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BIBLIOGRAPHY OF SOCIO-ECONOMIC STUDIES:
FISHERIES OF THE NORTHEAST U.S.

by

Rosamund Ladner, Leah J. Smith,
Susan Peterson and James Wilson

November 1981

TECHNICAL REPORT

*Prepared for the National Marine Fisheries
Service Contract NA-81-FA-00018, for the Pew
Memorial Trust, also for the Department of
Commerce, NOAA Office of Sea Grant under
NA-80AA-D-0077 (E/L-1) and for the Institution's
Marine Policy and Ocean Management Program.*

WOODS HOLE, MASSACHUSETTS 02543

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Approved for Distribution:



David A. Ross, Director
Marine Policy and Ocean Management

ABSTRACT

This bibliography of social and economic studies of the fisheries of the Northeast United States (Maine to North Carolina) includes annotated listings for each entry and an index of key words for cross-referencing. We have attempted to include all studies published since 1970, and a selected group of particularly significant studies done earlier. The major focus has been on commercial fisheries, but recreational fishing studies have also been included when possible. In addition to studies of the Northeast United States fisheries, studies of Canadian fishing subsidies, European and other markets, have been included because of their relevance to the regional industry. All stages of the fishing industry's operation - harvesting, processing, distribution, marketing - are included, along with management and policy oriented material.

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INTRODUCTION

This bibliography of social and economic studies of the fisheries of the Northeast United States (Maine to North Carolina) includes annotated listings for each entry and an index of key words for cross-referencing. We have attempted to include all studies published since 1970, and a selected group of particularly significant studies done earlier. The major focus has been on commercial fisheries, but recreational fishing studies have also been included when possible. In addition to studies of the Northeast United States fisheries, studies of Canadian fishing subsidies, European and other markets, have been included because of their relevance to the regional industry. All stages of the fishing industry's operation - harvesting, processing, distribution, marketing - are included, along with management and policy oriented material.

The report is organized in five sections. Section one lists all major data collection programs which extend over several years. The National Marine Fisheries Service data sources form the bulk of this section, and listings are given of each relevant State office for regularly collected statistics in individual States.

Section two lists studies which contain a substantial amount of primary data, generally collected over one or a few years. Some of these studies have collected data which is available (usually in some aggregated form) to other researchers; others give tables, summaries and analysis of the data collected.

Section three contains the bulk of the bibliography, articles and reports based primarily on secondary data or on smaller primary data collections, with emphasis on analysis and discussion rather than the presentation of data per se. The annotations for each of the references in sections one, two and three include the author, title, place of publication or affiliation of author, a brief description of the contents, and the primary and secondary data sources used. Within each section articles are arranged alphabetically by first author.

Section four is the key word index. It lists the page location for all articles referring to a particular key word. Key words include ports and other geographical locations; species; gear types; various economic, social or cultural variables.

October 1981
Woods Hole, Massachusetts

SECTION ONE

This section contains annotations on sources of continuous, ongoing, primary data collections. These data are collected by the National Marine Fisheries Service and by the States from Maine to North Carolina.

Ad Hoc Data Group: Lou Goodreau, Gene Hyerdahl, Leo Murphy, Robin Peters, Barbara Stevenson, Jim Wilson, and Hoyt Wheeland, Chair. 1981.

"Northeast Fisheries Data Collection and Management System," prepared for Northeast Fishery Management Task Force: Management Information System Working Group.

This document describes, in a clear and organized manner, the data collection, data files, and outputs of the Northeast Fisheries Data Collection and Management System. The emphasis is on socio-economic data, although collection and processing of biological data are also covered. The Data Collection section covers harvesting, processing, wholesaling, and retail/consumer data collected by NMFS and the New England and Mid-Atlantic Fishery Management Councils. The Data Files section describes the automated data files maintained by NMFS Northeast Fisheries Center and Regional Office, NMFS Headquarters, and the New England Fishery Management Council. The Outputs section describes the forms in which data are made available, such as monthly and annual statistical reports, computer printouts and special tabulations. The possible uses of data by NMFS and the Councils are covered. Each data file is named, described (to the variable in some cases) and a contact source is given.

Appendices include: 1) the 1978-1979 Censuses of New England and Mid-Atlantic Fishermen conducted by SSRI, University of Maine, Orono, and by Development Sciences Inc., 2) the Mid-Atlantic Fisheries Socio-economic Inventory, 3) the New England Council Fishery Data System, and 4) the NMFS Northeast Data Collection and Management System, including copies of data collection forms, descriptions of Headquarters' FISHSTATS data files, and listings of NMFS publications.

NMFS Publications

The following NMFS publications provide a means of accessing the socioeconomic data collected by NMFS.

Fishery Market News Reports

Daily landings and market receipts, weekly and monthly cold-storage holdings, daily exvessel prices, weekly wholesale prices of fresh and frozen products, foreign trade data, current market developments. Reports issued from Boston, New York, New Orleans, Terminal Island and Seattle. Published Monday, Wednesday and Friday.

Shellfish Market Review

Food Fish Market Review

Fish Meal and Oil Market Review

Each issued irregularly. Description and analysis of economic factors

affecting markets. Narrative covers review of market trends, historical and recent, and outlook for near future. Tables present landings, imports, inventories, supplies, apparent consumption, and prices (exvessel, wholesale, retail).

Operation Price Watch

Monthly report of informal survey of retail fish prices. Includes prices of surveyed items in ten cities, including Boston and Washington, D.C. Three price indexes (meat, poultry, fish). Fresh fish prices are not included. Indices differ from those published by the Bureau of Labor Statistics for the Consumer Price Index.

Participation in Marine Recreational Fishing, Northeastern U.S. 1973-74.
COM-75-10655.

New England Fisheries

Middle Atlantic Fisheries

These bulletins show annual data on U.S. commercial landings, fishermen, and operating unit data, production of processed products, by State. Published later in Fishery Statistics of the United States with text and more detailed information.

| | |
|---------------------------------------|-----------|
| <u>Maine Landings, 1946-76</u> | PB-27129 |
| <u>Massachusetts Landings 1943-77</u> | PB-275866 |
| <u>Rhode Island Landings 1954-77</u> | PB-287627 |
| <u>New York Landings 1954-76</u> | PB-275449 |
| <u>New Jersey Landings 1952-76</u> | PB-275696 |
| <u>Maryland Landings 1960-76</u> | PB-300636 |
| <u>Virginia Landings 1960-76</u> | PB-300673 |

Processors of Fishery Products in U.S. (excludes Alaska), 1978.

PB-80-219217 Gives firm name, address and major products

Maine Sardine Council

The Maine Sardine Council, 470 N. Main Street, Brewer Maine, 04412, has available information on a continuing basis concerning canning of sardines. Included are production figures on pounds of sardines and herring steaks canned per week and per year with breakdown by type of canning. The areas where the fish were caught are given, and percentages of amount canned from the various areas. Size of fish and number of fish per can are also available.

Kilbride, Carol J., 1980.

A Summary of State Fisheries Statistical Data Collection Programs in the Northeast Region, NMFS, Gloucester.

This brief paper contains one page for each state, from Maine to North Carolina, giving a summary of the state's data collection program, computer capability, state/federal statistical interaction, needs and comments. We were unable to find a document which gives the method of

access to state data files. However, Kilbride's paper lists the following contacts, who may be able to provide more information. In most cases, the Statistical Technical Committee Member is also the state Statistical Program Coordinator. Names given here are the Committee Members, as of September 1980.

Maine

James C. Thomas
Department of Marine Resources
Marine Resources Laboratory
West Boothbay Harbor, ME. 04575
(207) 633-5572

New Hampshire

Brook S. Dupee
Fish and Game Department
Box 2003
34 Bridge Street
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(603) 271-3421

Massachusetts

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Division of Marine Fisheries
Cat Cove Marine Laboratory
92 Fort Avenue
Salem, MA 01970
(617) 745-3107

Rhode Island

David Borden
Division of Fish and Wildlife
Marine Fisheries Section
Washington County Government Center
Wakefield, R.I. 02879
(401) 789-3094

Connecticut

Eric M. Smith
Department of Environmental Protection, Marine Region
P.O. Box 248
Waterford, CT 06385
(203) 443-0166

New York

Leonard Wood
Department of Environmental Conservation
Marine and Coastal Resources
Building 40, State University of New York
Stony Brook, N.Y. 11790
(516) 751-7900

New Jersey

Paul Hamer
Division of Fish, Game and Shellfisheries
Nacote Creek Research Station
Star Route
Absecon, N.J. 08201
(609) 441-3292

Delaware

Richard Seagraves
Department of Natural Resources and Environmental Control
Division of Fish and Wildlife
Edward Tatnall Building
P.O. Box 1401
Dover, Delaware 19901

Maryland

Howard King
Department of Natural Resources
Tidewater Administration - Tidal Fisheries Division
Taves State Office Building
580 Taylor Avenue
Annapolis, MD 21401
(301) 269-3784

Virginia

William L. Baker
Marine Resources Commission
P.O. Box 756
2401 West Avenue
Newport News, VA 23607
(804) 245-2811

North Carolina

Katy West
Division of Marine Fisheries
Box 769
Morehead City, NC 28557
(919) 726-7021

SECTION TWO

This section contains annotations on sources of one-time, large-scale primary data collections.

Acheson, James M., Ann W. Acheson, John R. Bort, and Jayne Lello, 1980.
The Fishing Ports of Maine and New Hampshire: 1978. Report to NSF, Vol. Ia, University of Rhode Island/University of Maine Study of Social and Cultural Aspects of Fisheries Management in New England Under Extended Jurisdiction. Orono, Maine: University of Maine Sea Grant Publications.

Part of a 3 volume report, this volume contains baseline data on each port and fishery in the 2 states. Section One contains general background information on biology, gear, marketing, legal environment, history. Section Two describes each of 71 ports, includes population, major industries, physical infrastructure; also fishing activities, marketing arrangements, processing facilities by fishery. Section Three summarizes the previous information by county.

Data: primary - collected 1978 by personal interviews; 71 ports visited.
secondary - historical

Poggie, John J., Jr., and Richard B. Pollnac, editors, 1980.
Small Fishing Ports of Southern New England, Report to NSF, Vol. Ib, University of Rhode Island, University of Maine Study of Social and Cultural Aspects of Fisheries Management in New England Under Extended Jurisdiction. Orono, Maine: University of Maine Sea Grant Publications.

Part of a 3 volume report, this volume contains case studies about Newburyport, Chatham, Westport, MA., Newport, RI and Stonington CT. Baseline, descriptive data.

Data: primary - visited ports in 1978. Also, personal interview schedule for 31 Chatham captains.
secondary - historical, NMFS.

Various Authors, 1980.

Essays on Social and Cultural Aspects of New England Fisheries: Implications for Management, 1980. Report to NSF, Vol. II, University of Rhode Island, University of Maine Study of Social and Cultural Aspects of Fisheries Management in New England Under Extended Jurisdiction. Orono, Maine: University of Maine Sea Grant Publications.

