



Department of
Primary Industries

Protecting the Greynurse Shark

A guide for recreational fishers and divers



Published by the NSW Department of Primary Industries

Protecting the Greynurse Shark...a guide for recreational fishers and divers

First published 2007. Second edition published December 2014.

ISBN 978-1-74256-698-6

More information

This guide was produced by the NSW Department of Primary Industries, Port Stephens Fisheries Institute, Taylors Beach Rd, Taylors Beach 2316, Locked Bag 1, Nelson Bay 2315. The 2014 publication has been updated to incorporate changes arising from the 2012 review of Greynurse Shark protection. The fishing regulations outlined in this brochure apply to recreational fishing (including spearfishing) and diving only. Commercial fishers should consult the relevant Marine Park User Guide and Zoning Plan, *NSW Fisheries Management Act 1994*, Fisheries Management (General) Regulation 2010, their share management plan and any other relevant regulations.

Boundaries and features shown in the maps in this guide are indicative only and do not display the full extent of Marine Park zones. Recreational fishers should consult the relevant Marine Park User Guide for the Parks' complete zoning plan. Maps should not be relied upon for navigation purposes. Geographical positions are given in degrees and decimal minutes from the datum WGS84 and can be found directly from GPS units and nautical charts.

Acknowledgments

This brochure was first published in 2007 with partial funding by the Northern Rivers Catchment Management Authority (NRCMA).

Front cover photography © Justin Gilligan, Back cover photography © Geoff Kelly.

TRIM Reference: PUB14/209

© State of New South Wales through the Department of Trade and Investment, Regional Infrastructure and Services, 2014. You may copy, distribute and otherwise freely deal with this publication for any purpose, provided that you attribute the NSW Department of Primary Industries as the owner.

Disclaimer: The information contained in this publication is based on knowledge and understanding at the time of writing (December 2014), but NSW Department of Primary Industries does not guarantee the publication is without flaw or is wholly appropriate for any particular purposes and therefore disclaims all liability for any error, loss or other consequences which may arise from relying on any information in this publication. Because of advances in knowledge and changes in legislation, users are reminded of the need to ensure that information upon which they rely is up to date and to check currency of the information with the appropriate officer of the Department of Primary Industries or the user's independent adviser. This guide should not be used for legal interpretation purposes. It is the responsibility of fishers and divers to ensure they are acting within the law at all times.

ABOUT THIS GUIDE

This guide summarises some of the latest information about Greynurse Sharks including the diving and recreational fishing (including spearfishing) arrangements that currently apply at Greynurse Shark critical habitat and aggregation sites in NSW. It does not include information on commercial fishing or protection of Greynurse Sharks in Commonwealth waters, such as the Cod Grounds or Pimpernel Rock.

While all care has been taken in producing this guide, NSW Department of Primary Industries accepts no responsibility for reporting inaccuracies and/or changes post-production. Fishers and divers are also reminded that it is their responsibility to ensure they comply with the relevant fishing and diving rules and to minimise their impacts on Greynurse Sharks while enjoying their sport.

How can I help?

Take a moment to study this guide and familiarise yourself with:

- » The identification features of Greynurse Sharks;
- » The Code of Conduct for Diving with Greynurse Sharks;
- » The fishing rules at aggregation sites and critical habitat areas; and
- » Report sightings and interactions with Greynurse Sharks.

AN INTRODUCTION TO GREYNURSE SHARKS

Greynurse Sharks are a large shark native to subtropical to cool temperate waters. Once abundant across their range, the species is now restricted to Australia, the east coasts of North and South America and the southeast coast of South Africa. In Australia there are two separate and genetically-distinct populations on the east and west coasts.

In NSW, Greynurse Sharks are typically found in coastal inshore waters, around rocky reefs and boulders or sand filled gutters in water depths of 15 – 40 m but also spend some time in deeper waters. They consistently occupy a relatively small number of locations along the NSW coast to feed, mate and pup termed **'aggregation sites'**, many of which are also popular fishing and diving locations. In NSW, tagged sharks have been recorded migrating over 800 km between aggregation sites in relatively short periods of time, and have shown to return to the same sites in consecutive years.

Greynurse Sharks are a long-lived species living to approximately 35 years, and like many other sharks exhibit a late onset of sexual maturity, estimated to be 7 years for males and 12 years for females. They have a low reproductive rate, producing a maximum of two pups every two years. They have an unusual reproductive strategy that involves intra-uterine cannibalism, i.e. the developing sharks eat their siblings while still inside the mother.

The east coast population also appears to be segregated by sex and size. Mating occurs in late spring, and pregnant females migrate north to southern Queensland where they spend about 6 months at aggregation sites away from sexually mature males. The pregnant females then migrate south to NSW waters in winter and give birth in late winter and early spring.

A CRITICALLY ENDANGERED SPECIES

Greynurse Sharks are extremely vulnerable to human-induced pressures, including fishing. Many decades of capture in a variety of fishing methods, including recreational and commercial line fishing, spearfishing and bather protection nets saw a significant decline in the number of Greynurse Sharks in NSW waters, particularly in the 1960s and 1970s.

