Appendix VI

Schedule and List of Participants - Training Course at Udon Thani Fisheries Research and Development Centre, Thailand. March 1995

Overseas Development Administration

and MARINE RESOURCES ASSESSMENT GROUP

COMPUTERISED FISHERIES DATA ANALYSIS

The Marine Resources Assessment Group (MRAG Ltd) manages the United Kingdom Overseas Development Administrations' Fisheries Management Science Programme or FMSP. This is part of the Renewable Natural Resources Research Strategy (RNRRS) implemented by the ODA to provide research support on renewable resources for developing countries. Within the FMSP priority is given to those projects on fisheries management and optimisation techniques for stock assessment appropriate to developing countries, and to tropical fish resources.

Both strategic research for the generation of new knowledge and technologies, and adaptive research to allow the application of the findings of strategic research are undertaken. These activities are initiated in response to the desires of fisheries managers and policy makers.

LENGTH FREQUENCY DISTRIBUTION ANALYSIS (LFDA)

This PC-based package includes three primary methods for estimating the parameters of the non-seasonal version of the von Bertalanffy growth curve directly from the length frequencies.

These are: Shepherd's Length Composition Analysis
The Projection Matrix method
A version of the non-seasonal Elefan method.

The program contains a facility allowing conversion of length frequencies to age frequencies using the estimated growth curves, and allows estimation of the total mortality rate Z using the Beverton-Holy method, the Powell-Wetherall method or from estimated age frequency distributions.

Users have access to in-depth explanations of the procedures used for estimating growth parameters through both the text of the manual and a tutorial illustrating in detail the analysis of a simulated length frequency data set.

CATCH EFFORT DATA ANALYSIS (CEDA)

CEDA is a PC-based package for analysing catch, effort and abundance index data, estimating the current and historic stock sizes, catchability and associated population dynamic parameters. Models available include stock depletion models, surplus production models (Schaeffer, Fox, Pella-Tomlinson) and an indexed recruitment model. Only non-equilibrium fitting methods are used, with error distributions either normal, log-normal or gamma. Bootstrap confidence intervals can be calculated, as well as for historic and projected population abundances. CEDA allows the projection of stock size into the future under various scenarios of catch and effort levels, enabling different management strategies to be investigated.

The CEDA package is aimed at fishery officers with an understanding of basic fishery concepts, and some knowledge of basic statistical principles.

The manual provides guidelines on selecting appropriate models for data sets, describes the data requirements, and explains its use through both text and tutorials.

