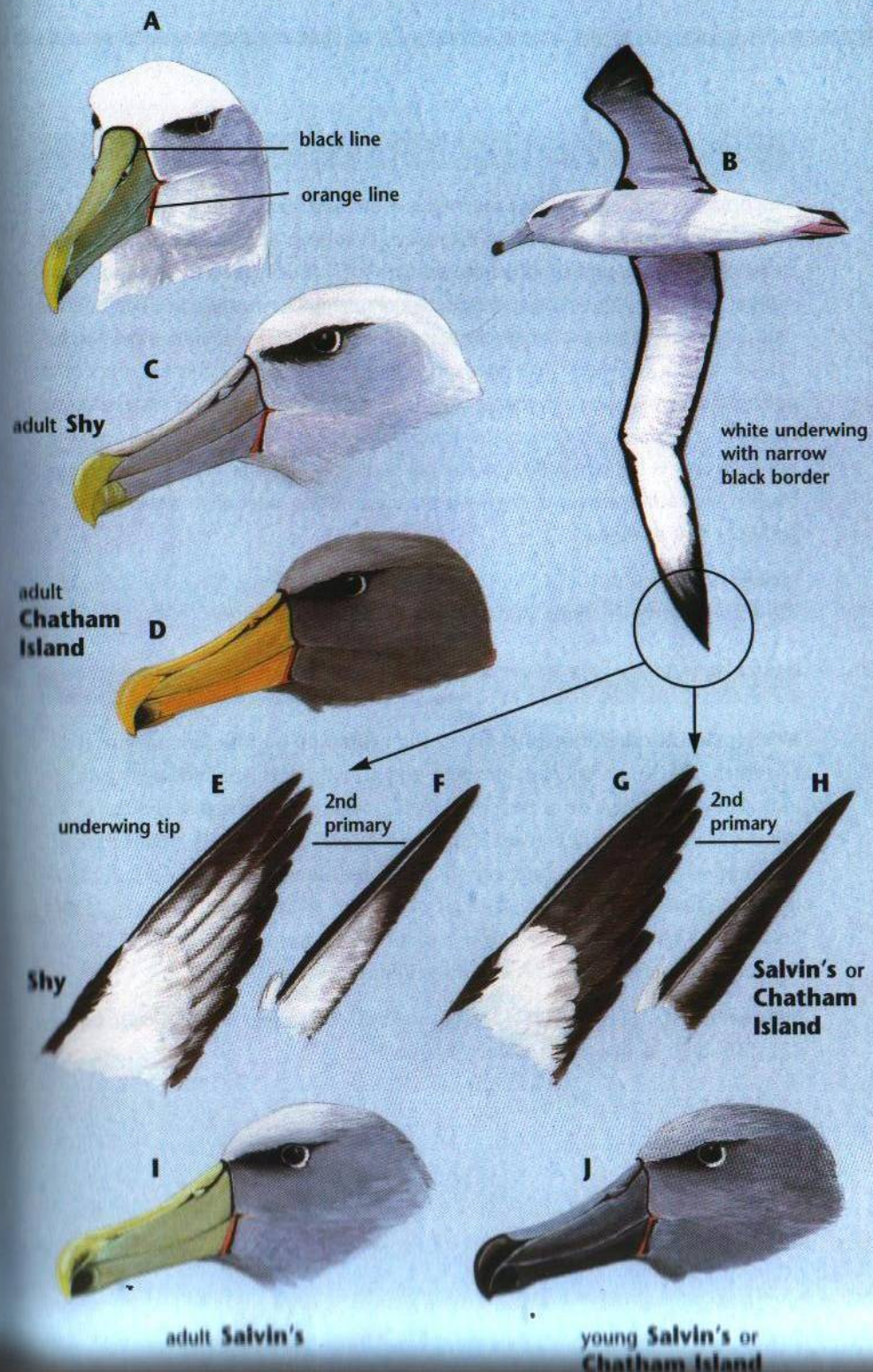


Plate 11

Shy Albatross

Diomedea cauta (C, E, F)

Description: Underparts white, underwing white with narrow dark margin (B). Upperwing and tail dark brownish-grey, back paler (frosty) grey. The tip of the underwing is white at the base of the primaries (E), and the inner web of the 2nd primary is white with a narrow dark border (F). Adults have white head and neck with a pale grey wash on the cheeks (C), and pale grey bill with a light yellow tip (C), often with a blackish smudge on the tip of the lower mandible. Juveniles have dark grey bills with blackish tips (similar to J), grey necks and heads with whitish caps, and a greyish, smudgy collar extending from the back of the neck across the upper breast. As the bird gets older the bill becomes paler grey with a yellower tip marked by blackish smudges, the head becomes whiter, especially on the throat, and the collar disappears.

Measurements: Bill 132 (122–141); tarsus 94 (86–104); wing 578 (535–622); tail 224 (210–242); 49 live birds, Auckland Islands and Bass Strait.²⁵

Salvin's Albatross

D. salvini (G, H, I, J)

Description: Underparts white, underwing white with narrow dark margins (B). Upperwing, back, and tail dark brownish-grey. The tip of the underwing is pale brownish-grey at the base of the primaries (G), and the inner web of the 2nd primary has a broad dark border fading to white near the quill (H). Adults have a grey head and neck with a paler cap (I) and a grey bill with darker sides and black tip as in I. Juveniles fledge with dark grey bills with blackish tips (similar to J), grey heads, and a smudgy grey collar from back of neck across breast. Head and bill become lighter and collar fades as birds get older.

Measurements: Bill 128 (123–135); tarsus 91 (85–95); wing 576 (555–600); tail 221 (210–235); 29 live adults, Bounty Islands.²⁶

Chatham Island Albatross

D. eremita (D, J)

Description: Underparts white, underwing white with narrow margins (B). Upperwing, back, and tail brownish-grey. Tip of underwing as Salvin's (see above, and G and H) but often slightly darker. Adults have a dark grey head and neck, barely lighter on the crown (D), and a bright yellow bill with a darker tip as in D. Juveniles fledge with grey heads and necks, paler than the adults, and dark grey bills with dark tip (similar to J). Immature plumages and bills not described, but bill and head as adults on return to breeding colony.

Measurements: Bill 121 (113–130); tarsus 88 (81–96); wing 565 (537–586); tail 229 (214–248); 23 live birds, Pyramid Rock.²⁷

Young Grey-headed, Yellow-nosed, Black-browed, and Buller's Albatrosses

Note: These young Albatrosses look similar. The key below uses the colour and pattern of the bill and of the grey plumage on the head. On a dead, wet bird, pale grey feathers on the head may look darker than the illustrations, and patches of grey can get lost in the surrounding white feathers. Look carefully.

Decide on bill colour first, then look at the head pattern:

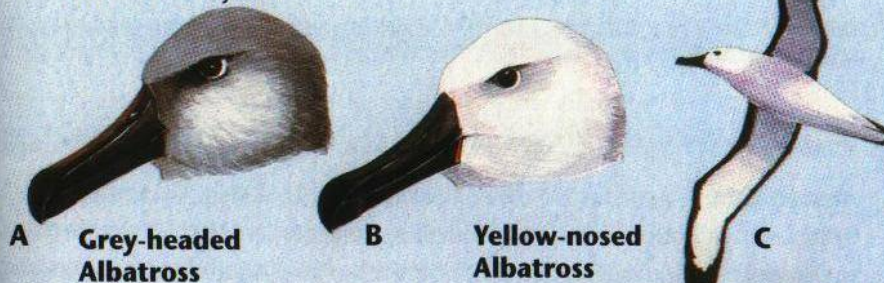
- bill black or very dark, sometimes with brownish-yellow stripe on top and/or bottom (the beginning of the adult pattern on the bill) – see A, B
 - head grey, perhaps with white patches, similar to A or E
Grey-headed Albatross – see description over
 - head white, as in B
Yellow-nosed Albatross – see description over
- bill grey with darker tip – see D, E
 - head grey – pattern varies, but cheeks always have some white, similar to A or E
Grey-headed Albatross – see description over
 - head white with variable pattern of pale grey, similar to D, G, or J
Southern or Northern Black-browed Albatross – go to eye colour, below
- bill brownish with variable darker markings, similar to G, H, or J
 - head grey with a paler or white cap, similar to H
Buller's Albatross – see description over
 - head white with a variable pattern of pale grey, similar to D, G, or J
Southern or Northern Black-browed Albatross – go to eye colour, below

look at the eye colour:

- iris dark brown – see J
Southern Black-browed Albatross – see description over
- iris yellow – see G
Northern Black-browed Albatross – see description over

A-C

bill black or very dark



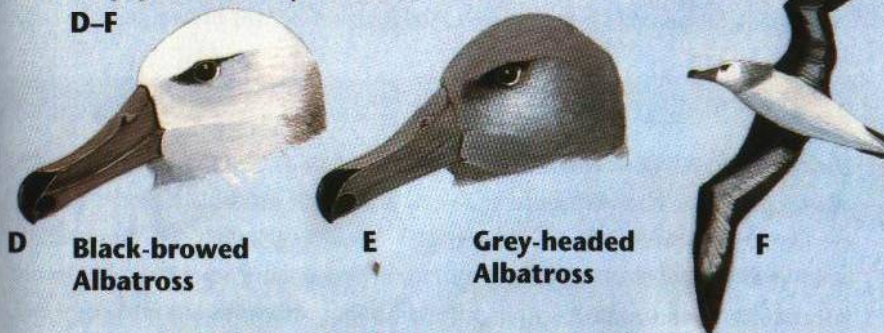
A Grey-headed Albatross

B Yellow-nosed Albatross

C

bill grey with darker tip

D-F



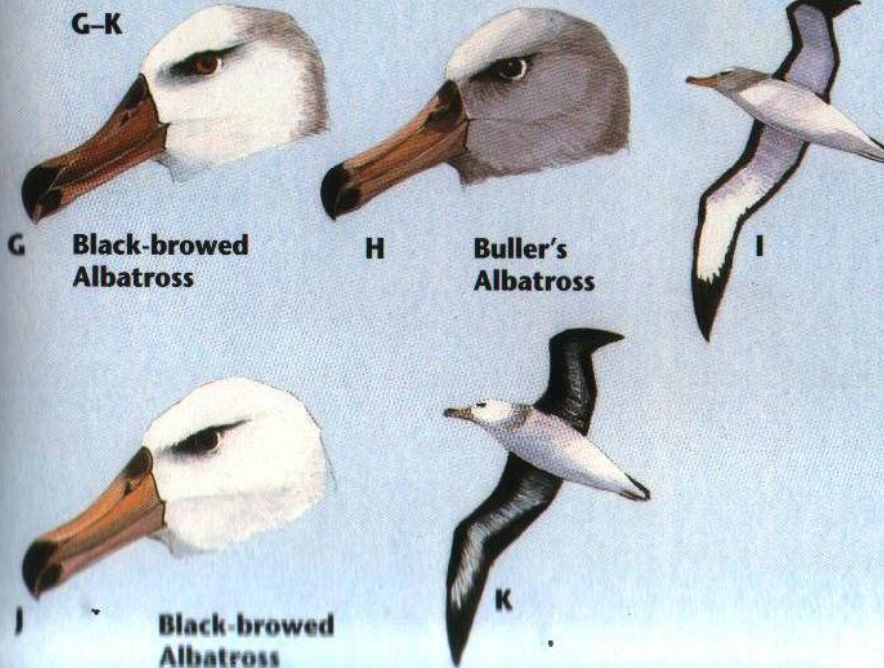
D Black-browed Albatross

E Grey-headed Albatross

F

bill brownish with darker markings

G-K



G Black-browed Albatross

H Buller's Albatross

I

J Black-browed Albatross

K

Plate 12

Note: All these young albatrosses have white underparts and rump, dark brownish-black upperwings, back, and tail.

Grey-headed Albatross

Diomedea chrysostoma (A, E, F)

Description: Bill grey with a dark (E) or black tip (A), sometimes with paler stripes on top and bottom of bill resembling the adult pattern (see Plate 9H). Head and neck grey with variable amounts of white but always some white on cheeks (A and E). As head wears paler, remaining grey feathers may form a collar (F). Underwing dark at fledging (F), lightening to adult pattern (see Plate 9I).²⁸ (Measurements and adult description, Plate 9.)

Yellow-nosed Albatross

D. chlororhynchos (B, C)

Description: Bill black (B), sometimes with paler stripe on top resembling the adult pattern (see Plate 9B). Head and neck white with small black patch in front of eye (B). Some birds may have a smudgy grey collar on sides of neck. Underwing white with narrow black margins, slightly wider on leading edge (C). (Measurements and adult description, Plate 9.)

Black-browed Albatrosses *D. melanophrys*, *D. impavida* (D, G, J, K)

Young birds of these two species are separable by eye colour but are described together here because their plumages are similar.

Description: Juveniles fledge with grey bills with blackish tips (D) and dark underwings. Older birds develop brownish (G) or pinkish (J) bills with darker tips and markings, and the underwing becomes lighter, like a smudgy version of the adult pattern (Plate 10C, F). The amount of grey on the head and neck varies (D, G, J) but is always pale, and in most cases the head is mainly white. A smudgy grey collar is often present (K).²⁹ (Measurements and adult description, Plate 10.)