In NSW, Greynurse Sharks are listed as **critically endangered** in the *Fisheries Management Act 1994*. The east coast population is also listed as critically endangered in the Commonwealth's *Environment Protection and Biodiversity Conservation Act 1999*, and the west coast population is listed as vulnerable. The east coast population is currently estimated to comprise of approximately 1365 individual Greynurse Sharks.

The largest and most significant Greynurse Shark aggregation sites in NSW are declared as **'critical habitat'**, meaning they are essential for the survival of the species. Special rules apply at those sites to minimise the impact of fishing and diving activities on Greynurse Sharks.

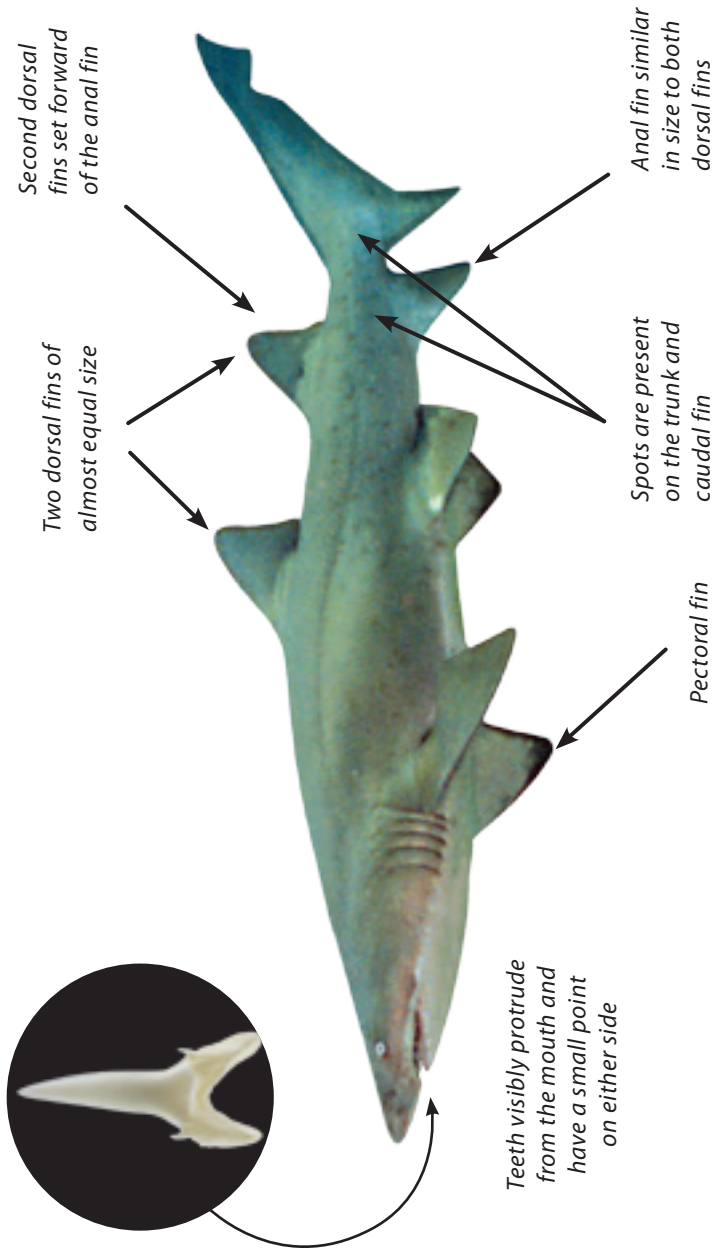
Despite their fierce appearance, Greynurse Sharks are not a threat to divers or swimmers unless provoked. They are a passive species with teeth designed for capturing prey such as fish, small sharks and rays.

IDENTIFYING A GREYNURSE SHARK

Greynurse Sharks are totally protected in NSW and Commonwealth waters and harming or fishing for them is illegal. It is therefore important that recreational fishers and divers can distinguish Greynurse Sharks from other species. Fishers are encouraged to release all sharks unless they are certain they are not a protected species.

Greynurse Sharks have sometimes been misidentified as Whaler Sharks by fishers; however, key features can be used to identify them. Greynurse Sharks have a bronze coloured upper body and a pale white underside. Dark spots are present on the trunk and caudal (tail) fin which are most prominent in juveniles.

Greynurse Sharks have large, stout bodies that are tapered at each end; with two distinctive large dorsal fins of similar size. The first dorsal fin is set well back from the pectoral fins and the anal fin is similar in size to both dorsal fins. The mouth extends beyond the front of the eye and has long protruding teeth. Greynurse Sharks grow to a maximum length of 3.2 m and newborn pups are approximately 1 m in length.



Distinctive anatomical features that may be used to identify Greynurse Sharks include their protruding teeth and two dorsal fins of almost equal size.

Main photo © David Harasti; Inset photo © R.Carraro

DIVING WITH GREYNURSE SHARKS

Diving activities, including SCUBA, snorkelling and freediving are not regulated at critical habitat and aggregation sites, however all recreational divers and commercial operators are subject to a Code of Conduct for Diving with Grey Nurse Sharks. The Code of Conduct was prepared by NSW DPI and Environment Australia, in consultation with the diving industry, and has been implemented as part of the national Grey Nurse Shark Recovery Plan.

