Diablo Canyon Power Plant

NPDES Receiving Water Monitoring Program: 2004 Annual Report

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Table of Contents

List of Tables ii
List of Figures ii
1.0 Introduction 1
2.0 Temperature Monitoring 3
3.0 Intertidal Algae and Invertebrates 5
4.0 Intertidal Fishes 7
5.0 Subtidal Algae and Invertebrates 8
5.1 Benthic Algae and Invertebrates 8
5.2 Surface Canopy Kelps 10
6.0 Subtidal Fishes 12
7.0 Literature Cited 14
RWMP Project Personnel 15

Appendix A Subtidal Temperatures
Appendix B Intertidal Temperatures
Appendix C Intertidal Algae and Invertebrate Results (HBT Method)
Appendix D Intertidal Fish Results (VBT Method)
Appendix E Subtidal Invertebrate and Kelp Results (SAQ Method)
Appendix F Subtidal Algae Results (SLC Method)
Appendix G Subtidal Invertebrate Results (SFQ Method)
Appendix H Subtidal Fish Results (SFO Method)

List of Tables

Table 1. Tasks, stations, and frequency of surveys for the DCPP Receiving Water Monitoring Program, 2004. 1

List of Figures

Figure 1. Location of the Diablo Canyon Power Plant. 2

Figure 2. Locations of intertidal temperature monitoring stations. 4

Figure 3. Locations of subtidal temperature monitoring stations. 4

Figure 4. Horizontal band transect stations. 5

Figure 5. Vertical band transect stations. 7

Figure 6. Subtidal benthic stations and habitat-forming kelp survey area in Diablo Cove 9

Figure 7. Map of surface kelp in Diablo Cove from the habitat-forming kelp survey completed in October 2004. 11

1.0 Introduction

Monitoring of the marine environment near the Diablo Canyon Power Plant (DCPP) is required by National Pollutant Discharge Elimination System (NPDES) Permit Order No. 90-09 as revised in a letter from the Central Coast Regional Water Quality Control Board in December 1998. Changes in the marine environment in the vicinity of DCPP (**Figure 1**) are monitored by the Receiving Water Monitoring Program (RWMP) in accordance with the NPDES Permit.

This report presents water temperature and biological data collected from January 2004 through February 2005 from the program's intertidal and subtidal monitoring tasks (**Table 1**). Delays in the fourth quarter 2004 subtidal sampling were caused by unusually rough sea conditions that extended the sampling into 2005. The report sections are divided according to the program's individual study tasks. Sampling methods for the intertidal and subtidal studies are followed by the results for the surveys. This report is mainly a data presentation, and does not include any analysis or discussion of results. Most results are presented in the accompanying appendices. Comprehensive analyses of changes in the marine environment resulting from the DCPP discharge have been presented in Tenera (1988, 1997, 1999a, 1999b and 2002; *see Section 7.0 – References*).

Table 1. Tasks, stations, and frequency of surveys for the DCPP Receiving Water Monitoring Program, 2004.

Task and Sampling Frequency	Stations
Temperature Monitoring (continuous readings every 20 min)	
Intertidal	NC 2, FC 1, FC 2, FC 3, NDC 1, NDC 2, NDC 3, SDC 1, SDC 2, SDC 3, SDP 1, SDP 2, SC 1, and SC 1-V
Subtidal	NC 1 -3m, FC 1 -3m, NDC 2 -3m, NDC 3 -3m, NDC 4 -4m, SDC 1 -3m, SDC 4 -4m, SC 1 -3m, and SC 2 -6m
Intertidal Horizontal Band Transects (algae, invertebrates, substrate)	
4 surveys per year	NC 1, NC 2, FC 1, FC 2, FC 3, NDC 1, NDC 2, NDC 3, SDC 1, SDC 2, SDC 3, SDP 1, SDP 2, and SC 1
Intertidal Vertical Band Transects (fishes)	
4 surveys per year	NC-1V, FC-1V, NDC-1V, SDC-2V, and SC-1V
Subtidal Benthic Stations (algae, invertebrates, substrate)	
4 surveys per year	FC 1 -3m, NDC 2 -3m, NDC 3 -3m, NDC 4 -4m, SDC 2 -3m, SDC 3 -4m, SC 1 -3m, and SC 2 -6m
Subtidal Fish Observations (fishes)	
4 surveys per year	FC FO-1, FC FO-2, FC FO-3, NDC FO-1, NDC FO-2, NDC FO-3, SDC FO-1, SDC FO-2, SDC FO-3; SC FO-1, SC FO-2, and SC FO-3
Habitat-Forming Kelp Survey (bull kelp, giant kelp)	
1 survey per year	Diablo Cove

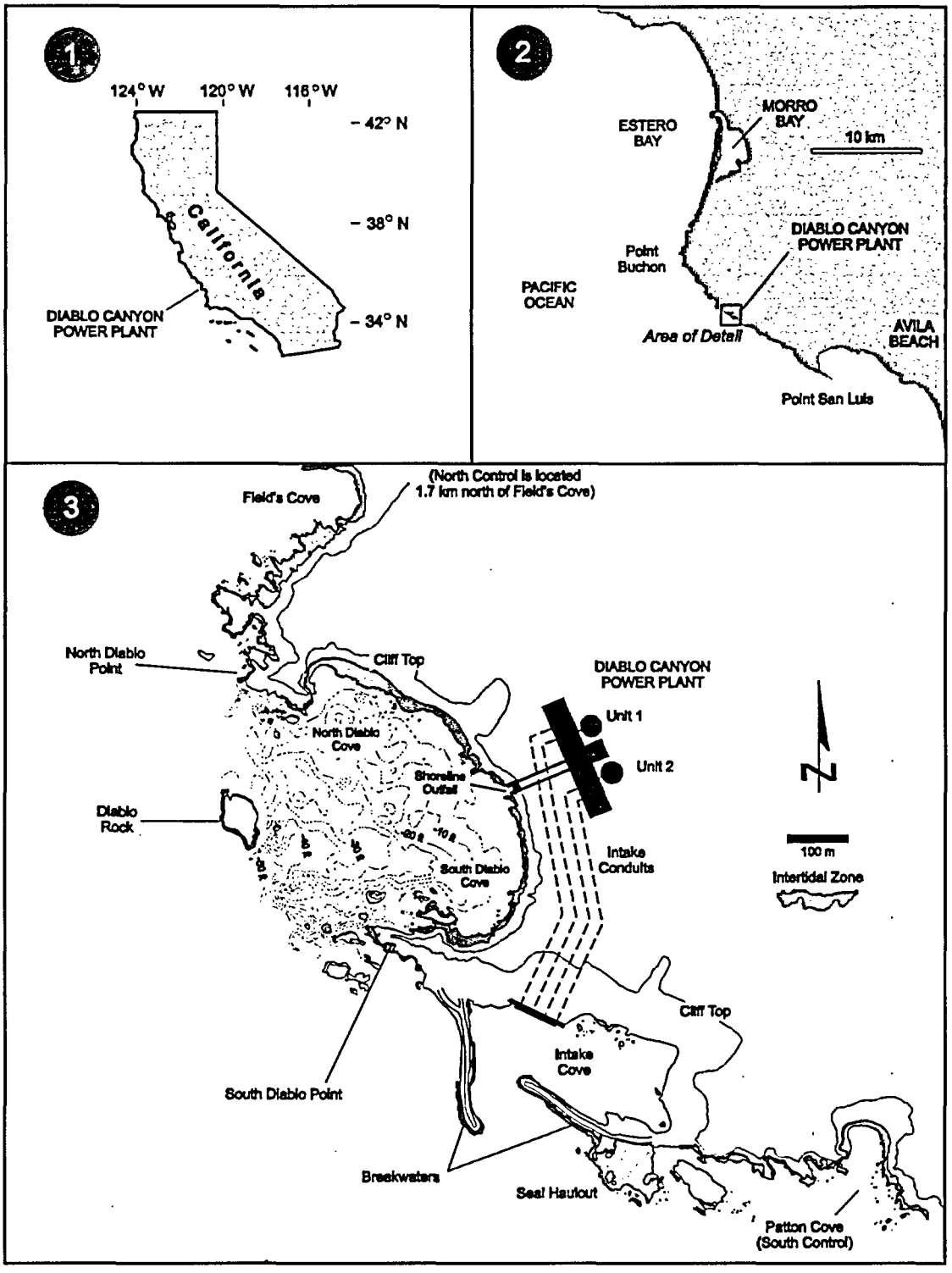

Figure 1. Location of the Diablo Canyon Power Plant.

2.0 Temperature Monitoring

Intertidal and subtidal seawater temperatures were recorded at permanent stations located along the Diablo Canyon coastline. Temperature units at intertidal stations were located along the rocky shore at the +0.6 m mean lower low water (MLLW) elevation (**Figure 2**). Subtidal temperature recorders were located at depths from -3 to -6 m MLLW (**Figure 3**). The naming designation of individual subtidal stations reflects the area location and number, followed by the station depth relative to MLLW (e.g., NDC 1 -3m is North Diablo Cove subtidal station 1 at a depth of -3 m MLLW).

The following 13 stations were nearest to the point of discharge in Diablo Cove, and were contacted regularly by the discharge plume:

Intertidal: NDC-1, NDC-2, NDC-3, SDC-1, SDC-2, SDC-3, SDP-1, and SDP-2.

Subtidal: NDC 2 -3m, NDC 3 -3m, NDC 4 -4m, SDC 1 -3m, and SDC 4 -4m.

The following four stations were located in Field's Cove, approximately one kilometer upcoast from Diablo Cove and contacted intermittently by the thermal plume:

Intertidal: FC-1, FC-2, and FC-3.

Subtidal: FC 1 -3m.

The following six control stations measured ambient ocean temperatures at sites beyond the influence of the discharge:

Intertidal: NC-2, SC-1, and SC-1V.

Subtidal: NC 1 -3m, SC 1 -3m, and SC 2 -6m.

Each instrument synchronously logged temperatures every 20 minutes throughout its deployment period. Instrument precision was 0.01°C with an accuracy of ± 0.2°C. Temperature units were deployed at a station for approximately 60 days and then exchanged with a serviced, calibrated unit. Intertidal temperature units recorded air temperatures when tidal levels receded below about +0.6 m MLLW. Air temperatures recorded by the intertidal temperature units were identified and removed from the database by referencing tidal height measurements that were calculated as the average tidal height from local NOAA tide stations at Morro Bay to the north and Port San Luis to the south.

Results

Results for all subtidal and intertidal temperature recording stations are presented in **Appendix A** and **Appendix B**

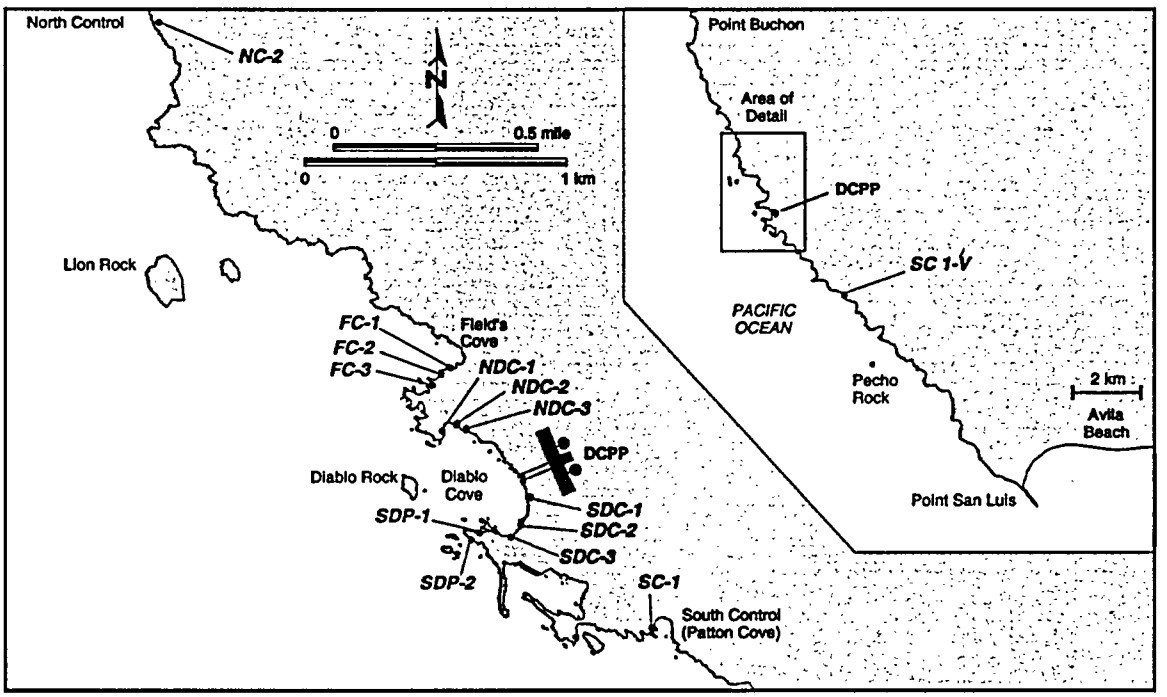

Figure 2. Locations of intertidal temperature monitoring stations.

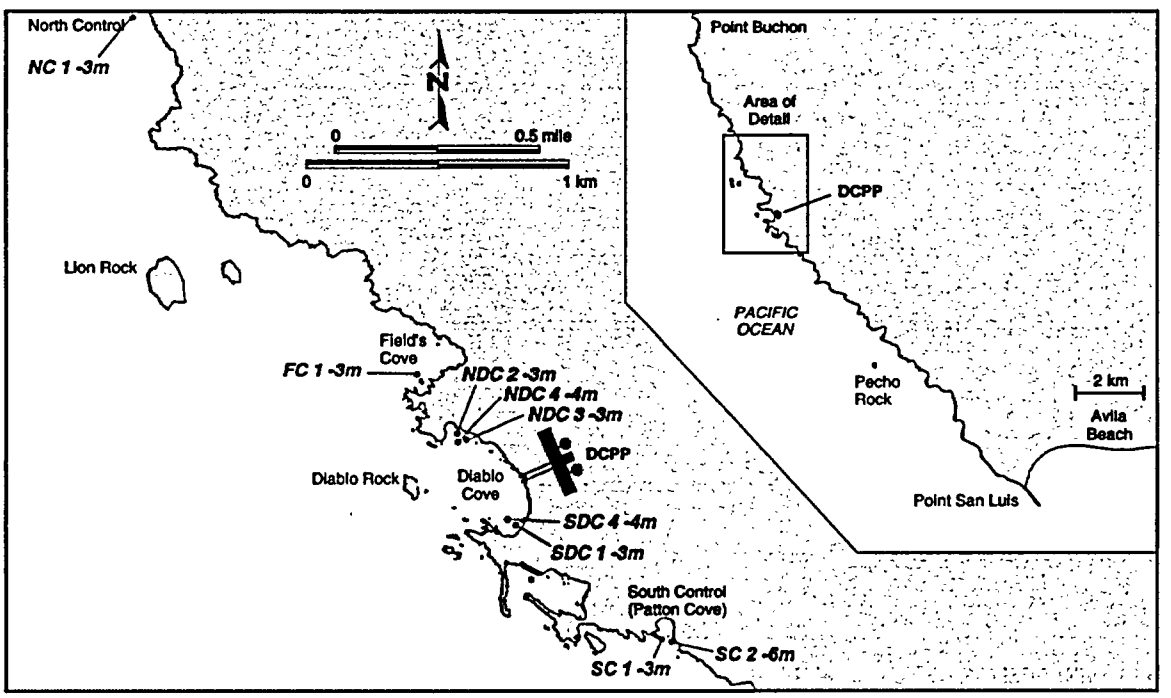

Figure 3. Locations of subtidal temperature monitoring stations.

3.0 Intertidal Algae and Invertebrates

Intertidal algae and invertebrates were sampled using the horizontal band transect (HBT) sampling method at the locations shown in **Figure 4**. Most HBT stations consisted of two 30 m long transects oriented parallel to the waterline, one at the +0.9 m (+3 ft) MLLW tide level and the other at the +0.3 m (+1 ft) MLLW tide level. Only one transect at the +0.9 m (3 ft) MLLW tide level was sampled at stations SDP-1 and SDP-2. The sampling area of each transect consisted of ten 1 m^2 fixed quadrats. Stations were mainly on bedrock and boulders, but various amounts of cobble and sand also occurred at the stations. The substrate at the +0.9 m MLLW level at Station SDC-1 near the discharge was mainly barren cobble. Therefore, the upper transect at that station was located lower at the +0.6 m MLLW tide level where the intertidal biota was more abundant.

Visual estimates of percent cover were made for all algal species and bare substrate. Overstory species were sampled first for coverage estimates, and then the overstory branches and blades were moved aside to allow estimates of understory and crustose species cover. Species with less than one percent cover were recorded as "present" on the data sheet. Total algal cover plus bare substrate cover almost always exceeded 100 percent in a quadrat due to layering of multiple algal taxa on the rocks.

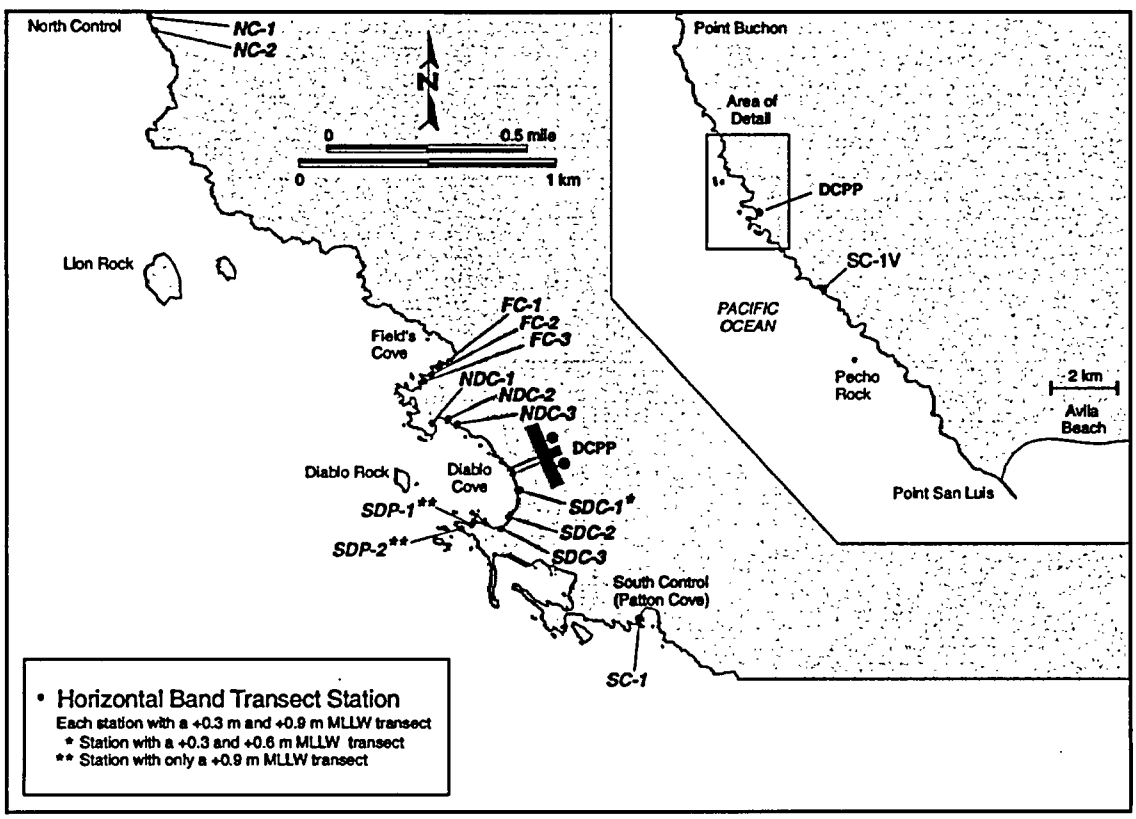

Figure 4. Horizontal band transect stations

Intertidal invertebrates were sampled in the same quadrats as the algae. In five of the ten quadrats, all species were recorded as either present or absent, and individuals larger than 2.5 cm in greatest dimension were counted. In the remaining five quadrats ('count quadrats'), the same method was used except that select species of invertebrates were counted regardless of size. The percent cover of sessile invertebrates, such as sponges and tunicates, was estimated using the same methods used for the algae. All algae and invertebrates were identified to the lowest taxonomic level practical. All sizes of black abalone were counted within these ten quadrats and within an additional five quadrats on the transect. The additional five quadrats had been sampled for algae and invertebrates during historical surveys in the 1980s, but are now retained only for providing additional replicate quadrats for sampling intertidal abalone.

Results

The survey mean and standard deviation for each taxon at each transect level for the four surveys completed during the year are presented in **Appendix C**. The mean for the entire year across the four surveys was also calculated and presented. Survey statistics for algae and substrates are calculated from all ten quadrats along a transect, while statistics for the invertebrates are calculated from the data for the five 'count' quadrats. If a taxon was only recorded as present in a quadrat, its abundance was given a value of 0.000001 for calculating summary statistics.

4.0 Intertidal Fishes

Intertidal fishes were sampled using the Vertical Band Transect (VBT) sampling method. At each of five stations (**Figure 5**), three fixed transects were positioned perpendicular to the shoreline at fixed locations. Each transect originated in the high intertidal zone (approximately +1.5 m MLLW) and terminated in the low intertidal zone (approximately -0.2 m MLLW). Transects at each station were separated by approximately 3 m. Each transect was used as a reference line to position twelve 1 m^2 permanent sampling quadrats, for a total of thirty-six 1 m^2 quadrats per station. Moveable rocks were carefully lifted and any fishes seen were captured in small hand nets. Foliose algae were also searched for cryptic fishes. Fishes were identified to the lowest practical taxonomic level, measured, and returned to the quadrat. Newly settled juvenile fishes were not identified to the species level but were grouped into composite taxa (e.g., Pholid/Stichaeid, *Anoplarchus/Cebidichthys*).

Results

The total numbers of fishes of each taxon observed throughout the surveys at each station during the four surveys completed during the year are presented in **Appendix D.** The tables also show the annual mean abundance and standard deviation for each taxon.

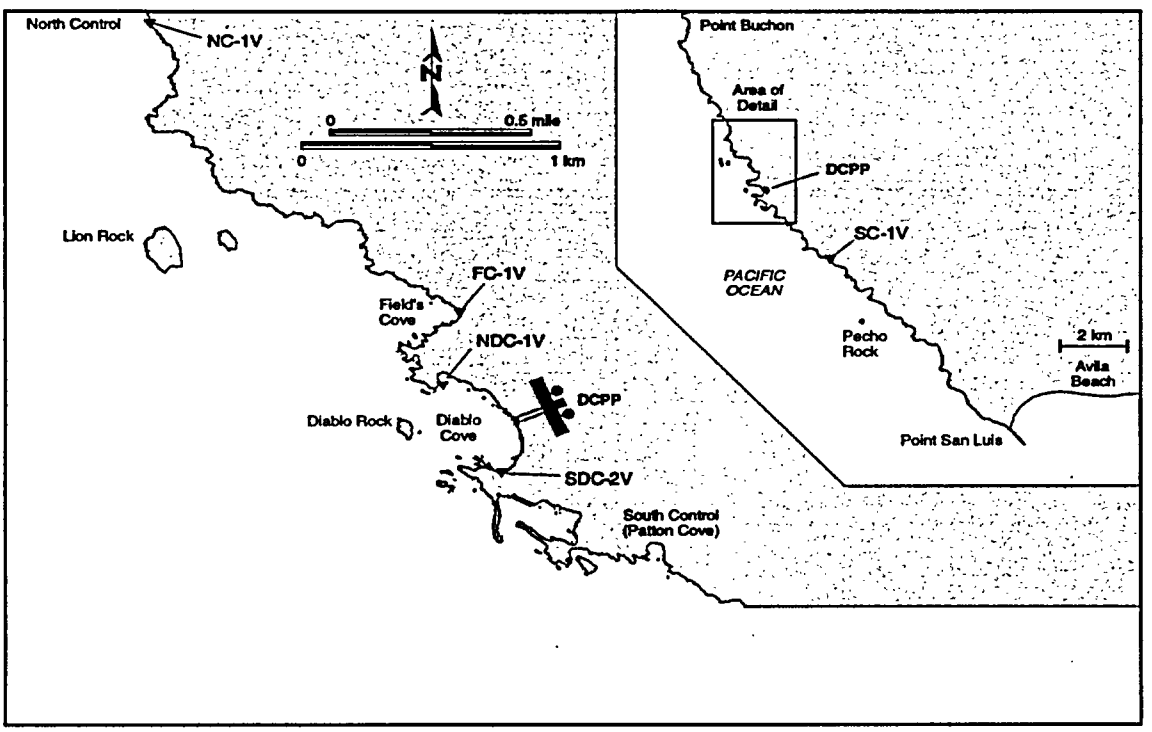

Figure 5. Vertical band transect stations.

5.0 Subtidal Algae and Invertebrates

5.1 Benthic Algae and Invertebrates

There are eight permanent subtidal benthic sampling stations located in depths ranging from -3 m to -6 m (-10 ft to -20 ft) MLLW (**Figure 6**). Two control stations were located in Patton Cove, beyond the range of thermal discharges from DCPP, while the remaining six stations received varying amounts of heat influence from the discharge. Stations were circular with a radius of 3.15 m and a sampling area of 28.0 m^2. The center 3.1 m^2 of each station, which contained a railcar mooring wheel, was not sampled in order to avoid any unnatural algal and invertebrate growth associated with the mooring. Each station was divided into four equal sections, or 'arc quadrants', 7.0 m^2 in area. All stations were established primarily on substrates of mixed bedrock and boulders with small amounts of cobble and sand.

Benthic algae and invertebrates were sampled by divers using three sampling methods at each fixed station. In the first method, individual species of kelp (brown algae of the order Laminariales and Fucales) and macroinvertebrates were counted in each subtidal arc quadrant (SAQ sampling method). Kelp plants and individuals of select invertebrate taxa were counted regardless of their size. Individuals of other non-encrusting invertebrates were counted if they were larger than 2.5 cm (length or width). Juvenile kelp plants that could not be identified to the species level were counted and recorded as 'Laminariales.' A few common species that generally occurred in numbers too high to accurately count were sampled only in the first one-third (2.33 m^2) of each quadrant, and abundances multiplied by three to provide an estimated abundance for the entire quadrant.

In the second sampling method, all understory algal species were quantified at the stations as percent cover using a random point contact (RPC) sampling method. A radius line with ten points positioned at decreasing intervals toward the station perimeter was attached to the center of the station and used to locate sampling loci in each quadrant. Fifty points within each quadrant, for a total of 200 points per station, were randomly selected before sampling using a random number table. For each survey the same unique set of random points were used at all stations. The presence of all algal species, sessile invertebrates, and substrates observed directly under the points was recorded. Holdfasts of kelp species were also included when contacted by the sample points. Percent cover of the understory algae was calculated by dividing the number of 'contacts' by the number of points sampled. Species were identified to the lowest taxonomic level practical. Unknown taxa were collected outside the sampling area, if possible, and returned to the laboratory for identification.

In the third method, invertebrates were sampled using the subtidal fixed quadrat (SFQ) method in four circular quadrats, each with an area of 0.25 m^2, at fixed locations within each subtidal station. The method quantified the species composition and abundance of all invertebrate taxa regardless of size. A fixed quadrat was located within each of the four SAQ quadrants at a subtidal station, generally on bedrock or boulder substrate. Depending upon the degree of topographical relief, two quadrats were located on horizontal-aspect substrate and two quadrats were located on vertical-aspect substrate. All non-encrusting taxa were identified and counted, and the coverage of encrusting taxa (e.g., colonial/social tunicates) was quantified in square centimeters if the total equaled or exceeded 6.5 square centimeters (1 square inch), or was recorded as "present" if coverage was less.

Results

The survey mean and standard deviation for each taxon at each station from the four surveys completed during the year are presented in **Appendices E** (SAQ), **F** (SLC), and **G** (SFQ). The means are based on the data from the four quadrats or quadrants at each station. The tables also show the mean taxa abundances for all the surveys by station. (The fourth quarterly survey extended into early February 2005, but was included in the 2004 data set). If an algal taxon was recorded as only present in the RPC study, with no numeric value, it was given a value of 0.000001 for calculating statistics for the station.

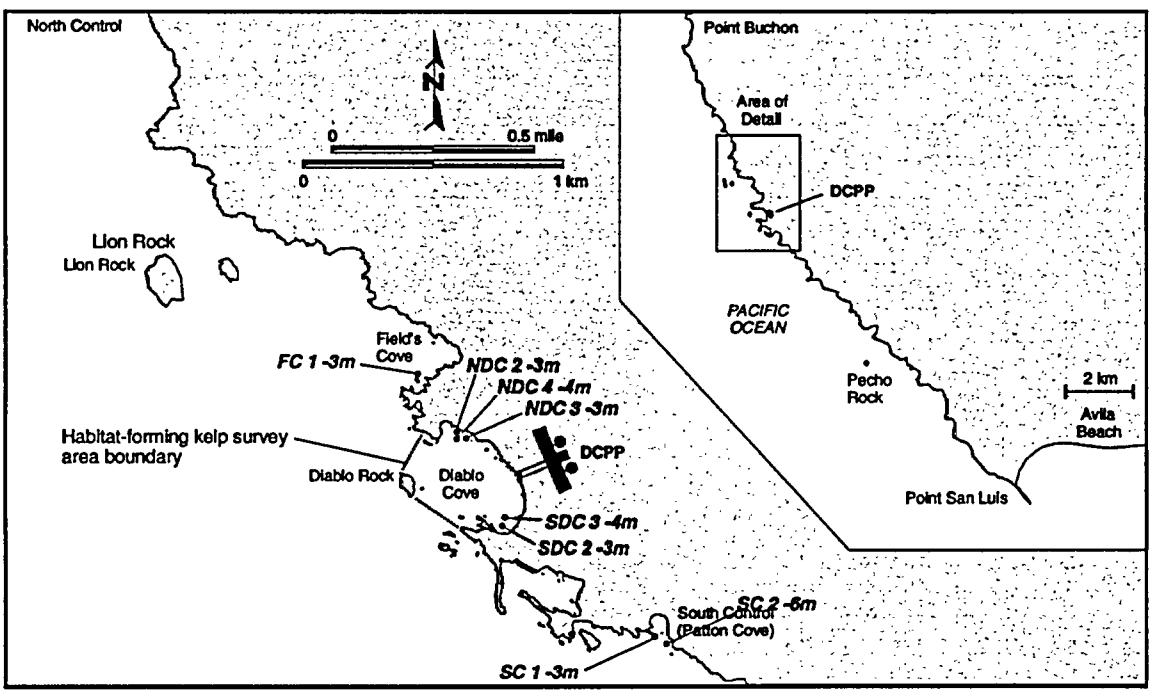

Figure 6. Subtidal benthic stations and habitat-forming kelp survey area in Diablo Cove

5.2 Surface Canopy Kelps

Hand drawn maps of surface kelp canopies in Diablo Cove were used to document the distribution and abundance of surface canopy-forming kelp species outside the fixed benthic stations. Near the end of the annual growth cycle in October, nearly all bull kelp plants have reached the surface and can be counted. Two observers at the headland of north Diablo Cove and two observers at the headland of south Diablo Cove (south Diablo Point) were used to count and map the extent of bull kelp plants and giant kelp canopies. The occurrence of bull kelp plants with bare bulbs, indicating early senescence in plants, are also noted when possible.

Results

The annual habitat-forming kelp survey for *Nereocystis luetkeana* (bull kelp) and *Macrocystis pyrifera* (giant kelp) was done on October 27, 2004 for North and South Diablo Cove. No bull kelp was observed in Diablo Cove during the survey. The distribution of giant kelp surface canopy in Diablo Cove is shown in **Figure 7**. There are no appendix figures or data tables presented for this task.

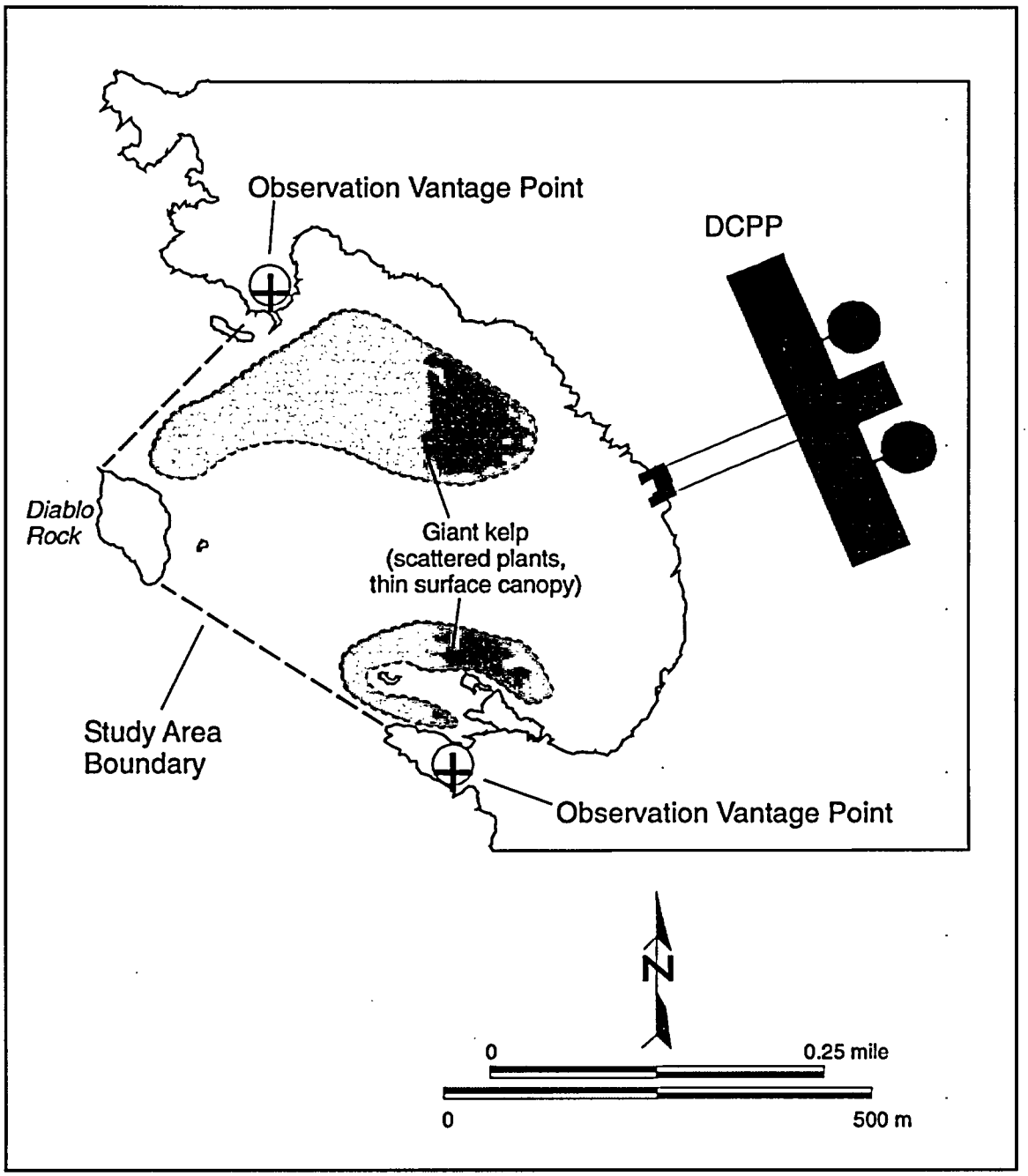

Figure 7. Map of surface kelp in Diablo Cove from the habitat-forming kelp survey completed in October 2004.

6.0 Subtidal Fishes

Visual counts of fishes were conducted by divers at 12 fixed subtidal stations located within and outside of the thermal discharge area (**Figure 8**). Each station consisted of a benthic transect 50 m long by 4 m wide by 1 m above the bottom, and a 50 m long by 4 m diameter midwater transect located above and parallel to the benthic transect. A station was sampled by first deploying a fiberglass measuring tape to mark the benthic transect centerline, beginning at a permanent station buoy and extending 50 m away from the buoy along a pre-determined compass course. Some transects crossed each other in the same area because some were positioned parallel to depth contours, and others were positioned perpendicular to depth contours. The area common to both transects in these cases was approximately 2%. This small overlap did not affect the data summaries because the numbers of fish counted were averaged by area, and the mobility of most fish added to the independence of transects.

A survey team consisted of two divers, each counting fish along the benthic and midwater portions of a transect independently, but in opposite directions. This sampling technique allowed a more thorough inspection of potential fish habitats from all angles of view than would have been possible by a single diver progressing along a transect in only one direction. Fish were identified to species if possible, but juveniles of some species with similar appearances were combined into broader categories.

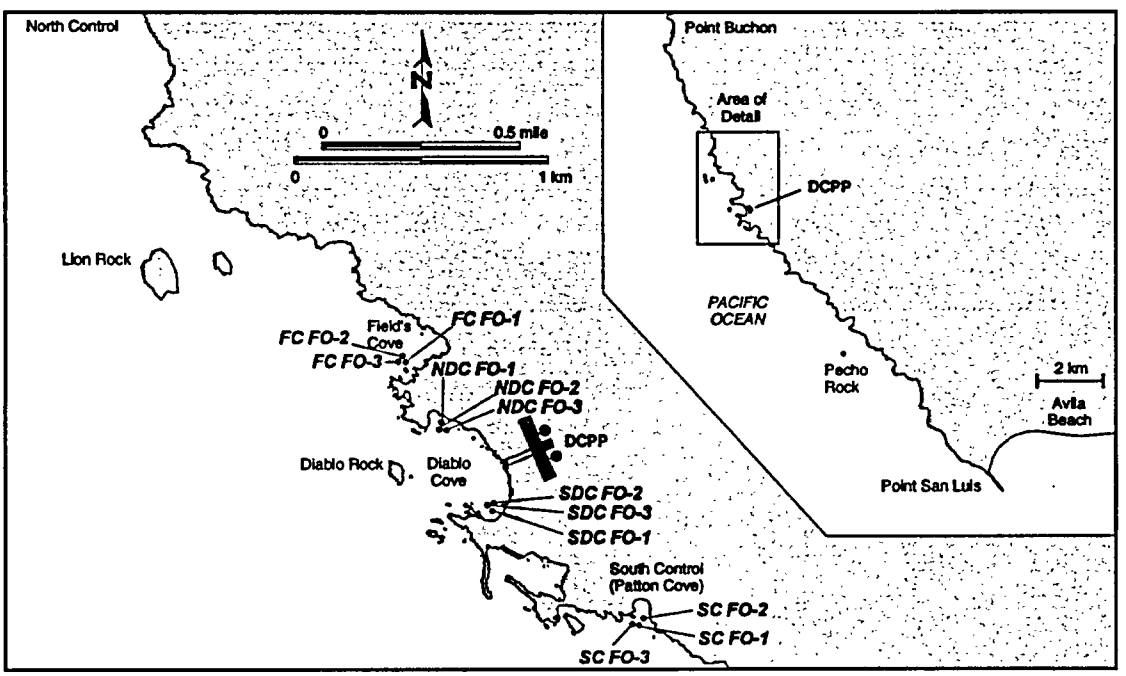

Figure 8. Subtidal fish observation transects.

The resulting survey data were the combined species counts of both divers, divided by two. This yielded an average count for each taxon per 50 m benthic or midwater transect. During each survey, the stations were usually sampled a second time within approximately one to two weeks of the initial sampling effort, unless adverse sea conditions precluded a second replicate. Replicate transects were pooled by survey and area. The areas were Field's Cove, north Diablo Cove, south Diablo Cove, and South Control.

Results

The survey mean and standard deviation for each taxon within each sampling area from the four surveys completed during the year are presented in **Appendix H.** The dates shown for the surveys represent the average date among the stations and replicates sampled in each area. The means are based on the data from the three transects within each area. The tables also show the overall mean for the entire year. Data for the fourth quarter 2004 were incomplete due to poor diving conditions associated with unusually rough sea conditions that prevented completion of the survey.

7.0 Literature Cited

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Tenera, Inc. 2002. Diablo Canyon Power Plant, Receiving Water Monitoring Program – 1995-2002 Analysis Report. Pacific Gas and Electric Company, San Francisco, CA.

RWMP Project Personnel

Key Project Personnel 2004 (Tenera Environmental):

Principal Investigator/ Project Manager:	Mr. John Steinbeck
Project Scientists:	Mr. Ernesto Calix Mr. Jay Carroll Mr. Joel Carter Mr. Gery Cox Mr. Chris Ehrler Mr. Andrew Harmer Mr. Scott Kimura Mr. Steve Pengilley Ms. Shelly Peters Mr. Jim Strampe
Project Staff:	Ms. Susan Helberg

Program Manager (PG&E) Mr. Jim Kelly

Appendix A

Subtidal Temperatures

Table A1. Monthly Statistical Summary of Subtidal Temperature (°C) Data, January – December 2004, North Control Station NC 1 -3m.

Month	Max	Min	Mean	Std. Dev	Sum	Sum SQ	N
Station: NC 1 -3m							
Jan	13.95	11.35	12.62	0.41	28,176	356,070	2,232
Feb	13.02	10.70	11.99	0.46	25,030	300,485	2,088
Mar	14.63	10.23	12.21	0.90	27,264	334,826	2,232
Apr	13.23	10.05	11.40	0.65	24,625	281,638	2,160
May	14.18	9.85	11.81	0.92	26,358	313,161	2,232
Jun	14.60	10.05	11.78	1.05	25,451	302,259	2,160
Jul	16.00	11.85	14.10	0.76	31,478	445,235	2,232
Aug	16.60	12.93	14.60	0.87	32,583	477,328	2,232
Sep	17.30	12.40	14.84	1.13	32,055	478,456	2,160
Oct	17.35	11.35	14.82	1.27	33,069	493,536	2,232
Nov	15.73	11.93	14.04	0.97	30,332	427,979	2,160
Dec	14.95	11.70	13.72	0.69	29,640	407,577	2,161

Table A2. Monthly Statistical Summary of Subtidal Temperature (°C) Data, January – December 2004, Field's Cove Station FC 1 -3m.

Month	Max	Min	Mean	Std. Dev	Sum	Sum SQ	N
Station: FC 1 -3m							
Jan	15.25	11.35	13.51	0.68	30,152	408,361	2,232
Feb	14.27	11.20	12.55	0.54	26,208	329,578	2,088
Mar	15.20	10.15	12.68	1.19	28,312	362,273	2,232
Apr	13.40	10.05	11.46	0.67	24,763	284,866	2,160
May	13.85	9.70	11.65	0.86	26,003	304,585	2,232
Jun	15.73	9.88	12.22	1.37	26,392	326,536	2,160
Jul	16.55	12.10	14.72	0.83	32,855	485,185	2,232
Aug	17.70	13.45	15.38	0.99	34,331	530,238	2,232
Sep	18.77	12.50	15.78	1.17	34,093	541,058	2,160
Oct	18.80	11.90	15.91	1.41	35,506	569,274	2,232
Nov	17.13	12.80	14.89	0.98	32,168	481,164	2,160
Dec	17.30	12.82	14.58	0.76	32,536	475,544	2,232

Table A3. Monthly Statistical Summary of Subtidal Temperature (°C) Data, January – December 2004, North Diablo Cove Stations NDC 2 -3m, NDC 3 -3m, and NDC 4 -4m.

Month	Max	Min	Mean	Std. Dev	Sum	Sum SQ	N
Station: NDC 2 -3m							
Jan	20.90	11.68	16.64	1.94	37,144	626,537	2,232
Feb	20.50	11.38	15.63	2.00	32,641	518,657	2,088
Mar	20.27	10.23	15.70	2.08	35,042	559,765	2,232
Apr	22.42	10.20	16.30	2.60	35,211	588,558	2,160
May	22.08	11.00	14.97	2.20	33,363	510,138	2,229
Jun	21.58	10.10	16.02	2.66	34,609	569,827	2,160
Jul	23.85	13.68	18.37	1.97	41,009	762,106	2,232
Aug	23.10	14.85	18.54	1.75	41,391	774,392	2,232
Sep	23.20	14.63	18.69	1.29	40,364	757,857	2,160
Oct	24.58	12.70	18.95	2.01	42,288	810,221	2,232
Nov	23.40	12.73	17.96	1.89	38,804	704,813	2,160
Dec	22.77	13.00	17.67	2.03	38,184	683,646	2,161
Station: NDC 3 -3m							
Jan	21.75	11.98	17.06	1.92	38,068	657,538	2,232
Feb	22.55	11.50	16.11	2.15	33,637	551,560	2,088
Mar	20.27	10.25	15.89	2.03	35,473	573,000	2,232
Apr	22.65	10.25	16.31	2.61	35,231	589,315	2,160
May	22.58	10.85	14.91	2.32	33,282	508,258	2,232
Jun	21.38	10.07	15.82	2.57	34,167	554,736	2,160
Jul	23.52	13.55	17.92	2.13	40,006	727,135	2,232
Aug	23.38	14.13	18.08	2.07	40,364	739,486	2,232
Sep	22.73	14.57	18.59	1.29	40,153	750,016	2,160
Oct	24.98	13.25	18.90	2.06	42,186	806,854	2,232
Nov	23.83	12.77	17.96	2.02	38,793	705,477	2,160
Dec	23.73	13.05	17.93	2.17	38,757	705,232	2,161
Station: NDC 4 -4m							
Jan	20.98	11.77	16.57	1.91	36,975	620,645	2,232
Feb	20.42	11.13	15.57	1.93	32,520	514,301	2,088
Mar	20.08	10.15	15.42	2.08	34,424	540,554	2,232
Apr	21.92	10.20	15.15	2.40	32,719	508,057	2,160
May	21.60	10.70	14.16	1.94	31,603	455,890	2,232
Jun	20.88	10.02	14.97	2.35	32,346	496,254	2,160
Jul	23.02	12.38	16.85	2.15	37,606	643,956	2,232
Aug	22.90	12.77	17.04	2.28	38,035	659,786	2,232
Sep	21.98	14.48	17.90	1.33	38,665	695,974	2,160
Oct	24.42	12.27	18.14	2.03	40,480	743,387	2,232
Nov	22.77	12.88	17.14	1.81	37,020	641,605	2,160
Dec	23.27	13.05	17.52	2.02	37,866	672,262	2,161

Table A4. Monthly Statistical Summary of Subtidal Temperature (°C) Data, January – December 2004, South Diablo Cove Stations SDC 1-3m and SDC 4-4m.

