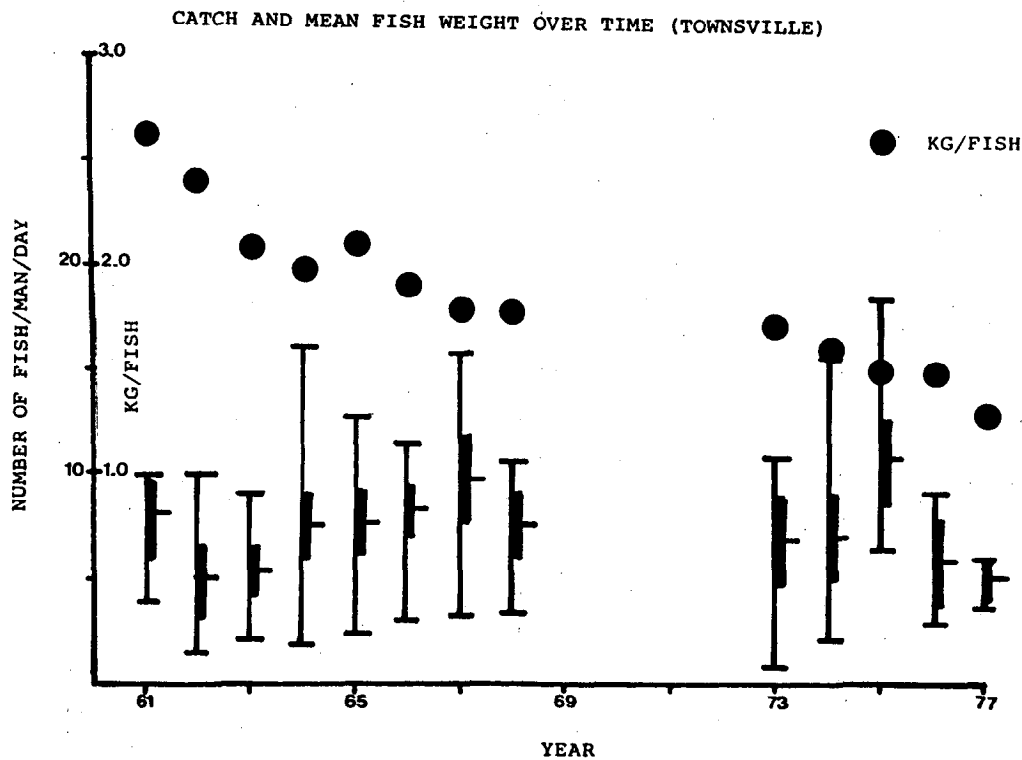


4. Townsville Area

(Loadstone, Watt, Keeper, Bramble, Rib, Lynch, Yankee, Broadhurst, Slashers, Kelso, Grubb, Hopkinsons, Halls, Centipede, Trunk and Davies Reefs).

Detailed records from 1961 to 1968 and from 1973 to 1978 were available and these showed that although fishermen are catching about the same number of fish as 15 years ago, the average fish size has been reduced by about 1 kg to about 1.5 kg in that time (Figure 4).

Figure 4



Generally there were similar findings at the individual reefs examined (for example, Broadhurst and Slashers Reefs). Most of the reefs for which records were available lie between 45 and 55 nautical miles from Townsville and it was difficult to find any relationship between catch and the distance of the reef from shore.

Looking at records of particular species caught at reefs off Townsville showed that coral trout catches increased in the early 1960's but have since declined somewhat. Sweetlip, which together with coral trout make up the majority of the catch, show variable catches, but there appears to be an overall increase in the last few years. Catches of red emperor, spangled emperor and cod have been consistently low over the last 15 years (Figures 5 and 6).