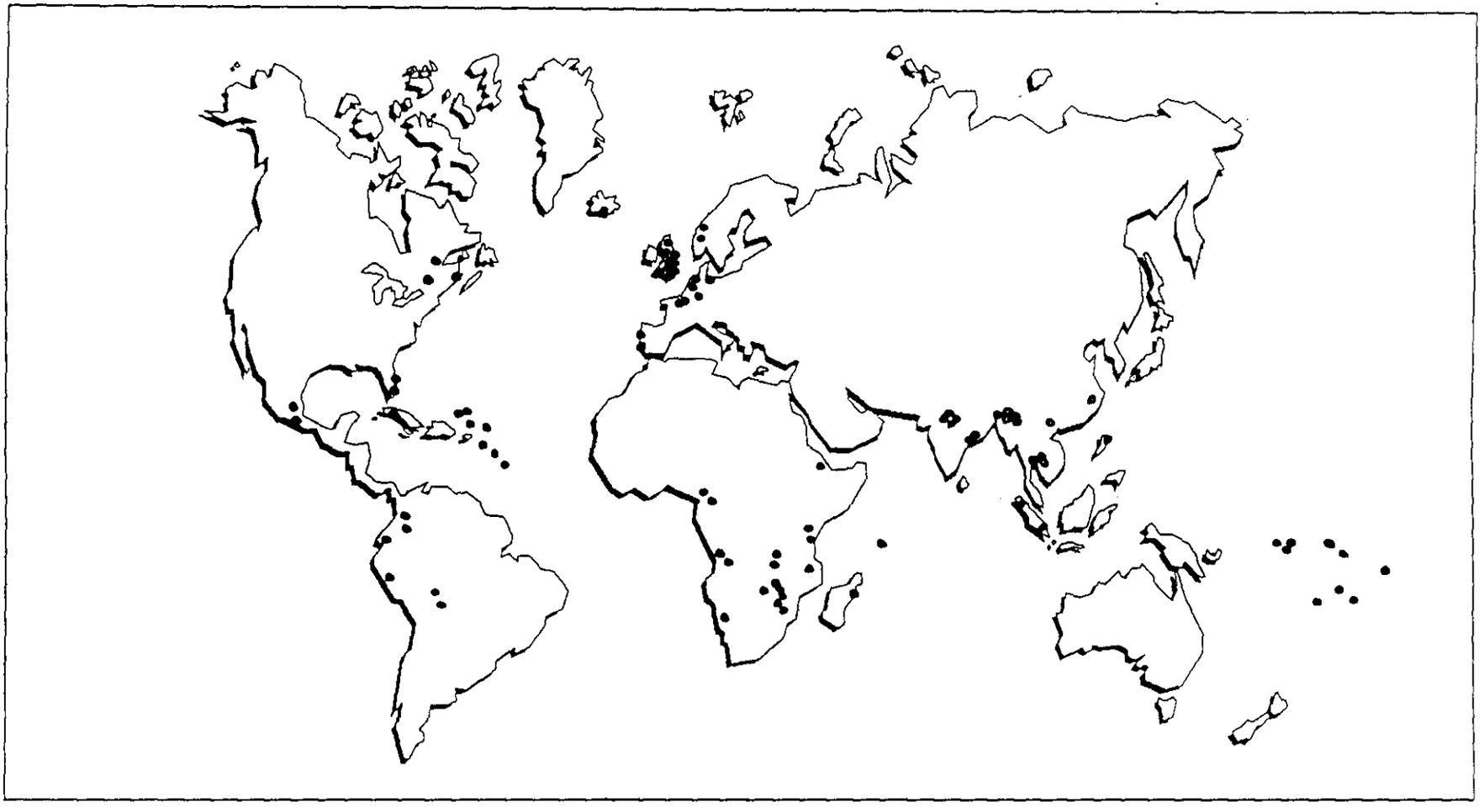
MRAG Ltd have developed 'user-friendly' software packages, designed for use on micro-computers, to enable non-experts in the field to analyse fisheries data using established models and methods for the purposes of fisheries management, conservation and development. This assists fishery managers and the scientists that advise them in decision making, providing a method through which scientific expertise and techniques can be transmitted in an objective form.

The software developed to estimate the biomass, growth and mortality parameters of fish stocks formed two distinct packages; Length Frequency Distribution Analysis (LFDA) for estimating von Bertalanffy growth parameters and mortality coefficients from fish length frequency distributions using a number of methods, and Catch Effort Data Analysis (CEDA) for analysing catch, effort and abundance index data.