Month	Max	Min	Mean	Std. Dev	Sum	Sum SQ	N
Station: SDC 1-3m							
Jan	23.23	13.10	16.50	1.89	36,834	615,843	2,232
Feb	23.23	11.82	16.00	2.04	33,412	543,390	2,088
Mar	22.70	10.57	15.67	2.07	34,984	557,856	2,232
Apr	22.50	10.80	15.34	2.47	33,136	521,544	2,160
May	20.95	10.40	15.33	2.57	34,215	539,251	2,232
Jun	22.83	12.10	16.33	2.43	35,278	588,936	2,160
Jul	23.85	11.73	16.13	2.80	36,007	598,386	2,232
Aug	24.65	12.23	15.90	2.74	35,495	581,237	2,232
Sep	22.10	12.63	16.32	1.87	35,257	583,016	2,160
Oct	24.80	13.13	17.23	2.32	38,456	674,600	2,232
Nov	22.95	12.95	16.64	1.95	35,952	606,602	2,160
Dec	24.70	13.35	16.54	1.84	35,745	598,534	2,161
Station: SDC 4-4m							
Jan	23.05	12.10	15.32	2.10	34,190	533,581	2,232
Feb	22.95	10.65	15.05	2.27	31,417	483,440	2,088
Mar	21.38	10.50	14.04	1.93	31,347	448,515	2,232
Apr	18.83	10.27	13.39	1.99	28,933	396,145	2,160
May	19.45	10.10	13.03	2.15	29,082	389,201	2,232
Jun	19.85	10.25	13.70	2.24	29,588	416,125	2,160
Jul	21.70	11.00	13.81	2.08	30,816	435,081	2,232
Aug	22.77	11.30	13.92	2.11	31,073	442,511	2,232
Sep	20.75	11.27	14.44	1.54	31,185	455,385	2,160
Oct	21.73	12.23	15.74	2.11	35,131	562,937	2,232
Nov	19.98	12.63	15.23	1.48	32,894	505,675	2,160
Dec	22.33	12.95	15.69	1.62	33,911	537,833	2,161

Table A5. Monthly Statistical Summary of Subtidal Temperature (°C) Data, January – December 2004, South Control Cove Stations SC 1 -3m and SC 2 -6m.

Month	Max	Min	Mean	Std. Dev	Sum	Sum SQ	N
Station: SC 1 -3m							
Jan	13.50	11.15	12.55	0.33	28,011	351,774	2,232
Feb	12.82	10.73	11.87	0.44	24,778	294,450	2,088
Mar	13.77	10.10	12.00	0.84	26,778	322,866	2,232
Apr	12.82	9.90	11.17	0.57	24,119	270,022	2,160
May	13.90	9.55	11.13	0.77	24,832	277,616	2,232
Jun	15.00	9.73	11.51	1.11	24,872	289,068	2,160
Jul	15.75	11.63	13.45	0.86	30,022	405,482	2,232
Aug	16.48	11.85	14.10	1.18	31,480	447,123	2,232
Sep	17.55	12.45	14.71	1.16	31,769	470,177	2,160
Oct	17.15	11.57	14.79	1.25	33,014	491,802	2,232
Nov	15.98	12.05	14.13	0.94	30,527	433,345	2,160
Dec	14.77	11.93	13.64	0.65	29,474	402,923	2,161
Station: SC 2 -6m							
Jan	13.23	11.15	12.49	0.28	27,874	348,274	2,232
Feb	12.63	10.77	11.81	0.43	24,654	291,493	2,088
Mar	13.68	10.10	11.80	0.83	26,348	312,581	2,232
Apr	12.20	9.88	10.89	0.48	23,532	256,872	2,160
May	13.98	9.45	10.74	0.70	23,962	258,346	2,232
Jun	14.50	9.52	11.05	1.02	23,868	265,983	2,160
Jul	15.55	10.70	12.70	0.99	28,343	362,113	2,232
Aug	16.40	11.15	13.36	1.27	29,821	402,061	2,232
Sep	16.88	11.05	14.07	1.14	30,396	430,532	2,160
Oct	16.65	11.52	14.54	1.33	32,451	475,752	2,232
Nov	15.98	12.38	14.11	0.89	30,475	431,680	2,160
Dec	14.60	12.38	13.69	0.58	29,574	405,456	2,161

Appendix B

Intertidal Temperatures

Table B1. Monthly Statistical Summary of Intertidal Temperature (°C) Data, January – December 2004, North Control Station NC 2 +0.6m.

Month	Max	Min	Mean	Std. Dev	Sum	Sum SQ	N
Station: NC 2 +0.6m							
Jan	13.63	11.07	12.50	0.48	15,686	196,351	1,255
Feb	12.98	10.55	11.91	0.48	13,194	157,362	1,108
Mar	14.20	10.43	12.23	0.86	14,029	172,424	1,147
Apr	13.38	9.95	11.52	0.67	12,579	145,391	1,092
May	15.35	9.68	12.21	1.06	14,006	172,306	1,147
Jun	15.90	10.07	12.49	1.31	14,608	184,380	1,170
Jul	16.67	12.75	14.73	0.76	18,814	277,919	1,277
Aug	17.10	13.27	15.26	0.76	19,584	299,684	1,283
Sep	18.05	12.32	15.23	1.28	19,095	292,813	1,254
Oct	17.33	11.60	14.87	1.22	19,367	290,030	1,302
Nov	15.70	11.40	13.99	1.05	17,701	249,061	1,265
Dec	15.10	11.52	13.65	0.75	17,401	238,192	1,275

Table B2. Monthly Statistical Summary of Intertidal Temperature (°C) Data, January – December 2004, Field's Cove Stations FC 1 +0.6m, FC 2 +0.6m and FC 2 +0.6m.

Month	Max	Min	Mean	Std. Dev	Sum	Sum SQ	N
Station: FC 1 +0.6m							
Jan	14.90	11.20	13.41	0.64	19,936	267,870	1,487
Feb	14.55	11.25	12.51	0.57	16,544	207,456	1,322
Mar	15.40	10.20	12.71	1.19	17,219	220,718	1,355
Apr	14.95	8.98	11.61	0.82	14,831	173,102	1,277
May	15.88	9.63	12.22	1.20	16,269	200,788	1,331
Jun	17.38	9.43	12.94	1.76	17,711	233,379	1,369
Jul	18.33	11.27	15.70	1.05	23,639	372,713	1,506
Aug	18.92	12.38	16.37	0.96	24,262	398,542	1,482
Sep	20.20	11.52	16.21	1.49	22,934	374,861	1,415
Oct	19.13	11.93	15.97	1.39	23,348	375,673	1,462
Nov	16.90	12.32	14.68	1.06	20,672	305,085	1,408
Dec	16.73	12.52	14.42	0.75	20,691	299,133	1,435
Station: FC 2 +0.6m							
Jan	15.07	11.23	13.41	0.65	16,826	226,108	1,255
Feb	14.43	11.23	12.50	0.51	13,850	173,414	1,108
Mar	15.23	10.32	12.69	1.16	14,557	186,313	1,147
Apr	14.10	10.07	11.64	0.74	12,708	148,485	1,092
May	15.20	9.70	12.18	1.13	13,967	171,518	1,147
Jun	18.00	9.82	12.88	1.77	15,075	197,900	1,170
Jul	18.48	12.45	15.61	1.03	19,938	312,645	1,277
Aug	18.92	12.20	16.26	0.91	20,862	340,282	1,283
Sep	19.65	12.73	16.20	1.40	20,317	331,607	1,254
Oct	19.10	11.95	16.03	1.39	20,866	336,892	1,302
Nov	16.95	12.52	14.74	1.05	18,646	276,238	1,265
Dec	16.85	12.73	14.50	0.73	18,489	268,802	1,275
Station: FC 3 +0.6m							
Jan	14.95	11.13	13.41	0.65	16,829	226,210	1,255
Feb	14.30	11.20	12.45	0.51	13,797	172,088	1,108
Mar	15.07	10.23	12.62	1.15	14,475	184,193	1,147
Apr	15.20	9.70	11.52	0.74	12,577	145,449	1,092
May	15.20	9.30	11.99	1.08	13,753	166,222	1,147
Jun	17.65	9.68	12.78	1.74	14,953	194,636	1,170
Jul	18.20	11.15	15.45	1.01	19,725	305,962	1,277
Aug	19.17	12.13	16.14	0.92	20,704	335,195	1,283
Sep	19.65	12.50	16.12	1.41	20,216	328,402	1,254
Oct	19.00	11.93	15.98	1.40	20,807	335,053	1,302
Nov	17.02	8.18	14.73	1.05	18,627	275,695	1,265
Dec	16.75	12.73	14.48	0.73	18,466	268,129	1,275

Table B3. Monthly Statistical Summary of Intertidal Temperature (°C) Data, January – December 2004, North Diablo Cove Stations NDC 1 +0.6m, NDC 2 +0.6m and NDC 3 +0.6m.

Month	Max	Min	Mean	Std. Dev	Sum	Sum SQ	N
Station: NDC 1 +0.6m							
Jan	20.77	11.63	16.13	1.70	23,984	391,133	1,487
Feb	20.00	11.07	14.95	1.82	19,767	299,955	1,322
Mar	20.13	10.15	14.96	2.18	20,267	309,559	1,355
Apr	20.58	10.25	15.29	2.31	19,521	305,209	1,277
May	21.27	9.82	14.82	2.09	19,732	298,328	1,331
Jun	21.92	10.10	16.18	2.97	22,156	370,656	1,369
Jul	23.85	11.38	19.05	1.92	28,685	551,907	1,506
Aug	22.70	14.88	19.24	1.28	28,518	551,165	1,482
Sep	22.98	14.68	18.87	1.33	26,702	506,392	1,415
Oct	23.92	12.23	18.62	1.88	27,220	511,967	1,462
Nov	22.83	12.80	17.39	1.78	24,483	430,180	1,408
Dec	21.88	13.07	17.08	1.75	24,508	422,974	1,435
Station: NDC 2 +0.6m							
Jan	20.38	11.90	16.16	1.71	19,292	315,190	1,194
Feb	19.55	11.25	15.10	1.76	16,083	246,184	1,065
Mar	20.17	10.20	15.37	2.15	16,968	265,920	1,104
Apr	21.00	10.23	15.80	2.35	16,794	271,166	1,063
May	21.88	10.55	14.87	2.09	16,585	251,583	1,115
Jun	22.13	10.02	15.90	2.99	17,955	295,593	1,129
Jul	23.30	14.07	19.06	1.70	23,305	447,610	1,223
Aug	22.58	12.38	19.22	1.41	24,047	464,716	1,251
Sep	22.77	12.50	18.99	1.30	23,223	443,038	1,223
Oct	24.00	12.85	18.76	1.85	23,887	452,594	1,273
Nov	22.63	12.68	17.54	1.78	21,770	385,822	1,241
Dec	22.02	13.02	17.15	1.71	21,312	369,060	1,243
Station: NDC 3 +0.6m							
Jan	20.67	11.75	16.37	1.80	24,607	407,744	1,503
Feb	19.95	11.27	15.38	1.95	20,550	321,174	1,336
Mar	20.20	10.25	15.50	2.12	21,272	335,951	1,372
Apr	21.77	10.40	16.17	2.32	20,857	344,170	1,290
May	21.73	11.05	15.18	2.06	20,393	315,316	1,343
Jun	21.77	10.10	16.32	2.90	22,539	379,426	1,381
Jul	23.95	14.02	19.12	1.82	29,041	560,266	1,519
Aug	22.88	14.02	19.28	1.38	28,791	558,052	1,493
Sep	23.17	15.30	19.00	1.25	27,151	518,106	1,429
Oct	24.20	13.05	18.86	1.86	27,710	527,741	1,469
Nov	22.80	12.68	17.73	1.78	25,067	448,836	1,414
Dec	22.42	12.98	17.31	1.81	25,001	437,586	1,444

Table B4. Monthly Statistical Summary of Intertidal Temperature (°C) Data, January – December 2004, South Diablo Cove Stations SDC 1 +0.6m, SDC 2 +0.6m and SDC 3 +0.6m.

Month	Max	Min	Mean	Std. Dev	Sum	Sum SQ	N
Station: SDC 1 +0.6m							
Jan	23.25	14.60	17.75	2.23	26,979	486,398	1,520
Feb	23.33	13.30	17.27	2.24	23,277	408,680	1,348
Mar	23.23	12.77	17.06	2.08	23,523	407,206	1,379
Apr	23.85	12.13	17.46	2.21	22,699	402,676	1,300
May	23.52	13.77	17.99	1.98	24,442	444,923	1,359
Jun	24.17	14.48	18.78	1.84	26,156	495,833	1,393
Jul	24.98	15.48	19.78	1.54	30,268	602,415	1,530
Aug	23.95	15.57	19.63	1.34	29,598	583,660	1,508
Sep	23.65	14.98	18.72	1.40	26,920	506,790	1,438
Oct	26.02	15.50	18.87	1.57	27,923	530,434	1,480
Nov	23.55	15.05	18.55	1.57	26,550	496,113	1,431
Dec	24.33	13.43	16.93	1.98	24,651	423,041	1,456
Station: SDC 2 +0.6m							
Jan	21.98	13.93	16.43	1.37	20,623	341,234	1,255
Feb	21.42	12.52	15.95	1.47	17,671	284,233	1,108
Mar	22.58	12.55	16.45	1.83	18,864	314,088	1,147
Apr	23.50	11.38	16.92	2.38	18,479	318,907	1,092
May	23.55	11.73	17.85	2.16	20,479	370,989	1,147
Jun	24.52	12.63	18.59	2.10	21,753	409,616	1,170
Jul	24.67	14.63	19.80	1.61	25,284	503,909	1,277
Aug	23.45	15.23	19.61	1.31	25,159	495,548	1,283
Sep	22.42	14.57	18.63	1.34	23,357	437,291	1,254
Oct	23.48	15.20	18.64	1.44	24,268	455,051	1,302
Nov	23.90	14.30	18.35	1.58	23,214	429,131	1,265
Dec	22.58	13.38	16.46	1.55	20,989	348,555	1,275
Station: SDC 3 +0.6m							
Jan	18.65	13.65	15.85	0.82	22,138	351,763	1,397
Feb	17.42	12.57	15.20	1.01	18,631	284,389	1,226
Mar	18.98	11.82	15.47	1.17	19,661	305,873	1,271
Apr	20.30	11.02	15.51	1.63	18,591	291,433	1,199
May	20.25	12.38	16.19	1.53	20,315	331,798	1,255
Jun	22.25	12.98	17.14	1.72	22,173	383,758	1,294
Jul	22.85	14.50	18.65	1.36	26,484	496,584	1,420
Aug	22.00	14.93	18.69	1.26	26,128	490,534	1,398
Sep	21.63	13.95	17.95	1.42	24,107	435,443	1,343
Oct	21.83	14.77	18.18	1.47	25,283	462,559	1,391
Nov	21.75	14.27	17.93	1.25	24,132	434,777	1,346
Dec	19.50	13.25	16.34	1.37	22,372	368,157	1,369

Table B5. Monthly Statistical Summary of Intertidal Temperature (°C) Data, January – December 2004, South Diablo Point Stations SDP 1 +0.6m and SDP 2 +0.6m.

Month	Max	Min	Mean	Std. Dev	Sum	Sum SQ	N
Station: SDP 1 +0.6m							
Jan	18.67	13.43	15.87	0.82	24,722	393,328	1,558
Feb	17.30	12.50	15.10	1.02	20,863	316,416	1,382
Mar	18.85	11.63	15.34	1.17	21,753	335,642	1,418
Apr	20.00	10.95	15.35	1.61	20,603	319,792	1,342
May	20.02	11.80	16.09	1.51	22,424	363,863	1,394
Jun	21.98	13.43	17.02	1.57	24,335	417,660	1,430
Jul	22.42	14.35	18.40	1.36	28,692	530,922	1,559
Aug	22.08	15.15	18.42	1.24	28,544	528,002	1,550
Sep	21.90	13.90	17.82	1.43	26,287	471,523	1,475
Oct	21.85	14.10	18.14	1.50	27,486	502,055	1,515
Nov	20.67	14.25	17.99	1.24	26,433	477,907	1,469
Dec	19.60	13.25	16.35	1.39	24,274	399,651	1,485
Station: SDP 2 +0.6m							
Jan	17.05	12.57	14.86	0.82	22,098	329,401	1,487
Feb	16.17	11.77	14.06	0.78	18,587	262,121	1,322
Mar	16.60	10.98	14.14	1.19	19,166	273,001	1,355
Apr	16.00	10.27	12.59	1.00	16,073	203,568	1,277
May	16.70	10.05	13.08	1.17	17,413	229,649	1,331
Jun	19.50	10.30	14.55	1.47	19,922	292,853	1,369
Jul	19.30	11.45	16.02	1.45	24,123	389,566	1,506
Aug	19.83	12.52	16.60	1.24	24,596	410,486	1,482
Sep	20.55	12.40	16.92	1.53	23,944	408,481	1,415
Oct	20.60	12.75	16.89	1.25	24,689	419,216	1,462
Nov	18.40	13.55	15.74	0.95	22,160	350,043	1,408
Dec	18.17	12.80	15.16	1.02	21,758	331,413	1,435

Table B6. Monthly Statistical Summary of Intertidal Temperature (°C) Data, January – December 2004, South Control Stations SC 1 +0.6m and SC 1-V.

Month	Max	Min	Mean	Std. Dev	Sum	Sum SQ	N
Station: SC 1 +0.6m							
Jan	13.02	11.20	12.43	0.32	17,134	213,198	1,378
Feb	12.65	10.77	11.79	0.44	14,280	168,611	1,211
Mar	13.55	10.07	11.93	0.82	15,014	179,893	1,259
Apr	12.60	9.90	11.11	0.52	13,139	146,247	1,183
May	13.85	9.55	11.23	0.80	13,883	156,716	1,236
Jun	15.10	9.70	11.78	1.27	15,063	179,455	1,279
Jul	15.82	11.75	13.76	0.84	19,221	265,452	1,397
Aug	16.88	12.38	14.57	1.06	20,188	295,599	1,386
Sep	18.00	12.38	14.94	1.36	19,915	299,993	1,333
Oct	17.27	11.55	14.82	1.25	20,389	304,259	1,376
Nov	15.82	12.02	14.06	0.94	18,731	264,591	1,332
Dec	14.75	11.88	13.57	0.66	18,360	249,741	1,353
Station: SC 1-V							
Jan	13.98	10.63	12.31	0.53	20,156	248,481	1,638
Feb	13.93	10.27	11.87	0.59	17,449	207,642	1,470
Mar	15.15	10.20	12.74	1.07	19,100	245,088	1,499
Apr	15.40	9.88	12.09	1.12	17,133	208,952	1,417
May	17.95	9.65	13.02	1.63	19,133	253,129	1,469
Jun	19.25	9.70	13.71	1.91	20,654	288,767	1,506
Jul	18.70	12.68	15.68	1.12	25,397	400,206	1,620
Aug	18.98	13.85	16.37	0.98	27,004	443,533	1,650
Sep	20.23	13.15	16.01	1.57	24,797	400,780	1,549
Oct	17.95	11.80	15.21	1.11	24,211	370,143	1,592
Nov	16.30	11.02	14.03	1.12	21,450	302,837	1,529
Dec	15.13	11.10	13.41	0.79	20,737	279,096	1,546

Appendix C

Intertidal Algae and Invertebrate Results (HBT Method)

(Note: Invertebrate taxa noted with an asterisk (*) were counted regardless of size; for all other taxa the counts represent only those individuals greater than 2.5 cm in greatest dimension. Individuals of the other taxa that were less than 2.5 cm in greatest dimension were sampled as present only, and were given a value of 0.000001 for the purpose of calculating statistics. Encrusting invertebrate taxa listed with a percent (%) were enumerated as coverage values using the same methods used for algal taxa (see Methods in Section 5.0).

Table C1. Intertidal Algae (percent cover) and Invertebrates (abundance per 1.0 m^2 ;percent cover) Survey Means, Standard Deviations and 2004 Annual Means, North Control Station NC 1+0.3m.

Survey	136		137		138		139		
Survey Date	22-Jan-04		11-May-04		4-Aug-04		4-Dec-04		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Algae Cover									
Mazzaella flaccida	12.9	9.0	39.9	12.3	46.4	14.6	19.9	10.3	29.8
Phyllospadix spp.	23.3	24.6	20.9	26.8	23.5	28.0	25.0	27.5	23.2
Mazzaella affinis	8.8	8.1	12.9	9.6	9.9	10.6	10.3	12.0	10.5
Non-coralline crust	17.6	13.6	7.1	5.5	6.5	6.3	9.1	7.6	10.1
Chondracanthus canaliculatus	9.2	6.2	8.4	5.2	11.0	5.7	9.2	5.2	9.5
Gastroclonium subarticulatum	6.4	6.8	5.3	5.2	11.5	12.8	13.1	10.0	9.1
Mastocarpus papillatus	6.9	14.7	5.6	3.1	4.1	5.2	3.5	5.3	5.0
Gelidium coulteri	4.9	4.5	2.2	3.4	1.9	1.0	2.4	2.0	2.8
Cryptopleura violacea	1.7	2.2	1.6	1.9	3.1	3.2	2.3	3.6	2.2
Codium setchellii	1.2	2.3	2.7	4.3	3.2	7.1	0.6	1.2	1.9
Endocladia muricata	1.7	5.0	2.8	8.3	1.6	5.1	0.1	0.4	1.6
Ulva/Enteromorpha spp.	0.1	0.3	<0.1	0.2	4.1	3.0	1.9	2.4	1.5
filamentous red algae-complex	0.5	0.9	2.4	2.9	1.4	3.0	0.9	1.2	1.3
coralline crust	1.7	1.5	1.2	1.2	0.7	0.7	1.2	0.9	1.2
Smithora naiadum	<0.1	<.01	<0.1	<.01	2.7	4.0	0.3	0.6	0.7
Mastocarpus jardinii	0.4	0.7	0.7	1.1	1.0	1.2	0.9	1.4	0.7
Mazzaella heterocarpa	<0.1	<.01	0.6	0.6	1.3	1.1	0.6	1.8	0.6
Mazzaella leptorhynchos	0.1	0.4	1.3	0.9	0.5	0.8	0.3	0.7	0.5
Pterosiphonia dendroidea	1.3	1.5	<0.1	<.01	-	-	<0.1	0.2	0.3
Corallina vancouveriensis	0.4	0.6	0.3	0.6	<0.1	0.2	0.4	0.8	0.3
Calliarthron/Bossiella spp.-complex	0.2	0.5	0.3	0.9	0.1	0.3	0.5	1.0	0.3
Prionitis spp.	<0.1	0.2	0.3	1.1	0.1	0.3	0.3	0.6	0.2
juv. articulated coralline algae	<0.1	0.2	<0.1	0.2	<0.1	<.01	0.4	0.8	0.1
Osmundea spp.	<0.1	0.2	<0.1	0.2	<0.1	<.01	0.4	0.8	0.1
Gelidium pusillum	0.1	0.3	<0.1	0.2	0.1	0.3	0.1	0.3	0.1
Sarcodiotheca gaudichaudii	<0.1	<.01	<0.1	<.01	<0.1	<.01	0.3	0.7	<0.1
Microcladia coulteri	-	-	-	-	0.1	0.3	0.1	0.4	<0.1
Corallina officinalis	<0.1	<.01	0.1	0.3	<0.1	<.01	<0.1	0.2	<0.1
Halymenia/Schizymenia spp.-complex	<0.1	<.01	0.2	0.5	-	-	-	-	<0.1
Callithamnion pikeanum	-	-	0.2	0.3	<0.1	<.01	-	-	<0.1
Porphyra spp.	-	-	-	-	0.1	0.4	-	-	<0.1
Cladophora spp.	<0.1	<.01	<0.1	<.01	<0.1	0.2	<0.1	<.01	<0.1
Egregia menziesii	-	-	-	-	<0.1	0.2	-	-	<0.1
Melobesia mediocris	<0.1	<.01	-	-	-	-	<0.1	<.01	<0.1
Bryopsis spp.	-	-	-	-	-	-	<0.1	<.01	<0.1
Chrysophyta unid.	-	-	-	-	<0.1	<.01	-	-	<0.1
Halosaccion americanum	-	-	<0.1	<.01	-	-	-	-	<0.1
Invertebrate Counts									
Tegula funebralis	47.6	29.4	24.0	25.3	15.2	14.1	18.0	11.8	26.2
Pagurus spp.	5.6	4.0	6.4	6.9	6.2	3.4	5.6	4.5	6.0
Anthopleura elegantissima	1.2	1.1	0.4	0.6	1.6	2.1	2.0	2.9	1.3
Tegula brunnea	0.2	0.5	0.4	0.9	0.6	0.9	1.4	0.9	0.7
Leptasterias spp.	0.4	0.9	0.8	1.1	<0.1	<.01	0.4	0.9	0.4
Strongylocentrotus purpuratus	1.4	1.1	-	-	0.2	0.5	-	-	0.4

(continued)

Table C1 (continued). Intertidal Algae (percent cover) and Invertebrates (abundance per 1.0 m^2 ; percent cover) Survey Means, Standard Deviations and 2004 Annual Means, North Control Station NC 1+0.3m.

Survey	136		137		138		139		
Survey Date	22-Jan-04		11-May-04		4-Aug-04		4-Dec-04		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Invertebrate Counts (continued)									
Tectura scutum	0.4	0.9	0.2	0.5	0.8	1.3	-	-	0.4
Pachygrapsus crassipes	0.4	0.9	0.4	0.9	-	-	-	-	0.2
Fissurella volcano	0.2	0.5	-	-	-	-	0.2	0.5	<0.1
Ocenebra spp.	0.2	0.5	0.2	0.5	-	-	-	-	<0.1
Rostanga pulchra	-	-	-	-	0.2	0.5	-	-	<0.1
Epiactis prolifera	0.2	0.5	-	-	-	-	-	-	<0.1
Lottia limatula	0.2	0.5	-	-	-	-	-	-	<0.1
Nucella emarginata	-	-	0.2	0.5	-	-	-	-	<0.1
Pugettia spp.	-	-	0.2	0.5	-	-	-	-	<0.1
Crepidula spp.	<0.1	< .01	<0.1	< .01	<0.1	< .01	<0.1	< .01	<0.1
Lacuna spp.	<0.1	< .01	<0.1	< .01	<0.1	< .01	<0.1	< .01	<0.1
Lottia asmi	<0.1	< .01	-	-	<0.1	< .01	<0.1	< .01	<0.1
Mopalia spp.	<0.1	< .01	-	-	-	-	-	-	<0.1
Acmaeidae unid.	-	-	-	-	<0.1	< .01	-	-	<0.1
Fusinus luteopictus	<0.1	< .01	-	-	-	-	-	-	<0.1
Bittium spp.	-	-	-	-	-	-	<0.1	< .01	<0.1
Cucumaria spp.	-	-	<0.1	< .01	-	-	-	-	<0.1
Heptacarpus spp.	<0.1	< .01	-	-	-	-	-	-	<0.1
Lissothuria nutriens	<0.1	< .01	-	-	-	-	-	-	<0.1
Chaetopteridae	<0.1	< .01	-	-	-	-	-	-	<0.1
Invertebrate Cover									
Pista spp.	5.7	6.2	2.2	3.0	1.3	1.4	6.9	9.6	4.0
tunicates, colonial/social unid.	<0.1	< .01	<0.1	< .01	0.8	1.5	<0.1	< .01	0.2
Porifera unid. (encrusting)	<0.1	0.2	<0.1	< .01	<0.1	< .01	<0.1	< .01	<0.1
Spirorbidae	<0.1	< .01	-	-	<0.1	< .01	<0.1	< .01	<0.1
Phragmatopoma californica	<0.1	< .01	-	-	<0.1	< .01	<0.1	< .01	<0.1
Bryozoa, unid. (encrusting)	<0.1	< .01	<0.1	< .01	<0.1	< .01	<0.1	< .01	<0.1
Chthamalus fissus	-	-	-	-	-	-	<0.1	< .01	<0.1
Haliclona spp.	-	-	-	-	-	-	<0.1	< .01	<0.1
Salmacina tribranchiata	-	-	-	-	<0.1	< .01	-	-	<0.1
Substrate Cover									
sand (shell gravel)	18.4	15.7	14.2	9.9	11.7	17.5	15.7	9.7	15.0
rock	3.1	2.6	1.9	1.6	0.9	1.3	3.0	4.7	2.2
cobble	0.8	2.0	0.6	1.3	<0.1	0.2	0.8	1.3	0.6

Table C2. Intertidal Algae (percent cover) and Invertebrates (abundance per 1.0 m^2 ; percent cover) Survey Means, Standard Deviations and 2004 Annual Means, North Control Station NC 1+0.9m.

Survey	136		137		138		139		
Survey Date	22-Jan-04		11-May-04		4-Aug-04		18-Nov-04		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Algae Cover									
Endocladia muricata	29.5	22.2	39.0	24.2	34.4	27.3	32.5	21.1	33.9
Mazzaella flaccida	16.2	14.2	16.6	17.1	29.7	19.9	19.6	11.4	20.5
Mastocarpus papillatus	15.3	8.3	19.3	9.2	26.8	18.7	15.2	7.0	19.1
Non-coralline crust	25.3	14.7	19.9	8.2	8.5	7.4	16.9	10.7	17.7
Pelvetia compressa	5.5	9.8	7.1	12.4	7.2	12.3	7.4	12.8	6.8
coralline crust	7.5	4.8	5.4	4.5	2.0	1.6	6.5	4.0	5.4
Codium setchellii	1.9	5.5	3.3	7.4	2.2	5.5	3.3	7.5	2.7
Mazzaella affinis	2.2	3.8	0.6	1.3	4.8	12.8	1.8	2.9	2.3
Corallina vancouveriensis	1.0	1.3	1.7	2.2	1.0	1.5	2.4	2.3	1.5
Chondracanthus canaliculatus	0.3	0.5	0.1	0.3	0.3	0.6	2.5	3.7	0.8
Mastocarpus jardinii	0.3	0.6	1.0	1.0	1.0	1.6	0.6	1.0	0.7
Gelidium coulteri	1.0	1.4	0.5	0.6	0.6	1.1	0.4	0.8	0.6
Gelidium pusillum	<0.1	0.2	1.0	1.1	0.6	0.7	0.3	0.9	0.5
Mazzaella heterocarpa	<0.1	0.2	0.6	1.1	0.5	1.1	0.1	0.4	0.3
Prionitis spp.	0.3	0.5	<0.1	0.2	0.1	0.4	0.4	1.1	0.2
juv. articulated coralline algae	<0.1	<.01	0.3	0.5	0.1	0.3	0.3	0.8	0.2
Analipus japonicus	0.3	1.1	0.1	0.4	<0.1	0.2	0.2	0.7	0.2
Porphyra spp.	<0.1	<.01	0.1	0.3	0.5	1.1	<0.1	<.01	0.2
Cryptopleura violacea	0.5	1.5	-	-	<0.1	<.01	-	-	0.1
Ulva/Enteromorpha spp.	<0.1	<.01	<0.1	<.01	0.3	0.9	<0.1	0.2	0.1
Cladophora spp.	<0.1	<.01	<0.1	<.01	0.3	0.6	<0.1	<.01	<0.1
Mazzaella leptorhynchos	<0.1	<.01	<0.1	<.01	-	-	0.2	0.7	<0.1
Corallina officinalis	-	-	-	-	-	-	0.1	0.3	<0.1
Phyllospadix spp.	-	-	-	-	-	-	<0.1	0.2	<0.1
Calliarthron/Bossiella spp.-complex	<0.1	<.01	-	-	<0.1	<.01	-	-	<0.1
Callithamnion pikeanum	<0.1	<.01	<0.1	<.01	-	-	-	-	<0.1
filamentous red algae-complex	-	-	-	-	<0.1	<.01	-	-	<0.1
Microcladia coulteri	-	-	-	-	<0.1	<.01	-	-	<0.1
Invertebrate Counts									
Tegula funebralis	49.0	55.6	34.0	20.3	33.6	19.8	39.0	22.8	38.9
Pagurus spp.	22.4	37.4	1.8	1.5	9.2	10.2	13.6	23.5	11.8
Anthopleura elegantissima	11.0	20.0	4.4	4.5	0.6	1.3	5.6	9.3	5.4
Pollicipes polymerus	3.4	7.6	8.4	18.8	4.4	9.8	5.4	12.1	5.4
Tectura scutum	0.4	0.6	-	-	6.2	11.7	-	-	1.7
Macclintockia scabra	-	-	1.4	2.2	2.4	3.4	2.2	3.5	1.5
Nuttallina californica	0.4	0.9	2.0	1.6	0.6	0.9	0.4	0.9	0.9
Tetraclita rubescens	0.8	1.8	0.6	1.3	0.4	0.9	1.2	2.7	0.8
Pachygrapsus crassipes	-	-	1.2	0.5	0.4	0.9	0.2	0.5	0.5
Lottia limatula	0.2	0.5	0.2	0.5	0.4	0.9	0.8	0.8	0.4
Leptasterias spp.	0.4	0.6	0.4	0.6	-	-	0.2	0.5	0.3
Lottia pelta	-	-	0.2	0.5	-	-	0.6	1.3	0.2
Ocenebra spp.	0.4	0.6	0.2	0.5	0.2	0.5	-	-	0.2
Mopalia spp.	0.2	0.5	0.2	0.5	-	-	-	-	<0.1
Strongylocentrotus purpuratus	-	-	-	-	0.4	0.6	-	-	<0.1
Haliotis spp.	<0.1	0.3	<0.1	0.3	-	-	<0.1	0.3	<0.1
Acanthina spp.	-	-	0.2	0.5	-	-	-	-	<0.1
Nereididae unid.	-	-	0.2	0.5	-	-	-	-	<0.1

(continued)

Table C2 (continued). Intertidal Algae (percent cover) and Invertebrates (abundance per 1.0 m^2 ; percent cover) Survey Means, Standard Deviations and 2004 Annual Means, North Control Station NC 1+0.9m.

Survey	136		137		138		139		
Survey Date	22-Jan-04		11-May-04		4-Aug-04		18-Nov-04		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Invertebrate Counts (continued)									
Pisaster ochraceus	-	-	-	-	-	-	0.2	0.5	<0.1
Pugettia spp.	-	-	-	-	0.2	0.5	-	-	<0.1
Acmaeidae unid.	<0.1	<.01	<0.1	<.01	<0.1	-	<0.1	<.01	<0.1
Lottia asmi	<0.1	<.01	<0.1	<.01	<0.1	<.01	<0.1	<.01	<0.1
Crepidula spp.	<0.1	<.01	<0.1	<.01	-	-	<0.1	<.01	<0.1
Littorina spp.	-	-	<0.1	<.01	-	-	-	-	<0.1
Mytilus californianus	<0.1	<.01	-	-	-	-	-	-	<0.1
Balanus spp.	-	-	-	-	-	-	<0.1	<.01	<0.1
Ischnochitonidae	-	-	-	-	<0.1	<.01	-	-	<0.1
Lacuna spp.	-	-	-	-	-	-	<0.1	<.01	<0.1
Tricolia spp.	-	-	-	-	-	-	<0.1	<.01	<0.1
Chama spp.	-	-	-	-	<0.1	<.01	-	-	<0.1
Grapsidae (juv.)	-	-	-	-	<0.1	<.01	-	-	<0.1
Invertebrate Cover									
Spirorbidae	<0.1	<.01	<0.1	<.01	<0.1	<.01	<0.1	<.01	<0.1
Phragmatopoma californica	<0.1	<.01	<0.1	<.01	<0.1	<.01	<0.1	<.01	<0.1
Haliclona spp.	<0.1	<.01	<0.1	<.01	<0.1	<.01	<0.1	<.01	<0.1
Chthamalus fissus	<0.1	<.01	<0.1	<.01	-	-	<0.1	<.01	<0.1
Bryozoa, unid. (encrusting)	<0.1	<.01	-	-	-	-	-	-	<0.1
Substrate Cover									
rock	7.4	5.3	4.4	3.3	2.0	1.2	4.2	3.1	4.5
cobble	3.8	9.9	4.1	11.8	2.5	7.0	4.4	11.8	3.7
sand (shell gravel)	0.2	0.5	0.5	1.1	0.9	1.3	1.1	2.6	0.7

Table C3. Intertidal Algae (percent cover) and Invertebrates (abundance per 1.0 m^2 ; percent cover) Survey Means, Standard Deviations and 2004 Annual Means, North Control Station NC 2+0.3m.

Survey	136		137		138		139		
Survey Date	5-Feb-04		21-May-04		3-Aug-04		9-Dec-04		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Algae Cover									
Mazzaella flaccida	17.8	9.6	48.3	8.7	33.7	13.3	15.6	8.4	28.8
Non-coralline crust	25.8	11.3	9.9	12.5	8.5	7.7	20.4	6.8	16.1
Chondracanthus canaliculatus	11.5	6.7	13.9	6.9	17.4	7.2	15.6	6.6	14.6
Phyllospadix spp.	12.7	13.0	13.3	16.1	14.8	16.3	15.6	20.2	14.1
Mazzaella affinis	11.7	9.7	13.8	10.4	11.3	8.0	10.8	8.9	11.9
Gastroclonium subarticulatum	4.9	4.7	2.8	3.4	4.9	5.1	13.1	10.0	6.4
Ulva/Enteromorpha spp.	1.5	2.1	3.9	4.9	15.8	9.3	4.2	3.0	6.3
Mastocarpus papillatus	3.1	5.2	9.8	6.3	7.3	6.9	1.1	1.1	5.3
Gelidium coulteri	3.5	3.8	1.5	1.3	2.2	1.6	3.3	3.1	2.6
Egregia menziesii	0.1	0.4	-	-	9.7	9.5	<0.1	0.2	2.5
Porphyra spp.	<0.1	<.01	4.1	5.0	4.4	3.5	-	-	2.1
Codium setchellii	2.1	4.0	0.8	1.5	1.0	1.9	2.5	6.0	1.6
coralline crust	1.9	2.4	0.3	0.5	1.5	1.2	2.6	3.0	1.6
Mastocarpus jardinii	0.6	0.8	1.4	1.8	2.1	2.7	0.5	1.5	1.1
Prionitis spp.	0.2	0.5	0.3	1.1	3.3	9.8	0.6	1.3	1.1
Mazzaella leptorhynchos	2.4	3.5	1.0	1.2	0.6	1.1	0.4	0.7	1.1
Smithora naiadum	-	-	0.2	0.5	2.1	2.4	0.9	1.6	0.8
Cryptopleura violacea	0.5	1.5	0.3	0.9	0.8	1.2	1.4	3.3	0.7
Mazzaella heterocarpa	0.6	1.1	1.0	1.3	1.1	1.5	-	-	0.7
Neorhodomela larix	0.8	1.2	0.1	0.4	0.3	1.1	0.3	0.8	0.4
filamentous red algae-complex	<0.1	0.2	0.6	0.9	0.6	1.1	0.1	0.4	0.3
Gelidium pusillum	0.3	0.6	0.3	0.4	<0.1	<.01	0.6	1.0	0.3
Corallina vancouveriensis	0.2	0.5	0.2	0.5	0.2	0.7	0.6	0.9	0.3
Mazzaella lilacina	-	-	1.2	1.5	-	-	-	-	0.3
Microcladia coulteri	<0.1	<.01	0.1	0.4	0.8	1.3	-	-	0.2
Calliarthron/Bossiella spp.-complex	0.2	0.5	0.5	1.3	<0.1	<.01	<0.1	0.2	0.2
Odonthalia floccosa	-	-	0.8	1.2	-	-	-	-	0.2
Cladophora spp.	<0.1	<.01	<0.1	<.01	0.7	2.0	<0.1	<.01	0.2
juv. articulated coralline algae	0.3	0.8	0.2	0.7	<0.1	<.01	<0.1	0.2	0.2
Osmundea spp.	<0.1	0.2	-	-	<0.1	0.2	0.3	0.8	0.1
Chondracanthus corymbiferus	-	-	-	-	0.3	0.9	<0.1	0.2	<0.1
Pterosiphonia dendroidea	0.1	0.3	<0.1	0.2	<0.1	<.01	-	-	<0.1
Endocladia muricata	<0.1	0.2	0.1	0.4	<0.1	<.01	-	-	<0.1
Sarcodiotheca gaudichaudii	<0.1	<.01	0.1	0.3	<0.1	0.2	-	-	<0.1
Callithamnion pikeanum	-	-	<0.1	0.2	<0.1	<.01	-	-	<0.1
Chondracanthus harveyanus/spinosus	<0.1	0.2	-	-	-	-	-	-	<0.1
Melobesia mediocris	-	-	-	-	<0.1	<.01	<0.1	<.01	<0.1
Soranthera ulvoidea	-	-	<0.1	<.01	<0.1	<.01	-	-	<0.1
Corallina officinalis	-	-	-	-	<0.1	<.01	<0.1	<.01	<0.1
Spongomorpha/Acrosiphonia-complex	-	-	<0.1	<.01	<0.1	<.01	-	-	<0.1
Halymenia/Schizymenia spp.-complex	<0.1	<.01	-	-	-	-	-	-	<0.1
Gelidium robustum	<0.1	<.01	-	-	-	-	-	-	<0.1
Leathesia difformis	<0.1	<.01	-	-	-	-	-	-	<0.1
Chrysophyta unid.	-	-	<0.1	<.01	-	-	-	-	<0.1
Invertebrate Counts									
Tegula funebralis	36.8	40.1	2.6	2.2	3.6	2.2	9.0	4.0	13.0
Pagurus spp.	7.4	9.9	2.8	1.9	2.0	2.1	7.2	8.6	4.9

(continued)

Table C3 (continued). Intertidal Algae (percent cover) and Invertebrates (abundance per 1.0 m^2 ; percent cover) Survey Means, Standard Deviations and 2004 Annual Means, North Control Station NC 2+0.3m.

