

5. REGULATION OF FISHING IN MARINE PARKS

In order to maintain sustainable yields of fished stocks, to resolve user conflicts and to fulfill the obligations of marine park management i.e. to permit reasonable use of the area without undue destruction, regulations have to be introduced.

Regulations can take a variety of main forms: licence limitation, size limitations, sex limitations, catch quotas, seasonal or areas restrictions or gear restrictions.

Licence limitation restricts the number of people entering a fishery and, given information on effort and catch, may be a satisfactory means of regulating a fishery, in that theoretically, the total amount of effort relative to catch can be limited. Size limits on species taken may permit successful breeding to occur, but may also have deleterious effects on population structure, if a larger total number of organisms is caught to obtain a sufficient number of an acceptable size. Minimum size limits may be deleterious for polygynous hermaphroditic organisms. Sex limitations may also increase breeding success, but may also increase mortality. Bag limits have the effect of narrowing the gap between good

and bad fishermen. The U.S.A. Sport Fishing Institute in 1964 reported that 66% of the nation's fishermen catch less than one third of all the fish caught and half of these fishermen catch no fish (Moeller and Engelken, 1972).

Seasonal or area restrictions are designed to permit restocking of depleted areas from "core" areas or "habitat reserves", which are maintained in an "unfished" state. In one of the few reported studies of the effects of area closure, tagging studies of spiny lobster (*Panulirus argus*) at Fort Jefferson National Monument showed that recruitment occurred into the commercially fished area from the closed area (Robinson, 1976). Another value of "unfished areas" is that if a measure of catch and effort can be obtained, the rate of recovery of fished areas may be assessed. Rotational closures however, may result in a "pulse" harvesting of fish stocks, which may or may not be a more satisfactory manner of fishing from a sustained yield point of view.

Gear restrictions can be used to reduce fishing effort and success, limit habitat disturbance and reduce the likelihood of behavioural changes in organisms. The effect of diver disturbance on spiny lobsters at Fort

Jefferson National Monument was shown to result in their scattering, making it more difficult for them to breed, feed, etc., that is, changing the population dynamics of the species (Robinson, 1976). Spearfishing has similar effects.

Rooney et al., point out the problems of policing fishing restrictions in marine parks and reserves and suggest that regulations may not be enforceable without support from the industry and fishermen. The U.S. experience is that although fishing has been traditionally regarded as acceptable in parks, the introduction of regulations was met favourably when it was accompanied by an interpretive program; advance public education is required (Robinson, 1976).

6. EXISTING REGULATION OF FISHERIES IN THE GREAT BARRIER REEF REGION

Existing Queensland and Commonwealth legislation concerned with fisheries and fishing on the Great Barrier Reef region is summarised in Appendix 1. Commercial fishing matters are regulated by both Federal and Queensland legislation, while amateur fishing is regulated largely by Queensland legislation.

The most recent development in regulation and control of fisheries in the area is the extension of the Australian fishing zone to 200 miles, which means that Australia controls fisheries out to 200 miles, but where Australian fishermen cannot exploit available fishing stocks, foreign fishermen must be permitted to fish these stocks.

The AFCWG Report suggests that any possible expansion of fishing in the Great Barrier Reef Region can be adequately handled by Australian fishermen and that entry of foreign fishermen in this area should not be considered. However, the resources of some of the pelagic species are relatively unknown and if they are shown to be economically exploitable and are unable to be fished by the Australian industry because the most feasible methods (e.g. pole and bait) are too labour intensive, some consideration may have to be given to the entry of foreign fishermen. Jurisdiction over the extended Australian fishing zone was discussed at the June 1978 Premiers' Conference and it was agreed that joint Commonwealth/State authorities would be established for offshore fishing which would, by agreement between the Commonwealth and the States, manage specified fisheries from the low-water mark out. By agreement, some fisheries

outside the territorial sea could be allocated to the State concerned.

7. IMPLICATIONS OF FISHERIES MATTERS FOR THE
GREAT BARRIER REEF MARINE PARK AUTHORITY.

200 Mile Fishing Zone:

- possibility of foreign vessels legally fishing Great Barrier Reef Region;
- surveillance for foreign vessels illegally fishing in Great Barrier Reef Region;
- involvement in joint offshore fishing authority for region;
- possible involvement with Queensland in management of fisheries outside territorial area;
- in the future: boundaries and fishery responsibility with respect to Papua New Guinea;
- effect of foreign fishing on reef populations.

Fisheries:

- evaluating relationship between commercial and recreational fishing on reef fish stocks, e.g. will regulations on recreational fishing have no effect if commercial fishing continues unchanged;

- consideration of effects of existing and potential commercial fisheries on reef region and reef populations, for example, demersal trawl fishery, reef fish fishery;
- degree of involvement and management of existing and potential commercial fisheries, especially reef fish, beche-de-mer, trochus fisheries, maricultural projects;
- enforcement of regulations e.g. closed areas
- assessment of effects of regulations and degree of flexibility so can be altered in view of new information;
- type of regulations to be introduced; particularly on near-shore reefs; benefits and feasibility of various kinds of regulations;
- kinds of regulations to be introduced for subsistence fisheries to maintain "traditional" catch and effort levels;
- kinds of regulations for coral, shell and aquarium fish collecting e.g. licence limitation and catch limits and effects on "rare" species.