

INTRODUCTION

The first Workshop on Fish Assessment Techniques in November 1978 (G.B.R.M.P.A., 1978) concluded that, of the techniques investigated for estimating populations of commercially and recreationally important species of bottom reef fish, the intensive search technique was the only feasible technique for realistic estimates of these populations. However a number of questions concerning the technique remained to be answered. A second Workshop on Fish Assessment Techniques was therefore conducted to determine:

1. the distance or time period which would provide a statistically valid population assessment;
2. the number of replicate swims necessary to provide a statistically valid population estimate over the fixed time period or fixed transect distance;
3. whether the number of replicates required makes this technique feasible for relatively rapid reef assessment;
4. the relationship between time of day and state of tide and the population estimate;
5. the relationships of between observer and within observer variability;
6. a feasible method for consistently estimating size classes to reduce between observer variability;
7. whether the technique would reveal differences in fish populations between an 'unfished' reef (e.g. Heron) and a 'fished' area (e.g. Masthead).

The Workshop was conducted for two weeks from 21 April to 4 May at Heron Island and was attended by four biologists from various organisations (Appendix 1). This report, which reflects the Workshop program, is essentially divided into three parts:

1. Underwater length estimation

In this Section variability in underwater length estimation was examined and standard techniques for improving accuracy and reducing variability were developed and employed.

2. Coral Trout Censusing

This Section involved diving censuses to determine the required transect time/length, required number of replicates, observer, tidal and time variability factors, usefulness of the method, differences between areas etc. and the relationship of results found in this study to other studies.

3. Proposed action and recommendations

A brief outline of the action proposed as a result of the Workshop findings is presented. Several Recommendations are also provided.