

SEACOAST MANAGEMENT

Group Contract, 1973-74

General Description

The status of seacoast management in Washington and other states around the United States coastal perimeter is the subject of this group study. The application of marine science to understand the problems of using and protecting coastal environments (beaches, tidelands, estuaries, etc.) is emphasized in the context of the economic, social, and political pressures involved.

The central activity of the program involves individual or, preferably, team efforts to compile case studies of seacoast problems. Progress on the investigations is discussed regularly by the whole group. General background in oceanography, marine ecology, and coastal geology is offered through a program of lectures, discussions, reading, field trips and laboratory studies.

Emphasis during the first quarter is on seacoast management problems in Washington. For the second quarter continuing students may work toward a national perspective while entering students take up a beginning format. Appropriate internships are encouraged.

Group Goal

The overall goal of the group will be to compile a series of reports documenting case studies of seacoast problems in Washington and other parts of the United States.

Learning Objectives

Participants in this group contract can expect to achieve the following objectives:

1. Gain a general foundation in marine science.
2. Gain advanced experience with selected topics in marine science.
3. Gain problem-oriented experience in environmental management, regional planning and related topics.
4. Learn and apply investigative methods in compiling information for case studies.
5. Learn to read, analyze, and write technical reports.

First Quarter - Fall 1973 - Group Activities

General Schedule - During weeks of full scheduling, the typical week includes two sessions on the core subjects, oceanography and coastal geology, a book seminar and a session to discuss the case studies. The remainder of the time was available for individual study and work on the case studies. Two weeks were left unscheduled, except for sessions to discuss case studies, to allow more time on case studies. Field trips replaced some regular scheduling.

Core-subject sessions - Lectures and discussions on oceanography and coastal geology. Twelve sessions of two to three hours each. Texts used -
(1) Gross, M. G. 1972. Oceanography. A View of the Earth. Prentice-Hall.
(2) Bird, E.C.F. 1969. Coasts. An Introduction to Systematic Geomorphology. MIT Press. Films shown - The Restless Sea, The Beach - A River of Sand, The Tides of the Ocean, The Salt Marsh, Ecology of a Tidal Slough, and Multiply - And Subdue the Earth.

Seminars - Four sessions on Design with Nature, by I. McHarg (Doubleday) and one session on The Frail Ocean by W. Marx (Ballantine). One session with Charles Nisbet, Evergreen Faculty Member in economics, on environmental problems and economics.

Case Studies - Eight sessions to discuss case studies, investigative methods and results.

Field trips -

1. Three days, October 3-5, to Willapa Bay and Long Beach Peninsula to examine regional seacoast problems and management. Visits and discussions with Ken Kimura and Peter Scribner, Pacific County Planners; James Bean, Manager, Port of Willapa Harbor; Richard Claunch and Bob Ramstad, Forest Planner and Manager, respectively, Weyerhaeuser Company; Rex Van Wormer, Biologist, Willapa National Wildlife Refuge; and Clyde Sayce, Director, Willapa Shellfish Laboratory, Washington Department of Fisheries.
2. The Evergreen State College beach at low tide, evening of October 9, to examine intertidal marine life and habitats in sediments.
3. Blakely Harbor, Bainbridge, at low tide on October 11, to examine rocky intertidal marine life and habitats. Visit to Joint Ventures Office, Trident Project (for siting U. S. Navy advanced nuclear submarine base at Bangor, on Hood Canal), at Silverdale.

Journals - Each participant was urged to write a journal containing regular entries recording progress and reflection on all aspects of this group contract.

Second Quarter - Winter 1974 - Group Activities

General Schedule - Typically the weekly schedule included two lecture sessions on selected topics in marine ecology, a seminar on current events in seacoast management and a session to discuss progress on case study projects. Occasional field trips, guest speakers, and field and laboratory sessions on marine ecology were also scheduled.

Lectures - Seventeen 1½ to 2 hour sessions given alternately by Dave Milne and Peter Taylor to the combined groups of "Marine Life and Water Quality" and "Seacoast Management". Topics included: autecology of marine organisms, regulation of populations, interactions between marine organisms -- competition and predation, commensalism and parasitism, trophodynamics, community diversity and stability, the biochemical cycle, ecology of the California scorpionfish, marine chordates, worms, sponges, mollusks, and seaweeds.

