



## Marine parks, sanctuaries for ocean life

Fish are the megafauna of marine areas, the higher-order herbivores and predators the ocean equivalent of kangaroos, wombats and koalas. We would not consider harvesting mammals in land-based national parks, so why should we do it to fish in marine national parks?

Fishing involves major indirect impacts on other marine species, communities and ecological processes. Targeted marine fishing can alter the population structures and species diversity of fished areas. The target species, some of which are large, high level predators in the ecosystem, are taken in what is akin to hunting in the terrestrial environment.

In some fisheries, particularly those using trawl and gill nets, large numbers of non-target species termed "bycatch" are also taken. The effects of trawling can include the reduction of fished and non-fished species, removal of organisms attached to the sea floor and changes in food webs such as increased populations of scavengers like seabirds, fish and crabs.

The increasing pressure on our shores from recreational activities such as fishing and collecting has led to reductions in target species such as molluscs, sea urchins, sea squirts and fish, the loss of habitats, alteration of populations and the disturbance of food chains.

### Recreational fishing

A desktop review of available research carried out by Dr Mark Norman, a leading Victorian marine biologist, showed recreational fishing removes large amounts of fish from our marine environment, and that recreational fishing pressure is building. Because marine national parks are designed to fully protect marine life, recreational fishing is completely inappropriate within them.

The Norman review confirmed that the impact of recreational fishing on fish stocks is substantial. In Port Phillip Bay alone, boat-based recreational fishers (excluding shore-based anglers) spend 2.7 million hours each year fishing, catching an estimated 2.7 million fish. Estimates of annual day boat catch by recreational fishers in Port Phillip Bay are 469 tonne, close to the commercial catch of 482 tonne (ex-



Marine parks protect ocean fish stocks, creating long-term benefits for both the recreational and commercial fishing industries.

cluding pilchard/sprat harvests) (Coutin et al. 1995).

The review also found that recreational fishing pressures are growing through increased participation, more efficient gear, increasing access to areas by four-wheel drives and boats, and higher efficiency in finding fish using technologies such as echo-sounders and geographical positioning systems.

Recreational fishing has a number of other actual or potential impacts that add to the pressure of coastal use. These include mortality of released animals, retention of undersized fish, lost gear, habitat damage, hydrocarbon release by outboard motors and the ecological impacts of fish removals.

The principal purpose of marine national parks is to protect marine biodiversity, but they can also be good for fisheries management and the sustainable use of Victoria's marine waters, and have immediate and long-term benefits for recreational and commercial fishers by promoting healthier and more productive oceans.

Victoria's marine environment is interconnected, with eggs, larvae, fish and other marine life and water moving along the coast.

By having a network of marine national parks and sanctuaries we can protect marine populations on the regional scale, at different locations and at different stages in their life cycle.

The parks will also act as refuges for targeted fish, provide reference sites to assess the impacts of fishing and show how these effects can be minimised in fished areas.