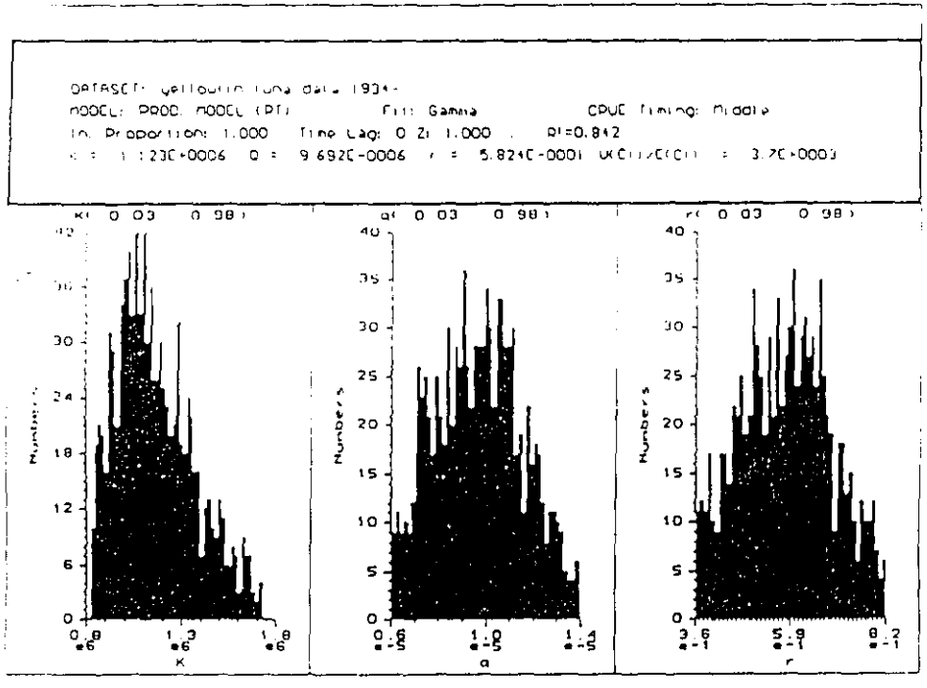
At present over 100 copies of CEDA and LFDA have been distributed to developing country fisheries scientists, ODA technical assistance personnel and other interested scientists in locations around the world for utilisation and evaluation, providing invaluable inputs at all stages and demonstrating its effectiveness in solving analytical problems during, for example, anchovy research in Thailand and conch research in Turks and Caicos.

For more information or a copy of CEDA and LFDA, please contact:

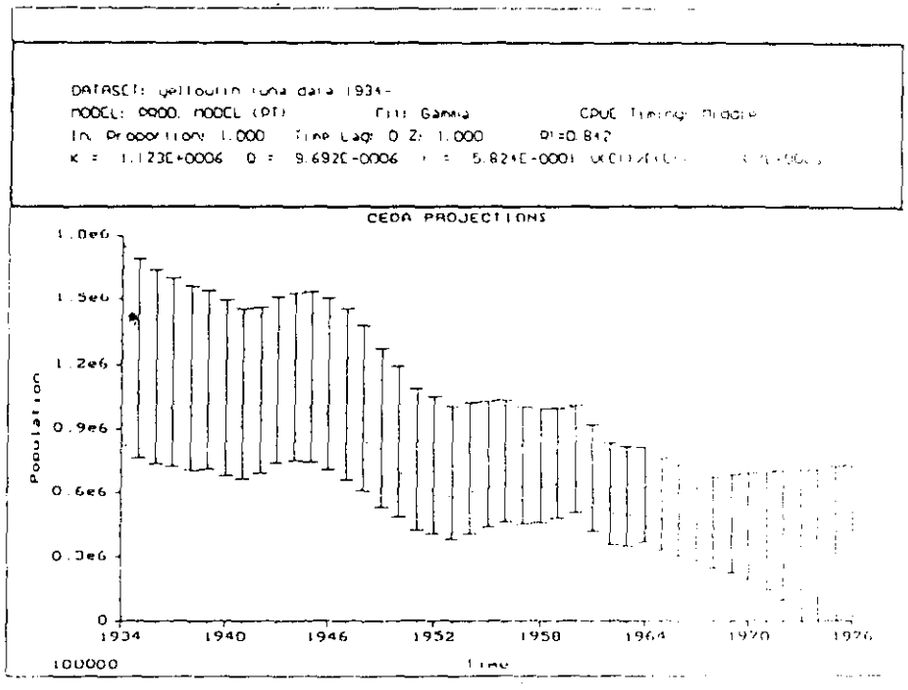
MRAG Ltd, 27 Campden Street, London, W8 7EP, UK.