Part of a 3 volume report, this volume contains articles on institutions and values, innovations and the socioeconomic factors that determine their adoption or non-adoption, and applications of socioeconomic information to specific management problems. Starred (*) articles are annotated in Section Three of this bibliography. Contains the following articles:

Section I: Key Values and Social Units in New England Fishing Ports

- * Adaptation to Uncertainty and Small Numbers Exchange: The New England Fresh Fish Market, by James Wilson
- * "Boats Don't Fish, People Do": Some Ethnographic Notes on the Federal Management of Fisheries in Gloucester, by Marcos L. Miller and John Van Maanen
- * Getting into Fishing: Social Identities Among Traditional and Non-Traditional Fishermen, by Marcos L. Miller and John Van Maanen
- * Fishermen's Wives: Coping with an Extraordinary Occupation, by Fran Danowski
- Sociocultural Variables Related to Variance in Perceptions of Alternative Fishing Types in Southern New England, by Richard B. Pollnac and John J. Poggie, Jr.
- Factors Influencing Preferred Fishing Type Among Fishermen in Southern New England, by Richard B. Pollnac and John J. Poggie, Jr.
- Social Desirability of Work and Management Among Fishermen in Two New England Ports, by John J. Poggie, Jr. and Richard B. Pollnac.
- * The Structure of Job Satisfaction Among New England Fishermen, by Richard B. Pollnac and John J. Poggie, Jr.
- Pruning the Family Tree: Kinship and Community in Coastal Maine, by Toby Lazarowitz and James A. Acheson
- Using the Family Jewels: The Family Estate in Coastal Maine, by James M. Acheson and Toby Lazarowitz
- The Fishermen's Wives Association, by James M. Acheson and Jayne Lello

Section II: Studies of Innovation and Impact of Extended Jurisdiction

- Metal Traps: A Key Innovation in the Maine Lobster Industry, by James M. Acheson
- Patterns of Gear Changes in the Northern New England Fishing Industry, by James M. Acheson
- Technological Innovations and Organizational Implications: The Case of Pair Trawling in New England's Fishing Industry, by John R. Bort
- * Technical Innovation in the New England Fin-Fishing Industry: An Examination of the Downs and Mohr Hypothesis, by James M. Acheson and Robert Reidman
- New Boats and New Gear: Federal Regulation and Investment in the New England Groundfishery, by James M. Acheson

Section III: Current Fisheries Management Issues

- * A Model to Analyze the Effects of Changing the Maine Minimum Legal Lobster Size From 3 3/16 Inches to 3 1/2 Inches, by James M. Acheson and Robert Reidman
- Cultural and Technical Factors Influencing Fishing Effectiveness in the Maine Lobster Industry: An Assessment by Fishermen and Biologists, by James M. Acheson
- * Factors Influencing Production of Metal and Wooden Lobster Traps: A Technical Report, by James M. Acheson
- * Attitudes Towards Limited Entry Legislation Among Fin-Fishermen in Northern New England, by James M. Acheson

Section IV: Summary

The Tragedy of the Commons: An Uncommon View, by James M. Acheson, John Poggie, Richard B. Pollnac, and James Wilson

Social and Cultural Factors Influencing Fishing Effort, by James M. Acheson and Ann W. Acheson

Wilson, James A., and James M. Acheson, 1980.

A Model of Adaptive Behavior in the New England Fishing Industry, Report to NFS, Vol. III, University of Rhode Island, University of Maine Study of Social and Cultural Aspects of Fisheries Management in New England Under Extended Jurisdiction. Orono, Maine: University of Maine Sea Grant Publications.

This volume presents a general social science model of the behavior of firms in modern industrial settings, in this case, the New England fishing industry. It is an adaptive, integrative model. Part 1 of the volume reviews literature applicable to fisheries problems. Part 2 presents the model. In Part 3, the model is used to explain aspects of fishing behavior in New England. Describes fishing clusters, and ten examples of institutions formed by fishermen. Part 4 covers the relationship of fishermen's institutions to the problem of fisheries management, and applies insights from the model to aspects of fisheries management.

Data: primary - draws on data collected for and presented in other volumes of this report. Part 3 contains some data from the same data collection, not previously reported or analyzed.

Marine Group, Development Sciences, Inc., in association with Robert J. Harmon and Associates, Inc., 1980.

Mid-Atlantic Fishery Conservation Zone: Fisheries Socio-Economic Inventory.

This 3 volume study contains:

- Vol. 1) A description and characterization of the Mid-Atlantic FCZ fishery system. Detailed descriptions of key ports, fleet, shoreside support, labor unions and co-operatives
 - Vol. 2) An economic analysis. Landings, harvesting, processing, marketing, imports. Impact of fishery activities on county employment and economics.
 - Vol. 3) Special studies. Community case study. Surveys of sport and commercial fishermen. Quantification issue in recreational fishery.
- Data:
- 1) Field observations and surveys in every port and market in Mid-Atlantic region.
 - 2) Census of commercial and charter/party boats.
 - 3) NMFS data processing and harvesting data.
 - 4) Reviewed all relevant studies.

Data : Mail and telephone interviews collected once in 1979-80 for 1978-80, from 400 commercial boats, 300 charter/party boats. Processed with SPSS.

Contact: John Bryson, Executive Director of Mid-Atlantic Fishery Management Council
Room 2115 Federal Building
North and New Streets
Dover, Delaware 19901

McConnell, Kenneth E. and Terrence P. Smith, 1979.

Marine Recreational Fishing in Rhode Island, (A series of reports), NOAA/Sea Grant, URI, Narragansett, RI.

1)"Marine Recreational Fishing in Rhode Island, February and March, 1978," Marine Memo 55.

This report is first in a series on a survey of marine recreational fishing in Rhode Island. This paper presents basic sports fishing parameters for February and March 1978. Reports estimates of aggregate catch and effort, and descriptive statistics for characteristics of sampled fishermen.

Data: primary - field interviews, February and March 1978, 137 fishermen (84 Rhode Island, 53 other states). Random telephone survey, March and April 1978, 10 households which finfished in February and March.

2)"Marine Recreational Fishing in Rhode Island, April and May, 1978," Marine Memo 56.

This report is second in a series on a study of marine recreational fishing in Rhode Island. This paper presents descriptive statistics for April and May 1978. Reports estimates of aggregate catch and effort, compares to February and March, and estimates catch by species by Rhode Island fishermen; descriptive statistics of fishermen's characteristics include age, years fished, income. Catch rates by mode of fishing (boat, jetties).

Data: primary - field interviews April and May 1978, 639 fishermen, 392 Rhode Island, 247 other states. Random telephone survey, May-June 1978; 77 households which finfished in Rhode Island in April and May.

3)"Marine Recreational Fishing in Rhode Island, June and July 1978," Marine Memo. 60.

This report is the third in a series providing descriptive statistics of marine recreational fishing in Rhode Island; it provides data from June and July 1978. Reports estimated aggregate measures of catch and effort, and descriptive measures of representative anglers. Estimates weighted defferently than in reports No. 1 and No. 2, thus not comparable.

Data: primary - field interviews with 1700 fishermen. Telephone interviews with 215 households which fished in Rhode Island in June and July, 1978.

4)"Marine Recreational Fishing in Rhode Island, Aug-Spt, 1978, Oct-Nov 1978, Dec 1978-Jan 1979," Marine Memo. 62.

This paper is the fourth progress report in a series. Gives descriptive statistics for the three sample periods. Estimates aggregate measures of recreational catch and effort, as well as descriptive statistics of anglers. Catch reported by mode of fishing and by species. Fish caught per hour by mode. State residence of anglers, and family income, age, years fished, distance traveled and cost to fish. Technical appendices for estimates computation.

Data: primary - stratified sample of field interviews, 2900 fishermen. Random telephone sample 345 households which fished in Rhode Island in August 1978 to January 1979.

5)"Marine Sportfishing in Rhode Island, 1978," forthcoming.

This paper is a final report summarizing basic findings from this study. Characteristics of Rhode Island resident and non-resident salt water sportfishermen, their fishing effort, catch, seasonal variation in catch, and places from which they fish are presented. Also, estimates of catch by species, time and type of fishing, costs of transportation to and from the fishing grounds, and out-of-pocket expenses of the sportfishermen. Appendix describes survey methodology and composition of the sample in each survey. The recreational marine fishery is large and diverse, and may have a substantial economic impact on local economies.

Data: primary - Field survey was a stratified random sample conducted between February 1978 and January 1979. Total field interviews were 5400; 54% were Rhode Island residents. Random telephone survey contacted a total of 9000 households, 650 of which had fished in the appropriate two month period. Technical report of survey methodology, and economic analyses forthcoming.

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SECTION THREE

Acheson, James M., 1974.

"The Lobster Fiefs: Economic and Ecological Effects of Territoriality in the Maine Lobster Industry," Human Ecology 3(3): 183-207.

This paper describes two kinds of lobstering territories claimed by Maine lobstermen, "nucleated" and "perimeter-defended", which differ in the extent to which exclusive fishing rights are maintained. These territorial arrangements have an effect on income and on the biomass. Overview of Maine lobster fishery. Description of territoriality. Process of boundary maintenance and change. Biological and economical benefits of fishing in perimeter-defended areas. Management implications.

Data: primary - income and expenses data, from personal interviews with 28 Maine lobstermen in 1972-73. Catch data from 14 lobstermen March 1973 to January 1974; 9,000 lobsters, 3000 from nucleated areas and 6000 from perimeter defended areas.

Acheson, James M., 1975.

"Fisheries Management and Social Context: The Case of the Maine Lobster Fishery," Transactions of the American Fisheries Society 104(4) 653-668.

This paper argues that opposition to fisheries regulations will be minimized if the regulations are congruent with existing social and economic system. Five kinds of management proposals to limit effort in Maine lobster fishery discussed against background of key institutional features of coastal communities.

Data: primary - 1972 personal interviews with 48 Maine fishermen.
1973 personal interviews with 144 Maine fishermen.

Acheson, James M., 1980a.

"Attitudes Toward Limited Entry Among Fishermen in Northern New England," Fisheries: A Bulletin of the American Fisheries Society, November-December 1980, Vol. 5, No.6.

This paper analyzes the reactions of Maine fishermen to proposed limited entry legislation. Potential positive effects of limited entry schemes. Gives reason New Hampshire and Maine fishermen oppose or advocate these proposals. Attitudes by age, species sought, and versatility of operation.

Data: primary - collected 1977 and 1978. 190 captains in Maine and New Hampshire. Personal interviews.

Acheson, James M., 1980b.

Factors Influencing Production of Metal and Wooden Lobster Traps: A Technical Report, Technical Report #63, University of Maine Sea Grant, Orono, Maine. Also in, Vol.II, URI-UME Report to NSF, 1980.

This paper analyzes the factors influencing lobster catches, with a view toward determining the relative importance of such factors. The effect of trap construction material on catches is particularly noted. Differences in trap productivity of different trap materials are substantial enough to be considered when investing in new traps. Has Net Present Value analysis of trap materials.

Data: primary - 7700 trap hauls 1977-78, from 18 Maine boats.
2100 traps from 3 Maine boats in 1979.

Acheson, James M., and Robert Reidman, 1982a.

"Biological and Economic Effects of Increasing the Minimum Legal Size of American Lobster in Maine," Transactions of the American Fisheries Society 112(1). Also in Vol.II, URI-UME Report to NSF, 1980, as: "A Model to Analyze the Effects of Changing the Maine Minimum Legal Lobster Size from 3 3/16 Inches to 3 1/2 Inches."

This paper presents biological and economic data on the effect of raising the legal lobster size. Biological data. Economic model to predict effect of change on revenues.

Data: primary - 1977-78, 18 Maine boats 8600 lobsters measured.
secondary - Thomas and Krause, State of Maine 1966-67.

Acheson, James M., and Robert Reidman, 1982b.

"Technical Innovations in the New England Fin-Fishing Industry: An Examination of the Downs and Mohr Hypothesis," American Ethnologist 9(1). Also in, Vol.II, URI-UME Report to NSF, 1980.

This paper explains Downs and Mohr's theory on innovation. Studies the innovations in the fin-fishing industry to support the theory. States early and late adopters are not a consistent group, or class of people. Also, statistical data (regression coefficients) in innovations cannot be understood in an absence of information on the context within which the decision making process occurs.

Data: primary - 190 Maine and New Hampshire fin-fishing boat captains personal interviews 1978.

Agnello, Richard J., and Lawrence P. Donnelley, 1975.

The Interaction of Economic, Biological, and Legal Forces in the Middle Atlantic Oyster Industry, College of Marine Studies/Sea Grant, University of Delaware, Newark.

This paper determines the interactions and importance of the economic, biological and legal forces, by quantifying and integrating some of the relevant variables into a supply and demand model of the oyster industry. Results yield useful information on price and income demand elasticities. Efforts to rehabilitate the industry by cleaning up pollution, replacing cultch, and encouraging legal private property rights may have large social values.

Data: secondary - NMFS, Bureau of Labor, Department of Commerce.

Annis, Roy, Richard Burkholder and Timothy Mulhern, 1975.