Buller's Albatrosses

D. bulleri (H, I)

Description: Bill brownish with a darker tip and variable darker markings (H). Head and neck grey with a paler or white cap (H) and sometimes a greyish collar. Underwing white with narrow black margins, wider on the leading edge (I). The bills of older birds develop a paler version of the adult pattern (Plate 10D, E). (Measurements and adult description, Plate 10.)

Giant Petrels

Bill large, pale, and longer than 80 mm

Compare plumage:

- bird almost all white – see F
Southern Giant Petrel – see description below
- bird black, brown or greyish – see A–E

compare eye colour:

Note: the colour of the iris is not always easy to see on dead birds if the eye is sunken or damaged.

- iris pale – see A
Northern Giant Petrel – see description below
- iris dark

compare bill with the descriptions below:

- bill tip darker than rest of bill and usually brownish or reddish – see A
Northern Giant Petrel – see description below
- bill tip greenish – see B
Southern Giant Petrel – see description below
- bill tip similar to rest of bill – see C
either *Northern* or *Southern Giant Petrel*; no further identification possible

Northern Giant Petrel

Macronectes halli (A, C)

Description: Adults are dark grey, whitish on face and chin, mottled white on head, neck and breast (A). Birds can become paler and more mottled as they get older. Iris pale (sometimes flecked darker). Juveniles fledge black with a dark brown iris and acquire adult plumage and pale eyes gradually over 5–7 years. Bill pale yellowish-pink, usually with a darker brownish or reddish tip (A). Sometimes juveniles have uniform yellowish-pink bills (C) and cannot be distinguished from Southern Giant Petrels.

Measurements: Bill 96 (85–110); tarsus 100 (87–106); wing 522 (482–564); 5–90 live birds, South Georgia.³⁰

Southern Giant Petrel

M. giganteus (B–F)

Description: Two colour phases. White phase birds are white except for a few scattered dark feathers (F). Juveniles are white like adults. Up to five per cent of some populations are white phase. Dark phase adults are grey brown with white head, neck, and breast speckled with brown (B, E). Juveniles fledge black (D), fading to greyish brown, and take about seven years to develop adult plumage.³¹



Iris brown at all ages. Bill pale pinkish-yellow with a greenish tip (B). A few juveniles have uniformly pale pinkish-yellow bills (C) and cannot be distinguished from Northern Giant Petrels.

Measurements: Bill 94 (85–103); tarsus 95 (88–102); wing 530 (500–550); tail 198 (187–211); 13 live birds, Australian Antarctic coast.³²

Sooty and Short-tailed Shearwaters; Great-winged Petrels

Bill dark, shorter than 48 mm, bird dark

Compare bill shape with descriptions below:

- bill stubby as in E
Great-winged Petrel – see description below
- bill narrow as in A and C

measure bill:

- bill longer than 37 mm – see A and B
Sooty Shearwater – see description below
- bill shorter than 37 mm – see C and D
Short-tailed Shearwater – see description below

Sooty Shearwater

Puffinus griseus (A, B)

Description: Completely dark brown or black except for silvery white on underwings (B). Bill dark, narrow, and longer than 37 mm (B). Legs and feet blackish on outer sides, pinkish on inner.

Measurements: Bill 41 (39–46); tarsus 57 (55–66); wing 293 (270–322); tail 87 (83–101); 198 live birds, Whero and Snares Islands, New Zealand; and Macquarie Island.³³

Short-tailed Shearwater

P. tenuirostris (C, D)

Description: Completely dark brown or black (D). A few birds have paler underwings. Bill dark, narrow, and shorter than 37 mm (C). Legs and feet blackish on outer sides, pinkish on inner.

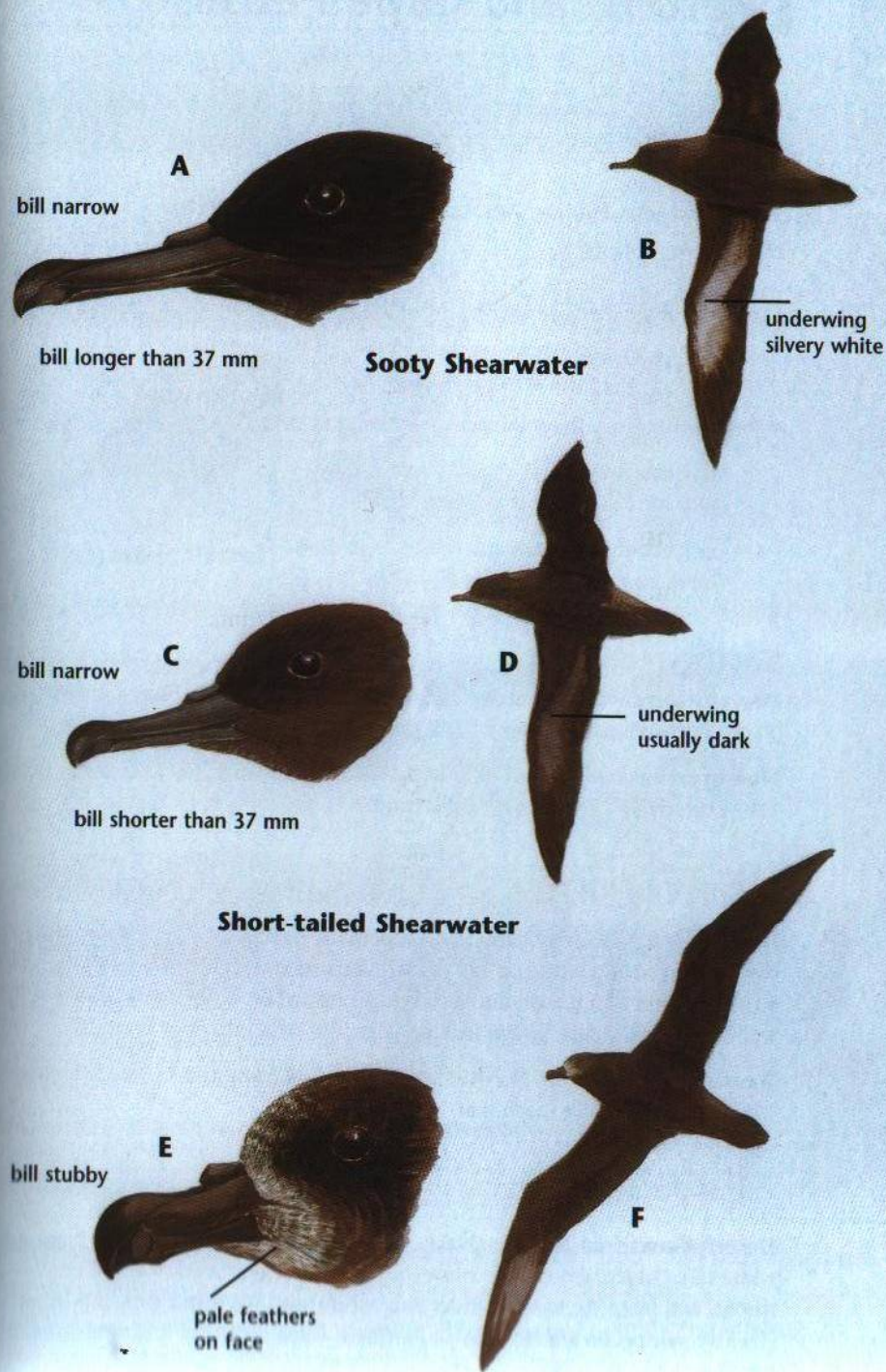
Measurements: Bill 32 (29–35); tarsus 52 (49–56); wing 278 (261–288); tail 82 (74–91); 37 museum specimens, south-east Australia.³⁴

Great-winged Petrel

Pterodroma macroptera (E, F)

Description: Completely dark except for some pale feathers around base of bill and throat (E, F). Bill black and stubby, over 16 mm deep, and strongly hooked (E). Tail long. Legs and feet black.

Measurements: Bill 36 (33–39); tarsus 44 (41–48); wing 318 (302–323); tail 125 (110–128); 29 live birds, Crozet and Kerguelen Islands.³⁵



Great-winged Petrel

Southern Fulmars, Antarctic Petrels, and Cape Petrels

Bird white and pale grey or distinctly patterned black or brown and white? – see B, D, F, G:

Yes – Southern Fulmar, Antarctic Petrel, and Cape Petrel – see below

No – go to Plate 16

Compare bird with description below:

- bird pale grey and white – see A and B
Southern Fulmar – see description below
- bird distinctly patterned black or brown and white
 - back black or brown and pattern, as in D
Antarctic Petrel – see description below
 - back chequered black and white, as in F and G
Cape Petrel – see description below

Southern Fulmar

Fulmarus glacialis (A, B)

Description: Silver-grey above and white below. Upperwing has a distinctive black and white pattern (see B). Bill pink and bluish-grey, with a dark tip (A).

Measurements: Bill 44 (41–48); tarsus 54 (50–58); wing 340 (325–360); tail 128 (115–139); 21 live birds, Adelle Land.³⁶

Antarctic Petrel

Thalassoica antarctica (C, D)

Description: Distinctly patterned. Upperparts dark brown except for white bars on wings, and white on tail (D). Underparts mostly white except for brownish chin and throat, and dark brown tip to tail. Underwing mostly white with broad dark brown leading edge. Bill dark brown or black (C).

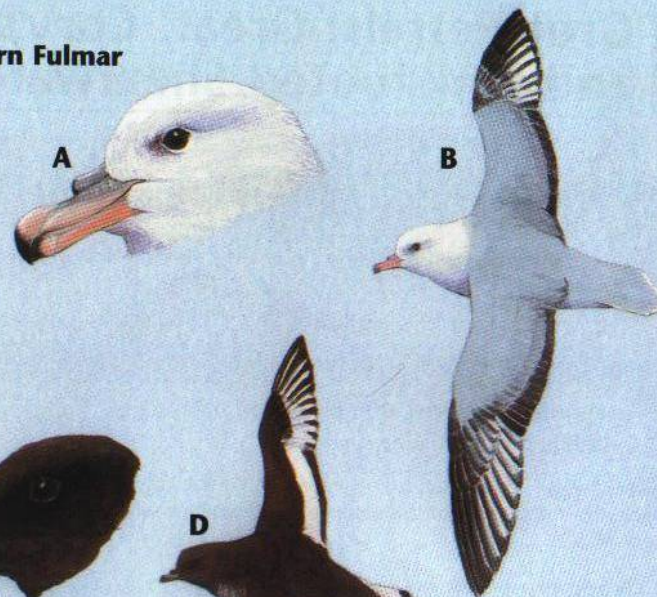
Measurements: Bill 37 (33–40); tarsus 45 (42–49); wing 312 (292–331); tail 118 (108–123); 24–44 specimens, various localities.³⁷

Cape Petrel

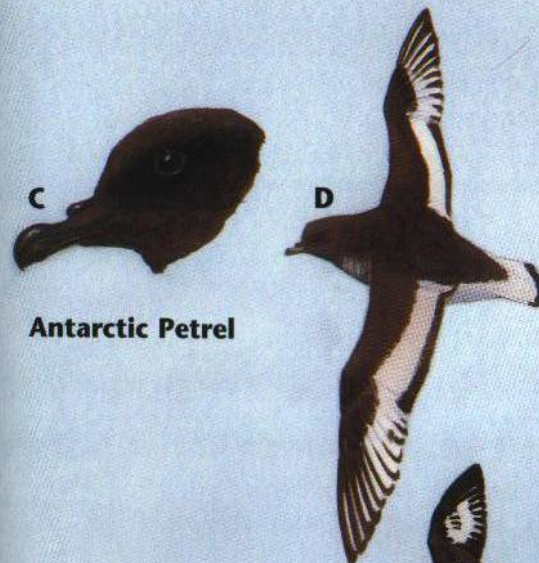
Daption capense (E–G)

Description: Head and neck black. Upperparts distinctly chequered black and white (G). Underparts mostly white except for blackish marks on chin and throat, and black tip to tail. Underwing white with black margins. Bill black (E). Two subspecies are recognised: Northern Cape Petrel (*D. c. australe*) (F) and Southern Cape Petrel (*D. c. capense*) (G). Northern Cape Petrels are darker.

Southern Fulmar



Antarctic Petrel



Cape Petrel



The upper back is black, the spots on lower back and rump larger, and white markings on upperwing smaller (F and G). Can be distinguished with practice.

Measurements: Bill 31 (29–34); tarsus 43 (39–47); wing 266 (257–278); tail 103 (91–110); 45 live birds (*D. c. capense*); South Orkney Islands.³⁸

Grey Petrels; Great, Cory's, and Pink-footed Shearwaters

Bird mainly dark above and white below? – see A–I:

Yes – Grey Petrel; Great, Cory's, and Pink-footed Shearwater – see below

No – go to Plate 17

Compare bird with descriptions below:

- underwings dark grey, as in B
Grey Petrel – see description over

Note: the pale underwings of the other birds on this page may appear darker when wet, especially if dark feathers of the upperwings become muddled with those of the underwings.

