

10 INTERACTION BETWEEN FISHERIES

As with the previous section this is only a brief overview of major likely interactions between fisheries to help give some context for biological studies.

10.1 Line fishing: Commercial and Recreational

The overlap between commercial and recreational fisheries both on coral reefs and in inter-reefal areas would appear at first glance to be substantial. They fish for the same species, in similar areas and with very similar gear. However, a recent study of the location of fishing of the small-boat recreational fleet (Blamey and Hundloe 1991) indicates that the effort of this fleet is concentrated heavily near the coast in most regions of the GBR (with the exception of Cairns) (see Section 6). The commercial fishermen are perhaps more likely to fish the more remote areas.

10.2 Line fishing: Reefs and Inter-Reefs

There appears a considerable differentiation among both recreational and commercial fishermen between those targeting trout and sweetlip (*L. miniatus*) around reefs and those targeting 'reds' in deeper, 'inter-reefal' waters. Of the reds, only juvenile red emperor seem to be taken with any regularity in close proximity to reefs, although some locations have reputations for regular catches of adult red emperor in relatively shallow water and sometimes even in daylight. The degree of spatial overlap between 'reef' and 'inter-reefal' species and the nature of their interaction remains to be quantified. An experienced 'inter-reefal' fisherman (J. Sikora) has indicated to us that if the boat is drifting for reds and a trout or sweetlip (*L. miniatus*) is caught, a 'reef' will be found in the immediate vicinity. *L. nebulosus* is, however, one species caught regularly by fishermen in both habitats. The significance of 'inter-reefal' waters as habitat for juvenile 'reef' species and as a migration route between reefs is unknown.

10.3 Trawling and Line fishing

The interaction between commercial and recreational line-fisheries on reefs is obvious. The interactions between the trawl fisheries for prawns and the line-fisheries are no less contentious but more difficult to determine. The issues were discussed at some length at a recent workshop sponsored by GBRMPA (Craig et al., Poiner and Gliester 1989). Studies carried out by QDPI (Jones and Goeden 1985, Watson 1989) conclude that the only species of major significance in the linefisheries that are also caught regularly as by-catch in the prawn trawls are juvenile 'reds' (*Lutjanus* spp.). Catches of juveniles, particularly of *L. erythropterus* and *L. malabaricus* are often considerable.

The major impediment to understanding the effects of trawling is a lack of knowledge of the distributions and life histories of the species involved. In particular the major nursery grounds of the important fin-fish species have not been determined. Trawlers certainly work heavily in areas known to contain both adult and juvenile reds but the degree of overlap between the habitats of these fishes and areas of intensive trawling is unknown, as are the indirect effects of trawling via bottom disturbance and modification.