"The New England Fishing Industry: Some Proposals for Revitalization,"
Sea Grant Undergraduate Projects Course, Department of Political Science,
University of New Hampshire.

This paper proposes management schemes to increase incomes and profits in the New England fishing industry. Discusses problems in industry including insurance, vessel financing, and domestic political situation. Sullivan bill and Studds bill.

Data: secondary - except tables showing politicians' support for fisheries legislation.

Aylward, Anne, and Gail Monahan, 1977.

The Fishing Industry in Massachusetts: A Report Prepared for the Mass. Legislature by the Mass. Port Authority, Boston.

An introduction to and history of the Mass. fishing industry. Discusses possible impacts of 200-mile limit and offshore oil drilling. Some marketing issues in expansion of underutilized species. Recommendations for management.

Data: all secondary, NMFS and others.

Baker, D., 1979.

Who Benefits from Fishing Vessel Construction Subsidies? Report prepared for the Department of Fisheries and Oceans Government of Canada.

This report to the Canadian government analyzes the distribution of federal vessel subsidy funds and their effect on the fishing industry in Nova Scotia. Describes current boatbuilding industry. Identifies objectives of current subsidy policy. Suggests alternative programs. Claims that benefits accrue to boatbuilders, at expense of fishermen without the subsidy.

Data: secondary - great amount of data, including boat building by county, all from Canadian Federal Government 1950-77.

Beal, Elmer, Jr., n.d.

"Maine Markets for Fresh Fish: An Analysis." Fisheries Communications, Stonington, ME.

This paper examines the Maine fresh fish markets and their ability to absorb fresh fish caught by local fishermen. A sample of retail stores and restaurants were surveyed to determine sales values of different species. Also discussed were findings on types of business methods involved in the market, consumer preferences, as well as information on Maine fishermen and distributors.

Data: primary - collected by author. Details not known.

Bigney, Tracy B., 1977.

The Maine Sardine Industry, the First One-Hundred Years 1876-1976,
Masters Thesis, University of Maine, Orono.

This thesis describes the history of Maine's sardine industry and the Canadian sardine industry in New Brunswick, which draws from the same fish stock.

Data: secondary - historical sources and NMFS.

Bockstael, Nancy E., and James J. Opaluch, 1981.

"Discrete Modelling of Behavioral Response Under Uncertainty: The Case of the Fishery," manuscript, University of Maryland, Department of Resource Economics.

This paper develops a discrete choice model of capital utilization decisions under uncertainty, which is applied to fishing firms' decisions in New England. Employs the model to characterize firms' response to regulation by quota.

Data: secondary - other papers and NMFS.

Booz, Allen, and Hamilton Inc. (Foster D. Snell Division), 1977.

More Aggressive Use of the Ocean Quahog, report to NMFS.

This study evaluates the potential for more widespread use of the ocean quahog. Assessment and biology of raw material; marketing and processing techniques and costs.

Data: primary - clam samples from eleven sites, personal interviews with unknown number of fishermen and 87 processors.

secondary - cost and capital data from suppliers; also NMFS and other agencies for other data.

Brown, Alan J., 1973.

Future Prospects for New England Domestic and Imported Fish Processing and Handling Facilities, Masters Thesis in Shipping and Shipbuilding Management, MIT, Cambridge, MA.

This thesis discusses the supplies of fresh and frozen, domestic and imported fish in New England. Describes fresh and frozen fish processing and handling. Analyzes and contrasts port facilities in Gloucester, Boston and New Bedford. Future prospects for industry.

Data: secondary - NMFS, 1960-70 maps, vessel pictures and descriptions.

Brownell, Willard, 1977.

New Hampshire's Fishing Industry, Marine Advisory Service, University of New Hampshire, Durham, New Hampshire.

This report profiles the state's commercial fisheries by species and gear type, and gives overview of landings and market data.

Data: no sources given, no footnotes or bibliography. One table of exvessel prices by species.

Callaghan, Dennis W., and Robert A. Comerford, 1978.

The Economic Impact of Commercial Fishing on the State of Rhode Island 1975, Sea Grant Technical Report 65, URI, Narragansett, RI.

Firms engaged in Rhode Island's commercial fishing activity (exempting fish retailers) were analyzed in an input-output framework to determine their impact on the state's economy.

Data: primary - 72 fishermen or firms, some not in Rhode Island, collected summer 1976.

secondary - NMFS and state agency data.

Capalbo, Susan M., Joel B. Dirlam, Virgil J. Norton, and D.H. Wang, 1977.

Subsidies to Canadian Groundfish Industry: Background Information for Countervailing Duty Assessment, Dept. of Resource Economics, Agricultural Exper. Station Contribution # 1738, URI, Kingston, RI.

This report identifies the types and magnitude of subsidies to the Canadian groundfish industry, in order to determine whether a countervailing duty is justified. Estimates per pound subsidies.

Data: secondary - Canadian Ministry of Foreign Affairs, etc.

Cape Ann Chamber of Commerce, 1977.

Economic Impact Report - The Fishing Industry and Gloucester, Mass.

This report gives the economic impact of the Gloucester fishing industry in view of 1977 codfish and haddock quota closings. Costs for large, medium and small boats include insurance, gear, repairs, oil, ice, electronics, taxes. Also, wages of employees of landbased components.

Data: primary - collected by staff, and community groups for 100 boats.

Cape Cod Planning and Economic Development Commission, 1978.

An Economic Profile of the Cape and Islands Fisheries.

For individual towns, reports history, existing support facilities, physical description of harbors, dockage, berthage, fuel, ice, areas fished (using maps), landings by species. Summary information on the

economic impact of commercial fishing on the area economy. Jurisdiction regulating fisheries in different ports.

Data: primary - mail questionnaires from unknown number of fishermen; personal interview 14 dealers, and other local sources.
secondary - King and Storey input/output data.

Carls, E. Glenn, 1978.

Long Island Boat Fishermen, N.Y. Sea Grant Report series, State University of N.Y and Cornell University, Ithaca, NY.

This study of Long Island charter and party boat fishermen includes quantitative data on demographic traits, an evaluation of fishing activity characteristics, and a measure of user attitudes toward licensing issues.

Data: primary data collected once in fall 1975 at 3 locations. Montauk, Captree State Park, and Sheepshead Bay, Long Island. Personal interviews with 400 fishermen over 16 years old.

Centaur Management Consultants, Inc., 1975.

Economic Impacts of the U.S. Commercial Fishing Industry, prepared for NMFS, NOAA, Dept. of Commerce.

The national economic impacts of the U.S. commercial fishing industry are determined using a national inter-industry input-output approach. Pollution effect of industry reviewed. Socio-economic characteristics of selected communities, including Hug and Hasey's Maine lobster data. Multipliers derived could be applied to New England, although they are derived from national figures.

Data: secondary - material from NMFS, Dept. of Commerce, 1967 national input/output table, U.S. Census of Manufactures, and others.

Centaur Management Consultants, Inc, Washington, D.C., 1977.

Economic Activity Associated With Marine Recreational Fishing, report prepared for: NMFS Washington D.C. contract # 6-35195.

Estimates economic contribution of marine recreational fishing to the national economy, for years 1972-75, using input/output analysis. Disaggregates national impacts into seven fishing regions. Appendices present detailed data analyses of economic impacts in 11 sales sector; also lists sources of data and procedures used.

Data: secondary - from many sources including U.S. Census 1967 national input/output table, 1970 Bureau of Sportfisheries and Wildlife Census. Some supplemental primary data. Field and phone interviews in each region with bait sellers, charter and head boat captains. Mail survey of 146 fishing tackle manufacturers.

Cole, K., and J.B. Dirlam, 1981.

Remedies Available to New England Fishermen for Protection Against Subsidized or Unfair Competition, Marine Memo 47, NOAA/Sea Grant, URI, Narragansett, RI.

Reviews procedures permissible under Federal Trade Act of 1979 for challenging imports subsidized by foreign governments. Explains requirements for obtaining assistance, and the types and amounts available.

Conrad, Jon M., n.d.

Management of a Multiple Cohort Fishery: The Hard Clam in Great South Bay, Dept. of Resource Economics, Cornell University, Ithaca, NY.

This paper develops a general multiple cohort model which is used to derive the condition for optimal harvest and age structure of a resource. The model is based on a time control problem which maximizes present value of net revenues subject to the constraints of recruitment and spawning as applied to the hard clam resource of Great South Bay, Long Island, NY.

Corey, Roger, Joel Dirlam and Todd Smith. 1981.

Current Developments in Ex-Vessel Groundfish Prices, Kingston RI: University of Rhode Island Marine Memorandum 65.

Paper describes ex-vessel market for species landed by otter trawlers in New Bedford. At a time when retail prices have increased 225% since 1967, the authors explore the problems associated with low ground fish prices received by the fishermen. A review of the factors that shape the demand side of the market is followed by a summary of the most important determinants of supply.

Data: secondary - NMFS, Department of Commerce and others.

Coutas, John C., Deziel, Frisbe, Israel, Johnston, Smith and Stockman.

The Socioeconomic Response of Coastal Communities to the Fisheries Conservation and Management Act of 1976, UNH-SG-AB-117, University of New Hampshire Marine Program, Durham, NH.

This undergraduate study defines the traditional social and economic patterns among fishermen from Newburyport, MA. to Kittery, Maine. Analyses discuss the possible ramifications of the FCMA upon these patterns, and makes policy recommendations based on the findings. Results: 1) an increase in economic competition and fishing effort diversification since the Act took effect, 2) most fishermen ignore the regulations, 3) most of the fishermen have little socio-economic effect on their communities and rarely interact in social and political community activities.

Data: primary - personal interviews with 32 fishermen. 24 from New Hampshire, covers 76% of the New Hampshire fleet (20 boats). 38% (16) of Newburyport, MA. fleet. Appendix contains questionnaire and percentage responses to all items.

Cowger, Joel D., 1978.

An Analysis of the Maine Crab Industry, Research Reference Document 78/7, Maine Department of Maine Resources Fisheries Research Lab, West Boothbay Harbor, ME.

Historical and seasonal trends of Maine crab fishery analyzed. Present state of fishery and potential for further development. Crab production and processing in coastal areas described and compared. Commercial species described. States that crab are not underutilized species.

Data: primary - from unknown number of harvesters, dealers and processors. Crab catch sampled and analyzed.

secondary - NMFS and Maine Dept. of Marine Resources.

Coyne, James M., 1981.

A Dynamic Bioeconomic Fisheries Simulation Model, with an Application to the American Lobster Fishery. MS Thesis, Dept. of Resource Economics, University of New Hampshire.

A dynamic fisheries model is developed which relaxes the equilibrium assumptions of traditional models. The model simulates the dynamics of the exploited lobster fishery and can be used to predict bioeconomic impacts of management plans. Includes a background of the American lobster fishery.

Data: all secondary sources.

Danowski, Fran, 1980.

"Fishermen's Wives: Coping With an Extraordinary Occupation," Marine Bulletin 37, NOAA/Sea Grant, URI, Narragansett, RI. Also in, Vol. II, URI-UME Report to NSF.

This paper surveys fishermen's wives in Galilee, R.I. to shape a general ethnography of the group and to look at relationships between fishing and the lives of the women. Covers attitudes toward unpredictable schedule, danger, status, children, kinship, friends, political awareness, domestic schedule, and marital relationship. Factor analysis of projective item responses. Self-anchoring scale used.

Data: primary - personal interviews in 1978, 50 women, 87 item personal interview.

Dearborn, Susan, 1977.

Soft Shell Clam Industry of Maine and Its Institutions of Regulation and

Management. MS Thesis, Dept. of Agricultural and Resource Economics, University of Maine, Orono.

This thesis gives an overview of the traditional clam industry and looks at how it is managed. The legal and political institutions of the state regulatory structure are examined to determine if they represent a clear statement of policy toward the resource. Included in the analysis are five case studies of towns' management practices.

Devanney, J.W. III., 1976.

Fishermen and Fish Consumer Income Under the 200-Mile Limit, MIT-SG 75-20, MIT Cambridge, MA.