- brown patch on belly, as in C
Great Shearwater – see description over
- underwings mostly white and belly white, as in F and G
Cory's or *Pink-footed Shearwater*

To separate these species use the combination of features below:

- bill length usually more than 45 mm, bill colour yellowish, see E;
underwings and undertail almost completely white, see F
Cory's Shearwater – see description over
- bill length usually less than 45 mm, bill colour pinkish-yellow, see I;
brown markings on white underwings, dark undertail and brown barring
on flanks, especially in dark phase, see G and H
Pink-footed Shearwater – see description over

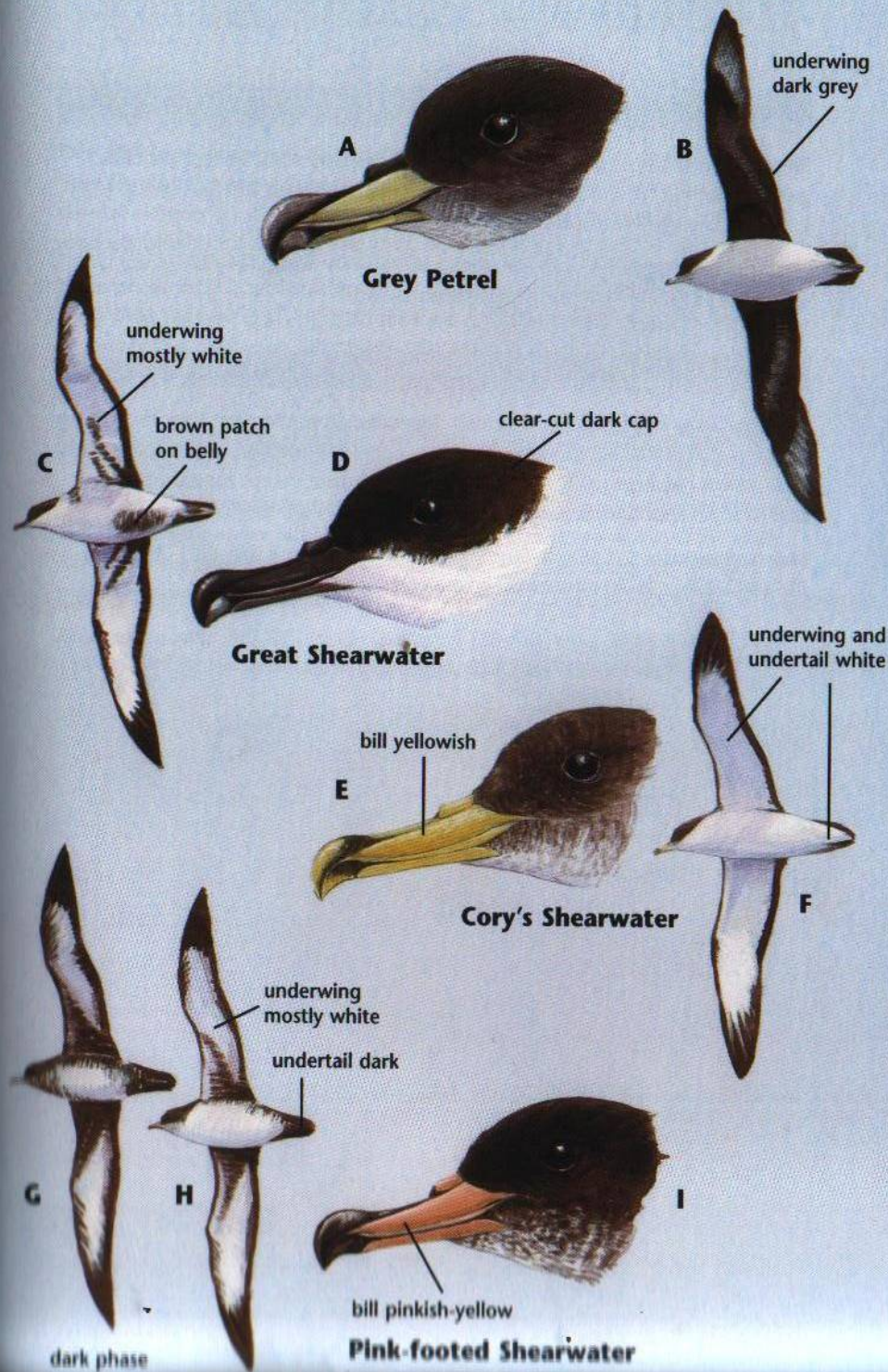


Plate 16

Grey Petrel

Procellaria cinerea (A, B)

Description: Upperparts greyish-brown, underparts white except for dark grey underwing (B). Bill pale yellowish-grey, dark grey on top and on tip (A). Legs and feet grey with paler webs.

Measurements: Bill 47 (42–50); tarsus 60 (56–63); wing 344 (327–358); tail 117 (113–123); 7–37 live birds, Kerguelen Island.³⁹

Great Shearwater

Puffinus gravis (C, D)

Description: Upperparts grey-brown, separated from clear cut dark brown cap by white collar (D). White crescent at base of tail. Underparts white except for dark brown patch on belly. Underwing mostly white except for dark margins and two irregular dark bars on inner wing (C). Bill dark grey.

Measurements: Bill 45 (43–50); tarsus 59 (57–63); wing 325 (301–348); tail 115 (109–126); 16–20 museum specimens, various localities.⁴⁰

Cory's Shearwater

Calonectris diomedea (E, F)

Description: Upperparts greyish-brown merging into white underparts. Variable white crescent at base of uppertail. Underwing white with dark narrow margins (F). Bill pale yellow, sometimes darker on tip. Two subspecies are recognised. *C. d. borealis* and *C. d. diomedea* differ mainly in size.

Measurements: *C. d. borealis*: Bill 57 (52–62); tarsus 59 (54–63); wing 367 (343–380); tail 140 (131–145); 13 museum specimens and 78 live birds, Salvage Islands.⁴¹ *C. d. diomedea*: Bill 49 (45–55); wing 343 (330–351); 14–33 museum specimens, various localities.⁴²

Pink-footed Shearwater

Puffinus creatopus (G, H, I)

Description: Upperparts grey-brown. Extent of white on underparts varies but always dark under tail and around feet (G, H). Underwing mostly white, with dark margins and variable dark markings on inner wing (G, H). Bill pinkish-yellow with dark tip (I).

Measurements: Bill 42 (41–46); tarsus 54 (50–56); wing 330 (318–337); tail 116 (114–122); 18–38 museum specimens, Chile and California.⁴³

Flesh-footed Shearwaters; Parkinson's and Westland Petrels

Bird completely black or dark brown, bill pale with dark tip? – see A, C, or E:

Yes – Flesh-footed Shearwater, Parkinson's, and Westland Petrels, see below

No – go to Plate 18

Compare foot colour:

- legs and feet pinkish, as in B
Flesh-footed Shearwater – see description below

- legs and feet black

measure bill and wing:

- bill shorter than 45 mm, wing shorter than 360 mm – see C, D
Parkinson's Petrel – see description below
- bill longer than 44 mm, wing longer than 360 mm – see E, F
Westland Petrel – see description below

Flesh-footed Shearwater *Puffinus carneipes* (A, B)

Description: Completely dark brown. Bill pale pink with a brownish tip, legs and feet pink.

Measurements: Bill 42 (37–49); tarsus 55 (52–58); wing 321 (309–335); tail 111 (106–120); 23 museum specimens, various localities.⁴⁴

Parkinson's Petrel *Procellaria parkinsoni* (C, D)

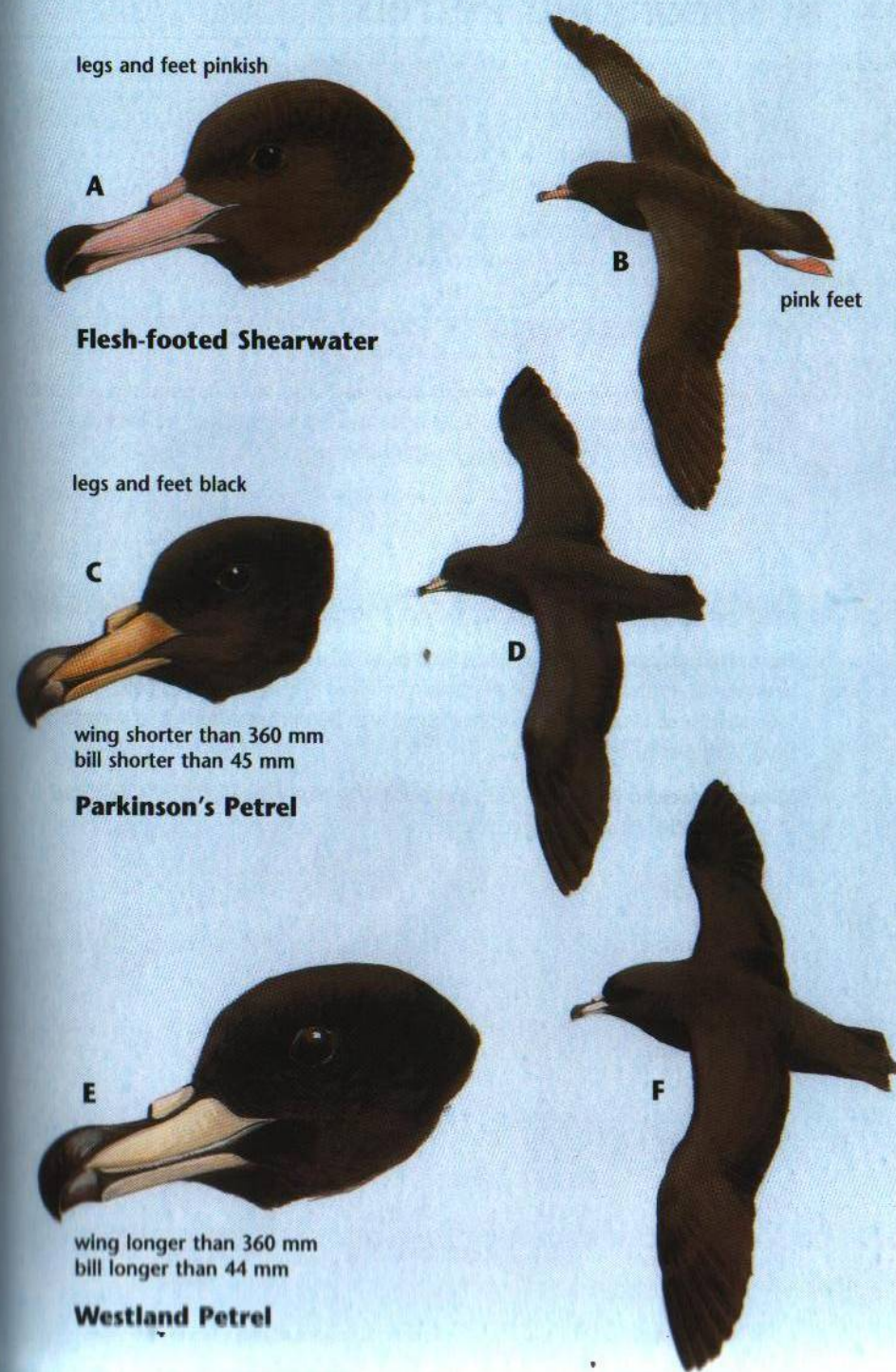
Description: Completely sooty or brownish-black (D). Legs and feet black. Bill pale with a darker tip (C), yellowish on sides in adults, bluish in juveniles. Looks very similar to Westland Petrel. Use measurements to distinguish the two (see key above).

Measurements: Bill 41 (39–44); tarsus 53 (49–55); wing 351 (348–357); tail 101 (93–106); 4–5 museum specimens, various localities.⁴⁵

Westland Petrel *Procellaria westlandica* (E, F)

Description: Completely sooty or brownish-black (F). Legs and feet black. Bill pale with a blackish tip (E), cream-coloured on sides in adult, paler and whiter in juveniles. Looks very similar to Parkinson's Petrel. Use measurements to distinguish the two (see key above).

