

Northwest Atlantic



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Report of 1987 Meeting of Marine Environment and
Ecosystems Subcommittee of CAFSAC

by

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The 1987 meeting of MEES had an agenda of three items. One day was devoted to a series of seven presentations on the Value of Holistic Ecosystem Modelling to Achieving the Mandate of DFO and related discussions. The second topic focused on a review of techniques for relating data on physical oceanography to data on marine fisheries. The final session considered details of standardizing instrumentation used in physical oceanographic research among the Atlantic Region research laboratories.

The second session should be of particular interest to the Environmental Subcommittee of NAFO. Papers for that session were solicited on three interrelated themes: 1) presentation of information on stocks where oceanographic conditions were thought to be influencing fisheries data, 2) presentation of quantitative methods for describing environmental variation or relating environmental attributes to fisheries attributes, and 3) examples of applying such quantitative methods to specific problems. There were seven presentations at the session; two on quantifying oceanographic conditions, three on quantitative tools, and two on projects relating oceanography to fisheries data. The presentations were:

Analysis of Sea Surface Temperature Variability from Oceanographic Data
by Peter C. Smith
Atlantic Oceanographic Laboratory
Bedford Institute of Oceanography
Dartmouth, Nova Scotia

Autocorrelation with Temporal, Vertical and Horizontal Separation
of Sea Bottom Temperature on the Northern Grand Bank
by Scott Akenhead
Department of Fisheries and Oceans
St. John's, Newfoundland

Quantifying Oceanographic Attributes and Their Influences on
Fisheries - Problems and Prospects
by J. C. Rice
Department of Fisheries and Oceans
St. John's, Newfoundland

Improved Abundance Estimation Using Regression Models
With Discrete Error Structure
by R. A. Myers
Department of Fisheries and Oceans
St. John's, Newfoundland

Assessment Tools Using Oceanographic and Other
Non-standard Types of Data
by R. O'Boyle
Marine Fish Division
Bedford Institute of Oceanography
Dartmouth, Nova Scotia

Seasonal Temperature, Salinity, Depth Distributions of Scotian
Shelf Groundfishes, and their Water Mass Relationships
by Ian Perry and R. J. Losier
Marine Fish Division
St. Andrews, New Brunswick

Silver hake Commercial Catch Rates
and their Relationship to Oceanographic Features
by D. Waldron
Marine Fish Division
Bedford Institute of Oceanography
Dartmouth, Nova Scotia

and

B. Petrie
Atlantic Oceanographic Laboratory
Bedford Institute of Oceanography
Dartmouth, Nova Scotia

The general discussion identified a few key points on the topic. A number of participants felt that it was premature to discuss quantitative ways to use environmental data rigorously and consistently in assessments. Rather, interest should focus on documenting such relationships rigorously, and ways to use the relationships in assessments would follow readily. There was some feeling that the expertise available to the department was not being used to its fullest, and a number of suggestions and recommendations were proposed to increase the direct interactions among oceanographers, fisheries biologists, and quantitative specialists. Research on the basic biology on many species is an essential fundamental prior to quantifying detailed effects of oceanographic conditions on their distributions and abundances.

The session on standardization of oceanographic instrumentation is also relevant to this group. The session commenced with presentations on current practices for collection of oceanographic data in each region. Substantial differences were revealed. A general discussion ensued with the objective of identifying a minimum program for data collection sufficient to identify the water mass in which the set was conducted. Three levels were (1) basic - SST, SSS, SBT, SBS for each fishing set, (2) all of (1) plus occasional T-depth profiles on a planned design, and (3) A CTD profile at each set and fixed moorings for monitoring between surveys. The minimum program was agreed to consist of temperature-depth profiles at every set, and CTD profiles on some designed layout. Regular calibration and consistent archiving of data are essential. Resolution should be 0.02°C for sigma-T and 0.05 ppm for salinity. There was also some discussion of details of changes in responsibilities among regions with the Science Integration Program. MEES attached great significance to the continuation of some long-term programs of oceanographic data collection. Attention of senior management was called to the importance of these data series, and to the need for an Atlantic Region data management plan for all physical oceanographic data with provision for regional data processing and centralized archiving, using standardized formats.