This report is a brief summary of some resource allocation principles. Thesis is that the 200-mile limit alone will not solve the basic resource management problem. Possible regulatory alternatives in descending order of attractiveness are competitive bonus bidding for transferable fishing rights, profits bidding, arbitrary per-vessel quotas, overall take restrictions and gear limitations.

Data: secondary - three sources.

Dewar, Margaret, R. Lake, M. Lord, D. Wishner, and J. Wondolleck, 1978.

The Fishing Industry of Chatham and Its Importance to the Town, Department of Urban Studies and Planning, MIT, Cambridge, MA.

This report is a study of the economic impact of its fishing industry on Chatham, MA. Describes the fleet, types of fishing; capital and operating expenditures detailed. Describes buyers, market, local suppliers to fishing industry, local purchasers of fish, dollar impact on town government.

Data: primary - personal interviews and study of financial records.

Dewar, Margaret, E., 1979.

Industry in Trouble: Economics and Policies of the New England Fisheries, Ph.D. Thesis, Department of Urban Studies and Planning, MIT, Cambridge, MA.

This thesis studies the politics and economics of the New England fishing industry from the early post-World War II years to 1979. The structure of the industry is examined, and the offshore groundfish industry is found to be most problematic, with other sectors improving or remaining stable, from 1950-1960's. Industry attempts to gain government assistance reviewed. Reasons why the programs failed, or would have, are given. Perceptions of industry problems in late 1960's (foreign fishing) covered, as well as latest efforts to solve industry problems.

Dewar, Margaret and Leah J. Smith, 1979.

The Fishing Labor Market in Two New England Ports, report to NOAA contract # 03-78-D01-69.

This paper looks at fishery labor market structure in two New England ports (Chatham and Gloucester, MA.), and assesses the importance of labor market issues in devising effective management plans. Gives ways fishermen get into fishing, use crew sites, become skippers, buy boats and leave fishing. Discusses effects of mesh regulation, quotas, limited entry on the two ports' fisheries. Appendix on fishermen's reactions to management.

Data: primary - personal interviews with 30 Chatham and 50 Gloucester fishermen. Life histories. 2 appendices explain sampling.

Dirlam, Joel B. and Der-Hsiung Wang, 1978.

Canadian Trade Practices and Policies Relative to Fish Commodities, a report under Contract 7-35365 to the Dept. of Commerce, Office of International Fisheries, National Marine Fisheries Service.

Dow, Robert L., Frederick W. Bell, Donald M. Harriman, 1975.

Bioeconomic Relationships for the Maine American Lobster Fishery with Consideration of Alternative Management Schemes, NOAA Technical Report NMFS SSRF-683, Seattle, WA.

This paper about the Maine inshore lobster fishery measures biological factors determining trends in abundance and production of lobsters. Analyzes impact of demand and operations costs on production. Measures returns to boat owners. Bio-economic model established. Economic and social impacts of four hypothetical management schemes.

Data: primary - data from A.A. Holmsen, URI, collected in 1967. 186 boats, (126 in Maine) data considered of questionable reliability.

Also, primary data from University of Maine for NMFS from Phippsburg, Beals and Corea, Maine collected 1970. Contains age, income, number and value of traps, alternate occupation.

Secondary data from NMFS, State agencies.

Dunham, Wallace C. and Elizabeth F. McGrath, 1980.

Trends in the Landings of Fish and Shellfish in Maine, 1928-1976, Bulletin #768, Maine Life Sciences and Agriculture Experiment Station, University of Maine, Orono.

This paper contains a time series analysis of volume and value of fish and shellfish in Maine for two periods prior to the MFCMA. A trend analysis is done on landings of 15 species as well as total volumes of species and total yearly volume to determine if the Maine fishing industry has been declining. Two periods were 1928-1976 and 1960-1976, the latter when foreign fishing competition was most prevalent, in order to draw some conclusions as to effect of foreign fishing on Maine landings.

Data: secondary - from State of Maine, on the resource and industry.

Dunham, Wallace C. and Walter P. Stinson, 1973.

Market Structure Analysis of the Maine Shrimp Industry, Bulletin 705, Life Sciences and Agriculture Experiment Station, University of Maine, Orono.

This report gives an overview of the shrimp industry in Maine and its contribution to the national and world shrimp industry. Marketing channels and competition are discussed. Trend and seasonality analysis of Maine shrimp landings and value of landings are included.

Data: secondary - State of Maine.

Dunham, Wallace C., and Munden M. Bray, 1974.

An Evolution of the Potential for Maine Raised Oysters, LSA Experiment Station Bulletin 709, University of Maine, Orono.

A review of the world and U.S. oyster industry is given.

Data: Information on oyster supplies in selected countries, trend analysis and cyclical analysis of demand by country, market for oysters on the half-shell, estimated costs and returns to potential Maine oyster producers. Source not known.

Dunham, Wallace C., and Joseph J. Mueller, 1976.

The Economic Impact of a Reduction in Shrimp Landings Under Regulated and Unregulated Programs, Department of Ag. and Resource Ec., University of Maine, Orono.

Economic impact on harvesting and process of shrimp is evaluated under 1) catch limit regulation, and 2) projection of catch under no regulations. The paper describes species that would be affected by effort transfer out of the shrimp fishery due to a reduction in landings. Information on fishing patterns, vessel characteristics, costs and returns, projected landing figures.

Data: primary - from questionnaires to vessel owners and processors.

DuPaul, William, and Samuel Baker, 1979a.

The Economic Impact of the Sea Scallop Fishery in Virginia, SRAMSHOE # 222, Virginia Institute of Marine Science/Sea Grant, Gloucester Point, VA.

This survey assesses the economic impact of the sea scallop fishery in Virginia, during the 1977 period of record growth. Also, the survey provides an economic analysis of Virginia - based scallop vessels. Describes fishery and overall landings for scallop dredge and trawl vessels. Gives direct and indirect employment and income effects of

sample vessels. Analyzes costs and returns of Virginia scallop vessels, based on the sample. Projected impact for 1978-79. Tables give impact on supply firms, income generated in all sectors, employment, budget for vessels by age class, break-even levels, vessel activity and income, and projected income to all sectors.

Data: primary - personal interviews with owners, and settlement sheets data from 12 scallop dredge vessels, in 1977-78.
secondary - NMFS.

DuPaul, Willam, and S. Baker, 1979b.

Economic Impact and Status of the Offshore Fishing Industry in Virginia, SRAMSHOE #225, Virginia Institute of Marine Science/Sea Grant, Gloucester Point, VA.

This report summarizes the offshore fishing industry (except surf clams) in Virginia in terms of its employment, income generated and overall economic impact to the state's economy. Budgetary analysis of offshore vessels operating from VA. ports. Describes vessels, gear, landings by species by port, trip characteristics. Income multipliers. Average operational characteristics of sample vessels.

Data: primary - personal interviews with owners and settlement sheet data from 12 scallop vessels in 1977-78.
secondary - NMFS, Coast Guard.

Ecker, George A., George S. Geer and Patrick Cody, 1976.

Economic Feasibility of Establishing a Fish Filleting Plant at the Port of Stonington, Connecticut, Dept. of Agriculture Economics and Rural Sociology, Cooperative Extension and Marine Advisory Service, University of Connecticut, Storrs, CT.

Ex-vessel supply estimation for port of Stonington. Description of marketing channels in groundfish industry. Demand indicators and trends. Description of domestic and imported contributions to supply of U.S. frozen and fresh fillets. Retail prices. Capital requirements for proposed processing plant and summary of estimated costs and returns.

Data: primary - some personal conversations.
secondary - NMFS, etc. MIT SG-75-7

Ferguson, Elizabeth, and Wallace C. Dunham, 1979.

The Perceptions, Attitudes and Reactions of Maine Commercial Fishermen Regarding Extended Jurisdiction and Fishery Management Practices, LSA Experiment Station Bulletin 763, University of Maine, Orono.

Compiles information from fishermen on regulations, effect of foreign fishing, effect of restrictions on foreigners, overall benefits of FCMA. Discussion of fishermen's attitudes towards transferring fish to offshore fishing vessels.

Data: Primary - interviews with fishermen as well as characteristics of respondents, and age, gear and home ports of vessels.

Fisheries Development Ltd., 1975.

The Market in Western Europe for Dogfish, Squid, Mussels, Skate, Monkfish and Whiting, report prepared for NMFS, Gloucester, MA.

This report contains market analyses of European countries for export of U.S. dogfish, squid, mussels, skate, monkfish and whiting. Reported by species, each countries' quality requirements, tariffs, import prices, f.o.b prices, foreign landings and market structure. Reported by country, distribution and marketing system, labelling, restrictions and other export marketing requirements.

Data: secondary - NMFS, European, international sources.

Francis, J.D., and L. Busch, 1973a.

New York State's Commercial Fisheries: Industry and Manpower Projections, Social Sciences, Rural Sociology, #2, New York's Food and Life Sciences Bulletin #28, NOAA/Sea Grant, SUNY-Cornell, Ithaca, NY.

This short monograph attempts to predict the future of New York State's commercial fisheries to 1975. Describes landings, value, employment, factors influencing trends for Atlantic fisheries, the Great Lakes, Hudson River Shad fishery and commercial fish hatcheries. The role of government. Projections show short term increase in value and number of fishermen. Future bleak without federal government intervention.

Data: primary - questionnaire from 28 private fish hatcheries in N.Y.
secondary - NMFS

Francis, J.D., and L. Busch, 1973b.

Fulton and South: Prospects and Potential of New York State Seafood Processing and Wholesaling Industries, Social Sciences, Rural Sociology #4, New York's Food and Life Sciences Bulletin #33, NOAA/Sea Grant. SUNY-Cornell, Ithaca, NY.

This report contains separate analyses for the fish and seafood canning, freezing and wholesaling industries. Discusses industry trends and their causes, indicating expected future development of the labor force in these industries. Predicts future of industries to 1975.

Data: primary - processors questionnaire distributed. Number of respondents not given.
secondary - U.S. Census, NMFS.

Gates, John M., and Virgil J. Norton, 1974.

The Benefits of Fisheries Regulation: A Case Study of the New England Yellowtail Flounder Fishery, Marine Technical Report No. 21, Marine Advisory Service, University of Rhode Island, Narragansett, RI.

Bioeconomic analysis of the yellowtail flounder fishery. Brief description of fishery. Presents data sources and justification for parameter estimates used in Base Model. Base Model analyzed from three potential industry positions, and with various changes in inputs to the model.

Data: secondary from Brown and Hennemuth, Carlson, Holmsen, Noetzel and Norton and other sources listed in bibliography. Landings data from NMFS.

Georgianna, Daniel, and P. Greenwood, R. Ibara, R. Ward.

Fish Processing Capacity in Massachusetts and New Hampshire (A series of reports) Massachusetts University Foundation College of Business and Industry, North Dartmouth, MA., prepared for NMFS New England Fisheries Development Program.

1. A Method of Estimating Fish Processing Capacity in Massachusetts and New Hampshire: A Technical Report, October 1977.

Defines industrial capacity. Surveys current estimates of processing capacity. Proposes a method for estimating processing capacity by product and port for Massachusetts and New Hampshire. Presents a method of comparison between results using this method, and results using survey methods of estimating capacity.

2. Preliminary Draft: Estimating Fish Processing Capacity in Massachusetts and New Hampshire, January 1979.

Contains data description, methodology, ex-vessel price equation and time-series production graphs for ten fishery products.

3. A Statistical Description of the Fresh Fish Industry in Massachusetts, May 1979.

Statistics on employment, landing and production presented in tables, by port and species for 1970-77. Covers traditional commercial finfishes only.

4. Fish Processing Capacity in Massachusetts and New Hampshire, July 1979.

Final Report of Phase 2. Using a modification of the peak-to-peak method of estimation developed by Klein at Wharton School, economic capacity of fish processors estimated. Gives theory and measurement of capacity. Model of ex-vessel prices developed. Estimates of capacity and utilization rates given for ten product categories. Tables of production and utilization rates given in Appendix.

Data: secondary - for all reports, NMFS and Market News. Appendix A, this report, contains description, sources and notes on data used.