Measurements: Bill 48 (45–49); tarsus 63 (58–67); wing 383 (362–400); tail 125 (122–129); 5–22 museum specimens.⁴⁶



White-chinned and Spectacled Petrels

Compare bird with description below:

- bill with pale tip, as in A, B, C
White-chinned Petrel – see description below
- bill with dark tip and face with white markings, as in E, F, and G
Spectacled Petrel – see description below

White-chinned Petrel *Procellaria aequinoctialis* (A–D)

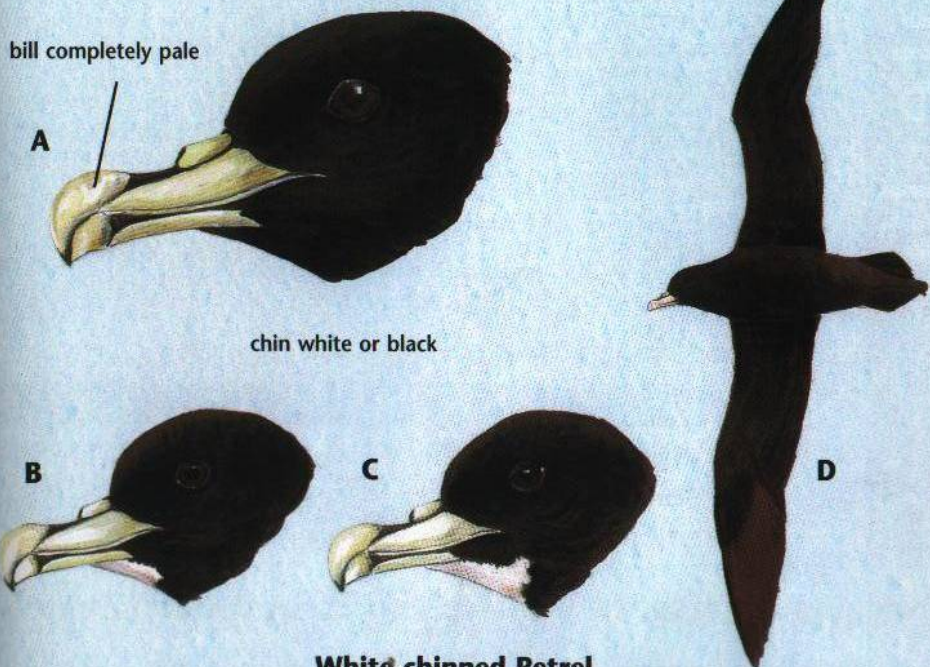
Description: Sooty black or brownish-black (D). Chin black (around ten per cent of the New Zealand population) (A), or with small patch of white feathers (B, C). Legs and feet black. Bill pale except for dark lines between bill plates (A–C).

Measurements: Bill 52 (47–56); tarsus 65 (61–70); wing 391 (371–415); tail 124 (113–134); 30–132 live birds, Crozet and South Georgia Islands.⁴⁷

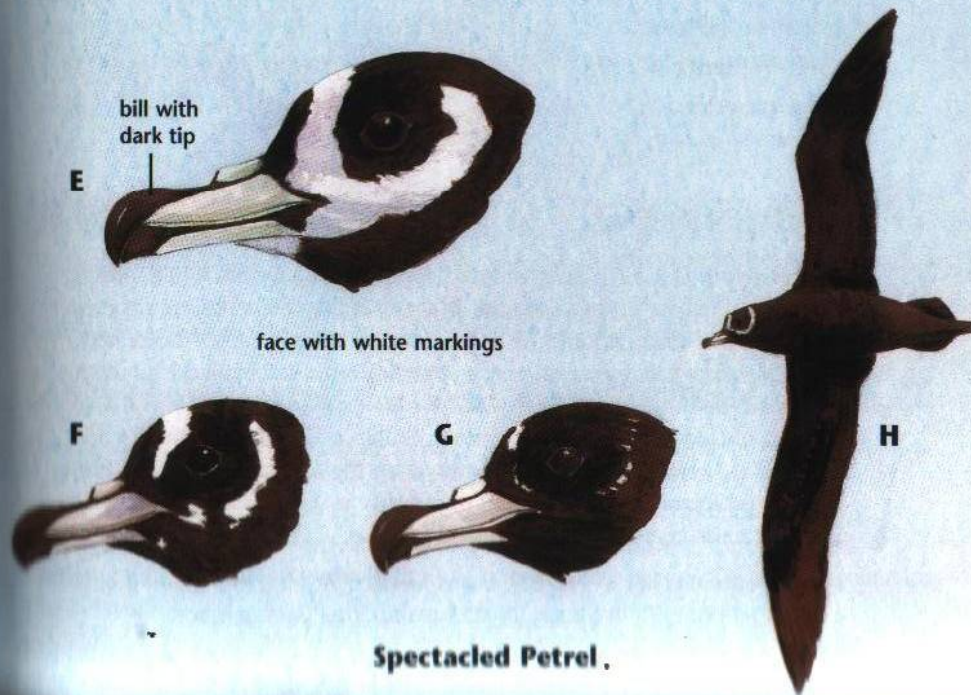
Spectacled Petrel *P. conspicillata* (E–H)

Description: Sooty black or brownish-black with variable white markings on head (E–G), typically forming a semicircle below the eye (G). Bill pale, often yellowish with a dark tip. Shorter winged and 20 per cent lighter in weight than White-chinned Petrels.⁴⁸

Measurements: Bill 51 (49–55); tarsus 62 (58–65); wing 350 (337–364); tail 118 (113–125); 10 skins, Inaccessible Island.⁴⁹



White-chinned Petrel



Spectacled Petrel

Skuas

Note: Skuas can be confused with juvenile Kelp Gulls. Check bill differences (compare Plate 19B and D with Plate 20B) and compare the flying skua (19A) with the flying gull (20A). Skuas have a white patch or flash on the wing at the base of the primaries, whereas juvenile Kelp Gulls do not.

Compare bill and plumage with description below:

- bill blue-grey with dark tip, as in B
Chilean Skua – see description below
- bill dark (see D), body paler than wings, similar to E and F
South Polar Skua – see description below
- bill dark (see D), and plumage brown, similar to G and H

measure bill, wing, tarsus, and mid-toe:

- bill longer than 54 mm and/or wing longer than 440 mm
Great Skua – see description below
- tarsus shorter than 62 mm and/or mid-toe shorter than 60 mm
South Polar Skua – see description below

Chilean Skua

Catharacta chilensis (B, C)

Description: Upperparts dark brown, spotted and streaked with lighter brown and grey. Dark brown cap on forehead and crown extends below eye. Underparts reddish-brown in adults (C), darker and brighter in juveniles. White patch at base of primaries on upper and underwing (A). Bill pale bluish-grey, darker at tip (B).⁵⁰

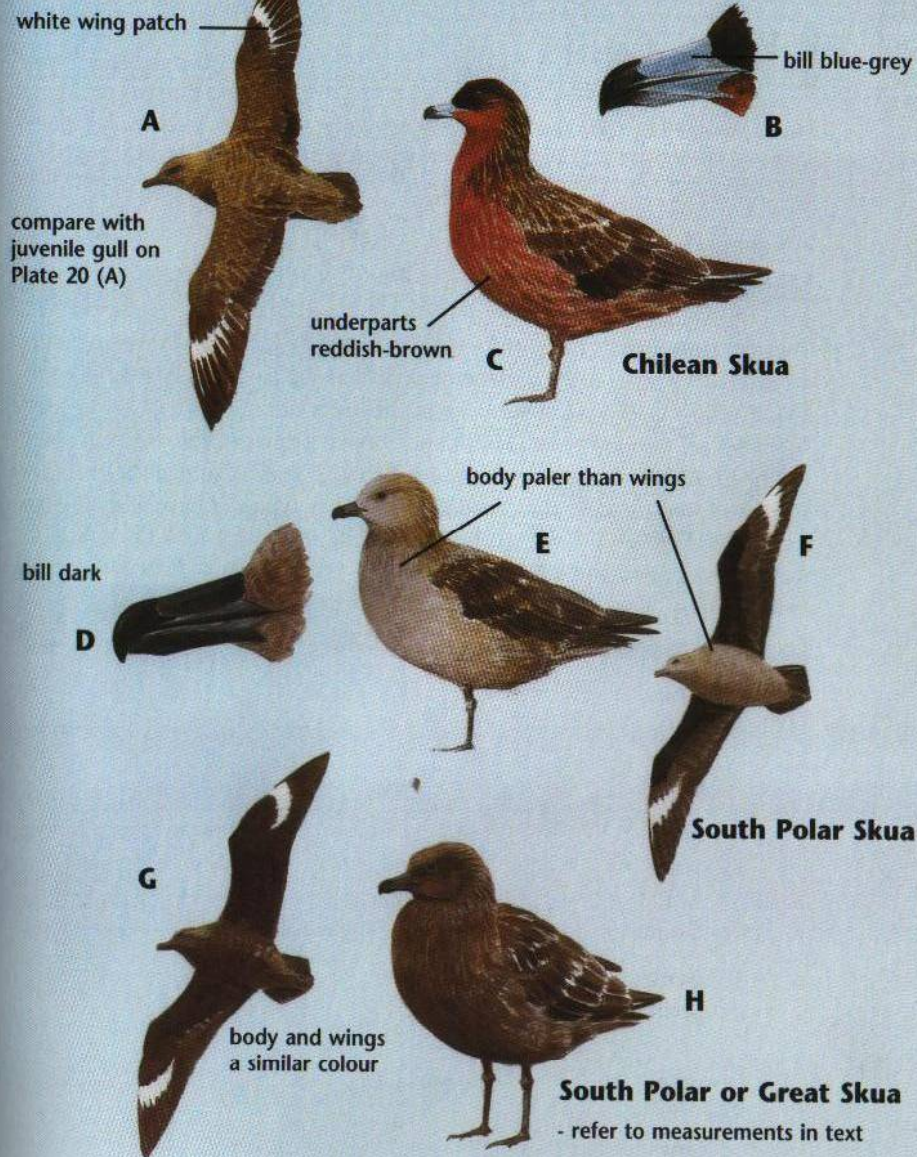
Measurements: Bill 48 (46–50); tarsus 69 (68–71); wing 394 (372–415); 13 museum specimens, various localities.⁵¹

South Polar Skua

Catharacta maccormicki (D–F)

Description: Occurs in light and dark forms. Both have black bills, white patches at the base of the primaries on upper and lower wings. Adults have a pale yellowish collar around the back of the neck. Light form – head, neck, and underparts pale brownish-grey contrasting with darker blackish-brown upperparts and underwing (E, F). Dark form – dark brown all over, variable amount of paler streaking and spotting, similar to G and H. A few all dark birds occur in most areas but predominate on the Antarctic Peninsula. Birds without noticeably paler heads and underparts are best separated from Great Skuas by measurements (see key above).

Measurements: Bill 47 (42–53); tarsus 64 (54–70); wing 402 (340–436); tail 146 (136–145); 8–77 live birds, Prydz Bay and King George Island.⁵²



Great Skua

Catharacta skua (D, G, H)

Description: Dark brown variably streaked and spotted with white or yellowish-brown (H). White patches at base of primaries on upper and underwings (G). Bill black (D). Adults have a yellowish gloss on feathers around back of neck. Young birds lack gloss on feathers on neck and many have smaller white patch on wing, especially on upperwing. Birds are best separated from dark form South Polar Skuas by measurements (see key above).

Measurements: Bill 55 (44–62); tarsus 76 (62–95); wing 416 (375–475); tail 158 (138–193); 57–158 museum specimens, various localities.⁵³

Kelp Gulls

Note: Juvenile Kelp Gulls can be confused with Skuas (Plate 19). Check the bill differences in 20B and 19B and D, and compare the flying birds in 20A and 19A. Juvenile Kelp Gulls do not have the white wing patch or flash at the base of the primaries that skuas have.

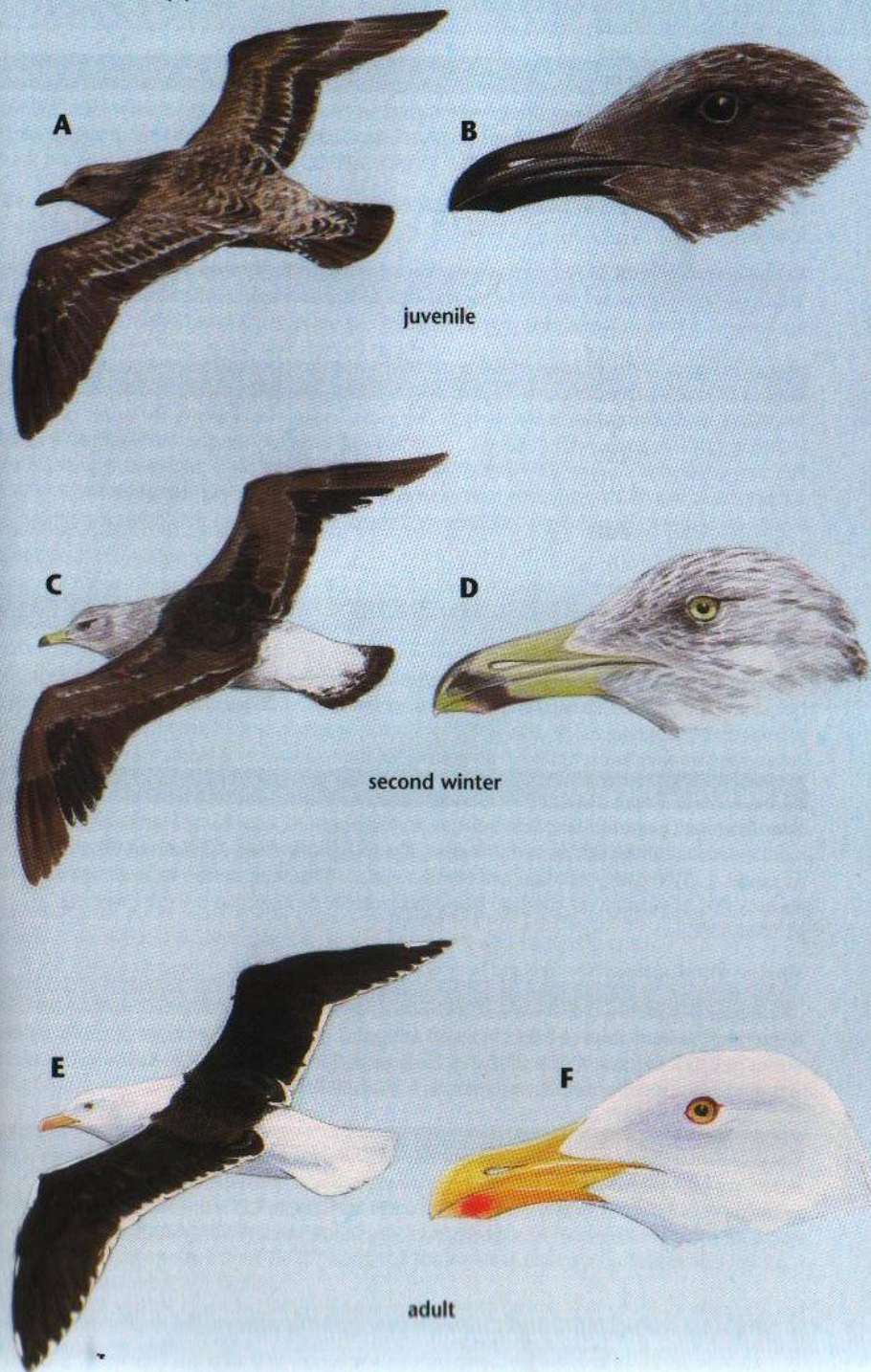
Kelp Gull

Larus dominicanus (A-F)

