

Cruise Report
Regional Monitoring Program
Bivalve Maintenance Cruise #19
March 23 – 26, 1999

1. INTRODUCTION

This report describes activities associated with the 1999 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. Four species of bivalves, *Mytilus californianus*, *Mytilus edulis*, *Crassostrea gigas* (both diploid and triploid varieties), and *Ostrea conchaphila* were deployed on January 5-8, 1999 at 12¹ 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. In addition, deployments were made at three “mega-stations”, at which each of the five bivalve types were deployed.

M. californianus was collected from Bodega Head. *O. conchaphila* and *C. gigas* (both varieties) were obtained from a commercial grower in Tomales Bay. *M. edulis* was collected from Tomales Bay. *C. fluminea* was not deployed as part of this cruise as the decision was made to obtain and analyze resident bivalves as part of the deployment 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 Napa River site

¹ Bivalves were not deployed at the Grizzly Bay, Sacramento River and San Joaquin River 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
Brad Cortright	AMS	Dive Tender for 3/23 – 3/24
Jordan Gold	AMS	Vessel Skipper
Nicole Kleinsinger	AMS	Dive Tender for 3/26
Jay Johnson	AMS	Dive Tender for 3/25, Diver for 3/26
Paul Salop	AMS	Diver for 3/23 – 3/25

2.3. Activities

<u>Date</u>	<u>Time</u>	<u>Activity</u>
3/23/99	0800-0848	Mobilized gear and conducted safety briefing aboard <i>ME II</i> , Grand Marina, Alameda. Departed for Alameda (BB71).
	0930-1000	Arrived Alameda. USCG performing maintenance on channel marker. Maintenance activities ran longer than expected. Departed for Coyote Creek (BA10).
	1055-1114	Checked and maintained mooring at Coyote Creek, departed for Dumbarton Bridge site (BA30).
	1128-1142	Checked and maintained mooring at Dumbarton Bridge, departed for Redwood Creek site (BA40).
	1158-1212	Checked and maintained mooring at Redwood Creek, departed for Alameda site (BB71).
	1247-1304	Checked and maintained mooring at Alameda, departed for Yerba Buena Island (BC10).
	1327-1342	Checked and maintained mooring at Yerba Buena Island, departed for Grand Marina.
	1358	Arrived at Grand Marina, demobilized vessel.
3/24/99	1200-1225	Mobilized gear aboard <i>ME II</i> , Black Point Marina. Departed for Petaluma River site (BD15).
	1228-1257	Checked and maintained mooring at Petaluma River, departed for San Pablo Bay site (BC60).
	0920-1020	Arrived San Pablo Bay. Conditions too rough to allow for maintenance of bivalves, departed for Black Point Marina.
	1120-1220	Arrived Black Point Marina, demobilized vessel

<u>Date</u>	<u>Time</u>	<u>Activity</u>
3/25/99	0830-0900	Mobilized gear aboard <i>ME II</i> , Grand Marina, Alameda. Departed for Red Rock site (BC60).
	0957-1018	Checked and maintained mooring at Red Rock, departed for Horseshoe Bay (BC21).
	1037-1052	Checked and maintained mooring at Horseshoe Bay, departed for Grand Marina.
	1140	Arrived Grand Marina.
3/26/98	0800-0830	Mobilized gear aboard <i>ME II</i> , Vallejo Marina. Departed for San Pablo Bay site (BD20).
	0908-0930	Checked and maintained mooring at San Pablo Bay, departed for Pinole Point site (BD30).
	0942-1000	Checked and maintained mooring at Pinole Point, departed for Davis Point site (BD40).
	1018-1030	Checked and maintained mooring at Davis Point, departed for Napa River site (BD50).
	1040-1145	Checked and maintained thermosalinograph at Napa River. Checked and maintained bivalve mooring at Napa River, departed for Vallejo Marina.
	1152	Arrived Vallejo Marina, demobilized vessel.

2.4. Discussion

Bivalve and Mooring Condition

All moorings were generally in good condition and all showed few signs of biological fouling. Thermosalinograph data at Napa River site was downloaded successfully.

General Comments

All maintenance operations were performed from the vessel *ME II* due to a scheduling conflict with the Romberg Tiburon Institute's *R/V Questuary*. All cruise objectives were met. Additionally, three gray whales, two adults & one juvenile, were observed 3/23/99, 1150, between Dumbarton Bridge and Redwood Creek stations.

Table 1. Observations of Mooring and Bivalve Condition

<u>Site Name/Code</u>	<u>Comments</u>
Coyote Creek/BA10	Zero visibility, no bio-fouling or byssal threads were observed, mooring gear in good shape.
Dumbarton Bridge/BA30	Zero visibility, no bio-fouling, a few byssal threads present, mooring gear in good shape.
Redwood Creek/BA40	Visibility 1 ft., no bio-fouling, byssal threads present, mooring gear in good shape.
Alameda/BB71	Zero visibility, very light bio-fouling, a few byssal threads present, mooring gear in good shape.
Yerba Buena Island/BC10	Zero visibility, byssal threads present, mooring gear in good shape.
Horseshoe Bay/BC21	Visibility 2 ft., no bio-fouling, byssal threads present, mooring gear in good shape.
Red Rock/BC60	Zero visibility, no bio-fouling, byssal threads present, mooring gear in good shape.
Pinole Point/BD30	Visibility 0.5 ft., moderate bio-fouling, mooring gear in good shape.
San Pablo Bay/BD20	Visibility 0.5 ft., little bio-fouling, mooring gear in good shape.
Petaluma River/BD15	Zero visibility, no bio-fouling, unsure if samples are alive, much sediment – but not appearing to cover bags at this time, mooring gear in good shape.
Davis Point/BD40	Zero visibility, little bio-fouling, mooring gear in good shape.
Napa River/BD50	Zero visibility, no bio-fouling, downloaded thermosalinograph data, both sets of mooring gear in good shape.
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.