

**Cruise Plan
Regional Monitoring Program
Bivalve Maintenance Cruise #16
March 3-5, 1997**

Objective

The objective of this cruise is:

- 1) Check and maintain bivalve moorings at 13¹ sites.

Transplanted bivalves were deployed at 13 sites from January 20-23, 1998. Deployment duration will be approximately 100 days. During this cruise, the primary objective will be the evaluation of mooring integrity by checking for abrasion of lines and security of knots and cable ties. The mesh bags containing the bivalves will be gently scrubbed with a nylon brush to remove fouling organisms. Although all cruise activities have been scheduled for three days, four days have been allocated for the cruise to allow for weather contingencies.

Personnel

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

Name	Affiliation	Duties
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

Mr. Bell will be responsible for all scientific operations and safety, Mr. Morgan will be responsible for vessel operation and safety and Messrs. Gold and Salop will alternate daily responsibilities as diver and dive tenders.

Cruise Schedule

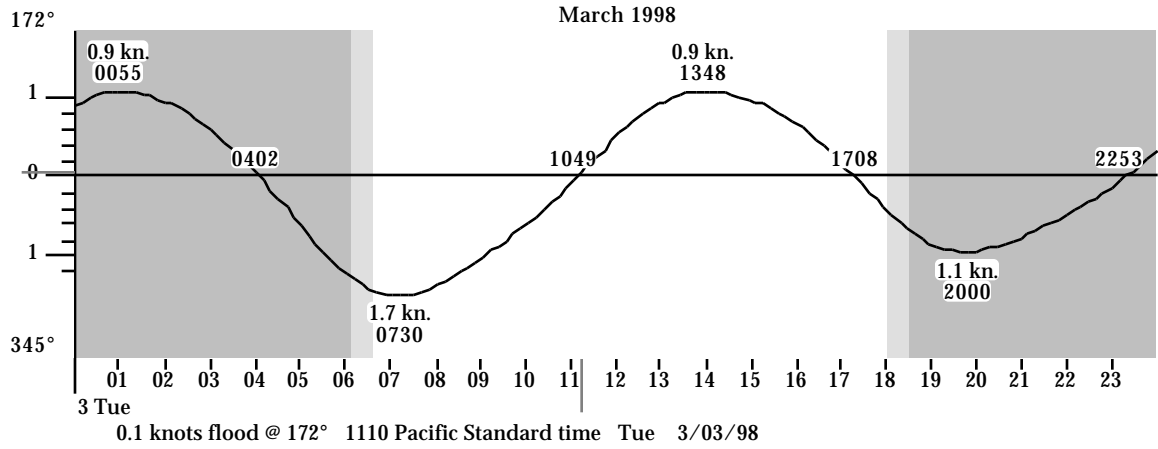
The following cruise schedule assumes that approximately 0.5 hr will be required for operations at each site. If weather or tide conditions are unfavorable for operating the *R/V Questuary* at the Davis Point station on March 4, an alternate vessel will be used on March 6 to deploy bivalves at this station.

Day 1

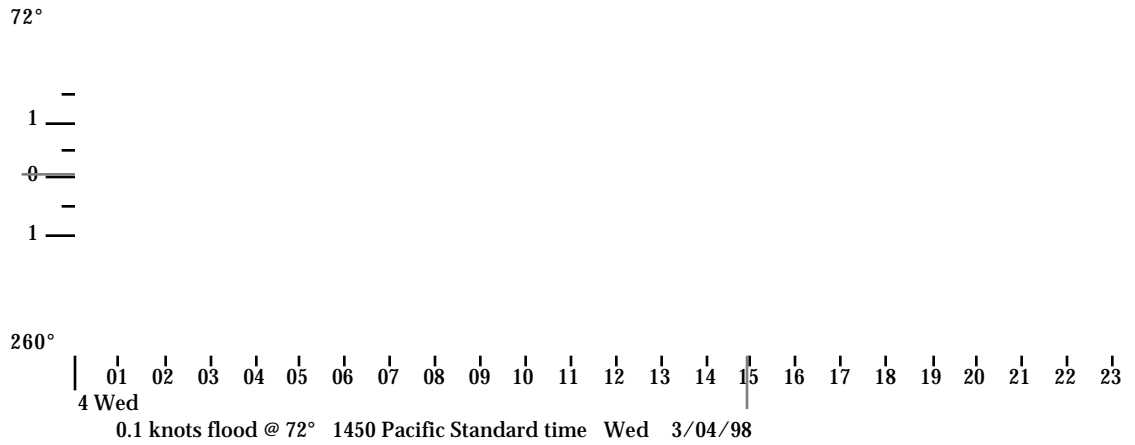
¹ Bivalves were not deployed at the Sacramento and San Joaquin River stations.

March 3, 1998	Mobilize gear at Emeryville Marina, conduct brief safety meeting aboard <i>R/V Questuary</i> , depart for Yerba Buena site.	0800-0830
	Examine and maintain moorings at Yerba Buena, Alameda, Redwood Creek, Dumbarton Bridge, and Coyote Creek. Slack water before flood at approximately 1040 and slack water before ebb at approximately 1440 at Oyster Point (Figure 1). Fuel vessel as necessary.	0830-1500
	Demobilize gear at Emeryville Marina and fill SCUBA tanks as necessary.	1500-1600
Day 2		
March 4, 1998	Mobilize gear at Emeryville Marina, conduct brief safety meeting aboard <i>R/V Questuary</i> , depart for Horseshoe Bay site.	0800-0830
	Examine and maintain moorings at Horseshoe Bay, Red Rock, Pinole Point, San Pablo Bay, Petaluma River, and Davis Point. Slack water before flood at approximately 1452 at Davis Point (Figure 2).	0830-1600
	Demobilize gear at Martinez marina and refill SCUBA tanks as necessary.	1600-1700
Day 3		
March 5, 1998	Mobilize gear at Martinez Marina, conduct brief safety meeting aboard <i>R/V Questuary</i> , depart for Grizzly Bay site.	0800-0830
	Examine and maintain moorings at Grizzly Bay and Napa River, return to Emeryville Marina. Slack water before ebb at approximately 1014 at Point Sacramento (Figure 3).	0830-1330
	Demobilize gear at Emeryville Marina, return SCUBA tanks and equipment.	1330-1500