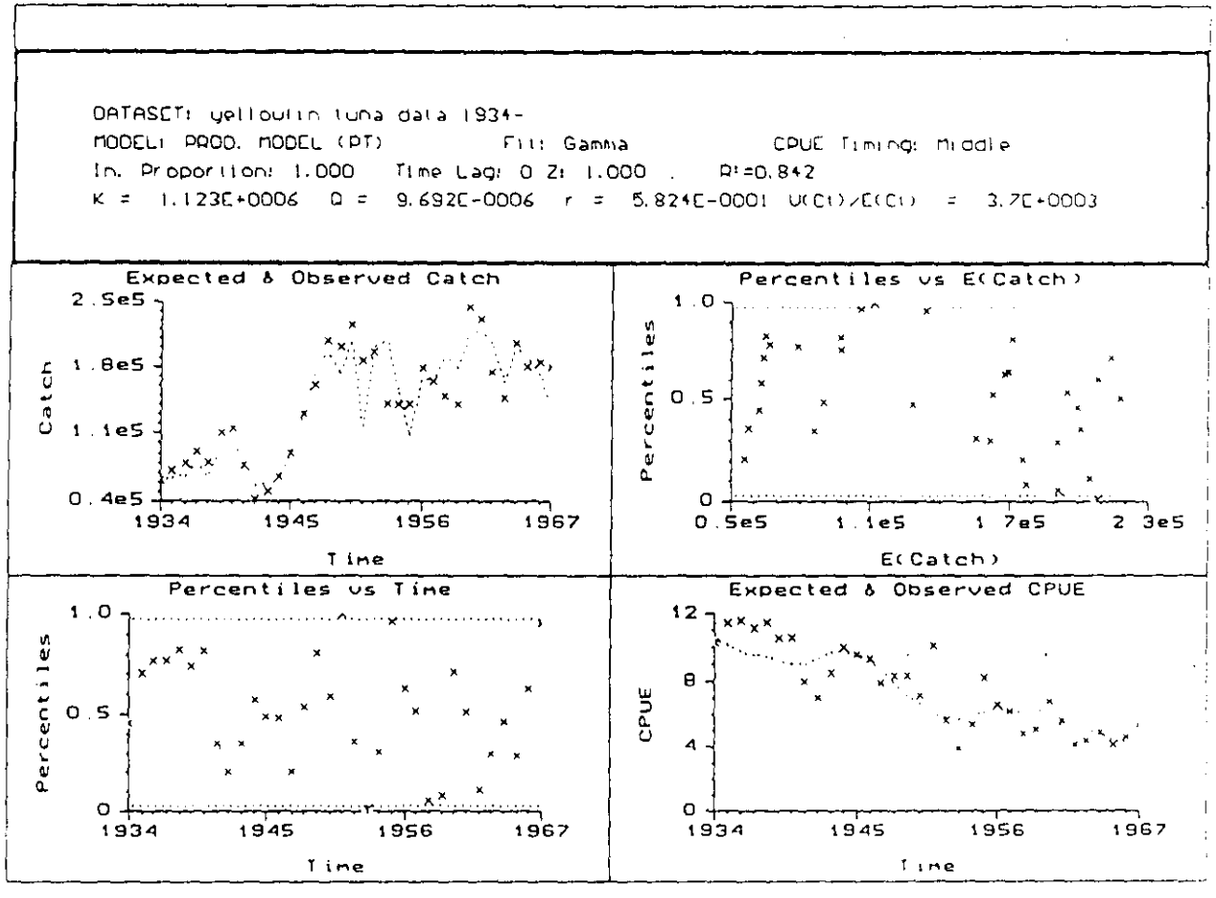
THE DISTRIBUTION OF CEDA AND LFDA SOFTWARE PACKAGES AROUND THE WORLD