The Code of Conduct applies in all NSW waters including Grey Nurse Shark critical habitat and aggregation sites and is voluntary; however, severe penalties apply for interfering with any threatened species such as the critically endangered Grey Nurse Shark. Diving restrictions at all critical habitats and aggregation sites in NSW waters are summarised in the following maps.

Divers complying with the Code of Conduct are unlikely to be involved in activities which interfere with Grey Nurse Sharks.

Code of Conduct for Diving with Greynurse Sharks

To comply with the Code of Conduct for Diving with Greynurse Sharks all divers **must not**:

- » Night dive in sites identified as habitat critical to the survival of Greynurse Sharks;
- » Touch, feed or interfere with the natural behaviour of Greynurse Sharks;
- » Chase, harass or interrupt the swimming patterns of Greynurse Sharks;
- » Block cave entrances, gutters or entrap Greynurse Sharks;
- » Dive in groups totalling more than ten divers; and
- » Use mechanical apparatus including but not limited to scooters and horns or electronic shark protection devices.

All divers must comply with this Code of Conduct

Commercial operators shall be signatories to the Code of Conduct for Diving with Greynurse Sharks and must conduct all dives in recognised Greynurse Shark areas under this Code.

In addition to the divers' obligations listed above, all commercial operators **must**:

- » Give a dive brief at each dive site identifying Greynurse Shark habitat areas;
- » Ensure all divers on their charter vessels comply with the Code of Conduct;
- » Participate in scientific research to collect information regarding Greynurse Shark populations and distribution; and
- » Display the Code of Conduct in all dive stores and on board dive boats.

Commercial diving charters and operators are required by law to apply for a permit prior to undertaking any commercial diving activities in NSW marine parks. For applications please refer to:

www.mpa.nsw.gov.au/pdf/Permit-Application-Form.pdf

FISHING NEAR GREYNURSE SHARKS

All line fishing methods that use hooks have the potential to harm Greynurse Sharks; however, research has shown recreational fishing methods using baited hooks with whole fish or large baits are far more likely to accidentally hook Greynurse Shark. Other methods, such as spinning and trolling with artificial lures or fishing with vegetable baits were shown to rarely result in accidental interactions with Greynurse Sharks.

Autopsies of Greynurse Sharks found that hooks can become embedded in the throat and stomach, and can puncture the shark's large liver. This can lead to bacterial infection, septicæmia (blood poisoning) and ultimately death, and is the largest known source of human-induced mortality of the species.

What should I do if I catch a Greynurse Shark?

If you catch a Greynurse Shark, you must release it carefully causing the least possible harm:

- » Bring the shark in as quickly as possible to minimise stress.
- » Avoid lifting it out of the water as this can cause internal damage.
- » Cut the line as close to the hooked area as possible, remembering that your safety is paramount.
- » Under no circumstances should you gaff or tail rope the shark.

How can I avoid hooking a Greynurse Shark?

- » Avoid berleying up-current of critical habitat and aggregation sites.
- » Avoid fishing with wire trace or at night near critical habitat and aggregation sites.
- » Consider trolling or spinning with artificial lures as an alternative to bait (note that the use of bait is prohibited at many aggregation sites).
- » Use non-offset circle hooks.
- » Consider changing your location if you accidentally hook a Greynurse Shark.

Significant penalties apply

- » \$500 on the spot fines apply for taking fish in contravention of a fishing notification. For first offences, maximum penalties of \$22 000 and/or 6 months imprisonment apply, and \$44 000 and/or 12 months imprisonment, for a second or subsequent offence.
- » \$500 on the spot fines apply for interfering with a threatened species (such as Greynurse Sharks), with maximum penalties of \$110 000 and/or 2 years imprisonment. Interfering includes harassing, chasing, tagging, marking or engaging in any activity for the purposes of attracting or repelling a Greynurse Shark.
- » \$2500 on the spot fines apply for harming, buying, selling or possessing a threatened species, with maximum penalties of \$220 000 and/or 2 years imprisonment for endangered species (such as a Greynurse Shark).

FISHING RULES AT CRITICAL HABITAT AND AGGREGATION SITES

The current fishing rules as of November 2014 are summarised in the table below and illustrated in the following maps of critical habitat and aggregation sites. The rules aim to increase protection for Grey Nurse Sharks while still retaining recreational fishing access using low risk methods.