Description: Adults have white head, body, and tail, black upperwing with white trailing edge, white underwing with dark tip and trailing edge (E). Bill bright yellow with a red spot on tip of the lower mandible. Iris pale yellow (F). Juveniles are mottled brown with darker brown primaries and tail, and paler rump (A). Bill black or dark brown, eye dark (B). They acquire adult plumage in about three years. By their second winter they typically have white bodies with brown spots on the head and neck, white tail with a dark tip, and upperwings brown and black (C). Bill is pale yellow, usually with darker marks near the tip (D).

Measurements: Bill 48 (43-54); tarsus 63 (56-70); wing 392 (365-423); tail 154 (142-160); 8-15 birds, Marion Island.⁵⁴

compare with Skua
on Plate 19 (A)



juvenile

second winter

adult

Breeding, populations, distribution, and behaviour

Amsterdam Albatross

Diomedea amsterdamensis

Breeding and populations: Breeds every two years. Season February to January of the following year. Breeds only on Amsterdam Island, South Indian Ocean. Total population estimated at only 65 birds.⁵⁵ Most birds are banded. CRITICALLY ENDANGERED

Marine distribution: Rarely seen. May occur to the north and east of Amsterdam Island in all seasons.

Behaviour: Unpublished observations of a few at sea show that Amsterdam Albatrosses follow ships and are likely to feed around fishing boats in the eastern South Indian Ocean. Could become hooked on longlines. Information urgently needed.

Snowy Albatross

D. chionoptera

Breeding and populations: Breeds every two years. Season November to December of the following year. Breeds on South Georgia, Prince Edward, Crozet, Kerguelen, and Macquarie Islands. Breeding population about 21,000 birds.⁵⁶ Total population about twice the breeding population. All monitored breeding populations have decreased by more than 30 per cent since the 1960s. Deaths on Southern Bluefin Tuna longlines are thought to have caused the decline in numbers. VULNERABLE

Marine distribution: Widespread throughout the Southern Ocean as far north as 30° S in winter. Ranges up to 3,000 km from breeding islands on foraging trips, and in non-breeding years migrates to favoured feeding areas such as eastern Australia.⁵⁷

Behaviour: Follows ships and feeds around fishing boats throughout the Southern Ocean. Frequently caught on both Southern Bluefin Tuna and Patagonian Toothfish longlines in South Atlantic and Indian Ocean.

Wandering Albatross

D. exulans

Breeding and populations: Breeds every two years. Season December to February, fourteen months later. Breeds on Inaccessible (2–3 pairs), Gough (c. 1000 pairs), Auckland (6200 pairs), Antipodes (c. 5100 pairs), and Campbell Islands (3 pairs).⁵⁸ The total number of breeding birds is about 24,000. Population on Auckland Island has probably declined, but is stable elsewhere. VULNERABLE

Marine distribution: New Zealand birds occur in the South Pacific, Tristan da Cunha birds mostly in the South Atlantic and around Southern Africa.⁵⁹

Behaviour: Follows ships and fishing boats. Antipodes Islands birds are caught on SBT longlines east of New Zealand, and Auckland Islands birds are caught south of New Zealand and in eastern and southern Australian seas. No information is available for Tristan birds.

Southern Royal Albatross

D. epomophora

Breeding and populations: Breeds every two years. Season November to October of the following year. Breeds only in the New Zealand area on Campbell Island (7500 pairs) and the Auckland Islands (100 pairs). Populations are thought to be stable.⁶⁰ VULNERABLE

Marine distribution: Migratory. Commonest between 36–63° S, from south-east Australia across the Pacific to South America, and in the Atlantic off Argentina and over the Falklands/Malvinas Shelf. Ranges north to 18° S off the Chilean coast. Birds may return to New Zealand breeding areas through the South Atlantic and Indian Oceans.⁶¹

Behaviour: Prefers shelf waters, and often feeds around trawlers and longliners, especially south of Australia.⁶²

Northern Royal Albatross

D. sanfordi

Breeding and populations: Breeds every two years. Season November to September of the following year. Breeds only in the New Zealand region on the Chatham Islands (6500 pairs) and, since 1919, at Taiaroa Head, South Island, New Zealand (25 pairs). The populations are stable, but may decrease in the future because few chicks have fledged recently.⁶³ ENDANGERED

Marine distribution: Migratory. Commonest between 30° S and 52° S around New Zealand, South Africa, and South Australia, and in the south-west Atlantic off Argentina and the Falkland/Malvinas Islands.⁶⁴

Behaviour: Prefers continental shelf waters. Feeds around fishing boats. Probably caught on SBT longlines south of Australia.⁶⁵

Light-mantled Sooty Albatross

Phoebastria palpebrata

Breeding and populations: Breeds every two years. Season October to the following June. Breeds on South Georgia (5000–7500 pairs), Prince Edward (240 pairs), Crozet (2300 pairs), Kerguelen (3000–5000 pairs), Heard (200–500 pairs), Macquarie (1000 pairs), Campbell (c. 1000 pairs), Antipodes (c. 1000 pairs), and Auckland Islands (c. 5000 pairs). Total population over 120,000. Populations stable.⁶⁶ Fewer young birds are joining the breeding population on Macquarie Island and the population may decline in the future.⁶⁷ DATA DEFICIENT

Marine distribution: Circumpolar. In summer, most common from 52° S to pack ice. In winter, regularly occurs north to 40° S, and as far as 20° S off northern Chile. Breeding birds range several thousand kilometres from colonies on foraging trips. Prefers deep offshore waters.

Behaviour: Does not regularly follow ships or feed around fishing boats, but follows SBT longliners in winter and is often caught in Indian and south-west Pacific Oceans.

Sooty Albatross

P. fusca

Breeding and populations: Breeds every two years. Season October to the following June. Breeds on the Tristan da Cunha group (c. 2800 pairs), Gough (5000–10,000 pairs), Prince Edward (2750 pairs), Crozet (2300 pairs), Kerguelen (5 pairs), Amsterdam and St Paul Islands (100 pairs). Total population c. 75,000 birds. Between 1978 and 1987 the population on Possession Island (Crozet group) decreased by more than half. It is not known if this has happened elsewhere.⁶⁸ VULNERABLE

Marine distribution: Mostly in the southern Atlantic and Indian Oceans from 40° W, east to West Australia. In summer, commonest from 35–50° S but often to 64° S in the south-west Indian Ocean. In winter, commonest from 30–40° along the Subtropical Convergence. Prefers deep waters and is not usually found over shelves.

Behaviour: Sometimes follows ships and feeds around fishing boats. SBT longliners may catch large numbers in winter.⁷⁰

Yellow-nosed Albatross

Diomedea chlororhynchos

Breeding and populations: Breeds annually. Season September–March/April. Breeds on the Tristan da Cunha group (c. 30,000 pairs), Gough (5000–10,000 pairs), Prince Edward (7000 pairs), Crozet (4430 pairs), Kerguelen (50 pairs), Amsterdam and St Paul Islands (c. 37,000 pairs).⁷¹ Total population is about 120,000 in the Atlantic, and about 200,000 in the Indian Ocean. Atlantic populations have increased following declines caused by human exploitation on Tristan,⁷² but Indian Ocean populations are declining, probably due to deaths on SBT longlines.⁷³ VULNERABLE

Marine distribution: Southern Atlantic and Indian Oceans, and Tasman Sea. In summer mostly between 35–45° S, north to 15° S off West Africa, and occasionally as far south as 56° S. In winter immature Atlantic birds migrate to shelves off South America and West Africa, Indian Ocean birds to shelves off Australia and New Zealand. Adults migrate to the same areas in winter. Prefers Subtropical Convergence waters in summer and shelf areas in winter, and is found over warmer waters than other Southern Ocean albatrosses.

Behaviour: Feeds around trawlers and is frequently caught by longliners.⁷⁴

Buller's Albatross

D. bulleri

Breeding and populations: Breeds annually. Season October–May on Chatham Islands, January–August elsewhere. Breeds only in New Zealand area, on Snares (8500 pairs), Solander (4000 pairs), Chatham (18,000 pairs), and Three Kings Islands (15 pairs).⁷⁵ Total population over 120,000 birds, increasing on Snares by an average of 3 per cent per year.⁷⁶ VULNERABLE

Marine distribution: During breeding season in New Zealand and south-east Australian waters 38–50° S. Commonest over shelves. After breeding adults and juveniles migrate to west coasts of Peru and Chile, where immature birds may remain for up to five years. Rare in South Atlantic and not recorded in the Indian Ocean.

Behaviour: Feeds around trawlers and SBT longliners.⁷⁷ Killed by fishing gear and SBT longliners in NZ waters. No information from South America.

Grey-headed Albatross

D. chrysoloma

Breeding and populations: Breeds every two years. Season October to following May. Breeds on Diego Ramirez (Cape Horn, c. 17,000 pairs), South Georgia (81,000 pairs), Prince Edward (11,500 pairs), Crozet (10,100 pairs), Kerguelen (13,400 pairs), Macquarie (80 pairs), and Campbell Island (c. 15,000 pairs).⁷⁸ Total population is over 600,000 birds. All monitored populations are declining sharply. At South Georgia this is caused by low survival of immatures to breeding age, perhaps because they are killed on SBT longlines.⁷⁹ VULNERABLE

Marine distribution: Circumpolar in offshore waters; in summer 46–64° S, in winter 39–51° S. Breeding birds fly up to 2000 km south from breeding islands to the Polar Front.⁸⁰

Behaviour: Only feeds around fishing boats in large numbers in winter, when many immatures and some adults are killed on SBT and other longliners.⁸¹

Southern Black-browed Albatross

D. melanophrys

Breeding and populations: Breeds annually. Season October–April/May. Breeds on Cape Horn (20,000 pairs); Falkland/Malvinas (400,000 pairs); South Georgia (102,000 pairs); Crozet (1000 pairs); Kerguelen (3100 pairs); Heard (700 pairs); Macquarie (100 pairs), and Antipodes Islands (100 pairs).⁸² Total population of this species is about 2.5 million birds, making it more abundant than all other Southern Ocean albatrosses combined. Most monitored populations show declines of up to 3 per cent per year, mainly because of low survival of immatures to breeding age.⁸³ LOW RISK

Marine distribution: Circumpolar. In summer commonest over shelves between 40–55° S in the Atlantic and Indian Oceans, 40–70° S around Australia and New Zealand, and 56–70° S in the Pacific. In winter, north to 20° S off Brazil and the coasts of W and E Africa. In winter Falkland/Malvinas birds migrate to shelves around southern Africa and S America, S Georgia birds to southern Africa, and Indian Ocean birds to shelves off E Africa, Australia and NZ, north to 26° S. Very few remain over oceanic waters May–September.⁸⁴

Behaviour: Large numbers feed behind trawlers, and many birds are killed in trawl fisheries off South Africa and in the Indian Ocean, on bottom longlines in the Atlantic and Indian Oceans, and on SBT longlines in the Indian Ocean, Australia, and New Zealand.⁸⁵ One of the main species caught by Patagonian toothfish longliners in the South Atlantic.