5. Fish Processing Capacity in Massachusetts and New Hampshire, Revised Version, July 1979.

Updates estimates using 1978 data.

6. Fish Processing Capacity in Massachusetts and New Hampshire: A Non-Technical Report, July 1979.

Condensed version of results.

Gersuny, Carl, and John J. Poggie Jr., 1973.

"Harbor Improvements and Fishing at Point Judith," Rhode Island History 32(1): 22-32.

Historical harbor improvements and past fish landings given. Discusses past types of fishing, what prompted harbor construction, and impact of harbor on commercial fishing. Illustrated.

Gersuny, Carl, and John J. Poggie, Jr., 1974.

"A Fishermens' Cooperative: Open System Theory Applied," Maritime Studies and Management, 1, 215-222. Also, Marine Reprint #25, URI, Narragansett, RI.

This paper discusses the Point Judith fishermen's co-op, focusing on the benefits of collective action with respect to buffering, levelling, and anticipation of environmental impacts. Gives brief history of Point Judith fishing. Describes the activities and facilities of the co-op.

Data: primary - interviews in 1970 with the head of the co-op. Secondary materials, unpublished.

Gersuny, Carl, John J. Poggie Jr., and Robert J. Marshall Jr., 1975.

Some Effects of Technological Change on New England Fishermen, NOAA Sea Grant, Marine Technical Report No. 42, Marine Advisory Service, URI, Narragansett, RI.

This sociological report presents a comparison of work in a large fishery (New Bedford) and on a small one (Stonington). Discussed are work attitudes and perceptions, kinship and social interactions. Descriptive statistics by port. Discusses mobility potential in view of possible loss of opportunities to continue fishing.

Data: primary - 1972-74 interviewed 61 New Bedford, 21 Stonington fishermen.

Greenwood, Peter H., n.d.

Common Property Resource Rent and Uncertainty: With an Application to the New England Groundfish Fleet, Agricultural Experiment Station, Scientific Contribution no. 91, University of New Hampshire.

This paper looks at the conditions for private resource equilibrium in an industry competitively exploiting the fishery when private returns are

uncertain. The paper develops that when private returns are uncertain competitive exploitation of a fishery resource does not lead to full dissipation of rent.

Grigalunas, Thomas A., and Craig A. Ascari, forthcoming.

Estimation of Income and Employment Multipliers for Marine-Related Activity in the Southern New England Marine Region, Dept. of Resource Economics, URI. Forthcoming: Journal of the Northeast Agricultural Council.

This paper summarizes some results from the authors' economic input/output study of marine-related activity in southern New England. Type I and II income and employment multipliers were estimated for each of nineteen marine-related industries in the model. The results may assist analysts with assessing regional impacts of marine policies.

Data: primary - 390 personal interviews with people in the nineteen industries. Conducted in 1977-78 for 1976. Some data collected by others at URI includes data from druggers, scallopers, fishermen and establishments.

Hamlin, Cyrus, and John R. Ordway, 1974.

The Commercial Fisheries of Maine, Maine Sea Grant Bulletin 5, Sea Grant Program, University of Maine, Orono.

This report was used as an outline text in a seminar for bankers. Elementary overview of harvesting, processing, storage, distribution and marketing systems, gear, fishing techniques. Section on fishing economics, lay, depreciation, costs and state and federal assistance programs. Sections on lobster fishery, trawling, shrimp, groundfish, finfish, underutilized species, shellfish, aquaculture and legal aspects of financing vessels.

Data: secondary from NMFS, other governmental agencies and Bigelow and Schroeder "Fishes of the Gulf of Maine", Ocean Research Corp.

Harvard Workshop in Community Development Finance, 1977.

Fishing Boat Production at the Boston Marine Industrial Park: A Marketing and Financial Feasibility Study, Harvard University, Cambridge, MA.

This study was performed to determine whether or not an enterprise at the Boston Marine Industrial Park producing ocean-going trawlers for use in New England waters would be viable, providing jobs for Boston residents and revenues for the City. On the basis of projections of revenues and costs we have concluded that such an enterprise is not likely to be financially self-sustaining if undertaken during the next five years, due to inadequate demand for vessels and unfavorable cost and financing conditions. Covers demand for new fishing vessels in New England, financial analysis of the proposed facility, and economic impact analysis. Bibliography.

Data: preliminary unpublished data on the New England fleet, from Dr. Virgil J. Norton, Department of Resource Economics, URI. Many secondary sources.

Hasselback, Nancy L., Joel B. Dirlam and John M. Gates, 1981.

"Canadian Fisheries Policy - Canadian Lobster Imports and the New England Lobster Industry," Marine Policy 5(1):40-51. Also, Marine Reprint No.127, URI, Narragansett, RI.

Describes subsidies received by Canadian lobster fishermen and effects of lobster imports from Canada on ex-vessel price and earnings of U.S. lobster fishermen. Returns to labor and management for a representative lobster fisherman under alternative import conditions are projected, and probable economic effects of a countervailing duty policy are discussed.

Haven, Dexter, S., William J. Hargis, Jr., and Paul C. Kendall, 1978.

"The Oyster Industry of Virginia: Its Status, Problems and Promise," VIMS Special Papers in Marine Science, #4, Virginia Institute of Marine Science/Sea Grant, Gloucester Point, VA.

This comprehensive document describes the Virginia oyster industry and gives management recommendations. Chapters include past and present oyster culture in the state, characteristics of public and private growing grounds, past and present oyster production, conditions of public oyster growing rocks, economic value of the industry, depletion and management, yield, predators and diseases, production, harvesting and processing on East Coast, legal aspects. Especially concerned with decline in landings, and how to reverse this trend. Bibliography.

Data: primary - interviews with dealers, packers, processors, growers.
secondary - historical, legal, tax records, unpublished manuscripts.

Henderson, J.V. and M. Tugwell, 1979.

"Exploitation of the Lobster Fishery: Some Empirical Results," in Journal of Environmental Economics and Management 6, 287-296.

This paper analyzes the optimal and free market uses of the lobster fishery and applies the results to two fishing areas in Canada. Biomass relationships and a production function are estimated and the empirical results are used to calculate hypothetical optimal fishing solutions. The welfare losses from overutilization of fishing areas are examined.

Data: secondary - Canadian Ministry of Fisheries.

Holmsen, Andreas A., 1971.

Economics of Offshore Lobster Trawling, Economics of Marine Resources, No.10, Department of Resource Economics, URI, Kingston.

This paper gives vessel characteristics, ownership, costs, returns to

labor, boat shares and expenses, depreciation, and rate of return on total assets for lobster trawlers in New Bedford, 1967. Gives factors affecting returns. Successful boats had more gross stock and more fishing days than unsuccessful ones. Determines that a lobster dragger, in good repair, with a good captain, can give a good return on investment, but for the fleet as a whole, this is not the case.

Data: primary - personal interviews with owners, accountants of 17 New Bedford lobster draggers. Investments, costs and returns for 1967.

Holmsen, Andreas A., 1972.

Remuneration, Ownership and Investment Decisions in the Fishing Industry, Marine Technical Report No. 1, Marine Advisory Service, University of Rhode Island, Narragansett, RI.

Paper presented at International Conference on Investment Fisheries, FAO, Rome, September 1969.

This paper discusses pay to labor in the New England fishing industry. Describes various lay systems in detail. Gives economic goals of absentee owners and owner operators. Gives effect of lay and kind of ownership on investment incentives. Remuneration on a share basis seems best under most conditions, but may prevent technical improvements or improved labor productivity. Tables present expenses and returns under broken 40 lay, comparison of average vessel and financial characteristics for boats with high and low returns to capital, relationship between horsepower and crew increase returns of alternate investment schemes.

Holmsen, Andreas A., 1973a.

Rhode Island's Floating Fish Trap Fishery, Marine Bulletin Series #14, URI, Narragansett, RI.

This paper documents the history, technology and structure of Rhode Island's trap fisheries. Touches on conflicts with other ocean users. Gives species caught and value of trap landings. Maps show trap placement by area.

Data: secondary - NMFS.

Holmsen, Andreas A., 1973b.

Potential Utilization of Underexploited Species in Southern New England, Marine Memorandum Series #32, URI/Sea Grant, URI, Narragansett, RI.

Some New England industrial fish could be used for food returning a better price to the vessel. Potential for selling red crab, jonah crab, monkfish, skate, ocean pout, ocean quahog, dogfish and squid to either domestic or foreign markets discussed. Gives some problems, and suggests some markets.

Holmsen, Andreas A., and Hiram McAllister, 1974.

Technological and Economic Aspects of Red Crab Harvesting and Processing,
Marine Technical Report No.28, URI, Narragansett, RI.

Discusses economic feasibility of utilizing the red crab fishery.
Estimates cost to pot and process crabs. Potential market prices.
Describes harvesting technology and details onboard and onshore
processing technology. Includes plans for building all equipment and for
setting up processing operation.

Holmsen, Andreas A., 1977.

Economics of Small Groundfish Trawlers in Iceland, Norway, and Southern
New England, Marine Technical Report #53, NOAA/Sea Grant, URI,
Narragansett, RI.

This paper looks at economics of 60-90 foot trawlers in the three areas.
Compares vessels and their economic climates and analyzes returns on
investment. Crews on New England boats receive more return than those on
similar Norwegian vessels, while a Norwegian owner receives more return
on investment than a New England owner.

Data: primary - seven New England groundfish trawlers. Data part of a
larger study in 1975, for 1974 period.
secondary - national governments.

Holmsen, Andreas, 1979a.

Flexibility of the Surf Clam Fleet, Staff Paper No.32, Dept. of Resource
Economics, URI, Kingston, RI.

This study projects what actions surf clam vessel owners might take in
response to adverse economic conditions in the fishery; also explores
whether or not vessel size and ownership patterns affect their decision.
Covers Mid-Atlantic and New England area. Tables include boat
characteristics, crew size, vessel ownership, other fisheries vessel
involved in, use of vessel if forced out of fleet.

Data: primary - interviews in 1978 with 80 vessel owners (92% of those
licensed) includes 150 (93%) boats. Also, info from license applications.

Holmsen, Andreas A., 1979b.

Some Aspects of Vessel Economics, Marine Memorandum #61, URI/Sea Grant,
URI, Narragansett, RI.

Paper presented at Rhode Island Bankers Association Conference on Fishing
Vessel Finance, Point Judith, RI, September 1979.

This paper advises bank officers on what variables to consider in
evaluating loan requests for fishing vessels. Describes lay systems, how
to determine returns to owner, trip expenses, costs, etc.

Holmsen, Andreas A., and S. Horsley, 1981.

Characteristics of the Labor Force in Quahog Handraking, Marine Memorandum #66, NOAA/Sea Grant, URI, Narragansett, RI.

This brief report gives findings from a URI survey of Rhode Island quahoggers. Compares recent figures with those collected in a similar survey in 1962-63. Gives age distribution, proportion of income earned from quahogging, education, alternative skills. Number who would leave the fishery if income declined. Residence of rakers. Quahogging effort in areas of Narragansett Bay (map).

Data: primary - mail questionnaires to 1000 Rhode Island quahog license-holders in 1978-79.

Huq, A.M., 1973.

"A Study of the Socioeconomic Impact of Changes in the Harvesting Labor Force in the Marine Lobster Industry," Ocean Fishery Management: Discussion and Research, by A.A. Sokoloski, ed. 1973, NOAA Technical Report NMFS (CIRC-371).

The question of the mobility of the labor force in the Maine lobster fishery is investigated with particular emphasis on social, educational, economic and demographic characteristics. Focuses on possible socioeconomic impacts of limited entry in the fishery. Three typical communities, Phippsburg, Beals, and Corea sampled.

Data: primary - 131 Maine fishermen, random stratified sample, personal interviews.

secondary - state census 1960, University of Maine, 1970.

Jessen, John, 1978.

Sketches of a Fishing Community: The Port of New Bedford MA, Sociology and Anthropology Department, URI, Kingston, RI.

