
DIRECTOR'S STATEMENT

From the beginning, the objective of the Coastal Water Project has been to understand the ecology of the open coastal waters off southern California. We are continually making measurements at sea and in the laboratory and correlating information from other sources in an attempt to replace conjecture with fact and give scientists and environmentalists the information needed for assessing coastal conditions. When assembled in a coherent fashion, these findings are the basis for objective thinking about the actions that man should take to protect the marine environment.

For example, we carefully inventory the animals and elements naturally present in the adjacent ocean, noting any substantial variations with time and place. We measure ocean currents to determine their influence on the disposition of the materials entering the sea. We also periodically resummairize data on the amounts of water, solids and chemicals being discharged through municipal wastewater outfalls or being added to the sea via other routes.

The resulting information is essential to the under-standing of life in our nearby waters, but it also presents us with troublesome new questions: Are changes in the distribution of animals resulting from mans' activities a cause for concern—especially when the percentage of change is small in comparison with natural variations or with the total number of animals involved? Can the addition of metals diluted to levels below the known thresholds of chronic toxicity have any effect on sea life? If the nutrients added by submarine outfalls increase the natural production of phytoplankton, should that be regarded as an improvement or a detriment? Should we be disturbed if sport fish are attracted to the abundant food around outfalls and congregate there?

The most perplexing questions are subjective. For example, man's activities in some coastal regions have been shown to affect the composition of adjacent marine communities, causing some species to be absent in the impacted area and others to be present in great abundance. Such effects are difficult to evaluate--although reduced diversity is generally thought to be detrimental to a community, who is to decide if the disappearance of a particular species of fish or worm or clam from a certain region is cause for concern?

All of us want coastal waters that are clean enough to be used in any way we wish. We want to be able to swim and dive anywhere along the coast; we want to be able to eat seafood without reservation; and we want marine life to be undamaged. Loss of these desirable qualities could come if a damaging excess of certain materials were permitted. At present, it appears that few

materials introduced by man are toxic enough or present in sufficiently large quantities to cause irreversible damage to marine populations in open, freely moving seawater. The discharge of potentially harmful chemical compounds, such as the chlorinated hydrocarbons, certainly should be minimized, by control at the source. The problem of persisting sediment reservoirs of these materials should continue to receive our attention.

The scientific papers on specific research tasks that are included in the Project's Annual Reports state where, when, and how samples were taken or measurements made; they explain how the analyses were done; and they summarize the resulting data. The papers are as objective as possible and avoid possibly prejudicial words or comments. These annual reports are one form of our professional communication with other scientists and with environmental groups who are engaged in similar work. Our scientists also publish in specialized professional journals, but that is not an effective way of reaching all people interested in our work because such publications are not widely available. Moreover, each journal has its own editorial style, and often there is a long delay before publication. Thus our solution has been to publish our own papers after subjecting each to extensive review by other scientists and by our consulting board members. It is our hope that the result is a presentation of ecological data in a form that is understandable by intelligent laymen as well as by scientists in other fields.

A problem with our annual reports has become increasingly apparent—each report covers only what we have studied in the past year and so gives a somewhat fragmented picture of what we know about coastal ecology. No single year's report gives a complete picture of the situation in our coastal waters. The outline and the summary statements mitigate this situation somewhat by indicating the way in which the new findings add to those reported earlier. Even so, the reader of each report gets only a few dozen pieces of a large complicated jigsaw puzzle. Even those persons who have read our 1973 report, "The Ecology of the Southern California Bight: Implications for Water Quality Management," and all of the subsequent annual reports can scarcely be expected to remember the previously deciphered pieces of the puzzle. Plainly, we need to present an updated overall picture.

Therefore, next year we hope to bring out a volume on the ecology of the open coastal waters of southern California that will summarize what is known about the subject in a systematic and understandable fashion.

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