Northern Black-browed Albatross

D. impavida

Breeding and populations: Breeds annually. Season August–April. Breeds only on Campbell Island, New Zealand (19,000–26,000 pairs), declining by more than 1 per cent per year.⁸⁶ VULNERABLE

Marine distribution: Confined to Pacific Ocean and seas around Australia. In summer 43–68° S; in winter migrates into subtropical waters mostly 24–48° S, east from Great Australian Bight to Pitcairn Island.⁸⁷

Behaviour: Feeds around trawlers, and many are caught on SBT longlines in Australian and New Zealand waters in winter.⁸⁸

Shy Albatross

D. cauta

Breeding and populations: Breeds annually. Season September–April. Breeds on Albatross Island, Pedra Branca, and Mewstone, Tasmania (7750 pairs), and on the Auckland Islands, on Disappointment, Adams, and the main island (65,200 pairs). Numbers stable or increasing.⁸⁹ VULNERABLE

Marine distribution: Adults mostly 36–52° S on Australian and New Zealand shelves throughout the year. Many adults from New Zealand migrate in winter to south-east Australia and, via the Indian Ocean, to southern Africa.⁹⁰ Immatures from New Zealand migrate to south-east Australian and southern African shelf waters, as do immatures from Mewstone, Tasmania. The first of these birds return to breed aged 5 years.⁹¹

Behaviour: One of the commonest albatrosses feeding behind trawlers around southern Africa,⁹² Tasmania,⁹³ and New Zealand.⁹⁴ Sometimes killed by trawl gear⁹⁵ and on SBT longlines south and east of New Zealand.⁹⁶

Salvin's Albatross

D. salvini

Breeding and populations: Breeds annually. Season October–April. Breeds on Crozet (4 pairs), Snares (650 pairs), and Bounty Islands (76,000 pairs).⁹⁷ VULNERABLE

Marine distribution: Adults mostly 38°–50° S over shelves east of New Zealand, with fewer in the Tasman Sea. After fledging juveniles migrate to the Humboldt Current between 14–38° S, where they are the second most abundant albatross.⁹⁸ The small population in the Indian Ocean is concentrated over shelves and seamounts.⁹⁹

Behaviour: Commonly feed around trawlers. Caught on SBT longlines around NZ in winter. Little information from elsewhere.

Chatham Island Albatross

D. eremita

Breeding and populations: Breeds annually. Season September–April. Breeds only on Pyramid Rock, Chatham Islands, NZ (3200 pairs). Population apparently stable.¹⁰⁰ CRITICALLY ENDANGERED

Marine distribution: Adults mostly 38–48° S, east of New Zealand. Rare in the Tasman Sea. Juveniles migrate after fledging to Peru and Ecuador, where they apparently remain until breeding age.

Behaviour: Follows trawlers and SBT longliners, with some deaths in both fisheries.¹⁰¹ Also caught by local fishermen in eastern Pacific near Easter Island.¹⁰²

Northern Giant Petrel

Macronectes halli

Breeding and populations: Breeds annually. Season August/October–February/March. Breeds on South Georgia (3000 pairs); Prince Edward (500 pairs); Crozet (1300 pairs); Kerguelen (1800 pairs); Macquarie (500 pairs); Campbell, Antipodes, Auckland, and Chatham Islands (1–5000 pairs).¹⁰³ The total population of around 40,000 birds appears to be decreasing. VULNERABLE

Marine distribution: Circumpolar, mostly 40–64° S in summer but north to 37° S off South American coasts. In winter mostly 25–45° S. Juveniles disperse rapidly and widely from breeding sites. South Georgian birds migrate to Australia and South America, and Indian Ocean birds to southern Africa.¹⁰⁴

Behaviour: Feeds around fishing vessels. Some deaths on SBT longlines, but rate of capture low.¹⁰⁵

Southern Giant Petrel

M. giganteus

Breeding and populations: Breeds annually. Season September–March at northern colonies; November–May in Antarctica. Breeds in small colonies on rocky coasts of Antarctica (total 1400 pairs); otherwise principally on Falkland/Malvinas (3200 pairs), South Shetland (6185 pairs), South Orkney (8755 pairs), South Sandwich (800 pairs); South Georgia (5000 pairs), Prince Edward (1747 pairs), Crozet (1017 pairs), Heard (2350 pairs), and Macquarie Islands (1000 pairs).¹⁰⁶ The total population is about 150,000 birds, three times more than Northern Giant Petrels. Many colonies have decreased or disappeared since the 1950s, possibly as a result of human disturbance at breeding colonies and deaths on longlines. VULNERABLE

Marine distribution: Circumpolar; in summer adults mostly in Antarctic waters 60–63° S and in subantarctic waters around breeding islands, and north to 38° S off South America and New Zealand. In winter some adults remain in Antarctic waters but most others range north to 20° S. After fledging juvenile birds disperse eastwards throughout the Southern Ocean and even into the tropics. Immatures appear to be commonest on Argentine, S African, Australian, and New Zealand shelves, and in the Ross Sea.¹⁰⁷

Behaviour: Regularly follows ships and feeds from trawlers. Some are killed by SBT longliners, but rate of capture low.¹⁰⁸

Sooty Shearwater

Puffinus griseus

Breeding and populations: Breeds annually. Season November–April. Main breeding area is in New Zealand region, on offshore islands (>2 million pairs) and Snares Islands (2.75 million pairs). Also on Campbell, Auckland (1000 pairs), Falkland/Malvinas (10,000 pairs), and Macquarie (1800 pairs) Islands; and on islands of S Chile and Cape Horn (>10,000 pairs), New South Wales (300 pairs), and Tasmania (>1000 pairs).¹⁰⁹ Total population at least 23 million. Populations apparently stable or increasing in New Zealand area. LOW RISK

Marine distribution: In summer mostly in seas around New Zealand, south-eastern Australia, and South America from 34–67° S, commonest over shelves where feeding flocks of over 20,000 occur. In autumn move into the Pacific as far north as 5° S off Ecuador, into the south-east Indian Ocean as far west as 60° E, and as far north as the Kerguelen Islands (49° S). In winter most birds migrate to the

north Pacific and North Atlantic Oceans. On return migration in spring, common north of 45° S off Argentina and Africa. A few birds occur throughout the Southern Ocean in all months of the year.

Behaviour: In recent years sometimes follows ships and feeds around trawlers. Frequently dives to depths of 40–67 m.¹¹⁰ Many birds are killed in drift-nets, and some are killed on SBT and other longlines.

Short-tailed Shearwater

P. tenuirostris

Breeding and populations: Breeds annually. Season November–April on many islands off the Australian coast, mainly in the south-east; Tasmania (6.8 million pairs); Victoria (2.2 million pairs); New South Wales (24,000 pairs). Total population over 23 million birds. Numbers apparently stable or increasing.¹¹¹ LOW RISK

Marine distribution: In summer and autumn south of Australia to 65° S and through the South Indian Ocean west to 60° E. In winter most migrate to the North Pacific.

Behaviour: Sometimes feeds around trawlers. Many are killed in North Pacific drift-net fisheries.

Great-winged Petrel

Pterodroma macroptera

Breeding and populations: Breeds annually in winter. Season May/June–October/November in the South Atlantic and Indian Oceans, and July–December in New Zealand. Breeds on Tristan da Cunha (1–3000 pairs), Gough (>100,000 pairs), Prince Edward (>10,000 pairs), Crozet (c. 100,000 pairs), Kerguelen Islands (c. 200,000 pairs), and on islands off West Australia (c. 20,000 pairs), and northern New Zealand (c. 100,000 pairs).¹¹² Numbers stable or increasing. LOW RISK

Marine distribution: Mostly 27–50° S in south-east Atlantic from 20° W, east across the Indian Ocean, and into the south-west Pacific Ocean as far as 130° W (Pitcairn Island). Usually in offshore waters, not migratory but ranges very widely from breeding islands.¹¹³

Behaviour: Sometimes follows ships and occasionally feeds around fishing boats. Caught on SBT and other longlines off northern New Zealand and Australia. Dives for longline baits and brings them to the surface, where they are more accessible to albatrosses.¹¹⁴

Southern Fulmar

Fulmarus glacialisoides

Breeding and populations: Breeds annually. Season December–April. Breeds on Antarctic Peninsula (100–1,000 pairs), on coasts and offshore islands of East Antarctica 50–145° E (many thousand pairs); and on South Shetland (71,000 pairs), South Orkney (100,000–1 million pairs), South Sandwich (1 million pairs), Bouvet, Balleny, and Peter 1st Islands (few). Populations apparently stable.¹¹⁵ LOW RISK

Marine distribution: Circumpolar. In summer concentrated within a few hundred kilometres of breeding grounds. Commonest at edge of pack ice and in iceberg belt north to 60° S, but regularly ranges north to 50° S. In winter disperses north to 40° S, but regularly to 30° S on shelves off Argentina¹¹⁶ and even to the equator in the Humboldt Current. Immature birds reach S Africa, Australia, and New Zealand, rarely as far north as 30° S.¹¹⁷

Behaviour: Commonly feeds around whaling and fishing boats in the Southern Ocean. No reports of deaths caused by fishing gear but the related Northern Fulmar is the most abundant species caught on bottom longlines in the Bering and Barents Seas.

Antarctic Petrel

Thalassoica antarctica

Breeding and populations: Breeds annually. Season November–February. Breeds on Antarctic coast, inshore islands, and inland escarpments, from margin of Weddell Sea west to eastern margin of Ross Sea (estimate 400,000 pairs). No confirmed breeding on Antarctic Peninsula or on oceanic Antarctic islands. Populations stable.¹¹⁸ LOW RISK

Marine distribution: Circumpolar. In summer mostly in pack-ice and iceberg belt south of 62° S, but regularly north to 56° S in Scotia Sea. In winter some stay near the ice edge, but most cross the Polar Front north to 48° S. Immature birds infrequently reach 36° S around Australia and New Zealand. Prefers open water near ice rather than the ice itself.¹¹⁹

Behaviour: No information on captures on fishing gear. Old reports of large numbers feeding around whaling ships.¹²⁰

Cape Petrel

Daption capense

Breeding and populations: Breeds annually. Season November–March. *D. c. capense* breeds on Antarctic coast and islands from Antarctic Peninsula to 142° E near Commonwealth Bay (>6000 pairs), South Shetland (c. 60,000 pairs), South Orkney (10,000–100,000 pairs), South Georgia (20,000 pairs), South Sandwich (10,000–100,000 pairs), Bouvet, Crozet (c. 400 pairs), Kerguelen (3000–5000 pairs), and Heard Islands. *D. c. australe* breeds on Campbell, Auckland, Snares, Antipodes, and Bounty Islands (5000–10,000 pairs). Populations are believed to be stable.¹²¹ LOW RISK

Marine distribution: Circumpolar. In summer mostly Antarctic waters 60–63° S, shelf areas near breeding islands and around New Zealand, and north to 51° S in South Atlantic. In winter from ice edge north to 24° S but to 15° S off West Africa, and to the equator in eastern tropical Pacific. Most common on shelves, especially off Argentina, south-west Africa, Australia, and New Zealand.¹²²

Behaviour: Regularly follows ships and feeds around whaling and fishing boats. Occasionally caught on SBT longlines around New Zealand¹²³ and on toothfish longlines around South Georgia.¹²⁴

Grey Petrel

Procellaria cinerea

Breeding and populations: Breeds annually in winter. Season March–November.¹²⁵ Breeds on Tristan da Cunha (50–100 pairs), Gough (possibly 100,000 pairs), Prince Edward (1000 pairs), Crozet (1000 pairs), Kerguelen (5000–10,000 pairs), Amsterdam (few), Campbell, and Antipodes Islands (10–50,000 pairs).¹²⁶ Exterminated by cats and rats on Macquarie Island and Hog Island, Crozet. Populations greatly reduced by cats and rats on Amsterdam, Marion, Possession, and Campbell Islands. No other information on population trends.¹²⁷ VULNERABLE

Marine distribution: Circumpolar throughout the year. Usually 32–58° S but slightly further south to 62° S in Indian and Pacific Oceans. In winter north to 20° S in South Atlantic and Indian Oceans. Favours deep ocean basins and generally avoids shelves, except near breeding islands and off Argentina in autumn.¹²⁸

Behaviour: Follows ships and feeds around fishing boats. Most frequently caught seabird on SBT longlines around New Zealand in winter, 1989–97.¹²⁹

Great Shearwater

Puffinus gravis

Breeding and populations: Breeds annually. Season November–April. Breeds in the Tristan da Cunha group (5 million pairs), on Gough (600,000–3 million pairs), and the Falkland/Malvinas Islands (100 pairs).¹³⁰ Populations are apparently stable.¹³¹ LOW RISK

Marine distribution: In summer mostly in South Atlantic 38–52° S, but a few north to 32° S off Brazil and south to 55° S. Smaller numbers occur regularly around southern Africa to 54° S, and east in a band from 39–45° S into the Indian Ocean as far as 65° E near Kerguelen Island. In winter most migrate to North Atlantic, but a few stay in the south throughout the year.¹³²

Behaviour: Follows ships and feeds around trawlers and fishing boats.¹³³

Cory's Shearwater

Calonectris diomedea

Breeding and populations: Breeds annually in the northern summer. Season May–November. Two subspecies. *C. d. borealis* breeds on Azores (50,000–90,000 pairs),¹³⁴ Madeira, Salvage (13,000 pairs; Mougou and others, 1996), Canary Islands (1000s pairs), Berlengas Islands. *C. d. diomedea* breeds on islands throughout the Mediterranean Sea (>26,000 pairs).¹³⁵ Has increased rapidly on several islands.¹³⁶ LOW RISK

Marine distribution: Breeds in northern hemisphere and migrates south. *C. d. diomedea* breeds in the Mediterranean and migrates along the west African coast into southern African waters. From November to May occurs off southern Africa between 24–40° S. *C. d. borealis* breeds on eastern Atlantic islands and migrates along the eastern coast of South America and across into the Indian Ocean. From November to May occurs in the south-west Atlantic to 48° S. From December–March also across the south-west Indian Ocean in a band between 34–42° S as far east as Amsterdam Island (77° E). Both subspecies prefer shelf waters and fronts.

