

THE MARINE ENVIRONMENT
Group Contract, Winter-Spring 1986

"The Marine Environment" was focused on the sea, its living inhabitants, and its importance for humankind. The principal subjects are oceanography, marine ecology, and a survey of the marine organisms, presented through lectures, seminars, reading, laboratory and field studies, and individual or group projects.

The faculty team was: Dr. William Brown (geography), Dr. David Milne (biology), and Dr. Peter Taylor, Coordinator (oceanography).

Winter Quarter

The lectures for the winter quarter, about six hours weekly, were about introductory oceanography, maritime climatology and an introduction to the marine invertebrates. The texts were Introductory Oceanography (H. V. Thurman), Animals Without Backbones (R. Buchsbaum), The Shape and Form of Puget Sound (R. Burns), The Coast of Puget Sound (J. Downing), and The Fertile Fjord (R. Strickland).

There were two seminars each week. One was based on students' presentations summarizing articles from semi-popular periodicals about a broad range of oceanographic and marine biological topics. There were seminars based on the following books: Science at Sea: Tales of An Old Ocean (T. van Andel), Kon-Tiki (T. Heyerdahl), Twenty Thousand Leagues Under the Sea (J. Verne), and The Hunt for Red October (T. Clancy). These were chosen to highlight, respectively, an oceanographer's personal perspective of his science, observations of the sea and oceanic marine life during an extended voyage by raft, historical literary perceptions about the sea, and modern military uses of the ocean.

Field and laboratory sessions featured introductions to field observations and field notes, intertidal marine life on the college's beach on South Puget Sound, laboratory methods of observing and identifying marine invertebrates, maritime history of Olympia, measurements of water parameters (salinity and temperature), survey of tidal elevations on a beach, and a week-long residence at the Friday Harbor Laboratories (University of Washington's marine field station) for collection and studies of diverse marine organisms.

For a quarter-long research project, the students were organized into groups of four or five to conduct a series of field observations of one or both of two sites. The sites were: (1) the relatively undisturbed beach of the college's waterfront on Eld Inlet, and (2) the urbanized waterfront of Olympia at the head of Budd Inlet. The purposes of the project were: (1) to develop skills for field observation of the marine coastal environment and inhabitants, including descriptive writing in field notes, (2) to gain knowledge of coastal marine environments and marine life, with and without human influence, and (3) to gain ability to analyze ecological relationships between marine organisms and their environments, and to examine the influences of human activities and other kinds of environmental changes on them. The results were presented in written reports, either as a collaborative effort by the team, or individually, at the team's option.

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Spring Quarter

Spring quarter lectures (about four hours each week) dealt with: (1) the distribution and cycling of the biologically important inorganic constituents of seawater (oxygen, carbon dioxide, nitrogen, phosphorus, sulfur); (2) marine plants and vertebrates; and (3) marine pollution. Lectures about marine mammals were presented by a biological consultant involved in ongoing research on local pinnipeds and cetaceans. Several of the lectures on marine pollution featured guest speakers who are involved in water quality management, aquaculture, and related activities in the Puget Sound region. Films shown were There Are No Islands Anymore (marine mammals and environmental problems) and Black Tide (oil pollution). The Water Link: History of Puget Sound as a Resource (D.J. Chasan 1981) provided background for the lectures on Puget Sound.

Workshops, about four hours each week, were based on Marine Ecology (J.S. Levinton 1982). The format was discussion and lecture based on study questions about the reading, issued for written responses prior to the sessions. A broad range of marine ecological subjects was covered, featuring the plankton and benthos, and the oceanic and coastal marine environments.

For a series of weekly seminars, students researched and presented talks about economically significant marine organisms. Working (usually) in pairs, one student compiled specified information on biology, the other on aspects of human interest or utilization. In addition to the talks, the students summarized the information in concise written reports, again following a specified format.

Three book seminars were held during the quarter, on: (1) Neptune's Revenge (A.W. Simon 1984), about degradation of the ocean; (2) Beautiful Swimmers (W.W. Warner 1976) and Highliners (W.B. McCloskey, Jr 1979) - a student could read either one - about crabbing in Chesapeake Bay and fishing in Alaska, respectively; and (3) Lads Before the Wind (K. Pryor 1975), about porpoise training and behavior.

Optional field trips were held as follows: bottom-trawling for marine organisms in South Puget Sound on the college's 38-foot vessel Seawulff; observation of rocky intertidal marine life at Tongue Point, Strait of Juan de Fuca; and, tour of Point Defiance Park Zoo/Aquarium, Tacoma, for exhibits of marine invertebrates, fishes, and mammals.

Students enrolled for full credit (16 units) undertook research projects on topics of their own choosing. A project could be based on a literature survey, field studies, laboratory studies, or a combination of approaches. The topics fell generally under one of three areas: (1) water quality, (2) marine organism(s), or (3) marine resources. Optional workshops and field trips were arranged for small groups of students, to provide background or training in methods for each project area. Each project culminated in a written technical-style report.