

**Cruise Report**  
**Regional Monitoring Program**  
**Summer 2000 Bivalve Maintenance Cruise**  
**August 11, 14-15, 2000**

1. INTRODUCTION

This report describes activities associated with the Summer 2000 bivalve maintenance cruise of the Regional Monitoring Program for Trace Substances 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*, *Mytilus edulis*, and *Crassostrea gigas*, were deployed on June 20 - 29, 2000 at 12<sup>1</sup> different locations depending upon the expected range of salinity. *M. californianus* were deployed at the most saline sites; *C. gigas* were deployed at sites with intermediate salinities. *M. edulis* were deployed at locations experiencing a variety of salinity regimes in order to study survival levels and growth only.

*M. californianus* were collected from Bodega Head. *C. gigas* were obtained from a commercial grower in Tomales Bay. *M. edulis* were collected from Tomales Bay. *C. fluminea* was not deployed as part of this cruise as resident bivalves will be harvested and analyzed for the Sacramento and San Joaquin River stations during the Bivalve Retrieval Cruise.

2. CRUISE REPORT

2.1. Objective

The objectives of this cruise were:

- 1) Check and maintain bivalve moorings at 12 sites.
- 2) Check, maintain, and download data from thermosalinograph installed at the Napa River site.
- 3) Obtain CTD cast from each station.

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<sup>1</sup> Bivalves were not deployed at the Sacramento River, San Joaquin River, and Grizzly Bay stations.

## 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 8/11, 8/14
Nicole David	SFEI	Dive Tender for 8/14
Jordan Gold	AMS	Vessel Skipper 8/11
David Morgan	Romberg Tiburon Ctr.	Vessel Skipper 8/14 – 8/15
Paul Salop	AMS	Diver
Ron Walder	SFEI	Dive Tender 8/14, Diver 8/15
Donald Yee	SFEI	Dive Tender, 8/11

## 2.3. Activities

<u>Date</u>	<u>Time</u>	<u>Activity</u>
8/11/00	0730-0815	Mobilized gear and conducted safety briefing aboard <i>M.E. II</i> , Vallejo Public Launch Ramp. Departed for Davis Point (BD40).
	0830-0852	Checked and maintained mooring at Davis Point, departed for Napa River (BD50).
	0903-0935	Checked and maintained mooring at Napa River. Retrieved salinograph for data retrieval; did not re-deploy due to mechanical problems with salinograph. Demobilized gear at Vallejo Public Boat Launch.
8/14/00	0800-0914	Mobilized gear and conducted safety briefing above <i>R/V Questuary</i> , Emeryville Marina. Departed for Horseshoe Bay (BC21).
	0952-1018	Checked and maintained mooring at Horseshoe Bay, departed for Red Rock (BC60).
	1046 - 1110	Checked and maintained mooring at Red Rock, departed for San Pablo Bay (BD20).
	1156 - 1210	Checked and maintained mooring at San Pablo Bay, departed for Petaluma River (BD15).
	1237 - 1259	Checked and maintained mooring at Petaluma River, departed for Pinole Point (BD30).
	1338 - 1359	Checked and maintained mooring at Pinole Point, departed for fuel stop at Sausalito.
	1500 - 1528	Refueling completed, departed for Yerba Buena Island (BC10).

<u>Date</u>	<u>Time</u>	<u>Activity</u>
	1605 - 1625	Checked and maintained mooring at Yerba Buena Island, departed for Emeryville Marina.
	1645 - 1700	Arrived at Emeryville Marina, demobilized vessel.
8/15/00	0730 - 0750	Mobilized gear aboard <i>R/V Questuary</i> , Emeryville Marina. Departed for Alameda (BB71).
	0840 - 0901	Checked and maintained mooring at Alameda, departed for Redwood Creek (BA40).
	0950 - 1006	Checked and maintained mooring at Redwood Creek, departed for Dumbarton Bridge (BA30).
	1027 - 1044	Checked and maintained mooring at Dumbarton Bridge, departed for Coyote Creek (BA10).
	1107 - 1124	Checked and maintained mooring at Coyote Creek, departed for Emeryville Marina.
	1400-1430	Arrived Emeryville Marina, demobilized vessel

#### 2.4. Discussion

##### *Bivalve and Mooring Condition*

All moorings were in good condition and all showed normal levels of biological fouling. At stations where “cage” type bivalve containment devices were deployed, the cages were not cleaned of biological fouling.

##### *General Comments*

All cruise objectives were met. Individual CTD casts were obtained at each station.

Thermosalinograph data at Napa River site was unable to be downloaded due to mechanical failure of the equipment. Unit was subsequently returned to manufacturer, Richard Brancker Research (RBR), for analysis. RBR staff indicated the salinograph conductivity sensor failed completely and all 2001 deployment data is irretrievable.

**Table 1. Observations of Mooring and Bivalve Condition**

<u>Site Name/Code</u>	<u>Comments</u>
Coyote Creek/BA10	Zero visibility, mooring gear in good shape.
Dumbarton Bridge/BA30	Broken piling yet to be replaced. Zero visibility, mooring gear in good shape
Redwood Creek/BA40	Visibility 1 ft., mooring gear in good shape
Alameda/BB71	Visibility 3 - 6 in., mooring gear in good shape.
Yerba Buena Island/BC10	Visibility 2 ft., mooring gear in good shape.
Horseshoe Bay/BC21	Visibility 2 - 3 ft., mooring gear in good shape.
Red Rock/BC60	Mooring gear in good shape.
Pinole Point/BD30	Zero visibility, mooring gear in good shape
San Pablo Bay/BD20	Zero visibility, mooring gear in good shape.
Petaluma River/BD15	Zero visibility, mooring gear in good shape.
Davis Point/BD40	Zero visibility, mooring gear in good shape.
Napa River/BD50	Zero visibility, both sets of mooring gear in good shape. Salinograph retrieved but not replaced.
Grizzly Bay/BF20	No clams deployed at this site, did not examine mooring.
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.