Survey	136		137		138		139		
Survey Date	5-Feb-04		21-May-04		3-Aug-04		9-Dec-04		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Invertebrate Counts (continued)									
Anthopleura elegantissima	6.4	11.1	5.2	10.0	2.0	2.8	0.8	1.3	3.6
Tectura scutum	4.0	8.4	1.4	2.2	1.6	3.6	-	-	1.8
Tegula brunnea	0.4	0.6	1.6	0.6	3.0	1.0	1.6	1.5	1.7
Epiactis prolifera	2.0	2.6	0.4	0.9	0.6	0.6	0.8	1.3	1.0
Lottia pelta	-	-	1.4	1.3	0.6	1.3	0.8	1.8	0.7
Macclintockia scabra	0.4	0.9	1.0	2.2	0.2	0.5	1.0	1.7	0.7
Lottia limatula	-	-	0.6	0.6	-	-	0.8	1.1	0.4
Fissurella volcano	0.2	0.5	-	-	0.6	0.9	0.4	0.9	0.3
Pachygrapsus crassipes	0.2	0.5	0.2	0.5	-	-	-	-	<0.1
Tetraclita rubescens	0.4	0.9	-	-	-	-	-	-	<0.1
Ocenebra spp.	-	-	-	-	-	-	0.4	0.9	<0.1
Pugettia spp.	-	-	-	-	0.2	0.5	0.2	0.5	<0.1
Nemertea unid.	-	-	-	-	0.2	0.5	-	-	<0.1
Calliostoma ligatum	-	-	-	-	-	-	0.2	0.5	<0.1
Cyanoplax spp.	-	-	-	-	0.2	0.5	-	-	<0.1
Mopalia spp.	-	-	0.2	0.5	-	-	-	-	<0.1
Nucella emarginata	0.2	0.5	-	-	-	-	-	-	<0.1
Tonicella lineata	-	-	0.2	0.5	-	-	-	-	<0.1
Leptasterias spp.	-	-	-	-	-	-	0.2	0.5	<0.1
Strongylocentrotus purpuratus	-	-	-	-	0.2	0.5	-	-	<0.1
Serpulidae unid.	0.2	0.5	-	-	-	-	-	-	<0.1
Acmaeidae unid.	-	-	<0.1	< .01	<0.1	< .01	<0.1	< .01	<0.1
Crepidula spp.	<0.1	< .01	<0.1	< .01	<0.1	< .01	<0.1	< .01	<0.1
Ischnochitonidae	-	-	<0.1	< .01	<0.1	< .01	<0.1	< .01	<0.1
Lacuna spp.	-	-	-	-	<0.1	< .01	<0.1	< .01	<0.1
Alia spp.	-	-	<0.1	< .01	-	-	<0.1	< .01	<0.1
Littorina spp.	-	-	-	-	-	-	<0.1	< .01	<0.1
Lottia asmi	<0.1	< .01	-	-	-	-	<0.1	< .01	<0.1
Invertebrate Cover									
Pista spp.	3.1	1.8	1.6	2.2	1.3	1.6	13.6	10.8	4.9
Bryozoa, unid. (encrusting)	<0.1	< .01	-	-	<0.1	< .01	0.1	0.4	<0.1
tunicates, colonial/social unid.	<0.1	< .01	<0.1	< .01	<0.1	< .01	<0.1	< .01	<0.1
Spirorbidae	<0.1	< .01	<0.1	< .01	<0.1	< .01	<0.1	< .01	<0.1
Porifera unid. (encrusting)	<0.1	< .01	<0.1	< .01	<0.1	< .01	<0.1	< .01	<0.1
Chthamalus fissus	<0.1	< .01	<0.1	< .01	-	-	<0.1	< .01	<0.1
Phragmatopoma californica	<0.1	< .01	<0.1	< .01	-	-	-	-	<0.1
Substrate Cover									
sand (shell gravel)	3.6	6.2	4.4	5.4	5.3	7.3	5.1	6.1	4.6
rock	6.7	9.0	1.6	1.4	2.1	2.1	2.9	1.8	3.3
cobble	3.0	6.1	1.5	2.5	1.0	1.7	2.1	5.0	1.9

Table C4. Intertidal Algae (percent cover) and Invertebrates (abundance per 1.0 m^2 ; percent cover) Survey Means, Standard Deviations and 2004 Annual Means, North Control Station NC 2+0.9m.

Survey	136		137		138		139		
Survey Date	5-Feb-04		21-May-04		3-Aug-04		9-Dec-04		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Algae Cover									
Endocladia muricata	33.0	21.3	44.9	24.2	39.2	25.3	32.8	22.4	37.5
Mastocarpus papillatus	16.2	15.7	21.5	12.6	24.7	12.5	16.6	11.6	19.7
Non-coralline crust	23.9	10.5	14.9	8.4	9.2	6.0	21.9	7.4	17.5
Mazzaella flaccida	5.1	6.5	5.3	6.3	12.6	9.6	6.3	5.9	7.3
Mazzaella affinis	5.1	6.2	5.8	5.8	10.2	8.4	7.4	7.1	7.1
coralline crust	6.7	6.4	2.7	2.6	1.8	2.6	5.5	3.5	4.2
Mastocarpus jardinii	1.0	1.5	1.9	2.6	2.0	4.5	2.0	4.6	1.7
Gelidium pusillum	0.8	1.0	0.3	0.4	1.2	2.2	0.9	1.2	0.8
Cryptosiphonia woodii	-	-	-	-	2.7	8.6	-	-	0.7
Corallina vancouveriensis	0.3	0.9	0.5	1.3	0.3	0.4	0.9	2.6	0.5
Gelidium coulteri	0.8	1.7	0.1	0.3	0.4	0.7	0.6	1.3	0.5
Mazzaella heterocarpa	0.3	1.1	0.5	1.1	0.6	1.8	<0.1	<.01	0.3
Porphyra spp.	<0.1	0.2	0.7	1.5	0.6	1.0	<0.1	<.01	0.3
Chondracanthus canaliculatus	<0.1	0.2	0.3	1.1	0.6	2.0	0.3	0.9	0.3
Gastroclonium subarticulatum	<0.1	<.01	-	-	-	-	0.8	2.6	0.2
Ulva/Enteromorpha spp.	<0.1	<.01	-	-	<0.1	<.01	0.6	2.0	0.2
juv. articulated coralline algae	<0.1	<.01	0.2	0.5	<0.1	<.01	0.2	0.7	0.1
Prionitis spp.	<0.1	<.01	0.3	1.1	<0.1	<.01	-	-	<0.1
Calliarthron/Bossiella spp.-complex	<0.1	<.01	<0.1	<.01	0.1	0.4	<0.1	<.01	<0.1
Pelvetia compressa	<0.1	<.01	0.1	0.4	-	-	<0.1	<.01	<0.1
filamentous red algae-complex	-	-	-	-	0.1	0.4	-	-	<0.1
Mazzaella leptorhynchos	<0.1	<.01	-	-	<0.1	<.01	<0.1	0.2	<0.1
Cryptopleura violacea	<0.1	0.2	-	-	-	-	-	-	<0.1
Cladophora spp.	<0.1	<.01	<0.1	<.01	<0.1	<.01	<0.1	<.01	<0.1
Osmundea spp.	<0.1	<.01	<0.1	<.01	-	-	-	-	<0.1
Corallina officinalis	-	-	-	-	-	-	<0.1	<.01	<0.1
Microcladia borealis	-	-	<0.1	<.01	-	-	-	-	<0.1
Chrysophyta unid.	-	-	-	-	<0.1	<.01	-	-	<0.1
Invertebrate Counts									
Tegula funebralis	152.6	86.4	121.0	80.1	94.8	45.4	113.4	84.0	120.5
Anthopleura elegantissima	27.4	14.4	10.6	8.5	11.2	19.5	14.6	8.0	16.0
Pagurus spp.	8.0	7.4	26.4	28.7	7.0	7.9	14.4	9.8	14.0
Macclintockia scabra	5.4	6.4	4.2	3.8	13.4	12.3	0.2	0.5	5.8
Tectura scutum	2.0	2.9	4.0	4.1	2.8	3.7	1.8	3.0	2.7
Lottia limatula	-	-	1.4	1.1	3.8	4.2	3.2	1.8	2.1
Tectura persona	-	-	-	-	2.8	6.3	-	-	0.7
Ocenebra spp.	0.4	0.6	1.0	1.0	0.8	1.3	0.4	0.6	0.7
Pollicipes polymerus	-	-	1.0	2.2	0.2	0.5	0.8	1.8	0.5
Lottia pelta	-	-	-	-	-	-	1.2	1.6	0.3
Mopalia spp.	0.2	0.5	0.2	0.5	0.6	0.9	0.2	0.5	0.3
Pachygrapsus crassipes	0.6	0.9	0.4	0.9	-	-	-	-	0.3
Acanthina spp.	0.2	0.5	0.2	0.5	0.4	0.9	-	-	0.2
Nuttallina californica	0.4	0.9	0.2	0.5	-	-	0.2	0.5	0.2
Lottia asmi	<0.1	<.01	<0.1	<.01	0.4	0.6	<0.1	<.01	0.1
Nemertea unid.	-	-	-	-	-	-	0.4	0.9	<0.1
Cyanoplax spp.	-	-	-	-	0.2	0.5	0.2	0.5	<0.1
Hemigrapsus nudus	0.2	0.5	-	-	0.2	0.5	-	-	<0.1

(continued)

Table C4 (continued). Intertidal Algae (percent cover) and Invertebrates (abundance per 1.0 m^2; percent cover) Survey Means, Standard Deviations and 2004 Annual Means, North Control Station NC 2+0.9m.

Survey	136		137		138		139		
Survey Date	5-Feb-04		21-May-04		3-Aug-04		9-Dec-04		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Invertebrate Counts (continued)									
Leptasterias spp.	-	-	-	-	0.4	0.6	-	-	<0.1
Crepidula spp.	<0.1	< .01	<0.1	< .01	0.2	0.5	<0.1	< .01	<0.1
Grapsidae (juv.)	-	-	<0.1	< .01	0.2	0.5	-	-	<0.1
Lottia digitalis	-	-	-	-	0.2	0.5	-	-	<0.1
Ischnochitonidae	-	-	-	-	0.2	0.5	-	-	<0.1
Acmaeidae unid.	<0.1	< .01	<0.1	< .01	<0.1	-	<0.1	< .01	<0.1
Littorina spp.	<0.1	< .01	-	-	-	-	<0.1	< .01	<0.1
Invertebrate Cover									
Chthamalus fissus	<0.1	< .01	<0.1	< .01	<0.1	< .01	1.3	2.2	0.3
tunicates, colonial/social unid.	<0.1	< .01	<0.1	< .01	0.3	0.9	<0.1	< .01	<0.1
Porifera unid. (encrusting)	-	-	<0.1	< .01	-	-	<0.1	0.2	<0.1
Spirorbidae	<0.1	< .01	<0.1	< .01	<0.1	< .01	<0.1	< .01	<0.1
Phragmatopoma californica	<0.1	< .01	<0.1	< .01	<0.1	< .01	<0.1	< .01	<0.1
Haliclona spp.	<0.1	< .01	<0.1	< .01	<0.1	< .01	-	-	<0.1
Bryozoa, unid. (encrusting)	-	-	-	-	-	-	<0.1	< .01	<0.1
Substrate Cover									
rock	18.1	11.2	10.2	6.8	13.0	14.7	13.4	8.2	13.7
cobble	8.1	8.5	7.4	7.4	2.8	4.5	8.4	7.4	6.7
sand (shell gravel)	<0.1	< .01	0.6	2.0	0.6	1.4	<0.1	< .01	0.3

Table C5. Intertidal Algae (percent cover) and Invertebrates (abundance per 1.0 m^2 ; percent cover) Survey Means, Standard Deviations and 2004 Annual Means, Field's Cove Station FC 1+0.3m.

Survey	136		137		138		139		
Survey Date	4-Feb-04		3-May-04		29-Jun-04		11-Nov-04		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Algae Cover									
Mazzaella flaccida	11.5	4.9	29.3	16.0	39.1	17.7	13.6	8.1	23.4
Gastroclonium subarticulatum	17.2	8.6	21.5	17.8	16.7	12.6	28.8	14.7	21.0
Non-coralline crust	28.1	12.0	18.5	8.3	14.9	9.0	16.1	12.8	19.4
Chondracanthus canaliculatus	8.2	4.7	11.0	9.9	11.1	9.3	6.5	4.3	9.2
Cryptopleura violacea	10.1	9.2	1.3	2.1	4.6	5.8	15.2	11.5	7.8
Endocladia muricata	4.2	4.9	7.2	11.0	8.1	13.3	6.4	11.6	6.4
Mastocarpus papillatus	3.6	5.1	6.7	8.1	10.4	10.1	3.3	7.0	6.0
coralline crust	8.9	5.4	4.6	3.3	4.7	2.6	3.9	3.8	5.5
Gelidium coulteri	1.8	1.8	2.3	1.2	7.2	5.4	6.0	4.5	4.3
Corallina vancouveriensis	5.3	3.9	7.3	8.7	0.1	0.3	4.1	5.1	4.2
Egregia menziesii	1.6	4.3	1.6	3.8	2.9	3.6	8.9	9.8	3.8
Mazzaella affinis	1.3	2.1	3.6	5.7	3.3	5.6	2.0	4.0	2.6
Phyllospadix spp.	3.0	3.4	2.1	2.9	1.7	1.9	3.4	7.0	2.5
juv. articulated coralline algae	3.2	1.6	1.6	1.9	1.4	1.6	1.8	1.9	2.0
Mastocarpus jardinii	1.2	1.1	2.1	2.2	1.3	1.7	0.3	0.7	1.2
Ulva/Enteromorpha spp.	0.3	0.8	0.6	1.3	1.5	3.6	2.0	2.8	1.1
Calliarthron/Bossiella spp.-complex	1.3	2.0	0.5	1.5	0.5	1.1	0.7	1.1	0.7
Mazzaella heterocarpa	0.3	0.7	1.1	1.2	1.5	2.1	-	-	0.7
Prionitis spp.	0.3	0.9	0.4	1.1	0.4	0.9	0.3	0.9	0.4
Spongomorpha/Acrosiphonia-complex	-	-	0.6	2.0	0.8	2.4	-	-	0.3
Porphyra spp.	<0.1	< .01	0.5	0.7	0.4	0.9	-	-	0.2
Pelvetia compressa	-	-	-	-	-	-	0.6	2.0	0.2
Cryptosiphonia woodii	0.1	0.3	0.1	0.3	0.1	0.4	-	-	0.1
Halymenia/Schizymenia spp.-complex	0.3	0.6	0.1	0.4	-	-	-	-	0.1
Gelidium pusillum	<0.1	0.2	0.1	0.3	<0.1	< .01	0.1	0.4	<0.1
Callithamnion pikeanum	<0.1	0.2	<0.1	< .01	0.3	0.9	-	-	<0.1
Osmundea spp.	<0.1	0.2	-	-	<0.1	< .01	0.3	0.7	<0.1
Mazzaella leptorhynchos	<0.1	0.2	<0.1	< .01	<0.1	0.2	<0.1	0.2	<0.1
Pterosiphonia dendroidea	<0.1	0.2	<0.1	0.2	-	-	-	-	<0.1
Corallina officinalis	-	-	<0.1	0.2	<0.1	< .01	-	-	<0.1
Sarcodiotheca gaudichaudii	<0.1	< .01	-	-	<0.1	0.2	-	-	<0.1
filamentous red algae-complex	-	-	-	-	<0.1	0.2	-	-	<0.1
Cladophora spp.	<0.1	< .01	<0.1	< .01	<0.1	< .01	<0.1	< .01	<0.1
Colpomenia spp.	-	-	-	-	<0.1	< .01	<0.1	< .01	<0.1
Smithora naiadum	-	-	-	-	-	-	<0.1	< .01	<0.1
Invertebrate Counts									
Tegula funebralis	21.8	19.8	72.6	78.2	27.2	19.0	20.0	22.6	35.4
Anthopleura elegantissima	17.4	15.3	8.8	10.0	11.8	11.3	11.8	19.8	12.5
Strongylocentrotus purpuratus	21.4	20.3	10.4	9.8	6.2	3.7	7.8	7.8	11.5
Tegula brunnea	9.0	9.9	2.6	2.3	14.4	10.1	5.8	5.8	8.0
Pagurus spp.	11.2	2.3	1.4	1.1	4.8	2.6	4.4	2.8	5.5
Nuttallina californica	4.0	5.7	3.2	4.7	1.4	2.2	2.0	3.5	2.7
Macclintockia scabra	5.0	10.6	0.6	1.3	3.4	7.6	0.6	1.3	2.4
Pachygrapsus crassipes	0.8	1.3	1.8	2.2	1.6	1.8	1.0	1.0	1.3
Fissurella volcano	1.6	2.1	1.2	0.8	0.6	0.6	0.8	0.5	1.1
Lottia limatula	1.4	2.0	0.6	0.9	1.4	1.5	0.4	0.6	1.0
Tectura scutum	0.6	0.6	0.6	0.9	0.8	1.1	0.2	0.5	0.6

(continued)

Table C5 (continued). Intertidal Algae (percent cover) and Invertebrates (abundance per 1.0 m^2 ; percent cover) Survey Means, Standard Deviations and 2004 Annual Means, Field's Cove Station FC 1+0.3m.

Survey	136		137		138		139		
Survey Date	4-Feb-04		3-May-04		29-Jun-04		11-Nov-04		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Invertebrate Counts (continued)									
Epiactis prolifera	0.2	0.5	0.8	1.1	0.6	0.9	0.2	0.5	0.5
Leptasterias spp.	-	-	-	-	1.4	0.6	0.2	0.5	0.4
Serpulorbis squamigerus	0.6	0.6	0.4	0.6	-	-	-	-	0.3
Serpulidae unid.	<0.1	<.01	0.4	0.6	0.2	0.5	0.2	0.5	0.2
Ocenebra spp.	0.8	0.8	-	-	-	-	-	-	0.2
Tetraclita rubescens	-	-	0.6	0.9	0.2	0.5	-	-	0.2
Nemertea unid.	0.2	0.5	0.2	0.5	0.2	0.5	-	-	0.2
Acmaea mitra	0.4	0.9	-	-	<0.1	<.01	0.2	0.5	0.2
Pisaster ochraceus	0.2	0.5	0.2	0.5	-	-	0.2	0.5	0.2
Pugettia spp.	<0.1	<.01	-	-	0.2	0.5	0.2	0.5	0.1
Lottia pelta	0.2	0.5	-	-	-	-	-	-	<0.1
Mopalia spp.	-	-	0.2	0.5	-	-	-	-	<0.1
Tonicella lineata	0.2	0.5	-	-	-	-	-	-	<0.1
Lottia ochracea	-	-	0.2	0.5	-	-	-	-	<0.1
Rostanga pulchra	-	-	-	-	-	-	0.2	0.5	<0.1
Mytilidae	-	-	-	-	0.2	0.5	-	-	<0.1
Acmaeidae unid.	-	-	<0.1	<.01	<0.1	<.01	-	-	<0.1
Sipuncula unid.	-	-	<0.1	<.01	<0.1	<.01	<0.1	<.01	<0.1
Amphissa spp.	-	-	-	-	<0.1	<.01	-	-	<0.1
Lottia asmi	-	-	-	-	-	-	<0.1	<.01	<0.1
Lacuna spp.	<0.1	<.01	-	-	-	-	-	-	<0.1
Heptacarpus spp.	<0.1	<.01	<0.1	<.01	-	-	-	-	<0.1
Alia spp.	<0.1	<.01	-	-	-	-	-	-	<0.1
Crepidula spp.	-	-	-	-	<0.1	<.01	-	-	<0.1
Lottia instabilis	-	-	-	-	-	-	<0.1	<.01	<0.1
Polychaeta unid.	-	-	-	-	-	-	<0.1	<.01	<0.1
Pelecypoda unid. boring	-	-	-	-	-	-	<0.1	<.01	<0.1
Pisaster/Henricia (juv.)	-	-	<0.1	<.01	-	-	-	-	<0.1
Lissothuria nutriens	-	-	-	-	-	-	<0.1	<.01	<0.1
Lepidozona spp.	-	-	-	-	<0.1	<.01	-	-	<0.1
Invertebrate Cover									
Pista spp.	1.0	2.2	<0.1	<.01	<0.1	0.2	1.9	5.9	0.7
tunicates, colonial/social unid.	<0.1	<.01	<0.1	<.01	<0.1	<.01	0.3	0.9	<0.1
Phragmatopoma californica	<0.1	<.01	<0.1	<.01	<0.1	<.01	<0.1	<.01	<0.1
Spirorbidae	<0.1	<.01	<0.1	<.01	<0.1	<.01	<0.1	<.01	<0.1
Chthamalus fissus	<0.1	<.01	<0.1	<.01	<0.1	<.01	<0.1	<.01	<0.1
Porifera unid. (encrusting)	<0.1	<.01	<0.1	<.01	-	-	<0.1	<.01	<0.1
Bryozoa, unid. (encrusting)	<0.1	<.01	<0.1	<.01	-	-	<0.1	<.01	<0.1
Bryozoa, unid. (foliose)	<0.1	<.01	-	-	-	-	-	-	<0.1
Salmacina tribranchiata	<0.1	<.01	-	-	-	-	-	-	<0.1
Substrate Cover									
rock	8.0	5.6	6.0	5.0	11.5	9.6	3.5	3.8	7.2
sand (shell gravel)	1.7	2.4	1.6	3.5	0.2	0.5	0.6	1.3	1.0
cobble	0.5	0.9	0.1	0.3	0.3	0.9	<0.1	<.01	0.2

Table C6. Intertidal Algae (percent cover) and Invertebrates (abundance per 1.0 m^2 ; percent cover) Survey Means, Standard Deviations and 2004 Annual Means, Field's Cove Station FC 1+0.9m.

Survey	136		137		138		139		
Survey Date	2-Mar-04		3-May-04		29-Jun-04		11-Nov-04		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Algae Cover									
Endocladia muricata	38.4	25.4	39.9	26.4	40.6	25.2	30.7	17.5	37.4
Non-coralline crust	17.5	8.8	11.7	10.8	14.4	7.8	24.8	12.1	17.1
Mastocarpus papillatus	5.0	5.1	6.3	7.8	6.3	4.0	11.0	11.8	7.1
Pelvetia compressa	1.3	2.3	0.8	2.2	3.5	7.6	1.3	3.9	1.7
coralline crust	1.5	1.8	1.3	2.6	0.6	1.5	1.6	4.3	1.2
Phyllospadix spp.	0.9	2.1	0.7	1.8	0.8	2.2	1.8	3.4	1.1
Corallina vancouveriensis	1.0	2.0	0.5	1.1	0.5	1.5	0.6	2.0	0.7
Gelidium coulteri	0.2	0.5	<0.1	<.01	<0.1	0.2	2.1	2.1	0.6
Mazzaella flaccida	0.1	0.4	0.2	0.5	0.3	0.9	1.5	2.4	0.5
Calliarthron/Bossiella spp.-complex	1.0	3.3	0.6	2.0	0.5	1.5	-	-	0.5
juv. articulated coralline algae	0.3	0.6	0.1	0.3	<0.1	<.01	1.3	4.0	0.4
Prionitis spp.	<0.1	0.2	<0.1	0.2	0.1	0.3	0.3	0.9	0.1
Hesperophycus californicus	-	-	-	-	0.4	1.3	-	-	0.1
Mazzaella leptorhynchos	<0.1	<.01	<0.1	<.01	0.2	0.5	<0.1	<.01	<0.1
Mazzaella heterocarpa	<0.1	<.01	0.1	0.3	<0.1	<.01	<0.1	0.2	<0.1
Mazzaella affinis	<0.1	0.2	<0.1	0.2	<0.1	<.01	<0.1	0.2	<0.1
Chondracanthus canaliculatus	<0.1	0.2	-	-	-	-	<0.1	0.2	<0.1
Mastocarpus jardinii	-	-	<0.1	<.01	-	-	0.1	0.4	<0.1
Porphyra spp.	<0.1	<.01	<0.1	<.01	<0.1	0.2	-	-	<0.1
Cladophora spp.	<0.1	-	<0.1	<.01	<0.1	<.01	<0.1	<.01	<0.1
Gelidium pusillum	<0.1	-	<0.1	<.01	<0.1	<.01	<0.1	<.01	<0.1
Ulva/Enteromorpha spp.	<0.1	<.01	-	-	-	-	-	-	<0.1
Callithamnion pikeanum	<0.1	<.01	-	-	-	-	-	-	<0.1
Cryptosiphonia woodii	-	-	-	-	<0.1	<.01	-	-	<0.1
Gastroclonium subarticulatum	<0.1	<.01	-	-	-	-	-	-	<0.1
Invertebrate Counts									
Tegula funebralis	260.6	69.1	298.2	101.3	480.6	187.0	153.0	120.3	298.1
Anthopleura elegantissima	339.4	245.7	248.8	222.1	268.2	274.7	271.2	185.6	281.9
Pagurus spp.	12.8	7.4	5.6	2.6	10.2	9.0	24.6	20.7	13.3
Macclintockia scabra	4.8	5.5	2.0	2.1	12.2	16.1	25.4	30.0	11.1
Lottia limatula	1.0	0.7	2.4	2.8	7.4	7.2	4.8	3.3	3.9
Cyanoplax spp.	0.4	0.6	2.8	1.6	2.4	2.6	1.2	1.3	1.7
Acanthina spp.	2.4	1.5	1.0	1.0	0.6	0.9	2.6	5.3	1.7
Tectura scutum	4.2	3.0	0.6	0.9	0.4	0.6	0.8	0.8	1.5
Ocenebra spp.	1.4	0.6	0.2	0.5	1.2	1.3	1.4	1.7	1.1
Lottia pelta	0.8	0.8	1.2	2.7	0.6	0.9	0.2	0.5	0.7
Pachygrapsus crassipes	0.6	0.6	0.4	0.6	0.2	0.5	0.8	0.8	0.5
Haliotis spp.	0.3	1.0	0.3	1.0	0.3	1.0	0.4	1.3	0.3
Nemertea unid.	-	-	-	-	0.6	0.9	-	-	0.2
Mopalia spp.	0.6	1.3	-	-	-	-	-	-	0.2
Lottia digitalis	0.4	0.9	-	-	-	-	-	-	<0.1
Pisaster ochraceus	0.2	0.5	-	-	-	-	0.2	0.5	<0.1
Strongylocentrotus purpuratus	-	-	-	-	0.4	0.9	-	-	<0.1
Tonicella lineata	-	-	-	-	-	-	0.2	0.5	<0.1
Hemigrapsus nudus	-	-	-	-	-	-	0.2	0.5	<0.1
Leptasterias spp.	0.2	0.5	-	-	-	-	-	-	<0.1
Pugettia spp.	-	-	0.2	0.5	-	-	-	-	<0.1

(continued)

Table C6 (continued). Intertidal Algae (percent cover) and Invertebrates (abundance per 1.0 m^2 ; percent cover) Survey Means, Standard Deviations and 2004 Annual Means, Field's Cove Station FC 1+0.9m.

Survey	136		137		138		139		
Survey Date	2-Mar-04		3-May-04		29-Jun-04		11-Nov-04		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Invertebrate Counts (continued)									
Acmaeidae unid.	<0.1	< .01	<0.1	< .01	<0.1	-	<0.1	-	<0.1
Lottia asmi	<0.1	< .01	<0.1	< .01	<0.1	< .01	-	-	<0.1
Littorina spp.	<0.1	< .01	-	-	<0.1	< .01	<0.1	< .01	<0.1
Crepidula spp.	-	-	-	-	<0.1	< .01	<0.1	< .01	<0.1
Ischnochitonidae	-	-	<0.1	< .01	<0.1	< .01	-	-	<0.1
Sipuncula unid.	-	-	-	-	<0.1	< .01	<0.1	< .01	<0.1
Grapsidae (juv.)	-	-	-	-	<0.1	< .01	-	-	<0.1
Nitidiscala/Opalia spp.	-	-	-	-	<0.1	< .01	-	-	<0.1
Serpulidae unid.	<0.1	< .01	-	-	-	-	-	-	<0.1
Heptacarpus spp.	-	-	-	-	-	-	<0.1	< .01	<0.1
Invertebrate Cover									
Phragmatopoma californica	0.7	0.7	0.4	1.3	0.3	0.5	0.1	0.4	0.4
Chthamalus fissus	<0.1	0.2	<0.1	0.2	<0.1	0.2	0.4	1.1	0.2
Spirorbidae	<0.1	< .01	<0.1	< .01	<0.1	< .01	-	-	<0.1
Haliclona spp.	<0.1	< .01	-	-	<0.1	< .01	<0.1	< .01	<0.1
Substrate Cover									
rock	20.2	13.1	28.3	16.7	31.3	17.6	25.0	9.4	26.2
sand (shell gravel)	5.1	4.4	5.4	4.5	0.4	1.1	2.5	5.5	3.4
cobble	3.1	3.5	3.8	7.9	2.2	4.8	1.5	3.1	2.6

Table C7. Intertidal Algae (percent cover) and Invertebrates (abundance per 1.0 m^2; percent cover) Survey Means, Standard Deviations and 2004 Annual Means, Field's Cove Station FC 2+0.3m.

Survey	136		137		138		139		
Survey Date	4-Feb-04		4-May-04		15-Jul-04		11-Nov-04		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Algae Cover									
Non-coralline crust	30.4	10.7	21.5	17.0	11.0	8.9	24.0	8.2	21.7
Mazzaella flaccida	5.5	7.3	15.0	14.3	16.7	13.1	5.6	6.1	10.7
Corallina vancouveriensis	10.7	9.7	15.1	14.0	3.5	4.8	12.1	12.5	10.4
Egregia menziesii	5.3	9.7	6.0	11.3	14.7	18.2	10.3	10.1	9.1
coralline crust	13.1	7.2	10.8	6.5	7.2	4.1	4.9	3.2	9.0
Endocladia muricata	5.7	9.8	7.6	13.7	8.5	14.1	8.5	15.2	7.6
Gelidium coulteri	4.1	2.3	2.6	1.8	8.8	6.2	9.9	6.9	6.4
Mastocarpus papillatus	3.3	2.4	4.2	3.1	9.5	12.1	4.2	3.4	5.3
Gastroclonium subarticulatum	2.6	3.7	3.9	7.1	3.1	4.3	8.2	9.0	4.4
Cryptopleura violacea	6.9	8.8	1.2	2.3	4.9	10.1	4.0	4.7	4.2
Chondracanthus canaliculatus	3.7	5.2	4.2	7.1	3.0	4.4	5.6	5.2	4.1
juv. articulated coralline algae	2.6	1.9	1.2	1.5	4.7	3.7	4.8	2.9	3.3
Phyllospadix spp.	1.4	3.4	3.4	9.1	2.4	5.9	4.4	9.9	2.9
Calliarthron/Bossiella spp.-complex	3.3	2.3	2.9	5.9	1.7	2.3	2.0	2.9	2.5
Mastocarpus jardinii	1.3	1.0	0.8	1.5	1.9	1.8	2.8	4.2	1.7
Mazzaella affinis	0.5	0.8	1.3	2.2	1.9	2.8	2.6	3.5	1.6
Prionitis spp.	1.3	1.9	0.6	1.1	1.0	1.4	1.7	3.1	1.1
Mazzaella heterocarpa	<0.1	<.01	1.7	1.4	1.0	1.2	0.3	0.6	0.8
Ulva/Enteromorpha spp.	0.5	0.6	0.1	0.4	0.4	0.9	0.3	0.5	0.3
Porphyra spp.	<0.1	<.01	0.2	0.5	0.8	1.1	-	-	0.3
Cryptosiphonia woodii	<0.1	<.01	0.5	0.7	0.2	0.7	0.1	0.4	0.2
Gelidium pusillum	<0.1	<.01	<0.1	<.01	-	-	0.7	1.5	0.2
Cladophora spp.	<0.1	<.01	<0.1	0.2	0.5	0.7	<0.1	0.2	0.2
Osmundea spp.	<0.1	0.2	<0.1	<.01	-	-	0.5	1.3	0.1
Corallina officinalis	<0.1	<.01	0.2	0.5	<0.1	0.2	0.1	0.4	0.1
Spongomorpha/Acrosiphonia-complex	-	-	0.2	0.5	<0.1	0.2	-	-	<0.1
Callithamnion pikeanum	-	-	0.3	0.6	-	-	-	-	<0.1
Mazzaella leptorhynchos	<0.1	<.01	<0.1	0.2	<0.1	<.01	-	-	<0.1
Sarcodiotheca gaudichaudii	<0.1	<.01	-	-	<0.1	0.2	-	-	<0.1
Halymenia/Schizymenia spp.-complex	-	-	-	-	<0.1	0.2	-	-	<0.1
filamentous red algae-complex	-	-	<0.1	0.2	-	-	-	-	<0.1
Microcladia borealis	-	-	<0.1	<.01	-	-	-	-	<0.1
Colpomenia spp.	-	-	<0.1	<.01	-	-	-	-	<0.1
Mazzaella lilacina	<0.1	<.01	-	-	-	-	-	-	<0.1
Callithamnion spp./*Pleonosporium* spp.	-	-	-	-	<0.1	<.01	-	-	<0.1
Melobesia mediocris	-	-	-	-	-	-	<0.1	<.01	<0.1
Invertebrate Counts									
Tegula funebralis	112.8	83.3	153.8	137.5	14.4	23.6	118.2	101.9	99.8
Strongylocentrotus purpuratus	40.0	14.3	38.2	13.2	11.4	2.3	22.0	5.2	27.9
Anthopleura elegantissima	35.6	37.6	12.2	9.9	18.4	19.4	28.4	21.5	23.7
Pagurus spp.	17.6	10.4	2.6	2.8	9.4	15.6	20.8	18.1	12.6
Macclintockia scabra	9.8	20.8	6.0	10.8	7.4	11.7	16.4	22.6	9.9
Nuttallina californica	4.6	7.5	6.0	5.0	1.8	3.0	6.2	8.8	4.7
Tegula brunnea	1.8	4.0	2.6	5.3	0.8	1.8	9.2	9.3	3.6
Lottia limatula	1.0	1.4	0.8	0.5	0.6	0.9	9.6	13.3	3.0
Fissurella volcano	1.4	2.1	0.6	0.9	1.8	3.5	3.8	3.0	1.9
Tetraclita rubescens	2.4	5.4	1.6	3.6	0.8	1.8	1.6	2.6	1.6

(continued)

Table C7 (continued). Intertidal Algae (percent cover) and Invertebrates (abundance per 1.0 m^2 ; percent cover) Survey Means, Standard Deviations and 2004 Annual Means, Field's Cove Station FC 2+0.3m.

Survey	136		137		138		139		
Survey Date	4-Feb-04		4-May-04		15-Jul-04		11-Nov-04		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Invertebrate Counts (continued)									
Pachygrapsus crassipes	-	-	2.0	2.0	0.4	0.6	0.6	1.3	0.8
Tectura scutum	0.8	0.8	0.8	0.5	1.0	0.7	0.2	0.5	0.7
Serpulorbis squamigerus	1.0	2.2	0.8	1.3	0.4	0.9	-	-	0.6
Ocenebra spp.	0.6	0.9	0.4	0.9	0.6	0.9	0.6	0.9	0.6
Serpulidae unid.	0.4	0.6	0.4	0.6	0.2	0.5	0.8	1.1	0.5
Lottia pelta	-	-	0.4	0.6	0.4	0.6	0.8	1.3	0.4
Pugettia spp.	-	-	0.2	0.5	0.8	0.8	0.6	0.9	0.4
Leptasterias spp.	-	-	0.4	0.6	0.4	0.6	0.6	0.9	0.4
Nemertea unid.	0.6	0.9	-	-	0.4	0.6	0.2	0.5	0.3
Epiactis prolifera	0.2	0.5	-	-	<0.1	< .01	0.6	1.3	0.2
Pisaster ochraceus	0.2	0.5	0.6	1.3	-	-	-	-	0.2
Cyanoplax spp.	0.4	0.9	-	-	0.2	0.5	-	-	0.2
Tonicella lineata	0.2	0.5	0.2	0.5	-	-	-	-	<0.1
Sipuncula unid.	-	-	<0.1	< .01	0.2	0.5	-	-	<0.1
Heptacarpus spp.	<0.1	< .01	-	-	-	-	0.2	0.5	<0.1
Cirratulidae/Terebellidae unid.	-	-	0.2	0.5	-	-	-	-	<0.1
Mopalia spp.	-	-	-	-	0.2	0.5	-	-	<0.1
Lottia ochracea	-	-	0.2	0.5	-	-	-	-	<0.1
Cancer antennarius	-	-	-	-	0.2	0.5	-	-	<0.1
Acmaeidae unid.	-	-	<0.1	< .01	<0.1	-	<0.1	< .01	<0.1
Lottia asmi	<0.1	< .01	-	-	<0.1	< .01	<0.1	< .01	<0.1
Acmaea mitra	<0.1	< .01	-	-	-	-	<0.1	< .01	<0.1
Discurria insessa	<0.1	< .01	-	-	-	-	<0.1	< .01	<0.1
Homolopoma luridum/Lirularia	-	-	<0.1	< .01	-	-	<0.1	< .01	<0.1
Alia spp.	<0.1	< .01	-	-	-	-	-	-	<0.1
Littorina spp.	<0.1	< .01	-	-	-	-	-	-	<0.1
Ischnochitonidae	<0.1	< .01	-	-	-	-	-	-	<0.1
Pelecypoda unid. boring	-	-	-	-	-	-	<0.1	< .01	<0.1
Lacuna spp.	-	-	-	-	-	-	<0.1	< .01	<0.1
Invertebrate Cover									
Chthamalus fissus	<0.1	0.2	0.2	0.7	0.6	1.5	0.4	0.9	0.3
Dodecaceria fewkesi	0.4	1.3	<0.1	< .01	<0.1	< .01	-	-	0.1
Pista spp.	<0.1	< .01	<0.1	< .01	-	-	0.3	1.1	<0.1
Phragmatopoma californica	<0.1	< .01	<0.1	< .01	<0.1	< .01	<0.1	< .01	<0.1
Porifera unid. (encrusting)	<0.1	< .01	<0.1	< .01	-	-	<0.1	< .01	<0.1
Spirorbidae	<0.1	< .01	<0.1	< .01	-	-	<0.1	< .01	<0.1
Haliclona spp.	<0.1	< .01	-	-	-	-	-	-	<0.1
Substrate Cover									
rock	15.6	14.3	15.6	10.3	15.1	17.3	9.7	7.9	14.0
sand (shell gravel)	0.8	1.4	1.0	1.8	1.5	2.4	0.8	1.6	1.0
cobble	0.3	0.8	0.2	0.7	0.8	1.3	0.5	1.1	0.5

Table C8. Intertidal Algae (percent cover) and Invertebrates (abundance per 1.0 m^2 ; percent cover) Survey Means, Standard Deviations and 2004 Annual Means, Field's Cove Station FC 2+0.9m.

Survey	136		137		138		139		
Survey Date	4-Feb-04		3-May-04		15-Jul-04		11-Nov-04		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Algae Cover									
Endocladia muricata	33.5	11.1	43.3	11.4	36.2	14.8	34.9	13.6	37.0
Non-coralline crust	19.7	14.8	11.3	10.9	11.5	8.7	21.2	13.1	15.9
Mastocarpus papillatus	5.2	3.7	6.1	3.0	11.5	7.7	8.1	6.5	7.7
Pelvetia compressa	3.3	4.4	4.3	7.6	6.1	12.7	5.5	9.1	4.8
Fucus gardneri	1.0	2.1	-	-	0.3	1.1	-	-	0.3
Cladophora spp.	<0.1	< .01	<0.1	< .01	0.2	0.5	0.6	0.8	0.2
coralline crust	0.3	0.5	0.1	0.4	<0.1	0.2	0.1	0.3	0.2
Porphyra spp.	<0.1	< .01	<0.1	< .01	0.5	0.6	0.1	0.3	0.2
Hesperophycus californicus	-	-	-	-	0.1	0.4	0.4	1.3	0.1
Gelidium coulteri	<0.1	< .01	-	-	<0.1	< .01	0.3	0.5	<0.1
Prionitis spp.	<0.1	0.2	<0.1	< .01	<0.1	< .01	0.1	0.4	<0.1
Mazzaella flaccida	<0.1	0.2	<0.1	< .01	<0.1	0.2	-	-	<0.1
Calliarthron/Bossiella spp.-complex	-	-	-	-	0.1	0.4	-	-	<0.1
juv. articulated coralline algae	<0.1	0.2	<0.1	< .01	<0.1	< .01	<0.1	< .01	<0.1
Mazzaella affinis	<0.1	< .01	-	-	-	-	<0.1	0.2	<0.1
Gelidium pusillum	<0.1	< .01	<0.1	< .01	<0.1	< .01	<0.1	< .01	<0.1
Corallina vancouveriensis	<0.1	< .01	<0.1	< .01	-	-	<0.1	< .01	<0.1
Mazzaella heterocarpa	-	-	-	-	-	-	<0.1	< .01	<0.1
Ulva/Enteromorpha spp.	<0.1	< .01	-	-	-	-	-	-	<0.1
Cryptosiphonia woodii	<0.1	< .01	-	-	-	-	<0.1	< .01	<0.1
Chondracanthus canaliculatus	<0.1	< .01	-	-	-	-	-	-	<0.1
Mazzaella leptorhynchos	<0.1	< .01	-	-	-	-	<0.1	< .01	<0.1
Mastocarpus jardinii	<0.1	< .01	-	-	-	-	-	-	<0.1
Fucaceae unid.	-	-	<0.1	< .01	-	-	-	-	<0.1
Invertebrate Counts									
Tegula funebralis	99.2	39.4	159.6	48.7	220.2	35.0	89.2	20.3	142.1
Anthopleura elegantissima	112.0	76.9	160.6	110.8	132.4	89.9	103.4	69.8	127.1
Macclintockia scabra	10.2	8.4	6.4	6.2	20.2	17.2	67.0	46.6	26.0
Lottia limatula	0.6	0.6	2.4	2.3	0.4	0.6	17.8	18.8	5.3
Pollicipes polymerus	-	-	8.4	18.8	10.4	23.3	-	-	4.7
Cyanoplax spp.	1.8	2.2	3.8	3.4	3.0	2.6	3.8	4.6	3.1
Pagurus spp.	4.8	5.5	-	-	0.4	0.9	3.6	3.3	2.2
Lottia pelta	0.8	1.8	0.8	0.8	0.8	1.3	3.2	3.1	1.4
Tectura scutum	1.0	1.7	0.2	0.5	4.2	2.4	-	-	1.4
Acanthina spp.	0.2	0.5	0.4	0.6	1.4	0.9	0.8	1.1	0.7
Pachygrapsus crassipes	0.6	0.6	1.2	1.6	0.4	0.6	-	-	0.6
Lottia digitalis	-	-	-	-	0.4	0.9	1.2	2.7	0.4
Ocenebra spp.	0.6	0.9	0.2	0.5	0.2	0.5	<0.1	< .01	0.3
Cirratulidae/Terebellidae unid.	-	-	0.2	0.5	0.8	1.3	<0.1	< .01	0.3
Mopalia spp.	-	-	-	-	-	-	0.4	0.6	<0.1
Mytilus californianus	-	-	0.4	0.9	-	-	-	-	<0.1
Littorina spp.	<0.1	-	-	-	0.2	0.5	<0.1	< .01	<0.1
Calliostoma ligatum	0.2	0.5	-	-	-	-	-	-	<0.1
Alia spp.	-	-	-	-	0.2	0.5	-	-	<0.1
Nuttallina californica	-	-	-	-	-	-	0.2	0.5	<0.1
Ophiothrix spp.	-	-	0.2	0.5	-	-	-	-	<0.1
Mytilidae	-	-	-	-	0.2	0.5	-	-	<0.1

(continued)

Table C8 (continued). Intertidal Algae (percent cover) and Invertebrates (abundance per 1.0 m^2 ; percent cover) Survey Means, Standard Deviations and 2004 Annual Means, Field's Cove Station FC 2+0.9m.

Survey	136		137		138		139		
Survey Date	4-Feb-04		3-May-04		15-Jul-04		11-Nov-04		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Invertebrate Counts (continued)									
Acmaeidae unid.	<0.1	< .01	<0.1	< .01	<0.1	-	<0.1	-	<0.1
Lottia asmi	<0.1	< .01	<0.1	< .01	<0.1	< .01	<0.1	< .01	<0.1
Ischnochitonidae	<0.1	< .01	<0.1	< .01	<0.1	< .01	<0.1	< .01	<0.1
Nitidiscala/Opalia spp.	-	-	-	-	-	-	<0.1	< .01	<0.1
Homolopoma luridum/Lirularia	<0.1	< .01	-	-	-	-	-	-	<0.1
Invertebrate Cover									
Phragmatopoma californica	<0.1	< .01	<0.1	0.2	<0.1	< .01	0.1	0.4	<0.1
Chthamalus fissus	<0.1	-	<0.1	< .01	<0.1	< .01	<0.1	-	<0.1
Spirorbidae	<0.1	< .01	-	-	-	-	-	-	<0.1
Substrate Cover									
rock	38.1	15.9	39.2	15.7	37.5	21.4	37.0	13.7	37.9
sand (shell gravel)	3.8	7.7	4.7	7.4	1.0	2.1	3.1	7.9	3.1
cobble	<0.1	0.2	-	-	0.3	1.1	0.8	1.4	0.3

Table C9. Intertidal Algae (percent cover) and Invertebrates (abundance per 1.0 m^2; percent cover) Survey Means, Standard Deviations and 2004 Annual Means, Field's Cove Station FC 3+0.3m.

