PHYSICAL OCEANOGRAPHY OF COASTAL UPWELLING: PRESENT KNOWLEDGE—FUTURE PLANS (ABSTRACT)

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Recording current meters and thermographs have been moored on the continental shelf off Oregon during the upwelling seasons from 1965 to 1969. These measurements have been supplemented by extensive hydrographic measurements and, more recently, airborne infrared thermometry. In 1969 mesoscale studies were made off Peru and off Oregon in coordination with biological and chemical oceanographers. A descriptive synthesis from these several studies provides us with a conceptual model of coastal upwelling. To validate, improve, and quantify our knowledge, a coastal upwelling experiment (CUE) is planned.

CUE-1 is a mesoscale physical oceanographic field experiment to be executed during the summer of 1972 off Newport, Oregon. Three ships, approximately 50 current meters, an NCAR Queen Air aircraft, various buoys, drogues, and current profilers will be deployed to determine the time and space scales of coastal upwelling in a one-degree latitude-longitude square on the Oregon coastal shelf. CUE is designed in close coordination with numerical models and is viewed as a first step toward attaining the capability to predict the complex integrated processes (both biological and physical) in upwelling ecosystems. CUE involves cooperation among scientists from eight universities, NOAA, NCAR, IATTC, and private industry.