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SUMMARY OF RESULTS OF THE BÊCHE-DE-MER PROJECT

NOTE : A detailed report on the results of the Bêche-de-mer project is in preparation. In addition, an article on this subject will appear in the next Fisheries Newsletter.

INTRODUCTION

Bêche-de-mer consultant Mr M. Gentle carried out a programme of research on the biology of commercial bêche-de-mer species in Fiji from August 1978 to August 1980. Mr Gentle was funded by the South Pacific Commission and worked in close cooperation with the Fiji Fisheries Division.

Aims of project :

- 1) to determine which species of bêche-de-mer could be used for commercial purposes;
- 2) to locate areas with rich beds of commercial bêche-de-mer;
- 3) to study the abundance, habitat-requirements, growth, reproduction and recruitment of the commercial species;
- 4) to advise on conservation measures needed to manage bêche-de-mer resources on a sustained-yield basis.

SUMMARY OF RESULTS

1) SPECIES OF COMMERCIAL VALUE

Several commercially valuable species of bêche-de-mer were found to be common in Fiji in addition to those already harvested for the bêche-de-mer market. The most important of these is the sandfish (Metriatyla scabra) an extremely abundant species and for which a substantial market exists in South East Asia. The sandfish is almost certainly common elsewhere in the Pacific Islands.

In collaboration with Mmme C. Conand of ORSTOM Noumea, a revised version of the SPC booklet on bêche-de-mer was produced. The new booklet gives detailed information about species identification as well as processing and marketing.

2) LOCATION OF AREAS WITH RICH BECHE-DE-MER RESOURCES

Diving surveys carried out in several parts of Fiji made it possible to draw conclusions about the habitat requirements of the commercial bêche-de-mer species. The richest bêche-de-mer grounds were found to occur in lagoons adjacent to large mountainous islands, and several entirely unexploited grounds were located. A map showing the richest bêche-de-mer grounds in Fiji has been prepared.

3) BIOLOGY OF COMMERCIAL BECHE-DE-MER

Detailed studies of the biology of the white teatfish (Microthele nobilis, the most valuable species) were carried out. The major habitat of juveniles of this species was found to be turtlegrass meadows. The juveniles are a different colour to the adults and live hidden among the turtlegrass. The richest white teatfish grounds were found in deeper water adjacent to these turtlegrass beds and a marked relationship was found between size and water depth, with larger animals occurring in deeper water.

Studies of population density were carried out by means of large transects set out by scuba divers. The maximum density of adult white teatfish encountered was approximately 20 tonnes (wet weight) per km<sup>2</sup> of sea bottom.

The reproductive cycle of the white teatfish was also studied using "gonad index" and microscopic examination. Animals in breeding condition were found throughout the year in Fiji. By contrast, the white teatfish in New Caledonia exhibits a marked seasonal breeding cycle (Conand person. commun.). Minimum length at sexual maturity in Fiji was found to be between 15 and 20 cm.

Efforts to study the growth rate of commercial bêche-de-mer were not successful because it is impossible to tag such soft-bodied animals. (Because studies were carried out in a traditional Fijian fishing area it was impossible to prevent collection of bêche-de-mer by local villagers, therefore growth rates could not be estimated by means of size-frequency analysis). However, based on previous studies on the growth rates of other species of holothurians, it is probably that the commercial bêche-de-mer species take several years to attain sexual maturity.

4) CONSERVATION MEASURES

The following conservation measures have been proposed:

- a minimum size limit for the white teatfish based on the minimum size at sexual maturity
- a ban on the use of scuba or other compressed air diving devices for the collection of bêche-de-mer.

It is unlikely that further restrictive conservation measures are necessary at this time.

5) VISITS TO OTHER COUNTRIES IN THE REGION

The consultant also visited the Tokelau Islands and Tonga to assess bêche-de-mer resources. No commercial bêche-de-mer were found in the Tokelaus but a substantial resource was found in Tonga. A small bêche-d-mer fishery has now been established in Tonga.

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1. The first part of the document discusses the importance of maintaining accurate records of all transactions. This is essential for ensuring the integrity of the financial statements and for providing a clear audit trail. The records should be kept up-to-date and should be easily accessible to all relevant parties.

2. The second part of the document outlines the various methods used to collect and analyze data. These methods include interviews, surveys, and focus groups. Each method has its own strengths and weaknesses, and it is important to choose the most appropriate method for the specific research objectives.

3. The third part of the document describes the process of data analysis. This involves identifying patterns and trends in the data, and then interpreting these findings in the context of the research objectives. It is important to be objective and to avoid drawing conclusions that are not supported by the data.

4. The final part of the document discusses the importance of reporting the results of the research. This involves writing a clear and concise report that summarizes the findings and provides recommendations for future action. The report should be written in a way that is accessible to all relevant parties, and it should be reviewed and approved by the appropriate authorities.