Survey	136		137		138		139		
Survey Date	2-Feb-04		12-May-04		17-Aug-04		13-Nov-04		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Algae Cover									
Mazzaella flaccida	21.0	19.0	39.7	26.1	37.6	22.5	21.8	21.0	30.0
Gastroclonium subarticulatum	18.2	16.7	19.1	25.3	23.9	30.9	17.3	12.4	19.6
Non-coralline crust	23.5	10.2	15.9	4.5	18.5	12.8	18.1	7.2	19.0
Chondracanthus canaliculatus	4.7	3.8	7.6	7.8	6.5	3.5	5.9	4.5	6.2
coralline crust	6.3	4.9	3.0	1.1	6.4	6.4	5.1	6.6	5.2
Phyllospadix spp.	2.1	5.1	3.4	7.3	5.1	8.3	9.4	16.8	5.0
Calliarthron/Bossiella spp.-complex	6.7	9.9	2.6	4.2	4.3	8.2	5.2	8.7	4.7
Mastocarpus papillatus	3.8	4.7	5.9	5.8	6.3	8.8	1.7	1.6	4.4
Mastocarpus jardinii	2.2	2.3	4.7	5.5	6.3	10.8	3.5	3.7	4.1
Gelidium coulteri	0.4	0.6	2.5	1.5	6.0	5.5	3.1	2.6	3.0
Ulva/Enteromorpha spp.	0.6	1.1	0.9	1.5	3.2	3.8	3.2	3.3	2.0
Cryptopleura violacea	1.2	1.3	0.6	0.8	2.2	2.0	2.4	2.6	1.6
Corallina vancouveriensis	2.1	2.2	1.1	1.4	1.7	3.0	1.4	3.2	1.6
Egregia menziesii	0.6	1.5	0.6	1.2	2.6	8.3	2.2	7.0	1.5
Mazzaella heterocarpa	1.9	1.9	2.8	3.3	0.3	0.6	<0.1	<.01	1.3
Mazzaella affinis	0.4	0.8	1.0	1.4	1.5	3.0	1.6	1.6	1.1
Endocladia muricata	0.9	1.5	1.9	1.8	1.3	2.4	<0.1	0.2	1.1
Porphyra spp.	4.1	13.0	-	-	-	-	-	-	1.0
juv. articulated coralline algae	0.6	0.7	0.4	0.6	1.8	3.3	0.8	1.1	0.9
Chrysophyta unid.	-	-	0.8	2.0	2.4	5.4	-	-	0.8
Cryptosiphonia woodii	0.3	0.5	1.2	2.0	0.8	1.4	-	-	0.6
Prionitis spp.	0.1	0.3	0.5	0.9	0.6	1.0	0.3	0.7	0.4
filamentous red algae-complex	0.2	0.5	1.3	1.9	-	-	<0.1	0.2	0.4
Callithamnion pikeanum	<0.1	<.01	0.6	1.3	<0.1	<.01	<0.1	<.01	0.2
Mazzaella leptorhynchos	<0.1	<.01	0.4	0.9	<0.1	0.2	<0.1	0.2	0.1
Corallina officinalis	-	-	<0.1	0.2	<0.1	<.01	0.5	0.7	0.1
Spongomorpha/Acrosiphonia-complex	-	-	0.6	1.8	<0.1	<.01	-	-	0.1
Smithora naiadum	<0.1	<.01	-	-	0.2	0.5	<0.1	0.2	<0.1
Gelidium pusillum	<0.1	0.2	<0.1	0.2	<0.1	0.2	<0.1	<.01	<0.1
Cladophora spp.	<0.1	<.01	<0.1	<.01	0.1	0.4	<0.1	<.01	<0.1
Osmundea spp.	<0.1	<.01	<0.1	<.01	-	-	0.1	0.3	<0.1
Halymenia/Schizymenia spp.-complex	0.1	0.4	-	-	-	-	-	-	<0.1
Sarcodiotheca gaudichaudii	<0.1	<.01	<0.1	0.2	-	-	<0.1	<.01	<0.1
Microcladia coulteri	-	-	-	-	<0.1	<.01	<0.1	<.01	<0.1
Colpomenia spp.	-	-	-	-	<0.1	<.01	<0.1	<.01	<0.1
Chondracanthus corymbiferus	<0.1	<.01	<0.1	<.01	<0.1	<.01	-	-	<0.1
Grateloupia doryphora	-	-	-	-	-	-	<0.1	<.01	<0.1
Callithamnion spp./*Pleonosporium* spp.	-	-	<0.1	<.01	-	-	-	-	<0.1
Melobesia mediocris	<0.1	<.01	-	-	-	-	-	-	<0.1
Invertebrate Counts									
Strongylocentrotus purpuratus	54.2	106.9	42.4	81.0	16.0	26.6	23.6	44.5	34.1
Tegula funebralis	38.4	52.8	34.4	31.9	3.8	6.4	10.6	19.0	21.8
Tegula brunnea	8.6	10.1	1.4	0.9	34.8	58.3	8.8	9.5	13.4
Pagurus spp.	16.6	15.2	5.0	6.2	16.4	8.9	10.0	4.6	12.0
Anthopleura elegantissima	8.8	5.6	6.6	3.2	5.0	1.2	6.4	4.6	6.7
Fissurella volcano	3.4	3.9	1.4	1.5	2.6	3.7	0.6	0.9	2.0
Tetraclita rubescens	2.4	5.4	2.8	6.3	0.2	0.5	-	-	1.4

(continued)

Table C9 (continued). Intertidal Algae (percent cover) and Invertebrates (abundance per 1.0 m^2 ; percent cover) Survey Means, Standard Deviations and 2004 Annual Means, Field's Cove Station FC 3+0.3m.

Survey	136		137		138		139		
Survey Date	2-Feb-04		12-May-04		17-Aug-04		13-Nov-04		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Invertebrate Counts (continued)									
Tectura scutum	0.4	0.9	1.2	1.3	2.8	5.2	<0.1	< .01	1.1
Serpulorbis squamigerus	1.2	1.3	0.2	0.5	0.6	0.9	-	-	0.5
Macclintockia scabra	0.2	0.5	0.4	0.9	1.0	2.2	0.2	0.5	0.5
Serpulidae unid.	0.6	0.6	0.4	0.9	0.2	0.5	<0.1	< .01	0.3
Nuttallina californica	0.2	0.5	0.2	0.5	0.8	1.8	-	-	0.3
Leptasterias spp.	0.2	0.5	-	-	0.6	0.9	0.2	0.5	0.3
Lottia pelta	0.4	0.9	-	-	-	-	0.6	0.9	0.3
Pugettia spp.	-	-	0.6	1.3	0.2	0.5	0.2	0.5	0.3
Acmaea mitra	0.2	0.5	0.2	0.5	0.2	0.5	0.2	0.5	0.2
Lottia limatula	0.2	0.5	0.2	0.5	-	-	0.4	0.6	0.2
Epiactis prolifera	0.2	0.5	-	-	-	-	0.4	0.6	0.2
Nemertea unid.	0.4	0.9	-	-	-	-	0.2	0.5	0.2
Pachygrapsus crassipes	-	-	0.4	0.9	0.2	0.5	-	-	0.2
Tectura persona	-	-	-	-	-	-	0.6	1.3	0.2
Tonicella lineata	0.2	0.5	0.2	0.5	<0.1	< .01	-	-	0.1
Mopalia spp.	0.2	0.5	0.2	0.5	-	-	-	-	<0.1
Pisaster ochraceus	-	-	-	-	-	-	0.4	0.6	<0.1
Ocenebra spp.	-	-	0.2	0.5	-	-	0.2	0.5	<0.1
Diodora spp.	-	-	0.2	0.5	-	-	-	-	<0.1
Lottia ochracea	-	-	0.2	0.5	-	-	-	-	<0.1
Mitra idae	-	-	-	-	0.2	0.5	-	-	<0.1
Pisaster giganteus	-	-	-	-	0.2	0.5	-	-	<0.1
Acmaeidae unid.	-	-	<0.1	< .01	<0.1	< .01	<0.1	< .01	<0.1
Sipuncula unid.	<0.1	< .01	-	-	<0.1	< .01	-	-	<0.1
Nereididae unid.	<0.1	< .01	-	-	<0.1	< .01	-	-	<0.1
Lacuna spp.	-	-	-	-	<0.1	< .01	-	-	<0.1
Crepidula spp.	-	-	-	-	<0.1	< .01	-	-	<0.1
Lottia asmi	-	-	-	-	<0.1	< .01	-	-	<0.1
Pycnopodia helianthoides	-	-	-	-	-	-	<0.1	< .01	<0.1
Pelecypoda unid. boring	-	-	-	-	<0.1	< .01	-	-	<0.1
Amphissa spp.	-	-	-	-	<0.1	< .01	-	-	<0.1
Heptacarpus spp.	-	-	-	-	<0.1	< .01	-	-	<0.1
Lissothuria nutriens	-	-	-	-	<0.1	< .01	-	-	<0.1
Cirratulidae/Terebellidae unid.	<0.1	< .01	-	-	-	-	-	-	<0.1
Invertebrate Cover									
Pista spp.	0.3	1.1	0.6	2.0	0.5	0.9	8.5	12.9	2.5
tunicates, colonial/social unid.	<0.1	< .01	-	-	0.1	0.4	<0.1	0.2	<0.1
Phragmatopoma californica	<0.1	< .01	<0.1	0.2	<0.1	0.2	<0.1	< .01	<0.1
Bryozoa, unid. (encrusting)	-	-	<0.1	0.2	-	-	-	-	<0.1
Spirorbidae	<0.1	< .01	-	-	<0.1	< .01	<0.1	< .01	<0.1
Porifera unid. (encrusting)	<0.1	< .01	-	-	<0.1	< .01	<0.1	< .01	<0.1
Chthamalus fissus	<0.1	< .01	-	-	-	-	<0.1	< .01	<0.1
Substrate Cover									
rock	6.9	6.3	2.0	0.8	2.1	2.0	1.2	1.1	3.1
sand (shell gravel)	3.1	4.8	2.2	3.3	0.5	1.0	1.6	3.1	1.8
cobble	0.9	1.4	1.9	4.0	0.8	2.0	0.9	1.5	1.1

Table C10. Intertidal Algae (percent cover) and Invertebrates (abundance per 1.0 m^2 ; percent cover) Survey Means, Standard Deviations and 2004 Annual Means, Field's Cove Station FC 3+0.9m.

Survey	136		137		138		139		
Survey Date	2-Feb-04		12-May-04		17-Aug-04		13-Nov-04		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Algae Cover									
Endocladia muricata	34.9	15.9	45.6	19.6	26.7	14.2	29.4	16.2	34.1
Mastocarpus papillatus	23.1	14.8	27.7	19.2	51.6	26.5	31.1	18.0	33.4
Non-coralline crust	22.9	7.6	15.0	7.6	18.9	9.0	22.7	9.5	19.9
Mazzaella flaccida	3.7	3.6	1.7	2.1	9.8	7.2	5.3	5.5	5.1
Gelidium coulteri	0.9	1.8	0.6	1.1	2.4	4.3	3.6	10.9	1.9
Pelvetia compressa	1.2	2.2	2.1	4.4	1.2	2.7	0.1	0.4	1.1
coralline crust	1.5	1.2	0.6	0.6	0.6	0.7	1.3	2.5	1.0
Cladophora spp.	<0.1	-	<0.1	0.2	2.5	6.1	0.1	0.3	0.7
Corallina vancouveriensis	0.5	1.3	0.9	2.6	<0.1	<.01	0.2	0.7	0.4
Mazzaella heterocarpa	0.5	0.5	0.1	0.4	1.0	1.5	<0.1	<.01	0.4
Chondracanthus canaliculatus	0.4	0.6	<0.1	<.01	-	-	0.9	1.1	0.3
Gelidium pusillum	0.4	0.6	0.2	0.7	0.3	0.8	<0.1	0.2	0.3
Porphyra spp.	<0.1	<.01	0.2	0.5	0.8	1.1	-	-	0.3
Mazzaella affinis	0.1	0.3	<0.1	<.01	0.4	1.1	0.4	0.8	0.2
Mastocarpus jardinii	-	-	0.3	0.5	0.3	0.9	0.1	0.4	0.2
Calliarthron/Bossiella spp.-complex	<0.1	0.2	-	-	0.2	0.5	0.3	0.7	0.1
juv. articulated coralline algae	<0.1	0.2	<0.1	0.2	<0.1	0.2	0.1	0.4	<0.1
Cryptosiphonia woodii	<0.1	0.2	<0.1	0.2	-	-	<0.1	0.2	<0.1
Cryptopleura violacea	-	-	-	-	0.1	0.4	<0.1	0.2	<0.1
Mazzaella leptorhynchos	0.1	0.3	<0.1	<.01	<0.1	<.01	<0.1	<.01	<0.1
Gastroclonium subarticulatum	-	-	0.1	0.3	-	-	<0.1	<.01	<0.1
Spongomorpha/Acrosiphonia-complex	-	-	-	-	<0.1	0.2	-	-	<0.1
Corallina officinalis	-	-	-	-	-	-	<0.1	0.2	<0.1
Prionitis spp.	-	-	<0.1	0.2	-	-	-	-	<0.1
Phyllospadix spp.	-	-	-	-	-	-	<0.1	0.2	<0.1
Ulva/Enteromorpha spp.	<0.1	<.01	-	-	-	-	<0.1	<.01	<0.1
Callithamnion pikeanum	-	-	<0.1	<.01	-	-	-	-	<0.1
Invertebrate Counts									
Tegula funebralis	103.8	72.6	107.4	52.7	252.4	84.9	150.0	81.7	153.4
Anthopleura elegantissima	20.2	27.1	21.0	29.8	12.2	12.0	40.8	52.1	23.6
Macclintockia scabra	3.0	1.2	2.8	3.0	25.6	22.5	11.0	14.6	10.6
Pagurus spp.	9.4	12.4	2.4	3.1	22.8	27.2	6.4	5.7	10.3
Lottia limatula	0.8	1.3	-	-	7.6	9.2	0.4	0.9	2.2
Tectura scutum	0.2	0.5	0.6	1.3	1.0	1.7	1.4	2.0	0.8
Lottia pelta	0.6	0.9	-	-	0.8	1.8	0.2	0.5	0.4
Cyanoplax spp.	<0.1	<.01	0.2	0.5	0.6	0.9	0.2	0.5	0.3
Ocenebra spp.	0.2	0.5	0.4	0.9	0.4	0.9	-	-	0.3
Pachygrapsus crassipes	-	-	0.6	0.9	0.2	0.5	-	-	0.2
Acanthina spp.	<0.1	<.01	-	-	0.6	0.9	-	-	0.2
Nuttallina californica	0.4	0.6	0.2	0.5	-	-	-	-	0.2
Hemigrapsus oregonensis	-	-	-	-	-	-	0.2	0.5	<0.1
Nereididae unid.	-	-	-	-	0.2	0.5	-	-	<0.1
Leptasterias spp.	-	-	-	-	0.2	0.5	-	-	<0.1
Pisaster ochraceus	-	-	-	-	-	-	0.2	0.5	<0.1
Strongylocentrotus purpuratus	0.2	0.5	-	-	-	-	-	-	<0.1
Grapsidae (juv.)	-	-	-	-	-	-	0.2	0.5	<0.1
Acmaeidae unid.	<0.1	<.01	<0.1	<.01	<0.1	-	<0.1	<.01	<0.1

(continued)

Table C10 (continued). Intertidal Algae (percent cover) and Invertebrates (abundance per 1.0 m^2; percent cover) Survey Means, Standard Deviations and 2004 Annual Means, Field's Cove Station FC 3+0.9m.

Survey	136		137		138		139		
Survey Date	2-Feb-04		12-May-04		17-Aug-04		13-Nov-04		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Invertebrate Counts (continued)									
Lottia asmi	<0.1	< .01	<0.1	< .01	<0.1	< .01	-	-	<0.1
Ischnochitonidae	-	-	<0.1	< .01	<0.1	< .01	-	-	<0.1
Crepidula spp.	-	-	-	-	<0.1	< .01	<0.1	< .01	<0.1
Littorina spp.	-	-	-	-	<0.1	< .01	-	-	<0.1
Pisaster/Henricia (juv.)	-	-	-	-	<0.1	< .01	-	-	<0.1
Invertebrate Cover									
Phragmatopoma californica	<0.1	-	0.1	0.3	<0.1	< .01	<0.1	< .01	<0.1
Chthamalus fissus	<0.1	< .01	<0.1	< .01	<0.1	< .01	<0.1	0.2	<0.1
Spirorbidae	<0.1	< .01	-	-	<0.1	< .01	<0.1	< .01	<0.1
Porifera unid. (encrusting)	-	-	-	-	-	-	<0.1	< .01	<0.1
Substrate Cover									
rock	14.6	9.8	17.1	10.5	11.3	10.7	11.8	14.2	13.7
sand (shell gravel)	6.1	12.0	3.0	4.5	3.1	6.9	0.9	0.9	3.3
cobble	-	-	0.4	1.1	0.2	0.7	0.1	0.4	0.2

Table C11. Intertidal Algae (percent cover) and Invertebrates (abundance per 1.0 m^2; percent cover) Survey Means, Standard Deviations and 2004 Annual Means, North Diablo Cove Station NDC 1+0.3m.

Survey	136		137		138		139		
Survey Date	4-Mar-04		20-May-04		29-Aug-04		16-Dec-04		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Algae Cover									
Non-coralline crust	25.1	11.6	23.8	14.8	29.2	11.4	27.6	12.2	26.4
coralline crust	4.4	3.2	2.6	3.0	1.0	0.9	2.4	2.1	2.6
Mastocarpus papillatus	1.0	1.8	<0.1	<.01	4.1	2.6	5.0	5.9	2.5
Gelidium coulteri	-	-	-	-	2.9	2.1	1.6	2.4	1.1
juv. articulated coralline algae	0.9	1.4	0.9	1.6	0.4	0.8	1.5	3.0	0.9
Corallina vancouveriensis	3.4	4.0	-	-	-	-	<0.1	<.01	0.9
Mazzaella affinis	<0.1	<.01	-	-	1.6	2.3	0.4	1.1	0.5
Gastroclonium subarticulatum	-	-	-	-	1.9	5.9	-	-	0.5
Phyllospadix spp.	-	-	-	-	1.9	5.9	-	-	0.5
Chondracanthus canaliculatus	<0.1	0.2	-	-	1.4	3.1	<0.1	0.2	0.4
Smithora naiadum	-	-	-	-	0.3	1.1	-	-	<0.1
filamentous red algae-complex	-	-	-	-	<0.1	<.01	0.3	0.9	<0.1
Mastocarpus jardinii	-	-	-	-	0.2	0.7	-	-	<0.1
Cladophora spp.	<0.1	<.01	-	-	0.1	0.4	<0.1	<.01	<0.1
Ulva/Enteromorpha spp.	-	-	-	-	<0.1	0.2	<0.1	<.01	<0.1
Mazzaella leptorhynchos	<0.1	0.2	-	-	<0.1	<.01	-	-	<0.1
Chondracanthus corymbiferus	-	-	-	-	<0.1	0.2	-	-	<0.1
Gelidium pusillum	<0.1	<.01	-	-	<0.1	<.01	-	-	<0.1
Prionitis spp.	-	-	-	-	-	-	<0.1	<.01	<0.1
Spongomorpha/Acrosiphonia-complex	-	-	-	-	-	-	<0.1	<.01	<0.1
Calliarthron/Bossiella spp.-complex	<0.1	<.01	-	-	<0.1	<.01	-	-	<0.1
Colpomenia spp.	-	-	-	-	<0.1	<.01	<0.1	<.01	<0.1
Endocladia muricata	-	-	-	-	<0.1	<.01	-	-	<0.1
Grateloupia doryphora	-	-	-	-	-	-	<0.1	<.01	<0.1
Invertebrate Counts									
Macclintockia scabra	287.0	105.9	330.6	78.4	264.0	68.9	304.6	126.8	296.6
Tegula brunnea	5.2	7.0	13.6	16.2	64.4	33.0	72.8	37.4	39.0
Tetraclita rubescens	21.0	17.8	49.8	37.2	3.2	3.1	13.4	11.0	21.9
Lottia digitalis	34.0	19.2	39.0	36.7	10.0	22.4	1.2	2.7	21.1
Pagurus spp.	18.8	27.8	15.2	16.4	16.8	22.1	32.4	65.9	20.8
Lottia limatula	3.8	3.1	17.0	9.3	21.0	17.4	11.8	7.6	13.4
Tegula funebralis	26.8	15.2	12.0	16.8	-	-	0.4	0.9	9.8
Tectura scutum	8.6	9.2	1.0	1.0	17.2	14.7	2.8	2.2	7.4
Lottia pelta	9.6	7.4	4.6	4.9	4.0	4.6	9.6	2.9	7.0
Strongylocentrotus purpuratus	2.6	1.8	6.8	6.1	5.6	3.9	6.2	6.8	5.3
Anthopleura elegantissima	3.2	2.2	1.8	1.1	7.8	4.9	1.6	1.1	3.6
Fissurella volcano	4.6	2.2	1.4	2.1	2.0	1.6	2.6	0.9	2.7
Serpulidae unid.	3.0	2.2	1.4	2.0	0.2	0.5	1.2	1.3	1.5
Pachygrapsus crassipes	0.2	0.5	1.2	1.3	2.8	1.5	0.8	0.8	1.3
Nuttallina californica	0.6	0.9	1.0	1.4	0.8	1.1	0.4	0.6	0.7
Mytilus californianus	0.8	0.8	0.6	0.9	0.2	0.5	1.0	2.2	0.7
Ocenebra spp.	1.4	1.7	0.4	0.9	0.6	0.9	0.2	0.5	0.7
Anthopleura xanthogrammica	0.4	0.6	0.8	0.8	0.2	0.5	0.8	0.8	0.6
Pollicipes polymerus	<0.1	<.01	1.6	3.6	-	-	-	-	0.4
Lottia gigantea	0.4	0.9	0.2	0.5	-	-	0.2	0.5	0.2
Cyanoplax spp.	<0.1	<.01	-	-	0.4	0.6	0.2	0.5	0.2
Mopalia spp.	-	-	-	-	0.2	0.5	0.2	0.5	<0.1

(continued)

Table C11 (continued). Intertidal Algae (percent cover) and Invertebrates (abundance per 1.0 m^2; percent cover) Survey Means, Standard Deviations and 2004 Annual Means, North Diablo Cove Station NDC 1+0.3m.

Survey	136		137		138		139		
Survey Date	4-Mar-04		20-May-04		29-Aug-04		16-Dec-04		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Invertebrate Counts (continued)									
Ophiothrix spp.	-	-	-	-	-	-	0.2	0.5	<0.1
Acmaeidae unid.	<0.1	< .01	<0.1	< .01	<0.1	-	<0.1	-	<0.1
Littorina spp.	-	-	<0.1	< .01	-	-	-	-	<0.1
Ischnochitonidae	-	-	<0.1	< .01	-	-	-	-	<0.1
Lottia ochracea	-	-	<0.1	< .01	-	-	-	-	<0.1
Balanus spp.	-	-	-	-	<0.1	< .01	-	-	<0.1
Invertebrate Cover									
Chthamalus fissus	7.5	7.1	2.8	3.9	4.1	4.0	7.7	9.2	5.5
Phragmatopoma californica	2.2	3.0	2.5	1.3	0.8	0.9	2.0	4.0	1.9
Spirorbidae	<0.1	< .01	<0.1	< .01	<0.1	< .01	<0.1	< .01	<0.1
Porifera unid. (encrusting)	<0.1	< .01	-	-	-	-	-	-	<0.1
Substrate Cover									
rock	39.0	15.2	55.7	20.1	42.0	12.4	80.6	116.1	54.3
cobble	13.9	5.1	13.8	5.6	10.3	7.3	10.8	5.8	12.2
sand (shell gravel)	4.2	4.3	2.6	1.6	5.8	7.2	2.7	2.4	3.8

Table C12. Intertidal Algae (percent cover) and Invertebrates (abundance per 1.0 m^2 ; percent cover) Survey Means, Standard Deviations and 2004 Annual Means, North Diablo Cove Station NDC 1+0.9m.

Survey	136		137		138		139		
Survey Date	4-Mar-04		20-May-04		29-Aug-04		16-Dec-04		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Algae Cover									
Non-coralline crust	41.3	19.0	30.8	14.7	35.6	17.5	29.0	13.8	34.1
Endocladia muricata	4.9	6.8	9.6	14.8	7.4	11.3	5.4	8.1	6.8
Mastocarpus papillatus	2.0	2.4	2.1	3.0	4.7	4.3	4.8	5.3	3.4
coralline crust	0.3	0.6	0.6	0.8	0.6	1.2	<0.1	<.01	0.4
Gelidium coulteri	-	-	-	-	1.3	2.0	<0.1	<.01	0.3
Mazzaella leptorhynchos	<0.1	<.01	<0.1	<.01	0.4	0.8	<0.1	<.01	0.1
Mazzaella affinis	<0.1	<.01	<0.1	<.01	0.3	0.5	<0.1	<.01	<0.1
Ulva/Enteromorpha spp.	<0.1	<.01	-	-	<0.1	0.2	<0.1	<.01	<0.1
Cladophora spp.	<0.1	<.01	<0.1	<.01	<0.1	<.01	<0.1	<.01	<0.1
Gelidium pusillum	<0.1	<.01	<0.1	<.01	<0.1	<.01	<0.1	<.01	<0.1
Pelvetia compressa	<0.1	<.01	<0.1	<.01	<0.1	<.01	<0.1	<.01	<0.1
Chondracanthus canaliculatus	<0.1	<.01	-	-	<0.1	<.01	-	-	<0.1
Gastroclonium subarticulatum	<0.1	<.01	-	-	<0.1	<.01	<0.1	<.01	<0.1
juv. articulated coralline algae	<0.1	<.01	-	-	-	-	<0.1	<.01	<0.1
Spongomorpha/Acrosiphonia-complex	-	-	-	-	-	-	<0.1	<.01	<0.1
Invertebrate Counts									
Tegula funebralis	100.4	42.8	313.0	166.6	258.6	94.9	413.2	367.7	271.3
Macclintockia scabra	91.2	54.6	92.4	38.8	182.6	67.6	88.2	24.6	113.6
Anthopleura elegantissima	71.0	85.4	80.0	98.2	81.2	99.2	69.0	85.6	75.3
Lottia digitalis	22.4	17.4	9.6	16.0	-	-	-	-	8.0
Pagurus spp.	1.8	3.0	2.4	3.3	20.0	17.0	6.0	6.6	7.6
Lottia limatula	0.2	0.5	1.2	1.1	15.4	12.6	8.0	10.6	6.2
Tectura scutum	0.8	1.3	0.4	0.9	6.4	3.4	0.2	0.5	2.0
Fissurella volcano	2.6	2.3	-	-	0.6	0.9	1.6	1.5	1.2
Cyanoplax spp.	0.2	0.5	0.4	0.6	1.4	1.5	1.4	1.1	0.9
Lottia pelta	0.4	0.6	0.8	1.3	-	-	1.8	2.2	0.8
Ocenebra spp.	1.2	1.3	0.6	0.6	1.0	1.4	0.2	0.5	0.8
Pachygrapsus crassipes	0.6	1.3	-	-	1.8	0.8	0.4	0.9	0.7
Acanthina spp.	1.2	1.3	0.2	0.5	0.2	0.5	0.8	0.8	0.6
Mopalia spp.	0.8	0.5	-	-	-	-	0.6	0.6	0.4
Strongylocentrotus purpuratus	-	-	-	-	1.2	1.8	0.2	0.5	0.4
Mytilus californianus	0.2	0.5	0.4	0.6	0.2	0.5	0.4	0.6	0.3
Tegula brunnea	<0.1	<.01	-	-	-	-	0.4	0.9	0.1
Littorina spp.	<0.1	<.01	<0.1	<.01	0.2	0.5	-	-	<0.1
Nemertea unid.	-	-	-	-	-	-	0.2	0.5	<0.1
Tetraclita rubescens	-	-	0.2	0.5	-	-	-	-	<0.1
Acmaeidae unid.	<0.1	<.01	<0.1	<.01	<0.1	-	<0.1	-	<0.1
Lottia asmi	<0.1	<.01	<0.1	<.01	-	-	<0.1	<.01	<0.1
Nitidiscala/Opalia spp.	<0.1	<.01	-	-	-	-	-	-	<0.1
Ischnochitonidae	-	-	-	-	-	-	<0.1	<.01	<0.1
Bittium spp.	-	-	<0.1	<.01	-	-	-	-	<0.1
Mytilus galloprovincialis	<0.1	<.01	-	-	-	-	-	-	<0.1
Invertebrate Cover									
Chthamalus fissus	4.0	6.0	1.7	2.5	3.8	5.5	4.0	6.7	3.4
Phragmatopoma californica	<0.1	<.01	<0.1	<.01	<0.1	<.01	<0.1	0.2	<0.1
Spirorbidae	<0.1	<.01	-	-	<0.1	<.01	<0.1	<.01	<0.1

(continued)

Table C12 (continued). Intertidal Algae (percent cover) and Invertebrates (abundance per 1.0 m^2; percent cover) Survey Means, Standard Deviations and 2004 Annual Means, North Diablo Cove Station NDC 1+0.9m.

	Survey	136		137		138		139		
	Survey Date	4-Mar-04		20-May-04		29-Aug-04		16-Dec-04		
Taxon		Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	**Annual Mean**
<u>Substrate Cover</u>										
rock		31.5	21.5	45.8	19.1	41.4	20.1	44.8	17.0	40.9
cobble		11.6	10.1	7.7	5.0	6.2	5.0	5.6	4.4	7.8
sand (shell gravel)		6.9	7.2	6.6	5.3	3.8	4.2	10.6	10.8	6.9

Table C13. Intertidal Algae (percent cover) and Invertebrates (abundance per 1.0 m^2 ; percent cover) Survey Means, Standard Deviations and 2004 Annual Means, North Diablo Cove Station NDC 2+0.3m.

Survey	136		137		138		139		
Survey Date	20-Jan-04		6-May-04		28-Jul-04		12-Nov-04		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Algae									
Non-coralline crust	32.2	20.3	29.0	18.3	19.5	11.5	33.7	16.9	28.6
Phyllospadix spp.	16.9	26.5	13.5	22.4	19.2	27.0	19.9	26.7	17.4
filamentous red algae-complex	6.2	6.1	15.3	19.7	17.3	15.8	2.8	4.9	10.4
coralline crust	5.7	3.0	5.6	5.0	1.0	1.1	1.3	0.9	3.4
Gastroclonium subarticulatum	1.1	2.0	1.3	2.2	4.0	5.9	3.8	3.5	2.5
Gelidium coulteri	1.0	1.9	0.6	0.7	1.9	1.0	5.0	8.3	2.1
Mastocarpus papillatus	0.8	2.0	3.5	5.9	2.5	4.8	0.8	1.1	1.9
Chrysophyta unid.	1.0	3.3	<0.1	<.01	6.3	8.0	<0.1	<.01	1.8
Mazzaella affinis	1.0	1.4	2.8	3.9	2.5	3.8	0.2	0.5	1.6
Chondracanthus canaliculatus	1.1	1.8	0.6	1.0	1.7	1.9	2.8	2.3	1.5
Smithora naiadum	0.4	1.3	-	-	1.6	2.7	3.2	5.5	1.3
juv. articulated coralline algae	1.5	1.2	2.1	1.4	-	-	0.5	0.7	1.0
Ulva/Enteromorpha spp.	0.3	0.7	0.4	0.7	2.6	2.1	0.3	0.5	0.9
Pterosiphonia dendroidea	3.5	4.2	-	-	-	-	-	-	0.9
Prionitis spp.	0.3	0.7	0.1	0.4	0.4	0.9	1.9	2.4	0.7
Corallina officinalis	-	-	<0.1	<.01	-	-	1.3	1.2	0.3
Calliarthron/Bossiella spp.-complex	1.0	1.8	<0.1	0.2	0.1	0.4	-	-	0.3
Corallina vancouveriensis	0.8	1.0	<0.1	<.01	<0.1	0.2	<0.1	<.01	0.2
Sarcodiotheca gaudichaudii	-	-	0.1	0.4	0.1	0.4	0.2	0.7	0.1
Mazzaella leptorhynchos	0.3	0.6	<0.1	0.2	-	-	<0.1	<.01	0.1
Mastocarpus jardinii	<0.1	<.01	0.1	0.4	0.3	0.5	-	-	0.1
Halymenia/Schizymenia spp.-complex	<0.1	<.01	0.2	0.5	0.1	0.4	-	-	<0.1
Osmundea spp.	0.1	0.3	-	-	<0.1	0.2	0.1	0.4	<0.1
Gelidium pusillum	<0.1	<.01	<0.1	<.01	-	-	0.2	0.5	<0.1
Grateloupia doryphora	-	-	-	-	<0.1	<.01	0.2	0.7	<0.1
Sargassum muticum	-	-	<0.1	0.2	-	-	0.1	0.4	<0.1
Endocladia muricata	-	-	<0.1	0.2	-	-	<0.1	0.2	<0.1
Mazzaella heterocarpa	-	-	<0.1	<.01	<0.1	0.2	-	-	<0.1
Colpomenia spp.	<0.1	<.01	<0.1	0.2	<0.1	<.01	-	-	<0.1
Melobesia mediocris	<0.1	0.2	-	-	<0.1	<.01	-	-	<0.1
Cladophora spp.	-	-	<0.1	<.01	<0.1	<.01	<0.1	<.01	<0.1
Spongomorpha/Acrosiphonia-complex	<0.1	<.01	-	-	-	-	<0.1	<.01	<0.1
Halosaccion americanum	-	-	-	-	<0.1	<.01	-	-	<0.1
Microcladia coulteri	-	-	-	-	-	-	<0.1	<.01	<0.1
Cryptopleura violacea	-	-	<0.1	<.01	-	-	-	-	<0.1
Bryopsis spp.	<0.1	<.01	-	-	-	-	-	-	<0.1
Endarachne/Petalonia-complex	<0.1	<.01	-	-	-	-	-	-	<0.1
Invertebrates									
Macclintockia scabra	253.2	290.2	206.8	213.3	321.4	392.0	98.4	47.5	220.0
Strongylocentrotus purpuratus	19.6	41.6	45.6	70.6	40.0	48.9	18.4	26.2	30.9
Tetraclita rubescens	40.4	70.8	35.4	59.4	23.0	51.4	7.6	11.5	26.6
Lottia digitalis	22.0	46.5	13.6	28.8	17.0	38.0	-	-	13.2
Anthopleura elegantissima	8.8	14.3	7.6	13.2	7.0	12.0	12.4	22.9	9.0
Fissurella volcano	9.8	7.1	12.2	16.9	4.8	2.7	7.4	5.7	8.6
Lottia pelta	5.2	6.2	9.4	13.4	10.6	10.4	7.0	7.0	8.1
Lottia limatula	0.8	1.8	7.4	5.1	5.6	6.9	7.0	13.5	5.2
Mytilus californianus	2.2	4.4	5.6	9.4	3.2	6.1	6.4	9.2	4.4

(continued)

Table C13 (continued). Intertidal Algae (percent cover) and Invertebrates (abundance per 1.0 m^2 ; percent cover) Survey Means, Standard Deviations and 2004 Annual Means, North Diablo Cove Station NDC 2+0.3m.

Survey	136		137		138		139		
Survey Date	20-Jan-04		6-May-04		28-Jul-04		12-Nov-04		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Invertebrates (continued)									
Lottia gigantea	2.6	3.7	3.8	6.1	3.2	4.4	3.6	7.0	3.3
Tectura scutum	0.8	1.8	4.4	3.5	1.2	2.7	-	-	1.6
Tegula brunnea	0.6	0.9	3.8	7.4	-	-	0.2	0.5	1.2
Cyanoplax spp.	0.4	0.9	0.8	1.8	1.6	3.6	0.6	1.3	0.9
Nuttallina californica	0.6	0.9	1.6	1.5	0.4	0.9	0.2	0.5	0.7
Pachygrapsus crassipes	0.4	0.9	0.8	0.8	1.0	1.0	-	-	0.6
Pagurus spp.	0.4	0.9	-	-	1.0	1.4	-	-	0.4
Ocenebra spp.	0.4	0.9	-	-	0.4	0.9	0.6	0.9	0.4
Tegula funebralis	0.4	0.9	-	-	-	-	0.8	1.3	0.3
Balanus spp.	-	-	-	-	1.0	2.2	-	-	0.3
Acanthina spp.	-	-	0.2	0.5	-	-	0.2	0.5	<0.1
Grapsidae (juv.)	-	-	-	-	<0.1	< .01	0.2	0.5	<0.1
Polychaeta unid.	-	-	-	-	0.2	0.5	-	-	<0.1
Pugettia spp.	-	-	-	-	0.2	0.5	-	-	<0.1
Hemigrapsus oregonensis	-	-	-	-	-	-	0.2	0.5	<0.1
Diopatra ornata	-	-	0.2	0.5	-	-	-	-	<0.1
Cancer antennarius	-	-	-	-	0.2	0.5	-	-	<0.1
Serpulidae unid.	0.2	0.5	-	-	-	-	-	-	<0.1
Acmaeidae unid.	<0.1	< .01	<0.1	-	<0.1	-	<0.1	-	<0.1
Heptacarpus spp.	-	-	<0.1	< .01	<0.1	< .01	-	-	<0.1
Sipuncula unid.	-	-	<0.1	< .01	-	-	-	-	<0.1
Ophiactis simplex	-	-	<0.1	< .01	<0.1	< .01	-	-	<0.1
Alia spp.	-	-	-	-	<0.1	< .01	-	-	<0.1
Pycnogonida unid.	-	-	-	-	<0.1	< .01	-	-	<0.1
Pollicipes polymerus	<0.1	< .01	-	-	-	-	-	-	<0.1
Ischnochitonidae	-	-	-	-	<0.1	< .01	-	-	<0.1
Lacuna spp.	-	-	-	-	-	-	<0.1	< .01	<0.1
Septifer bifurcatus	-	-	-	-	<0.1	< .01	-	-	<0.1
Invertebrate Cover									
Pista spp.	1.7	4.0	<0.1	< .01	<0.1	< .01	1.5	2.6	0.8
Chthamalus fissus	0.6	2.0	1.3	4.0	0.1	0.4	<0.1	< .01	0.5
Phragmatopoma californica	0.5	1.3	<0.1	< .01	<0.1	< .01	0.1	0.4	0.2
Spirorbidae	<0.1	< .01	-	-	-	-	<0.1	< .01	<0.1
Substrate Cover									
rock	25.5	14.1	26.0	15.7	26.0	29.1	34.0	16.8	27.9
sand (shell gravel)	2.4	3.2	18.0	23.6	9.1	8.3	7.1	11.5	9.1
cobble	2.8	3.2	3.9	4.9	0.9	1.5	4.9	7.5	3.1

Table C14. Intertidal Algae (percent cover) and Invertebrates (abundance per 1.0 m^2; percent cover) Survey Means, Standard Deviations and 2004 Annual Means, North Diablo Cove Station NDC 2+0.9m.

Survey	136		137		138		139		
Survey Date	3-Feb-04		20-May-04		28-Jul-04		12-Nov-04		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Algae Cover									
Endocladia muricata	13.9	14.7	14.1	12.9	14.0	12.2	14.2	12.4	14.0
Non-coralline crust	6.9	5.3	4.7	5.2	5.7	4.5	6.0	4.9	5.8
Mastocarpus papillatus	2.2	2.0	1.7	3.0	3.2	5.4	2.3	2.2	2.3
coralline crust	2.8	1.9	0.8	0.7	0.8	0.8	1.0	1.2	1.4
Gelidium coulteri	0.4	0.8	<0.1	<.01	0.6	1.1	1.5	1.4	0.6
juv. articulated coralline algae	0.2	0.3	0.6	1.1	0.2	0.5	0.9	1.8	0.5
filamentous red algae-complex	0.3	1.1	0.3	0.9	0.6	2.0	<0.1	<.01	0.3
Corallina vancouveriensis	0.5	1.0	0.6	1.8	<0.1	0.2	-	-	0.3
Mazzaella affinis	0.2	0.3	<0.1	<.01	0.3	0.5	0.4	1.3	0.2
Calliarthron/Bossiella spp.-complex	0.2	0.7	0.2	0.7	0.5	1.0	<0.1	<.01	0.2
Corallina officinalis	-	-	-	-	-	-	0.7	2.0	0.2
Gastroclonium subarticulatum	<0.1	<.01	-	-	-	-	0.1	0.3	<0.1
Chondracanthus canaliculatus	<0.1	0.2	-	-	<0.1	<.01	<0.1	<.01	<0.1
Prionitis spp.	<0.1	0.2	<0.1	<.01	-	-	-	-	<0.1
Cladophora spp.	<0.1	<.01	<0.1	<.01	<0.1	-	<0.1	<.01	<0.1
Gelidium pusillum	<0.1	<.01	<0.1	<.01	<0.1	-	<0.1	<.01	<0.1
Ulva/Enteromorpha spp.	-	-	-	-	-	-	<0.1	<.01	<0.1
Osmundea spp.	-	-	-	-	-	-	<0.1	<.01	<0.1
Pelvetia compressa	<0.1	<.01	-	-	-	-	-	-	<0.1
Porphyra spp.	<0.1	<.01	-	-	-	-	-	-	<0.1
Sarcodiotheca gaudichaudii	-	-	-	-	<0.1	<.01	-	-	<0.1
Invertebrate Counts									
Macclintockia scabra	190.6	96.8	173.8	79.8	296.0	199.2	326.4	163.1	246.7
Tegula funebralis	140.8	31.5	275.2	152.9	181.0	139.9	94.4	137.3	172.9
Anthopleura elegantissima	100.6	102.8	83.2	78.7	77.6	71.5	91.8	87.7	88.3
Lottia digitalis	60.2	76.5	17.0	22.5	6.6	14.8	-	-	21.0
Lottia limatula	0.4	0.6	8.8	8.6	15.6	15.7	14.2	12.3	9.8
Tectura scutum	3.8	5.8	1.0	2.2	13.6	6.7	5.2	7.4	5.9
Cyanoplax spp.	3.6	1.8	2.4	2.1	9.0	4.4	1.4	1.5	4.1
Lottia pelta	9.0	10.7	3.0	2.9	1.0	1.4	2.8	3.7	4.0
Pagurus spp.	3.4	3.5	6.0	10.2	1.6	2.3	2.6	4.2	3.4
Mytilus californianus	2.2	3.2	2.4	3.9	2.4	4.8	1.8	2.7	2.2
Pachygrapsus crassipes	0.6	0.6	0.6	0.9	5.0	5.8	0.2	0.5	1.6
Strongylocentrotus purpuratus	0.4	0.9	0.8	1.3	3.4	7.1	1.4	2.6	1.5
Fissurella volcano	0.6	0.9	-	-	2.8	4.1	2.2	2.5	1.4
Lottia gigantea	1.6	1.8	1.2	2.2	1.2	2.7	1.6	2.1	1.4
Acanthina spp.	0.6	0.9	3.2	3.4	0.6	0.9	0.4	0.9	1.2
Ocenebra spp.	1.0	1.7	-	-	0.2	0.5	0.8	0.5	0.5
Pollicipes polymerus	0.4	0.9	<0.1	<.01	0.8	1.8	-	-	0.3
Mopalia spp.	0.6	0.6	0.2	0.5	0.2	0.5	-	-	0.3
Nuttallina californica	-	-	0.2	0.5	0.6	0.9	0.2	0.5	0.3
Tetraclita rubescens	0.4	0.9	0.4	0.9	-	-	-	-	0.2
Littorina spp.	<0.1	<.01	<0.1	<.01	<0.1	<.01	0.4	0.6	0.1
Tonicella lineata	-	-	-	-	-	-	0.2	0.5	<0.1
Hemigrapsus oregonensis	-	-	-	-	-	-	0.2	0.5	<0.1
Acmaeidae unid.	<0.1	<.01	<0.1	-	<0.1	-	<0.1	-	<0.1
Lottia asmi	<0.1	<.01	<0.1	<.01	<0.1	<.01	-	-	<0.1

(continued)

Table C14 (continued). Intertidal Algae (percent cover) and Invertebrates (abundance per 1.0 m^2; percent cover) Survey Means, Standard Deviations and 2004 Annual Means, North Diablo Cove Station NDC 2+0.9m.

Survey	136		137		138		139		
Survey Date	3-Feb-04		20-May-04		28-Jul-04		12-Nov-04		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Invertebrate Counts (continued)									
Heptacarpus spp.	-	-	-	-	<0.1	< .01	<0.1	< .01	<0.1
Sipuncula unid.	-	-	-	-	<0.1	< .01	-	-	<0.1
Grapsidae (juv.)	-	-	<0.1	< .01	-	-	-	-	<0.1
Invertebrate Cover									
Chthamalus fissus	6.5	5.9	3.1	3.7	4.0	3.5	14.2	13.5	7.0
Phragmatopoma californica	<0.1	-	<0.1	0.2	<0.1	< .01	0.1	0.4	<0.1
Spirorbidae	<0.1	< .01	-	-	-	-	<0.1	< .01	<0.1
Substrate Cover									
rock	64.0	11.1	75.0	12.4	69.9	12.2	60.2	12.4	67.3
cobble	1.4	2.2	2.0	1.8	1.4	1.8	2.5	3.2	1.8
sand (shell gravel)	<0.1	< .01	-	-	0.3	0.9	0.6	2.0	0.2

Table C15. Intertidal Algae (percent cover) and Invertebrates (abundance per 1.0 m^2 ; percent cover) Survey Means, Standard Deviations and 2004 Annual Means, North Diablo Cove Station NDC 3+0.3m.

