

Fisheries Scientific Committee

January 2008

Ref. No. FD32
File No. FSC 99/22

FINAL DETERMINATION

Carcharias taurus – grey nurse shark

The Fisheries Scientific Committee, established under Part 7A of the *Fisheries Management Act 1994* (the Act), has made a final determination to omit *Carcharias taurus* – grey nurse shark from Part 1 of Schedule 4 Endangered Species of the Act and insert *Carcharias taurus* – grey nurse shark into Part 1 of Schedule 4A Critically Endangered Species of the Act. The amendment of the threatened species lists is provided for by Part 7A, Division 2 of the Act.

The Fisheries Scientific Committee, with reference to the criteria relevant to this species, prescribed by Part 11B of the *Fisheries Management (General) Regulation 2002* (the Regulation) has found that:

Background

1. *Carcharias taurus* – grey nurse shark is a valid, recognised taxon and is a species as defined in the Act.
2. *Carcharias taurus* Rafinesque, 1810 of the family Odontaspidae has also been known in the local literature as *Odontaspis cinerea* Ramsay, 1880; *Carcharias arenarius* Ogilby, 1911; and *Eugomphodus taurus*. Overseas, this species is also known as the sand tiger shark or spotted ragged-tooth shark.
3. *Carcharias taurus* – grey nurse shark has the following conservation status:
 - i. NSW *Fisheries Management Act 1994*: Endangered;
 - ii. IUCN globally – Vulnerable, Australia – Vulnerable, NSW Critically Endangered;
 - iii. Commonwealth *Environmental Protection and Biodiversity Conservation Act 1999*: - Critically Endangered (east coast population);
 - iv. Victoria *Flora and Fauna Guarantee Act 1988*: - Threatened;
 - v. Queensland *Nature Conservation Act 1992*: - Endangered; and,
 - vi. Australian Society for Fish Biology: - Vulnerable.
4. *Carcharias taurus* has been recorded from temperate waters of all oceans except the eastern Pacific, including the length of the NSW coast.
5. *Carcharias taurus* has a two-yearly reproductive cycle, with females producing, on average, one pup or less per year - possibly the lowest reproductive rate of any shark.
6. Reproduction, habitat, ecology and life history of *Carcharias taurus* in eastern Australian waters is well documented (e.g., NSW DPI, 2006).

Criteria – reduction in abundance, geographic distribution or genetic diversity (Regulation clause 340F)

1. *Carcharias taurus* suffered significant declines in NSW, from fishing and spear-fishing and other causes, particularly in the 1960s and 70s. Despite protection in NSW waters since 1984, the species has not shown an increase in population size.
2. Data from the 1960s is sparse and incomplete, but it has been estimated from sightings of *Carcharias taurus* that there were, at minimum, over 1700 individuals distributed at about 57 aggregation sites along the southern Queensland and NSW coastline. In 2001, as a result of an intensive diver survey of these sites, the total population of *Carcharias taurus* was estimated to be fewer than 500.
3. Further support for an extremely large reduction in the population of *Carcharias taurus* is provided by:
 - a. A very large decline in the catches of this species by game fishers between 1961-1990.
 - b. The concurrent decline in the catches of the species in the beach safety (shark) mesh nets, from over 30 per year in the 1950s to about 1-2 per year in recent years.
4. The minimum anthropogenic mortality, assessed from recovered carcasses of *Carcharias taurus*, was estimated in 2002 to be about 12 per year, mostly consisting of females.
5. Currently, there is concern that the genetic diversity of *Carcharias taurus* may be impacted by the low number of reproductive individuals.

Criteria – threatening processes (Regulation clause 340G)

1. *Carcharias taurus* is threatened by:
 - a. Illegal fishing;
 - b. Injury due to accidental capture by commercial and recreational fishers; and,
 - c. Capture in beach safety (shark) mesh nets.
2. In light of the above, the Fisheries Scientific Committee has found that these threatening processes continue to operate within the geographic distribution of the species and existing reserve systems or other forms of refuge do not adequately protect the species.

Conclusion pursuant to section 220F(2) of the Act

In the opinion of the Fisheries Scientific Committee:

- a. *Carcharias taurus* – grey nurse shark is facing an extremely high risk of extinction in New South Wales in the immediate future, as determined in accordance with the criteria prescribed by the Regulation as discussed above.

The species is eligible to be listed as a **CRITICALLY ENDANGERED SPECIES**.

Sources and Links

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