Behaviour: Follows ships and feeds around trawlers.¹³⁷

Pink-footed Shearwater

Puffinus creatopus

Breeding and populations: Probably breeds annually. Season November–April on Mas Atierra (a few thousand pairs) and Santa Clara Islands (300 pairs), Juan Fernandez group, and Mocha Islands (25,000 pairs), southern Chile.¹³⁸ Numbers have declined by 40 per cent in recent years.¹³⁹ ENDANGERED

Marine distribution: In summer in the Pacific Ocean off the west coast of S America, to at least 44° S off Chile. In winter migrates to eastern North Pacific, as far north as the Gulf of Alaska, but a few remain off Chile all year.¹⁴⁰

Behaviour: Feeds around trawlers. Probably caught on bottom longlines throughout range.

Flesh-footed Shearwater

P. carneipes

Breeding and populations: Breeds annually. Season November–April. Breeds on St Paul Island (600 pairs), Indian Ocean; Lord Howe Island (20,000–40,000 pairs), Tasman Sea; and on many islands off the coasts of southern Australia (100–200,000 pairs),¹⁴¹ and northern New Zealand (perhaps 70,000 pairs).¹⁴² No information on population trends. VULNERABLE

Marine distribution: In summer mostly 30–40° S in the Indian Ocean and south-west Pacific, but regularly north to 25° S around Australia, and south to 44° S around New Zealand. Mostly over shelves and slopes. In winter Australian and St Paul Island populations migrate into North Indian Ocean and Arabian Sea, and New Zealand populations migrate into North Pacific and Sea of Okhotsk.¹⁴³

Behaviour: Commonly feeds around fishing boats. Dives well and is often hooked on bottom and SBT longlines off northern New Zealand and Australia.¹⁴⁴ Also killed in North Pacific drift-net fisheries.

Parkinson's Petrel

Procellaria parkinsoni

Breeding and populations: Breeds annually. Season November–June. Previously bred on New Zealand mainland, in widespread mountain colonies between 35–43° S, until exterminated by predators. Now breeds only on the New Zealand offshore islands of Little Barrier (100 pairs) and Great Barrier (1000 pairs). The population on Little Barrier Island probably decreased by 70 per cent from 1971–81 as a result of cat predation. The cats have now been eradicated, and the population is thought to be stable.¹⁴⁵ VULNERABLE

Marine distribution: Migratory. In summer in south-west Pacific 30–42° S, from coast of New South Wales east to 175° W. In winter in eastern tropical Pacific 14° N–5° S, and from 110° W to the Central American coast.¹⁴⁶

Behaviour: Follows ships and feeds around fishing boats. Caught on SBT and probably bottom longlines in northern New Zealand.¹⁴⁷ Probably also caught off Central America.

Westland Petrel

P. westlandica

Breeding and populations: Breeds annually in winter. Season May–November. Breeds on New Zealand mainland at Punakaiki 42° S, West Coast of South Island (c. 3300 pairs). The population is estimated to have increased by 4 per cent per year since 1956.¹⁴⁸ VULNERABLE

Marine distribution: From April–November 38–47° S in New Zealand shelf waters and 33–45° S in Tasman Sea east of Australian coast. November–April migrates across Pacific; immatures north to 16° S in Humboldt Current, and adults south to Cape Horn (55° S).

Behaviour: Follows fishing boats, feeds around trawlers, and is sometimes caught on SBT longlines.¹⁴⁹

White-chinned Petrel

P. aequinoctialis

Breeding and populations: Breeds annually. Season November–May. Breeds on Falkland/Malvinas (>100 pairs), Gough (few); South Georgia (2 million pairs), Prince Edward (>10,000 pairs), Crozet (>100,000 pairs), Kerguelen (>100,000 pairs), Campbell, Antipodes, and Auckland Islands (c. 50,000 pairs).¹⁵⁰ No information on population trends. VULNERABLE

Marine distribution: Circumpolar in summer, mostly 40–65° S, but non-breeders occur further north in Humboldt and Benguela Currents. In winter most South Atlantic birds migrate to shelf and slope waters off southern Africa and South America, north to 6° S in the Humboldt Current and to 20° S off Brazil. Indian Ocean birds migrate to shelf waters off southern Africa,¹⁵¹ north to 15° S in the Benguela Current. New Zealand birds disperse north to Australian and New Zealand shelves.¹⁵² One of the few species commonly found over both shelves and deep ocean basins.

Behaviour: Large numbers feed around fishing boats. Dives regularly to depths of 3–13 m.¹⁵³ Probably the species most frequently killed on longlines in the south Atlantic, around southern Africa, and in the western Indian Ocean. Also caught in drift-nets in the Tasman Sea.

Spectacled Petrel

P. conspicillata

Breeding and populations: Breeds annually. Season October–April.¹⁵⁴ Breeds only on Inaccessible Island, Tristan da Cunha group (1000 pairs).¹⁵⁵ The rarest seabird in the South Atlantic. CRITICALLY ENDANGERED

Marine distribution: September–November mostly found within 500 miles of Inaccessible Island (37°17' S; 12°45' W). Also over deep waters east of Buenos Aires, from 40° W to Cape Town.¹⁵⁶ In April–May only south of Gough Island, towards Cape Town, and east of Buenos Aires,¹⁵⁷ although birds that are probably non-breeders are moulting ashore on Inaccessible Island.¹⁵⁸ In June–July widespread from Inaccessible Island to Brazil.¹⁵⁹ Occur over deep water in all seasons but non-breeders present on Brazilian shelf and shelf-break throughout much of the year.¹⁶⁰

Behaviour: Feeds around trawlers.¹⁶¹ High numbers are caught on tuna longlines off Brazil.¹⁶²

Chilean Skua

Catharacta chilensis

Breeding and populations: Breeds annually in colonies. Season November–February. Breeds on Chilean coast and inshore islands from Valdivia (40° S) to Cape Horn; and on islands and possibly headlands of Patagonian coast south from Puerto Deseado (47° S) to Puerto Santa Cruz (50° S). No information on population sizes or trends.¹⁶³ DATA DEFICIENT

Marine distribution: Little known. In summer close to breeding areas and east to the Falkland/Malvinas Islands. In winter off the west coast of S America north to at least 14° S at Pisco Bay, Peru,¹⁶⁴ and off the east coast to 22° S at Rio, Brazil.¹⁶⁵

Behaviour: Scavenger. Probably feeds around fishing boats off South American coasts. No information on captures in fishing gear.

South Polar Skua

Catharacta maccormicki

Breeding and populations: Breeds annually. Season November–March. Breeds on Antarctic coasts, nearby islands, and up to 150 miles inland. Many thousands of pairs in total. Generally increasing.¹⁶⁶ LOW RISK

Marine distribution: Circumpolar in summer. Mostly around pack-ice except for a few non-breeders around Australia and New Zealand. In winter migrates to North Atlantic, North Indian, and North Pacific Oceans.

Behaviour: Approach ships and feed around trawlers. No information on captures in fishing gear.

Great Skua

Catharacta skua

Breeding and populations: Breeds annually. Season mostly November–March. Breeds on Antarctic Peninsula (150 pairs), South Shetland (450 pairs), South Orkney (300 pairs), South Georgia (c. 1000 pairs), South Sandwich (100 pairs), Tristan da Cunha group (c. 400 pairs; Richardson, 1984), Gough (2000–3000 pairs; Swales, 1965), Bouvet (10s pairs), Prince Edward (960 pairs), Crozet (c. 600 pairs), Amsterdam and St Paul, Kerguelen (2000–4000 pairs), Heard (100 pairs), Macquarie (550 pairs), Campbell (100 pairs), Auckland (100 pairs), Snares (83 pairs), Stewart Island area (25 pairs), Antipodes (100 pairs), and Chatham Islands (80 pairs). The total Southern Ocean population of Great skuas is probably about 40,000 birds. Populations are stable or increasing.¹⁶⁷ LOW RISK

Marine distribution: Circumpolar. In summer south of 35° S to ice edge.¹⁶⁸ In winter most birds from Antarctic and subantarctic breeding colonies migrate to shelf waters off South America, South Africa, and Australia from 30–60° S. Birds stay at temperate breeding colonies all year. Eighty per cent of Australian records are over shelf and slope waters, 20 per cent over deep ocean basins.¹⁶⁹

Behaviour: Scavenger and predator at petrel, penguin, and seal colonies. Also feeds around trawlers. In winter, feeds mainly at sea. Occasionally killed on SBT longlines.

Kelp Gull

Larus dominicanus

Breeding and populations: Breeds annually. Season mostly November–February. Breeds on South American coasts and inshore islands from Cape Horn north to 6° S (northern Peru) on the west coast, and to 22° S (near Rio de Janeiro) on the east coast; on the Antarctic Peninsula, South Shetland (2100 pairs), South Orkney (500 pairs), South Georgia (750 pairs), and South Sandwich Islands (100 pairs). Also southern Africa from Namibia (18° S) to Port Elizabeth; Prince Edward (230 pairs), Crozet (c. 800 pairs), Kerguelen (4000–8000 pairs), and Heard Islands (>100 pairs); and around south-eastern Australia (>5000 pairs); Macquarie (50–100 pairs), Campbell, Auckland, Antipodes, Bounty, and Chatham Islands, and New Zealand. Populations close to human habitation have increased greatly.¹⁷⁰ LOW RISK

Marine distribution: Very few in open oceans.¹⁷¹ Some feed on well-established offshore trawling grounds¹⁷² but most stay within 12 miles of the shore throughout the year.¹⁷³ In winter most antarctic breeding birds migrate to shelf waters off South America.¹⁷⁴

Behaviour: Feeds around trawlers. No information on captures on fishing gear.