Survey	136		137		138		139		
Survey Date	20-Jan-04		6-May-04		29-Jul-04		12-Nov-04		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Algae Cover									
Non-coralline crust	21.9	18.8	20.9	15.0	18.5	17.9	27.7	27.0	22.3
coralline crust	3.3	3.7	6.9	6.0	4.9	4.5	3.6	2.5	4.7
juv. articulated coralline algae	5.1	6.1	0.6	0.7	0.3	0.7	3.5	6.4	2.4
filamentous red algae-complex	0.2	0.5	1.9	4.6	3.2	7.2	3.5	6.0	2.2
Corallina vancouveriensis	0.3	0.7	-	-	1.4	2.2	5.1	6.7	1.7
Calliarthron/Bossiella spp.-complex	1.0	1.8	2.4	3.6	-	-	-	-	0.9
Gelidium coulteri	-	-	0.5	0.7	1.2	1.4	0.8	0.9	0.6
Ulva/Enteromorpha spp.	<0.1	<.01	0.1	0.3	0.6	0.6	0.3	0.7	0.3
Colpomenia spp.	<0.1	<.01	<0.1	0.2	<0.1	0.2	0.3	0.7	0.1
Mastocarpus papillatus	-	-	-	-	<0.1	0.2	0.3	1.1	0.1
Gelidium pusillum	0.1	0.3	-	-	<0.1	<.01	0.2	0.5	<0.1
Chondracanthus canaliculatus	-	-	<0.1	<.01	0.1	0.4	0.1	0.4	<0.1
Gastroclonium subarticulatum	-	-	-	-	-	-	0.1	0.4	<0.1
Chrysophyta unid.	<0.1	<.01	<0.1	<.01	-	-	<0.1	0.2	<0.1
Mazzaella leptorhynchos	-	-	-	-	-	-	<0.1	0.2	<0.1
Cladophora spp.	-	-	-	-	-	-	<0.1	<.01	<0.1
Codium fragile	<0.1	<.01	-	-	<0.1	<.01	-	-	<0.1
Corallina officinalis	-	-	<0.1	<.01	-	-	-	-	<0.1
Grateloupia doryphora	-	-	-	-	-	-	<0.1	<.01	<0.1
Bryopsis spp.	-	-	-	-	-	-	<0.1	<.01	<0.1
Invertebrate Counts									
Macclintockia scabra	352.8	145.5	242.2	64.5	192.0	71.8	215.4	100.8	250.6
Tetraclita rubescens	49.2	58.0	39.6	22.1	33.6	22.2	30.8	29.6	38.3
Strongylocentrotus purpuratus	13.6	5.6	41.8	20.8	36.4	20.1	23.2	10.0	28.8
Mytilus californianus	13.4	26.7	12.8	17.4	1.2	1.8	57.8	121.5	21.3
Fissurella volcano	14.4	4.4	20.0	15.4	10.4	4.2	9.8	6.1	13.7
Lottia digitalis	2.4	3.8	3.0	3.7	3.6	8.1	28.2	17.8	9.3
Lottia gigantea	8.8	8.3	8.4	8.0	10.0	8.1	6.8	5.3	8.5
Tectura scutum	-	-	5.0	5.8	21.6	6.1	2.2	2.9	7.2
Lottia limatula	8.0	6.8	4.6	4.6	10.8	7.1	0.6	0.9	6.0
Lottia pelta	3.0	1.0	10.0	10.0	3.0	2.8	6.2	3.8	5.6
Nuttallina californica	3.0	5.7	3.4	6.1	0.4	0.6	3.8	8.0	2.7
Anthopleura elegantissima	1.2	1.6	0.8	1.1	1.2	1.3	0.8	1.3	1.0
Pachygrapsus crassipes	0.6	0.9	1.2	1.3	1.8	1.3	-	-	0.9
Cyanoplax spp.	<0.1	<.01	0.2	0.5	1.4	0.9	0.8	0.8	0.6
Epiactis prolifera	0.8	1.3	0.2	0.5	0.4	0.9	0.4	0.9	0.5
Serpulidae unid.	1.2	1.6	-	-	-	-	0.2	0.5	0.4
Ocenebra spp.	0.4	0.6	-	-	0.2	0.5	-	-	0.2
Nemertea unid.	-	-	0.4	0.9	-	-	-	-	<0.1
Tegula brunnea	-	-	0.4	0.9	-	-	-	-	<0.1
Tegula funebralis	0.2	0.5	-	-	-	-	0.2	0.5	<0.1
Urticina spp.	<0.1	<.01	-	-	0.2	0.5	-	-	<0.1
Octopus spp.	-	-	-	-	0.2	0.5	-	-	<0.1
Pugettia spp.	-	-	-	-	0.2	0.5	-	-	<0.1
Acmaeidae unid.	<0.1	<.01	<0.1	-	<0.1	-	<0.1	<.01	<0.1
Pollicipes polymerus	<0.1	<.01	-	-	<0.1	<.01	<0.1	<.01	<0.1
Sipuncula unid.	-	-	<0.1	<.01	<0.1	<.01	<0.1	<.01	<0.1

(continued)

Table C15 (continued). Intertidal Algae (percent cover) and Invertebrates (abundance per 1.0 m^2; percent cover) Survey Means, Standard Deviations and 2004 Annual Means, North Diablo Cove Station NDC 3+0.3m.

Survey	136		137		138		139		
Survey Date	20-Jan-04		6-May-04		29-Jul-04		12-Nov-04		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Invertebrate Counts (continued)									
Phidiana hiltoni	<0.1	< .01	-	-	-	-	-	-	<0.1
Ophiuroidea unid.	-	-	-	-	-	-	<0.1	< .01	<0.1
Heptacarpus spp.	-	-	-	-	<0.1	< .01	-	-	<0.1
Lissothuria nutriens	<0.1	< .01	-	-	-	-	-	-	<0.1
Cirratulidae/Terebellidae unid.	-	-	-	-	<0.1	< .01	-	-	<0.1
Invertebrate Cover									
Phragmatopoma californica	0.7	0.7	0.6	1.2	0.6	1.2	0.5	0.7	0.6
Chthamalus fissus	<0.1	-	<0.1	-	<0.1	< .01	<0.1	< .01	<0.1
Spirorbidae	<0.1	< .01	-	-	-	-	<0.1	< .01	<0.1
Porifera unid. (encrusting)	<0.1	< .01	-	-	-	-	<0.1	< .01	<0.1
Hydroida	<0.1	< .01	-	-	-	-	-	-	<0.1
Substrate Cover									
rock	62.2	23.1	63.7	21.7	64.3	23.4	54.9	30.3	61.3
cobble	6.5	7.7	4.2	5.8	6.1	7.8	6.9	7.3	5.9
sand (shell gravel)	<0.1	0.2	-	-	-	-	<0.1	< .01	<0.1

Table C16. Intertidal Algae (percent cover) and Invertebrates (abundance per 1.0 m^2 ; percent cover) Survey Means, Standard Deviations and 2004 Annual Means, North Diablo Cove Station NDC 3+0.9m.

Survey	136		137		138		139		
Survey Date	20-Jan-04		6-May-04		29-Jul-04		12-Nov-04		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Algae Cover									
Non-coralline crust	18.8	12.2	14.7	9.2	11.7	8.4	15.4	9.9	15.2
Endocladia muricata	1.9	4.0	3.3	7.2	1.9	5.7	3.1	7.8	2.5
Ulva/Enteromorpha spp.	<0.1	< .01	<0.1	< .01	8.2	6.7	0.6	0.6	2.2
coralline crust	1.7	1.8	1.2	1.0	0.7	0.8	0.6	0.6	1.0
Fucus gardneri	-	-	-	-	3.2	9.0	-	-	0.8
juv. articulated coralline algae	1.0	1.7	0.1	0.3	<0.1	< .01	0.3	0.8	0.4
Gelidium coulteri	<0.1	0.2	<0.1	< .01	<0.1	0.2	1.0	1.4	0.3
Chrysophyta unid.	-	-	0.6	1.3	-	-	-	-	0.1
Mastocarpus papillatus	<0.1	< .01	<0.1	0.2	0.3	0.7	<0.1	< .01	<0.1
Gelidium pusillum	0.1	0.4	-	-	<0.1	< .01	<0.1	< .01	<0.1
Corallina vancouveriensis	-	-	0.1	0.4	<0.1	< .01	<0.1	< .01	<0.1
Colpomenia spp.	-	-	-	-	<0.1	< .01	0.1	0.3	<0.1
Mazzaella affinis	-	-	<0.1	< .01	<0.1	< .01	<0.1	0.2	<0.1
Porphyra spp.	-	-	<0.1	< .01	<0.1	< .01	-	-	<0.1
Cladophora spp.	-	-	-	-	<0.1	< .01	<0.1	< .01	<0.1
Prionitis spp.	<0.1	< .01	-	-	<0.1	< .01	-	-	<0.1
Spongomorpha/Acrosiphonia-complex	-	-	-	-	<0.1	< .01	-	-	<0.1
Calliarthron/Bossiella spp.-complex	-	-	-	-	-	-	<0.1	< .01	<0.1
Gastroclonium subariculatum	-	-	<0.1	< .01	-	-	-	-	<0.1
Chondracanthus canaliculatus	-	-	-	-	<0.1	< .01	-	-	<0.1
Invertebrate Counts									
Macclintockia scabra	300.6	169.1	179.2	97.9	191.4	98.1	369.0	207.4	260.1
Lottia digitalis	86.0	101.0	48.2	31.9	28.2	27.8	33.6	39.4	49.0
Tegula funebralis	9.0	5.9	16.8	34.8	12.4	19.3	19.4	28.0	14.4
Strongylocentrotus purpuratus	11.2	13.3	15.6	17.1	18.4	11.4	9.8	10.7	13.8
Lottia limatula	31.8	39.0	4.0	2.9	8.0	4.5	-	-	11.0
Tetraclita rubescens	5.0	5.9	14.8	15.5	9.0	10.7	9.2	10.0	9.5
Lottia gigantea	11.4	10.3	7.4	8.3	8.4	7.4	10.0	11.0	9.3
Tectura scutum	0.8	1.1	6.4	5.9	16.0	13.4	6.4	12.2	7.4
Fissurella volcano	6.6	10.5	7.8	10.8	5.4	5.1	3.2	4.6	5.8
Lottia pelta	6.6	9.0	5.8	8.8	1.4	2.2	3.6	4.3	4.4
Mytilus californianus	6.4	9.5	5.2	7.3	4.4	6.4	1.2	1.8	4.3
Pagurus spp.	2.2	4.4	3.6	8.1	1.4	2.6	-	-	1.8
Pachygrapsus crassipes	1.2	0.8	0.6	0.9	3.8	2.2	0.6	0.6	1.6
Tegula brunnea	-	-	5.0	11.2	1.0	2.2	-	-	1.5
Cyanoplax spp.	2.2	2.4	0.8	0.8	2.2	1.5	-	-	1.3
Ocenebra spp.	0.2	0.5	1.4	2.0	0.8	1.1	0.4	0.9	0.7
Balanus spp.	-	-	0.2	0.5	0.2	0.5	1.6	1.5	0.5
Pollicipes polymerus	1.4	3.1	0.4	0.9	<0.1	< .01	<0.1	< .01	0.5
Anthopleura elegantissima	0.4	0.6	0.4	0.6	0.6	0.6	0.4	0.6	0.5
Serpulidae unid.	1.2	1.3	0.2	0.5	0.2	0.5	-	-	0.4
Mopalia spp.	-	-	0.4	0.9	-	-	-	-	<0.1
Nuttallina californica	-	-	-	-	-	-	0.4	0.9	<0.1
Epiactis prolifera	0.2	0.5	-	-	-	-	-	-	<0.1
Octopus spp.	-	-	-	-	0.2	0.5	-	-	<0.1
Ophioplocus spp.	-	-	-	-	0.2	0.5	-	-	<0.1
Acmaeidae unid.	<0.1	-	<0.1	-	<0.1	< .01	<0.1	-	<0.1

(continued)

Table C16 (continued). Intertidal Algae (percent cover) and Invertebrates (abundance per 1.0 m^2 ; percent cover) Survey Means, Standard Deviations and 2004 Annual Means, North Diablo Cove Station NDC 3+0.9m.

Survey	136		137		138		139		
Survey Date	20-Jan-04		6-May-04		29-Jul-04		12-Nov-04		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Invertebrate Counts (continued)									
Littorina spp.	<0.1	< .01	<0.1	< .01	<0.1	< .01	<0.1	< .01	<0.1
Ischnochitonidae	<0.1	< .01	-	-	-	-	-	-	<0.1
Pelecypoda unid. boring	<0.1	< .01	-	-	-	-	-	-	<0.1
Heptacarpus spp.	-	-	-	-	<0.1	< .01	-	-	<0.1
Grapsidae (juv.)	<0.1	< .01	-	-	-	-	-	-	<0.1
Invertebrate Cover									
Chthamalus fissus	17.4	14.4	12.7	11.6	12.5	14.9	17.3	14.3	15.0
Phragmatopoma californica	0.4	0.9	2.8	8.1	<0.1	< .01	<0.1	0.2	0.8
Spirorbidae	<0.1	0.2	-	-	-	-	-	-	<0.1
Porifera unid. (encrusting)	<0.1	< .01	-	-	-	-	-	-	<0.1
Substrate Cover									
rock	53.6	13.1	61.5	16.4	60.6	15.7	58.4	12.3	58.5
cobble	5.8	8.9	5.8	11.9	4.7	9.5	5.8	11.2	5.5
sand (shell gravel)	<0.1	0.2	-	-	-	-	-	-	<0.1

Table C17. Intertidal Algae (percent cover) and Invertebrates (abundance per 1.0 m^2 ; percent cover) Survey Means, Standard Deviations and 2004 Annual Means, South Diablo Cove Station SDC 1+0.3m.

Survey	136		137		138		139		
Survey Date	19-Jan-04		5-May-04		2-Jul-04		12-Dec-04		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Algae Cover									
Non-coralline crust	35.7	18.0	34.0	15.8	28.7	16.1	22.4	15.2	30.2
coralline crust	9.2	12.7	12.3	18.9	3.0	6.3	11.1	11.3	8.9
filamentous red algae-complex	4.5	7.6	13.4	14.4	7.9	8.1	1.5	2.9	6.8
Chrysophyta unid.	-	-	<0.1	0.2	26.6	16.3	-	-	6.7
juv. articulated coralline algae	5.9	8.6	4.7	4.1	0.2	0.5	14.3	9.5	6.3
Ulva/Enteromorpha spp.	0.5	1.3	8.2	9.8	14.0	8.4	0.6	1.1	5.8
Gelidium coulteri	<0.1	<.01	0.9	1.4	8.6	8.5	1.5	2.9	2.7
Sargassum muticum	0.3	1.1	3.8	11.9	1.6	5.1	0.8	2.4	1.6
Corallina vancouveriensis	-	-	-	-	<0.1	0.2	3.1	5.0	0.8
Cladophora spp.	<0.1	<.01	<0.1	<.01	-	-	2.2	4.9	0.5
Colpomenia spp.	<0.1	<.01	1.9	2.1	<0.1	0.2	-	-	0.5
Mazzaella affinis	-	-	<0.1	<.01	0.5	0.6	1.0	3.1	0.4
Prionitis spp.	0.3	0.6	<0.1	<.01	<0.1	0.2	0.8	1.6	0.3
Mastocarpus papillatus	<0.1	<.01	<0.1	<.01	1.3	2.3	<0.1	<.01	0.3
Grateloupia doryphora	-	-	-	-	1.2	1.8	<0.1	<.01	0.3
Cryptopleura violacea	0.1	0.3	<0.1	<.01	0.2	0.7	0.2	0.5	0.1
Calliarthron/Bossiella spp.-complex	<0.1	0.2	0.3	0.6	0.2	0.5	-	-	0.1
Gastroclonium subarticulatum	-	-	-	-	<0.1	<.01	0.5	1.5	0.1
Cystoseira osmundacea	-	-	0.3	1.1	0.1	0.4	-	-	0.1
Mazzaella heterocarpa	-	-	0.1	0.3	0.3	0.9	<0.1	<.01	0.1
Halymenia/Schizymenia spp.-complex	-	-	0.3	0.6	<0.1	0.2	-	-	<0.1
Pterosiphonia dendroidea	<0.1	<.01	-	-	<0.1	0.2	0.2	0.5	<0.1
Acrosorium uncinatum	-	-	<0.1	0.2	-	-	<0.1	<.01	<0.1
Chondracanthus corymbiferus	-	-	-	-	-	-	<0.1	0.2	<0.1
Chondracanthus canaliculatus	-	-	<0.1	<.01	<0.1	<.01	<0.1	<.01	<0.1
Rhodymenia spp.	-	-	-	-	-	-	<0.1	<.01	<0.1
Invertebrate Counts									
Tetraclita rubescens	118.8	106.4	35.0	23.7	23.0	27.0	81.6	73.1	64.6
Mytilus californianus	93.4	186.3	6.2	13.9	<0.1	<.01	<0.1	<.01	24.9
Macclintockia scabra	19.8	22.7	20.0	18.3	26.8	21.1	12.2	16.6	19.7
Anthopleura elegantissima	10.4	8.1	16.6	9.1	21.8	11.6	13.8	11.6	15.7
Fissurella volcano	17.2	11.1	11.4	8.9	7.8	7.3	15.6	9.3	13.0
Strongylocentrotus purpuratus	6.4	5.9	11.6	11.1	9.6	8.8	0.6	1.3	7.1
Lottia limatula	2.8	3.4	10.2	6.1	11.0	12.9	2.4	4.3	6.6
Lottia pelta	0.8	0.5	3.8	6.5	8.6	7.1	2.6	3.2	4.0
Tegula funebralis	10.0	19.7	-	-	-	-	-	-	2.5
Pagurus spp.	4.6	10.3	-	-	0.4	0.9	-	-	1.3
Cyanoplax spp.	0.2	0.5	0.8	1.1	0.8	0.5	0.4	0.9	0.6
Lottia digitalis	-	-	1.4	3.1	-	-	-	-	0.4
Lottia gigantea	0.4	0.9	0.4	0.9	0.2	0.5	0.2	0.5	0.3
Tectura scutum	0.8	1.1	-	-	-	-	-	-	0.2
Serpulorbis squamigerus	0.2	0.5	0.4	0.9	-	-	0.2	0.5	0.2
Pugettia spp.	-	-	-	-	<0.1	<.01	0.4	0.6	0.1
Pisaster ochraceus	-	-	-	-	0.2	0.5	0.2	0.5	<0.1
Mopalia spp.	0.2	0.5	-	-	-	-	-	-	<0.1
Nuttallina californica	-	-	-	-	-	-	0.2	0.5	<0.1
Nitidiscala/Opalia spp.	-	-	-	-	-	-	0.2	0.5	<0.1

(continued)

Table C17 (continued). Intertidal Algae (percent cover) and Invertebrates (abundance per 1.0 m^2; percent cover) Survey Means, Standard Deviations and 2004 Annual Means, South Diablo Cove Station SDC 1+0.3m.

Survey	136		137		138		139		
Survey Date	19-Jan-04		5-May-04		2-Jul-04		12-Dec-04		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Invertebrate Counts (continued)									
Ophiuroidea unid.	-	-	-	-	-	-	0.2	0.5	<0.1
Acmaeidae unid.	<0.1	-	<0.1	-	<0.1	-	<0.1	-	<0.1
Lottia ochracea	-	-	-	-	<0.1	< .01	-	-	<0.1
Pollicipes polymerus	<0.1	< .01	-	-	-	-	-	-	<0.1
tunicate, solitary unid.	<0.1	< .01	-	-	-	-	-	-	<0.1
Lacuna spp.	-	-	-	-	-	-	<0.1	< .01	<0.1
Ophiactis simplex	-	-	<0.1	< .01	-	-	-	-	<0.1
Invertebrate Cover									
Phragmatopoma californica	7.4	8.8	1.4	2.6	<0.1	< .01	8.5	10.2	4.3
Chthamalus fissus	<0.1	< .01	0.2	0.7	<0.1	< .01	0.3	0.8	0.1
Pista spp.	<0.1	< .01	-	-	-	-	0.1	0.4	<0.1
Spirorbidae	<0.1	< .01	<0.1	< .01	<0.1	< .01	<0.1	< .01	<0.1
Amphipod (tube)	-	-	-	-	<0.1	< .01	-	-	<0.1
Porifera unid. (encrusting)	<0.1	< .01	-	-	-	-	-	-	<0.1
Substrate Cover									
rock	27.2	8.8	16.5	4.7	7.7	5.4	23.6	12.4	18.8
cobble	8.3	10.5	8.1	8.4	6.0	8.2	7.3	10.4	7.4
sand (shell gravel)	1.0	1.7	1.5	2.1	0.6	1.0	2.4	2.2	1.4

Table C18. Intertidal Algae (percent cover) and Invertebrates (abundance per 1.0 m^2 ; percent cover) Survey Means, Standard Deviations and 2004 Annual Means, South Diablo Cove Station SDC 1+.6m.

Survey	136		137		138		139		
Survey Date	19-Jan-04		5-May-04		2-Jul-04		12-Dec-04		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Algae Cover									
Non-coralline crust	43.7	8.2	40.5	17.6	38.5	8.4	33.5	10.2	39.1
Gelidium coulteri	-	-	2.3	4.0	21.7	12.4	6.9	6.1	7.7
coralline crust	3.9	2.7	4.4	4.7	1.5	2.4	3.3	2.1	3.3
Ulva/Enteromorpha spp.	<0.1	<.01	6.8	6.7	5.5	5.7	<0.1	0.2	3.1
Sargassum muticum	1.3	3.5	3.1	7.9	-	-	1.5	4.6	1.5
juv. articulated coralline algae	0.6	1.8	0.6	1.6	0.2	0.5	3.3	2.7	1.2
Grateloupia doryphora	-	-	0.1	0.4	2.8	5.9	-	-	0.7
Chrysophyta unid.	-	-	1.3	1.5	1.3	3.5	-	-	0.6
Mastocarpus papillatus	<0.1	<.01	0.5	0.9	1.3	2.1	0.7	1.2	0.6
Prionitis spp.	0.1	0.3	0.2	0.7	1.1	2.0	0.8	2.0	0.6
Cryptopleura violacea	<0.1	0.2	0.2	0.7	1.5	3.3	0.2	0.5	0.5
Calliarthron/Bossiella spp.-complex	1.5	2.6	0.2	0.7	-	-	-	-	0.4
Halymenia/Schizymenia spp.-complex	-	-	1.3	2.3	0.3	0.8	-	-	0.4
Corallina vancouveriensis	-	-	-	-	-	-	1.2	2.3	0.3
filamentous red algae-complex	<0.1	0.2	0.3	0.9	0.3	0.7	0.3	0.9	0.2
Mazzaella affinis	-	-	0.1	0.3	0.3	0.6	0.1	0.3	0.2
Cladophora spp.	<0.1	<.01	<0.1	<.01	<0.1	<.01	0.4	0.9	0.1
Pterosiphonia dendroidea	<0.1	<.01	-	-	<0.1	<.01	0.3	0.6	<0.1
Mazzaella heterocarpa	-	-	<0.1	<.01	0.1	0.3	-	-	<0.1
Colpomenia spp.	-	-	0.1	0.3	-	-	-	-	<0.1
Gelidium pusillum	<0.1	<.01	<0.1	<.01	<0.1	<.01	<0.1	0.2	<0.1
Acrosorium uncinatum	-	-	-	-	-	-	<0.1	0.2	<0.1
Mazzaella leptorhynchos	-	-	<0.1	<.01	-	-	<0.1	<.01	<0.1
Chondracanthus canaliculatus	-	-	<0.1	<.01	<0.1	<.01	<0.1	<.01	<0.1
Corallina officinalis	-	-	<0.1	<.01	-	-	<0.1	<.01	<0.1
Gastroclonium subarticulatum	-	-	-	-	-	-	<0.1	<.01	<0.1
Porphyra spp.	-	-	<0.1	<.01	-	-	-	-	<0.1
Chondracanthus corymbiferus	-	-	-	-	-	-	<0.1	<.01	<0.1
Farlowia/Pikea spp.-complex	<0.1	<.01	-	-	-	-	-	-	<0.1
Chondracanthus harveyanus/spinosus	-	-	-	-	<0.1	<.01	-	-	<0.1
Invertebrate Counts									
Mytilus californianus	170.6	243.8	61.2	125.2	47.2	105.5	35.0	78.3	78.5
Tetraclita rubescens	118.0	83.4	54.8	52.3	13.4	12.0	114.0	153.6	75.1
Anthopleura elegantissima	84.8	81.9	50.6	35.9	43.8	34.7	46.2	41.7	56.4
Tegula funebralis	79.4	109.6	46.4	103.8	0.4	0.6	64.4	142.9	47.7
Macclintockia scabra	82.4	66.3	16.0	15.3	37.6	39.6	21.4	12.4	39.4
Lottia limatula	3.4	3.5	15.0	14.1	14.6	14.6	1.2	1.3	8.6
Fissurella volcano	11.2	6.2	4.2	3.0	3.6	4.2	13.8	11.2	8.2
Lottia pelta	2.0	1.4	0.6	1.3	3.0	1.9	1.8	3.0	1.9
Strongylocentrotus purpuratus	3.4	2.9	2.0	1.9	-	-	1.0	1.4	1.6
Cyanoplax spp.	1.0	0.7	1.4	1.1	1.6	1.5	0.2	0.5	1.1
Serpulorbis squamigerus	1.4	1.1	0.2	0.5	0.4	0.9	0.4	0.6	0.6
Tectura scutum	1.0	2.2	1.0	2.2	-	-	0.2	0.5	0.6
Pachygrapsus crassipes	0.4	0.6	1.4	0.6	0.4	0.9	-	-	0.6
Lottia gigantea	0.4	0.9	0.6	0.9	0.4	0.9	0.2	0.5	0.4
Mopalia spp.	1.0	0.7	<0.1	<.01	-	-	-	-	0.3
Nuttallina californica	0.4	0.6	-	-	-	-	0.2	0.5	0.2

(continued)

Table C18 (continued). Intertidal Algae (percent cover) and Invertebrates (abundance per 1.0 m^2; percent cover) Survey Means, Standard Deviations and 2004 Annual Means, South Diablo Cove Station SDC 1+.6m.

Survey	136		137		138		139		
Survey Date	19-Jan-04		5-May-04		2-Jul-04		12-Dec-04		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Invertebrate Counts (continued)									
Tectura persona	0.4	0.9	-	-	-	-	-	-	<0.1
Pisaster ochraceus	0.4	0.9	-	-	-	-	-	-	<0.1
Nemertea unid.	-	-	-	-	0.2	0.5	-	-	<0.1
Octopus spp.	-	-	-	-	-	-	0.2	0.5	<0.1
Acmaeidae unid.	<0.1	-	<0.1	-	<0.1	< .01	<0.1	-	<0.1
Heptacarpus spp.	<0.1	< .01	-	-	-	-	<0.1	< .01	<0.1
Ophiactis simplex	-	-	<0.1	< .01	<0.1	< .01	-	-	<0.1
Nitidiscala/Opalia spp.	-	-	-	-	-	-	<0.1	< .01	<0.1
Pelecypoda unid. boring	-	-	<0.1	< .01	-	-	-	-	<0.1
Serpulidae unid.	<0.1	< .01	-	-	-	-	-	-	<0.1
Sipuncula unid.	-	-	<0.1	< .01	-	-	-	-	<0.1
Modiolus spp.	-	-	<0.1	< .01	-	-	-	-	<0.1
Cirratulidae/Terebellidae unid.	-	-	<0.1	< .01	-	-	-	-	<0.1
Invertebrate Cover									
Chthamalus fissus	0.3	0.7	0.3	0.6	0.3	0.5	1.9	2.6	0.7
Phragmatopoma californica	1.5	2.3	0.1	0.4	<0.1	< .01	1.0	1.5	0.7
Pista spp.	<0.1	< .01	<0.1	< .01	-	-	0.3	0.7	<0.1
Spirorbidae	<0.1	< .01	<0.1	< .01	<0.1	< .01	<0.1	< .01	<0.1
Bryozoa, unid. (encrusting)	<0.1	< .01	-	-	<0.1	< .01	-	-	<0.1
Porifera unid. (encrusting)	-	-	-	-	-	-	<0.1	< .01	<0.1
Substrate Cover									
rock	23.4	11.3	30.2	16.8	18.1	14.3	35.6	15.1	26.8
cobble	12.5	19.5	6.3	5.5	6.6	9.5	17.3	42.5	10.7
sand (shell gravel)	1.3	1.6	2.4	3.4	4.6	5.6	4.7	5.6	3.2

Table C19. Intertidal Algae (percent cover) and Invertebrates (abundance per 1.0 m^2 ; percent cover) Survey Means, Standard Deviations and 2004 Annual Means, South Diablo Cove Station SDC 2+0.3m.

Survey	136		137		138		139		
Survey Date	19-Jan-04		7-May-04		18-Aug-04		18-Nov-04		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Algae Cover									
Non-coralline crust	47.4	17.7	41.7	20.6	24.1	8.8	44.7	17.4	39.5
filamentous red algae-complex	6.3	13.6	9.3	19.8	12.4	26.5	3.5	7.4	7.8
Ulva/Enteromorpha spp.	<0.1	<.01	8.4	17.1	17.4	11.2	<0.1	<.01	6.4
Prionitis spp.	4.7	6.6	5.7	8.0	8.3	7.1	4.7	5.7	5.9
coralline crust	6.3	3.5	6.0	6.5	0.8	1.0	9.2	7.4	5.6
Gelidium coulteri	1.1	1.5	2.4	2.9	11.9	12.2	<0.1	0.2	3.9
Mastocarpus papillatus	1.4	2.5	3.1	5.3	2.4	3.7	0.3	0.6	1.8
Cryptopleura violacea	0.9	1.2	0.2	0.3	2.7	2.7	0.7	1.2	1.1
juv. articulated coralline algae	1.0	2.4	0.3	0.5	<0.1	0.2	1.3	1.9	0.7
Corallina vancouveriensis	1.0	1.4	0.5	1.1	-	-	1.2	1.4	0.7
Gastroclonium subarticulatum	0.6	1.8	0.9	2.9	0.3	0.7	0.2	0.7	0.5
Mazzaella affinis	0.1	0.3	0.6	1.2	0.8	2.0	<0.1	<.01	0.4
Pterosiphonia dendroidea	1.3	2.1	<0.1	0.2	-	-	0.1	0.3	0.4
Chondracanthus canaliculatus	0.5	0.8	0.5	1.1	0.2	0.5	<0.1	0.2	0.3
Osmundea spp.	0.2	0.7	0.7	2.2	-	-	-	-	0.2
Chondria decipiens	<0.1	0.2	0.4	0.8	<0.1	<.01	0.1	0.4	0.2
Mazzaella leptorhynchos	<0.1	<.01	0.3	0.9	-	-	<0.1	<.01	<0.1
Mastocarpus jardinii	0.3	0.9	<0.1	0.2	<0.1	<.01	-	-	<0.1
Calliarthron/Bossiella spp.-complex	<0.1	<.01	-	-	-	-	0.3	0.7	<0.1
Gelidium pusillum	0.1	0.4	<0.1	<.01	<0.1	0.2	<0.1	<.01	<0.1
Cryptosiphonia woodii	0.2	0.7	-	-	-	-	-	-	<0.1
Halymenia/Schizymenia spp.-complex	<0.1	<.01	0.1	0.3	-	-	-	-	<0.1
Endocladia muricata	-	-	-	-	0.1	0.3	-	-	<0.1
Grateloupia doryphora	-	-	<0.1	0.2	-	-	-	-	<0.1
Sargassum muticum	-	-	-	-	-	-	<0.1	0.2	<0.1
Cladophora spp.	<0.1	<.01	<0.1	<.01	-	-	<0.1	<.01	<0.1
Chrysophyta unid.	-	-	<0.1	<.01	<0.1	<.01	-	-	<0.1
Corallina officinalis	-	-	<0.1	<.01	-	-	-	-	<0.1
Mazzaella heterocarpa	-	-	<0.1	<.01	-	-	-	-	<0.1
Invertebrate Counts									
Tegula funebralis	243.6	151.2	81.6	68.5	108.8	85.1	305.0	68.0	184.8
Anthopleura elegantissima	40.2	12.9	56.6	12.1	48.2	46.6	61.8	16.3	51.7
Tetraclita rubescens	28.0	53.4	6.8	5.6	3.2	7.2	21.2	26.9	14.8
Lottia limatula	2.8	2.2	4.2	3.0	19.0	15.6	4.6	6.0	7.7
Macclintockia scabra	6.6	6.5	2.2	2.3	13.8	9.0	6.4	5.5	7.3
Fissurella volcano	3.6	5.9	3.2	1.9	2.2	1.8	6.8	4.7	4.0
Pagurus spp.	1.0	1.4	-	-	10.8	12.0	0.6	1.3	3.1
Lottia pelta	3.2	4.7	2.4	2.2	2.4	4.3	0.8	0.8	2.2
Strongylocentrotus purpuratus	0.2	0.5	1.6	2.5	1.0	2.2	2.2	4.4	1.3
Serpulorbis squamigerus	0.6	0.9	1.8	2.1	-	-	1.4	1.7	1.0
Cyanoplax spp.	0.2	0.5	0.2	0.5	1.4	0.9	1.2	1.1	0.8
Pachygrapsus crassipes	0.4	0.6	-	-	-	-	0.6	0.9	0.3
Acanthina spp.	-	-	-	-	0.2	0.5	0.6	0.6	0.2
Balanus spp.	-	-	-	-	-	-	0.6	1.3	0.2
Tectura scutum	-	-	0.4	0.9	-	-	-	-	<0.1
Pisaster ochraceus	-	-	0.2	0.5	-	-	0.2	0.5	<0.1
Ocenebra spp.	-	-	-	-	0.4	0.9	-	-	<0.1

(continued)

Table C19 (continued). Intertidal Algae (percent cover) and Invertebrates (abundance per 1.0 m^2; percent cover) Survey Means, Standard Deviations and 2004 Annual Means, South Diablo Cove Station SDC 2+0.3m.

Survey	136		137		138		139		
Survey Date	19-Jan-04		7-May-04		18-Aug-04		18-Nov-04		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Invertebrate Counts (continued)									
Lottia asmi	<0.1	< .01	-	-	<0.1	< .01	0.2	0.5	<0.1
Epiactis prolifera	0.2	0.5	-	-	-	-	-	-	<0.1
Mopalia spp.	-	-	-	-	-	-	0.2	0.5	<0.1
Tegula brunnea	-	-	-	-	0.2	0.5	-	-	<0.1
Cancer antennarius	-	-	-	-	0.2	0.5	-	-	<0.1
Acmaeidae unid.	<0.1	-	<0.1	-	<0.1	< .01	<0.1	< .01	<0.1
Littorina spp.	<0.1	< .01	-	-	<0.1	< .01	-	-	<0.1
Sipuncula unid.	-	-	-	-	<0.1	< .01	<0.1	< .01	<0.1
Hermissenda crassicornis	-	-	-	-	<0.1	< .01	-	-	<0.1
Pelecypoda unid. boring	-	-	-	-	<0.1	< .01	-	-	<0.1
Amphissa spp.	<0.1	< .01	-	-	-	-	-	-	<0.1
Cirratulidae/Terebellidae unid.	-	-	-	-	-	-	<0.1	< .01	<0.1
Mytilus galloprovincialis	<0.1	< .01	-	-	-	-	-	-	<0.1
Mytilus spp.	<0.1	< .01	-	-	-	-	-	-	<0.1
Invertebrate Cover									
Chthamalus fissus	0.3	0.9	<0.1	< .01	<0.1	-	2.4	3.2	0.7
Phragmatopoma californica	<0.1	< .01	<0.1	< .01	-	-	-	-	<0.1
Spirorbidae	<0.1	< .01	-	-	-	-	<0.1	< .01	<0.1
Pista spp.	<0.1	< .01	<0.1	< .01	-	-	<0.1	< .01	<0.1
Bryozoa, unid. (encrusting)	<0.1	< .01	-	-	-	-	<0.1	< .01	<0.1
Substrate Cover									
rock	21.1	16.8	14.3	17.3	15.9	11.1	26.6	14.8	19.5
sand (shell gravel)	3.7	6.4	4.5	5.6	12.3	11.3	5.7	7.5	6.5
cobble	2.5	3.3	2.8	5.2	0.4	1.3	1.7	2.6	1.9

Table C20. Intertidal Algae (percent cover) and Invertebrates (abundance per 1.0 m^2 ; percent cover) Survey Means, Standard Deviations and 2004 Annual Means, South Diablo Cove Station SDC 2+0.9m.

Survey	136		137		138		139		
Survey Date	18-Jan-04		24-May-03		18-Aug-04		18-Nov-04		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Algae Cover									
Non-coralline crust	17.8	23.6	15.5	27.3	14.5	25.1	12.8	25.0	15.2
Prionitis spp.	0.6	1.2	0.9	2.1	1.0	1.9	0.3	0.6	0.7
Mastocarpus papillatus	0.4	1.1	0.2	0.7	1.6	2.0	<0.1	0.2	0.6
Endocladia muricata	0.3	1.1	0.3	1.1	0.2	0.7	1.1	3.1	0.5
Gelidium coulteri	-	-	-	-	1.0	1.1	<0.1	<.01	0.2
Ulva/Enteromorpha spp.	-	-	-	-	0.7	1.5	-	-	0.2
Gelidium pusillum	<0.1	<.01	<0.1	<.01	0.3	0.7	-	-	<0.1
Microcladia coulteri	0.3	1.1	-	-	-	-	-	-	<0.1
coralline crust	0.1	0.4	<0.1	<.01	<0.1	<.01	<0.1	-	<0.1
Mazzaella affinis	-	-	-	-	0.1	0.3	-	-	<0.1
Cryptopleura violacea	-	-	-	-	0.1	0.4	-	-	<0.1
juv. articulated coralline algae	<0.1	0.2	<0.1	<.01	<0.1	<.01	<0.1	<.01	<0.1
Porphyra spp.	<0.1	0.2	-	-	-	-	-	-	<0.1
Cladophora spp.	-	-	<0.1	<.01	<0.1	<.01	<0.1	<.01	<0.1
Mazzaella leptorhynchos	<0.1	<.01	<0.1	<.01	<0.1	<.01	-	-	<0.1
Corallina vancouveriensis	-	-	-	-	-	-	<0.1	<.01	<0.1
Mazzaella heterocarpa	-	-	-	-	-	-	<0.1	<.01	<0.1
Grateloupia doryphora	-	-	-	-	<0.1	<.01	-	-	<0.1
Invertebrate Counts									
Tegula funebralis	150.8	174.2	349.6	135.8	141.4	134.3	185.2	119.4	206.8
Anthopleura elegantissima	207.6	181.7	123.8	106.6	97.8	50.8	172.0	100.0	150.3
Macclintockia scabra	26.8	26.2	11.4	8.4	34.4	22.3	23.0	16.4	23.9
Lottia limatula	0.4	0.6	22.8	18.9	15.8	8.2	2.2	3.9	10.3
Pagurus spp.	1.2	2.7	6.8	9.4	2.8	5.7	3.2	6.6	3.5
Tectura scutum	0.4	0.6	0.6	0.6	-	-	9.6	12.5	2.7
Mytilus californianus	8.0	16.8	1.2	1.3	0.4	0.6	0.8	1.8	2.6
Lottia pelta	1.0	1.7	4.6	3.7	1.0	1.0	3.0	5.2	2.4
Cyanoplax spp.	0.2	0.5	-	-	0.2	0.5	1.4	1.5	0.5
Pachygrapsus crassipes	-	-	-	-	1.0	0.7	0.4	0.9	0.4
Lottia digitalis	0.8	1.8	-	-	-	-	-	-	0.2
Fissurella volcano	0.2	0.5	-	-	0.2	0.5	0.4	0.9	0.2
Acanthina spp.	0.2	0.5	0.2	0.5	-	-	0.2	0.5	0.2
Tetraclita rubescens	-	-	-	-	-	-	0.4	0.9	<0.1
Septifer bifurcatus	0.2	0.5	-	-	-	-	-	-	<0.1
Acmaeidae unid.	<0.1	<.01	<0.1	<.01	<0.1	<.01	<0.1	-	<0.1
Littorina spp.	<0.1	<.01	<0.1	<.01	<0.1	<.01	<0.1	<.01	<0.1
Lottia asmi	<0.1	<.01	<0.1	<.01	<0.1	<.01	-	-	<0.1
Nitidiscala/Opalia spp.	-	-	<0.1	<.01	<0.1	<.01	-	-	<0.1
Nereididae unid.	-	-	<0.1	<.01	-	-	-	-	<0.1
Cirratulidae/Terebellidae unid.	-	-	-	-	-	-	<0.1	<.01	<0.1
Invertebrate Cover									
Chthamalus fissus	0.1	0.3	0.1	0.3	1.5	1.6	5.0	4.4	1.7
Substrate Cover									
rock	41.8	30.1	55.2	25.3	47.0	21.6	54.9	27.6	49.7
sand (shell gravel)	17.6	32.2	17.8	18.1	20.5	23.1	19.9	21.3	18.9
cobble	18.5	27.1	8.1	12.7	11.1	17.2	3.8	5.9	10.3

Table C21. Intertidal Algae (percent cover) and Invertebrates (abundance per 1.0 m^2 ; percent cover) Survey Means, Standard Deviations and 2004 Annual Means, South Diablo Cove Station SDC 3+0.3m.

Survey	136		137		138		139		
Survey Date	19-Feb-04		24-May-04		16-Aug-04		23-Nov-04		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Algae Cover									
Non-coralline crust	38.5	17.2	38.6	11.7	26.0	9.8	48.3	12.0	**37.8**
Mastocarpus papillatus	25.5	14.1	30.4	16.2	23.4	6.6	22.9	12.1	**25.6**
Ulva/Enteromorpha spp.	<0.1	< .01	<0.1	< .01	46.9	11.8	<0.1	0.2	**11.7**
Mazzaella affinis	0.6	1.2	0.9	1.1	0.5	0.9	0.2	0.5	**0.5**
Gelidium pusillum	0.3	0.4	1.2	1.9	<0.1	< .01	<0.1	-	**0.4**
Sargassum muticum	-	-	0.3	1.1	-	-	1.1	2.3	**0.4**
Chondracanthus canaliculatus	0.1	0.4	<0.1	0.2	-	-	1.0	1.9	**0.3**
Gastroclonium subarticulatum	<0.1	0.2	-	-	0.3	0.5	0.5	1.1	**0.2**
coralline crust	0.3	0.5	0.1	0.3	<0.1	< .01	0.3	0.5	**0.2**
Endocladia muricata	<0.1	0.2	0.3	0.9	<0.1	0.2	<0.1	0.2	**0.1**
Gelidium coulteri	<0.1	0.2	<0.1	0.2	0.3	0.5	<0.1	< .01	**0.1**
Cryptopleura violacea	-	-	-	-	-	-	0.4	0.9	**0.1**
Prionitis spp.	<0.1	< .01	<0.1	< .01	-	-	0.3	0.9	**<0.1**
filamentous red algae-complex	<0.1	0.2	<0.1	0.2	0.1	0.3	<0.1	< .01	**<0.1**
Corallina vancouveriensis	-	-	-	-	-	-	0.1	0.4	**<0.1**
Mazzaella leptorhynchos	<0.1	< .01	-	-	<0.1	< .01	<0.1	0.2	**<0.1**
Chondria decipiens	-	-	-	-	-	-	<0.1	0.2	**<0.1**
Cladophora spp.	<0.1	< .01	<0.1	< .01	<0.1	< .01	<0.1	< .01	**<0.1**
Mastocarpus jardinii	<0.1	< .01	-	-	<0.1	< .01	-	-	**<0.1**
Colpomenia spp.	-	-	-	-	<0.1	< .01	<0.1	< .01	**<0.1**
juv. articulated coralline algae	-	-	-	-	-	-	<0.1	< .01	**<0.1**
Pelvetia compressa	-	-	-	-	<0.1	< .01	-	-	**<0.1**
Microcladia coulteri	<0.1	< .01	-	-	-	-	-	-	**<0.1**
Pterosiphonia dendroidea	-	-	-	-	-	-	<0.1	< .01	**<0.1**
Invertebrate Counts									
Tegula funebralis	152.6	171.5	62.6	76.9	0.6	0.9	54.0	50.9	**67.5**
Pagurus spp.	53.0	37.4	40.6	27.1	34.0	39.8	33.0	48.9	**40.2**
Anthopleura elegantissima	43.0	85.7	21.6	40.7	17.6	33.4	35.4	73.6	**29.4**
Macclintockia scabra	6.8	10.1	39.4	55.8	51.6	56.2	11.2	11.3	**27.3**
Tetraclita rubescens	21.2	37.9	11.0	15.1	13.2	21.0	9.8	12.6	**13.8**
Lottia limatula	1.4	1.5	8.0	2.9	10.8	14.3	1.0	0.7	**5.3**
Fissurella volcano	7.8	16.4	1.6	1.5	0.8	1.1	1.8	1.8	**3.0**
Lottia pelta	1.0	1.4	3.4	2.3	4.2	3.1	0.8	0.8	**2.4**
Tegula brunnea	3.0	6.7	-	-	-	-	1.8	3.0	**1.2**
Tectura scutum	0.8	1.3	3.2	2.4	0.4	0.6	0.2	0.5	**1.2**
Strongylocentrotus purpuratus	-	-	2.2	1.6	0.4	0.6	-	-	**0.7**
Pisaster ochraceus	0.2	0.5	0.6	0.9	0.4	0.9	0.2	0.5	**0.4**
Pachygrapsus crassipes	0.4	0.9	0.6	0.6	0.4	0.6	-	-	**0.4**
Cyanoplax spp.	-	-	0.2	0.5	0.4	0.6	0.2	0.5	**0.2**
Ocenebra spp.	-	-	-	-	0.6	0.6	0.2	0.5	**0.2**
Diopatra ornata	0.2	0.5	0.2	0.5	-	-	-	-	**<0.1**
Anthopleura xanthogrammica	-	-	-	-	-	-	0.2	0.5	**<0.1**
Nereididae unid.	-	-	-	-	0.2	0.5	-	-	**<0.1**
Mitra idae	-	-	-	-	0.2	0.5	-	-	**<0.1**
Ophiothrix spp.	-	-	-	-	-	-	0.2	0.5	**<0.1**
Acmaeidae unid.	<0.1	< .01	<0.1	-	<0.1	-	<0.1	-	**<0.1**
Lottia asmi	<0.1	< .01	<0.1	< .01	-	-	<0.1	< .01	**<0.1**

(continued)

Table C21 (continued). Intertidal Algae (percent cover) and Invertebrates (abundance per 1.0 m^2; percent cover) Survey Means, Standard Deviations and 2004 Annual Means, South Diablo Cove Station SDC 3+0.3m.

