

Black Rockcod – *Epinephelus daemeli*

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Aquatic Ecosystems Unit, Port Stephens Fisheries Institute



Figure 1: A Black Rockcod (Photo: D. Harasti)

Introduction

The Black Rockcod, also known as Black Cod or Black-Saddled Rockcod, is a large, reef-dwelling species belonging to the grouper family, which is found in warm temperate and subtropical parts of the south-western Pacific. The species' historic Australian range probably extended from southern Queensland to Victoria; however, the Black Rockcod is now mostly found from southern Queensland to eastern Victoria, with the NSW coastline forming the species' main range.

Large Black Rockcod are slow moving, territorial and curious. In addition to those characteristics, they are slow growing and have a relatively long life span making them particularly susceptible to population decline. Over the last two centuries, populations of Black Rockcod have been greatly reduced due to overharvesting.

In NSW, the Black Rockcod was listed as a protected species in 1983, and subsequently listed as a **vulnerable species** in 1999. There are heavy penalties for harming, possessing, buying or selling them, or for harming their habitat (see 'Legal implications').

Description

An adult Black Rockcod can grow to 1.7 m in length and at least 80kg in weight, but it is more common to see smaller fish (up to 1m/30kg).

Although the species is usually black in estuaries and banded in clearer waters on coastal reefs, the colour of Black Rockcod can vary. Adult fish can change colour quickly from a uniform dark grey-black to a blotched or distinctively banded dark pattern. Some fish also have small black spots or occasional whitish markings on the body and/or fins and all fish have a distinct black 'saddle' shaped spot just in front of the tail.

The Black Rockcod has a rounded caudal fin and 11 dorsal spines. It is a carnivorous species with distinct canine teeth on both sides of the upper and lower jaws. It is similar in appearance to other large *Epinephelus* species such as the Bar Rockcod, the Queensland Grouper and the Goldspotted Rockcod, and can sometimes be confused with these and other closely related species.



Figure 2: Black Rockcod (Images: P. Tully)

Identifying features

- Colour highly variable from black to grey with blotches of banding pattern
- Large canine teeth in both jaws
- Distinct black 'saddle' shaped spot just in front of the tail
- Rounded caudal fin
- 11 dorsal spines
- White margin on fins

Habitat and Ecology

- Adult Black Rockcod are usually found in caves, gutters and beneath bommies on rocky reefs, from near shore environments to depths of at least 50 m.
- Small juveniles are often found in coastal rock pools, and larger juveniles around rocky shores in estuaries.
- They are territorial and often occupy a particular cave for life.
- Black Rockcod are opportunistic carnivores, eating mainly other fish and crustaceans.
- Like most other species in the *Epinephelus* genus, the Black Rockcod is a protogynous hermaphrodite – first developing as a sexually mature female and then changing into a male later in life at a length of approximately 100 – 110 cm.
- Recent survey data has shown that although Black Rockcod were historically broadly distributed across a number of sites in NSW, the number of sites and observed individuals appear to be significantly reduced.

Why is the Black Rockcod threatened?

- Black Rockcod populations have been reduced by over-harvesting by line, net and spear fishers.

- The species is now totally protected in NSW, but accidental capture (and hooking injuries in accidentally caught fish) still poses a threat.
- Accidental capture of Black Rockcod can cause mortality from hooking and handling injuries or barotrauma (injury caused by depressurisation and swim-bladder decompression when fish are taken out of deep water).
- Juvenile Black Rockcod are also impacted by the loss or degradation of estuarine and intertidal nursery habitats.
- It is possible that overfishing of larger males before protection in 1983 may have impaired subsequent recruitment and recovery.

Conservation and recovery actions

- Ensure that councils, government agencies and other relevant organisations are aware of the location of important areas for Black Rockcod.
- Negotiate with local councils and industry groups regarding the type and scale of development near key areas and provide relevant information to support appropriate planning and impact assessment.
- Promote the use of fishing techniques and gear that eliminate or mitigate the impact of high and moderate risk activities on Black Rockcod.
- Produce advisory material to address identification issues and raise awareness of the protected status of Black Rockcod.
- Maximise compliance activities at identified important sites.
- Report any sightings of the species via the NSW DPI [online form](#).
- A full list of strategies and actions for promoting the recovery of the Black Rockcod is set out in the NSW DPI [Priorities Action Statement](#).

Legal implications

It is illegal to catch and keep, buy, sell, possess or harm a Black Rockcod (or any other threatened species in NSW) without a specific permit, licence or other appropriate approval, and significant penalties apply. For vulnerable species, these penalties can include fines of up to \$55,000 and up to 1 year in prison. There can also be significant penalties for causing damage to the habitat of a threatened species without approval.

The impacts of developments or activities that require consent or approval in accordance with

the *Environmental Planning and Assessment Act 1979* must be assessed and considered by consent or determining authorities. Where such actions are likely to result in significant impact on a threatened species or its habitat, a detailed species impact statement must be prepared.

Strategies to be adopted for promoting the recovery of the Black Rockcod must be set out in the NSW DPI Priorities Action Statement.

A recovery plan has been prepared in accordance with the provisions of the *Fisheries Management Act 1994* to promote the recovery of the species to a position of viability in nature.

Bibliography and further reading

Fisheries Scientific Committee (1999) *Epinephelus daemeli* – Black Cod. Recommendation.

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Harasti, D. et. al (2014) Where are the little ones: distribution and abundance of the threatened serranid *Epinephelus daemeli* (Gunther, 1876) in intertidal habitats in New South Wales, Australia. *Journal of Applied Ichthyology* **30** (5): 1007–1015.

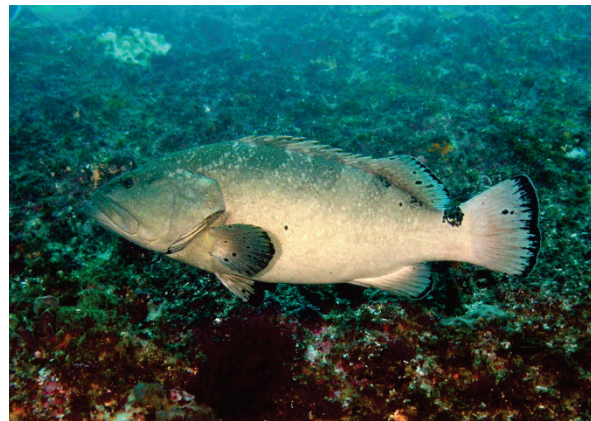
NSW DPI (2012) Black Rockcod (*Epinephelus daemeli*) recovery plan. Aquaculture, Conservation and Marine Parks Unit, Port Stephens Fisheries Institute 37pp.

Threatened Species Scientific Committee (2012) Commonwealth Conservation advice on *Epinephelus daemeli* (Black Rock-cod). 5 pp.

For further information

See [Species Protection](#)
Contact the NSW DPI Threatened Species Unit:
Port Stephens Fisheries Institute
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Nelson Bay NSW 2315
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Figures 3 and 4: A juvenile (above) and a mature (below) Black Rockcod. (Photos: D. Harasti)



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