

Blue groper — Situation Report

By Research Officer John Johnson

Although detailed information on the biology of the blue groper (*Achoerodus gouldii*) is lacking there are indications that the species is relatively long-lived, territorial and slow-growing. These characteristics appear to make it susceptible to over-fishing and many divers believe that there has been a decline in numbers over the past 20 years.

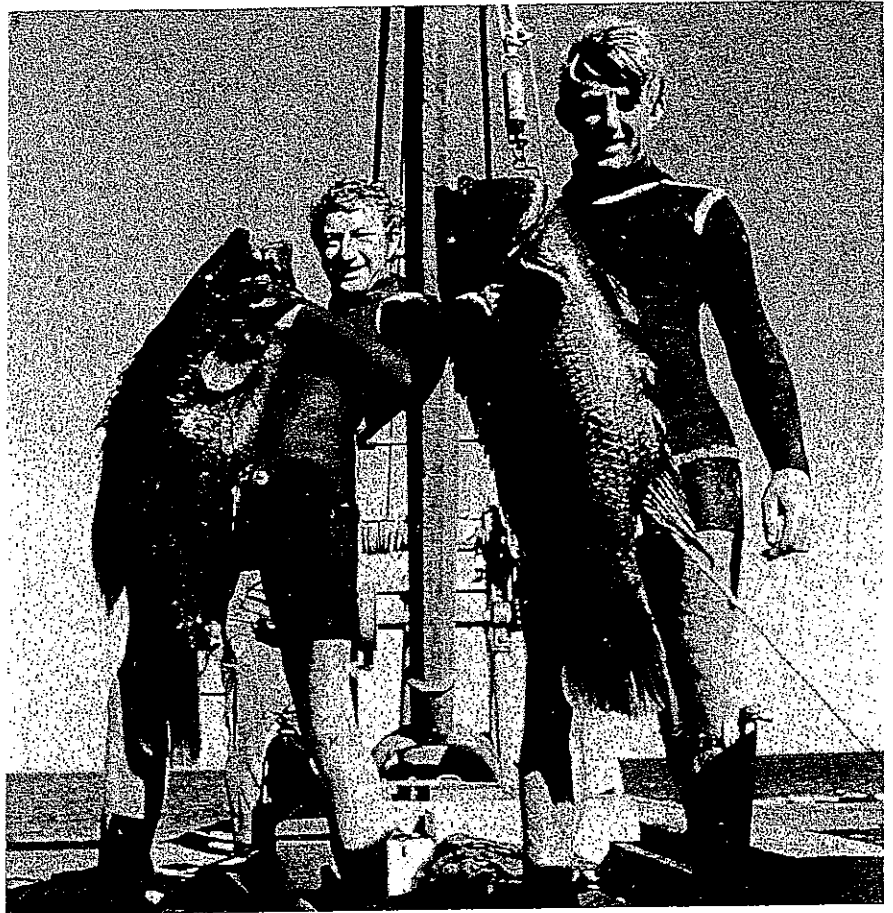
In Australian waters there are two species in the genus *Achoerodus*. *A. viridis* occurs along the eastern Australian coast and *A. gouldii* occurs along the southern Australian coast from Western Australia to Victoria although it is uncommon east of the Murray Mouth. *A. gouldii* inhabits wave-swept submerged reef areas adjacent to the mainland and around off-shore islands on moderate to high energy coasts. It has never been known to be north of the latitude of Aldinga reef in Gulf St. Vincent or Wardang Island in Spencer Gulf.

In South Australia *A. gouldii* has two colour morphs, a green morph and a blue morph. The green specimens are small (60 cm) while the blue specimens are generally larger fish and the colour change may be associated with sexual maturity.

Blue groper is carnivorous feeding mainly on molluscs and small crustaceans such as amphipods. Underwater observations indicate that blue groper, like most labrids, are territorial.

