Michigan Sea Grant College Program

People & Projects
1987 - 1989

Contents

About Michigan Sea Grant

The Michigan Sea Grant College Program is one of 29 programs across the nation established to promote the understanding and wise use of the Great Lakes and oceans. Through research, education, and extension, Michigan Sea Grant helps individuals, local communities, marine businesses, and state and local agencies to wisely develop and use the resources of the Great Lakes.

Michigan Sea Grant is a cooperative effort of The University of Michigan and Michigan State University. Other state universities and colleges also work with the program. Michigan Sea Grant is funded by the National Sea Grant College Program, a branch of the National Oceanic and Atmospheric Administration. These funds are supplemented by matching funds from the state, universities, businesses, and other non-federal sources.

Research, education, and extension are the three principal functions of the program. In research, Michigan Sea Grant directs interdisciplinary work on the Great Lakes and their aquatic resources. Researchers have been focusing on tracing toxic substances in the lakes, rehabilitating the Great Lakes fishery, increasing recreational uses of the lakes to stimulate Michigan's economy, sorting out Great Lakes policy issues, and improving the design of Great Lakes and ocean-going vessels.

Sea Grant's education programs provide professional development and in-service training for students and for members of the marine business community. Sea Grant supports college students involved in Sea Grant research and participates in a University of Michigan/industry consortium that provides research on ocean offshore mining problems and training for marine engineering students. A Sea Grant/4-H Extension Agent

provides Great Lakes curricula and field trips for public school students and participates in a Sea Grant cosponsored camp for Great Lakes studies on a Lake Michigan island each summer. Other agents conduct educational programs for commercial fishers, charterboat operators, rescue personnel who handle diving and drowning accidents, marina owners, and aquaculturists.

Sea Grant Extension is Sea Grant's vital link between research and the people who can directly apply the information. Extension agents in coastal communities work with residents, businesses, agencies, and others to identify new problems in the field that should be addressed by Sea Grant research, and to provide information and assistance.

Recent agent activities have included helping shoreline residents select economical and effective shoreline erosion protection options, helping local governments improve tourism marketing strategies; helping recreational businesses perfect operations; and helping commercial fishers refine fishing and marketing strategies. Agents are also involved in helping coastal communities establish underwater shipwreck preserves, develop land-based services for these preserves, and institute treatment and evacuation procedures for diving accident victims. They also train persons how to revive victims of cold water near-drowning accidents.

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Sea Grant Extension

Michigan Sea Grant Extension links people who use the Great Lakes with the program's research components. Field extension agents transfer to local communities the knowledge and technology developed through research. They help groups and individuals apply the information to their specific needs. The agents also suggest potential research projects, in response to the problems experienced by coastal residents and businesses. Campus specialists provide the extension agents with in-depth knowledge on specific topics when it is needed.

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Campus Specialists

Campus specialists draw on their university research to provide the extension agents with up-to-date information they need to help their communities. Like the agents, they work directly with the public and businesses in response to specific problems. Frequently, they help prepare extension publications.

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Special Projects: Aquaculture; leadership development in aquaculture industry; salmon triploidy

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Special Projects: Economic impacts of diving

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Crop & Soil Science
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Special Projects: Use of fish waste as a crop fertilizer

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Special Projects: Great Lakes fisheries

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Special Projects: Economic impacts of local tourism; market segmentation of the charterboat industry

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Maureen McDonough
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Special Projects: Marketing techniques for local tourism businesses

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Special Projects: Diving and water safety

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Special Projects: Economic impacts of recreational boating

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Special Projects: Economic impacts of diving

Extension Agents

District Extension Sea Grant Agents are Michigan Sea Grant's representatives in communities around the state. They work with residents and organizations on an everyday basis, delivering the results of research and bringing back to the program word of emerging problems that need to be addressed by research and education. Agents are generalists, but each also has special interest areas.