This report describes the port of New Bedford, MA. It contains chapters on town characteristics, harbor characteristics, fleet description, new vessel construction, support organizations. One chapter describes the lumpers, their work and union. Risk, stress and fishermen's modes of coping are given, as well as their relationships with and attitudes toward women and family. Competitive fishing behavior, and port dynamics are explored.

Data: some interviewing took place, but it is not documented in this paper. Five secondary sources listed in bibliography.

Kalikstein, Paul H., 1974.

The Marketability of Squid, MIT/Sea Grant #74-24, MIT, Cambridge, MA.

This report determines the market potential for three processed squid

products: squid chowder, squid cocktail, fried squid rings. Market research done in Boston area. Trial purchase would be extremely low, but some possibilities of export to Europe and some new product ideas were discovered.

Data: primary - telephone interviews in 1973 with 132 Boston residents. Taste test from panel of 56 people. Mail questionnaire from 132 Bostonians. Random sample.
secondary - NMFS.

Kelley, Robert J., and Niels Rorholm, 1974.

An Analysis of the Rhode Island Marina Industry, Marine Technical Report 29, NOAA/Sea Grant, URI, Narragansett, RI.

This paper directs the attention of town, state and coastal planners to the suitability of Rhode Island's coastal zone for boat-based recreation and to the economic activities that can be stimulated through its use. Describes business organization and ownership, services and facilities, and rates charged by marinas and boatyards. Employment and gross income given. Summer berthing and winter storage described by length class, for future and compared to 1962.

Data: primary - personal interviews conducted in 1973 with 69 firms in business for profit (marinas and boatyards) in RI, for 1972. Represents 95% of the population of such businesses.

Kyte, Harold, et. al., 1975.

The New England Fishing Industry: A Consideration of Problems Relevant to Policy Options, Department of Economics, University of Maine, Orono.

This paper discusses some problems of the New England fishing industry, in terms of possible passage of 200-mile limit. Covers groundfish resources, U.S. and Canadian fleet capacity and technology, U.S. Canadian subsidies, and tariffs, duties and markets.

Data: secondary - ICNAF, U.S. Census, others.

Kyte, Harold J., and Wayne H. Meserve, 1976.

The Impact of Subsidies on Canadian-American Fisheries: An Obstacle to Joint Management? University of Maine, Orono.

This paper offers a qualitative analysis of the subsidy programs of the U.S. and Canada, followed by an econometric estimation of the impact of the Canadian vessel construction subsidy on the competitive positions of the Canadian and U.S. fleets. Contain tables on value of subsidies to both fleets and descriptions of the subsidies available.

Data: secondary - U.S. and Canadian governments.

MacIsaac, Donald B., and W. Thomas Holtz, 1981.

Massachusetts Marine Fisheries Management Policy Report, prepared for Mass. Marine Fisheries Advisory Commission, by the Division of Marine Fisheries, publication No. 12403-139-150-5-81-CR.

This is a draft report of the Massachusetts Marine Fisheries Advisory Commission to develop a state fisheries policy. The policies in the report are general principles and guidelines for future action. Proposed actions are included which recommend improvements to existing situations. Describes history and present state of all Mass. fisheries.

Data: secondary - NMFS, State agencies for 1979.

MacKenzie, William, 1973a.

Organizing New England Commercial Fishermen: Local, State, and Regional Efforts, Masters Thesis, URI, May 1973.

This study details several forms which fishery organizations have taken at local and state levels. Emphasis placed on formation, growth, operating procedures of two New England regional organizations, AOFLA and NEFSC.

MacKenzie, William H., 1973b.

"Organizing New England Commercial Fishermen at the Regional Level," Marine Affairs Journal (01):33-51.

This study details two regional fishery organizations, AOFLA and NEFSC. Gives history, membership, operating structure, finances, meetings, accomplishments. Anticipates future of each group and general future of regional organizations.

Data: secondary and some interviews with key people in the groups.

Maine, Department of Marine Resources (Grant, George, Peters, and Wilson), 1978.

"Towards a Fisheries Development Strategy for Maine," DMR, Orono, Maine.

This report examines the conditions of the Maine fishing industry and identifies opportunities and recommendations that will promote the growth of the industry while at the same time minimizing effects on traditional lifestyles of fishermen and communities. Considers development of a state-wide fisheries development program which would lead to long term economic stability and growth.

Data: secondary on all facets of fishing industry in Maine.

Maine Department of Marine Resources, (prepared by Harbridge House, Inc.), 1978. "National Investigations of Market Opportunities for Maine Seafood," DMR, Orono, Maine.

Report examines the potential for Maine Seafood products to be introduced into markets in metropolitan areas throughout the U.S. Information on feasibility in terms of types of products, market entry, distribution and marketing recommendations.

Marcus, H., J. Townley, A. Brown and E. Lee, 1974.
Using Co-operatives to Aid the New England Fishing Industry, Sea Grant Report 75-7, MIT, Cambridge, MA.

This report provides insight into the New England fishing industry to determine how fishing cooperatives can be more effective. Part 1 - Summary and Conclusions. Part 2 - An Analysis of Accounting Systems for Fisheries Cooperatives. Part 3 - New England Handling and Processing Facilities for Domestic and Imported Finfish. Part 4 - Distant Markets, Systems Management Approach to Analysis: Emphasis on exporting fresh sea urchin roe. Surveys cooperatives in Chatham, Provincetown, Point Judith. Surveys market for fresh New England fish in Hawaii.

Data: primary - 35 Hawaiian restaurants and hotels surveyed.
secondary - NMFS and others 1970

Marine Policy and Ocean Management Program, 1976.
Effects on Commercial Fishing of Petroleum Development Off the Northeastern U.S., Technical Report, WHOI-76-66, Woods Hole Oceanographic Institution, Woods Hole, MA.

This report studies the possible effects of offshore oil development on New England and Mid-Atlantic commercial fishing. Three general categories of effects: offshore interactions, onshore interaction, pollution effects. Recommendations, general descriptions of physical environment, commercial fishing industry, petroleum industry technology, legal and regulatory framework.

Data: primary - 60 fishermen interviews-attitudes
secondary - NMFS, ICNAF, many diagrams, maps, figures

Marshall, R. J., 1973.
Emotive Commitment to Fishing: A Sociological Exploration of Three New England Fishing Communities, Masters Thesis, URI.

This paper examines the extent to which fishing as a way of life is differentiated within the occupation itself. Hypothesizes that differences in commitment are related to differences in occupational and contextual variables. Three ports surveyed. Expected differences were found.

Data: primary - personal interviews conducted in 1972 with 21 Stonington, 61 New Bedford and 26 Point Judith fishermen

Martingale, Inc., 1978.

The Economic Impact of the Atlantic Bluefin Tuna Fishery in Massachusetts, Study conducted for Commonwealth of MA. Dept. of Fisheries, Wildlife and Recreational Vehicles, Division of Marine Fisheries.

This report analyzes economic effects of federal regulations on bluefin and tuna in Mass. Describes fishing techniques and marketing structure. Detailed section on Tokyo market. Uses least squares regression analysis to develop model to show impact of proposed tuna regulations in 12 potential cases.

Data: primary data collected but not described.

McCay, Bonnie J., 1981.

"Optimal Foragers or Political Actors? Ecological Analyses of a New Jersey Fishery," American Ethnologist 8(2), 356-382.

Recent trends in ecological anthropology are described and applied in an analysis of a New Jersey fishery. Variability in the fishery, pollution, restrictions on access, illegal fishing and depletion of the resource are described for a diversified community of baymen and inshore fishermen. A concluding discussion of the problem of overfishing indicates the importance of balancing ecological approaches with just consideration of social, cultural, and political reality.

Data: primary from interviews with fishermen in 1979 and 1980.
secondary - State of New Jersey and National Marine Fisheries Service.

McCay, Bonnie J., 1980.

"A Fishermens' Cooperative, Limited: Indigenous Resource Management in a Complex Society," Anthropological Quarterly 53:29-38.

This paper describes an informal system to limit fishing effort developed and used by members of a dock and marketing cooperative in New York Bight region of the Mid-Atlantic states. Voluntary quotas, restricted membership, regional cooperation.

Data: primary - interviews with unknown number of fishermen.

McConnell, K.E. and L.E. Nicholson, 1978.

Economic Study of the Party Boat Industry in New England, Report for NERFMC, Dept. of Resource Economics, URI, Kingston, RI.

This report is the second phase of a study of party boats in the Mid-Atlantic and New England. Gives mean annual fixed costs, mean daily operating costs, operating decisions, species sought and trip data; impact analysis of changing fish stocks and regulation.

Data: primary - open ended personal interviews with 22 operators, New York to Maine. Sample representative of geographic region and vessel class size.

McDonald, Allen, Joseph Rowland and Richard Fitzgerald.
Employment and the Massachusetts Fishing Industry.

This report to the Mass. Division of Employment Security is concerned with employment levels and labor market information in Mass. fishing and related industries. From the history of the industries' decline, it proceeds to the establishment of the 200-mile limit, then to an overview of today's commercial fisheries, next to the role of fishing in the state's economy and finally to economic statistics and time series that describe the industry.

Data: secondary - NMFS, Mass Employment Security and other published sources.

McHugh, J.L., 1977.
Fisheries and Fishery Resources of New York Bight, NOAA Technical Report, NMFS Circular 401.

This report discusses the rise and fall of fish and shellfish landings in New York and New Jersey. Fifty species are discussed and illustrated with figures and tables of landings, domestic and foreign since 1880. Says variations including industrial fisheries is mostly responsible for declining total catch. Says total catch of resources taken by only domestic fishermen declined more sharply than domestic catch of species shared with foreign fleets. Foreign fishing only a symptom of domestic troubles, which are economic and sociopolitical in nature, not easily solved by scientific solutions.

Data: secondary - NMFS and others, domestic, foreign, recreational landings by area since 1960 and 1880.

McPherson, Roy Nick, 1973.
Gloucester Resource Study, Sea Grant Program #74-3, MIT, Cambridge, MA.

This book characterizes the city of Gloucester and its resources. Chapters cover history, economic and industrial base, transportation, governmental structures. Problem areas and recommendations. Six pages of references. Appendices include percentage responses to survey items.

Data: primary - survey in 1973 of 287 adults, 521 high school students, 450 tourists, 20 downtown retail businesses and some art galleries.
secondary - state and federal statistics, others.

Meade, Thomas L., and George W. Gray Jr., 1973.

The Red Crab, Marine Technical Report Series No.11, URI, Narragansett, RI.

This technical report contains two articles on the availability, and handling, processing, and marketing of Red Crab. Includes methods of processing, microbiology and composition of meal.

Data: primary - from exploratory trawling-24 drags
secondary - technical reports and papers.

Miller, M.L., and John Van Maanen, 1978.

"Getting Into Fishing: Social Identities Among Traditional and Non-traditional Fishermen," paper presented at American Anthropological Association Annual Meetings, Los Angeles, CA, Nov. 1978. Also in Vol. II, URI-UME Report to NSF, 1980.

This paper describes fishing activities in Gloucester, Chatham and Newburyport Ma. Contrasts each in terms of physical and political characteristics. Typology of fishermen presented, based on distinctions made by the fishermen. Speculation on causes, consequences and long term prospects of an occupation undergoing considerable change.

Data:primary - observation and interviews 1977-78, "cultural anthropology"

Miller, M.L. and John Van Maanen, 1979.

Boats Don't Fish, People Do: Some Ethnographic Notes on the Federal Management of Fisheries in Gloucester, Human Organization 38(4) 377-385. Also in, Vol.II, URI-UME Report to NSF, 1980.

This paper examines the patterns of conduct which emerged after Federal quotas were imposed on the fisheries of Gloucester, MA. Historically based social and occupational distinctions reported. Incidents of social distress and violence recounted.

Data: primary - observations and interviews 1977-78 "cultural anthropology"

New England Fishery Management Council, 1980.

Draft Compendium of Descriptive Material for Interim Groundfish Plan for Atlantic Groundfish, Haddock, Cod, Yellowtail Flounder.

