

SEABIRD IDENTIFICATION CARDS

for Fishing Vessels operating in the Indian Ocean



Indian Ocean Tuna Commission
Commission des Thons de l'Océan Indien

iotc itoi

These seabird identification cards are produced as part of a series of awareness materials developed by the Indian Ocean Tuna Commission in order to improve the reporting of interactions between vessels targeting species under the management mandate of the IOTC and seabirds.

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Seabirds are species that derive their sustenance primarily from the ocean and which spend the bulk of their time (when not on land at breeding sites) at sea. Seabirds are characterised as being late to mature and slow to reproduce; some do not start to breed until they are ten years old. To compensate for this, seabirds are long-lived, with natural adult mortality typically very low. These traits make any increase in human-induced adult mortality potentially damaging for population viability, as even small increases in mortality can result in population declines.

Eight seabird families occur within the Indian Ocean Tuna Commission (IOTC) area of competence, either regularly or as breeding populations. Of these, the Procellariiformes (albatrosses and petrels) are the species most susceptible to being caught as bycatch in longline fisheries, and therefore are most susceptible to direct interactions with IOTC fisheries.

These cards will help observers and fishers to identify seabirds caught by fishing vessels operating in the IOTC area of competence. Each card contains the common and scientific names of the seabird, its conservation status (CR - critically endangered, EN - endangered, VU - vulnerable, NT - near threatened), some information about its adult size (wingspan) and habitat as well as some key features for its identification. Distribution maps show the approximate range for each species in the IOTC area of competence.

Identify, record, photograph and report every seabird interaction with your vessel.



Albatrosses

Albatrosses' nostrils are NOT fused into a tube and are clearly visible as two separate openings either side of the bill. They are large birds with very long wings compared to body length.

Genus *Diomedea*

Four species occur in the IOTC area. World's biggest seabirds, with very large heavy bills and wingspan. All-white backs unique amongst albatrosses (but note young Wandering Albatrosses have dark backs).

Genus *Phoebastria*

Two species of all-dark albatrosses with clear white eye-ring and colourful, fleshy line on bills.

Beware: relatively small, slender bills and small, separate nostrils allow this group to be separated from the Giant Petrels, which are (mostly) also all brown. Giant Petrels have large, bulky bills with a large, fused nostril tube on the top of their bill.

Genus *Thalassarche*

Medium and small albatrosses with wingspans ranging from 2 – 2.5 m. All have dark backs, but Shy Albatrosses backs fade to grey (never white) over time.



Shy-type Albatross

Wandering Albatross

Diomedea exulans



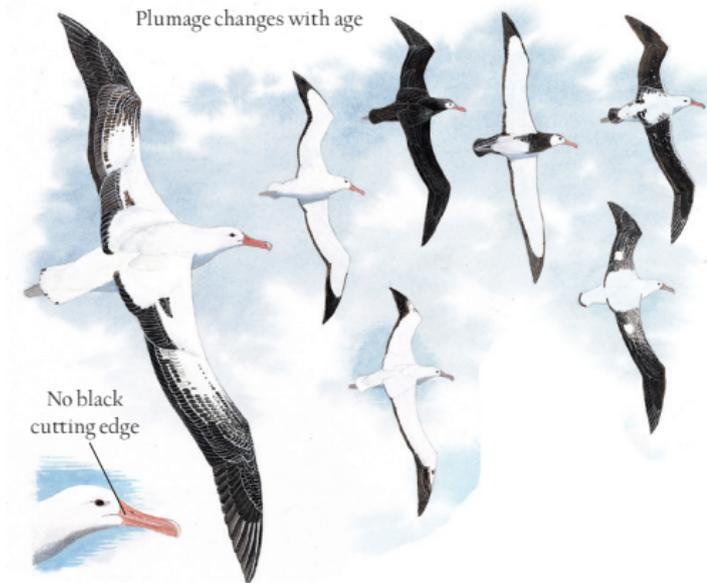
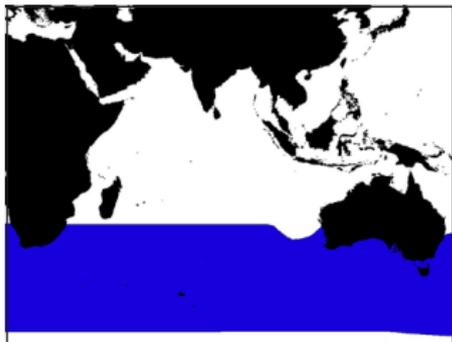
Wingspan: 2.5 - 3.5 m

Infrequent in shelf waters

Common in southern latitudes year-round

- NO black cutting edge on bill

Beware: highly variable, with birds getting whiter with age, starting nearly all dark to ending nearly all white.



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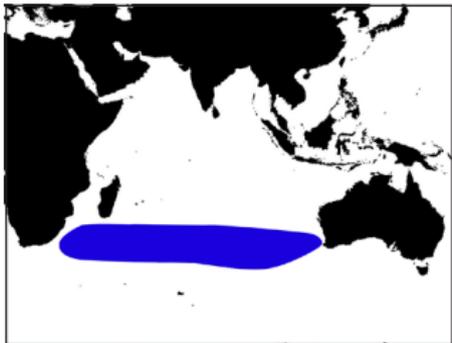
Albatrosses

Amsterdam Albatross *Diomedea amsterdamensis*

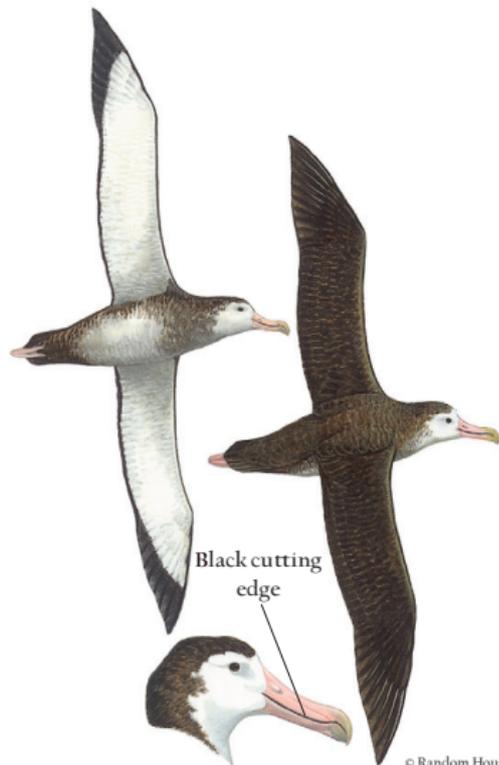
CR

- Black-brown all over, except face, underwing and belly
- No white on upper wings
- Black cutting edge on bill

Beware: young Wandering Albatross are nearly identical, but do not have black cutting edge on bill.