Site name & legal status	Recreational fishing restrictions	Spearfishing restrictions
Julian Rocks Critical Habitat (FM Act) & Sanctuary Zone (ME(MR))	Fishing prohibited	Fishing prohibited
The Steps / Anemone Bay, North Solitary Island Habitat Protection Zone (ME(MR)) Section 8 closure (FM Act)	Line fishing using bait is prohibited* Wire traces are permitted for trolling purposes only within 500 m of North Solitary Island, but only whilst a vessel is underway.	Permitted
Manta Arch, South Solitary Island Habitat Protection Zone (ME(MR)) Section 8 closure (FM Act)	Line fishing using bait is prohibited* Wire traces are permitted for trolling purposes only within 500 m of South Solitary Island, but only whilst a vessel is underway.	Permitted
Green Island Critical Habitat (FM Act) Section 8 closure (FM Act)	Line fishing using bait is prohibited*	Permitted
Fish Rock Critical Habitat (FM Act) Section 8 closure (FM Act)	Line fishing using bait is prohibited*	The taking of fish by spear or speargun is prohibited within 200m of Fish Rock other than: Australian Salmon; Mahi Mahi; Tailor; Cobia; Marlin and Sailfish (all species in the Family Istiophoridae); Mackerel and Tuna (all species in the Family Scombridae); Wahoo; Trevally, Yellowtail Kingfish and Rainbow Runner (all species in the Family Carangidae)

Site name & legal status	Recreational fishing restrictions	Spearfishing restrictions
Mermaid Reef Section 8 closure (FM Act)	Line fishing using bait is prohibited*	Permitted
The Pinnacle Critical Habitat (FM Act) & Sanctuary Zone (ME(MR))	Fishing prohibited	Fishing prohibited
Big and Little Seal Rocks Critical Habitat (FM Act) & Sanctuary Zone (ME(MR))	Fishing prohibited	Fishing prohibited
Little Broughton Island Critical Habitat (FM Act) & Sanctuary Zone (ME(MR))	Fishing prohibited	Fishing prohibited
Magic Point Critical Habitat (FM Act) Section 8 closure (FM Act)	Line fishing using bait is prohibited*	Permitted
Tollgate Islands Critical Habitat (FM Act) & Sanctuary Zone (ME(MR))	Fishing prohibited	Fishing prohibited
Montague Island Critical Habitat (FM Act) & Habitat Protection Zone – Restricted (ME(MR))	1. line fishing permitted 1 May – 31 October 2. between 1 November – 30 April: a. No fishing with bait; b. No fishing at anchor; c. No fishing with a wire trace line; d. No nets (but landing nets are allowed)	Permitted

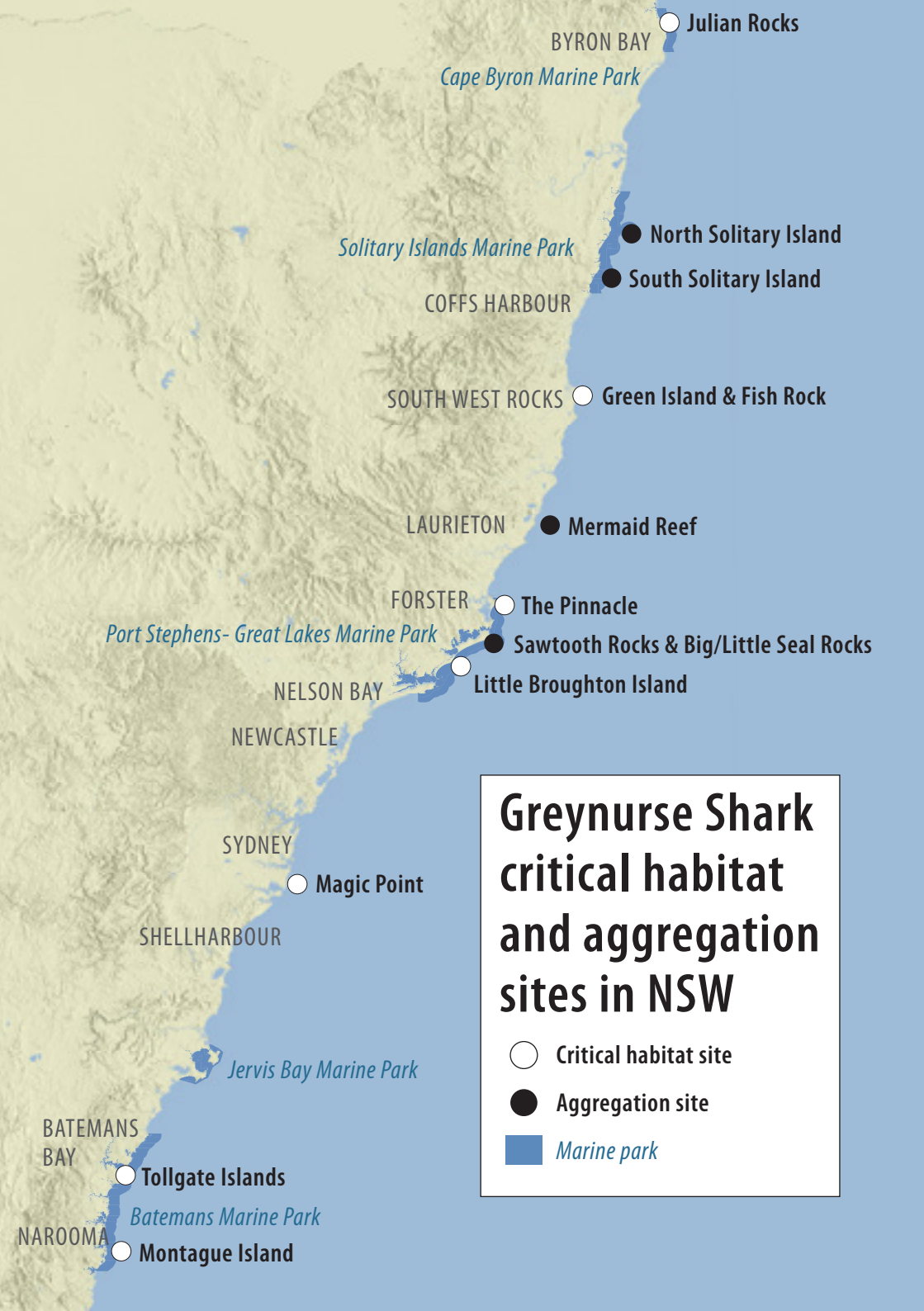
Table Notes:

FM Act = *Fisheries Management Act 1994*;

ME(MR) = *Marine Estate (Management Rules) Regulation 1999*;

* denotes that soft plastics, artificial baits and vegetable baits only are permitted

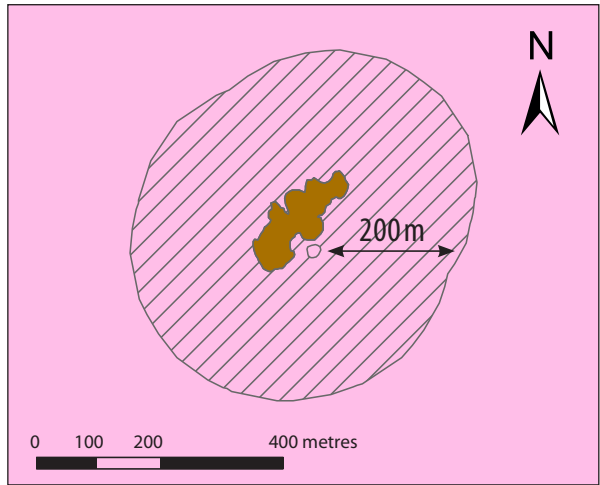
This table is a summary of fishing restrictions at the listed critical habitat and aggregation sites and is not a defence to prosecution.



Greynurse Shark critical habitat and aggregation sites in NSW

- Critical habitat site
- Aggregation site
- Marine park

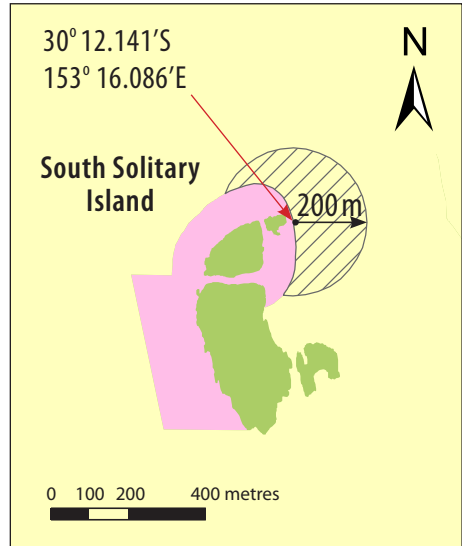
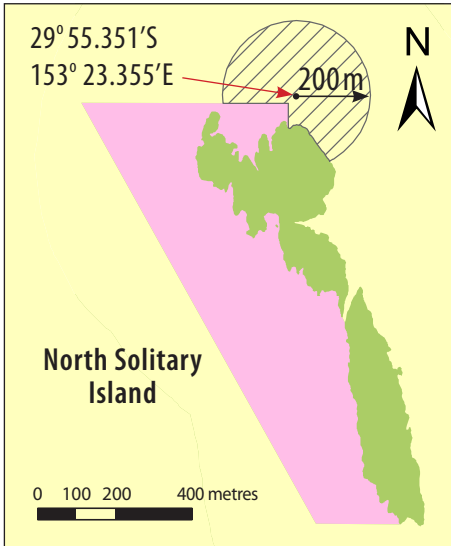
Julian Rocks – Cape Byron Marine Park



Activity	Greynurse Shark Critical Habitat	Sanctuary Zone
Line fishing – all methods	✘	✘
Spearfishing	✘	✘
SCUBA diving (a)	✔	✔

Activity Table Symbols	
✔	Activity permitted in the zone.
✘	Activity not permitted in the zone.
(a)	Code of Conduct for Diving with Greynurse Sharks applies.
Notes	<p>1. The activity table presents a summary of recreational fishing and diving activities permitted and restrictions that apply. Refer to the <i>Fisheries Management Act 1994</i>, <i>Fisheries Management (General) Regulation 2010</i> and the <i>Marine Estate Management Act 2014</i> and its regulations for full details.</p> <p>2. For more information on Marine Park zonings see: www.mpa.nsw.gov.au/cbmp.html</p>

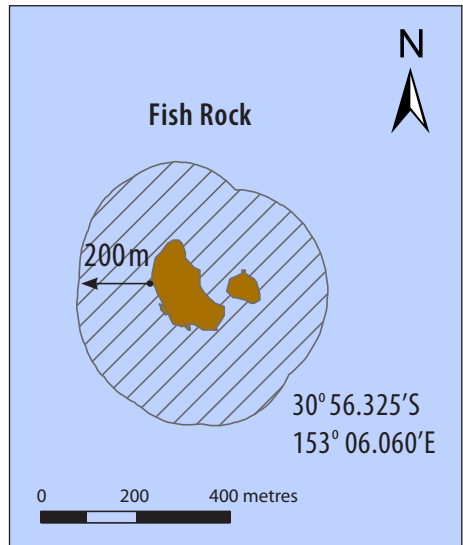
North & South Solitary Islands – Solitary Islands Marine Park