This working paper contains descriptive material which will be considered in the Interim Groundfish Management Plan. This volume will be an appendix to the final plan which should be available in Fall 1981. Contains description of stocks, habitats, existing laws and policies, economics of harvesting and processing, social/cultural framework by ports, states. Four management measures listed with options in detail and specification explained. No recommended management measures in this draft version.

Data: secondary - NMFS and others.

New Hampshire, University of, Sea Grant Marine Advisory Service, 1974.
A Preliminary survey of the Potential for a Commercial Cancer Crab
Fishery in New Hampshire and Southern New England, report to N.E.
Fisheries Development Program of NMFS.

This short paper contains basic biological data on crabs, describes the present (1974) status of the crab fishery and discusses the potential for its further development.

Data: primary - 100 commercial lobstermen interviewed; 30 dealers interviewed; 10,000 crabs trapped.

New Haven, City of, 1980.

"Shallow Draft Marine Commercial Fisheries," Coastal Planning Steering Committee, City of New Haven.

This paper summarizes the local lobster and finfish fisheries currently pursued by fishermen out of New Haven Harbor as well as outlining fisheries development opportunities for the city. Development of the harbor as a commercial fishing port depends upon upgrading and providing berthing facilities for the existing local fleet and attracting fish landings from the offshore and Long Island Sound fisheries.

Data: primary - from interviews with harvesters and processors.
secondary - from State and NMFS catch statistics.

Nicholson, L.E., and K.E. McConnell, 1977.

A Description of the New England Headboat Fleet, for New England Regional Fishery Management Council, Dept. of Resource Economics, URI, Kingston.

This paper is a report on the first phase of a project to provide the New England Fishery Management Council with economic data about the New England Headboat, or party boat, fleet. This phase gives number and location of boats, physical characteristics, such as size and capacity. The second phase should give economic data. Presents eight tables including licensing requirements and passenger capacity, vessel characteristics.

Data: secondary - visited all Coast Guard offices, Long Island to Maine, to examine files. October - November 1977. Not presented is their list of all headboats, with detailed description.

Nicholson, L.E., and R.P. Ruais, 1979.

Description of the Recreational Fisheries for Cod, Haddock, Pollack and Silver Hake off the Northeast Coast of the U.S., report to New England Regional Fishery Management Council.

Describes water-borne and shore-based recreational fisheries in coastal states from Virginia through Maine. Covers economic impacts of marine recreational angling using Centaur Management's Economic Activity Associated with Marine Recreational Fishing.

Sections on: charter boat fishery, party boat fishery, private boat fishery and shore-based fishery.

Data: secondary - data from many sources including Salt Water Angling Surveys (1960-1970), NOAA/NMFS, 1975 National Hunting and Fishing Survey, state agencies and industry publications.

Noetzel, Bruno G., 1974.

Economic Feasibility of a Squid Fishery in New England, NMFS, Economic Research Division, Washington, D.C.

Description of the resource, U.S. and New England. Potential for directed fishery in New England. Estimated cost of operation for vessels with and without refrigeration. Estimated returns to capital and labor. Processing methods. Description of prototype evisceration and skinning machinery. Domestic and export market potential.

Data: primary - estimates gross revenues, cost of operation and returns per vessel, per year.

secondary - ICNAF, NMFS, MITSG-74-13, MITSG-74-24.

Noetzel, Bruno G., 1977.

Revenues, Costs and Returns from Vessel Operations in Major U.S. Fisheries. U.S. Department of Commerce, NMFS.

This report evaluates the revenues from operations of fishing vessels in selected U.S. fisheries in the Atlantic, Pacific and Gulf of Mexico. Includes groundfish fisheries of New England, in 1973-75. Return on investment calculated. Covers gross revenue, fuel costs, variable and fixed costs, investment, total capital, returns to operators' labor. Also vessel characteristics. Presented in detailed tables.

Data: secondary - NMFS

Norton, Virgil J., and Morton M. Miller, 1966.

An Economic Study of the Boston Large-Trawler Labor Force, Bureau of Commercial Fisheries, Circular-248, U.S. Department of Interior, Fish and Wildlife Service.

This study focuses on the fishing manpower resource in Boston, Mass. Socio-economic data; age, education, work experience, earnings, mobility.

Data: primary - personal interviews collected 1964. Stratified by days fished and job status - 200 fishermen.

Olsen, Stephen B., and David K. Stevenson, 1975.

Commercial Marine Fish and Fisheries of Rhode Island, Marine Technical Report 34, Coastal Resources Center, Marine Advisory Service, URI, Kingston.

This study examines prospects of fisheries development for Rhode Island and New England. It includes a basic inventory of fish stocks and landings and charts of the primary and secondary nearshore fishing grounds of the state's fleet. Part two is a reference guide to Rhode Island's commercial stocks. Recommendations for management and port improvements.

Data: secondary from NMFS.

Orbach, Michael, K., 1979.

"Fishery Cooperatives on the Chesapeake Bay: Advantage or Anachronism?" Presented to symposium: "Small-Scale Fisheries Coops; Problems in Structure and Organization", Society for Applied Anthropology, Philadelphia, March 1979.

Using examples from the Chesapeake Bay area, this paper shows that cooperative forms are used to a significant degree, in concert with other organizational forms, which though not normally termed "cooperative", rely heavily on cooperation, investment and coordination. Gives physical, social and economic characteristics of the area. History of local cooperative efforts.

Patterson, W. Robert, 1971.

The New England Marine Industry: A Study of the Marine Manufacturing and Service Companies, New England Marine Resources Information Program and the New England Aquarium.

This report is a review and analysis of both developed and potential assets of marine manufacturing and service companies in New England. Describes marine industry (location, size, employees, sales, growth, markets, geographical distribution of sales). Compares national and New England industries. Gives regional, national and international market trends. Multiplier effects. Problems of the small marine industry company. Marine management problems. Appendices give questionnaire, and percentage responses to items, list of companies surveyed, some relevant NMFS statistics, economic importance of fisheries and marine retail/marinas to New England region.

Data: primary - mail questionnaires from 131 companies, 30% of the New England marine manufacturing and service companies.

Peterson, Susan, B. and Leah J. Smith, 1979.

New England Fishing, Processing and Distribution, WHOI-79-52, Woods Hole Oceanographic Institution, Woods Hole, MA.

The New England fishing industry is examined in terms of the capacity and flexibility of the offshore fleet, of the processing plants, and of the transportation systems- limitations explored.

Data: primary - personal interviews collected once in 1977 for 1976 from 57 vessel owners or captains. Mail interview with 54 processors and dealers. Processed with SPSS.
secondary data from NMFS.

Peterson, Susan and Leah J. Smith, 1981.

Small-Scale Commercial Fishing in Southern New England, WHOI-81-72,
Woods Hole Oceanographic Institution, Woods Hole, MA.

This description of the small-scale sector of the Southern New England (Massachusetts, Rhode Island and Connecticut) fishery includes information on the fishermen (their ages, education, experience, occupational training, family involvement and reasons for fishing) and the physical characteristics of the fleet (the boats and gear). Fishing patterns are analyzed by species, geographical areas and seasons. The economic structure of small-scale fishing is described in terms of investment, net and gross earnings, fuel costs, crew payment systems and marketing arrangements. Management implications of this information and analyses are included.

Data: primary - interviews with 236 fishermen from Southern New England in 1979 and 1980. Processed with SPSS.

Poggie, John Joseph Jr., and Carl Gersuny, 1974.

Fishermen of Galilee: The Human Ecology of a New England Coastal Community, Marine Bulletin No 17, Marine Advisory Service, URI, Narragansett, RI.

This book applies a human ecology model to the fishing community at Galilee, R.I. Covers physical and social environments, history, social organization, fishermen's coop, attitudinal characteristics. Compares fishermen to millworkers.

Data: primary - 29 millworkers interviewed; 29 fishermen interviewed
secondary - local history and some regional demographics.

Pollnac, Richard B., Carl Gersuny and John J. Poggie, Jr., 1975.

"Economic Gratification Patterns Among Fishermen and Millworkers in Southern New England," Human Organization 34: 1-7. Also, Marine Reprint Series #43, URI, Narragansett, RI.

This paper tests several hypotheses concerning the correlates of economic gratification orientations among fishermen and millworkers in Southern New England. Findings indicate that these orientations are related to occupation, temporal perspective and ethnicity. It is suggested that economic gratification patterns are influenced by periodicity of income

and perceived access to the means of production.

Data: primary - personal interviews in 1972 with random sample of 108 fishermen in New Bedford, Point Judith, and Stonington. Part of a larger survey of 138 fishermen and millworkers.

Poggie, J.J. Jr., R.B. Pollnac, and C. Gersuny, 1976.

"Risk as a Basis for Taboos Among Fishermen in Southern New England," Journal for the Scientific Study of Religion 15(3) 257-262. Also, Marine Reprint #68, URI, Narragansett, RI.

This paper examines the relationship between fishermen's taboos, a form of ritual behavior, and a number of sociocultural variables. Taboo usage was positively related to time spent at sea, and negatively related to socialization of fishing family. Findings support Malinowski's risk and ritual hypothesis showing that within a single dangerous occupation, degree of ritual covaries with degree of risk involved.

Data: primary - personal interviews with random sample of 108 fishermen in Point Judith, Stonington and New Bedford.

Pollnac, Richard B., and John J. Poggie, Jr., 1978.

Perceptions of Alternative Fishing Types in Southern New England, Anthropology Working Paper #24, URI, Narragansett, RI.

This paper examines fishermen's attitudes to inshore vs offshore fishing styles, in an attempt to determine possible sociocultural ramifications of a major shift in strategy. Explores individuals differential perceptions of different fishing types. Important variables were present fishing type, years of education, owner/nonowner status, years of fishing experience, and number of relatives fishing. Tables present statistical results of analyses.

Data: primary - personal interviews with 79 fishermen (30 boats) in Point Judith. Random sample, stratified by type of fishing.

Pollnac, Richard, B. and John J. Poggie, Jr., 1979.

The Structure of Job Satisfaction Among New England Fishermen, Anthropology Working Paper #31, Sociology-Anthropology Department, URI, Kingston, RI. Also in, Vol. II, URI-UME Report to NSF, 1980.

This paper investigates job satisfaction and its social and occupational correlates among New England fishermen. A 22-item list is adapted from Schletzer's (1965) job satisfaction scale. Responses factor analyzed. Resultant three job-characteristics factors analyzed in regression with two overall job satisfaction measures, and other sociocultural variables. Analyses performed for total sample and within groups based on port and fishing style. Tables give regression and canonical correlation results.

Data: primary - personal interviews collected winter 1977-78 from 45 New Bedford, 79 Point Judith, 80 Bristol, Maine fishermen for current practices.

Portland, City of, 1978.

"Portland Fish Pier Feasibility Study," C.E. Maguire, Inc. (Major authors: G. Grant, R. Peters, J. Wilson, B. O'Donnel).

This report examines the feasibility of a public fish pier for the City of Portland. Several sites and alternative market structures are examined. The report concludes that a fish pier is not economically feasible unless it incorporates 1) centralized off-loading and vessel support functions, and 2) a radical change in the current methods of buying and selling fish. A warehouse auction of the sort common in Europe and Japan is suggested.

Prysunka, A.M., F.M. French, W.C. Dunham, and H.B. Metzger, 1977.

An Analysis of the Dealer Processor Sector of the Maine Soft-Shell Clam Industry, LSA Experiment Station Bulletin 722, University of Maine, Orono.

Paper contains physical and economic characteristics of soft shell clam dealers and firms. A look at the structure of the sources of supply, processing, and distribution.

Data: primary - on processing, distribution, product sales, price determination.

Ritchie, Theodore, P., 1976.

A Comprehensive Review of the Commercial Clam Industries in the United States, Delaware Sea Grant, Newark, Delaware.

The commercial industries associated with four major clam species (hard, surf, soft, and ocean quahog) are reviewed in this report. Reviews of additional clam species and associated minor industries are also included. Covers biological and pollution problems, harvesting, processing and marketing.

Data: secondary - from consultants who solicited information from all industry segments, local, state and federal conservation and health agencies. Copies of reports on file at College of Marine Studies Library, Lewes, Delaware.

Rorholm, Niels, 1976.