Figure 5

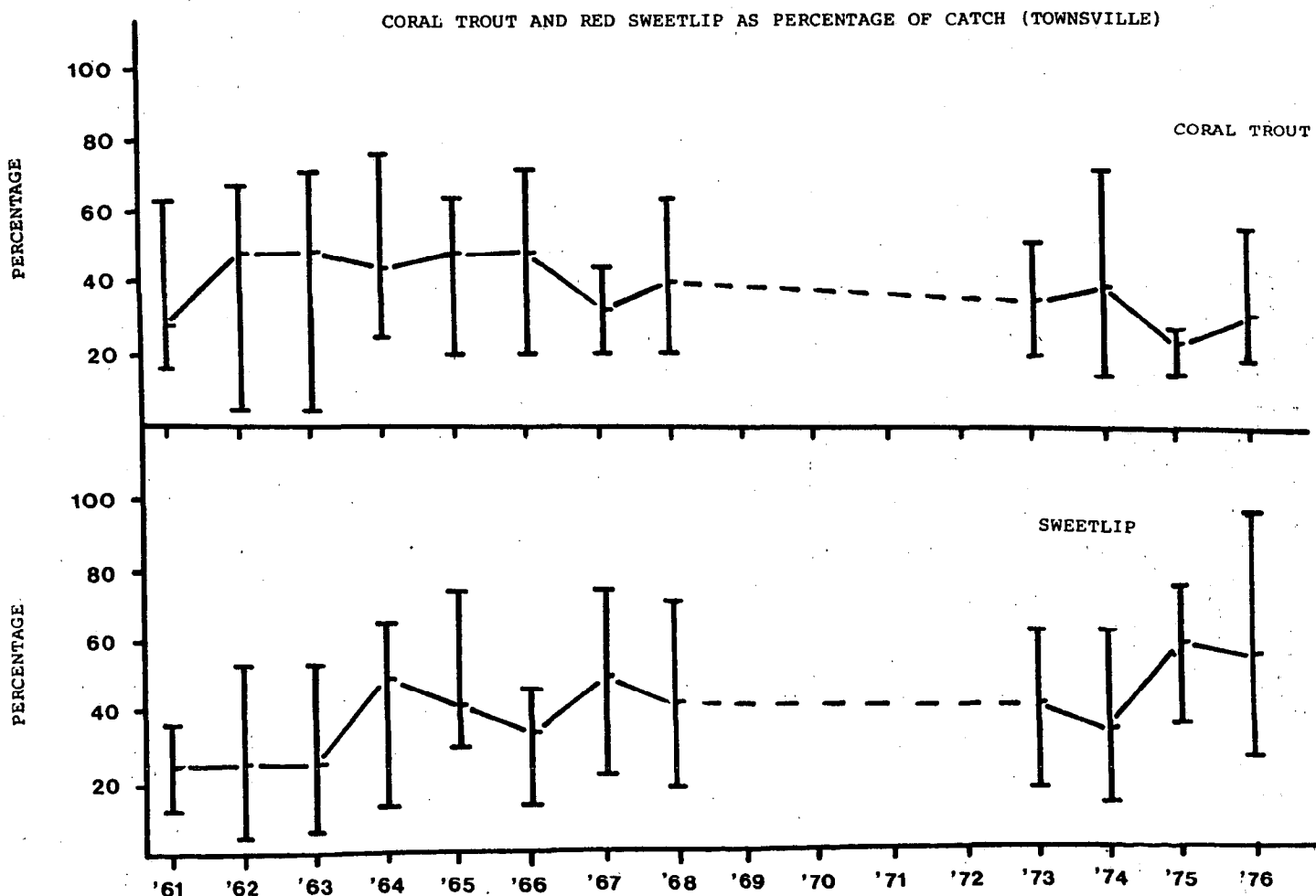
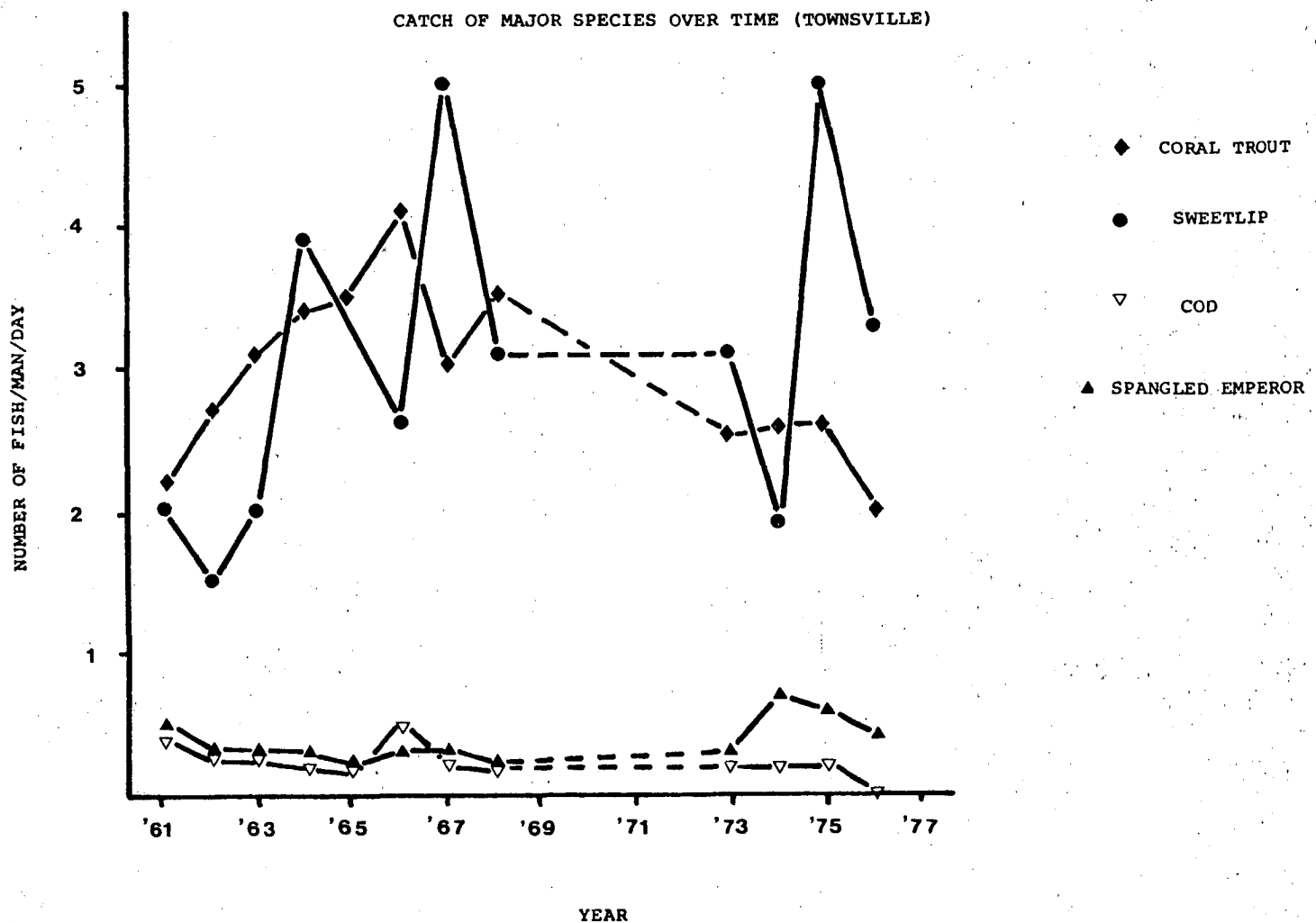