Wingspan: 2.8 - 3.4 m
Infrequent in shelf waters
Extremely rare, but generally between 20-40°S



Northern Royal Albatross

Diomedea sanfordi

EN

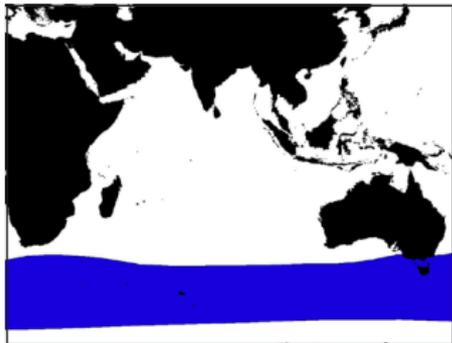
Wingspan: 2.9 - 3.4 m

Infrequent in shelf waters

Common in southern latitudes year-round

- White back and white tail
- No white on upperwings
- Black cutting edge on bill

Beware: young birds have dark outer tail feathers, and may have some dark feathers on head and back. Adults are indistinguishable from juvenile Southern Royal Albatrosses.



Albatrosses

Southern Royal Albatross

Diomedea epomophora



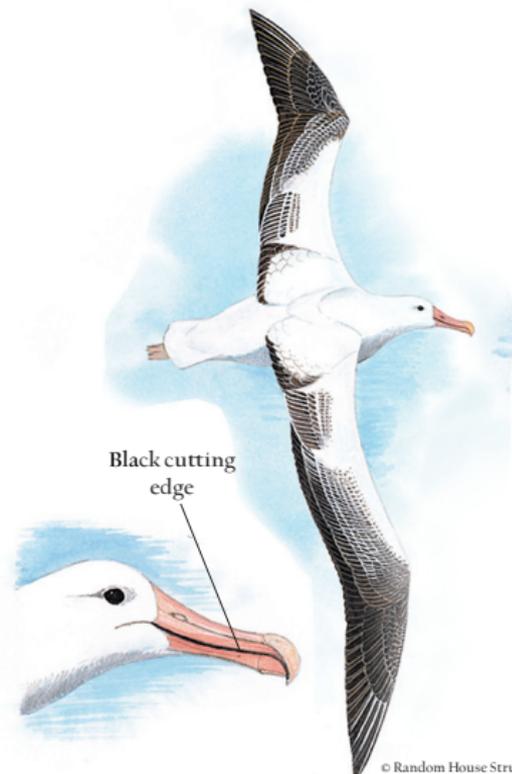
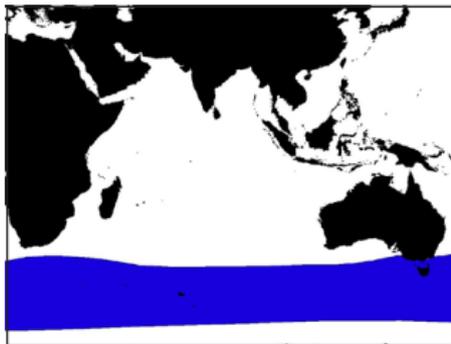
Wingspan: 2.9 - 3.4 m

Infrequent in shelf waters

Common in southern latitudes year-round

- Front of wings (leading edge) white
- Whitening on wings starts from leading edge, not from middle of wing
- Black cutting edge on bill

Beware: Juveniles Southern Royal Albatrosses are indistinguishable from adults Northern Royal Albatrosses.

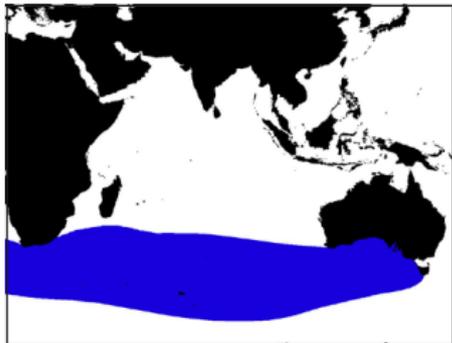


Sooty Albatross

Phoebetria fusca



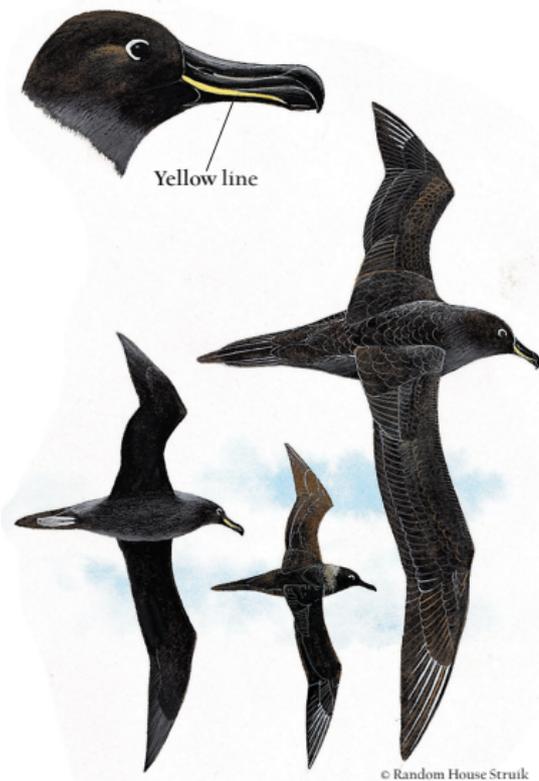
- Uniformly brown from head to tail, except white eye-ring
- Creamy-yellow, fleshy line on lower bill (this may fade to colourless/brown when dead, so not always a reliable feature)



Wingspan: 2 m

Restricted to deep waters

Year-round

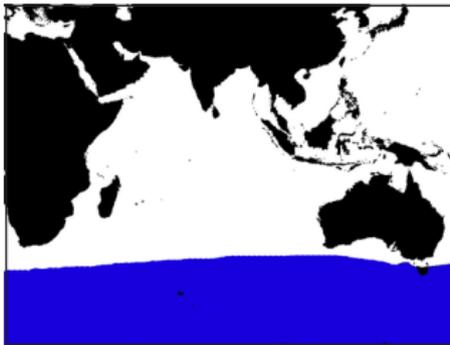


Light-mantled Albatross

NT

Phoebastria palpebrata

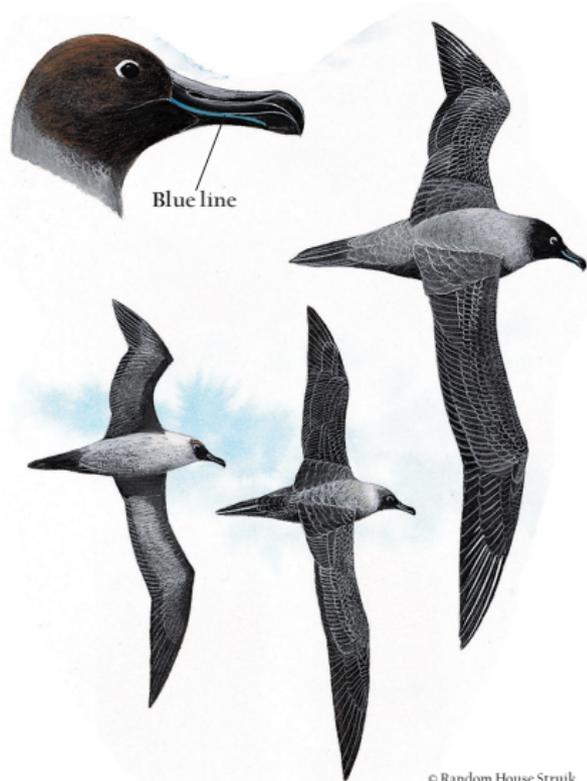
- Dark all over, but back noticeably paler than rest of body, and, head and wings noticeably darker than other parts
- Has a pale blue, fleshy line on lower bill (this may fade to colourless/brown when dead, so not always a reliable feature)