Field and Laboratory Sessions on Marine Organisms - Three sessions respectively to examine living plankton, identification of shelled intertidal animals (barnacles and mollusks), and ecological survey methods.

Guest Speakers - Dr. Robert Harriss, Florida State University, on water management and coastal problems in Florida; and D. Rodney Mack, Shoreline Program Manager, Department of Ecology, informal discussion on the Washington State shoreline management program.

Seminars - One session on Landscape for Humans by P. van Dresser, one session on coastal zone legislation and five sessions on current events from newspapers, magazines and other media.

Field Trips and Conferences -

1. Hearing on the National Coastal Zone Management Act of 1972 guidelines, sponsored by the National Oceanic and Atmospheric Administration, Seattle, January 10.
2. Coastal trip to the Monterey Peninsula and San Francisco Bay area, February 1 through 9, to examine Oregon and California coasts and aspects of seacoast management. Conferences, lectures and tours variously with federal and California and Oregon state agencies involved in coastal zone management, marine aquacultural projects, representatives of coastal land development enterprises, individual marine biologists, geologist and planners, and coastal sites of biological and geological interest.
3. Tour of Kikut Island, Washington, proposed site of a nuclear power plant, February 14. Mr. Dick Downie, Snohomish PUD, provided guidance and discussion on environmental implications.
4. Land Use Symposium, February 21, Tumwater, sponsored by the Washington Resources Council.
5. Fourth Technical Conference on Estuaries, Oregon State University, Corvallis, March 14-15. Topics included estuarine science and management.

Case Studies Projects - Weekly sessions to discuss case study projects, investigative methods and results. Part of each session was conducted jointly with the "Marine Life and Water Quality" contract group.

Survey of Oceanography module - For students in their first quarter of this group contract, together with part-time students and students from other programs. An introductory survey of oceanography covering physical, chemical, geological and biological aspects. Texts included: Gross, M.G., Oceanography: A View of the Earth (Prentice Hall, 1972) and the Scientific American book, Oceanography (Freeman).

Third Quarter - Spring 1974 - Group Activities

General Schedule - The schedule was more irregular this quarter because of emphasis on the group project described on this page. A fully scheduled week did include a lecture session on marine benthos ecology, a seminar on current events, submission of a short written report, and a session to discuss progress on projects. We also had sessions with guest speakers some weeks.

Lectures - Peter Taylor, the group contract sponsor, gave seven lectures on the ecology of marine benthic invertebrates in support of the Port of Olympia study. Topics included were: benthos sampling, benthic communities, animal-sediment relationships, substrate selection and results of a benthic study in Puget Sound.

Guest Speakers - Mr. Dick Malin, Project Engineer, Port of Olympia, on the Port of Olympia comprehensive plan; Mr. Andrew Driscoll, Northwest Environmental Consultants, on the nature of environmental assessment and impact studies; Dr. Richard Sternberg, Department of Oceanography, University of Washington, on coastal geomorphology.

Field Trip - To the University of Washington, College of Engineering Open House, to view a working hydraulic model of the Port of Olympia.

Nuclear Power Symposium - This group contract and other TESC programs cosponsored a public Nuclear Power Symposium featuring nationally and regionally recognized authorities, on May 10.

Seminars - Five sessions on current events in seacoast management monitored from news media and other periodicals.

Short Written Essays - Each student was requested to submit weekly one or two-page essays on topics of their choosing in seacoast management. The Water's Edge, Critical Problems of the Coastal Zone, edited by B.H. Ketchum, was urged as a basis for the essays.

Environmental Assessment Study of the Port of Olympia - Six students and the contract sponsor undertook this project on a contractual arrangement with the Port of Olympia which supplied funds to cover expenses for supplies, transportation and boat charter. The project included surveys of benthic and intertidal marine invertebrates, of waterfowl and shorebirds, and compilation of historical records of Port development. The activities included: benthic sampling by bottom grab, intertidal census and transect sampling, laboratory identification and enumeration of benthic fauna, field censuses of waterfowl and shorebirds, solicitation of records of past observations of birds in the Port, and research of documents and charts and interviews with residents describing historical conditions in the Port. Finally, a written report was prepared detailing the results of this study.