Figure 6



5. Mackay Area

(Chinaman, Scottish, Southampton, Coles, Creel, Bolton, Warlen, Stevens and Square Reefs among others).

Members of the Mackay deep sea fishing clubs fish from either a large cruiser or from small dories operating from the cruiser. Records from 1976 to 1979 were available. Comparing the catches from the small boats with the large boat, it is strikingly evident that the dories are much more successful in catching many more fish than the large boat (Figure 7). However although the men in dories catch

more fish, they catch fish of about the same size (Figure 7) and the main species of fish (coral trout and sweetlip) are caught by each group in similar proportions (Figure 8).

Figure 7

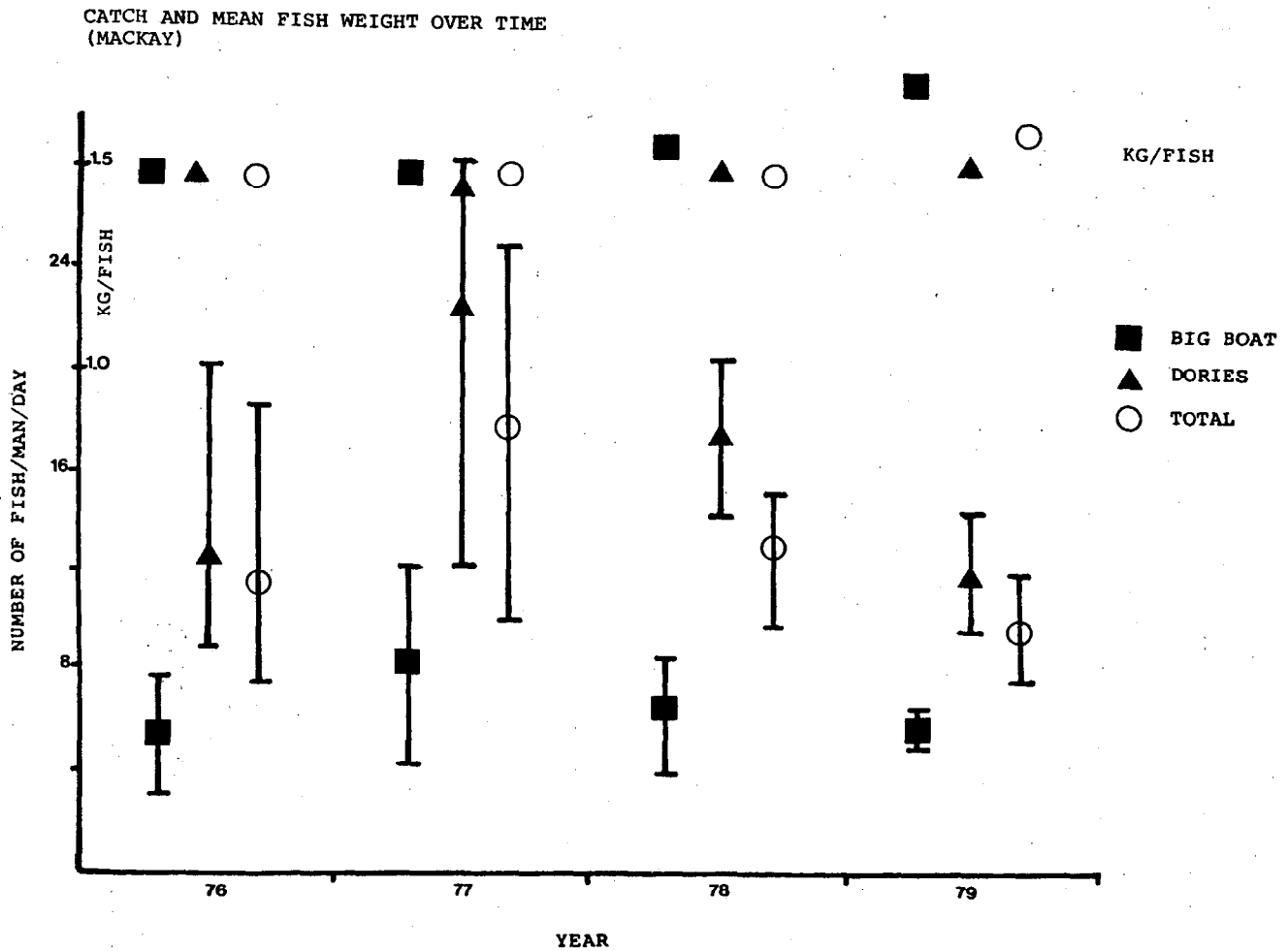
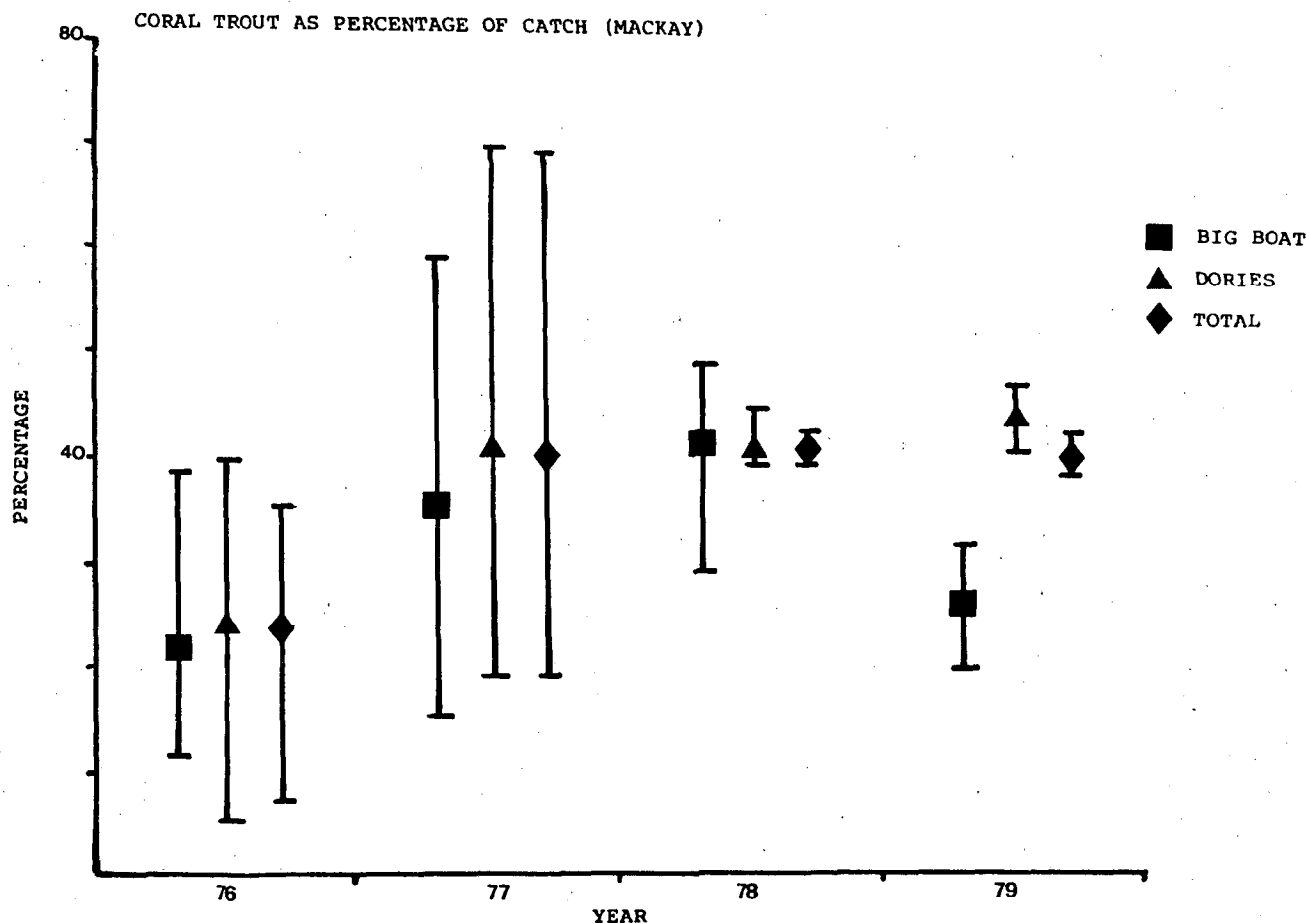


