

POPULATION DYNAMICS WORKSHOP 6-13/8/75

REPORT TO THE FISHING INDUSTRY RESEARCH COMMITTEE

Background

Following the recommendations of the 10th meeting of the Standing Committee on Fisheries and the November 1974 meeting of the Education Committee, a population dynamics workshop, convened by the CSIRO Division of Fisheries and Oceanography, was held in Brisbane on 6-13 August, 1975. Data used during the workshop were from the banana prawn and scallop fisheries. Data on banana prawns were obtained from CSIRO and Australian Department of Agriculture, while data on scallops were obtained from the Victorian Division of Fisheries and Wildlife, the Tasmanian Department of Agriculture, and the Western Australia Department of Fisheries and Wildlife. A grant covering the operating expenses of the workshop was obtained from the Fishing Industry Research Trust Account.

Objectives

The aims of the workshop were to:

- (a) instruct fisheries officers in the use of population dynamics data for the calculation of yield and cost curves for banana prawns and scallops;
- (b) illustrate the application of the principles of population dynamics to the management of the banana prawn and scallop fisheries.

Operational Procedures

The workshop was divided into three segments, and covered the following topics:

- (a) Population dynamics
 - (i) construction of a measure of fishing intensity and of relative fishing powers of boats
 - (ii) calculation of fishing and natural mortality rates
 - (iii) calculation of growth rates
 - (iv) construction of yield/recruit curves
 - (v) discussion on stock-recruitment relationships
 - (vi) discussion on data needs.

(b) Economics

- (i) construction of cost curves
- (ii) break-even analyses .

(c) Management

- (i) discussion of management objectives
- (ii) discussion of regulations to achieve these objectives .

For each segment, an introductory talk was given, explaining the basic concepts and techniques relevant to that segment. Participants then moved into small discussion groups which examined and answered questions on the data. The groups then reconvened for general discussions of results.

During a summary session at the conclusion of the workshop, the following points were raised:

- (i) The workshop was extremely successful and useful. Each participant, regardless of his prior knowledge of population dynamics, gained further insight into the use of population dynamics.
- (ii) There is a continuing need for further training workshops on other Australian fisheries.
- (iii) Independently of further training workshops, "expert" workshops need only to be organised on an ad hoc basis when the need arises.
- (iv) The workshop was too short to adequately deal with data from two fisheries. It was felt that two weeks were needed if two fisheries were to be covered. A majority felt that it is desirable to have data from more than one fishery in order to get a balanced view of the use of techniques.

The workshop recommended that further workshops be held every two years for training purposes. It was further recommended that data from two Australian fisheries be used during each workshop, and that the fisheries be selected on grounds of the suitability of the available data base. By virtue of its training basis, and the lack of a full data set, it was felt that the workshop could make no specific conclusions or recommendations on the fisheries studied.

List of participants

Technical Convenor

Dr G.P. Kirkwood CSIRO

Instructors

Dr G.P. Kirkwood CSIRO
 Mr M. Sturman Australian Department of Agriculture
 Dr C. Lucas University of Queensland
 Dr M.J. Sanders Victorian Department of Fisheries
 and Wildlife
 Mr.I. Kirkegaard Department of Northern Australia

Participants

A.D.A.

Mr A. Caton
Mr R. Walker

N.S.W.

Mr J.P. Glaister
Miss M. Leedow
Mr N. Ruello

N.T.

Mr D.L. Crey
Mr I. Kirkegaard
Mr G.F. White

Queensland

Mr M. Dredge

S.A.

Mr M. King

Tasmania

Mr C.E. Stunner

Victoria

Mr D. Negilski
Mr R. Winstanley

W.A.

Mr N.C. Hall
Mr D. Heald

CSIRO

- Dr J. Redfield
- Mr D. Reid
- Dr P. Rothlisberg
- Mr I. Somers
- Dr C.A. Stanley
- Dr D. Staples
- Mr B. Taylor