Survey	136		137		138		139		
Survey Date	19-Feb-04		24-May-04		16-Aug-04		23-Nov-04		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Invertebrate Counts (continued)									
Littorina spp.	-	-	-	-	<0.1	< .01	<0.1	< .01	<0.1
Grapsidae (juv.)	-	-	<0.1	< .01	<0.1	< .01	-	-	<0.1
Crepidula spp.	-	-	-	-	<0.1	< .01	-	-	<0.1
Nitidiscala/Opalia spp.	-	-	-	-	<0.1	< .01	-	-	<0.1
Ischnochitonidae	-	-	-	-	<0.1	< .01	-	-	<0.1
Lacuna spp.	-	-	-	-	<0.1	< .01	-	-	<0.1
Amphissa spp.	-	-	<0.1	< .01	-	-	-	-	<0.1
Invertebrate Cover									
Chthamalus fissus	0.5	0.7	0.3	0.5	0.3	0.9	0.1	0.3	0.3
Spirorbidae	<0.1	< .01	<0.1	< .01	<0.1	< .01	<0.1	< .01	<0.1
Phragmatopoma californica	<0.1	< .01	<0.1	< .01	-	-	-	-	<0.1
Pista spp.	<0.1	< .01	-	-	<0.1	< .01	<0.1	< .01	<0.1
Bryozoa, unid. (encrusting)	-	-	-	-	-	-	<0.1	< .01	<0.1
Substrate Cover									
cobble	18.9	9.1	17.4	8.5	11.1	7.5	13.8	12.6	15.3
rock	22.4	9.7	14.0	8.3	8.9	5.4	10.1	5.4	13.9
sand (shell gravel)	2.8	2.5	3.2	2.2	3.3	1.3	4.4	2.7	3.4

Table C22. Intertidal Algae (percent cover) and Invertebrates (abundance per 1.0 m^2 ; percent cover) Survey Means, Standard Deviations and 2004 Annual Means, South Diablo Cove Station SDC 3+0.9m.

Survey	136		137		138		139		
Survey Date	18-Jan-04		24-May-04		16-Aug-04		23-Nov-04		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Algae Cover									
Non-coralline crust	28.1	15.9	23.2	14.0	36.7	21.9	34.6	20.8	30.7
Mastocarpus papillatus	15.2	8.8	3.9	6.5	14.4	12.7	9.4	7.3	10.7
Gelidium coulteri	<0.1	0.2	-	-	0.4	0.7	0.2	0.5	0.2
coralline crust	<0.1	0.2	0.4	1.1	<0.1	< .01	<0.1	< .01	0.1
Gelidium pusillum	<0.1	< .01	<0.1	< .01	0.3	0.7	<0.1	0.2	0.1
Mazzaella affinis	-	-	-	-	0.3	0.6	<0.1	< .01	<0.1
Endocladia muricata	-	-	<0.1	< .01	<0.1	0.2	<0.1	< .01	<0.1
Mastocarpus jardinii	<0.1	0.2	-	-	-	-	-	-	<0.1
Cladophora spp.	<0.1	< .01	<0.1	< .01	<0.1	< .01	<0.1	< .01	<0.1
Mazzaella leptorhynchos	<0.1	< .01	-	-	<0.1	< .01	<0.1	< .01	<0.1
juv. articulated coralline algae	<0.1	< .01	<0.1	< .01	-	-	<0.1	< .01	<0.1
Ulva/Enteromorpha spp.	-	-	-	-	<0.1	< .01	-	-	<0.1
Invertebrate Counts									
Tegula funebralis	166.0	133.2	115.4	58.7	197.4	125.0	147.4	60.0	156.6
Anthopleura elegantissima	91.2	105.1	60.4	95.0	74.6	87.0	68.0	83.4	73.6
Macclintockia scabra	19.8	31.2	13.4	6.7	121.2	88.2	37.0	20.4	47.9
Pagurus spp.	4.2	6.6	2.4	3.6	20.4	14.5	17.4	17.7	11.1
Lottia limatula	0.2	0.5	1.8	0.8	5.8	6.0	2.4	1.7	2.6
Tetraclita rubescens	0.2	0.5	1.0	2.2	3.6	5.1	2.0	3.1	1.7
Mytilus californianus	<0.1	< .01	<0.1	< .01	4.4	9.8	2.0	4.5	1.6
Pollicipes polymerus	<0.1	< .01	0.4	0.9	2.4	5.4	0.8	1.8	0.9
Lottia pelta	-	-	0.6	0.9	0.8	1.8	0.6	0.9	0.5
Fissurella volcano	-	-	-	-	-	-	1.6	3.6	0.4
Acanthina spp.	0.8	1.3	-	-	0.6	0.9	-	-	0.4
Pachygrapsus crassipes	0.2	0.5	0.2	0.5	0.4	0.9	0.6	0.9	0.4
Tectura scutum	0.2	0.5	0.2	0.5	0.8	1.8	-	-	0.3
Pisaster ochraceus	-	-	0.2	0.5	0.8	0.8	0.2	0.5	0.3
Cyanoplax spp.	-	-	0.2	0.5	0.2	0.5	-	-	<0.1
Diopatra ornata	-	-	0.2	0.5	-	-	-	-	<0.1
Ocenebra spp.	0.2	0.5	-	-	-	-	-	-	<0.1
Acmaeidae unid.	<0.1	< .01	<0.1	< .01	<0.1	-	<0.1	-	<0.1
Lottia asmi	<0.1	< .01	<0.1	< .01	<0.1	< .01	<0.1	< .01	<0.1
Littorina spp.	-	-	-	-	<0.1	< .01	<0.1	< .01	<0.1
Nitidiscala/Opalia spp.	-	-	-	-	-	-	<0.1	< .01	<0.1
Ischnochitonidae	-	-	-	-	-	-	<0.1	< .01	<0.1
Amphissa spp.	-	-	<0.1	< .01	-	-	-	-	<0.1
Sipuncula unid.	-	-	-	-	-	-	<0.1	< .01	<0.1
Invertebrate Cover									
Chthamalus fissus	0.6	1.1	1.4	2.3	1.6	2.4	3.3	3.5	1.7
Spirorbidae	<0.1	< .01	<0.1	< .01	<0.1	< .01	<0.1	< .01	<0.1
Phragmatopoma californica	-	-	<0.1	< .01	-	-	-	-	<0.1
Substrate Cover									
rock	31.9	30.6	33.2	26.7	28.8	28.3	26.5	28.0	30.1
cobble	15.8	12.7	30.0	15.8	14.9	10.8	19.3	13.3	20.0
sand (shell gravel)	9.8	7.3	9.1	6.2	6.1	4.3	4.6	2.9	7.4

Table C23. Intertidal Algae (percent cover) and Invertebrates (abundance per 1.0 m^2 ; percent cover) Survey Means, Standard Deviations and 2004 Annual Means, South Diablo Point Station SDP 1+0.9m.

Survey	136		137		138		139		
Survey Date	21-Jan-04		19-May-04		30-Jun-04		29-Nov-04		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Algae Cover									
Non-coralline crust	66.4	11.4	66.5	11.8	53.7	19.9	58.8	19.5	61.3
Gelidium coulteri	5.4	3.6	10.8	5.9	13.8	7.7	6.5	5.1	9.1
coralline crust	9.9	6.7	7.3	6.1	6.9	7.0	9.3	6.4	8.4
Corallina vancouveriensis	0.2	0.3	3.8	4.9	3.5	8.9	8.4	6.3	4.0
juv. articulated coralline algae	4.2	2.6	2.8	5.3	1.9	3.4	0.9	1.2	2.4
Mastocarpus papillatus	1.9	2.5	3.3	3.1	1.5	1.6	<0.1	< .01	1.6
Mastocarpus jardinii	0.3	0.6	1.8	1.7	2.5	2.5	1.6	2.3	1.6
Prionitis spp.	0.1	0.4	0.3	0.9	1.0	1.7	2.1	2.5	0.9
Calliarthron/Bossiella spp.-complex	1.5	1.9	-	-	1.6	2.3	<0.1	< .01	0.8
Ulva/Enteromorpha spp.	<0.1	< .01	0.2	0.3	0.6	1.8	0.3	0.9	0.3
Mazzaella flaccida	<0.1	< .01	0.6	1.1	0.3	0.8	0.1	0.3	0.3
Endocladia muricata	0.1	0.4	0.3	0.9	0.3	0.9	0.1	0.4	0.2
Callithamnion spp./*Pleonosporium* spp.	-	-	0.5	0.6	0.1	0.4	-	-	0.2
Chrysophyta unid.	0.3	1.1	<0.1	0.2	-	-	-	-	0.1
Cryptopleura violacea	-	-	-	-	-	-	0.3	0.7	<0.1
filamentous red algae-complex	-	-	0.1	0.4	-	-			<0.1
Gelidium pusillum	<0.1	0.2	-	-	<0.1	< .01	<0.1	< .01	<0.1
Porphyra spp.	-	-	<0.1	0.2	-	-	-	-	<0.1
Spongomorpha/Acrosiphonia-complex	-	-	<0.1	< .01	-	-	<0.1	0.2	<0.1
Mazzaella affinis	-	-	<0.1	< .01	<0.1	< .01	<0.1	< .01	<0.1
Cladophora spp.	<0.1	< .01	-	-	<0.1	< .01	<0.1	< .01	<0.1
Halymenia/Schizymenia spp.-complex	-	-	-	-	<0.1	< .01	<0.1	< .01	<0.1
Mazzaella heterocarpa	-	-	-	-	-	-	<0.1	< .01	<0.1
Corallina officinalis	-	-	-	-	-	-	<0.1	< .01	<0.1
Colpomenia spp.	-	-	-	-	<0.1	< .01	-	-	<0.1
Osmundea spp.	-	-	-	-	-	-	<0.1	< .01	<0.1
Bryopsis spp.	-	-	<0.1	< .01	-	-	-		<0.1
Invertebrate Counts									
Anthopleura elegantissima	153.0	76.3	103.6	56.4	174.0	140.2	229.2	126.6	165.0
Macclintockia scabra	31.4	27.3	230.2	123.8	130.4	73.2	172.8	118.7	141.2
Tetraclita rubescens	50.6	38.4	56.2	37.7	73.2	35.7	72.6	55.3	63.2
Strongylocentrotus purpuratus	27.0	27.9	26.6	20.2	57.6	85.0	44.4	57.4	38.9
Lottia pelta	1.0	1.2	9.6	14.4	6.4	4.4	1.0	0.7	4.5
Lottia gigantea	3.2	2.1	2.4	2.1	2.2	3.0	3.2	2.7	2.8
Fissurella volcano	4.6	2.1	0.4	0.9	0.8	0.8	4.4	3.7	2.6
Pisaster ochraceus	2.4	1.5	1.2	1.3	2.2	0.5	0.8	0.5	1.7
Anthopleura xanthogrammica	1.8	0.8	1.4	1.5	1.2	1.3	1.2	1.1	1.4
Pachygrapsus crassipes	0.2	0.5	0.2	0.5	3.6	2.4	0.6	0.9	1.2
Mytilus californianus	2.8	6.3	-	-	0.8	1.8	0.6	1.3	1.1
Lottia limatula	1.0	1.0	1.0	1.7	1.8	2.5	0.2	0.5	1.0
Pollicipes polymerus	0.4	0.9	2.4	5.4	<0.1	< .01	0.4	0.9	0.8
Mytilus spp.	-	-	3.2	7.2	-	-	-		0.8
Tectura scutum	-	-	1.4	2.0	0.4	0.6	-	-	0.5
Serpulidae unid.	0.8	0.5	-	-	<0.1	< .01	0.6	0.6	0.4
Nemertea unid.	0.2	0.5	-	-	<0.1	< .01	1.0	1.2	0.3
Tegula funebralis	0.8	1.1	-	-	-	-	0.4	0.6	0.3
Nuttallina californica	-	-	-	-	0.2	0.5	0.8	0.8	0.3

(continued)

Table C23 (continued). Intertidal Algae (percent cover) and Invertebrates (abundance per 1.0 m^2; percent cover) Survey Means, Standard Deviations and 2004 Annual Means, South Diablo Point Station SDP 1+0.9m.

Survey	136		137		138		139		
Survey Date	21-Jan-04		19-May-04		30-Jun-04		29-Nov-04		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Invertebrate Counts (continued)									
Lottia ochracea	-	-	0.4	0.9	-	-	0.2	0.5	0.2
Tegula brunnea	-	-	-	-	-	-	0.6	0.6	0.2
Cyanoplax spp.	-	-	0.2	0.5	0.2	0.5	-	-	0.1
Lottia digitalis	-	-	-	-	-	-	0.4	0.9	<0.1
Pagurus spp.	0.4	0.9	-	-	-	-	-	-	<0.1
Sipuncula unid.	<0.1	< .01	-	-	<0.1	< .01	0.2	0.5	<0.1
Nucella emarginata	0.2	0.5	-	-	-	-	-	-	<0.1
Serpulorbis squamigerus	-	-	-	-	-	-	0.2	0.5	<0.1
Ocenebra spp.	-	-	-	-	-	-	0.2	0.5	<0.1
Acmaeidae unid.	<0.1	< .01	<0.1	-	<0.1	-	<0.1	< .01	<0.1
Pelecypoda unid. boring	-	-	-	-	<0.1	< .01	<0.1	< .01	<0.1
Leptasterias spp.	-	-	<0.1	< .01	-	-	-	-	<0.1
Invertebrate Cover									
Chthamalus fissus	0.2	0.3	0.7	0.8	1.5	1.8	0.3	0.7	0.7
Phragmatopoma californica	<0.1	< .01	<0.1	< .01	<0.1	< .01	<0.1	< .01	<0.1
Spirorbidae	<0.1	< .01	<0.1	< .01	<0.1	< .01	<0.1	< .01	<0.1
Dodecaceria fewkesi	<0.1	< .01	<0.1	< .01	<0.1	< .01	<0.1	< .01	<0.1
Bryozoa, unid. (encrusting)	<0.1	< .01	-	-	-	-	<0.1	< .01	<0.1
Porifera unid. (encrusting)	-	-	<0.1	< .01	-	-	<0.1	< .01	<0.1
tunicates, colonial/social unid.	-	-	-	-	-	-	<0.1	< .01	<0.1
Salmacina tribranchiata	-	-	-	-	<0.1	< .01	-	-	<0.1
Substrate Cover									
rock	2.7	2.2	4.9	3.8	9.2	6.2	9.7	11.3	6.6
sand (shell gravel)	-	-	-	-	<0.1	< .01	<0.1	< .01	<0.1
cobble	-	-	-	-	-	-	<0.1	< .01	<0.1

Table C24. Intertidal Algae (percent cover) and Invertebrates (abundance per 1.0 m^2 ; percent cover) Survey Means, Standard Deviations and 2004 Annual Means, South Diablo Point Station SDP 2+0.9m.

Survey	136		137		138		139		
Survey Date	21-Jan-04		19-May-04		30-Jun-04		15-Nov-04		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Algae Cover									
coralline crust	13.8	9.9	22.2	13.0	21.5	11.7	14.9	7.0	18.1
Corallina vancouveriensis	15.3	10.2	25.3	11.7	10.2	8.2	19.4	10.4	17.6
Gelidium coulteri	12.4	10.5	23.4	18.9	20.3	18.3	4.7	7.3	15.2
Prionitis spp.	9.2	12.8	7.4	12.9	10.1	8.8	24.4	14.0	12.8
Mazzaella flaccida	4.9	6.8	16.9	20.3	15.3	21.0	4.3	6.2	10.3
Cryptopleura violacea	22.1	9.7	1.7	1.3	5.7	7.8	9.9	7.1	9.8
Calliarthron/Bossiella spp.-complex	4.2	5.6	2.8	4.9	10.3	11.1	7.0	10.7	6.1
Non-coralline crust	11.1	8.2	5.2	2.4	3.1	3.1	4.9	3.3	6.1
Gastroclonium subarticulatum	1.6	1.8	5.0	5.9	4.9	8.2	2.6	3.0	3.5
Egregia menziesii	1.1	1.2	1.5	2.3	3.5	4.5	2.8	4.4	2.2
juv. articulated coralline algae	3.5	3.5	<0.1	0.2	0.6	0.9	0.9	0.6	1.3
Callithamnion spp./*Pleonosporium* spp.	<0.1	<.01	3.3	1.6	1.3	1.1	0.2	0.3	1.2
Mastocarpus jardinii	0.8	1.6	0.8	2.4	1.0	2.4	1.5	3.4	1.1
Chondracanthus canaliculatus	1.4	2.4	1.1	1.5	0.6	0.9	1.0	1.3	1.0
filamentous red algae-complex	-	-	0.3	1.1	2.0	5.0	<0.1	<.01	0.6
Osmundea spp.	0.6	1.0	-	-	<0.1	<.01	0.2	0.5	0.2
Mazzaella affinis	-	-	<0.1	<.01	<0.1	<.01	0.5	1.1	0.1
Ulva/Enteromorpha spp.	0.3	1.1	<0.1	<.01	<0.1	<.01	<0.1	<.01	<0.1
Chondracanthus corymbiferus	<0.1	<.01	<0.1	<.01	0.3	0.9	-	-	<0.1
Mazzaella heterocarpa	<0.1	0.2	0.1	0.4	<0.1	<.01	<0.1	0.2	<0.1
Corallina officinalis	0.1	0.4	<0.1	0.2	<0.1	0.2	-	-	<0.1
Chrysophyta unid.	0.3	0.9	-	-	-	-	-	-	<0.1
Bryopsis spp.	-	-	0.1	0.3	<0.1	0.2	<0.1	<.01	<0.1
Microcladia coulteri	-	-	-	-	0.2	0.7	-	-	<0.1
Mastocarpus papillatus	<0.1	0.2	<0.1	0.2	-	-	<0.1	<.01	<0.1
Codium fragile	<0.1	<.01	-	-	0.1	0.4	-	-	<0.1
Gelidium robustum	<0.1	0.2	-	-	<0.1	<.01	-	-	<0.1
Porphyra spp.	<0.1	<.01	<0.1	<.01	-	-	-	-	<0.1
Grateloupia doryphora	-	-	-	-	<0.1	<.01	-	-	<0.1
Codium setchellii	-	-	-	-	-	-	<0.1	<.01	<0.1
Callithamnion pikeanum	-	-	<0.1	<.01	-	-	-	-	<0.1
Gelidium pusillum	<0.1	<.01	-	-	-	-	-	-	<0.1
Microcladia borealis	-	-	-	-	<0.1	<.01	-	-	<0.1
Mazzaella lilacina	-	-	-	-	<0.1	<.01	-	-	<0.1
Halicystis ovalis	-	-	-	-	-	-	<0.1	<.01	<0.1
Halymenia/Schizymenia spp.-complex	-	-	<0.1	<.01	-	-	-	-	<0.1
Invertebrate Counts									
Strongylocentrotus purpuratus	100.4	64.0	176.8	74.4	200.2	110.4	140.8	92.9	154.6
Anthopleura elegantissima	86.8	73.0	66.0	62.4	29.0	27.1	80.6	81.6	65.6
Tetraclita rubescens	16.8	33.7	2.6	3.3	7.2	13.4	3.0	3.9	7.4
Pisaster ochraceus	4.0	1.9	1.4	1.1	3.0	2.1	3.2	3.3	2.9
Pachygrapsus crassipes	0.4	0.6	2.6	2.1	5.0	2.1	3.6	1.5	2.9
Serpulorbis squamigerus	4.0	3.4	1.4	2.0	1.6	1.8	2.4	2.3	2.4
Lottia pelta	0.6	0.9	0.6	1.3	3.8	6.3	3.2	6.1	2.1
Serpulidae unid.	4.6	3.7	1.0	1.7	1.8	1.1	0.4	0.9	2.0
Fissurella volcano	0.8	0.5	0.8	0.8	1.0	1.2	3.2	1.3	1.5
Anthopleura xanthogrammica	1.2	2.7	1.2	2.7	0.8	1.8	0.2	0.5	0.9

(continued)

Table C24 (continued). Intertidal Algae (percent cover) and Invertebrates (abundance per 1.0 m^2; percent cover) Survey Means, Standard Deviations and 2004 Annual Means, South Diablo Point Station SDP 2+0.9m.

Survey	136		137		138		139		
Survey Date	21-Jan-04		19-May-04		30-Jun-04		15-Nov-04		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Invertebrate Counts (continued)									
Leptasterias spp.	0.6	0.6	0.4	0.6	0.6	0.9	1.6	0.9	0.8
Tegula brunnea	0.4	0.6	0.2	0.5	-	-	2.4	3.2	0.8
Balanus spp.	-	-	3.0	6.7	-	-	-	-	0.8
Nemertea unid.	0.4	0.9	1.0	1.7	0.6	0.9	0.8	1.1	0.7
Pagurus spp.	2.0	4.5	-	-	-	-	-	-	0.5
Tonicella lineata	0.2	0.5	0.2	0.5	0.4	0.9	1.0	1.0	0.5
Macclintockia scabra	-	-	1.0	2.2	0.4	0.9	-	-	0.4
Lottia ochracea	-	-	1.2	0.5	-	-	-	-	0.3
Acmaea mitra	0.4	0.9	0.2	0.5	-	-	0.2	0.5	0.2
Lottia limatula	-	-	-	-	0.6	0.9	-	-	0.2
Sipuncula unid.	<0.1	<.01	<0.1	<.01	<0.1	-	0.4	0.9	0.1
Calliostoma ligatum	-	-	0.2	0.5	-	-	0.2	0.5	<0.1
Mopalia spp.	0.4	0.6	-	-	-	-	-	-	<0.1
Cancer antennarius	0.2	0.5	-	-	0.2	0.5	-	-	<0.1
Tegula funebralis	0.2	0.5	-	-	-	-	-	-	<0.1
Nuttallina californica	0.2	0.5	-	-	-	-	-	-	<0.1
Nereididae unid.	-	-	-	-	-	-	0.2	0.5	<0.1
Pugettia spp.	-	-	-	-	-	-	0.2	0.5	<0.1
Haliotis spp.	<0.1	0.3	-	-	-	-	-	-	<0.1
Acmaeidae unid.	<0.1	<.01	<0.1	-	<0.1	-	<0.1	<.01	<0.1
Pelecypoda unid. boring	<0.1	<.01	<0.1	<.01	<0.1	<.01	<0.1	<.01	<0.1
Pollicipes polymerus	<0.1	<.01	<0.1	<.01	<0.1	<.01	<0.1	<.01	<0.1
Ischnochitonidae	<0.1	<.01	-	-	-	-	<0.1	<.01	<0.1
Corynactis californica	-	-	<0.1	<.01	-	-	<0.1	<.01	<0.1
Mytilus californianus	-	-	-	-	<0.1	<.01	<0.1	<.01	<0.1
Idotea spp.	-	-	<0.1	<.01	-	-	-	-	<0.1
Grapsidae (juv.)	-	-	-	-	<0.1	<.01	-	-	<0.1
Cirratulidae/Terebellidae unid.	-	-	<0.1	<.01	<0.1	<.01	-	-	<0.1
Hermissenda crassicornis	-	-	-	-	-	-	<0.1	<.01	<0.1
Lacuna spp.	<0.1	<.01	-	-	-	-	-	-	<0.1
Amphissa spp.	<0.1	<.01	-	-	-	-	-	-	<0.1
Lissothuria nutriens	-	-	<0.1	<.01	-	-	-	-	<0.1
Mytilus spp.	<0.1	<.01	-	-	-	-	-	-	<0.1
Ophiactis simplex	-	-	-	-	-	-	<0.1	<.01	<0.1
Invertebrate Cover									
Dodecaceria fewkesi	-	-	<0.1	<.01	-	-	0.2	0.7	<0.1
Porifera unid. (encrusting)	<0.1	0.2	<0.1	<.01	<0.1	<.01	<0.1	0.2	<0.1
Salmacina tribranchiata	-	-	<0.1	<.01	<0.1	<.01	<0.1	<.01	<0.1
Spirorbidae	<0.1	<.01	-	-	<0.1	<.01	<0.1	<.01	<0.1
Phragmatopoma californica	<0.1	<.01	<0.1	<.01	<0.1	<.01	<0.1	<.01	<0.1
Pista spp.	-	-	-	-	<0.1	<.01	-	-	<0.1
tunicates, colonial/social unid.	<0.1	<.01	<0.1	<.01	-	-	<0.1	<.01	<0.1
Bryozoa, unid. (encrusting)	-	-	-	-	-	-	<0.1	<.01	<0.1
Hydroida	<0.1	<.01	-	-	-	-	<0.1	<.01	<0.1
Chthamalus fissus	<0.1	<.01	-	-	-	-	<0.1	<.01	<0.1
Substrate Cover									
rock	3.2	2.9	3.9	1.1	5.6	4.0	3.1	1.4	4.0
cobble	<0.1	<.01	-	-	-	-	-	-	<0.1

Table C25. Intertidal Algae (percent cover) and Invertebrates (abundance per 1.0 m^2 ; percent cover) Survey Means, Standard Deviations and 2004 Annual Means, South Control Station SC 1+0.3m.

Survey	136		137		138		139		
Survey Date	23-Jan-04		10-May-04		16-Jul-04		14-Nov-04		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Algae Cover									
Mazzaella flaccida	22.8	13.7	45.6	17.4	51.2	21.6	20.6	13.3	35.1
Chondracanthus canaliculatus	21.3	15.6	30.3	16.5	32.4	24.6	16.4	5.1	25.1
Gastroclonium subarticulatum	19.7	14.2	8.5	9.6	2.4	3.4	27.8	12.7	14.6
Non-coralline crust	16.2	9.1	9.5	7.3	9.2	8.4	16.2	11.2	12.8
coralline crust	8.8	7.3	3.5	3.1	4.9	4.5	7.2	6.7	6.1
Cryptopleura violacea	3.2	3.8	1.9	2.0	2.6	3.1	5.8	7.7	3.4
Phyllospadix spp.	2.0	3.5	2.1	3.1	1.5	4.0	4.5	6.6	2.5
Ulva/Enteromorpha spp.	2.2	2.3	1.9	1.3	2.8	1.8	2.6	4.4	2.4
Mastocarpus papillatus	1.0	1.3	2.4	2.3	2.2	4.9	2.6	4.2	2.0
Mastocarpus jardinii	1.5	2.3	2.7	4.8	1.4	2.6	0.3	0.7	1.5
Egregia menziesii	1.0	2.2	1.0	2.1	1.9	4.2	0.2	0.7	1.0
Porphyra spp.	-	-	-	-	4.1	13.0	-	-	1.0
Prionitis spp.	1.5	2.0	1.0	1.1	0.1	0.3	0.8	1.2	0.9
Endocladia muricata	0.5	0.7	1.0	1.6	1.7	3.9	-	-	0.8
Mazzaella affinis	1.2	1.8	0.3	0.5	0.7	1.0	1.0	2.0	0.8
Spongomorpha/Acrosiphonia-complex	-	-	2.9	4.6	0.2	0.5	-	-	0.8
Mazzaella heterocarpa	0.3	0.7	1.7	1.4	0.5	0.7	0.3	0.7	0.7
Osmundea spp.	0.3	0.5	0.4	0.9	0.1	0.3	1.0	0.9	0.5
Halosaccion americanum	0.8	1.7	0.3	0.6	0.2	0.5	0.5	1.5	0.4
Calliarthron/Bossiella spp.-complex	1.3	3.5	0.2	0.5	<0.1	0.2	<0.1	<.01	0.4
Corallina vancouveriensis	0.3	0.5	<0.1	0.2	0.2	0.7	0.8	1.4	0.3
juv. articulated coralline algae	0.6	1.3	0.3	0.9	0.1	0.3	0.3	0.5	0.3
Mazzaella lilacina	-	-	1.2	1.4	-	-	-	-	0.3
Gelidium pusillum	0.5	1.3	<0.1	<.01	0.2	0.5	0.1	0.4	0.2
filamentous red algae-complex	0.2	0.7	0.6	1.1	-	-	-	-	0.2
Chondracanthus corymbiferus	<0.1	<.01	0.4	0.9	0.2	0.7	-	-	0.2
Callithamnion pikeanum	<0.1	0.2	0.4	0.9	<0.1	<.01	-	-	0.1
Smithora naiadum	-	-	<0.1	<.01	<0.1	<.01	0.4	1.3	0.1
Mazzaella leptorhynchos	-	-	0.2	0.5	-	-	-	-	<0.1
Sarcodiotheca gaudichaudii	<0.1	0.2	<0.1	0.2	<0.1	<.01	-	-	<0.1
Cystoseira osmundacea	<0.1	0.2	-	-	-	-	<0.1	0.2	<0.1
Gelidium coulteri	<0.1	<.01	<0.1	<.01	<0.1	0.2	-	-	<0.1
Corallina officinalis	<0.1	<.01	<0.1	0.2	-	-	<0.1	<.01	<0.1
Microcladia coulteri	-	-	<0.1	<.01	<0.1	<.01	<0.1	<.01	<0.1
Cladophora spp.	<0.1	<.01	-	-	-	-	<0.1	<.01	<0.1
Callophyllis spp.	<0.1	<.01	-	-	-	-	-	-	<0.1
Callithamnion spp./*Pleonosporium* spp.	-	-	<0.1	<.01	<0.1	<.01	-	-	<0.1
Erythrophyllum delesserioides	-	-	<0.1	<.01	-	-	-	-	<0.1
Bryopsis spp.	<0.1	<.01	-	-	-	-	-	-	<0.1
Invertebrate Counts									
Tetraclita rubescens	56.2	68.5	10.0	11.7	24.0	53.7	9.0	20.1	24.8
Macclintockia scabra	0.4	0.6	6.0	5.1	13.4	19.3	3.8	4.2	5.9
Pagurus spp.	6.2	8.0	1.2	2.7	2.2	2.7	1.0	1.7	2.7
Anthopleura elegantissima	1.8	1.9	1.0	1.0	1.8	3.0	2.0	3.4	1.7
Tegula funebralis	-	-	-	-	5.0	7.6	0.6	0.9	1.4
Lottia pelta	0.2	0.5	0.8	0.8	2.8	3.8	1.6	2.5	1.4
Tectura scutum	-	-	0.2	0.5	3.0	6.2	0.2	0.5	0.9

(continued)

Table C25 (continued). Intertidal Algae (percent cover) and Invertebrates (abundance per 1.0 m^2; percent cover) Survey Means, Standard Deviations and 2004 Annual Means, South Control Station SC 1+0.3m.

Survey	136		137		138		139		
Survey Date	23-Jan-04		10-May-04		16-Jul-04		14-Nov-04		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Invertebrate Counts (continued)									
Tegula brunnea	1.4	1.7	0.4	0.6	0.6	1.3	0.2	0.5	0.7
Asterina miniata	0.6	0.9	0.2	0.5	-	-	0.6	0.6	0.4
Epiactis prolifera	0.4	0.6	-	-	-	-	0.8	0.5	0.3
Lottia limatula	-	-	0.8	0.8	-	-	0.4	0.9	0.3
Nemertea unid.	0.2	0.5	-	-	0.8	1.3	-	-	0.3
Mopalia spp.	0.2	0.5	0.2	0.5	-	-	0.2	0.5	0.2
Tonicella lineata	-	-	-	-	<0.1	<.01	0.4	0.6	0.1
Pugettia spp.	<0.1	<.01	0.4	0.6	-	-	-	-	0.1
Heptacarpus spp.	<0.1	<.01	-	-	-	-	0.4	0.9	0.1
Fissurella volcano	-	-	-	-	0.4	0.9	-	-	<0.1
Diopatra ornata	0.4	0.6	-	-	-	-	-	-	<0.1
Pisaster ochraceus	-	-	-	-	-	-	0.4	0.9	<0.1
Ocenebra spp.	-	-	-	-	0.2	0.5	0.2	0.5	<0.1
Ischnochitonidae	<0.1	<.01	0.2	0.5	<0.1	<.01	<0.1	<.01	<0.1
Acmaea mitra	<0.1	<.01	0.2	0.5	-	-	-	-	<0.1
Hemigrapsus nudus	-	-	-	-	0.2	0.5	-	-	<0.1
Pachygrapsus crassipes	-	-	0.2	0.5	-	-	-	-	<0.1
Leptasterias spp.	-	-	0.2	0.5	-	-	-	-	<0.1
Acmaeidae unid.	<0.1	<.01	<0.1	<.01	<0.1	<.01	<0.1	<.01	<0.1
Lacuna spp.	<0.1	<.01	<0.1	<.01	<0.1	<.01	<0.1	<.01	<0.1
Homolo. luridum/Lirularia succincta	<0.1	<.01	-	-	-	-	-	-	<0.1
Alia spp.	<0.1	<.01	<0.1	<.01	<0.1	<.01	-	-	<0.1
Anthozoa unid.	<0.1	<.01	-	-	-	-	-	-	<0.1
Lottia digitalis	-	-	<0.1	<.01	-	-	-	-	<0.1
Discurria insessa	<0.1	<.01	-	-	-	-	-	-	<0.1
Crepidula spp.	<0.1	<.01	-	-	-	-	-	-	<0.1
Littorina spp.	-	-	-	-	-	-	<0.1	<.01	<0.1
Lottia instabilis	-	-	-	-	-	-	<0.1	<.01	<0.1
Henricia leviuscula	-	-	<0.1	<.01	-	-	-	-	<0.1
Idotea spp.	-	-	-	-	-	-	<0.1	<.01	<0.1
Phidiana hiltoni	<0.1	<.01	-	-	-	-	-	-	<0.1
Rostanga pulchra	<0.1	<.01	-	-	-	-	-	-	<0.1
Bittium spp.	<0.1	<.01	-	-	-	-	-	-	<0.1
Pisaster/Henricia (juv.)	-	-	-	-	-	-	<0.1	<.01	<0.1
Serpulidae unid.	<0.1	<.01	-	-	-	-	-	-	<0.1
Mytilimeria nuttalli	<0.1	<.01	-	-	-	-	-	-	<0.1
Invertebrate Cover									
Chthamalus fissus	<0.1	<.01	<0.1	<.01	-	-	1.0	2.1	0.2
Phragmatopoma californica	<0.1	0.2	<0.1	<.01	<0.1	<.01	0.6	2.0	0.2
tunicates, colonial/social unid.	<0.1	<.01	<0.1	<.01	0.5	1.0	<0.1	<.01	0.1
Spirorbidae	<0.1	-	<0.1	<.01	<0.1	<.01	<0.1	<.01	<0.1
Bryozoa, unid. (encrusting)	<0.1	<.01	<0.1	<.01	<0.1	<.01	<0.1	<.01	<0.1
Porifera unid. (encrusting)	<0.1	<.01	<0.1	<.01	-	-	<0.1	<.01	<0.1
Pista spp.	-	-	<0.1	<.01	<0.1	<.01	<0.1	<.01	<0.1
Substrate Cover									
rock	7.3	5.4	2.6	3.0	5.2	4.6	8.8	7.4	6.0
sand (shell gravel)	9.4	8.6	3.8	5.6	1.8	3.9	2.6	3.4	4.4
cobble	3.2	2.6	1.4	1.1	2.4	4.4	4.0	2.2	2.8

Table C26. Intertidal Algae (percent cover) and Invertebrates (abundance per 1.0 m^2; percent cover) Survey Means, Standard Deviations and 2004 Annual Means, South Control Station SC 1+0.9m.

Survey	136		137		138		139		
Survey Date	23-Jan-04		10-May-04		16-Jul-04		14-Nov-04		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Algae Cover									
Non-coralline crust	27.2	22.8	18.8	10.7	17.6	13.6	18.2	9.0	20.5
Endocladia muricata	17.5	10.7	22.8	10.1	19.3	9.9	17.5	8.9	19.3
Pelvetia compressa	13.4	15.3	10.7	15.1	14.2	18.9	13.0	18.1	12.8
Mastocarpus papillatus	9.4	5.1	8.8	5.8	14.1	6.5	13.3	9.4	11.4
coralline crust	6.8	5.9	7.0	6.3	2.6	2.7	9.6	7.2	6.5
Mazzaella flaccida	2.9	1.9	2.4	2.6	4.7	5.1	3.5	3.8	3.4
Mastocarpus jardinii	1.8	3.0	1.9	1.4	1.9	3.1	3.9	5.0	2.4
Porphyra spp.	0.1	0.4	0.1	0.3	3.1	3.5	1.5	3.3	1.2
Gelidium pusillum	0.6	0.6	0.6	0.5	0.8	0.8	0.4	1.1	0.6
Gelidium coulteri	<0.1	<.01	<0.1	<.01	1.7	5.0	<0.1	0.2	0.4
Mazzaella heterocarpa	0.9	1.2	0.5	0.7	<0.1	<.01	0.2	0.3	0.4
Corallina vancouveriensis	0.5	0.6	0.5	0.6	<0.1	<.01	0.3	0.5	0.3
Ulva/Enteromorpha spp.	0.9	1.4	<0.1	<.01	<0.1	0.2	<0.1	0.2	0.3
Mazzaella affinis	0.4	1.3	<0.1	<.01	<0.1	<.01	0.3	0.9	0.2
Cladophora spp.	<0.1	<.01	0.1	0.3	0.2	0.5	<0.1	0.2	0.1
Halosaccion americanum	-	-	<0.1	0.2	0.1	0.4	<0.1	0.2	<0.1
juv. articulated coralline algae	<0.1	<.01	<0.1	<.01	0.1	0.4	<0.1	0.2	<0.1
Chondracanthus canaliculatus	<0.1	<.01	-	-	-	-	0.2	0.5	<0.1
Corallina officinalis	-	-	-	-	<0.1	0.2	0.1	0.3	<0.1
Cryptopleura violacea	-	-	-	-	<0.1	0.2	<0.1	<.01	<0.1
Fucus gardneri	-	-	<0.1	0.2	-	-	-	-	<0.1
Callithamnion pikeanum	-	-	<0.1	<.01	<0.1	<.01	-	-	<0.1
Mazzaella leptorhynchos	-	-	<0.1	<.01	-	-	-	-	<0.1
Phyllospadix spp.	<0.1	<.01	-	-	-	-	-	-	<0.1
filamentous red algae-complex	<0.1	<.01	-	-	-	-	-	-	<0.1
Invertebrate Counts									
Tegula funebralis	92.8	58.9	58.6	67.5	35.0	29.5	33.8	27.3	55.1
Macclintockia scabra	13.6	19.0	9.8	12.7	13.8	14.5	10.6	8.9	12.0
Pagurus spp.	35.8	45.8	-	-	5.2	6.4	3.8	4.9	11.2
Tectura scutum	6.0	5.1	4.4	2.1	6.2	6.0	5.2	5.1	5.5
Anthopleura elegantissima	5.6	5.4	5.0	5.4	3.2	1.9	4.0	4.7	4.5
Lottia limatula	5.8	4.8	1.2	1.8	5.6	3.9	3.0	1.9	3.9
Tetraclita rubescens	0.8	1.8	2.2	3.5	10.2	15.5	-	-	3.3
Lottia pelta	3.0	2.2	1.2	1.8	0.2	0.5	5.8	2.1	2.6
Pachygrapsus crassipes	-	-	0.6	0.9	-	-	0.2	0.5	0.2
Strongylocentrotus purpuratus	0.2	0.5	-	-	0.2	0.5	0.4	0.9	0.2
Cyanoplax spp.	-	-	0.4	0.9	-	-	0.2	0.5	0.2
Hemigrapsus nudus	0.4	0.9	-	-	-	-	0.2	0.5	0.2
Nemertea unid.	0.2	0.5	-	-	-	-	-	-	<0.1
Acanthina spp.	-	-	0.2	0.5	-	-	-	-	<0.1
Lottia digitalis	-	-	0.2	0.5	-	-	-	-	<0.1
Mopalia spp.	-	-	0.2	0.5	-	-	-	-	<0.1
Lottia ochracea	0.2	0.5	-	-	-	-	-	-	<0.1
Hemigrapsus oregonensis	-	-	-	-	-	-	0.2	0.5	<0.1
Idotea spp.	-	-	0.2	0.5	-	-	-	-	<0.1
Ocenebra spp.	-	-	-	-	0.2	0.5	-	-	<0.1
Haliotis spp.	-	-	-	-	-	-	<0.1	0.3	<0.1

(continued)

Table C26 (continued). Intertidal Algae (percent cover) and Invertebrates (abundance per 1.0 m^2 ; percent cover) Survey Means, Standard Deviations and 2004 Annual Means, South Control Station SC 1+0.9m.

Survey	136		137		138		139		
Survey Date	23-Jan-04		10-May-04		16-Jul-04		14-Nov-04		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Invertebrate Counts (continued)									
Acmaeidae unid.	<0.1	< .01	<0.1	-	<0.1	< .01	<0.1	-	<0.1
Littorina spp.	-	-	<0.1	< .01	<0.1	< .01	<0.1	< .01	<0.1
Crepidula spp.	-	-	<0.1	< .01	-	-	-	-	<0.1
Ischnochitonidae	-	-	-	-	-	-	<0.1	< .01	<0.1
Grapsidae (juv.)	-	-	-	-	<0.1	< .01	-	-	<0.1
Invertebrate Cover									
Chthamalus fissus	<0.1	-	<0.1	-	<0.1	0.2	0.9	2.2	0.2
Phragmatopoma californica	<0.1	< .01	0.3	0.7	<0.1	< .01	0.2	0.5	0.1
Spirorbidae	<0.1	< .01	-	-	<0.1	< .01	-	-	<0.1
Substrate Cover									
cobble	20.8	18.3	21.2	15.4	16.3	15.5	16.5	12.3	18.7
rock	17.2	10.6	18.3	9.4	19.3	10.2	18.3	8.7	18.3
sand (shell gravel)	7.7	7.8	3.0	2.9	3.3	7.0	3.8	3.8	4.5

Appendix D

Intertidal Fish Results
(VBT Method)

Table D1. Intertidal Fish Survey Totals, 2004 Annual Means, and Standard Deviations, North Control Station NC-1V.

Survey Survey Date Taxon	96 6-Feb-04 Total	97 3-Jun-04 Total	98 3-Aug-04 Total	99 13-Dec-04 Total	Annual Mean	Std. Dev.
Xiphister mucosus	5	7	12	11	8.8	3.3
Xiphister atropurpureus	11	2	6	9	7.0	3.9
Pholididae/Stichaeidae unid.	6	10	6	3	6.3	2.9
Anoplarchus purpurescens	-	2	2	6	2.5	2.5
Xererpes fucorum	-	1	6	2	2.3	2.6
Cebidichthys violaceus	4	-	3	-	1.8	2.1
Oligocottus snyderi	2	-	5	-	1.8	2.4
Gobiesox maeandricus	-	1	1	4	1.5	1.7
Xiphister spp.	-	-	3	-	0.8	1.5
Gibbonsia spp.	1	-	-	-	0.3	0.5
Cottidae unid.	-	-	1	-	0.3	0.5

Table D2. Intertidal Fish Survey Totals, 2004 Annual Means, and Standard Deviations, Field's Cove Station FC-1V.

Survey Survey Date Taxon	96 16-Feb-04 Total	97 4-Jun-04 Total	98 30-Jul-04 Total	99 15-Dec-04 Total	Annual Mean	Std. Dev.
Xiphister mucosus	24	27	25	3	19.8	11.2
Pholididae/Stichaeidae unid.	5	10	9	5	7.3	2.6
Cebidichthys violaceus	17	9	-	1	6.8	7.9
Gobiesox maeandricus	9	6	-	12	6.8	5.1
Oligocottus snyderi	15	-	4	-	4.8	7.1
Anoplarchus purpurescens	5	4	3	1	3.3	1.7
Cottidae unid.	-	5	-	7	3.0	3.6
Xiphister atropurpureus	-	-	3	-	0.8	1.5
Gibbonsia spp.	-	-	-	2	0.5	1.0
Xererpes fucorum	-	2	-	-	0.5	1.0
Artedius spp.	-	1	-	-	0.3	0.5
Anoplarchus/Cebidichthys spp.	-	-	1	-	0.3	0.5

Table D3. Intertidal Fish Survey Totals, 2004 Annual Means, and Standard Deviations, South Diablo Cove Station SDC-2V.

Survey	96	97	98	99		
Survey Date	18-Feb-04	5-Jun-04	31-Jul-04	14-Dec-04		
Taxon	Total	Total	Total	Total	Annual Mean	Std. Dev.
Cebidichthys violaceus	55	33	27	18	33.3	15.8
Xiphister mucosus	11	6	10	4	7.8	3.3
Pholididae/Stichaeidae unid.	2	4	8	4	4.5	2.5
Scytalina cerdale	2	9	6	-	4.3	4.0
Xiphister atropurpureus	1	3	3	8	3.8	3.0
Micrometrus minimus	-	-	14	-	3.5	7.0
Atherinidae unid.	-	-	8	-	2.0	4.0
Anoplarchus purpurescens	1	-	2	4	1.8	1.7
Anoplarchus/Cebidichthys spp.	-	-	1	4	1.3	1.9
Gobiesox maeandricus	1	2	-	-	0.8	1.0
Cottidae unid.	-	1	-	2	0.8	1.0

Table D4. Intertidal Fish Survey Totals, 2004 Annual Means, and Standard Deviations, North Diablo Cove Station NDC-1V.