UPPER PENINSULA

Ron Kinnunen
(906) 228-4830

Upper Peninsula Extension Center
1030 Wright Street
Marquette, Michigan 49855

Interest areas: Great Lakes fisheries, toxic substances, fish pathology and diseases, bottomland preserves development

NORTHWEST MICHIGAN

John McKinney
(616) 922-4620

Governmental Center
400 Boardman Avenue
Traverse City, Michigan 49684

Interest areas: Management of tourism and marine businesses, coastal resource management, public policy, water levels and diversions, erosion mitigation

SOUTHWEST MICHIGAN

Charles Pistis
(616) 846-8250

County Extension Office, Room 101
Ottawa County Building
Grand Haven, Michigan 49417

Interest areas: Coastal recreation and tourism development, waterfront development, charterboat industry, sport fisheries, recreational boating industry

SOUTHEAST MICHIGAN

Steve Stewart
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Cooperative Extension Service
County Building, 11th Floor
Mount Clemens, Michigan 48043

Interest areas: Great Lakes recreation, water safety, marine business management, erosion management, computer applications

NORTHEAST MICHIGAN

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(517) 362-3449

Cooperative Extension Service
P.O. Box 599
Tawas City, Michigan 48764

Interest areas: Community and regional planning and development, bottomland preserves, coastal tourism

4-H SEA GRANT AGENT

Joan Stuecken
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County Extension Office, Room 101
Ottawa County Building
Grand Haven, Michigan 49417

Interest area: Youth education

Communications

Communications plays a crucial role in increasing knowledge of Great Lakes issues by relaying Sea Grant research results, information on extension agents' activities, and other Great Lakes information to the public, the research community, and governmental decisionmakers. Communications publicizes research and extension activities; develops, produces, and distributes brochures, fact sheets, reports, and audio-visual materials; develops displays for conferences; produces a newsletter; and cooperates in publicity opportunities with Sea Grant programs in other states.

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Environmental Studies

This subprogram stems from concern about the effects of toxic substances in the Great Lakes on human health and aquatic and wildlife resources. The research emphasizes the fate and distribution of toxic substances in the Great Lakes and their effects on aquatic life.

Subprogram Coordinators:

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Studies on the Toxicological Significance of Chlordane and Toxaphene Residues in Great Lakes Fish

This study will test Great Lakes salmonids for toxaphene and chlordane tissue residues. Results will help determine how serious these residues are to consumers of these popular food fish.

Principal Investigator: Project # R/TS-27

Fumio Matsumura
(517) 353-9430
Entomology
107 Pesticide Research Center
Michigan State University

Effects of Maternal Exposure of Rainbow Trout to 2,3,7,8-Tetrachlorodibenzo-p-Dioxin (TCDD) on Reproduction

Eggs and fry from adult, female rainbow trout and other Great Lakes salmonid species will be collected and tested in order to determine the dose-lethality relationship and the effects of exposure to TCDD, and to identify sources and background concentrations of dioxins and furans in Great Lakes fish eggs.

Principal Investigators: Project # R/TS-31

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Matthew Zabik
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Pesticide Research Center
204B Pesticide Research Center
Michigan State University

Geochemistry of the Sediment-Water Interface in Profundal Lake Sediments

Using a manned submersible to collect samples, the sediment-water interface in the Great Lakes will be studied to determine the geochemical processes and rates of chemical reactions. The nature of nutrient cycling and the fate of contaminants are determined at this interface, but little is known about it in freshwater lakes.

Principal Investigators: Project # R/ES-2

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Geological Science
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Michigan State University

A Sediment Dispersal Model for Lake Michigan

This study will apply geostatistical modeling techniques to help identify the composition, patterns of dispersal, and manner in which surficial sediments in Lake Michigan mix with sediment materials from other sources. Results will be valuable for aiding water quality management decisions.

Principal Investigator: Project # R/ES-1

Robert M. Owen
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The University of Michigan

This subprogram applies a deeper understanding of large aquatic ecosystems to the development of sound fishery management strategies. The development of improved models of stock recruitment and yield for important commercial and sport fishery species is a major goal. An improved hatchery environment, key to the success of many management plans, is also pursued.

Subprogram Coordinators:

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David Jude
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Factors Controlling Recruitment and Year Class Variability of Lake Whitefish

Studies will determine larval lake whitefish growth and survival as functions of egg quality, amount of food per larvae at hatching, water temperatures, and current speeds. A model will be developed to predict year class strength and recruitment to enable fishermen to anticipate catch and managers to set effective guidelines.