Wingspan: 2 m

Restricted to deep waters

Year-round



Grey-headed Albatross

Thalassarche chrysostoma



Wingspan: 2.2 m

Rare on continental shelf

Mainly winter

Adult:

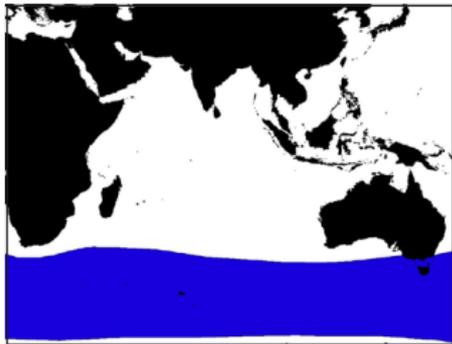
- Dark-grey head and neck
- Yellow line on top of upper AND underside of lower bills
- Underwings have thick black leading edge

Beware: Yellow-nosed Albatross has yellow line only on upper bill

Juvenile:

- All-grey head but white on face
- No yellow on bill
- All-dark underwings

Beware: Juvenile Black-browed Albatross has all-dark underwings and grayish head with white on face and all-dark bill, but bill tip is very visibly darker



Juvenile



Adult



Yellow lines

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Indian Yellow-nosed Albatross

Thalassarche carteri

EN

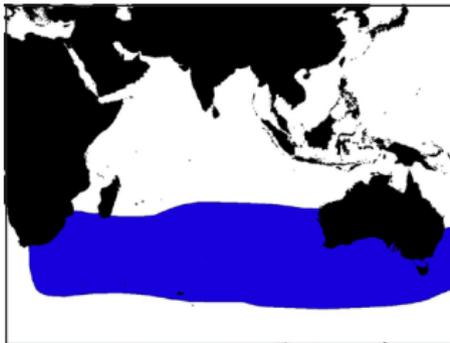
Wingspan: 1.8 - 2 m

Common in shelf waters

All year

- White head and neck, some with light gray on sides of head
- Yellow line on upper bill only

Beware: *Atlantic Yellow-nosed Albatross* (*T. chlororhynchos*, not illustrated) is rare in IOTC area, and has dark grey head with contrasting white cap (top of head)



Shy-type Albatross

Thalassarche cauta, *T. steadi*

NT

Wingspan: 2.1 - 2.6 m

Common

Mainly winter

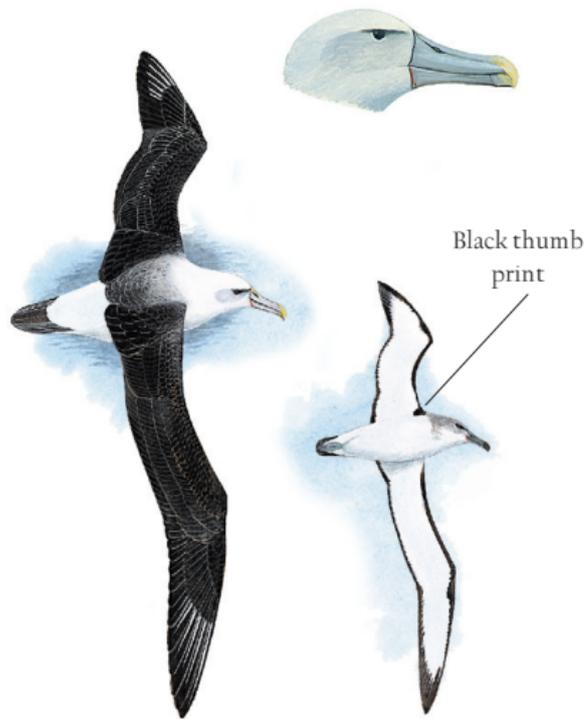
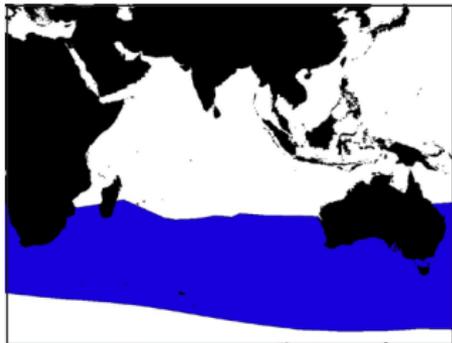
Adult:

- Very long wings with only thin black margins on underwing, otherwise completely white
- Small black notch in armpit
- Largest of the *Thalassarche* group
- Large grey bill with yellow tip only

Juvenile:

- Underwing pattern unique and same as for adult

Beware: juveniles have variable amounts of grey on head and could be confused with juvenile Grey-headed or Black-browed Albatrosses, but these two have dark underwings.



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Albatrosses

Black-browed Albatross

Thalassarche melanophrys

EN

Wingspan: 2.1 - 2.5 m

Common

Adult mostly winter

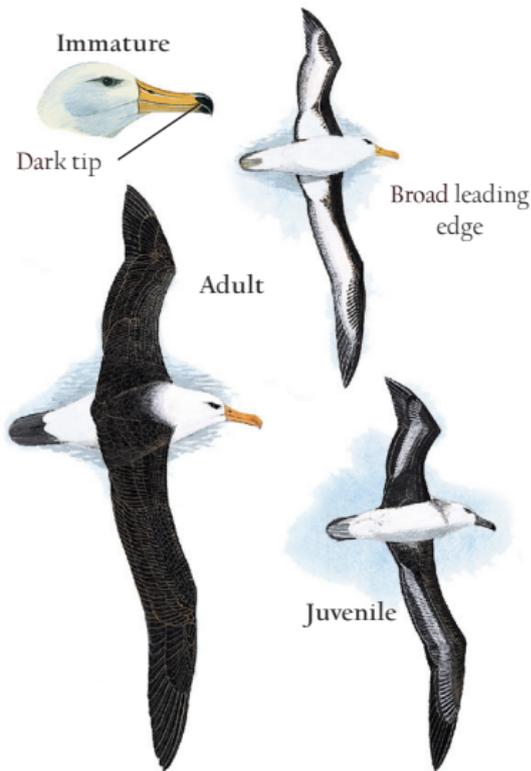
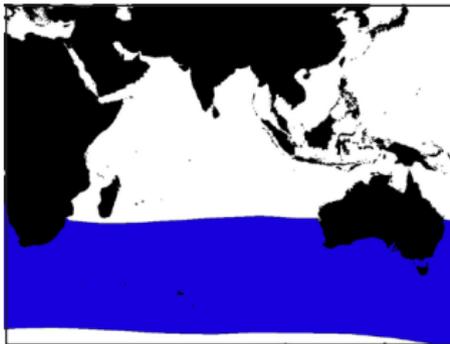
Adult:

- All-orange bill with pinkish tip diagnostic
- Dark around eye creating the 'black-brow'

Juvenile:

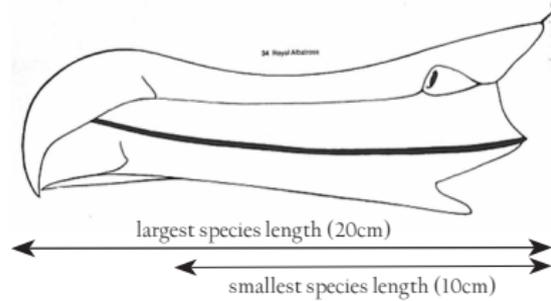
- Dark feathers around eye reduced but always present
- Bill lightens toward orange with age, all intermediate stages have dark tip to bill

Beware: juvenile Grey-headed Albatross which has more grey on head and lacks dark eye. Shy and White-capped Albatross have much larger, deeper bill and white underwing.



