

## PART 8: DATA AND RESEARCH NEEDS

### §8.1 Gear Development Research Needs

In view of the Council's selection of operational control as the management strategy for this plan, ongoing gear development and analysis are important for continued effective implementation of the multi-species management program. Accordingly, mesh selectivity and trawl design research require support at realistic levels in order to most effectively attain the FMP plan objectives. Comparative evaluation of mesh size in existing gear, as well as the design of new, more selective gear for use in the multi-species fishery, is of great interest to the Council.

Of current interest to the Council would be testing and comparative analysis of conventional vs. square mesh cod ends in both large and small mesh fisheries. As noted in Section 5.5, the use of square mesh cod ends may result in reduced levels of groundfish discard mortality, an important consideration in fishery management. Determination of the correspondence between square and conventional diamond mesh for specific species in the fishery is an area of needed research. Comparative studies of conventional vs. square mesh is currently being conducted in inshore waters by the Commonwealth of Massachusetts to a limited extent. There must be a more complete testing program and analysis of the benefits and limitations of the use of square mesh before its use as a management tool can be seriously considered. A cooperative testing program with the states, NMFS, and Sea Grant is strongly urged.

In addition to research on square mesh, testing and analysis of the use of separator trawls in the small mesh fisheries for whiting or shrimp would be of significant value in relation to the Council's interest in providing fishing opportunities, while minimizing undesirable impacts on associated species. It has been demonstrated in other regions of the country, most notably the Gulf of Mexico, that separator trawls may minimize by-catch. In the groundfish fishery, this technique may reduce the by-catch of juvenile flounder or redfish.

Another area where research could be called for is relative to recent developments in automatic longlining or auto-lining fishing techniques. Of particular interest would be analysis of the comparative efficiency of these methods relative to others in the fishery for the purpose of management. If management measures restrict the use of some gear types, alternative fishing methods such as auto-lining must be carefully evaluated.

Establishment within the Northeast Fisheries Center of a fully-funded, adequately-staffed research program to evaluate the functional attributes of gear commonly used as well as new gear types used in the multi-species fishery is recommended. The objectives of such a program would be to suggest limitations on the use of gear, and appropriate modifications or useful gear design changes. While it appears that the Center is a logical funding source for such research, conducted internally or contracted out, there are several other funding options.

Sea Grant has demonstrated a capability in the area of gear development. Continued effort by Sea Grant would serve to contribute to the overall fishery

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management process through making useful data available to managers and user groups. It is recommended that research programs such as the M.I.T. Sea Grant Fisheries Technology Center be adequately supported and that its effort be directly linked to Council efforts at fisheries management.

Potential funding sources for the research at the M.I.T. Center for Fisheries Engineering, the Northeast Fisheries Center, the Massachusetts Commercial Fisheries Extension Service and the Maine Fishery Technology Service could include the National Marine Fisheries Service, Sea Grant, the Saltonstall-Kennedy Program (S-K funds) and the Wallop-Breaux Program, all of which could support a management effort promoting development of the fisheries.

### §8.2 Economic Data & Research Needs

The Council has initially determined that the NMFS Three-Tier Data Collection Program is currently sufficient for continuing management under the Multi-Species FMP given three provisions: (1) an expansion of the collection base; (2) improvements of the type indicated below for Tier Two and as may be suggested by the FMP Monitoring Group; and (3) maintenance of all data including vessel identification numbers. Notwithstanding this initial determination, the FMP Monitoring Group may indicate a need for additional data or a new data collection system after periodic review of the current system. Expansion of the NMFS weigh-out landings data collection system in Connecticut and New York are highly recommended for effective implementation and updating of the FMP. In addition, it is suggested that NMFS continue to improve the coverage of this data collection system in the Mid-Atlantic region.

Trip interviews (Tier Two) have proven to be an effective way of assembling data about the fisheries and should be continued. This method of data collection might be more useful if it included information on the number of crew members on each trip. The data is important for estimating the input of labor in the production process for these fisheries, which can be determined if vessel identifiers are maintained. Trip interview data, in order to be most useful to the Council, should be assembled in a consistent manner and distributed on a regular basis to the Council.

The Council requires that any data respecting a fishing vessel's operations, including the vessel's identification, that may be voluntarily supplied by fishermen through the NMFS Three-Tier Data Collection Program shall be retained in the data base, in strict confidence, for management analysis purposes only, unless removed or deleted at the specific request of an individual vessel owner. If the FMP Monitoring Group finds that such data are not being adequately maintained or that a sufficient number of vessel owners do not allow such data to be maintained, then a new data collection system which does provide the necessary data will be considered.

Vessel cost data should continue to be collected by NMFS. These data are necessary for updating the management plan and achieving its explicit management goals and objectives.

Production models of the fisheries need to be improved and expanded, including cross-sectional analysis, which requires identification of vessels by NMFS to assess the IRFA requirement. Modeling of the financial performance of major New England fleet sectors should continue. Application of this research data to the management effort would serve to enhance the overall management effort.

Standardization of fishing effort data in order to quantify changes and identify trends in fishing effort by different gear types and size classes should be pursued. It is important for managers to know how their policies are affecting fishing effort or whether changes in effort are caused by other factors such as changes in technology, interest rates, government construction subsidies, etc. Market models which include the international economy should be developed in order to broaden the understanding of market interdependence of fishery products under management. Work on imports which has been completed by the Analytical Services Branch of the Northeast Fisheries Center should be expanded to include explicit import equations. The Council will continue to develop the short-run supply model which will be of importance in updating the management plan.

Economic impact analysis of the Gulf of Maine Boundary settlement on the New England industry should be provided by NMFS to the Council for incorporation of relevant information into fishery management plans.

To the extent possible, NMFS should undertake the tasks described above because NMFS personnel have the most direct access to the data and tend to have a better understanding of the management environment than private or academic researchers. However, additional avenues of support to complete the research and data needs which are important to the effective implementation of the management program might include Wallop-Breaux or S-K funding sources. While these monies are primarily aimed at development projects, management and development of the resource are closely related; and support from these programs could easily be justified.

### §8.3 Other Areas for Research and Data Needs

Other areas where data needs exist include updating of relevant socio-cultural information on New England ports. A thorough socio-economic analysis of the impact of the FMP is warranted. Information is also lacking in the area of habitat protection. There are serious gaps in the information pool with regard to the effects of certain activities on fish habitat and the resultant impact on fisheries productivity and marketability.

In the area of recreational fisheries, information on the catch and effort of recreational anglers has improved substantially since the inception of the National Survey in 1979. While data from this source provides an indication of the biological impact of recreational fishing on groundfish stocks, this source is not adequate to assess the economic impact of recreational fishing. Other existing national and regional studies on the economic impacts of recreational fishing have not specifically focused on recreational groundfish fishing. Studies which provide comprehensive information on the economic structure and importance of recreational fishing in New England are needed. This information is necessary for the determination of net social benefits from recreational fishing and to understand in advance how commonly used management measures and techniques might affect participation in the fisheries and industries dependent on the recreational fisheries.