The mortality of the species during different stages of its life cycle and the fecundity of reproductively mature specimens is not known, although it has been estimated from 22 specimens that the species takes approximately eight years to reach 40 cm, 15 years to reach 60 cm, 25 years to reach 80 cm and about 50 years to attain the maximum recorded size (142 cm). From field observations it is believed that blue groper reach reproductive maturity at about 60 cm length or about 15 years of age, according to the South Australian Museum.

No information exists for predicting the recolonisation potential of the species in areas from which it has been eliminated, although this is likely to be very low. This is confirmed by a knowledge of the decline in numbers of the species over the more accessible part of South Australia's coastline, i.e. east



Blue groper, once popular as a sport fish among spearfishermen, is now banned by most spearfishing clubs and contest organisers. Greater protection may be needed, however, to maintain populations.

of Cape Catastrophe, in the last 20 years and the failure for the species to make any noticeable recovery despite the fact that many spearfishing clubs discourage its taking and it is no longer an "eligible" species in state or national spearfishing contests. Also, it may take considerable time for reproductively mature individuals to appear in the population because of the species' slow growth rate.

The blue groper is of considerable interest to skin divers and scuba divers because of its characteristics: large size and striking colouration; and its relatively slow-moving nature. It readily takes food from the hand. It has been considered a "trophy" fish by some spearfishermen and a popular subject for underwater photographs. A company operating tours in South Australia has advertised a diving holiday on one of the Sir Joseph Banks Islands in southern Spencer Gulf and lists as one of the attractions the chance to hand-feed a blue groper.

The species is captured by spearing, handline, rod and line fishing and large mesh nets set for shark, and this will continue as long as these methods of fishing are permitted in areas where blue groper occur.

Scuba divers and spearfishermen report that the number of blue groper speared in South Australia in recent years has decreased.

Commercial fishermen generally land the species as by-catch while fishing for their "target" fish.

In 1980 the South Australian Government prohibited the sale of blue groper by commercial fishermen, and although they reportedly make up only a small amount of the catches, fishermen still want to sell them as by-catch. From reported landings between June 1976 and December 1980 the proportion of commercial fishermen's incomes obtained from the sale of this species appears to be very small.

In the late 1960s the South Australian Museum Underwater Research Group recommended a minimum legal length of 60 cm to allow the fish to breed at least once and suggested that at this size the fish was unpalatable (*R. Sprigg, I. Thomas, C. Freeman, G. Kennedy, C. Glover and S. Shepherd, unpublished data*). This group advocated total protection of the fish. During the 1970s the Scuba Divers' Association of South Australia Incorporated made several approaches to the South Australian Department of Fisheries calling for protection of the species within both Gulf St Vincent and Spencer Gulf.

Although in 1980 the sale of the species by commercial fishermen was prohibited, this does not ban the capture of the species by either recreational or commercial fishermen. The existing legal minimum length is 46 cm.

In Western Australia a ban on taking blue groper (*A. gouldii*) was imposed in 1973 as a conservation measure, because the species is particularly vulnerable to capture by spearfishermen. This ban was lifted in 1978 and replaced by a bag limit of one per day for recreational fishermen. No bag limit was placed on commercial fishermen. However,

concern was expressed at the possibility of a depletion of blue groper stocks if abalone fishermen were permitted to spear the fish without restrictions. Therefore, new conditions placing further restrictions on the taking of blue groper by professional abalone fishermen in certain zones were introduced.