ALBATROSSES

nostrils not fused into tube and clearly visible as two separate openings either side of the bill.



PETRELS

nostrils are fused in one tube on top of the bill.



Petrels

Petrels can be confused with shearwaters, however petrels all have short, stout, 'chunky' bills, whereas shearwater always have long, slender bills.

Genus *Macronectes*

Two species of large petrels, same size as medium albatrosses. Large, heavy bills with pronounced hook and long, fused nostril tubes. Usually dark-brown, but increasingly pale from head down with age. Southern Giant Petrel has spectacular white morph with black flecks on pure white feathers. Only bill tip colour can be used to separate these two species.

Genus *Procellaria*

The largest members of the petrel family aside from the two Giant Petrel species. Two species, commonly occur in subtropical and Southern Ocean waters of the IOTC area. Both actively forage at night and can dive very deep. They are usually responsible for returning baited longline hooks to the surface, which albatrosses will then 'steal' from them and get hooked. Because of their excellent night vision and strong diving abilities, these species are amongst the most difficult to prevent from being caught on longline hooks.

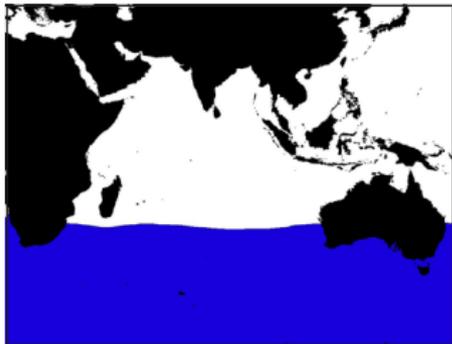
Cape (Pintado) Petrel



Southern Giant Petrel

Macronectes giganteus

- Albatross-sized
- Huge bill with greenish tip
- Bill tip does not contrast strongly with the rest of the bill
- Nasal tubes are fused into one long tube on top of bill

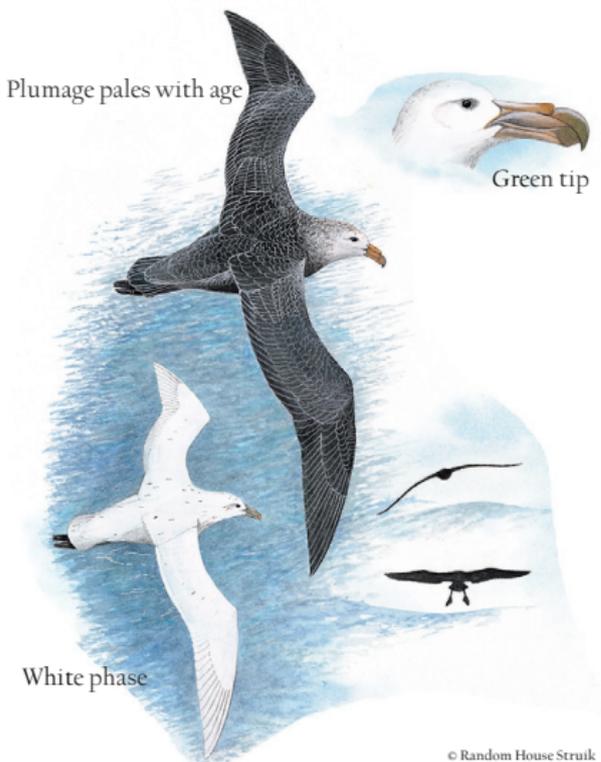


Wingspan: 1.5 - 2.1 m

Common

Year-round

Plumage pales with age



White phase

Green tip

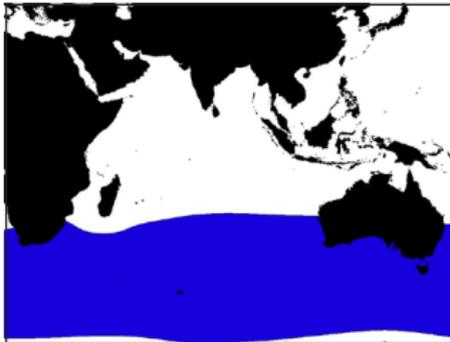
© Random House Struik

Petrels

Northern Giant Petrel

Macronectes halli

- Albatross-sized
- Huge bill with red-brown tip
- Bill tip contrasts with the rest of the bill
- Nasal tubes are fused into one long tube on top of bill



Wingspan: 1.5-2.1 m

Common

Year-round

Plumage pales with age



White-chinned Petrel

Procellaria aequinoctialis



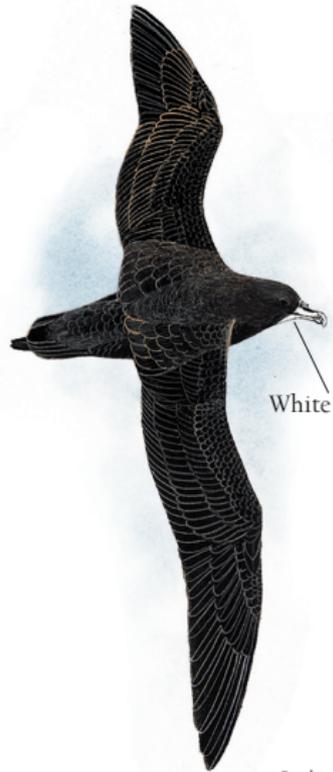
Wingspan: 1.4 m
Most common petrel
All year

- All dark with white chin
- Ivory bill with black 'saddle'
- Occasionally more extensive white chin with patch on head or on belly.

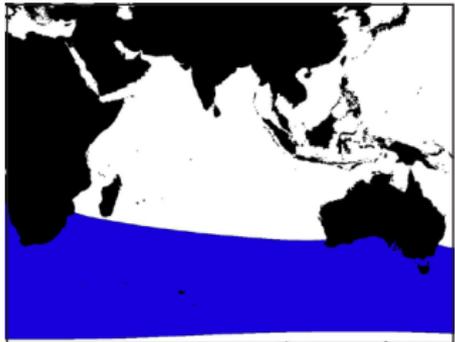
Beware: closely related Spectacled Petrel (*P. conspicillata*) is extremely rare in IOTC area, and easily recognizable with white, large circles around eyes and dark bill tip.