Figure 8



The clubs recognise that dory fishermen are more successful and their point scoring system and allowable fishing times reflect this.

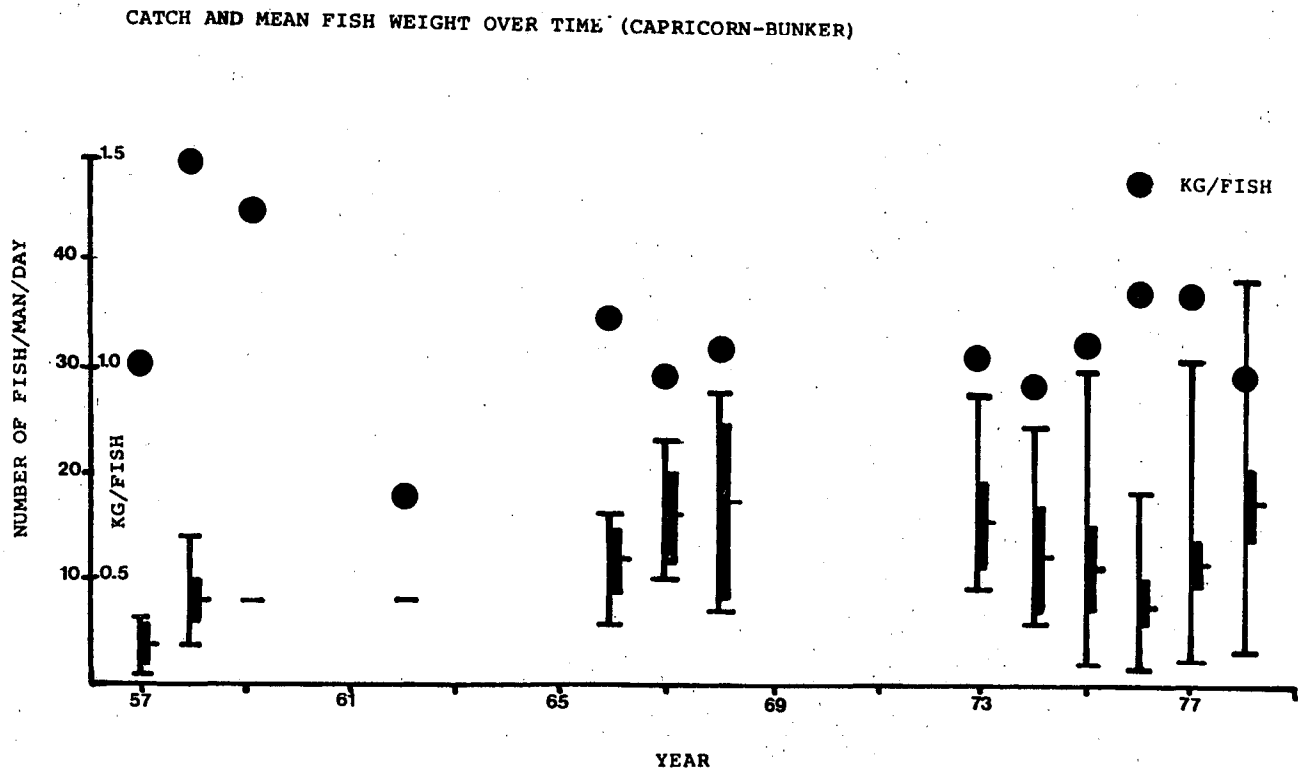
6. Capricorn-Bunker and Lady Elliott Island Area