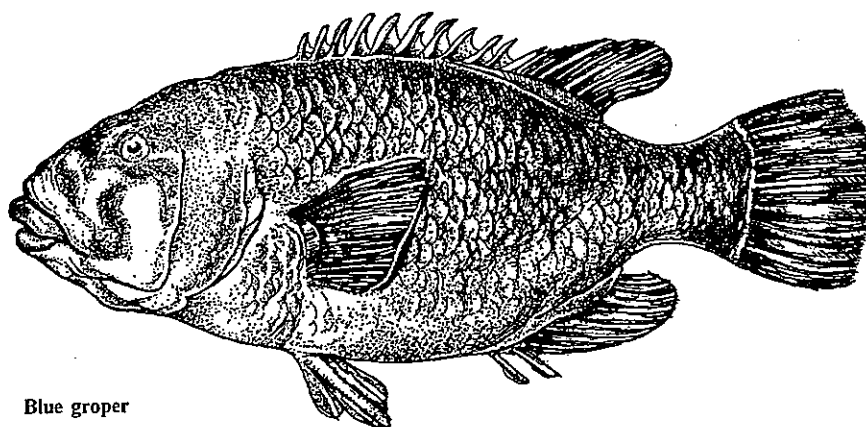
In New South Wales a ban on the taking of blue groper, *A. viridis*, was introduced on the 1970s. More recently this ban has been relaxed and the present legislation prohibits the sale of the species by commercial fishermen and a ban on their capture by nets and by spearing. Furthermore, a bag limit of two fish per angler or line fisherman per day applies.

In some areas of the gulfs where blue groper once occurred commonly there are now very few specimens. However, along the West Coast and around the off-shore islands, in areas of suitable habitat, blue groper commonly may be seen. This suggests that blue groper are not under the threat of extinction but that some groper populations have been subjected to more exploitation than others. Blue groper populations not yet severely exploited by recreational and commercial fishermen may need to be protected because of uncertainty over the recovery capacity of exploited groper populations.

Options which may be looked at in South Australia include:

- maintain the present restrictions on commercial fishermen and introduce a bag limit of one fish per recreational fisherman per day.
- a total ban for recreational and commercial fishermen on the capture of blue groper in the gulfs of South Australia and along the northern coast of Kangaroo Island, and
- a total ban for recreational and commercial fishermen on the capture of blue groper in South Australia.

The first option does not provide complete protection to the blue groper stocks and is unlikely to have any beneficial effect for the small population numbers now observed in the South Australian gulfs. It is considered that these populations in time could be exploited to an almost irrecoverable level if this legislation was introduced.



Blue groper

The reported landings (kg) of blue groper, *Achoerodus gouldii*, in South Australia from commercial catch returns, between June 1976 and December 1980, and the value of the catch based on the average price/kg each year.

Port of Landing	Year				July 1980 to Dec. 1980	Total landings at each port. (kg)
	76/77	77/78	78/79	79/80		
Baird Bay	—	—	—	5	—	5
Ceduna	—	—	129	—	—	129
Coffin Bay	137	13	34	30	—	214
Corny Point	14	7	47	—	88	156
Elliston	17	1 200	450	360	181	2 208
Fowlers Bay	—	10	—	—	—	10
Kingscote	—	114	36	—	—	150
Marion Bay	23	51	64	1 028	137	1 303
Pondalowie Bay	—	—	—	43	—	43
Port Kenny	—	439	—	—	—	439
Port Lincoln	212	980	781	2 283	764	5 020
Streaky Bay	269	151	53	744	40	1 257
Thevenard	55	13	28	—	—	96
Venus Bay	—	—	345	5	—	350
Total (kg)	727	2 978	1 967	4 498	1 210	
Landings per year						
Value to fishermen (in dollars)	422	1 787	1 357	1 529	Not available	

The second option is a minimum measure to permit populations to increase in number over that part of the species' range from which it has been largely eliminated. Hence a possible area of total ban is all that water enclosed by two straight lines as shown in the map. It is also worth considering that in other areas the minimum legal length for the taking of blue groper be increased to 60 cm and that the current restriction applying to the commercial fishermen should remain in force.

At present a total ban throughout South Australia is not justified until at least evidence accumulates that the species' populations are threatened in the Great Australian Bight. However, a total ban would probably be the most enforceable measure.



John Johnson



Proposed total ban area for the taking of blue groper.

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