

General Introduction



Bait barge with sea lions near the entrance of San Diego Bay,
along the inside of Point Loma Peninsula.

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Chapter 1

General Introduction

San Diego Bay is one of few natural deepwater harbors on the Pacific Coast. The Bay is located in the Southern California Bight (SCB) just north of the Mexican/United States border, and is sheltered by the overlapping peninsulas of Point Loma and Coronado. San Diego Bay is an important commercial port that accommodates substantial military holdings as well as a commercial and recreational fishing fleet. The Bay also harbors several types of important natural resources, including salt marches, tidal flats, bird nesting and foraging sites, and essential fish habitats such as eelgrass beds. Many of these resources are located within two National Wildlife Refuges, the Sweetwater Marsh National Wildlife Refuge (316 acres) and the South San Diego Bay National Wildlife Refuge (3,940 acres). Additionally, nine federal and state listed endangered or threatened species are found in various habitats scattered about the Bay (Port of San Diego 2003).

In 1987, the San Diego Bay Interagency Water Quality Panel (Bay Panel) was formed by legislation (California Law Chapter 1087) to gain a better understanding of the environmental conditions of the Bay (see San Diego Bay Perspective 2003). This legislation was designed to encourage agencies responsible for stewardship of San Diego Bay and its resources to coordinate their efforts and to provide technical information and advice to the San Diego Regional Water Quality Control Board (RWQCB). The Bay Panel was composed of 31 member organizations, including federal, state and local agencies such as the National Fish and Wildlife Service, the County of San Diego Department of Health Services, the California Department of Fish and Game, the United States Environmental Protection Agency, and so forth (see San Diego Bay Perspective 2003 for complete list of agencies). Some of the goals of this panel were to characterize the ecological state of San Diego Bay, identify long term environmental trends within the Bay (e.g., trends in sediment contaminant levels), and to address public concerns about the exposure to contaminants from eating fish captured in the Bay. The mission of the panel was passed on to the RWQCB when the Bay Panel disbanded in 1997.

This report was created in accordance with a memorandum of understanding between the RWQCB and the City of San Diego designed to address the interests of the Bay Panel using data collected for San Diego Bay as part of the Southern California Bight 1998 Regional Monitoring Project (Bight'98). Bight'98 was part of an effort to provide an integrated assessment of the SCB through regional-scale EMAP style stratified random sampling (see Bight'98 Steering Committee 2003). In addition to addressing the Bay Panel's interests, the results of this study are put into context with the U.S. Navy's Integrated National Resources Management Plan for San Diego Bay (USDoN, SWDIV and SDUPD 2000), a recent publication that provides a historical review of data collected in San Diego Bay. The Navy's Management Plan outlined several "contaminants of concern for the San Diego Bay Region," which included chlordane, chromium, copper, lead, mercury, tributyltin, zinc, polycyclic aromatic hydrocarbons (PAHs), and polychlorinated biphenols (PCBs). The report also describes several sources for these and other contaminants, and includes a thorough biological assessment of the flora and fauna of the Bay (e.g., macroalgae, eelgrass, plankton, invertebrates, fishes, birds, marine mammals).

Each of the major sampling components of the Bight'98 survey was used to characterize the state of the subtidal habitats in San Diego Bay. These components include sediment particle size and chemistry characteristics (Chapter 2), macrobenthic invertebrate communities (Chapter 3), trawl-caught fish and megabenthic invertebrate communities (Chapter 4), and contaminant levels in fish tissues (Chapter 5). A summary of the stations and type of sampling conducted at each site is listed in Appendix A.1. Sediment toxicity samples were also collected by the City of San Diego during the course of this survey, but the Southern California Coastal Water Research Project (SCCWRP) analyzed these samples. All of the sediment toxicity results for Bight'98, including an evaluation of samples from San Diego Bay, are reported in the Bight'98 Sediment Toxicity Report (Bay et al. 2000).

The study described herein was unique in its comprehensive coverage of San Diego Bay. First, it includes the first random survey of fish and invertebrate populations in the Bay. Second, it provides an assessment of contaminants in the tissues of fishes in order to address human health concerns and ecological impacts (e.g., muscle tissue vs. whole fish samples). Finally, this report also provides the first comprehensive comparison of conditions in San Diego Bay to other bays and harbors in the SCB. Such comparisons were possible because these areas were sampled at the same time using the same Bight'98 sample design.

LITERATURE CITED

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