Activity	Habitat Protection Zone	Grey Nurse Shark Aggregation site	Sanctuary Zone
Line fishing (using soft plastics, artificial and vegetable based baits)	✓	✓ (a)	✗
All other line fishing methods	✓	✗	✗
Spearfishing	✓	✓	✗
SCUBA diving (b)	✓	✓	✓

Activity Table Symbols	
✓	Activity permitted in the zone.
✗	Activity not permitted in the zone.
(a)	Wire traces are permitted for trolling purposes, but only whilst a vessel is underway.
(b)	Code of Conduct for Diving with Grey Nurse Sharks applies.
Notes	<p>1. The activity table presents a summary of recreational fishing and diving activities permitted and restrictions that apply. Refer to the <i>Fisheries Management Act 1994</i>, <i>Fisheries Management (General) Regulation 2010</i> and the <i>Marine Estate Management Act 2014</i> and its regulations for full details.</p> <p>2. For more information see www.mpa.nsw.gov.au/simp/html</p>

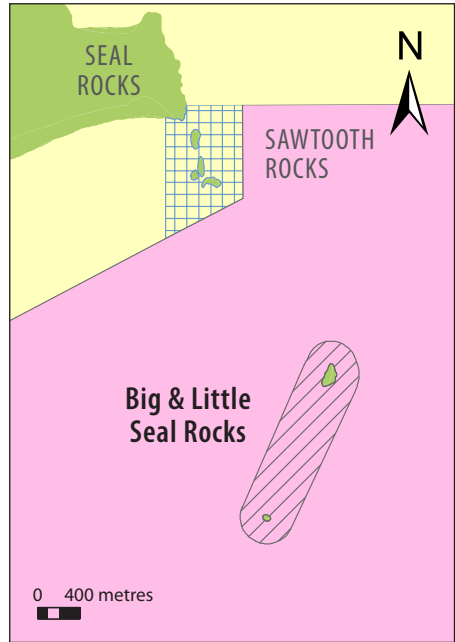
Green Island and Fish Rock – South West Rocks



Activity	Greynurse Shark Critical Habitat
Line fishing (using soft plastics, artificial and vegetable based baits)	✓
All other line fishing methods	✗
Spearfishing (a)	✗
SCUBA diving (b)	✓

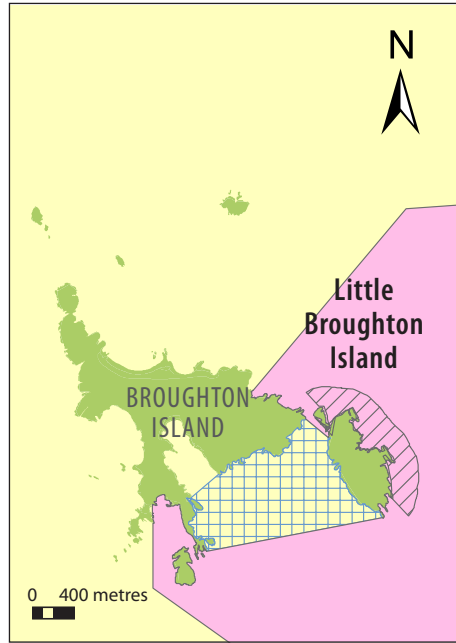
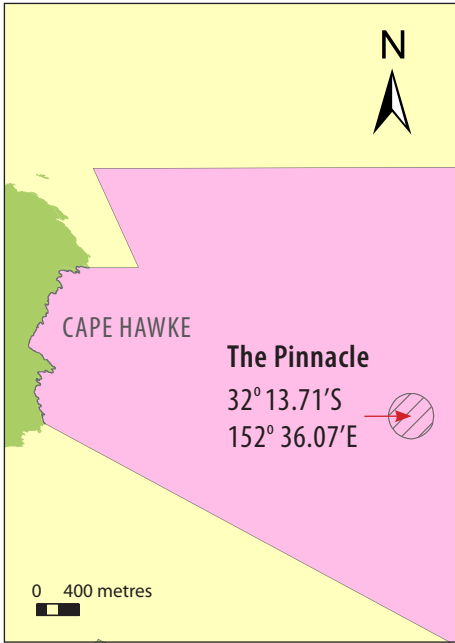
Activity Table Symbols	
✓	Activity permitted in the zone.
✗	Activity not permitted in the zone.
(a)	Within 200m of Fish Rock, fishing with spears or spear guns is prohibited for all fish except: i. Families: a. <i>Carangidae</i> (all Trevally, Kingfish & Rainbow Runner); b. <i>Scombridae</i> (Mackerel, Tuna, Wahoo); c. <i>Istiophoridae</i> (Marlin, Sailfish) ii. Species: a. <i>Rachycentron canadum</i> (Cobia); b. <i>Pomatomus saltatrix</i> (Tailor); c. <i>Coryphaena hippurus</i> (Mahi Mahi); d. <i>Arripis trutta</i> (Australian Salmon).
(b)	Code of Conduct for Diving with Greynurse Sharks applies.
Notes	The activity table presents a summary of recreational fishing and diving activities permitted and restrictions that apply. Refer to the <i>Fisheries Management Act 1994</i> and Fisheries Management (General) Regulation 2010 for full details.