Spectacled Petrel



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Grey Petrel

Procellaria cinerea

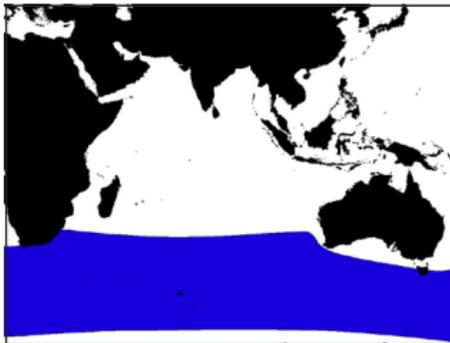
NT

Wingspan: 1.4 m

Rare

Year-round

- Combination of uniform grey above and clean white body below
- Grey underwings
- Pale bill with dark tip

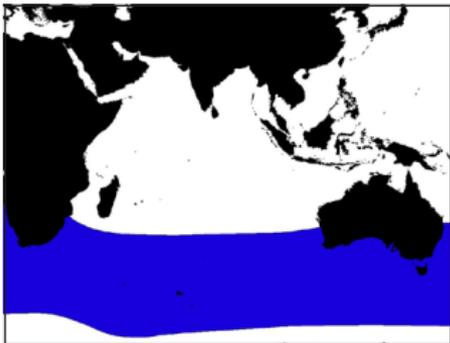


Great-winged Petrel

Pterodroma macroptera

- Mottled, grey-white blaze around all-dark bill diagnostic

Beware: Sooty Shearwater, which has a silvery underwings. Many all-dark petrels could cause confusion, but ranges do not overlap much, with this species seldom occurring north of 20° S.



Wingspan: 1 m

Common

Austral Summer



Petrels

Cape (Pintado) Petrel

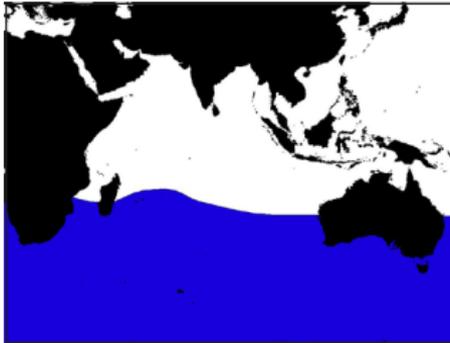
Daption capense

Wingspan: 0.9 m

Common

Austral Winter

- Mottled black-and-white patterns on wings and back
- Seldom recorded as bycatch in longline fisheries



Shearwaters can be confused with petrels, however shearwaters always have long, slender bills whereas petrels all have short, stout, 'chunky' bills.

Genus *Puffinus*

Four species common in the region. Small to medium sized seabirds, with long wings. Upperwings dark brown to black, and underwings white to dark brown.



Shearwaters

Sooty Shearwater

Puffinus griseus

NT

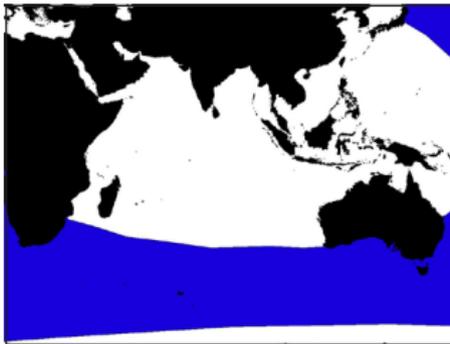
Wingspan: 1 m

Common

All year

- Silvery underwing

Beware: Short-tailed Shearwater, which is confined to the south east of the Indian Ocean and small proportion have obvious silvery underwings



© Random House Struik

Great Shearwater

Puffinus gravis

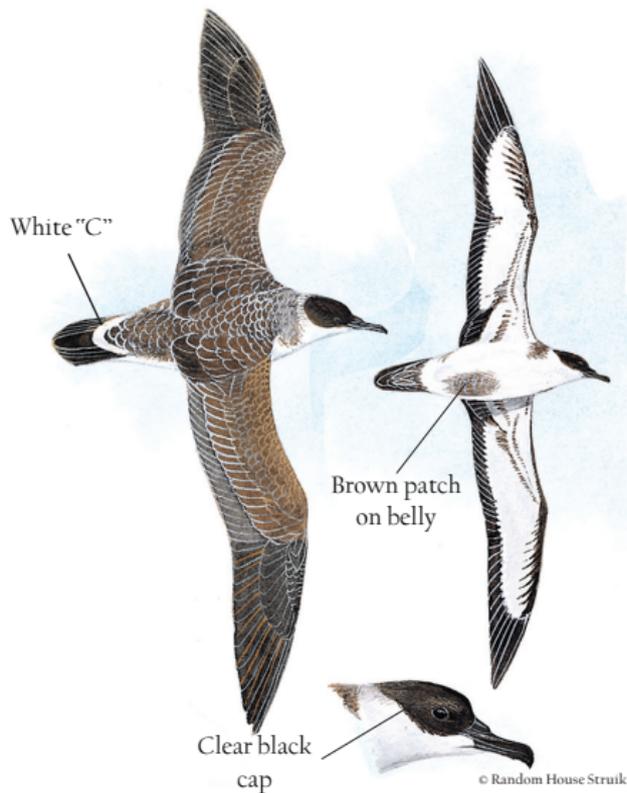
- Dark, smudgy patch on white belly
- Narrow pale neck-band
- White "C" on rump



Wingspan: 1 - 1.2 m

Common in western Indian Ocean, absent in eastern Indian Ocean

Scarce mid-winter



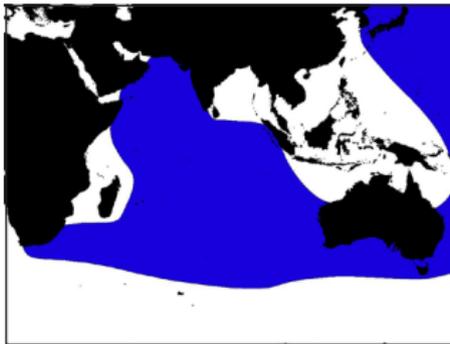
Shearwaters

Shearwaters

Flesh-footed Shearwater

Puffinus carneipes

- Pale pinkish feet
- Uniformly dark-brown plumage
- Pale bill with dark tip.