Principal Investigators: Project # R/GLF-19

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Michigan State University

Effects of Hyperoxic Environment on the Survivability of Hatchery Raised Rainbow Trout

This study will assess the condition of both hyperoxic and non-hyperoxic hatchery raised rainbow trout once released to natural waters to determine whether acclimation to normally oxygenated waters is required for maximum survivability. The findings will enable hatcheries to increase fish survivability, thus reducing the cost of maintaining Michigan's sport fisheries.

Principal Investigators: Project # R/GLF-27

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Biology & Chemistry
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David Behmer
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Distinguishing Between Naturally Produced and Stocked Walleyes in Saginaw Bay

This study will examine if naturally produced walleyes from tributaries contribute to recruitment of walleyes in Saginaw Bay. The results will aid the management of the walleye fishery by providing information concerning whether the fish are naturally reproducing, to what degree, and the effect on competing species and forage fish.

Principal Investigator: Project # R/GLF-30

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Competition for Food Among the Major Predators in Saginaw Bay

The abundance of small perch in Saginaw Bay and their importance in the diets of walleye and channel catfish will be quantified, as will the diets of the three major predator species in the bay. This evaluation of community dynamics in the bay's major piscivores will aid management of the Saginaw Bay fishery.

Principal Investigator: Project # R/GLF-29

James S. Diana
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Relative Contribution of Inland Spawned Fish to the Lake Michigan Yellow Perch Stock

The yellow perch, a valuable sport fish, will be studied to determine if spawning is occurring in Lake Michigan or in connecting water bodies and wetlands. This research will produce valuable information for fishery managers who need to find the best spawning habitats for Great Lakes fish.

Principal Investigators: Project # R/GLF-22

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Dumstaffnage Marine
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Comparative Analysis of Year Class Strength and Population Parameters of Pink Salmon in the Upper Great Lakes

This is the fifth year of a six-year project to determine the population dynamics and yield potential of the pink salmon in Michigan tributaries to Lake Superior. The data will be useful in determining the importance of this salmonid in Lake Superior and its potential for commercial and sport fisheries.

Principal Investigator: Project # R/GLF-32

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Marine Transportation and Engineering

This subprogram focuses on a new and more efficient method of ship design and testing, with the goal of aiding the production of more efficient ships for both Great Lakes and ocean trade.

It also supports The University of Michigan/Sea Grant/Industry Consortium which provides for research in ocean offshore engineering problems.

Subprogram Coordinator:

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Sea Grant/Industry Consortium in Offshore Engineering

This consortium of The University of Michigan's School of Naval Architecture and Marine Engineering and several offshore engineering corporations supports Ph.D.-level research in offshore engineering and course revisions in The University of Michigan's naval architecture and marine engineering curricula. The resultant research findings, graduate education, and faculty development is applicable to the ocean coasts, giving this project a national scope.

Principal Investigators: Project # R/T-23

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Michael Parsons
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Reliability Analysis of Marine Diesel Propulsion Systems: Towards Rational Maintenance, Repair, and Replacement Decisions

Detailed scrutiny of the reliability and maintenance requirements of the propulsion systems of Great Lakes diesel-powered vessels will yield a data base and analytical models of the performance of various shipboard components. The models and data will then be used to guide rational maintenance, repair and replacement decisions. The benefits will be reduced ship operating costs and safer marine transportation.

Principal Investigator: Project # R/T-19

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Further Research on the Structural Reliability of Marine Diesel Engine Shafting Systems

This project is a continuation of an ongoing study to examine the structural reliability of diesel shafting systems, and refine the analytical models used to describe cylinder and propeller excitation. Simpler and more practical reliability-based design criterion are being developed so that marine engine safety can be optimized.

Principal Investigators: Project # R/T-24

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Coastal Economic Development

The current emphasis in this subprogram is to help local communities and the state promote tourism, principally through analysis of tourist attitudes and the development of models for evaluating promotional programs.

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Attitudes, Image and Perception Shifts Following Great Lakes Vacation Travel

A comprehensive "before and after" study of visitors' perceptions of Great Lakes coastal zone travel destinations will provide insights that local and state economic planners may use to develop efficient economic diversification strategies.