Notes

- ¹ Reviewed by Gales, 1993.
- ² Alexander and others, 1997.
- ³ For instance, Alexander and others, 1997; Robertson and Nunn, in press.
- ⁴ Collar and others, 1994.
- ⁵ For albatrosses the updated threat classification follows Croxall and Gales, in press; and for other species the authors have updated the list of Collar and others, 1994, in the light of the new published and unpublished reports cited.
- ⁶ *Checklist of Birds of the World*, edited by Mayr and Cottrell, 1979.
- ⁷ Devillers, 1978.
- ⁸ Alexander and others, 1997.
- ⁹ Jouventin and others, 1989.
- ¹⁰ Weimerskirch and others, 1997.
- ¹¹ Tomkins 1984; Marchant and Higgins, 1990.
- ¹² Tickell, 1968; Tomkins, 1984.
- ¹³ Robertson and Warham, 1994, and unpublished data.
- ¹⁴ Murphy, 1936; Hagen, 1952; Swales, 1965.
- ¹⁵ Bourne, 1989.
- ¹⁶ Westerskov, 1960; Tennyson, unpubl. data.
- ¹⁷ Richdale, 1942.
- ¹⁸ Marchant and Higgins, 1990.
- ¹⁹ Berruti, 1979.
- ²⁰ Brooke and others, 1980.
- ²¹ Marchant and Higgins, 1990.
- ²² Ibid.
- ²³ Ibid.
- ²⁴ Ibid.
- ²⁵ Ibid.
- ²⁶ Robertson and van Tets, 1982.
- ²⁷ Robertson, in Marchant and Higgins, 1990.
- ²⁸ Details appear in Prince and others, 1994.
- ²⁹ Ibid.
- ³⁰ Hunter, 1984.
- ³¹ Marchant and Higgins, 1990.
- ³² Ibid.
- ³³ Ibid.
- ³⁴ Ibid.
- ³⁵ Ibid.
- ³⁶ Ibid.
- ³⁷ Serventy and others, 1971; Marchant and Higgins, 1990.
- ³⁸ Marchant and Higgins, 1990.
- ³⁹ Ibid.
- ⁴⁰ Ibid.
- ⁴¹ Data from Marchant and Higgins, 1990.
- ⁴² Cramp and Simmons, 1977.
- ⁴³ Marchant and Higgins, 1990.
- ⁴⁴ Ibid.
- ⁴⁵ Ibid.
- ⁴⁶ Ibid.
- ⁴⁷ Ibid.
- ⁴⁸ Hall, 1987.
- ⁴⁹ Rowan and others, 1951; Hagen, 1952.
- ⁵⁰ Devillers, 1978.
- ⁵¹ Ibid.
- ⁵² Higgins and Davies, 1996.
- ⁵³ Ibid.
- ⁵⁴ Data from Higgins and Davies, 1996.
- ⁵⁵ Marchant and Higgins, 1990.
- ⁵⁶ Calculated from Gales, 1993.
- ⁵⁷ Banding data, Marchant and Higgins, 1990.
- ⁵⁸ Data from Gales, 1993 and G. Taylor, Department of Conservation, New Zealand.
- ⁵⁹ Marchant and Higgins, 1990.
- ⁶⁰ Gales, 1993.
- ⁶¹ Robertson and Kinsky, 1972; Marchant and Higgins, 1990.
- ⁶² Bartle, 1974; Gales, 1993.
- ⁶³ Gales, 1993.
- ⁶⁴ Marchant and Higgins, 1990.
- ⁶⁵ T. Reid, pers. comm.
- ⁶⁶ Gales, 1993.
- ⁶⁷ K. Kerry, pers. comm.
- ⁶⁸ Data from Gales, 1993.
- ⁶⁹ Data from Marchant and Higgins, 1990.
- ⁷⁰ Gales, 1993.
- ⁷¹ Data from Gales, 1993.
- ⁷² Gales, 1993.
- ⁷³ H. Weimerskirch, pers. comm.
- ⁷⁴ Gales, 1993.
- ⁷⁵ Gales, 1993.
- ⁷⁶ Sagar and others, 1994.
- ⁷⁷ Bartle, 1974; Petyt, 1995.
- ⁷⁸ Data from Gales, 1993.
- ⁷⁹ Prince and others, 1994.
- ⁸⁰ Rodhouse and others, 1996.
- ⁸¹ Gales, 1993.
- ⁸² Data from Gales, 1993.
- ⁸³ Gales, 1993; Prince and others, 1994.
- ⁸⁴ Marchant and Higgins, 1990.
- ⁸⁵ Gales, 1993.
- ⁸⁶ Ibid.
- ⁸⁷ Marchant and Higgins, 1990.
- ⁸⁸ Gales, 1993.
- ⁸⁹ Ibid.
- ⁹⁰ Marchant and Higgins, 1990.
- ⁹¹ Gales, 1993.
- ⁹² Liversidge and Le Gras, 1981.
- ⁹³ Gales, 1993.
- ⁹⁴ Bartle, 1974.
- ⁹⁵ Bartle, 1991.
- ⁹⁶ Murray and others, 1993.
- ⁹⁷ Data from Miskelly, 1984; Marchant and Higgins, 1990.
- ⁹⁸ Johnson, 1965.
- ⁹⁹ J-C Stahl, unpubl. data.
- ¹⁰⁰ Gales, 1993.
- ¹⁰¹ J.A. Bartle, unpubl. data.
- ¹⁰² Data based on band recoveries.
- ¹⁰³ Data from Robertson and Bell, 1984; Marchant and Higgins, 1990.
- ¹⁰⁴ Marchant and Higgins, 1990.
- ¹⁰⁵ Croxall and others, 1984; Murray and others, 1993.
- ¹⁰⁶ Data mostly from Marchant and Higgins, 1990.
- ¹⁰⁷ Marchant and Higgins, 1990.
- ¹⁰⁸ Croxall and others, 1984; Murray and others, 1993.
- ¹⁰⁹ Data from Croxall and others (eds.), 1984; Marchant and Higgins, 1990.
- ¹¹⁰ Weimerskirch and Sagar, 1996.
- ¹¹¹ Marchant and Higgins, 1990.
- ¹¹² Rough estimates of burrow numbers from Richardson, 1984; Marchant and Higgins, 1990.
- ¹¹³ Data from Marchant and Higgins, 1990.
- ¹¹⁴ M.J. Imber, pers. comm.
- ¹¹⁵ Marchant and Higgins, 1990.
- ¹¹⁶ Watson and others, 1971.
- ¹¹⁷ Marchant and Higgins, 1990.
- ¹¹⁸ Ibid.
- ¹¹⁹ Ibid.
- ¹²⁰ Ibid.
- ¹²¹ Data from Marchant and Higgins, 1990.
- ¹²² Marchant and Higgins, 1990.
- ¹²³ Murray and others, 1993.
- ¹²⁴ Ashford and others, 1995.
- ¹²⁵ Zotier, 1990.
- ¹²⁶ Data from Marchant and Higgins, 1990.
- ¹²⁷ Marchant and Higgins, 1990.
- ¹²⁸ Ibid.
- ¹²⁹ J.A. Bartle, unpubl. data.
- ¹³⁰ Data from Marchant and Higgins, 1990.
- ¹³¹ Richardson, 1984.
- ¹³² J.-C. Stahl in Marchant and Higgins, 1990.
- ¹³³ Marchant and Higgins, 1990.
- ¹³⁴ Monteiro and others, 1996.
- ¹³⁵ Data from Marchant and Higgins, 1990.
- ¹³⁶ Mougouin and others, 1996.
- ¹³⁷ Data on marine distribution and behaviour from Marchant and Higgins, 1990.
- ¹³⁸ Johnson, 1965.
- ¹³⁹ Schlatter, 1998.
- ¹⁴⁰ Data from Marchant and Higgins, 1990.
- ¹⁴¹ Ross, Weaver, and Grieg, 1996.
- ¹⁴² Data from Marchant and Higgins, 1990.
- ¹⁴³ Marchant and Higgins, 1990.
- ¹⁴⁴ J.A. Bartle, unpubl. data.
- ¹⁴⁵ Imber, 1987.
- ¹⁴⁶ Marchant and Higgins, 1990.
- ¹⁴⁷ J.A. Bartle, unpubl. data.
- ¹⁴⁸ J.A. Bartle, unpubl. data.
- ¹⁴⁹ J.A. Bartle, unpubl. data.
- ¹⁵⁰ Marchant and Higgins, 1990.
- ¹⁵¹ Data from banding recoveries.
- ¹⁵² Watson and others, 1971; Marchant and Higgins, 1990.
- ¹⁵³ Huin, 1994.
- ¹⁵⁴ Estimated from data in Rowan and others, 1951; Hagen, 1952.
- ¹⁵⁵ Enticott and O'Connell, 1985.
- ¹⁵⁶ Ibid.
- ¹⁵⁷ Enticott and O'Connell, 1985.
- ¹⁵⁸ Rowan and others, 1951.
- ¹⁵⁹ Ibid.
- ¹⁶⁰ F. Olmos, pers. comm.
- ¹⁶¹ Ibid.
- ¹⁶² Vaske, 1991.
- ¹⁶³ Devillers 1978.
- ¹⁶⁴ Ibid.
- ¹⁶⁵ Watson and others, 1971.
- ¹⁶⁶ Higgins and Davies, 1996.
- ¹⁶⁷ Data from Higgins and Davies, 1996.
- ¹⁶⁸ Watson and others, 1971.
- ¹⁶⁹ Data from Higgins and Davies, 1996.
- ¹⁷⁰ Higgins and Davies, 1996.
- ¹⁷¹ Watson and others, 1971.
- ¹⁷² J.A. Bartle, unpubl. data.
- ¹⁷³ Bartle, 1974.
- ¹⁷⁴ Higgins and Davies, 1996.

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Names of Southern Ocean seabirds in this guide

Latin	English	Spanish	French	Russian	CCAMLR Code
<i>Diomedeidae</i>					
<i>Diomedea amsterdamensis</i>	Amsterdam Albatross	Albatros de Amsterdam	Albatros d'Amsterdam	Амстердамский альбатрос	DAM
<i>Diomedea chionoptera</i>	Snowy Albatross	Albatros Nevado	Albatros neigeux	“Снежный” альбатрос	DCH
<i>Diomedea exulans</i>	Wandering Albatross	Albatros Errante	Grand albatros	Странствующий альбатрос	DIX
<i>Diomedea epomophora</i>	Southern Royal Albatross	Albatros Real del Sur	Albatros royal du Sud	Королевский альбатрос	DIP
<i>Diomedea sanfordi</i>	Northern Royal Albatross	Albatros Real del Norte	Albatros royal du Nord	Северный королевский альбатрос	DIS
<i>Phoebastria palpebrata</i>	Light-mantled Sooty Albatross	Albatros de Manto Claro	Albatros fuligineux à dos clair	Дымчатый альбатрос	PHE
<i>Phoebastria fusca</i>	Sooty Albatross	Albatros Oscuro	Albatros fuligineux à dos sombre	Темный альбатрос	PHU
<i>Diomedea chlororhynchus</i>	Yellow-nosed Albatross	Albatros de Pico Amarillo	Albatros à bec jaune	Желтоклювый альбатрос	DCR
<i>Diomedea bulleri</i>	Buller's Albatross	Albatros de Buller	Albatros de Buller	Альбатрос Буллера	DIB
<i>Diomedea chrysostoma</i>	Grey-headed Albatross	Albatros de Cabeza Gris	Albatros à tête grise	Сероголовый альбатрос	DIC
<i>Diomedea melanophrys</i>	Southern Black-browed Albatross	Albatros de Ceja Negra del Sur	Albatros à sourcils noirs du Sud	Чернобровый альбатрос	DIM
<i>Diomedea impavida</i>	Northern Black-browed Albatross	Albatros de Ceja Negra del Norte	Albatros à sourcils noirs du Nord	Северный чернобровый альбатрос	DMP
<i>Diomedea cauta</i>	Shy Albatross	Albatros de Frente Blanca	Albatros timide	Пугливый альбатрос	DCU
<i>Diomedea salvini</i>	Salvin's Albatross	Albatros de Salvin	Albatros de Salvin	Альбатрос Сальвина	DSL
<i>Diomedea eremita</i>	Chatham Island Albatross	Albatros de las Islas Chatham	Albatros des îles Chatham	Чатамский альбатрос	DER
<i>Procellariidae</i>					
<i>Macronectes balli</i>	Northern Giant Petrel	Petrel Gigante del Norte	Pétrel géant subantarctique	Северный гигантский буревестник	MAH
<i>Macronectes giganteus</i>	Southern Giant Petrel	Petrel Gigante del Sur	Pétrel géant antarctique	Южный гигантский буревестник	MAI
<i>Puffinus griseus</i>	Sooty Shearwater	Petrel Oscuro	Puffin fuligineux	Серый буревестник	PFG
<i>Puffinus tenuirostris</i>	Short-tailed Shearwater	Petrel Australiano	Puffin à bec grêle	Тонкоклювый буревестник	PFT
<i>Pterodroma macroptera</i>	Great-winged Petrel	Petrel de Alas Grandes	Pétrel noir	Большекрылый буревестник	PDM
<i>Fulmarus glacialis</i>	Southern Fulmar	Petrel Plateado	Fulmar antarctique	Антарктический глупыш	FUG
<i>Thalassoica antarctica</i>	Antarctic Petrel	Petrel Antártico	Pétrel antarctique	Антарктический буревестник	TAA
<i>Daption capense</i>	Cape Petrel	Petrel Damero	Damier du Cap	Капский голубок	DAC
<i>Procellaria cinerea</i>	Grey Petrel	Petrel Gris	Pétrel gris	Серый тайфунник	PCI
<i>Puffinus gravis</i>	Great Shearwater	Petrel Pardo	Puffin majeur	Большой буревестник	PUG
<i>Calonectris diomedea</i>	Cory's Shearwater	Petrel Ceniciento	Puffin cendré	Средиземноморский буревестник	CDI
<i>Puffinus creatopus</i>	Pink-footed Shearwater	Petrel de Patas Rosas	Puffin à pieds roses	Южноамериканский бледноногий буревестник	PUC
<i>Puffinus carneipes</i>	Flesh-footed Shearwater	Petrel Negro de Patas Pálidas	Puffin à pieds pâles	Бледноногий буревестник	PFC
<i>Procellaria parkinsoni</i>	Parkinson's Petrel	Petrel de Parkinson	Pétrel de Parkinson	Тайфунник Паркинсона	PRK
<i>Procellaria westlandica</i>	Westland Petrel	Petrel de Westland	Pétrel du Westland	Вестландский тайфунник	PCW
<i>Procellaria aequinoctialis</i>	White-chinned Petrel	Petrel Negro	Pétrel à menton blanc	Белоподбородковый тайфунник	PRO
<i>Procellaria conspicillata</i>	Spectacled Petrel	Petrel con Antifaz	Pétrel à lunettes	Очковый тайфунник	PCN
<i>Stercorariidae</i>					
<i>Catbaracta chilensis</i>	Chilean Skua	Skúa Pardo	Labbe du Chili	Чилийский поморник	CTH
<i>Catbaracta macormicki</i>	South Polar Skua	Skúa Polar del Sur	Labbe de MacCormick	Антарктический поморник	CAM
<i>Catbaracta skua</i>	Great Skua	Skúa Marrón Gaviota	Grand labbe	Большой поморник	CSK
<i>Laridae</i>					
<i>Larus dominicanus</i>	Kelp Gull	Gaviota Cochenera	Goéland dominicain	Доминиканская чайка	LDO