Sawtooth Rocks, Big & Little Seal Rocks Port Stephens – Great Lakes Marine Park



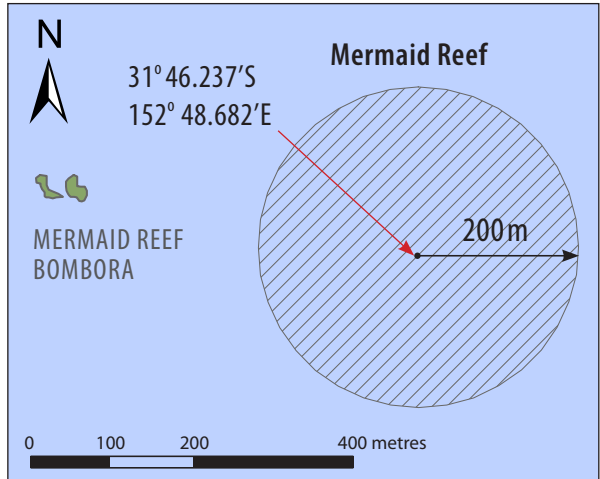
Activity	Habitat Protection Zone	Habitat Protection Zone	Greynurse Shark Critical Habitat	Sanctuary Zone
Line fishing (using soft plastics, artificial and vegetable based baits)	✓	✓ (a)(b)	✗	✗
All other line fishing methods	✓	✗ (b)	✗	✗
Spearfishing	✓	✓ (b)	✗	✗
SCUBA diving (c)	✓	✓	✓	✓

The Pinnacle and Little Broughton Island



Activity Table Symbols	
✓	Activity permitted in the zone.
✗	Activity not permitted in the zone.
(a)	Fishing with bait is prohibited. It is only permitted to take fish by way of artificial lure, artificial fly, fish trap, lobster trap, hand picking, spear or speargun.
(b)	Fishing, spearfishing, lobster gathering or trapping is not permitted from anchored vessels.
(c)	Code of Conduct for Diving with Grey Nurse Sharks applies.
Notes	<p>1. The activity table presents a summary of recreational fishing and diving activities permitted and restrictions that apply. Refer to the <i>Fisheries Management Act 1994</i>, Fisheries Management (General) Regulation 2010 and the <i>Marine Estate Management Act 2014</i> and its regulations for full details.</p> <p>2. For more information see: www.mpa.nsw.gov.au/psglmp.html</p>

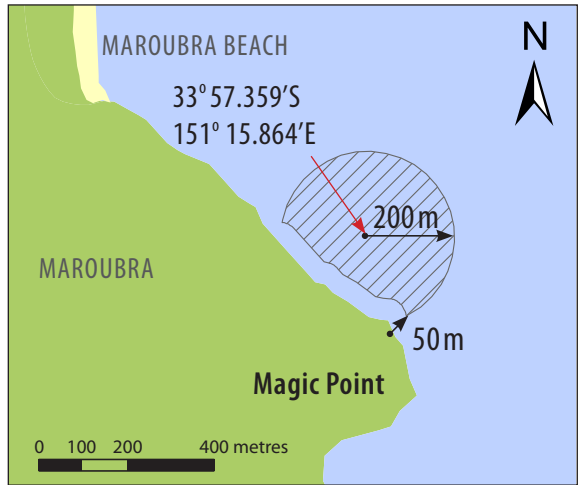
Mermaid Reef – Diamond Head



Activity	Greynurse Shark Aggregation site
Line fishing (using soft plastics, artificial and vegetable based baits)	✓
All other line fishing methods	✗
Spearfishing	✓
SCUBA diving (a)	✓

Activity Table Symbols	
✓	Activity permitted in the zone.
✗	Activity not permitted in the zone.
(a)	Code of Conduct for Diving with Greynurse Sharks applies.
Notes	The activity table presents a summary of recreational fishing and diving activities permitted and restrictions that apply. Refer to the <i>Fisheries Management Act 1994</i> and <i>Fisheries Management (General) Regulation 2010</i> for full details.