Wingspan: 1 m

Northern Indian Ocean during austral winter

South east Indian Ocean in austral summer



Wedge-tailed Shearwater

Puffinus pacificus

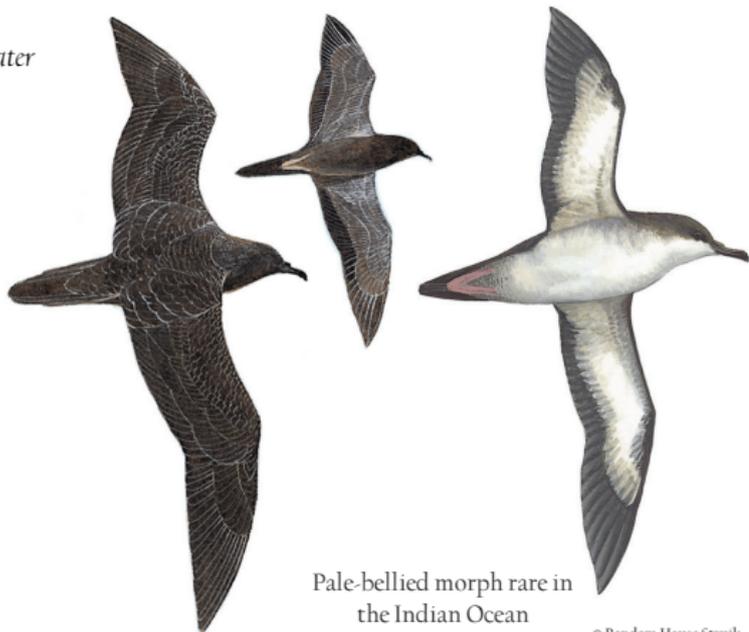
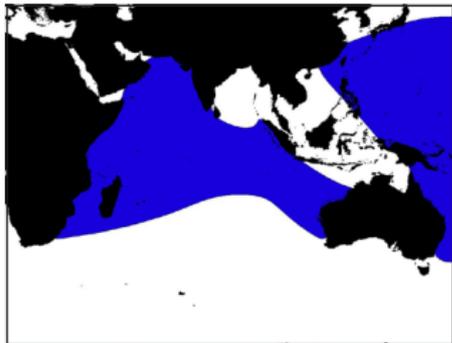
Wingspan: 1 m

Common in tropical waters

Year around

- When spread open, tail forms 'V', or wedge - thus its common name Wedge-tailed Shearwater

Beware: Great-winged Petrel (see bill shape) and Sooty Shearwater (see underwing pattern)



Pale-bellied morph rare in the Indian Ocean

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Shearwaters

Boobies & Gannets

Boobies and gannets (Sulids) are large and common tropical and subtropical birds that tend to occur within 200km of land. Confusion with albatrosses unlikely: all Sulids have simple, very pointed bills which lack obvious hooked end and prominent nostrils of albatrosses.



Red-footed Booby

Sula sula

Adult:

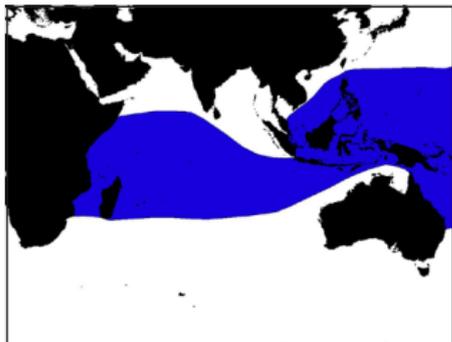
- Bright red feet

Beware: dark and light morphs. Cape and Australian gannets lack red feet and have black tail feathers

Juvenile:

- No clear underwing pattern, feet yellow, brown or reddish

Beware: all other juvenile boobies have clearly defined underwings



Wingspan: 1 m

Common

All year



© Random House Struik

Brown Booby

Sula leucogaster

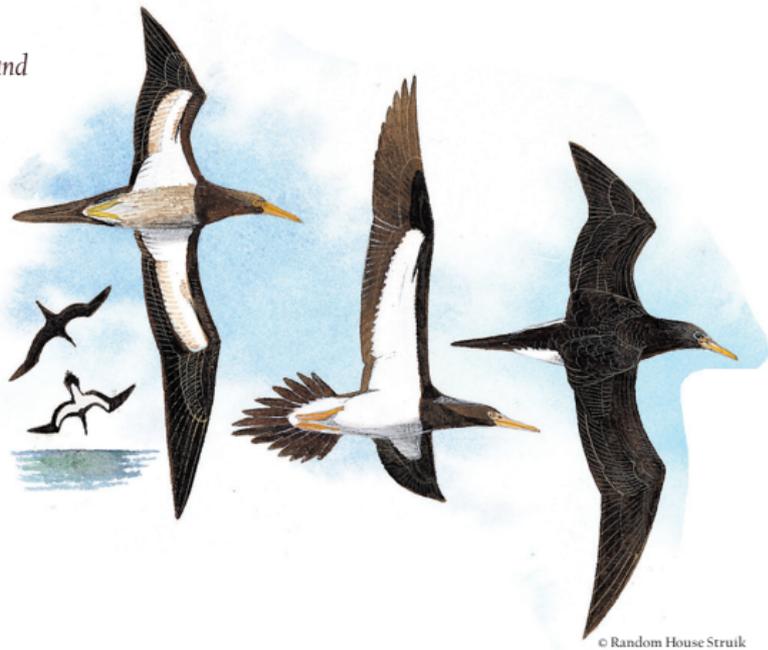
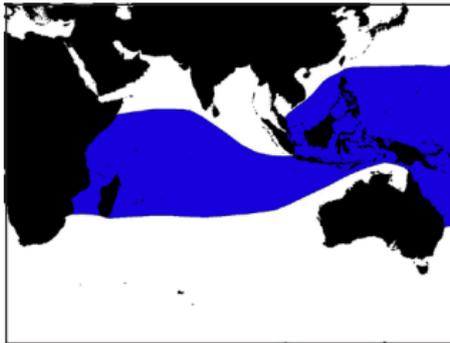
Wingspan: 1 m

Common

All year

- Brown head, upper parts and throat, extending onto upper breast

Beware: juvenile Masked Booby, which have dark throat only and lacks dark on upper breast.



Masked Booby

Sula dactylatra

Wingspan: 1.5 m

Common

All year in near shore tropical waters

Adult:

- White body
- Small, black face mask diagnostic

Juvenile:

- Brown does not extend onto upper breast
- White ring around neck



Juvenile



Adult

© Random House Struik

Cape Gannet

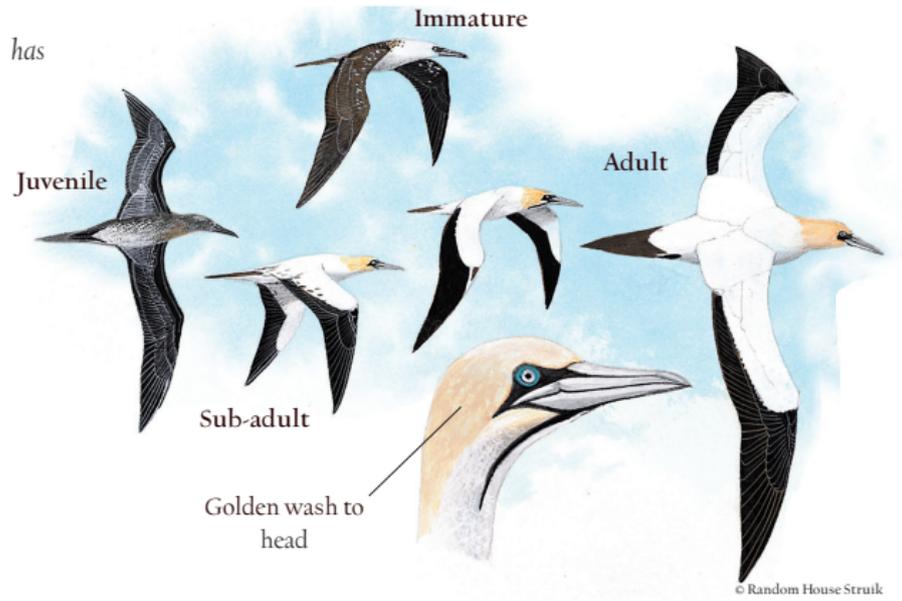
Morus capensis



Wingspan: 1.8 m
Common inshore, endemic to South Africa
All year

- Black tail
- Golden head with black stripe on throat
- Black feet

Beware: Australian Gannet (not illustrated) has white outer tail feathers



Frigatebirds are unmistakable, large, dark tropical seabirds known for attacking other seabirds. Deeply forked, scissor-tails.

