

REPORT TO GREAT BARRIER REEF MARINE PARK AUTHORITY ON THE
PRELIMINARY RESULTS OF THE PROJECT : Age and Growth of the Coral trout
Plectropomus leopardus: The Juvenile Phase.

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The objective of this project was to study the growth and determine the age of juvenile coral trout Plectropomus leopardus around Lizard Island. Three field trips to Lizard Island were conducted during 1991 and the beginning of 1992 to collect juvenile coral trout. With the use of fence nets operated by divers, 43 individuals under 25.4 cm of Fork Length (FL) were collected (Figs. 1 to 5).

After capture, the fishes were brought to sea-water tanks in the Research Station and allowed to acclimatize for a week. This procedure has been shown to increase the survivorship of tetracyclined fishes (McFarlane and Beamish, 1990). After this period, fishes under 12 cm FL were starved for two days and immersed in a Tetracycline solution for 14 hours. Individuals larger than 12 cm were injected intraperitoneally with a solution of 50mg of tetracycline per kg of fish (Beamish and Mcfarlane, 1981) . Individuals were kept in captivity for periods varying between 10 days and a year (five fishes were brought to James Cook University to be kept in captivity at Sir George Fisher Center and two of them are still alive).

Otoliths removed from tetracycline-treated fishes were washed in fresh water, dried and kept in dark containers. These otoliths will be sectioned for observation to verify the presence of daily rings.

The smaller specimens were observed around Lizard island during January and February, which is consistent with the spawning activities observed in the region from September to December (pers. obs.). The modal progression through the months indicates that on average individuals grow to about 20 cm FL during their first year of life. However, the age structure must be analyzed to verify if the variance of the frequency distributions collected in different months is a result of differential growth rate or variation in recruitment. If both of these possibilities apply, the result of this interaction will be investigated.

As an overall result, the collection of small specimens will allow the addition of small age classes to the calculation of the growth curve for the whole population, thus yielding more accurate growth parameters.

Literature Cited:

McFarlane, G. A. and Beamish, R. J. 1987. Selection of dosages of oxytetracycline for age validation studies., Can. J. Fish. Aquat. Sci., 44:905-909.

McFarlane, G. A. and R. J. Beamish. 1990. Effect of an external tag on growth of Sablefish (Anoplopoma fimbria), and consequences to mortality and age at maturity. Can. J. Fish. Aquat. Sci., 47:1551-1557.

Modal Progression in the frequency distribution of juvenile coral trout at Lizard island.