Principal Investigator: Project # R/R-15

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Recreation and Tourism Forecasting

This research compares and evaluates several alternatives to tourism forecasting for coastal counties in Michigan. Past recreational patterns are being analyzed to identify future seasonal tourism trends. Knowledge of these trends helps recreational organizations make development, growth, and marketing decisions more easily and in a wide range of areas.

Principal Investigator: Project # R/CE-1

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Great Lakes Policy Research

Conflicts in resource use are caused by the complexity of the Great Lakes ecosystem, coupled with policies developed by single-purpose interests and limited jurisdictions. This subprogram will investigate the value and feasibility of institutional arrangements that would help policymakers solve Great Lakes management issues from a comprehensive perspective.

Subprogram Coordinator:

Jonathan W. Bulkley
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Trends and Emerging Issues in Great Lakes Management: A Longitudinal Study

Government units will be surveyed to assess trends in resource policy. Sharper definition of priority issues will aid decision-makers in policy formation. A much-needed historical perspective on Great Lakes management efforts and opportunities will also result.

Principal Investigators: Project # R/RP-4

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Legal, Institutional and Administrative Issues in Hybrid Water Law Systems

Hybridization in water law systems over the past thirty years is of great interest to Michigan governmental agencies. This project is designed to learn and evaluate how these hybrid systems work, and to highlight special issues that might be encountered in adopting a new water law system in Michigan.

Principal Investigators: Project # R/RP-5

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An Analysis of Great Lakes Salmonid Angler Preferences and Expectancies for Future Fisheries Management Programs in Lake Michigan

The biology of Great Lakes fish communities and the sociology of Great Lakes anglers are not well known. This investigation of salmon anglers will determine the awareness level, values, and beliefs held by Great Lakes anglers, and their response to Great Lakes policymakers. An improved relationship between these two groups might enhance the resource base and the socio-economic benefits of the Great Lakes area. 1988

Principal Investigator: Project # R/R-9

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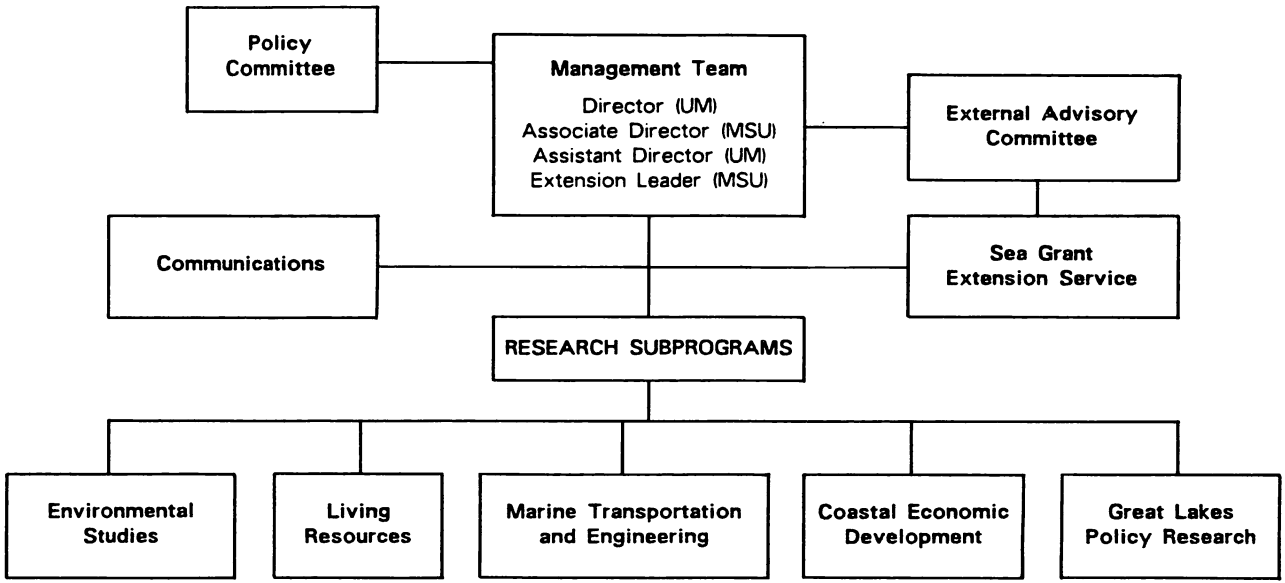

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