Males occasionally seen with bright red throat sacs inflated spectacularly.

Sexes differ.

Male Christmas Frigatebird (*F. andrewsi*, not illustrated) are all-black with white belly patch diagnostic. Females have black head and throat with extensive white breast and belly, and clear finger of white extending onto underwing. Juveniles are similar to females but have brownish head



Great Frigatebird

Frigatebirds

Greater Frigatebird

Fregata minor

Male:

- All-black plumage

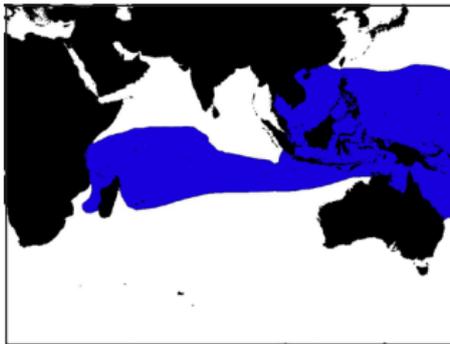
Female:

- White on breast/belly never extends onto wings

Juvenile:

- Reddish head and throat with white breast, but no white extending to underwing

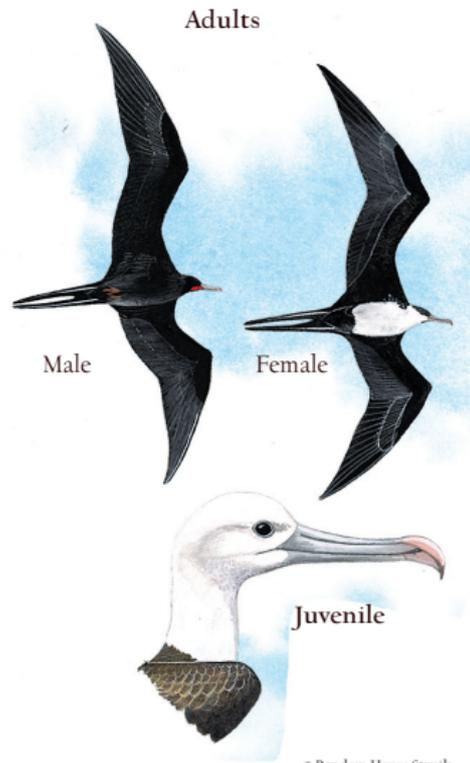
Beware: Lesser Frigatebird has white extending onto underwing



Wingspan: 2-2.3 m

Common inshore, but ranges widely in tropical waters

All year



Lesser Frigatebird

Fregata ariel

Male:

- Otherwise all dark bird has small white patch joining underwing to body

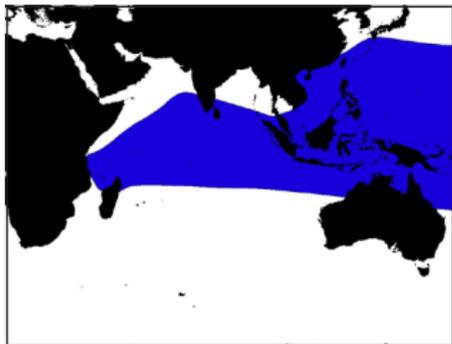
Female:

- Dark belly with white on upper breast extending onto underwing

Juvenile:

- Reddish head and throat with white breast, with white extending to underwing

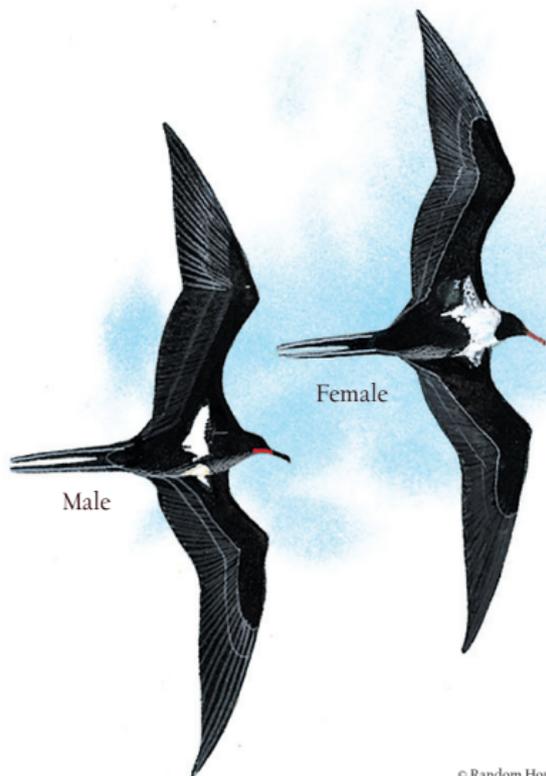
Beware: female Christmas Frigatebird which has white belly



Wingspan: 2 m

Common inshore, but ranges widely in tropical waters

All year

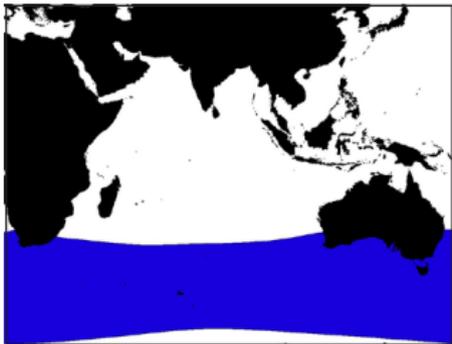


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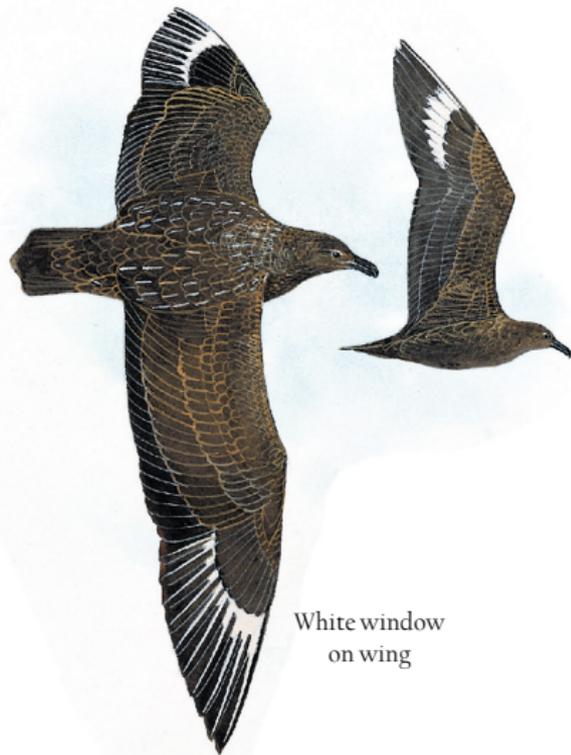
Frigatebirds