(Lady Elliot, Lady Musgrave and One Tree Reefs, Douglas Shoals, Llewellyn, Fairfax, Fitzroy, Broomfield, Wreck, Lamont, Wilson, Erskine and Masthead Reefs, Cabbage Patch, Wistari, North West, Boulton, Hoskyn, Tryon and New Reefs, Guthrie and Haberfield Shoals and Johnson Patches).

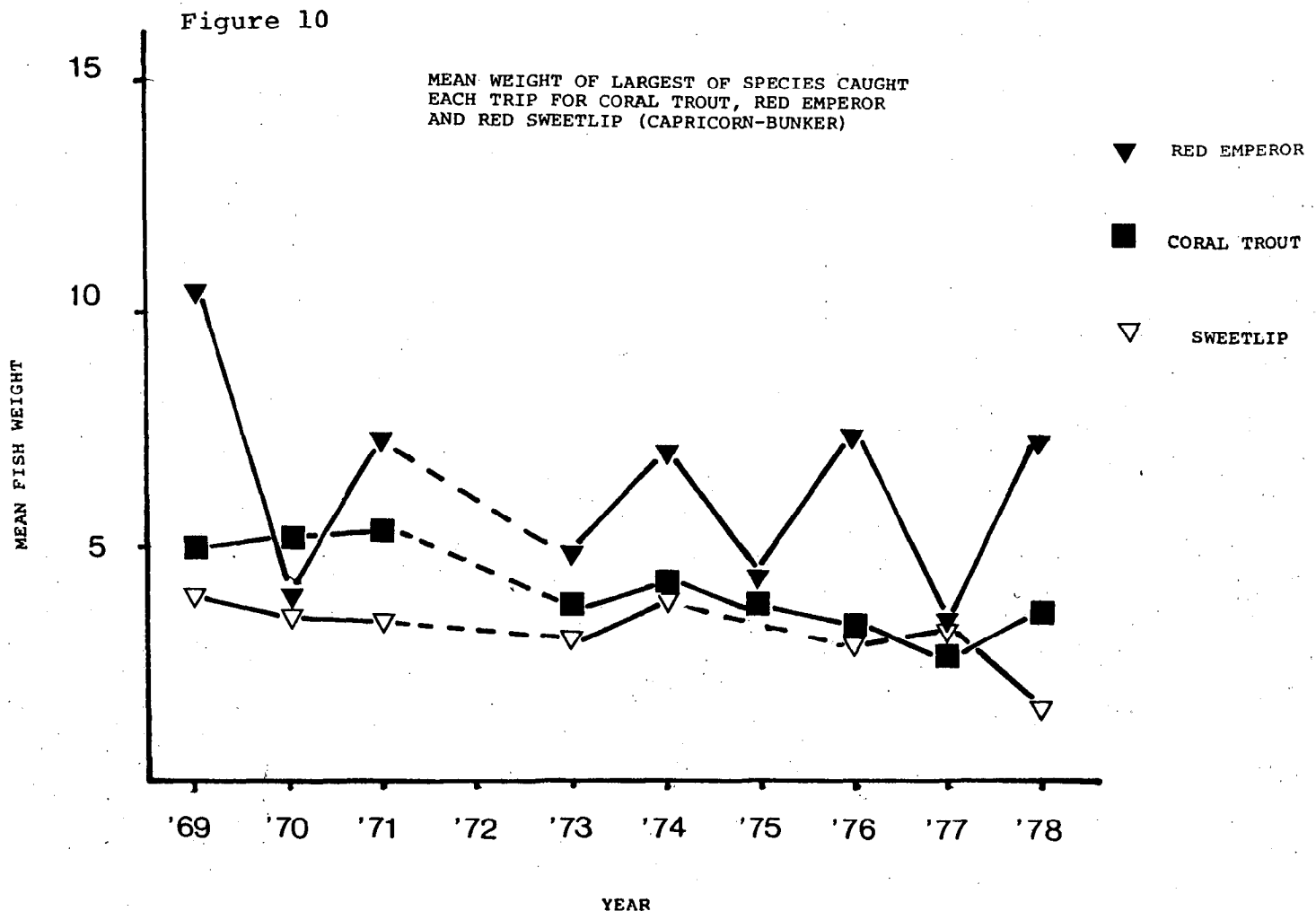
Records from 1957 to 1978 were available from a number of clubs, and although this area is probably one of the most heavily fished on the Great Barrier Reef, the records for all reefs combined showed that there has been no decrease in the last 20 years in catches or in the average fish size; there is some suggestion of an increase in catches in the late 1950's which has subsequently levelled off (Figure 9).