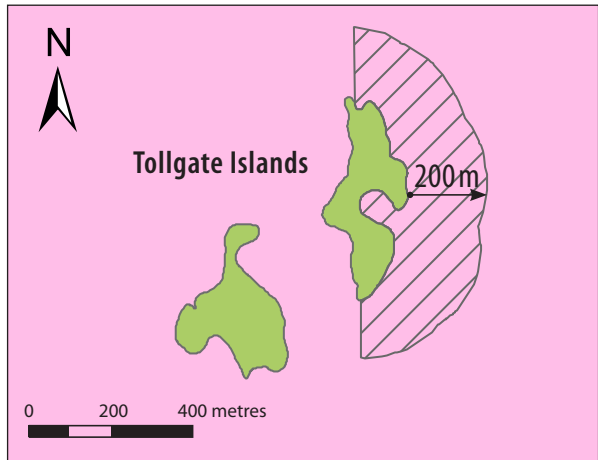
Magic Point – Maroubra



Activity	Greynurse Shark Critical Habitat
Line fishing (using soft plastics, artificial and vegetable based baits)	✓
All other line fishing methods	✗
Spearfishing	✓
SCUBA diving (a)	✓

Activity Table Symbols	
✓	Activity permitted in the zone.
✗	Activity not permitted in the zone.
(a)	Code of Conduct for Diving with Greynurse Sharks applies.
Notes	The activity table presents a summary of recreational fishing and diving activities permitted and restrictions that apply. Refer to the <i>Fisheries Management Act 1994</i> and <i>Fisheries Management (General) Regulation 2010</i> for full details.

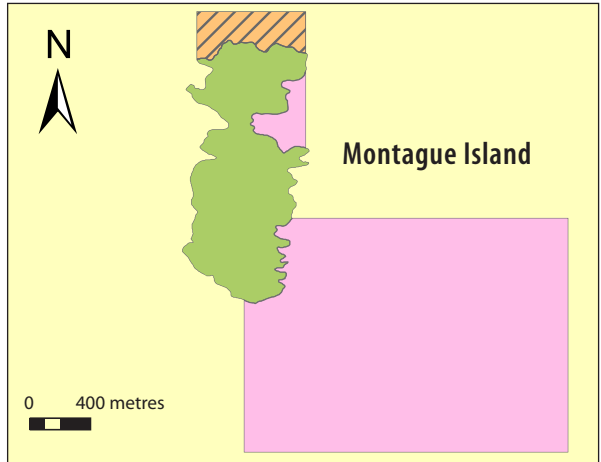
Tollgate Islands – Batemans Marine Park – Batemans Bay



Activity	Grey Nurse Shark Critical Habitat	Sanctuary Zone
Line fishing - all methods	✗	✗
Spearfishing	✗	✗
SCUBA diving (a)	✓	✓

Activity Table Symbols	
✓	Activity permitted in the zone.
✗	Activity not permitted in the zone.
(a)	Code of Conduct for Diving with Grey Nurse Sharks applies.
Notes	<p>1. The activity table presents a summary of recreational fishing and diving activities permitted and restrictions that apply. Refer to the <i>Fisheries Management Act 1994</i>, Fisheries Management (General) Regulation 2010 and the <i>Marine Estate Management Act 2014</i> and its regulations for full details.</p> <p>2. For more information see: http://www.mpa.nsw.gov.au/bmp.html</p>

Montague Island – Batemans Marine Park – Narooma



Activity	Habitat Protection Zone	(Inner) Habitat Protection Zone (Restricted)		Sanctuary Zone
		1/5-31/10	1/11-30/4	
Line fishing (using soft plastics, artificial and vegetable based baits)	✓	✓	✓ (a)	✗
All other line fishing methods	✓	✓	✗ (a)	✗
Spearfishing	✓	✓	✓	✗
SCUBA diving (b)	✓	✓	✓	✓

Activity Table Symbols	
✓	Activity permitted in the zone.
✗	Activity not permitted in the zone.
(a)	Between 1 November and 30 April: ● No fishing with bait ● No fishing at anchor ● No fishing with a wire trace line ● No nets (but landing nets are allowed)
(b)	Code of Conduct for Diving with Grey Nurse Sharks applies.
Notes	1. The activity table presents a summary of recreational fishing and diving activities permitted and restrictions that apply. Refer to the <i>Fisheries Management Act 1994</i> , <i>Fisheries Management (General) Regulation 2010</i> and the <i>Marine Estate Management Act 2014</i> and its regulations for full details. 2. For more information see: http://www.mpa.nsw.gov.au/bmp.html

REPORTING GREYNURSE SHARK SIGHTINGS AND INTERACTIONS

Fishers and divers can report sightings or interactions to NSW DPI.

Record the details including:

- » Your name, address, phone number
- » Date and time
- » Location (GPS coordinates if possible)
- » Water depth
- » Approximate total length

Send your information to the NSW DPI by any of the following methods:

- » **Phone:** 24 hour reporting line (02) 4916 3877.
- » **Online:** www.dpi.nsw.gov.au/fisheries
Follow the link to the Threatened Species Sighting Form.
- » **Mail:** Threatened Species Unit,
NSW Department of Primary Industries
Locked Bag 1
Nelson Bay NSW 2315
- » **Email:** fisheries.threatenedspecies@dpi.nsw.gov.au

Interactions with Grey Nurse Sharks in Commonwealth Waters must be reported within seven days of becoming aware of the incident to the Australian Government Department of the Environment on:

Phone: 1800 641 806 or Email: Protected.Species@environment.gov.au

Report any suspicious or illegal fishing activity to your local NSW DPI Fisheries Office or call the Fishers Watch Phone line on 1800 043 536.

For further information please call 1300 550 474 or visit www.dpi.nsw.gov.au/fisheries



Photo © Justin Gilligan



Department of
Primary Industries