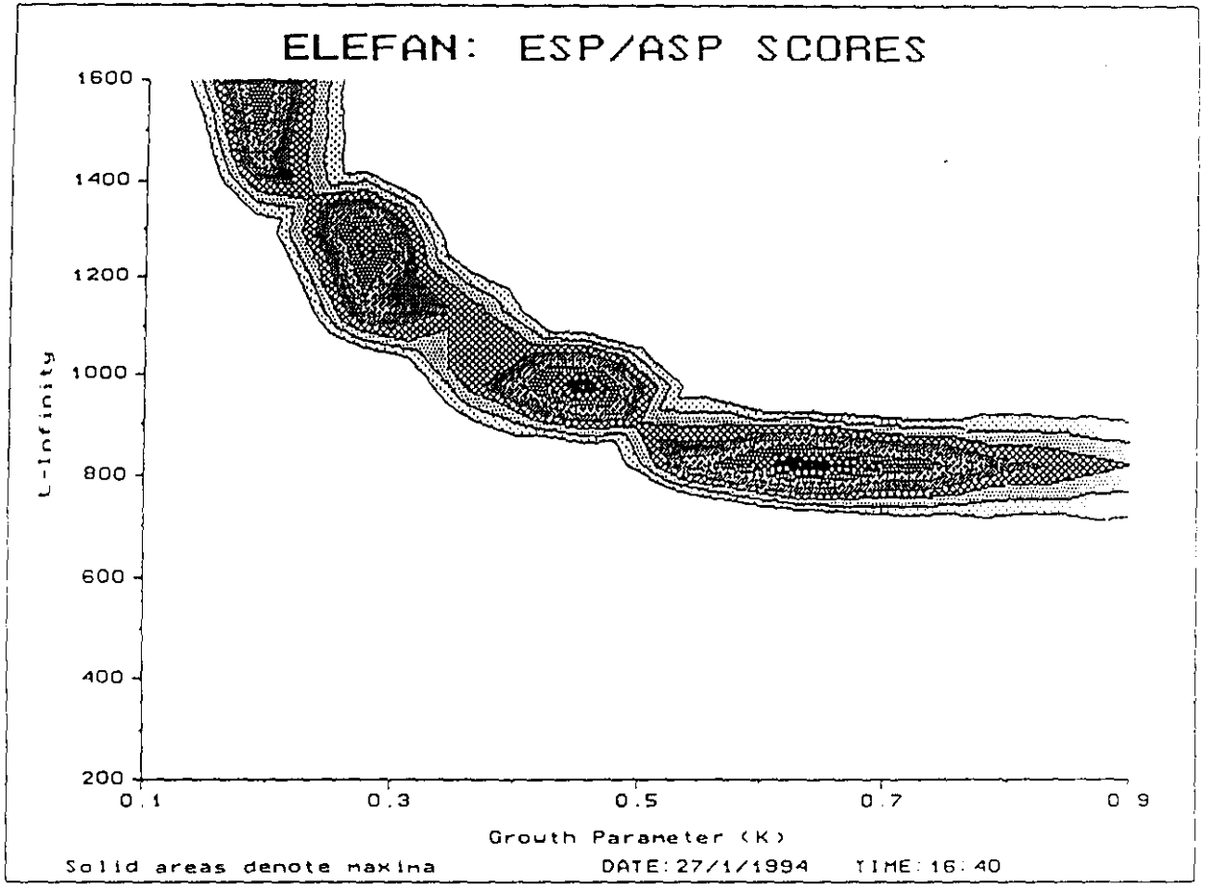
BOOTSTRAP CONFIDENCE INTERVALS OF K, Q AND R



