

**Cruise Report
Regional Monitoring Program
Bivalve Maintenance Cruise #16
March 3-5, 1998**

1. INTRODUCTION

This report describes activities associated with the 1998 wet-season bivalve maintenance cruise of the Regional Monitoring Program for Toxic Contaminants in the San Francisco Estuary. Measurement of contaminant bioaccumulation in transplanted bivalves is one component of this program that is designed to provide long-term data on concentrations of trace metals and organic compounds in water, sediments, and tissues, as well as toxicity throughout the estuary.

Contaminant bioaccumulation in bivalves is being measured in this program by attempting to collect bivalves from sites that are known to be clean and transplanting them to separate mooring locations in the Estuary. Three species of bivalves, *Mytilus californianus*, *Crassostrea gigas*, and *Corbicula fluminea* were deployed on January 20-22, 1998 at 13¹ different locations depending upon the expected range of salinity. *M. californianus* was deployed at the most saline sites, which are from San Pablo Bay southward to the Dumbarton Bridge; *C. gigas* was deployed at sites with intermediate salinities between Grizzly Bay and San Pablo Bay, and south of the Dumbarton Bridge; and *C. fluminea* was deployed at Grizzly Bay. *M. californianus* was collected from Bodega Head, *C. gigas* was obtained from a commercial grower in Tomales Bay, and *C. fluminea* was collected from Lake Chabot in Alameda County and held in the lake three weeks prior to deployment.

2. CRUISE REPORT

2.1. Objective

The objective of this cruise was:

- 1) Check and maintain bivalve moorings at 13 sites.

2.2. Personnel

The personnel and work assignments for this cruise were as follows:

<u>Name</u>	<u>Affiliation</u>	<u>Duties</u>
David Bell	AMS	Cruise Manager, Dive Master
Jordan Gold	AMS	Diver, Dive Tender
David Morgan	Romberg Tiburon Institute	Vessel Skipper
Paul Salop	AMS	Diver, Dive Tender

¹ Bivalves were not deployed at the Sacramento and San Joaquin River stations.

2.3. Activities

<u>Date</u>	<u>Time</u>	<u>Activity</u>
3/3/98	0800-0900	Mobilized gear and conducted safety briefing aboard <i>R/V Questuary</i> , Emeryville Marina. Departed for Yerba Buena Island site (BC10).
	0900-0930	The Yerba Buena Island mooring could not be located. The piling was most likely removed by Bay Bridge crews working in the vicinity. Departed for Alameda site (BB71).
	0930-1055	Checked and maintained mooring at Alameda, departed for Redwood Creek site (BA40).
	1055-1120	Checked and maintained mooring at Redwood Creek, departed for Dumbarton Bridge site (BA30).
	1120-1240	Checked and maintained mooring at Dumbarton Bridge, departed for Coyote Creek site (BA10).
	1240-1315	Checked and maintained mooring at Coyote Creek, departed for Emeryville Marina.
	1530	Arrived at Emeryville Marina, demobilized vessel.
3/4/98	0800-0850	Mobilized gear aboard <i>R/V Questuary</i> , Emeryville Marina. Departed for Horseshoe Bay site (BC21).
	0850-0920	Checked and maintained mooring at Horseshoe Bay, departed for Red Rock site (BC60).
	0920-1020	Checked and maintained mooring at Red Rock, departed for San Pablo Bay site (BD20).
	1020-1120	Checked and maintained mooring at San Pablo Bay, departed for Petaluma River site (BD15).
	1120-1220	Checked and maintained mooring at Petaluma River, departed for Pinole Point site (BD30).

<u>Date</u>	<u>Time</u>	<u>Activity</u>
	1220-1325	Checked and maintained mooring at Pinole Point, departed for Davis Point site (BD40).
	1325-1410	Attempted to locate Davis Point mooring. The ground line was buried under six feet of sand and the mooring buoy could not be located during a sweep-search of the area. Departed for Martinez Marina.
	1445	Arrived at Martinez Marina, demobilized vessel.
3/5/98	0800-0845	Mobilized gear aboard <i>R/V Questuary</i> , Martinez Marina. Departed for Grizzly Bay site (BF20).
	0845-1000	Checked and maintained mooring at Grizzly Bay, departed for Napa River site (BD50).
	1000-1020	Checked and maintained mooring at Napa River, departed for Emeryville Marina.
	1140	Arrived Emeryville Marina, demobilized vessel.

2.4. Discussion

Bivalve and Mooring Condition

The piling for the Yerba Buena Island mooring site has been removed by work crews preparing the Bay Bridge for future retrofit. A new mooring site for this station will be established during the next bivalve deployment cruise scheduled for June 2, 1998.

As occurred during the wet-season deployment of 1997, the Davis Point mooring was buried under a large sand deposit and could not be located. A new, shorter-length mooring line will be attached to the piling during the next bivalve deployment cruise.

All other moorings were generally in good condition and all showed very little signs of biological fouling.

General Comments

Except for the two bivalve moorings that could not be located, all cruise objectives were met.

Table 1. Observations of Mooring and Bivalve Condition

<u>Site Name/Code</u>	<u>Comments</u>
Coyote Creek/BA10	Zero visibility, very light bio-fouling with hydroids, a few byssal threads present, mooring gear in good shape.
Dumbarton Bridge/BA30	Zero visibility, no bio-fouling, one bag of mussels was empty, no byssal threads present, moderate mortality predicted, mooring gear in good shape.
Redwood Creek/BA40	Zero visibility, very light bio-fouling with hydroids, a few byssal threads present, mooring line buried under 6" of sediment, mooring gear in good shape.
Alameda/BB71	Zero visibility, very light bio-fouling with hydroids, a few byssal threads present, mooring gear in good shape.
Yerba Buena Island/BC10	Piling and mooring site missing.
Horseshoe Bay/BC21	Visibility 2 ft., moderate bio-fouling, many byssal threads present, mooring gear in good shape.
Red Rock/BC60	Zero visibility, moderate bio-fouling with hydroids, many byssal threads present, mooring gear in good shape.
Pinole Point/BD30	Visibility 1 ft., very light bio-fouling, byssal threads present, mooring gear in good shape.
San Pablo Bay/BD20	Zero visibility, no bio-fouling, mooring gear in good shape.
Petaluma River/BD15	Zero visibility, no bio-fouling, mooring gear in good shape.
Davis Point/BD40	Mooring line buried six feet under sand, could not locate mooring buoy.
Napa River/BD50	Zero visibility, no bio-fouling, mooring in good shape.
Grizzly Bay/BF20	Zero visibility, no fouling, mooring in good shape.
Sacramento River/BG20	No clams deployed at this site, did not examine mooring.
San Joaquin River/BG30	No clams deployed at this site, did not examine mooring.