This was also true of catch records for individual reefs for which we have records (Lady Elliot, Lady Musgrave).

Figure 9



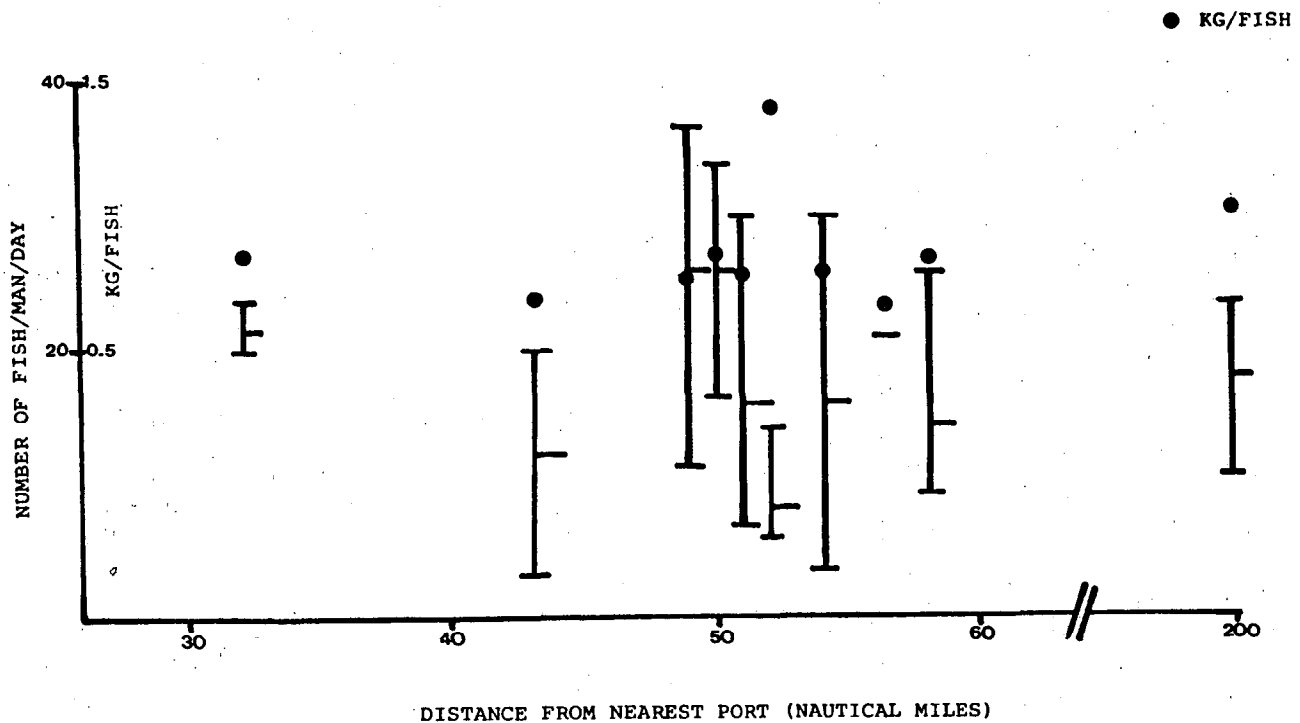
Looking at the percentage of fish over 4 kg and more recently 2.5 kg, supported the contention that average fish size has not changed greatly. However, although the average fish size may not have changed greatly there is some evidence that large coral trout, sweetlip and red emperor are caught less frequently, although catches of red emperor, in particular, fluctuate considerably (Figure 10).



Reefs in the Capricorn-Bunker area are accessible from a number of ports; and are not located a wide range of distances from the coast. These facts probably account for the lack of a clear relationship between catch and distance from the nearest port (Figure 11). Comparing reef fishing with fishing from the edge of the Continental Shelf (where, although the catch is different, it could be regarded as a comparatively unfished area) shows that the catch and average fish size do not differ greatly, although catches from the edge of the Continental Shelf do show greater fluctuations.