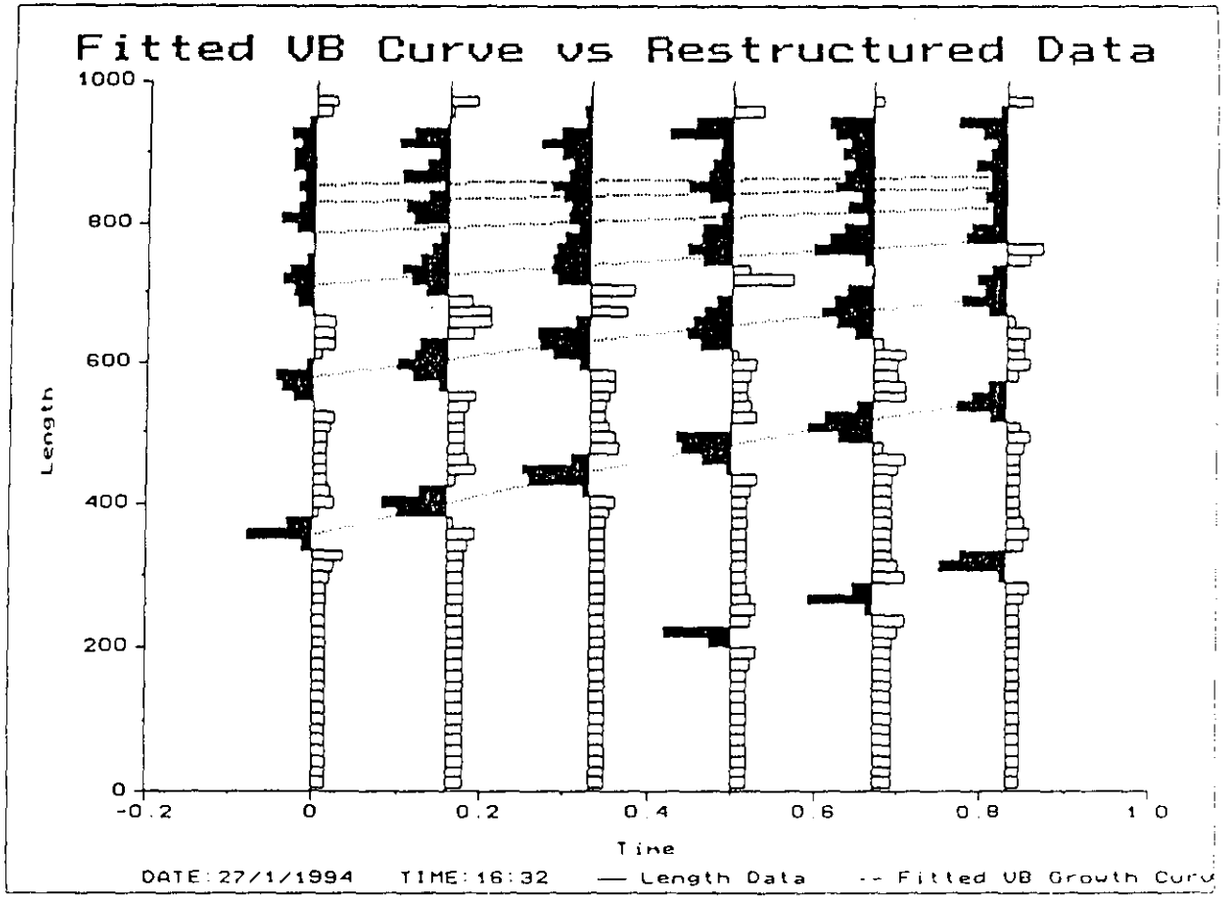
PROJECTIONS WITH CONFIDENCE INTERVALS AS COMPUTED BY CEDA



DIAGNOSTICS FOR GAMMA ERROR MODEL AS COMPUTED BY CEDA



ELEFAN CONTOUR PLOT AS COMPUTED BY LFDA



FITTED CURVE VS RESTRUCTURED DATA AS COMPUTED BY LFDA

OVERSEAS DEVELOPMENT ADMINISTRATION

AND MARINE RESOURCES ASSESSMENT GROUP

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