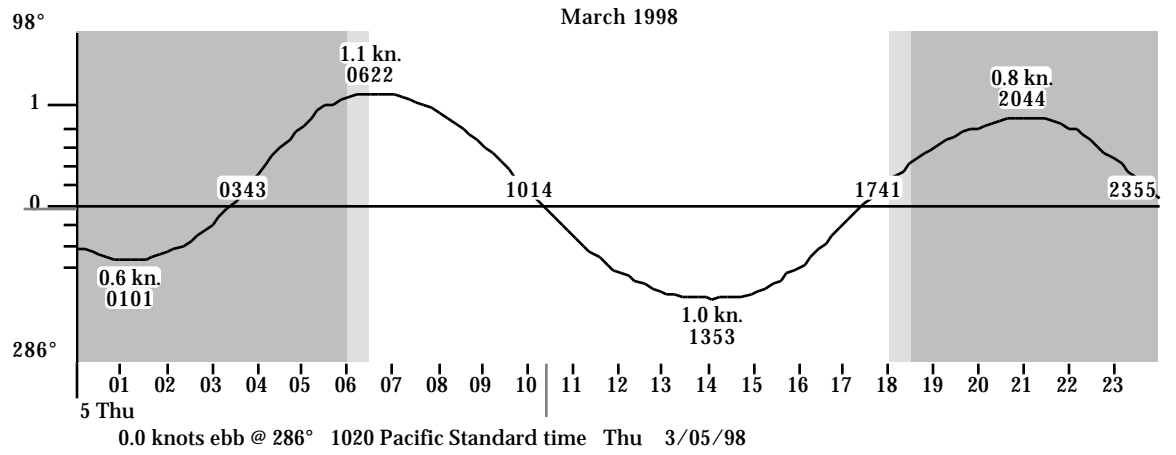
Oyster Point, 2.8 miles east of, South SAN FRANCISCO BAY Latitude: 37° 40'



Davis Point, 1.0 nmi. NW of, SAN PABLO BAY Latitude: 38° 04' N Longitude



Point Sacramento, 0.3 mile NE OF, SACRAMENTO RIVER Latitude: 38° 04'



Site Locations

The geographic coordinates for the sites are listed in Table 1.

Table 1. Coordinates of Regional Monitoring Program Bivalve Deployment

Site Name/Code	Latitude	Longitude	Comments
Coyote Creek/BA10	37° 28.19'	122° 03.83'	Channel marker "18"
Dumbarton Bridge/BA30	37° 30.80'	122° 08.08'	Channel marker "14"
Redwood Creek/BA40	37° 32.82'	122° 11.70'	Channel marker "4"
Alameda/BB71	37° 41.73'	122° 20.38'	Channel marker "1" 1.65 nmi SE of Hunters Point
Yerba Buena Island/BC10	37° 49.12'	122° 20.81'	Dolphin 0.1 nmi N of Bay Bridge
Horseshoe Bay/BC21	37° 49.87'	122° 28.65'	Dolphin 100 ft W of fishing pier
Red Rock/BC61	37° 55.70'	122° 28.13'	Channel marker "2" for Larkspur ferry terminal
Pinole Point/BD30	38° 01.00'	122° 22.05'	Channel marker "P"
San Pablo Bay/BD20	38° 02.72'	122° 25.71'	Channel marker "1"
Petaluma River/BD15	38° 06.77'	122° 30.05'	NE end of railroad bridge
Davis Point/BD40	38° 03.26'	122° 15'.63	E side of UNOCAL loading dock
Napa River/BD50	38° 04.84'	122° 14.82'	Mare Island Strait adjacent to General Foods facility, 0.7 nmi from channel marker "2"
Grizzly Bay/BF20	38° 06.49'	122° 03.37'	Channel marker "9" 1.0 nmi NW of Garnet Point
Sacramento River/BG20	-NA-	-NA-	Channel marker "8" N of Sherman Island
San Joaquin River/BG30	-NA-	-NA-	Channel marker "8" 0.75 nmi E of Antioch Marina

Bivalve Deployments

Bivalves deployed at each site during the January 20-23 cruise are indicated in Table 2.

Table 2. Bivalve deployment from January 28-31, 1997.

Site Name/Code	Deployment Date	Species Deployed	Quantity Deployed
Coyote Creek/BA10	1/21/98	CGIG	156
Dumbarton Bridge/BA30	1/21/98	MCAL	160
Redwood Creek/BA40	1/21/98	MCAL	160
Alameda/BB71	1/21/98	MCAL	160
Yerba Buena Island/BC10	1/21/98	MCAL	160
Horseshoe Bay/BC21	1/21/98	MCAL	160
Red Rock/BC61	1/22/98	MCAL	160
Pinole Point/BD30	1/22/98	MCAL	160
		CGIG	117
San Pablo Bay/BD20	1/22/98	CGIG	117
Petaluma River/BD15	1/22/98	CGIG	117
Davis Point/BD40	1/20/98	CGIG	156
Napa River/BD50	1/23/98	CGIG	117
Grizzly Bay/BF20	1/23/98	CFLU	80
Sacramento River/BG20	-NA-	-NA-	0
San Joaquin River/BG30	-NA-	-NA-	0