

## Blue groper —

By Research Officer J

Although detailed information on the biology of the blue groper (*Achoerodus gouldii*) is lacking, there are indications that the species is relatively long-lived, territorially slow-growing. These characteristics appear to make it susceptible to overfishing and many divers believe 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 east 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 latitudes. It has never been known north of the latitude of Alderney in Gulf St. Vincent or Ward Island in Spencer Gulf.

In South Australia *A. gouldii* has two colour morphs, a green and a blue morph. The green specimens are small (60 cm), 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 gobies, are territorial.

The mortality of the species at different stages of its life cycle, the fecundity of reproductive 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, 22 years to reach 80 cm and about 30 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 parts of South Australia's coastline,

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that at this size the fish was unpalatable (*R. Sprigg, I. Thomas, C. Freeman, G. Kennedy, C. Glover and S. Shepherd, unpublished data*).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 over the possibility of a depletion of proper stocks if they were permitted to be taken without restrictive conditions placed on the taking of the fish. Professional anglers in certain zones were

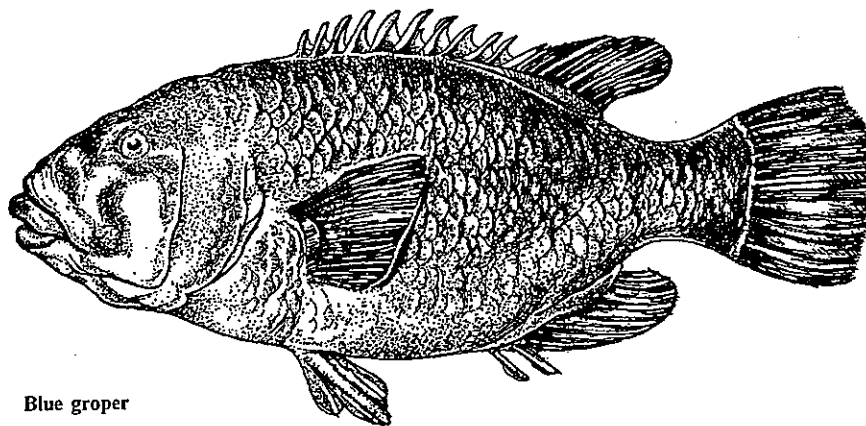
In New South Wales the taking of blue groper was introduced on a limited basis. Recently this ban was lifted and the present regulations allow the sale of the fish by recreational fishermen and by commercial fishermen using nets and by commercial fishermen using spears. Furthermore, a bag limit of one per angler or line applies.

In some areas where blue groper once thrived there are now very few. However, along the coast around the offshore islands of suitable habitat is commonly found. This suggests that blue groper under the threat of extinction that some groper populations have been subjected to are more resilient than others. Blue groper is not yet severely depleted and recreational anglers and commercial fishermen may be able to recover populations because of undiminished recovery capacity.

Options which have been considered in South Australia

- maintain the status quo of commercial capture and introduce a bag limit per recreational angler
- a total ban on commercial capture of blue groper in the northern coast and southern coast of South Australia
- a total ban on commercial capture of blue groper in Australia.

The first option is a complete protection of proper stocks and any beneficial population nurseries in the South Australia considered that this time could be irrecoverable if blue groper 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.

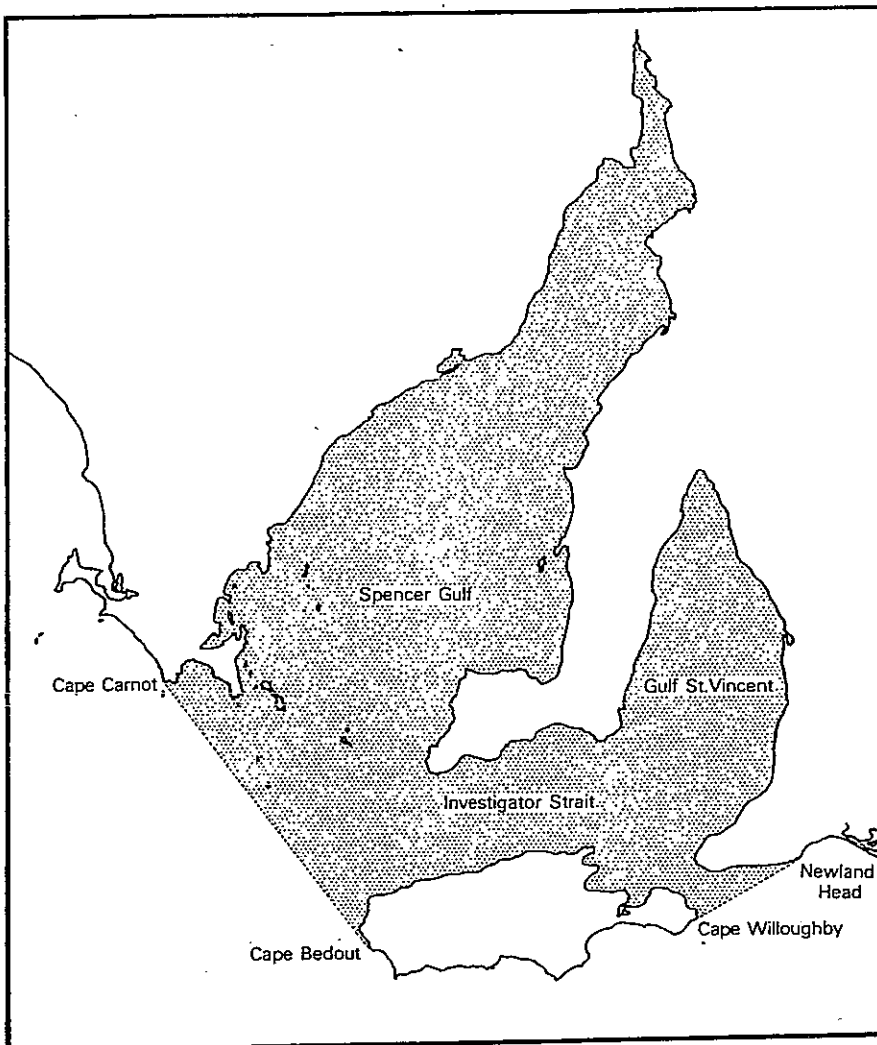
Port of Landing	Year				July 1980 to Dec. 1980	Total landings at each port. (kg)
	76/77	77/78	78/79	79/80		
Baird Bay	—	—	—	5	—	5
Ceduna	—	—	129	—	—	129
Coffin Bay	137	13	34	30	—	214
Corny Point	14	7	47	—	88	156
Elliston	17	1 200	450	360	181	2 208
Fowlers Bay	—	10	—	—	—	10
Kingscote	—	114	36	—	—	150
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
<b>Total (kg)</b>	<b>727</b>	<b>2 978</b>	<b>1 967</b>	<b>4 498</b>	<b>1 210</b>	
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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