Boats and Their People: A Study of Rhode Island Boat Owners, Marine Technical Report #52, URI, Narragansett, RI.

This study of recreational boat owners in Rhode Island gives family characteristics of boat owners, boat storage, use of boats by type,

annual costs of owning and using a boat, future plans, satisfaction with boat, marinas, NOAA charts and weather reports. Reasons for boat ownership. Detractions from boating pleasure. Boating as a locational factor.

Data: primary - mail questionnaires in 1974, from 930 RI boat owners for 1973 season. One-fourth of boat owners in each size class from zero to 99 feet.

Smith, J. Barry, 1980.

"Replenishable Resource Management under Uncertainty: A Reexamination of the U.S. Northern Fishery," Journal of Environmental Economics and Management 7, 209-219.

This paper partially extends the replenishable resource management literature to the case of uncertainty. Stochastic resource dynamics are defined, studied and estimated. The results of this study suggest that the misallocation of resources into the northern lobster fishery has been greater than was previously believed. While aggregate stochastic influences are small in the lobster fishery, the dynamics of whales appear to be significantly affected by stochastic influences.

Data: secondary sources.

Smith, Leah, J., 1977.

"Fishing Boat Income, Capital and Labor: A Distributional Study of a New England Port," Economic Impacts of Extended Fisheries Jurisdiction, L.G. Anderson, ed., Ann Arbor: Ann Arbor Science Publishers, Inc.

This paper investigates the way income, capital stock and labor are distributed among fishing boats in New Bedford, MA. The influence of various capital and labor variables on individual boat income is assessed. Tables include gross stock, vessel characteristics, captains ethnicity and kinship, days at sea.

Data: primary - personal interviews 31 New Bedford offshore trawlers for 1975.

Smith, Leah, J., and Susan Peterson, 1977.

The New England Fishing Industry: A Basis for Management, WHOI Technical Report 77-57, Woods Hole Oceanographic Institution, Woods Hole, MA.

Socioeconomic and physical characteristics of the following ports: Boston, New Bedford, Gloucester, Point Judith, Rockland, Portland, ME, Rye, N.H., Provincetown, Chatham, Menemsha, MA., Newport, R.I., Stonington, CT. Includes vessel, crew and trip characteristics, major species, marketing systems, description of processors for offshore fishing. Examples of limited entry programs in South Africa, Japan, British Columbia, Washington State and Alaska. Potential effects of limited entry on New England ports.

Data: primary - personal interviews 1975-76 with 100% fresh fish processors in ports studied (48). Personal interviews with 30 New Bedford fishermen collected in 1974-75 for 1973-74. Interviews with fishermen from other New England ports.

secondary - summary statistics from NMFS.

Strand, Ivar, 1976.

An Economic Appraisal of Eastern Shore Seafood Harvesting, Virginia
Institute of Marine Science, Marine Resource Advisory #11/Sea Grant,
Gloucester Point, VA.

This advisory examines Virginia's Eastern Shore seafood harvesting industry. Based on monthly (1972-74) and annual (1949-72) data, short and long-term trends are analyzed. Seasonal variations in landings, production problems and changes in scale, and capital to labor ratios are examined. The information serves as a baseline assessment of current production, sheds light on industry problems, and is used in the final section to assess probable changes in the fishery, especially in light of industrial development.

Data: secondary - NMFS, unpublished.

Synergy Inc., 1974.

A Baseline Economic Forecast of the U.S. Fishing Industry, for NMFS.

This report is one of 2 economic studies prepared for NMFS, as background information for the National Plan for Marine Fisheries. Presented is baseline forecast of economic characteristics of the U.S. fishing industry, 1974-85. The study is in 4 volumes:

Vol. I. - executive summary and conclusions.

Vol. II. - reference volume of tables and plots

Vol. III. - computer documentation, users instructions for
time series data base

Vol. IV. - technical appendices

Data base and methodology are computerized. Hundreds of tables and scattergrams.

Data: secondary - NMFS "Basic Economic Indicators" Census "Annual Survey of Manufactures 1971" and others.

Taber, Robert E., 1976.

Scottish Seining Applied to Inshore Vessels in Southern New England,
Marine Bulletin #25, URI, Narragansett, RI.

This booklet describes a demonstration of Scottish seining off Chatham, MA., in a line trawler converted to Scottish seiner. Explains operation of the gear, results of demonstration, and gives recommendations for future use of the gear in the area.

Data: primary - reports cost of gear used and describes vessel, gear and demonstration area.

Trigom-Parc, 1974.

A Socio-Economic and Environmental Inventory of the North Atlantic Region - Sandy Hook to Bay of Fundy, Vol. II, submitted to Bureau of Land Management, Maine Minerals Division. The Research Institute of the Gulf of Maine/Public Affairs Research Center.

This volume contains the socio-economic inventory for the North Atlantic coastal area, New Jersey to Maine. The purpose is to summarize available baseline data and to present a comprehensive bibliography of important literature, for each subject area. The subject areas are: population characteristics and income, overview of economic activity, petroleum and petro-chemicals, fisheries, recreation, transportation, land use, and other marine related activities.

Data: secondary by county, coastal/inland, 1940-72 and projections.

Voiland, Michael, 1976.

Present and Future Locational Aspects of Charter Fishing Enterprises in New York State: A Resource Paper, New York Sea Grant Technical Report #RM-16, SUNY, Syracuse, NY.

This paper presents and discusses selected spatial aspects of the state's charter fishing enterprises, both marine and on Lake Ontario. Considers present and future development. Compares north, south and east shores. Future prospects discussed on the basis of location.

Data: primary - personal interviews with one-third of the state's charter operators (86 approx). Field visits. Uncompiled secondary data sources.

Vondruska, John, 1972.

Conditions and Recent Changes in the New England Fishing Industry, File Manuscript No. 115, Economic Research Laboratory, NMFS.

This preliminary report describes changes in New England landings and value, fishermen and vessels, real output per fisherman, New England processing industry, otter trawling and individual fisheries by New States, 1960-70. Also, wages and unemployment, insurance, imports. Many tables, from NMFS.

Data: secondary - NMFS

White, Donald, J., 1954.

The New England Fishing Industry A Study in Price and Wage Setting, Harvard University Press, Cambridge, MA.

This book is concerned with relations between labor union, vessel owners and fish buyers for the fresh and frozen finfish sector of Boston, Gloucester and New Bedford in 1952. Examines origins and rationales of policies developed by each interest group.

Data: secondary - federal government.

Wieland, Tom, 1981.

An Economic Analysis of the Ocean Fishing Industry of Chincoteague, Virginia, Dalmarva Advisory Council, Salisbury, Maryland.

This report describes the local economic impact of the fishing industry in Chincoteague, VA. Its purpose is to support the proposed dredging and improvements to the inlet. Gives vessel, gear, captain characteristics, operating expenses, earnings, comments on proposed dredging, losses from present condition of inlet. Dock and processor characteristics, potential inlet users.

Data: primary - personal interviews 1979, for 1978; 30 Virginia fishermen.

Williams, Anne D., 1975.

Effects of Foreign Fishing on the Coastal Marine Fisheries of New York State, New York Sea Grant Institute, State University, Stony Brook, NY.

This paper shows that many basic problems afflicting domestic fisheries would remain if foreign fishing off the US ceased. Examines the history of New York commercial and recreational fisheries, fisheries of other states, catches by foreign fleets, and international management. Sections discussed by foreign country, and again, by species. Five pages of references.

Data: secondary.

Williams, Douglas, n.d.

An Examination of the Relationship Between Actual Fishing Behavior in Maine and the Intent of Regulation Under the Fishery Conservation and Management Act: The Demersal Fisheries Management Plans and Their Effects. Thesis, Department of Agriculture and Resource Economics, University of Maine, Orono. Forthcoming, 1982.

In this thesis the author looks at the impact of regulation on Maine fishermen in terms of the behavior that the regulations elicit. The objective is to analyze current regulation systems and determine if resulting fishermen's behavior is consistent with the goals of management. Behavior under limited entry regulations is analyzed and compared to types of behavior management intended. Also consideration of alternate regulations if behavior is not consistent with goals of management plans.

Wilson, James, and Charles E. Rockwood, 1975.

Congestion and Stock Recruitment Problems in the Maine Lobster Fishery,
from Economic State and Problems of Small Scale Fisheries O.E.C.D.

This paper reviews congestion and stock recruitment problems of the Maine Lobster fishery to illustrate the problem of introducing management in an overcrowded fishery.

Data: secondary

Wilson, James, and James Clifton, 1976.

"Tariffs are the Problem," in Maine Commercial Fisheries.

This article states that Maine herring purse seiners face a 19% hidden tax in their competition with foreign purse seiners, due to U.S. tariffs on gear and equipment. Describes current tariffs.

Data: secondary - U.S. government. No primary data in article, but cost and earnings information for purse seiners, three categories of draggers, shrimpers, salmon-trollers, crabbers, tuna seiners and in- and off-shore lobstering were collected. Cost data is categorized to conform with U.S. tariff schedules.

Wilson, James A., Wayne H. Meserve, Everett W. Maxim and Kevin J. Boyle, 1977.
The Economic Feasibility of the Installation of Chilled and Refrigerated Seawater Systems in New England (Herring) Carrier Vessels, New England Fisheries Development Program, NMFS.

This study attempts to quantify the profitability of sixteen investment projects which utilize chilled seawater and refrigerated seawater systems. Both are methods of preserving sea herring, so that it might be used as food fish, rather than for industrial use. Some hypothetical examples used. No estimates made for new carrier vessels constructed solely for use of these systems. No estimates for conversion of catching vessels. Non-technical and technical sections presented. Both systems are found to be highly profitable investment projects for use in transporting adult sea herring.

Data: primary interviews in 1977 with private firms-confidential.

Wilson, James A, 1977.

"A Test of the Tragedy of the Commons," in Managing the Commons, ed. Hardin and Baden, pp. 96-111. San Francisco: W.H. Freeman and Co.

Wilson states the tragedy of the commons in economic terms, and then goes on to analyze fishery resource management. He proposes a hypothesis about observable differences between similar fisheries with uncontrolled access and with controlled access and uses the Maine lobster fishery to test his hypothesis. He concludes that the lobster fishery follows the classic lines of an unmanaged common property resource and that the most

noticeable manifestation of the problem is in decline of catch per trap haul.

Data: Primary - detailed catch information from 15 fishermen; Secondary - statistics from the State of Maine.

Wilson, James, and Robin Peters, 1978.

The 1978 Census of New England Commercial Fishermen, Preliminary draft of census returns. Social Science Research Institute, University of Maine, Orono.

This booklet is a preliminary summary of the results of this census, conducted for NERFMC by SSRI at University of Maine, Orono. Tables present vessel characteristics and gear, species sought by month, general fishing area. Also expectations of future fishing, investment in gear and boats. Text explains data collection.

Data: primary - mail and phone interviews from 2000 New England fishermen collected in 1978 for 1977. Covers 60% of population of skippers, all New England fishing sectors, except inshore lobstering. Data file on tape available for use.

Wilson, James, Hugh Briggs and Ralph Townsend.

An Input-Output Analysis of Maine's Fisheries, University of Maine, Orono.

An input-output model of Maine's economy was modified to include nine fisheries sectors. The modified model was then used to estimate the increases in income induced per dollar of sales for each fisheries sector for 1979.

Data: secondary - 28 industries estimated plus 4 processing and 5 harvesting sectors added. Technical coefficients for the added sectors based on interviews conducted in 1979.

Wilson, James, 1980.

"Adaptation to Uncertainty and Small Numbers Exchange: The New England Fresh Fish Market," The Bell Journal of Economics 11(2). Also in, Vol.II, URI-UME Report to NSF, 1980.

This article uses the New England fresh fish market, especially sales from fishermen to first buyer to show that inaccuracy of market information and other factors cause trading to take place under conditions of uncertainty and small numbers. Inefficiencies in trade are mitigated by a pattern of bilateral agreements. Reciprocal and consignment agreements are discussed. However, the overall effect is to further suppress the flow of market information and to impair other measures of market performance.

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