Subantarctic Skua *Stercorarius antarcticus*

- Subantarctic distinguished from brown morph of South Polar (*S. maccormicki*, not illustrated) with great difficulty, but latter has small, circular, white blaze of feathers at base of bill.
- Pale and intermediate morph South Polar's are rarer, but have paler bodies contrasting strongly with darker wings



Wingspan: 1.3 - 1.6 m
Frequent
Adult mostly austral winter



White window
on wing

IF YOU RECOVER A BANDED SEABIRD

BTO BRIT MUSEUM NH
LONDON SW7 www.ring.ac

6C23691

Petrels and albatrosses of all species caught in the IOTC zone are likely to wear bands, since large numbers have been banded on the breeding grounds. Generally, birds carry a metal leg band with a number and the address/name of the banding scheme to which recovery must be reported. Some birds may also carry a second plastic/coloured band on the other leg. The entire information on the metal band should be recorded. Since this information is unique, the reporter does not need to provide the band itself, the exact information on the band is sufficient to validate the recovery.

Examples of metal bands:

- **France:** Ois Museum Paris – CF 22234
- **South Africa:** Inform SAFRING University of Capetown – J876543
- **United Kingdom:** BTO BRIT MUSEUM NH – LONDON SW7 www.ring.ac – 6C23691

In case of catch of a banded bird:

1. Check both legs, especially if a plastic band is detected, a metal band is likely to be found on the other leg:
 - if dead (most of the cases), then band(s) can be removed, record the numbers, letters and banding scheme or address, as appearing above
 - if alive (in rare cases the bird is caught during hauling of line), the bird must be held at the back of head AND by the bill (not by the throat), the hook removed, and you must record the entire band information before releasing the bird overboard. Never remove the band.
2. Record:
 - Position of recovery (latitude and longitude)
 - Date
 - Fishing vessel (type and flag)
3. Send the information to the IOTC Secretariat (secretariat@iotc.org) who will forward it to the national banding authorities.

IOTC REQUIREMENTS REGARDING SEABIRDS

(Note: requirements as per IOTC Resolutions 12/03 and 12/06. It is recommended that you check annually for modifications by IOTC)

Longline and gillnet fishing vessels shall record in their logbook any incidental catch of seabirds.

Fishing vessels shall report any interaction with seabirds, including details of species

Fishing vessels operating south of 25° South shall use at least two of the following three mitigation measures:

- **night setting with minimum deck lighting** (no setting after nautical dawn and before nautical dusk)
- **bird-scaring lines or 'tori lines'** (tori lines shall be deployed during longline setting)
- **weighted branch lines** (weights must be attached to all branch lines)

LINEWEIGHTING SPECIFICATIONS

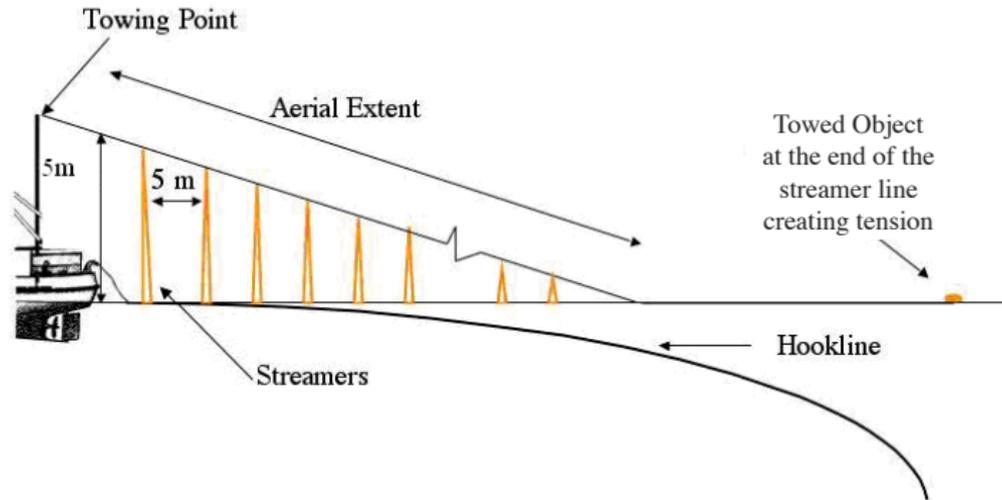
Weights must be attached to all branch lines as follow:

- at least 45 grams attached within 1 m of the hook, or
- at least 60 grams attached within 3.5 m of the hook, or
- at least 98 grams attached within 4 m of the hook



DESIGN OF BIRD SCARING LINES (TORI LINES)

1. An appropriate towed device on the section of the tori line in the water can improve the aerial extension.
2. The above water section of the line shall be sufficiently light that its movement is unpredictable to avoid habituation by birds and sufficiently heavy to avoid deflection of the line by wind.
3. The line is best attached to the vessel with a robust barrel swivel to reduce tangling of the line.
4. The streamers should be made of material that is conspicuous and produces an unpredictable lively action (e.g. strong fine line sheathed in red polyurethane tubing) suspended from a robust three-way swivel (that again reduces tangles) attached to the line.
5. Each streamer should consist of two or more strands.
6. Each streamer pair should be detachable by means of a clip so that line stowage is more efficient.



DEPLOYMENT OF BIRD SCARING LINES (TORI LINES)

1. The line should be suspended from a pole affixed to the vessel. The tori pole should be set as high as possible so that the line protects bait a good distance astern of the vessel and will not tangle with fishing gear. Greater pole height provides greater bait protection. For example, a height of around 7m above the water line can give about 100m of bait protection.
2. If vessels use only one tori line it should be set to windward of sinking baits. If baited hooks are set outboard of the wake, the streamer line attachment point to the vessel should be positioned several meters outboard of the side of the vessel that baits are deployed. If vessels use two tori lines, baited hooks should be deployed within the area bounded by the two tori lines.
3. Deployment of multiple tori lines is encouraged to provide even greater protection of baits from birds.
4. Because there is the potential for line breakage and tangling, spare tori lines should be carried onboard to replace damaged lines and to ensure fishing operations can continue uninterrupted. Breakaways can be incorporated into the tori line to minimize safety and operational problems should a longline float foul or tangle with the in-water extent of a streamer line.
5. When fishers use a bait casting machine (BCM), they must ensure coordination of tori line and machine by *i*) ensuring the BCM throws directly under the tori line protection, and *ii*) when using a BCM (or multiple BCMs) that allows throwing to both port and starboard, two tori lines should be used.
6. When casting branchline by hand, fishers should ensure that baited hooks and coiled branchline sections are cast under the tori line protection, avoiding the propeller turbulence which may slow the sink rate.
7. Fishers are encouraged to install manual, electric or hydraulic winches to improve ease of deployment and retrieval of tori lines.