Survey	96	97	98	99		
Survey Date	20-Feb-04	4-Jun-04	29-Aug-04	12-Dec-04		
Taxon	Total	Total	Total	Total	Annual Mean	Std. Dev.
Cebidichthys violaceus	1	1	-	1	0.8	0.5
Xiphister atropurpureus	-	3	-	-	0.8	1.5
Gobiesox maeandricus	-	1	-	1	0.5	0.6
Anoplarchus purpurescens	-	2	-	-	0.5	1.0
Xiphister mucosus	-	-	2	-	0.5	1.0
Cottidae unid.	-	-	-	1	0.3	0.5

Table D5. Intertidal Fish Survey Totals, 2004 Annual Means, and Standard Deviations, South Control Station SC-1V.

Survey	96	97	98	99		
Survey Date	17-Feb-04	2-Jun-04	2-Aug-04	10-Dec-04		
Taxon	Total	Total	Total	Total	Annual Mean	Std. Dev.
Anoplarchus purpurescens	110	23	13	41	46.8	43.7
Cebidichthys violaceus	40	31	15	19	26.3	11.4
Xiphister mucosus	28	35	22	11	24.0	10.2
Pholididae/Stichaeidae unid.	16	23	9	22	17.5	6.5
Gobiesox maeandricus	12	11	3	5	7.8	4.4
Oligocottus snyderi	3	6	15	1	6.3	6.2
Xiphister atropurpureus	-	4	6	8	4.5	3.4
Xererpes fucorum	-	1	14	-	3.8	6.9
Gibbonsia spp.	3	-	-	1	1.0	1.4
Xiphister spp.	-	-	4	-	1.0	2.0
Porichthys notatus	-	2	-	-	0.5	1.0
Anoplarchus/Cebidichthys spp.	-	2	-	-	0.5	1.0

Appendix E

Subtidal Invertebrate and Kelp Results (SAQ Method)

Table E1. Subtidal Algae and Invertebrates (SAQ Method) Survey Means (abundance per 7 m^2), Standard Deviations and Annual Means, Field's Cove Station FC 1 -3m.

Survey	124		125		126		127		
Survey Date	17-Mar-04		18-May-04		10-Sep-04		14-Jan-05		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Algae									
Laminaria setchellii	118.8	23.7	93.8	21.4	81.0	26.6	90.3	29.4	95.9
Laminariales	-	-	17.0	6.2	-	-	22.0	7.7	9.8
Cystoseira osmundacea	11.3	6.6	13.8	7.5	2.5	1.0	6.8	5.9	8.6
Nereocystis luetkeana	-	-	10.0	5.0	8.0	4.1	-	-	4.5
Macrocystis spp.	-	-	0.5	0.6	0.5	0.6	0.3	0.5	0.3
Pterygophora californica	-	-	0.5	0.6	-	-	-	-	0.1
Invertebrates									
Tegula brunnea	237.0	53.4	128.3	31.0	81.0	33.5	97.5	46.1	135.9
Acmaea mitra	6.0	2.5	5.3	4.5	6.0	4.2	2.3	1.5	4.9
Asterina miniata	9.3	4.0	3.8	3.0	3.0	1.8	3.5	1.3	4.9
Tonicella lineata	5.3	2.9	3.8	1.5	0.8	1.5	1.5	1.7	2.8
Cryptochiton stelleri	3.3	2.2	5.0	2.9	1.3	1.3	1.8	1.7	2.8
Calliostoma ligatum	6.0	2.5	0.8	1.5	1.5	1.7	2.3	1.5	2.6
Pagurus spp.	2.8	2.5	3.0	2.0	1.3	1.5	2.8	2.8	2.4
Tegula montereyi	1.5	1.7	0.8	1.5	0.8	1.5	0.8	1.5	0.9
Anthopleura elegantissima	2.0	0.8	1.0	0.8	0.5	0.6	-	-	0.9
Epiactis prolifera	2.0	0.8	1.0	1.4	0.3	0.5	-	-	0.8
Pycnopodia helianthoides	0.5	1.0	1.3	1.0	1.0	0.8	0.3	0.5	0.8
Leptasterias spp.	0.8	1.0	0.8	1.0	0.5	0.6	-	-	0.5
Mitra idae	0.5	0.6	0.5	1.0	0.3	0.5	0.5	1.0	0.4
Lottia instabilis	-	-	-	-	-	-	1.3	1.9	0.3
Loxorhynchus spp.	0.8	0.5	0.3	0.5	-	-	0.3	0.5	0.3
Pugettia spp.	0.3	0.5	-	-	1.0	-	-	-	0.3
Archidoris spp.	0.8	1.0	-	-	-	-	0.5	1.0	0.3
Discurria insessa	0.5	1.0	-	-	0.5	1.0	-	-	0.3
Lithopoma gibberosum	0.5	1.0	-	-	0.3	0.5	-	-	0.2
Strongylocentrotus purpuratus	0.5	1.0	-	-	-	-	0.3	0.5	0.2
Phidiana hiltoni	0.3	0.5	0.5	0.6	-	-	-	-	0.2
Mimulus foliatus	0.8	1.0	-	-	-	-	-	-	0.2
Diaulula sandiegensis	-	-	0.3	0.5	0.3	0.5	-	-	0.1
Pisaster giganteus	0.3	0.5	-	-	0.3	0.5	-	-	0.1
Pisaster/Henricia (juv.)	-	-	0.5	0.6	-	-	-	-	0.1
Ophiothrix spp.	-	-	0.3	0.5	-	-	0.3	0.5	0.1
Haliotis spp.	0.3	0.5	0.3	0.5	-	-	-	-	0.1
Hermissenda crassicornis	-	-	-	-	0.3	0.5	-	-	<0.1
Pseudomelatoma torosa	-	-	-	-	-	-	0.3	0.5	<0.1
Triopha catalinae	-	-	0.3	0.5	-	-	-	-	<0.1
Placiphorella velata	0.3	0.5	-	-	-	-	-	-	<0.1
Cryptolithodes sitchensis	-	-	0.3	0.5	-	-	-	-	<0.1
Cancer spp.	0.3	0.5	-	-	-	-	-	-	<0.1

Table E2. Subtidal Algae and Invertebrates (SAQ Method) Survey Means (abundance per 7 m^2), Standard Deviations and Annual Means, North Diablo Cove Station NDC 2 -3m.

Survey	124		125		126		127		
Survey Date	22-Mar-04		26-May-04		19-Aug-04		13-Jan-05		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Algae									
Cystoseira osmundacea	23.5	5.0	18.3	5.7	4.8	1.5	17.0	6.9	15.9
Macrocystis spp.	4.0	0.8	10.5	8.7	7.5	4.4	3.5	2.1	6.4
Laminariales	7.0	9.9	-	-	2.3	2.6	-	-	2.3
Invertebrates									
Strongylocentrotus purpuratus	96.8	24.2	47.8	27.6	48.0	32.5	20.3	7.9	53.2
Acmaea mitra	7.5	7.1	1.5	3.0	24.8	11.6	3.8	1.5	9.4
Anthopleura elegantissima	4.0	1.4	2.0	1.2	2.3	1.0	2.5	2.7	2.7
Epiactis prolifera	0.8	1.0	-	-	1.8	1.0	-	-	0.6
Ophiothrix spp.	1.5	1.7	0.3	0.5	0.3	0.5	-	-	0.5
Serpulorbis squamigerus	-	-	0.3	0.5	-	-	0.8	1.0	0.3
Parastichopus spp.	0.3	0.5	0.5	0.6	0.3	0.5	-	-	0.3
Doriopsilla albopunctata	-	-	-	-	0.8	0.5	0.3	0.5	0.3
Pelecypoda unid. boring	0.5	0.6	-	-	0.5	1.0	-	-	0.3
Phidiana hiltoni	0.5	0.6	-	-	-	-	0.3	0.5	0.2
Archidoris spp.	0.5	1.0	-	-	-	-	0.3	0.5	0.2
Anthopleura artemisia	-	-	-	-	0.5	1.0	-	-	0.1
Fissurella volcano	0.5	0.6	-	-	-	-	-	-	0.1
Lottia ochracea	-	-	-	-	-	-	0.5	0.6	0.1
Diopatra ornata	-	-	-	-	0.3	0.5	0.3	0.5	0.1
Pugettia spp.	-	-	0.3	0.5	0.3	0.5	-	-	0.1
Diodora spp.	-	-	-	-	-	-	0.3	0.5	<0.1
Acmaeidae unid.	-	-	0.3	0.5	-	-	-	-	<0.1
Lithopoma gibberosum	0.3	0.5	-	-	-	-	-	-	<0.1
Pisaster giganteus	-	-	-	-	0.3	0.5	-	-	<0.1
Ophioplocus spp.	0.3	0.5	-	-	-	-	-	-	<0.1
Eupentacta quinquesemita	-	-	-	-	0.3	0.5	-	-	<0.1
Aplysia californica	-	-	0.3	0.5	-	-	-	-	<0.1
Megathura crenulata	-	-	-	-	0.3	0.5	-	-	<0.1
Mexichromis porterae	-	-	-	-	0.3	0.5	-	-	<0.1

Table E3. Subtidal Algae and Invertebrates (SAQ Method) Survey Means (abundance per 7 m^2), Standard Deviations and Annual Means, North Diablo Cove Station NDC 3 -3m.

Survey	124		125		126		127		
Survey Date	18-Mar-04		26-May-04		23-Aug-04		14-Jan-05		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Algae									
Sargassum muticum	128.3	71.2	69.8	46.7	143.3	193.5	67.0	59.2	102.1
Cystoseira osmundacea	39.3	15.9	34.3	19.4	20.0	9.0	57.5	25.8	37.8
Macrocystis spp.	5.8	3.0	2.0	1.6	-	-	1.5	0.6	2.3
Laminariales	-	-	5.8	6.7	-	-	-	-	1.4
Invertebrates									
Strongylocentrotus purpuratus	281.5	207.4	419.5	256.4	278.8	121.4	156.3	102.8	284.0
Acmaea mitra	4.5	1.7	1.5	1.7	34.5	30.3	11.3	12.8	12.9
Anthopleura elegantissima	5.0	1.4	3.8	2.8	3.3	1.9	2.3	2.1	3.6
Fissurella volcano	0.5	0.6	7.3	8.5	0.3	0.5	0.8	1.0	2.2
Pelecypoda unid. boring	1.0	0.8	4.5	9.0	0.5	0.6			1.5
Epiactis prolifera	2.3	1.7	1.5	1.9	0.5	0.6	-		1.1
Ophiothrix spp.	1.8	1.7	1.5	1.7	1.0	0.8			1.1
Tonicella lineata	-	-	0.8	1.5	0.8	1.5			0.4
Lottia ochracea	-	-	0.8	1.0	0.3	0.5	0.3	0.5	0.3
Parastichopus spp.	0.3	0.5	0.3	0.5	0.8	1.5	-	-	0.3
Haliotis spp.	0.3	0.5	0.8	1.5	0.3	0.5	-		0.3
Serpulorbis squamigerus	-	-	-	-	-	-	1.0	1.2	0.3
Pisaster giganteus	0.3	0.5	-	-	0.5	0.6	-	-	0.2
Lissothuria nutriens	-	-	0.8	1.0	-	-	-	-	0.2
Archidoris spp.	0.3	0.5	-	-	0.3	0.5	0.3	0.5	0.2
Megathura crenulata	0.3	0.5	-	-	-	-	0.3	0.5	0.1
Anthozoa unid.	0.3	0.5	-	-	-	-	-	-	<0.1
Diodora spp.	-	-	-	-	0.3	0.5	-	-	<0.1
Pagurus spp.	0.3	0.5	-	-	-	-	-	-	<0.1
Asterina miniata	-	-	-	-	0.3	0.5	-	-	<0.1
Loxorhynchus spp.	-	-	0.3	0.5	-	-	-	-	<0.1
Doriopsilla albopunctata	-	-	-	-	0.3	0.5	-	-	<0.1
Phidiana hiltoni	0.3	0.5	-	-	-	-	-	-	<0.1
Pisaster brevispinus	-	-	0.3	0.5	-	-	-	-	<0.1
Pugettia spp.	0.3	0.5	-	-	-	-	-	-	<0.1

Table E4. Subtidal Algae and Invertebrates (SAQ Method) Survey Means (abundance per 7 m^2), Standard Deviations and Annual Means, North Diablo Cove Station NDC 4 -4m.

Survey	124		125		126		127		
Survey Date	10-Feb-04		24-May-04		02-Sep-04		04-Feb-05		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Algae									
Cystoseira osmundacea	17.3	9.7	24.5	9.7	19.0	13.0	14.8	13.8	18.9
Macrocystis spp.	4.0	0.8	4.8	0.5	8.5	2.9	1.8	2.2	4.8
Laminariales	0.8	1.5	-	-	-	-	0.3	0.5	0.3
Laminaria setchellii	-	-	-	-	0.5	0.6	-	-	0.1
Pterygophora californica	-	-	-	-	-	-	0.3	0.5	<0.1
Invertebrates									
Strongylocentrotus purpuratus	36.8	29.5	56.8	52.4	67.8	43.5	83.0	57.2	61.1
Anthopleura elegantissima	8.8	5.9	11.0	3.4	8.8	4.2	10.8	1.9	9.8
Tegula brunnea	-	-	-	-	22.5	35.7	-	-	5.6
Acmaea mitra	4.5	1.7	3.8	3.8	6.8	3.8	4.5	1.7	4.9
Diopatra ornata	6.3	4.9	0.3	0.5	2.5	2.7	1.8	1.3	2.7
Tethya aurantia	1.8	1.5	1.3	1.3	2.0	1.2	2.5	1.9	1.9
Parastichopus spp.	1.0	1.4	2.8	2.9	1.3	0.5	0.3	0.5	1.3
Epiactis prolifera	1.5	1.3	0.5	0.6	2.0	2.8	0.5	0.6	1.1
Phidiana hiltoni	1.5	0.6	1.0	0.8	0.3	0.5	0.3	0.5	0.8
Pisaster giganteus	0.5	0.6	-	-	0.8	1.0	0.8	1.0	0.5
Tonicella lineata	-	-	-	-	0.8	1.5	0.8	1.5	0.4
Asterina miniata	0.3	0.5	0.5	1.0	-	-	0.8	1.0	0.4
Anthopleura artemisia	0.3	0.5	0.3	0.5	0.8	1.0	-	-	0.3
Ophiothrix spp.	0.8	1.0	0.3	0.5	-	-	-	-	0.3
Pectinidae	-	-	-	-	0.8	1.0	0.3	0.5	0.3
Mitra idae	0.5	1.0	-	-	0.3	0.5	-	-	0.2
Megathura crenulata	0.3	0.5	-	-	0.5	1.0	-	-	0.2
Archidoris spp.	-	-	-	-	0.3	0.5	0.5	0.6	0.2
Fissurella volcano	-	-	0.3	0.5	0.3	0.5	-	-	0.1
Loxorhynchus spp.	0.5	1.0	-	-	-	-	-	-	0.1
Pelecypoda unid. boring	-	-	0.3	0.5	0.3	0.5	-	-	0.1
Eudistylia polymorpha	-	-	0.5	1.0	-	-	-	-	0.1
Ophioplocus spp.	-	-	0.3	0.5	-	-	0.3	0.5	0.1
Anthozoa unid.	0.3	0.5	-	-	-	-	-	-	<0.1
Pisaster ochraceus	0.3	0.5	-	-	-	-	-	-	<0.1
Doriopsilla albopunctata	-	-	-	-	0.3	0.5	-	-	<0.1
Placiphorella velata	-	-	-	-	-	-	0.3	0.5	<0.1
Mimulus foliatus	-	-	-	-	0.3	0.5	-	-	<0.1
Pisaster/Henricia (juv.)	-	-	-	-	-	-	0.3	0.5	<0.1

Table E5. Subtidal Algae and Invertebrates (SAQ Method) Survey Means (abundance per 7 m^2), Standard Deviations and Annual Means, South Diablo Cove Station SDC 2 -3m.

Survey	124		125		126		127		
Survey Date	11-Feb-04		27-May-04		03-Sep-04		13-Oct-04		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Algae									
Cystoseira osmundacea	21.8	13.8	13.8	5.1	12.3	2.5	9.3	3.8	14.3
Macrocystis spp.	4.8	2.5	9.5	1.3	7.0	2.0	5.8	2.2	6.8
Laminariales	7.5	9.0	3.5	2.9	1.3	1.9	-	-	3.1
Sargassum muticum	1.8	2.1	4.8	3.0	-	-	-	-	1.6
Invertebrates									
Ophiothrix spp.	24.5	20.5	-	-	-	-	-	-	6.1
Anthopleura elegantissima	4.3	1.0	2.3	1.7	2.0	0.8	2.8	1.0	2.8
Acmaea mitra	5.3	3.8	0.8	1.5	2.3	1.5	2.3	1.5	2.6
Cucumaria spp.	5.0	1.4	-	-	-	-	-	-	1.3
Anthopleura artemisia	0.5	0.6	1.0	0.8	1.0	0.8	1.3	1.3	0.9
Strongylocentrotus purpuratus	1.3	1.5	1.0	0.8	0.5	1.0	0.5	1.0	0.8
Mitra idae	0.8	1.0	-	-	2.0	1.4	0.5	0.6	0.8
Pisaster brevispinus	0.5	1.0	0.8	0.5	1.0	0.8	1.0	-	0.8
Diopatra ornata	1.8	2.1	-	-	-	-	0.5	0.6	0.6
Asterina miniata	0.8	1.0	0.8	0.5	0.3	0.5	-	-	0.4
Halcampa decemtentaculata	1.3	1.9	0.5	1.0	-	-	-	-	0.4
Pisaster giganteus	0.5	0.6	0.5	0.6	0.3	0.5	0.5	0.6	0.4
Pycnopodia helianthoides	0.5	0.6	0.3	0.5	0.3	0.5	0.3	0.5	0.3
Parastichopus spp.	0.8	1.5	-	-	-	-	0.5	0.6	0.3
Doriopsilla albopunctata	0.8	0.5	0.3	0.5	-	-	-	-	0.3
Phidiana hiltoni	0.3	0.5	-	-	-	-	0.5	0.6	0.2
Cryptochiton stelleri	-	-	-	-	0.5	0.6	-	-	0.1
Pelecypoda unid. boring	-	-	-	-	0.5	1.0	-	-	0.1
Aplysia californica	-	-	-	-	-	-	0.5	1.0	0.1
Epiactis prolifera	0.3	0.5	-	-	-	-	-	-	<0.1
Pisaster ochraceus	-	-	-	-	-	-	0.3	0.5	<0.1
Loxorhynchus spp.	0.3	0.5	-	-	-	-	-	-	<0.1
Triopha catalinae	0.3	0.5	-	-	-	-	-	-	<0.1
Pugettia spp.	-	-	-	-	-	-	0.3	0.5	<0.1
Cancer spp.	-	-	0.3	0.5	-	-	-	-	<0.1
Archidoris spp.	-	-	0.3	0.5	-	-	-	-	<0.1

Table E6. Subtidal Algae and Invertebrates (SAQ Method) Survey Means (abundance per 7 m^2), Standard Deviations and Annual Means, South Diablo Cove Station SDC 3 -4m.

Survey	124		125		126		127		
Survey Date	12-Mar-04		28-May-04		07-Sep-04		01-Dec-04		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Algae									
Macrocystis spp.	3.0	2.2	10.5	3.5	11.8	2.9	9.8	4.5	8.8
Cystoseira osmundacea	1.8	2.9	6.5	6.8	14.0	7.0	6.8	4.4	7.3
Pterygophora californica	1.8	2.4	5.8	5.9	0.5	1.0	3.3	1.0	2.8
Laminaria setchellii	0.3	0.5	1.3	0.5	4.3	4.0	4.0	2.6	2.4
Laminariales	-	-	3.3	5.9	-	-	-	-	0.8
Invertebrates									
Anthopleura elegantissima	17.8	2.1	18.3	4.0	11.3	1.3	10.8	3.0	14.5
Diopatra ornata	33.5	7.9	3.0	2.5	11.8	5.9	5.5	6.4	13.4
Strongylocentrotus purpuratus	31.3	40.8	13.0	14.4	2.8	3.2	1.5	1.9	12.1
Acmaea mitra	2.3	1.5	-	-	3.8	2.9	3.0	4.2	2.3
Pisaster giganteus	1.5	1.3	1.5	1.7	1.8	1.7	2.3	1.0	1.8
Asterina miniata	1.8	0.5	1.3	1.5	2.0	0.8	1.8	1.3	1.7
Pisaster brevispinus	0.5	0.6	1.0	0.8	0.5	0.6	1.3	0.5	0.8
Anthopleura artemisia	1.0	0.8	0.8	0.5	0.5	0.6	0.8	1.0	0.8
Mitra idae	0.8	1.0	0.8	1.5	1.5	0.6	-	-	0.8
Cryptochiton stelleri	0.5	0.6	1.3	0.5	1.3	0.5	-	-	0.8
Pycnopodia helianthoides	0.3	0.5	0.3	0.5	1.8	1.7	0.5	1.0	0.7
Doriopsilla albopunctata	-	-	-	-	1.8	2.9	-	-	0.4
Tegula brunnea	-	-	-	-	1.5	3.0	-	-	0.4
Parastichopus spp.	0.5	0.6	0.3	0.5	0.3	0.5	-	-	0.3
Urticina spp.	0.5	0.6	-	-	-	-	0.3	0.5	0.2
Anthozoa unid.	-	-	-	-	0.8	1.0	-	-	0.2
Tonicella lineata	-	-	-	-	-	-	0.8	1.5	0.2
Tethya aurantia	0.3	0.5	-	-	0.3	0.5	0.3	0.5	0.2
Cucumaria spp.	-	-	0.5	1.0	0.3	0.5	-	-	0.2
Archidoris spp.	-	-	0.3	0.5	0.3	0.5	0.3	0.5	0.2
Hermissenda crassicornis	-	-	-	-	0.5	1.0	-	-	0.1
Phidiana hiltoni	-	-	-	-	0.5	0.6	-	-	0.1
Pelecypoda unid. boring	-	-	-	-	0.5	0.6	-	-	0.1
Diodora spp.	0.3	0.5	-	-	-	-	-	-	<0.1
Pagurus spp.	-	-	-	-	0.3	0.5	-	-	<0.1
Henricia leviuscula	-	-	-	-	-	-	0.3	0.5	<0.1
Loxorhynchus spp.	-	-	-	-	-	-	0.3	0.5	<0.1
Mimulus foliatus	-	-	-	-	0.3	0.5	-	-	<0.1
Orthasterias koehleri	-	-	0.3	0.5	-	-	-	-	<0.1
Ophioplocus spp.	-	-	-	-	-	-	0.3	0.5	<0.1
Eupentacta quinquesemita	-	-	-	-	0.3	0.5	-	-	<0.1
Megathura crenulata	-	-	-	-	0.3	0.5	-	-	<0.1

Table E7. Subtidal Algae and Invertebrates (SAQ Method) Survey Means (abundance per 7 m^2), Standard Deviations and Annual Means, South Control Station SC 1 -3m.

Survey	124		125		126		127		
Survey Date	13-Feb-04		17-May-04		20-Aug-04		05-Feb-05		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Algae									
Laminaria setchellii	54.0	10.7	111.0	6.4	107.5	42.8	110.5	11.5	95.8
Pterygophora californica	69.8	24.6	65.3	39.1	69.0	21.1	45.8	22.8	62.4
Laminariales	58.0	29.9	118.3	57.1	5.8	7.2	27.8	32.2	52.4
Nereocystis luetkeana	0.5	1.0	47.8	65.3	9.3	12.2	-	-	14.4
Cystoseira osmundacea	14.8	4.3	11.5	3.0	7.3	1.9	14.0	11.6	11.9
Invertebrates									
Tegula brunnea	83.3	32.6	68.3	18.6	15.0	8.1	57.0	21.2	55.9
Anthopleura elegantissima	8.3	3.5	4.5	2.1	3.8	1.0	7.8	2.6	6.1
Asterina miniata	6.8	3.0	8.5	2.4	2.0	0.8	7.0	4.1	6.1
Tonicella lineata	9.0	2.5	6.8	1.5	3.0	3.5	0.8	1.5	4.9
Pagurus spp.	0.5	1.0	2.0	1.6	8.0	3.9	4.0	4.1	3.6
Acmaea mitra	6.0	2.5	5.3	2.9	3.0	2.5	-	-	3.6
Lottia instabilis	-	-	-	-	2.5	1.3	5.3	4.4	1.9
Discurria insessa	3.5	1.9	2.3	1.3	-	-	-	-	1.4
Calliostoma ligatum	0.8	1.5	1.5	1.7	-	-	3.0	-	1.3
Epiactis prolifera	1.5	1.7	3.5	2.4	-	-	-	-	1.3
Cryptochiton stelleri	1.5	1.0	1.3	0.5	1.0	0.8	0.8	1.0	1.1
Diopatra ornata	0.8	1.0	2.3	2.1	-	-	0.3	0.5	0.8
Pycnopodia helianthoides	1.0	0.8	-	-	1.0	0.8	0.8	1.0	0.7
Halcampa decemtentaculata	1.5	1.9	1.0	1.2	-	-	-	-	0.6
Tegula montereyi	0.8	1.5	0.8	1.5	-	-	-	-	0.4
Mopalia spp.	0.5	0.6	0.3	0.5	-	-	-	-	0.2
Anthopleura artemisia	0.5	0.6	-	-	-	-	-	-	0.1
Leptasterias spp.	0.3	0.5	0.3	0.5	-	-	-	-	0.1
Urticina spp.	0.3	0.5	-	-	-	-	-	-	<0.1
Hermissenda crassicornis	0.3	0.5	-	-	-	-	-	-	<0.1
Cancer antennarius	0.3	0.5	-	-	-	-	-	-	<0.1
Pisaster ochraceus	-	-	-	-	0.3	0.5	-	-	<0.1
Loxorhynchus spp.	0.3	0.5	-	-	-	-	-	-	<0.1
Phidiana hiltoni	-	-	0.3	0.5	-	-	-	-	<0.1
Pseudomelatoma torosa	-	-	0.3	0.5	-	-	-	-	<0.1
Pisaster giganteus	-	-	-	-	0.3	0.5	-	-	<0.1
Pugettia spp.	-	-	0.3	0.5	-	-	-	-	<0.1
Orthasterias koehleri	-	-	-	-	-	-	0.3	0.5	<0.1
Cancer spp.	-	-	0.3	0.5	-	-	-	-	<0.1
Crangon spp.	-	-	0.3	0.5	-	-	-	-	<0.1
Hopkinsia rosacea	-	-	-	-	0.3	0.5	-	-	<0.1
Lepidozona spp.	-	-	-	-	-	-	0.3	0.5	<0.1

Table E8. Subtidal Algae and Invertebrates (SAQ Method) Survey Means (abundance per 7 m^2), Standard Deviations and Annual Means, South Control Station SC 2 -6m.

Survey	124		125		126		127		
Survey Date	23-Mar-04		25-May-04		24-Aug-04		04-Feb-05		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Algae									
Laminaria setchellii	51.8	30.1	66.3	32.9	57.8	11.9	113.5	73.1	72.3
Pterygophora californica	43.0	27.2	65.8	45.9	92.0	20.2	46.8	11.8	61.9
Laminariales	5.0	1.4	133.0	85.3	25.0	30.0	-	-	40.8
Nereocystis luetkeana	-	-	119.8	68.0	28.5	11.2	0.3	0.5	37.1
Cystoseira osmundacea	1.3	1.3	0.3	0.5	1.5	1.9	1.3	1.3	1.1
Invertebrates									
Tegula brunnea	56.3	32.6	156.8	53.5	25.5	27.4	4.5	1.7	60.8
Asterina miniata	16.3	6.8	13.0	11.5	13.5	6.8	18.8	5.5	15.4
Anthopleura elegantissima	5.0	1.4	8.3	2.4	6.0	2.2	6.5	6.5	6.4
Acmaea mitra	7.5	3.9	7.5	5.7	8.3	4.5	0.8	1.5	6.0
Tonicella lineata	9.0	2.5	7.5	3.9	-	-	1.5	1.7	4.5
Serpulorbis squamigerus	-	-	-	-	-	-	12.8	21.5	3.2
Pisaster giganteus	3.8	2.9	1.0	0.8	4.8	2.2	3.0	1.6	3.1
Calliostoma ligatum	4.5	3.0	1.5	3.0	-	-	5.3	2.9	2.8
Pagurus spp.	5.0	0.8	1.3	1.0	-	-	1.3	1.0	1.9
Corynactis californica	-	-	6.3	12.5	-	-	-	-	1.6
Diopatra ornata	0.8	1.0	2.0	1.8	2.3	2.9	1.0	2.0	1.5
Cryptochiton stelleri	2.3	1.5	1.8	1.0	0.3	0.5	0.8	1.0	1.3
Tethya aurantia	0.8	1.0	2.0	2.8	1.3	1.0	0.8	1.0	1.2
Epiactis prolifera	1.5	0.6	3.0	1.6	-	-	-	-	1.1
Lottia instabilis	-	-	1.0	1.2	3.5	3.4	-	-	1.1
Pisaster ochraceus	2.3	1.9	-	-	1.5	1.3	0.3	0.5	1.0
Tegula montereyi	2.3	2.9	0.8	1.5	0.8	1.5	-	-	0.9
Mitra idae	1.5	1.3	0.3	0.5	-	-	0.8	1.0	0.6
Pycnopodia helianthoides	0.8	1.0	0.8	1.5	0.3	0.5	0.5	0.6	0.6
Haliotis spp.	0.3	0.5	-	-	0.5	1.0	1.3	1.9	0.5
Archidoris spp.	0.5	0.6	0.3	0.5	0.3	0.5	1.0	0.8	0.5
Orthasterias koehleri	0.3	0.5	0.8	0.5	0.3	0.5	0.3	0.5	0.4
Halcampa decemtentaculata	-	-	1.3	1.5	-	-	-	-	0.3
Doriopsilla albopunctata	0.3	0.5	-	-	1.0	1.4	-	-	0.3
Pisaster brevispinus	0.3	0.5	-	-	0.8	1.0	0.3	0.5	0.3
Urticina spp.	0.3	0.5	0.3	0.5	-	-	0.5	1.0	0.3
Leptasterias spp.	0.5	0.6	0.5	0.6	-	-	-	-	0.3
Pisaster/Henricia (juv.)	0.8	1.0	-	-	-	-	-	-	0.2
Anthopleura artemisia	0.3	0.5	0.3	0.5	-	-	-	-	0.1
Discurria insessa	0.5	0.6	-	-	-	-	-	-	0.1
Hermissenda crassicornis	-	-	0.5	0.6	-	-	-	-	0.1
Eudistylia polymorpha	0.3	0.5	0.3	0.5	-	-	-	-	0.1
Mimulus foliatus	0.5	0.6	-	-	-	-	-	-	0.1
Anthopleura xanthogrammica	0.3	0.5	-	-	-	-	-	-	<0.1
Mopalia spp.	0.3	0.5	-	-	-	-	-	-	<0.1
Cancer antennarius	0.3	0.5	-	-	-	-	-	-	<0.1
Strongylocentrotus purpuratus	-	-	0.3	0.5	-	-	-	-	<0.1
Loxorhynchus spp.	0.3	0.5	-	-	-	-	-	-	<0.1
Porifera unid. (encrusting)	0.3	0.5	-	-	-	-	-	-	<0.1
Placiphorella velata	0.3	0.5	-	-	-	-	-	-	<0.1
Eupentacta quinquesemita	-	-	-	-	-	-	0.3	0.5	<0.1
Cadlina spp.	0.3	0.5	-	-	-	-	-	-	<0.1
Pectinidae	-	-	0.3	0.5	-	-	-	-	<0.1

Appendix F

Subtidal Algae Results
(SLC Method)

Table F1. Subtidal Algae (SLC Method) Survey Means (percent cover), Standard Deviations and Annual Means, Field's Cove Station FC 1 -3m.

Survey	124		125		126		127		
Survey Date	17-Mar-04		18-May-04		10-Sep-04		7-Feb-05		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Algae									
Calliarthron/Bossiella spp.-complex	64.5	16.5	68.5	11.1	64.5	9.6	62.0	21.0	64.9
coralline crust	29.5	9.7	26.0	7.1	17.5	6.0	38.5	12.9	27.9
Chondracanthus corymbiferus	7.5	4.4	12.0	5.9	11.0	6.8	5.5	4.4	9.0
Cryptopleura ruprechtiana	3.0	3.5	10.0	10.7	6.0	6.3	5.5	3.4	6.1
Prionitis spp.	7.0	5.3	10.0	8.2	2.0	1.6	5.0	2.0	6.0
Rhodymenia spp.	4.0	1.6	8.0	2.8	6.0	2.3	3.5	1.0	5.4
Laminaria setchellii	2.0	2.8	1.5	1.9	5.5	2.5	7.0	4.2	4.0
Non-coralline crust	5.0	4.8	0.5	1.0	2.0	2.8	6.0	1.6	3.4
Cystoseira osmundacea	1.5	1.9	1.0	1.2	2.5	3.0	1.5	1.9	1.6
Gelidium robustum	1.5	1.9	0.5	1.0	1.0	1.2	1.5	1.9	1.1
Desmarestia spp.	-	-	1.5	1.9	1.0	1.2	-	-	0.6
Neoptilota densa	<0.1	<.01	0.5	1.0	0.5	1.0	1.0	2.0	0.5
Microcladia coulteri	<0.1	<.01	1.5	3.0	<0.1	<.01	<0.1	<.01	0.4
Nereocystis luetkeana	-	-	<0.1	<.01	1.5	1.0	-	-	0.4
Farlowia/Pikea spp.-complex	0.5	1.0	0.5	1.0	<0.1	<.01	<0.1	<.01	0.3
Callophyllis spp.	<0.1	<.01	0.5	1.0	-	-	<0.1	<.01	0.1
Macrocystis spp.	-	-	<0.1	<.01	<0.1	<.01	0.5	1.0	0.1
Osmundea spp.	-	-	<0.1	<.01	0.5	1.0	<0.1	<.01	0.1
Prionitis australis	<0.1	<.01	<0.1	<.01	-	-	<0.1	<.01	<0.1
Ulva/Enteromorpha spp.	<0.1	<.01	<0.1	<.01	<0.1	<.01	<0.1	<.01	<0.1
Callophyllis flabellulata	<0.1	<.01	-	-	<0.1	<.01	<0.1	<.01	<0.1
Scinaia confusa	-	-	<0.1	<.01	<0.1	<.01	-	-	<0.1
Pterygophora californica	-	-	-	-	<0.1	<.01	-	-	<0.1
Corallina officinalis	-	-	-	-	-	-	<0.1	<.01	<0.1
Gelidium spp.	-	-	-	-	-	-	<0.1	<.01	<0.1
Laminariales	-	-	-	-	-	-	<0.1	<.01	<0.1
Ahnfeltiopsis linearis	-	-	-	-	-	-	<0.1	<.01	<0.1
Delesseria decipiens	-	-	<0.1	<.01	-	-	-	-	<0.1
Invertebrates									
Bryozoa, unid. (encrusting)	-	-	-	-	-	-	1.0	2.0	0.3
Substrate									
colonized rock	71.5	15.6	79.5	16.5	80.0	7.8	79.5	7.2	77.6
cobble	20.0	14.7	13.0	14.7	7.5	10.4	9.0	5.0	12.4
colonized cobble	5.0	2.0	6.5	3.4	4.5	1.0	10.5	4.1	6.6
rock	3.5	3.4	1.0	1.2	8.0	8.5	1.0	2.0	3.4

Table F2. Subtidal Algae (SLC Method) Survey Means (percent cover), Standard Deviations and Annual Means, North Diablo Cove Station NDC 2 -3m.

Survey	124		125		126		127		
Survey Date	30-Mar-04		26-May-04		19-Aug-04		13-Jan-05		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Algae									
coralline crust	29.0	10.4	23.5	4.1	58.0	4.0	32.5	8.4	35.8
Calliarthron/Bossiella spp.-complex	22.5	11.7	31.0	15.7	32.5	10.8	30.5	9.0	29.1
Chrysophyta unid.	22.0	12.1	39.0	13.9	2.5	2.5	-	-	15.9
Farlowia/Pikea spp.-complex	7.5	6.2	5.0	2.6	7.0	3.5	10.5	7.2	7.5
Cystoseira osmundacea	6.5	4.1	5.0	4.8	6.5	4.4	5.0	1.2	5.8
Prionitis spp.	5.0	2.6	2.5	3.0	6.0	2.3	2.0	2.8	3.9
Non-coralline crust	<0.1	-	<0.1	-	5.0	2.6	5.0	1.2	2.5
Colpomenia spp.	<0.1	<.01	10.0	5.7	-	-	-	-	2.5
Macrocystis spp.	1.5	1.9	2.0	2.3	5.0	5.3	0.5	1.0	2.3
Cryptopleura violacea	0.5	1.0	2.5	2.5	0.5	1.0	3.5	4.4	1.8
Acrosorium uncinatum	1.5	1.0	-	-	5.0	3.8	-	-	1.6
Gelidium robustum	1.0	1.2	2.0	2.8	2.0	1.6	-	-	1.3
Desmarestia spp.	0.5	1.0	2.5	3.8	1.0	2.0	-	-	1.0
Rhodymenia spp.	2.5	2.5	-	-	<0.1	<.01	1.5	1.0	1.0
Chondracanthus corymbiferus	1.0	1.2	2.0	1.6	0.5	1.0	-	-	0.9
Pterosiphonia dendroidea	1.0	1.2	0.5	1.0	-	-	-	-	0.4
filamentous red algae-complex	1.5	1.0	-	-	-	-	-	-	0.4
Callophyllis spp.	<0.1	<.01	1.0	1.2	-	-	<0.1	<.01	0.3
Halymenia/Schizymenia spp.-complex	-	-	1.0	1.2	<0.1	<.01	-	-	0.3
Corallina officinalis	<0.1	<.01	<0.1	<.01	0.5	1.0	<0.1	<.01	0.1
Sargassum muticum	<0.1	<.01	0.5	1.0	-	-	-	-	0.1
Ulva/Enteromorpha spp.	-	-	<0.1	<.01	<0.1	<.01	-	-	<0.1
Cladophora spp.	<0.1	<.01	-	-	-	-	<0.1	<.01	<0.1
Mazzaella rosea	<0.1	<.01	<0.1	<.01	-	-	-	-	<0.1
Ahnfeltiopsis linearis	<0.1	<.01	-	-	<0.1	<.01	-	-	<0.1
Antitha./Platythamnion spp.-complex	-	-	-	-	<0.1	<.01	-	-	<0.1
Microcladia coulteri	-	-	-	-	<0.1	<.01	-	-	<0.1
Sarcodiotheca gaudichaudii	-	-	-	-	<0.1	<.01	-	-	<0.1
Scinaia confusa	-	-	<0.1	<.01	-	-	-	-	<0.1
Prionitis australis	-	-	<0.1	<.01	-	-	-	-	<0.1
Chondra. harveyanus/spinosus	<0.1	<.01	-	-	-	-	-	-	<0.1
Substrate									
colonized rock	62.0	11.9	69.0	15.5	70.0	7.7	50.5	11.5	62.9
cobble	25.5	9.0	11.0	5.3	3.5	2.5	31.0	9.0	17.8
colonized cobble	10.5	3.0	11.0	6.0	19.0	4.8	11.0	3.8	12.9
sand (shell gravel)	2.0	1.6	6.0	6.7	6.0	2.8	0.5	1.0	3.6
rock	-	-	3.0	3.5	1.5	1.9	7.0	1.2	2.9

Table F3. Subtidal Algae (SLC Method) Survey Means (percent cover), Standard Deviations and Annual Means, North Diablo Cove Station NDC 3 -3m.

Survey	124		125		126		127		
Survey Date	30-Mar-04		26-May-04		23-Aug-04		4-Feb-05		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Algae									
coralline crust	57.0	8.9	32.5	11.8	55.5	4.7	65.0	6.2	52.5
Chrysophyta unid.	31.0	14.7	62.0	12.8	22.0	4.3	<0.1	<.01	28.8
Calliarthron/Bossiella spp.-complex	16.0	9.4	12.5	14.8	26.5	12.6	26.5	1.9	20.4
Sargassum muticum	11.5	7.7	7.0	4.8	13.0	11.4	6.0	6.7	9.4
Acrosorium uncinatum	11.5	1.0	<0.1	<.01	2.0	4.0	16.0	2.8	7.4
Prionitis spp.	3.5	1.0	5.0	3.8	10.5	1.9	5.0	3.8	6.0
Cystoseira osmundacea	5.0	4.2	3.5	3.4	6.0	4.3	4.5	1.9	4.8
Non-coralline crust	3.0	2.6	1.5	1.9	3.0	2.6	7.0	2.6	3.6
Macrocystis spp.	2.5	2.5	5.0	4.2	6.5	5.5	<0.1	<.01	3.5
Farlowia/Pikea spp.-complex	2.5	3.0	3.5	4.7	1.5	1.9	4.0	2.8	2.9
Cryptopleura violacea	6.5	3.0	<0.1	<.01	1.0	2.0	-		1.9
Colpomenia spp.	-	-	5.0	3.5	1.5	3.0	<0.1	<.01	1.6
Gelidium robustum	1.5	3.0	1.5	3.0	0.5	1.0	0.5	1.0	1.0
Chondra. corymbiferus	<0.1	<.01	2.5	3.0	<0.1	<.01	<0.1	<.01	0.6
Pterosiphonia dendroidea	<0.1	<.01	-	-	<0.1	<.01	2.5	3.0	0.6
Cladophora spp.	1.5	3.0	<0.1	<.01	-	-	<0.1	<.01	0.4
filamentous red algae-complex	1.5	3.0	-	-	-				0.4
Rhodymenia spp.	<0.1	<.01	0.5	1.0	0.5	1.0	-	-	0.3
Desmarestia spp.	-	-	<0.1	<.01	1.0	1.2	-	-	0.3
Ulva/Enteromorpha spp.	<0.1	<.01	0.5	1.0	<0.1	<.01	<0.1	<.01	0.1
Ahnfeltiopsis linearis	<0.1	<.01	<0.1	<.01	0.5	1.0	<0.1	<.01	0.1
Dictyota binghamiae	0.5	1.0	<0.1	<.01	-	-	-	-	0.1
Halymenia/Schizymenia spp.-complex	-	-	0.5	1.0	<0.1	<.01	-	-	0.1
Callophyllis spp.	0.5	1.0	<0.1	<.01	-	-	-	-	0.1
Gastroclonium subarticulatum	-	-	-	-	0.5	1.0	-	-	0.1
Nienburgia andersoniana	0.5	1.0	-	-	<0.1	<.01	-	-	0.1
Grateloupia doryphora	-	-	0.5	1.0	-	-	-	-	0.1
Corallina officinalis	<0.1	<.01	-	-	<0.1	<.01	<0.1	<.01	<0.1
Mazzaella rosea	-	-	<0.1	<.01	<0.1	<.01	-	-	<0.1
Antitha./Platythamnion spp.-complex	<0.1	<.01	<0.1	<.01	<0.1	<.01	-	-	<0.1
Osmundea spp.	-	-	-	-	<0.1	<.01	-	-	<0.1
Callophyllis flabellulata	-	-	-	-	<0.1	<.01	-	-	<0.1
Sarcodiotheca gaudichaudii	-	-	-	-	<0.1	<.01	-	-	<0.1
Plocamium cartilagineum	-	-	-	-	<0.1	<.01	-	-	<0.1
Invertebrates									
Porifera unid. (encrusting)	-	-	-	-	-	-	<0.1	<.01	<0.1
Substrate									
colonized rock	68.0	4.3	73.5	5.0	83.0	2.6	74.5	4.4	74.8
colonized cobble	12.5	9.3	13.0	11.4	11.5	5.7	14.5	6.0	12.9
sand (shell gravel)	16.0	9.4	3.0	6.0	4.5	4.4	1.5	1.9	6.3
rock	3.0	2.6	6.0	7.1	-	-	8.0	3.7	4.3
cobble	0.5	1.0	4.5	5.3	1.0	1.2	1.5	1.9	1.9

Table F4. Subtidal Algae (SLC Method) Survey Means (percent cover), Standard Deviations and Annual Means, North Diablo Cove Station NDC 4 -4m.

