

Tropical Reef Ecology

Program Description

Winter Quarter 1980

Students in the TRE program spent 7 weeks at a field camp on Maui conducting studies of a local reef. Preparation consisted of a 9-day visit to institutions on Oahu, 2 weeks of literature research and other activities at The Evergreen State College campus and, for some, literature research during the preceding quarter. Objectives of the program included acquiring firsthand familiarity with reef species, exposure to current views of reef formation and ecology, and acquaintance with individuals and institutions conducting research in this area.

Field Studies. Each student completed three field assignments which were: 1) location and identification of selected organisms; 2) participation in a large coordinated census of the reef organisms and substrate; and 3) design and conduct of independent study of an aspect of reef ecology. Projects 2 and 3 required analysis of the data and a written report of findings; project 1 required an oral presentation of findings to the class. In addition to these studies, opportunities were available for underwater observation at many sites around Maui, by day and night. Each student was required to record field observations in a journal and dive log. The class met twice weekly to report and discuss unusual sightings and field observations.

Texts. 1) A Natural History of the Hawaiian Islands (Kay; required). 2) Many journal articles and books were available as reference material, including Biology and Geology of Coral Reefs (Endean and Jones), Pacific Crustacea (Tinker), Handbook of Hawaiian Fishes (Gosline and Brook), and Reef and Shore Fauna of Hawaii (Eldredge and Devaney, corals; Kay, molluscs).

Seminars. Seminar discussions of the following articles and topics were held: "The Ecology of Conus in Hawaii" (journal article, by Kohn); "Aspects of Island Biology"; "Is the Olowalu Reef declining or growing?"; "Do the census data suggest zonation on Olowalu Reef?" and "How does the reef community differ from that of Puget Sound?"

Lectures. Lecture topics were as follows: Reef formation processes (E - Milne); Complexity of reef communities (E - Milne); Tropical marine biogeography (E - Taylor); Venomous reef organisms (E - Taylor); Marine census techniques (E - Walton and Huckle); Hawaiian fishes I (O - Matsuura); Hawaiian reef invertebrates (O - Hopper); Hawaiian fishes II (M - Yoshida); Humpback whale behavior (M - Hudnall); Analysis of reef census data (M - Milne).

(E = Evergreen; O = Oahu; M = Maui).

Film. Behavior and Ecology of Coral Reef Fishes.

Institutions Visited. Class members became acquainted with personnel and research activities of the following organizations: Hawaiian Institute of Marine Biology; Bernice P. Bishop Museum; Waikiki Aquarium; University of Hawaii Marine Option Program; Oceanic Institute (optional).

Faculty. David H. Milne, Peter B. Taylor. Jak Ayres, dive master.

Suggested Course Equivalencies (upper division):

- 6 - Tropical reef ecology
- 8 - Marine field research (underwater observation and census)
- 2 - Tropical marine algology or Tropical marine zoology*

* depending upon student's taxonomic specialty and interests