Figure 11

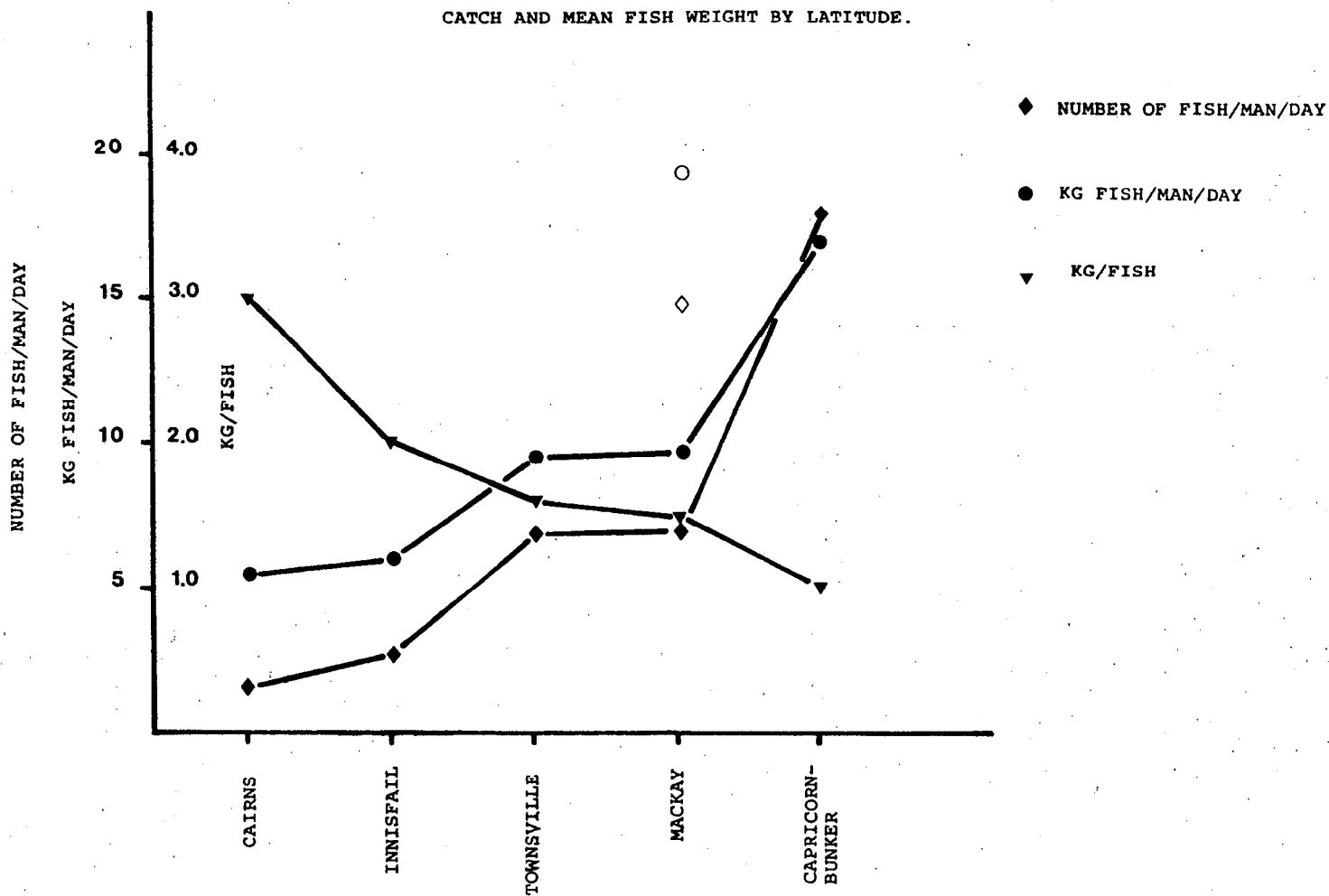
CATCH AND MEAN FISH WEIGHT vs DISTANCE
FROM NEAREST PORT (CAPRICORN-BUNKER
AND CONTINENTAL SHELF)



7. Changes in Catch with Latitude

Taking the average catch in numbers and weight and the average fish weight for each of the areas above for the most recent year we have records, shows that north to south from off Cairns to the Capricorn-Bunker area the catch changes from fewer (about 6) large (about 3 kg) fish to more (about 17) smaller (about 1 kg) fish (Figure 12). Whether this is a result of differences in the composition of the catch, species differences or other natural phenomena or whether it is the result of fishing is at this stage unknown.

Figure 12



The solid data points for Mackay are those from cruiser fishermen, while the empty points represent total values (based on catches of both cruiser and dory fishermen). Although the value for fish catch in numbers fits in with the general trend, the value for fish catch in weight is slightly higher than the value obtained for the Capricorn-Bunker area. This may be the result of the reefs from Mackay being further offshore than the reefs in the Capricorn-Bunker area; records from Cairns and Innisfail showed that catches further offshore are greater than inshore.