

BLUE GROPER SURVEYS ON KI

Reef Watch, Conservation Council of South Australia

Reef Watch recently sponsored a survey of western blue groper (*Achoerodus gouldii*) on the nearshore rocky reef areas on the western and northern coasts of Kangaroo Island.

The western blue groper is a long-lived, slow growing, site-associated fish considered by some fisheries researchers and conservation experts in S.A. to be potentially threatened.

Western blue groper (WBG) are found on the exposed coasts of southern Australia from Cape Leeuwin, W.A. to Victoria but are rare east of the River Murray mouth. Little is known of the biology of the species, but much of it can be inferred from that of the eastern blue groper (*Achoerodus viridis*).

In the recent surveys, divers and snorkellers counted and estimated the size of groper along several replicated 100m x 5m transect belts. This method was found to be suitable for sampling females and sub-adults (20-60 cm), which are site-attached and swim in loose aggregations. However, the transects were not long enough to adequately sample the less abundant juveniles (<20 cm) and adults (> 60 cm), the latter having home ranges of up to 16,000 m². To estimate accurately the density of adults divers swam, greater distances covering up to 1 km of the coast were required, noting where the home range of one pair ended and another began.

There was a trend of decreasing numbers of adults and sub-adults with distance from the western end of the island. At a sheltered site near Penneshaw, in an area proposed for a Marine Park, the density of juveniles was a hundred times more than other sites sampled.

Previous observations suggest that WBG may take up to 15 years before reaching sexual maturity, when it changes from greenish colour to blue. Initial studies by Dr Shepherd show they feed on crabs, smaller crustaceans, sea urchins and molluscs. On one offshore island group, male gopers were found to be site-attached and wandered over a home-range of up to 8000 m². Gopers, like other wrasses may play a key role in coastal ecosystems by controlling the abundance of crabs (which predate on small abalone), and sea-urchins (which consume epibenthic macroalgae).

Although protected in South Australia's Gulfs and Investigator Strait, commercial and recreation fishing occurs throughout the rest of the state.

Blue gopers have been described as "highly vulnerable to overexploitation". In the 1980's, divers reported that western blue groper numbers were rapidly declining in areas south of Adelaide, due to commercial and recreational fishing, including spear-fishers. Charter boats target them in some areas of SA. Groper are caught as a bycatch in shark and Commonwealth scalefish fisheries.

The recent Australian Conservation Overview of Marine and Estuarine Fish (Pogonoski et al.2001) suggested that blue groper be classified as Lower Risk - Conservation Dependent on an Australia-wide basis, because the continued survival of this species in southern Australian waters may rely on its protection from over-fishing by line (commercial and recreational) and spear-fishers (recreational).

The surveys were undertaken by Dr. Scoresby Shepherd in conjunction with five Reef Watch divers. Funding was provided by Coastcare and the office of Coast and Marine, Department for Environment and Heritage. Reef Watch is a program of the Conservation Council of SA.