Survey	124		125		126		127		
Survey Date	10-Feb-04		24-May-04		2-Sep-04		4-Feb-05		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Algae									
coralline crust	92.5	3.4	25.5	4.1	37.5	17.6	47.5	10.4	50.8
Calliarthron/Bossiella *spp.-complex*	-	-	42.0	15.8	47.0	3.5	37.5	8.4	31.6
Farlowia/Pikea spp.-complex	10.5	3.4	33.0	6.6	20.5	3.0	12.5	1.9	19.1
Desmarestia spp.	-	-	16.0	4.3	19.5	15.3	-	-	8.9
Acrosorium uncinatum	13.5	4.1	<0.1	<.01	7.5	9.0	12.0	5.2	8.3
Cryptopleura violacea	9.0	2.0	17.5	10.1	4.5	1.9	<0.1	<.01	7.8
Cystoseira osmundacea	4.5	6.4	8.5	8.4	6.5	5.3	4.5	3.4	6.0
Chondrac. corymbiferus	3.5	1.0	11.0	7.4	6.5	4.1	1.0	1.2	5.5
Corallina officinalis	18.5	5.5	-	-	-	-	<0.1	<.01	4.6
Prionitis spp.	4.0	2.8	4.5	3.4	3.5	2.5	6.0	3.7	4.5
Chrysophyta unid.	-	-	17.0	4.2	-	-	-	-	4.3
Rhodymenia spp.	5.0	2.6	6.0	3.7	2.0	1.6	0.5	1.0	3.4
Macrocystis spp.	3.5	1.9	2.0	1.6	4.0	5.7	<0.1	<.01	2.4
Callophyllis spp.	<0.1	<.01	8.0	2.8	1.0	2.0	-	-	2.3
Non-coralline crust	1.0	1.2	-	-	<0.1	-	5.0	2.6	1.5
Gelidium robustum	1.5	1.9	1.5	1.9	0.5	1.0	<0.1	<.01	0.9
Pterosiphonia dendroidea	2.0	4.0	0.5	1.0	<0.1	<.01	0.5	1.0	0.8
Prionitis australis	1.5	1.9	1.0	1.2	<0.1	<.01	0.5	1.0	0.8
Ahnfeltiopsis linearis	<0.1	<.01	2.0	2.3	<0.1	<.01	<0.1	<.01	0.5
Callophyllis flabellulata	<0.1	<.01	1.5	1.0	<0.1	<.01	-	-	0.4
Halymenia/Schizymenia spp.-complex	-	-	1.5	3.0	-	-	-	-	0.4
Antitha./Platythamnion spp.-complex	-	-	1.0	1.2	<0.1	<.01	<0.1	<.01	0.3
Nienburgia andersoniana	0.5	1.0	-	-	0.5	1.0	-	-	0.3
Colpomenia spp.	<0.1	<.01	0.5	1.0	-	-	-	-	0.1
filamentous red algae-complex	0.5	1.0	-	-	-	-	-	-	0.1
Cryptopleura ruprechtiana	-	-	-	-	0.5	1.0	-	-	0.1
Polyneura latissima	-	-	0.5	1.0	-	-	-	-	0.1
Osmundea spp.	<0.1	<.01	<0.1	<.01	<0.1	<.01	-	-	<0.1
Chondrac. harveyanus/spinosus	-	-	<0.1	<.01	<0.1	<.01	-	-	<0.1
Laminaria setchellii	-	-	-	-	<0.1	<.01	<0.1	<.01	<0.1
Laminariales	<0.1	<.01	-	-	-	-	<0.1	<.01	<0.1
Ulva/Enteromorpha spp.	-	-	-	-	<0.1	<.01	<0.1	<.01	<0.1
Gloiosiphonia californica	-	-	<0.1	<.01	-	-	-	-	<0.1
Cladophora spp.	-	-	-	-	-	-	<0.1	<.01	<0.1
Sarcodiotheca gaudichaudii	-	-	-	-	<0.1	<.01	-	-	<0.1
Scinaia confusa	<0.1	<.01	-	-	-	-	-	-	<0.1
Mazzaella rosea	-	-	<0.1	<.01	-	-	-	-	<0.1
Invertebrates									
Phragmatopoma californica	1.0	1.2	-	-	-	-	14.5	6.8	3.9
Porifera unid. (encrusting)	-	-	-	-	0.5	1.0	-	-	0.1
Substrate									
colonized rock	85.0	4.2	83.5	7.7	80.0	5.9	78.0	2.3	81.6
colonized cobble	13.0	5.3	3.5	1.9	5.5	3.4	12.5	1.9	8.6
sand (shell gravel)	-	-	3.0	3.8	8.5	5.3	3.0	1.2	3.6
cobble	0.5	1.0	5.5	3.4	4.0	2.3	2.0	1.6	3.0
rock	1.5	3.0	4.5	3.4	1.5	3.0	4.5	2.5	3.0

Table F5. Subtidal Algae (SLC Method) Survey Means (percent cover), Standard Deviations and Annual Means, South Diablo Cove Station SDC 2 -3m.

Survey	124		125		126		127		
Survey Date	11-Feb-04		27-May-04		3-Sep-04		13-Oct-04		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Algae									
coralline crust	78.0	4.9	13.5	6.4	30.5	7.9	26.0	4.9	37.0
Cryptopleura violacea	18.0	5.2	31.5	16.1	30.0	3.3	25.0	8.4	26.1
Prionitis spp.	<0.1	<.01	6.5	5.3	18.5	6.4	23.0	5.3	12.0
Calliarthron/Bossiella spp.-complex	3.0	3.5	9.0	3.5	14.0	3.7	18.5	15.0	11.1
Nienburgia andersoniana	11.5	3.0	16.0	4.6	8.0	1.6	8.5	5.7	11.0
Farlowia/Pikea spp.-complex	3.0	2.0	5.0	2.6	15.0	6.6	14.0	2.8	9.3
Cystoseira osmundacea	4.0	1.6	6.0	2.3	7.0	1.2	5.5	1.9	5.6
Macrocystis spp.	3.0	1.2	7.5	4.4	5.0	3.5	5.5	3.4	5.3
Rhodymenia spp.	3.5	4.7	9.0	6.6	2.0	2.3	5.5	1.0	5.0
Chondra. corymbiferus	5.0	3.5	3.5	3.4	8.0	4.9	2.0	2.8	4.6
Chrysophyta unid.	-	-	10.5	8.5	1.0	2.0	-	-	2.9
Acrosorium uncinatum	4.5	4.4	2.0	4.0	4.0	-	<0.1	<.01	2.6
Chondra. harveyanus/spinosus	-	-	3.5	4.1	2.0	2.8	2.0	2.3	1.9
Pterosiphonia dendroidea	6.0	1.6	-	-	<0.1	<.01	<0.1	<.01	1.5
Ahnfeltiopsis linearis	-	-	1.0	1.2	4.0	3.7	1.0	2.0	1.5
Gelidium robustum	4.0	1.6	1.0	2.0	0.5	1.0	0.5	1.0	1.5
Sargassum muticum	<0.1	<.01	5.0	3.5	-	-	<0.1	<.01	1.3
filamentous red algae-complex	<0.1	<.01	-	-	4.5	3.4	0.5	1.0	1.3
Prionitis australis	4.0	5.4	-	-	<0.1	<.01	<0.1	<.01	1.0
Osmundea spp.	1.0	2.0	<0.1	<.01	0.5	1.0	<0.1	<.01	0.4
Corallina officinalis	-	-	0.5	1.0	<0.1	-	<0.1	-	0.1
Callophyllis flabellulata	<0.1	<.01	0.5	1.0	<0.1	<.01	<0.1	<.01	0.1
Non-coralline crust	0.5	1.0	-	-	<0.1	<.01	<0.1	<.01	0.1
Gelidium spp.	-	-	-	-	0.5	1.0	<0.1	<.01	0.1
Halymenia/Schizymenia spp.-complex	-	-	0.5	1.0	-	-	-	-	0.1
Ulva/Enteromorpha spp.	<0.1	-	<0.1	<.01	<0.1	-	<0.1	<.01	<0.1
Antitha./Platythamnion spp.-complex	-	-	-	-	<0.1	-	<0.1	<.01	<0.1
Laminariales	<0.1	<.01	-	-	-	-	-	-	<0.1
Microcladia coulteri	<0.1	<.01	-	-	-	-	-	-	<0.1
Sarcodiotheca gaudichaudii	-	-	<0.1	<.01	-	-	-	-	<0.1
Bryopsis spp.	<0.1	<.01	-	-	-	-	-	-	<0.1
Pterygophora californica	-	-	-	-	-	-	<0.1	<.01	<0.1
Colpomenia spp.	<0.1	<.01	-	-	-	-	-	-	<0.1
Scinaia confusa	<0.1	<.01	-	-	-	-	-	-	<0.1
Gymnogongrus chiton	<0.1	<.01	-	-	-	-	-	-	<0.1
Invertebrates									
Phragmatopoma californica	-	-	-	-	-	-	0.5	1.0	0.1
Substrate									
colonized rock	77.5	7.7	66.5	4.4	64.0	2.8	58.0	6.9	66.5
sand (shell gravel)	8.0	-	24.0	3.7	30.0	3.7	38.5	6.0	25.1
cobble	7.0	4.2	5.0	1.2	4.0	2.3	3.5	2.5	4.9
colonized cobble	6.0	4.3	3.5	3.4	2.0	2.8	-	-	2.9
rock	1.5	1.9	1.0	1.2	-	-	-	-	0.6

Table F6. Subtidal Algae (SLC Method) Survey Means (percent cover), Standard Deviations and Annual Means, South Diablo Cove Station SDC 3 -4m.

Survey	124		125		126		127		
Survey Date	12-Mar-04		28-May-04		7-Sep-04		1-Dec-04		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Algae									
coralline crust	64.5	6.6	20.0	7.1	29.0	3.5	48.5	8.7	40.5
Calliarthron/Bossiella spp.-complex	40.0	4.9	22.5	7.2	30.0	5.9	21.5	4.1	28.5
Cryptopleura violacea	10.0	7.8	7.0	2.6	45.0	15.5	7.5	5.0	17.4
Rhodymenia spp.	5.5	3.0	15.0	4.8	10.5	7.6	4.5	1.9	8.9
Chondra. corymbiferus	6.0	2.8	11.5	6.6	11.5	7.9	6.0	4.0	8.8
Macrocystis spp.	1.0	1.2	9.5	7.0	16.0	4.9	7.0	3.5	8.4
Chrysophyta unid.	-	-	27.5	13.1	-	-	-	-	6.9
Farlowia/Pikea spp.-complex	6.5	2.5	5.0	2.6	4.5	3.4	1.5	1.9	4.4
Cryptopleura ruprechtiana	2.0	2.3	1.5	1.9	4.5	2.5	1.0	1.2	2.3
Prionitis spp.	3.0	2.6	<0.1	<.01	<0.1	<.01	1.5	1.9	1.1
Gelidium robustum	1.0	2.0	1.0	2.0	0.5	1.0	2.0	1.6	1.1
Nienburgia andersoniana	0.5	1.0	1.5	1.0	1.5	1.0	<0.1	<.01	0.9
Cystoseira osmundacea	0.5	1.0	2.0	2.8	0.5	1.0	<0.1	<.01	0.8
Desmarestia spp.	-	-	0.5	1.0	2.5	3.0	-	-	0.8
Acrosorium uncinatum	<0.1	<.01	2.5	2.5	<0.1	<.01	-	-	0.6
Callophyllis spp.	<0.1	<.01	1.5	3.0	1.0	2.0	-	-	0.6
Non-coralline crust	1.0	1.2	-	-	<0.1	<.01	0.5	1.0	0.4
filamentous red algae-complex	1.5	3.0	-	-	<0.1	<.01	-	-	0.4
Pterosiphonia dendroidea	1.0	1.2	0.5	1.0	-	-	-	-	0.4
Ahnfeltiopsis linearis	0.5	1.0	<0.1	<.01	<0.1	<.01	0.5	1.0	0.3
Prionitis australis	0.5	1.0	<0.1	<.01	0.5	1.0	-	-	0.3
Callophyllis flabellulata	<0.1	<.01	<0.1	<.01	0.5	1.0	-	-	0.1
Pterygophora californica	<0.1	<.01	<0.1	<.01	-	-	<0.1	<.01	<0.1
Laminaria setchellii	-	-	<0.1	<.01	-	-	<0.1	<.01	<0.1
Corallina officinalis	-	-	-	-	<0.1	<.01	-	-	<0.1
Polyneura latissima	-	-	<0.1	<.01	<0.1	<.01	-	-	<0.1
Osmundea spp.	-	-	<0.1	<.01	<0.1	<.01	-	-	<0.1
Antitha./Platythamnion spp.-complex	<0.1	<.01	<0.1	<.01	-	-	-	-	<0.1
Sarcodiotheca gaudichaudii	-	-	<0.1	<.01	-	-	-	-	<0.1
Dictyota binghamiae	-	-	<0.1	<.01	-	-	-	-	<0.1
Laminariales	<0.1	<.01	-	-	-	-	-	-	<0.1
Invertebrates									
Bryozoa, unid. (encrusting)	0.5	1.0	-	-	-	-	-	-	0.1
Substrate									
colonized rock	84.5	8.9	80.0	5.2	79.0	10.1	70.5	11.5	78.5
sand (shell gravel)	6.5	1.9	12.0	1.6	9.5	7.2	22.0	13.6	12.5
cobble	3.5	4.4	6.0	3.3	4.5	5.7	4.0	2.8	4.5
rock	1.5	3.0	0.5	1.0	6.0	4.9	1.5	1.9	2.4
colonized cobble	4.0	3.3	1.5	1.9	0.5	1.0	2.0	2.3	2.0

Table F7. Subtidal Algae (SLC Method) Survey Means (percent cover), Standard Deviations and Annual Means, South Control Station SC 1 -3m.

Survey	124		125		126		127		
Survey Date	13-Feb-04		17-May-04		20-Aug-04		5-Feb-05		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Algae									
coralline crust	76.5	4.4	33.0	10.5	26.5	12.0	40.5	4.1	44.1
Calliarthron/Bossiella spp.-complex	20.0	10.1	32.0	22.3	40.0	24.1	26.0	11.4	29.5
Rhodymenia spp.	18.0	3.7	16.5	19.5	36.5	13.7	16.0	1.6	21.8
Laminaria setchellii	8.0	1.6	8.5	3.4	4.5	4.4	4.5	4.1	6.4
Pterygophora californica	11.0	4.8	2.5	1.9	5.0	3.5	4.0	1.6	5.6
Halymenia/Schizymenia spp.-complex	-	-	20.5	24.4	-	-	-	-	5.1
Cystoseira osmundacea	2.5	1.9	6.5	3.4	4.5	1.9	3.5	3.4	4.3
Gelidium robustum	2.5	1.0	1.5	1.9	2.5	3.0	2.5	2.5	2.3
Chondra. corymbiferus	4.0	2.8	1.5	1.0	<0.1	<.01	1.0	2.0	1.6
Desmarestia spp.	-	-	1.5	1.9	2.5	5.0	-	-	1.0
Farlowia/Pikea spp.-complex	2.5	1.9	<0.1	-	<0.1	<.01	<0.1	<.01	0.6
Non-coralline crust	-	-	0.5	1.0	-	-	2.0	2.8	0.6
Cryptopleura ruprechtiana	-	-	2.5	1.9	-	-	-	-	0.6
Laminariales	1.0	2.0	0.5	1.0	<0.1	<.01	<0.1	<.01	0.4
Nereocystis luetkeana	-	-	<0.1	-	1.5	1.9	-	-	0.4
Prionitis spp.	1.0	1.2	0.5	1.0	<0.1	<.01	<0.1	<.01	0.4
Delesseria decipiens	1.5	3.0	-	-	-	-	-	-	0.4
Osmundea spp.	1.0	1.2	<0.1	<.01	-	-	<0.1	<.01	0.3
Pterosiphonia dendroidea	<0.1	<.01	1.0	2.0	-	-	<0.1	<.01	0.3
Ulva/Enteromorpha spp.	<0.1	-	0.5	1.0	-	-	<0.1	<.01	0.1
filamentous red algae-complex	0.5	1.0	<0.1	<.01	-	-	-	-	0.1
Prionitis australis	0.5	1.0	-	-	-	-	<0.1	<.01	0.1
Bryopsis spp.	0.5	1.0	-	-	-	-	-	-	0.1
Neorhodomela larix	-	-	0.5	1.0	-	-	-	-	0.1
Microcladia coulteri	<0.1	<.01	<0.1	<.01	<0.1	<.01	<0.1	<.01	<0.1
Corallina officinalis	-	-	<0.1	<.01	<0.1	<.01	<0.1	<.01	<0.1
Plocamium cartilagineum	-	-	-	-	-	-	<0.1	<.01	<0.1
Callophyllis spp.	<0.1	<.01	-	-	-	-	<0.1	<.01	<0.1
Cryptopleura violacea	-	-	<0.1	<.01	-	-	-	-	<0.1
Phyllospadix spp.	-	-	<0.1	<.01	-	-	-	-	<0.1
Callophyllis firma	-	-	<0.1	<.01	-	-	-	-	<0.1
Ahnfeltiopsis linearis	-	-	<0.1	<.01	-	-	<0.1	<.01	<0.1
Callophyllis flabellulata	-	-	<0.1	<.01	-	-	-	-	<0.1
Gastroclonium subarticulatum	<0.1	<.01	-	-	-	-	-	-	<0.1
Rhodoptilum plumosum	<0.1	<.01	-	-	-	-	-	-	<0.1
Scinaia confusa	-	-	<0.1	<.01	-	-	-	-	<0.1
Chrysophyta unid.	<0.1	<.01	-	-	-	-	-	-	<0.1
Invertebrates									
Phragmatopoma californica	-	-	-	-	-	-	22.5	8.1	5.6
tunicates, colonial/social unid.	-	-	-	-	1.0	2.0	-	-	0.3
Porifera unid. (encrusting)	-	-	-	-	-	-	1.0	2.0	0.3
Bryozoa, unid. (encrusting)	-	-	-	-	-	-	0.5	1.0	0.1
Substrate									
colonized rock	94.5	2.5	83.0	8.7	89.5	5.0	85.5	3.4	88.1
sand (shell gravel)	2.0	2.8	6.0	1.6	1.0	1.2	7.5	1.9	4.1
rock	-	-	7.5	9.9	5.5	4.4	-	-	3.3
colonized cobble	2.0	2.3	2.5	5.0	1.5	3.0	4.5	3.4	2.6
cobble	1.5	1.9	1.0	1.2	2.0	1.6	2.5	1.9	1.8

Table F8. Subtidal Algae (SLC Method) Survey Means (percent cover), Standard Deviations and Annual Means, South Control Station SC 2 -6m.

Survey	124		125		126		127		
Survey Date	23-Mar-04		25-May-04		24-Aug-04		4-Feb-05		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Algae									
coralline crust	58.5	6.6	62.0	4.3	48.0	5.9	80.0	6.3	62.1
Calliarthron/Bossiella spp.-complex	36.5	8.7	28.0	8.2	39.5	15.1	21.5	11.0	31.4
Desmarestia spp.	-	-	18.0	10.7	10.5	10.0	-	-	7.1
Rhodymenia spp.	9.0	4.2	4.0	4.3	4.5	2.5	3.0	4.8	5.1
Pterygophora californica	4.0	2.8	5.0	4.2	5.5	1.9	1.5	1.9	4.0
Chondra. corymbiferus	6.0	3.3	<0.1	-	0.5	1.0	2.0	1.6	2.1
Nereocystis luetkeana	-	-	0.5	1.0	6.5	5.0	<0.1	<.01	1.8
Laminaria setchellii	0.5	1.0	1.5	1.9	1.5	3.0	3.0	2.6	1.6
Cryptopleura ruprechtiana	0.5	1.0	4.0	4.9	-	-	-	-	1.1
Laminariales	<0.1	<.01	4.0	5.7	-	-	-	-	1.0
Non-coralline crust	1.5	1.0	<0.1	-	2.0	1.6	<0.1	<.01	0.9
filamentous red algae-complex	2.0	4.0	1.0	2.0	-	-	-	-	0.8
Dictyota binghamiae	0.5	1.0	1.5	3.0	0.5	1.0	-	-	0.6
Cystoseira osmundacea	<0.1	<.01	0.5	1.0	0.5	1.0	0.5	1.0	0.4
Polyneura latissima	0.5	1.0	-	-	-	-	-	-	0.1
Rhodoptilum plumosum	<0.1	<.01	<0.1	<.01	-	-	<0.1	<.01	<0.1
Prionitis spp.	<0.1	<.01	<0.1	<.01	<0.1	<.01	<0.1	<.01	<0.1
Callophyllis firma	<0.1	<.01	<0.1	<.01	-	-	-	-	<0.1
Farlowia/Pikea spp.-complex	<0.1	<.01	<0.1	<.01	<0.1	<.01	<0.1	<.01	<0.1
Ulva/Enteromorpha spp.	-	-	<0.1	<.01	-	-	-	-	<0.1
Gelidium robustum	<0.1	<.01	-	-	-	-	<0.1	<.01	<0.1
Callophyllis spp.	<0.1	<.01	-	-	-	-	-	-	<0.1
Scinaia confusa	-	-	<0.1	<.01	<0.1	<.01	-	-	<0.1
Weeksia spp.	-	-	-	-	-	-	<0.1	<.01	<0.1
Delesseria decipiens	<0.1	<.01	-	-	-	-	-	-	<0.1
Callophyllis flabellulata	<0.1	<.01	-	-	-	-	-	-	<0.1
Microcladia coulteri	-	-	<0.1	<.01	-	-	-	-	<0.1
Cryptopleura violacea	-	-	-	-	-	-	<0.1	<.01	<0.1
Fryeella gardneri	-	-	<0.1	<.01	-	-	-	-	<0.1
Schizymenia epiphytica	-	-	-	-	<0.1	<.01	-	-	<0.1
Membrano./Branchioglos. spp.	<0.1	<.01	-	-	-	-	-	-	<0.1
Invertebrates									
Bryozoa, unid. (encrusting)	11.5	1.9	-	-	2.0	4.0	5.0	1.2	4.6
Porifera unid. (encrusting)	2.5	1.9	1.0	1.2	1.0	1.2	4.5	1.0	2.3
Corynactis californica	-	-	-	-	-	-	0.5	1.0	0.1
tunicates, colonial/social unid.	-	-	-	-	-	-	0.5	1.0	0.1
Phragmatopoma californica	-	-	-	-	-	-	0.5	1.0	0.1
Substrate									
colonized rock	87.0	10.5	84.5	9.4	67.5	45.3	92.5	7.6	82.9
colonized cobble	6.0	4.6	4.5	5.7	24.5	47.7	6.0	7.1	10.3
rock	-	-	8.5	5.7	3.0	2.0	-	-	2.9
sand (shell gravel)	4.5	3.4	2.0	2.8	2.0	2.8	0.5	1.0	2.3
cobble	2.0	2.3	0.5	1.0	3.0	4.8	1.0	1.2	1.6

Appendix G

Subtidal Invertebrate Results (SFQ Method)

Table G1. Subtidal Invertebrates (SFQ Method) Survey Means (abundance per 0.25 m^2 ; percent cover) Standard Deviations and Annual Mean, Field's Cove Station FC 1 -3m.

Survey	124		125		126		127		
Survey Date	17-Mar-04		18-May-04		10-Sep-04		14-Jan-05		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Invertebrate Counts									
Tetraclita rubescens	-	-	-	-	-	-	62.0	108.8	15.5
Tegula brunnea	3.5	3.1	4.0	3.4	3.3	1.7	3.0	2.3	3.4
Pelecypoda unid. boring	5.0	8.1	0.8	1.5	-	-	7.5	12.4	3.3
Pagurus spp.	2.8	2.2	3.0	3.6	2.5	3.1	3.8	2.2	3.0
Phragmatopoma californica	3.0	6.0	-	-	6.3	9.5	2.0	1.4	2.8
Pugettia spp.	1.5	1.3	2.3	1.3	1.8	0.5	2.8	1.3	2.1
Homolo. luridum/Lirularia succincta	0.5	1.0	-	-	1.5	1.3	5.5	3.1	1.9
Sipuncula unid.	1.3	2.5	0.3	0.5	1.0	1.4	2.0	4.0	1.1
Lissothuria nutriens	-	-	-	-	2.8	1.3	1.3	1.3	1.0
Strongylocentrotus purpuratus	-	-	1.3	1.0	0.8	1.0	0.3	0.5	0.6
Fusinus luteopictus	-	-	-	-	0.5	0.6	1.8	1.0	0.6
Acmaea mitra	0.3	0.5	-	-	1.3	1.0	0.5	0.6	0.5
Leptasterias spp.	1.0	0.8	0.3	0.5	0.3	0.5	0.5	0.6	0.5
Serpulidae unid.	-	-	-	-	0.8	1.0	1.3	1.5	0.5
Epiactis prolifera	0.3	0.5	0.3	0.5	0.5	0.6	0.5	0.6	0.4
Lottia instabilis	1.3	2.5	-	-	-	-	0.3	0.5	0.4
Amphissa spp.	-	-	-	-	1.0	0.8	0.5	0.6	0.4
Pista spp.	0.5	1.0	0.3	0.5	0.3	0.5	0.3	0.5	0.3
Anthozoa unid.	-	-	-	-	-	-	1.0	1.2	0.3
Balanus/Tetraclita spp.	-	-	-	-	1.0	2.0	-	-	0.3
Calliostoma ligatum	0.3	0.5	-	-	-	-	0.5	1.0	0.2
Asterina miniata	0.5	0.6	-	-	-	-	0.3	0.5	0.2
Cryptochiton stelleri	-	-	0.3	0.5	-	-	0.5	0.6	0.2
Mimulus foliatus	-	-	0.3	0.5	-	-	0.5	0.6	0.2
Pisaster/Henricia (juv.)	-	-	-	-	0.5	0.6	0.3	0.5	0.2
Tonicella lineata	-	-	-	-	-	-	0.5	0.6	0.1
Crepidula spp.	0.3	0.5	-	-	0.3	0.5	-	-	0.1
tunicate, solitary unid.	-	-	-	-	0.3	0.5	0.3	0.5	0.1
Ocenebra spp.	-	-	0.5	0.6	-	-	-	-	0.1
Ischnochitonidae	-	-	-	-	0.3	0.5	0.3	0.5	0.1
Cryptolithodes sitchensis	0.3	0.5	-	-	-	-	0.3	0.5	0.1
Ophiothrix spp.	-	-	-	-	0.3	0.5	0.3	0.5	0.1
Ophioplocus spp.	0.5	1.0	-	-	-	-	-	-	0.1
Cadlina spp.	-	-	-	-	0.3	0.5	0.3	0.5	0.1
Anthopleura elegantissima	0.3	0.5	-	-	-	-	-	-	<0.1
Fissurella volcano	0.3	0.5	-	-	-	-	-	-	<0.1
Alia spp.	-	-	-	-	-	-	0.3	0.5	<0.1
Mopalia spp.	-	-	-	-	-	-	0.3	0.5	<0.1
Cancer antennarius	0.3	0.5	-	-	-	-	-	-	<0.1
Diaulula sandiegensis	-	-	-	-	0.3	0.5	-	-	<0.1
Doriopsilla albopunctata	-	-	-	-	-	-	0.3	0.5	<0.1
Mitra idae	-	-	-	-	0.3	0.5	-	-	<0.1
Phidiana hiltoni	-	-	-	-	-	-	0.3	0.5	<0.1
Lophopanopeus spp.	-	-	0.3	0.5	-	-	-	-	<0.1
Lepidozona spp.	0.3	0.5	-	-	-	-	-	-	<0.1
Modiolus spp.	0.3	0.5	-	-	-	-	-	-	<0.1
Lebbeus lagunae	0.3	0.5	-	-	-	-	-	-	<0.1

(continued)

Table G1 (continued). Subtidal Invertebrates (SFQ Method) Survey Means (abundance per 0.25 m^2 ; percent cover) Standard Deviations and Annual Mean, Field's Cove Station FC 1 -3m.

Survey	124		125		126		127		
Survey Date	17-Mar-04		18-May-04		10-Sep-04		14-Jan-05		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Invertebrate Counts (continued)									
Eupentacta quinquesemita	-	-	-	-	0.3	0.5	-	-	<0.1
Invertebrate Cover									
Porifera unid. (encrusting)	0.3	0.7	0.4	0.5	2.0	2.4	2.0	1.6	1.2
Bryozoa, unid. (encrusting)	0.1	0.3	<0.1	0.1	0.5	0.2	1.1	0.7	0.5
tunicates, colonial/social unid.	-	-	<0.1	<.01	0.6	0.5	1.0	1.8	0.4
Eurystomella bilabiata	<0.1	<.01	0.1	0.3	-	-	0.8	1.2	0.2
Salmacina tribranchiata	-	-	<0.1	<.01	<0.1	0.1	0.1	0.3	<0.1
Spirorbidae	<0.1	-	-	-	<0.1	-	<0.1	0.1	<0.1
Bryozoa, unid. (foliose)	-	-	-	-	<0.1	<.01	-	-	<0.1

Table G2. Subtidal Invertebrates (SFQ Method) Survey Means (abundance per 0.25 m^2 ; percent cover) Standard Deviations and Annual Mean, North Diablo Cove Station NDC 2 -3m.

	Survey	124		125		126		127		
	Survey Date	22-Mar-04		26-May-04		10-Aug-04		13-Jan-05		
Taxon		Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Invertebrate Counts										
Phragmatopoma californica		7.5	4.2	2.0	4.0	9.0	4.7	22.8	14.9	10.3
Strongylocentrotus purpuratus		15.8	5.1	7.8	2.5	7.3	1.3	10.3	2.2	10.3
Pelecypoda unid. boring		11.3	14.2	3.8	3.3	4.8	3.3	14.3	17.2	8.5
Lissothuria nutriens		5.8	3.9	1.8	1.5	3.8	2.8	4.5	2.1	3.9
Dendropoma spp.		10.3	10.6	-	-	-	-	2.3	3.3	3.1
Ophiactis simplex		-	-	2.3	1.7	6.8	2.1	3.3	4.7	3.1
Fissurella volcano		3.5	2.4	1.0	0.8	1.0	0.8	2.8	1.7	2.1
Acmaea mitra		0.5	0.6	-	-	4.0	2.5	1.5	1.3	1.5
Serpulidae unid.		1.5	2.4	0.8	1.0	<0.1	<.01	2.8	2.5	1.3
Pista spp.		2.3	4.5	-	-	-	-	0.3	0.5	0.6
Lottia ochracea		1.0	1.4	0.5	1.0	0.5	1.0			0.5
Pugettia spp.		0.8	1.5	-	-	1.3	0.5	-	-	0.5
Pododesmus cepio		-	-	-	-	-	-	1.5	1.3	0.4
Ophiuroidea unid.		1.3	1.5	-	-	-	-	0.3	0.5	0.4
Serpulorbis squamigerus		0.5	1.0	0.3	0.5	-	-	0.5	1.0	0.3
Amphissa spp.		-	-	-	-	1.3	1.0	-	-	0.3
Sipuncula unid.		0.5	1.0	-	-	-	-	0.8	1.0	0.3
Anthopleura elegantissima		0.3	0.5	0.5	0.6	0.3	0.5	-	-	0.3
Epiactis prolifera		-	-	-	-	-	-	1.0	0.8	0.3
Tegula brunnea		-	-	0.3	0.5	0.3	0.5	0.5	1.0	0.3
Tetraclita rubescens		-	-	-	-	-	-	1.0	1.4	0.3
Ischnochitonidae		0.3	0.5	-	-	0.3	0.5	0.5	0.6	0.3
Diodora spp.		-	-	0.3	0.5	0.3	0.5	0.3	0.5	0.2
Anthozoa unid.		-	-	-	-	0.3	0.5	0.3	0.5	0.1
Acmaeidae unid.		-	-	0.5	1.0	-	-	-	-	0.1
Sabellidae		0.3	0.5	-	-	-	-	0.3	0.5	0.1
Diopatra ornata		0.3	0.5	-	-	0.3	0.5	-	-	0.1
Mitra idae		-	-	-	-	0.5	0.6	-	-	0.1
Bittium spp.		-	-	0.3	0.5	0.3	0.5	-	-	0.1
Cucumaria spp.		0.5	1.0	-	-	-	-	-	-	0.1
Doridacea unid.		-	-	-	-	-	-	0.5	1.0	0.1
Chaetopteridae		-	-	-	-	-	-	0.5	1.0	0.1
Anthopleura artemisia		-	-	-	-	0.3	0.5	-	-	<0.1
Tonicella lineata		-	-	-	-	-	-	0.3	0.5	<0.1
Tegula pulligo		0.3	0.5	-	-	-	-	-	-	<0.1
Parastichopus spp.		-	-	0.3	0.5	-	-	-	-	<0.1
Diaulula sandiegensis		0.3	0.5	-	-	-	-	-	-	<0.1
Phidiana hiltoni		0.3	0.5	-	-	-	-	-	-	<0.1
Triopha catalinae		0.3	0.5	-	-	-	-	-	-	<0.1
Mimulus foliatus		-	-	-	-	0.3	0.5	-	-	<0.1
Lacuna spp.		-	-	-	-	0.3	0.5	-	-	<0.1
Chama spp.		-	-	0.3	0.5	-	-	-	-	<0.1
Lepidozona spp.		-	-	-	-	0.3	0.5	-	-	<0.1
Modiolus spp.		-	-	-	-	0.3	0.5	-	-	<0.1
Rictaxis punctocaelatus		-	-	-	-	0.3	0.5	-	-	<0.1

(continued)

Table G2 (continued). Subtidal Invertebrates (SFQ Method) Survey Means (abundance per 0.25 m^2; percent cover) Standard Deviations and Annual Mean, North Diablo Cove Station NDC 2 -3m.

Survey	124		125		126		127		
Survey Date	22-Mar-04		26-May-04		10-Aug-04		13-Jan-05		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Invertebrate Cover									
Porifera unid. (encrusting)	0.1	0.2	-	-	-	-	0.3	0.4	<0.1
tunicates, colonial/social unid.	<0.1	<.01	-	-	<0.1	<.01	<0.1	0.1	<0.1
Clathrina spp.	-	-	-	-	<0.1	<.01	-	-	<0.1
Spirorbidae	-	-	<0.1	<.01	<0.1	<.01	<0.1	-	<0.1
Bryozoa, unid. (encrusting)	-	-	-	-	<0.1	<.01	<0.1	<.01	<0.1
Salmacina tribranchiata	-	-	-	-	-	-	<0.1	<.01	<0.1

Table G3. Subtidal Invertebrates (SFQ Method) Survey Means (abundance per 0.25 m^2 ; percent cover) Standard Deviations and Annual Mean, North Diablo Cove Station NDC 3 -3m.

Survey	124		125		126		127		
Survey Date	18-Mar-04		26-May-04		23-Aug-04		14-Jan-05		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Invertebrate Counts									
Ophiactis simplex	42.5	9.6	9.8	12.3	19.5	24.4	10.8	8.3	20.6
Phragmatopoma californica	21.0	12.0	3.5	7.0	2.0	2.5	23.0	23.6	12.4
Strongylocentrotus purpuratus	20.8	15.1	12.0	6.8	4.0	2.5	5.5	4.5	10.6
Pelecypoda unid. boring	17.0	13.6	7.5	10.2	6.8	3.5	6.3	7.8	9.4
Fissurella volcano	4.0	2.2	3.5	1.0	2.0	1.8	2.8	2.9	3.1
Lissothuria nutriens	2.0	3.4	1.5	1.7	2.5	3.0	5.0	6.9	2.8
Acmaea mitra	0.5	0.6	0.5	0.6	4.8	2.2	3.3	1.5	2.3
Lottia ochracea	3.0	0.8	2.8	2.5	1.5	3.0	0.5	0.6	1.9
Serpulidae unid.	1.8	2.9	0.8	1.0	2.3	2.2	2.3	2.6	1.8
Ophiothrix spp.	-	-	-	-	0.3	0.5	4.3	4.0	1.1
Tetraclita rubescens	0.3	0.5	-	-	-	-	3.0	4.8	0.8
Epiactis prolifera	0.5	0.6	0.5	0.6	1.0	0.8	1.0	1.2	0.8
Sipuncula unid.	0.8	1.0	-	-	1.0	0.8	0.5	1.0	0.6
Serpulorbis squamigerus	0.3	0.5	0.3	0.5	0.3	0.5	0.5	0.6	0.3
Dendropoma spp.	0.5	1.0	-	-	-	-	0.8	1.5	0.3
Anthopleura elegantissima	0.3	0.5	0.3	0.5	0.3	0.5	0.3	0.5	0.3
Cucumaria spp.	0.8	0.5	-	-	0.3	0.5	-	-	0.3
Balanus/Tetraclita spp.	0.5	1.0	0.5	1.0	-	-	-	-	0.3
Diodora spp.	0.3	0.5	-	-	-	-	0.5	1.0	0.2
Mitra idae	0.3	0.5	-	-	0.5	1.0	-	-	0.2
Pugettia spp.	-	-	0.5	0.6	0.3	0.5	-	-	0.2
Pista spp.	0.3	0.5	-	-	-	-	0.3	0.5	0.1
Pycnogonida unid.	0.3	0.5	-	-	-	-	0.3	0.5	0.1
Ischnochitonidae	-	-	-	-	-	-	0.5	0.6	0.1
Chaetopteridae	-	-	-	-	-	-	0.5	0.6	0.1
Lottia pelta	-	-	0.3	0.5	-	-	-	-	<0.1
Mopalia spp.	-	-	-	-	0.3	0.5	-	-	<0.1
Mytilus californianus	-	-	0.3	0.5	-	-	-	-	<0.1
Tectura scutum	-	-	-	-	0.3	0.5	-	-	<0.1
Acmaeidae unid.	-	-	0.3	0.5	-	-	-	-	<0.1
Polychaeta unid.	-	-	-	-	0.3	0.5	-	-	<0.1
Diaulula sandiegensis	-	-	0.3	0.5	-	-	-	-	<0.1
Doriopsilla albopunctata	0.3	0.5	-	-	-	-	-	-	<0.1
Heptacarpus spp.	-	-	-	-	0.3	0.5	-	-	<0.1
Ophioplocus spp.	-	-	-	-	0.3	0.5	-	-	<0.1
Haliotis spp.	-	-	0.3	0.5	-	-	-	-	<0.1
Nudibranchia unid.	-	-	-	-	0.3	0.5	-	-	<0.1
Mytilidae	-	-	-	-	0.3	0.5	-	-	<0.1
Mytilus spp.	-	-	-	-	-	-	0.3	0.5	<0.1
Invertebrate Cover									
Porifera unid. (encrusting)	0.3	0.4	<0.1	0.1	-	-	<0.1	0.1	0.1
Spirorbidae	<0.1	<.01	<0.1	<.01	<0.1	<.01	<0.1	<.01	<0.1
Hydroida	<0.1	<.01	-	-	-	-	<0.1	<.01	<0.1
tunicates, colonial/social unid.	<0.1	<.01	-	-	<0.1	<.01	<0.1	<.01	<0.1

Table G4. Subtidal Invertebrates (SFQ Method) Survey Means (abundance per 0.25 m^2 ; percent cover) Standard Deviations and Annual Mean, North Diablo Cove Station NDC 4 -4m.

Survey	124		125		126		127		
Survey Date	10-Feb-04		24-May-04		2-Sep-04		4-Feb-05		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Invertebrate Counts									
Phragmatopoma californica	56.8	58.5	7.5	7.1	18.5	11.6	166.0	100.3	62.2
Ophiactis simplex	30.0	33.5	2.5	3.8	1.0	2.0	6.0	2.5	9.9
Strongylocentrotus purpuratus	3.0	1.6	4.3	5.9	4.5	7.1	-	-	2.9
Henricia leviuscula	-	-	-	-	-	-	8.8	7.3	2.2
Balanus/Tetraclita spp.	3.5	7.0	-	-	1.0	2.0	2.5	3.3	1.8
Serpulidae unid.	1.0	1.4	1.8	1.5	1.0	0.8	1.8	1.7	1.4
Ophiothrix spp.	2.3	2.6	0.8	1.5	0.8	1.0	0.5	0.6	1.1
Chaetopteridae	-	-	-	-	1.3	2.5	3.0	6.0	1.1
Pelecypoda unid. boring	0.5	1.0	1.0	1.2	1.5	1.7	0.8	1.0	0.9
Acmaea mitra	0.5	0.6	0.5	0.6	1.5	1.0	0.8	0.5	0.8
Pugettia spp.	0.8	1.5	1.0	2.0	1.0	2.0	0.3	0.5	0.8
Lissothuria nutriens	-	-	0.5	0.6	2.0	2.5	0.5	0.6	0.8
Anthopleura elegantissima	0.8	1.0	0.8	0.5	0.3	0.5	0.8	1.5	0.6
Bittium spp.	-	-	0.3	0.5	-	-	1.5	1.3	0.4
Fissurella volcano	-	-	0.5	1.0	0.3	0.5	0.8	0.5	0.4
Serpulorbis squamigerus	0.3	0.5	0.3	0.5	0.3	0.5	0.5	1.0	0.3
Alia spp.	-	-	-	-	0.3	0.5	0.8	1.5	0.3
Amphissa spp.	-	-	-	-	0.3	0.5	0.8	1.0	0.3
Epiactis prolifera	0.5	0.6	-	-	-	-	0.3	0.5	0.2
Lottia ochracea	-	-	0.3	0.5	-	-	0.5	0.6	0.2
Pista spp.	0.3	0.5	-	-	-	-	0.3	0.5	0.1
Pagurus spp.	-	-	0.3	0.5	-	-	0.3	0.5	0.1
Phidiana hiltoni	-	-	0.3	0.5	0.3	0.5	-	-	0.1
Cucumaria spp.	0.5	1.0	-	-	-	-	-	-	0.1
Ophioplocus spp.	-	-	0.3	0.5	-	-	0.3	0.5	0.1
Diodora spp.	-	-	-	-	-	-	0.3	0.5	<0.1
Tegula brunnea	-	-	-	-	0.3	0.5	-	-	<0.1
Tonicella lineata	-	-	-	-	-	-	0.3	0.5	<0.1
Leucilla nuttingi	-	-	-	-	-	-	0.3	0.5	<0.1
Eudistylia polymorpha	0.3	0.5	-	-	-	-	-	-	<0.1
Doridacea unid.	-	-	-	-	-	-	0.3	0.5	<0.1
Chama spp.	0.3	0.5	-	-	-	-	-	-	<0.1
Lepidozona spp.	0.3	0.5	-	-	-	-	-	-	<0.1
Archidoris spp.	-	-	-	-	0.3	0.5	-	-	<0.1
Homolo. luridum/Lirularia succincta	-	-	-	-	-	-	0.3	0.5	<0.1
Invertebrate Cover									
Porifera unid. (encrusting)	0.3	0.3	<0.1	<.01	0.1	0.3	<0.1	<.01	<0.1
Clathrina spp.	0.2	0.3	-	-	-	-	<0.1	<.01	<0.1
tunicates, colonial/social unid.	<0.1	<.01	<0.1	<.01	<0.1	<.01	<0.1	<.01	<0.1
Spirorbidae	<0.1	<.01	<0.1	<.01	<0.1	<.01	<0.1	<.01	<0.1
Abiet./Sertularella/Sertularia	-	-	-	-	<0.1	<.01	<0.1	<.01	<0.1
Bryozoa, unid. (encrusting)	<0.1	<.01	-	-	<0.1	<.01	-	-	<0.1
Salmacina tribranchiata	-	-	-	-	<0.1	<.01	-	-	<0.1

Table G5. Subtidal Invertebrates (SFQ Method) Survey Means (abundance per 0.25 m^2 ; percent cover) Standard Deviations and Annual Mean, South Diablo Cove Station SDC 2 -3m.

	Survey	124		125		126		127		
	Survey Date	11-Feb-04		27-May-04		3-Sep-04		13-Oct-04		
Taxon		Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Invertebrate Counts										
Phragmatopoma californica		3.0	4.8	3.5	7.0	3.0	6.0	38.0	26.8	11.9
Sipuncula unid.		3.5	1.7	3.5	2.4	2.3	1.0	6.8	2.6	4.0
Pista spp.		0.5	0.6	0.8	1.5	9.0	3.5	4.3	2.6	3.6
Ophiactis simplex		4.3	5.7	1.3	2.5	-	-	6.5	5.5	3.0
Ophiothrix spp.		4.8	6.9	0.8	1.0	2.8	1.7	0.5	1.0	2.2
Chaetopteridae		-	-	1.5	3.0	2.0	4.0	3.8	3.0	1.8
Serpulidae unid.		0.5	0.6	1.0	0.8	1.8	1.7	0.3	0.5	0.9
Pelecypoda unid. boring		0.8	1.0	-	-	-	-	2.0	1.6	0.7
Ophiuroidea unid.		-	-	-	-	1.5	1.7	1.3	1.3	0.7
Lissothuria nutriens		-	-	0.5	1.0	0.8	1.0	1.3	2.5	0.6
Pagurus spp.		-	-	-	-	0.5	1.0	1.3	2.5	0.4
Mitra idae		0.3	0.5	0.3	0.5	0.8	1.0	0.5	0.6	0.4
Strongylocentrotus purpuratus		0.3	0.5	-	-	0.5	0.6	0.5	1.0	0.3
Balanus/Tetraclita spp.		-	-	-	-	-	-	1.3	2.5	0.3
Rictaxis punctocaelatus		-	-	-	-	0.8	1.0	0.5	0.6	0.3
Fissurella volcano		0.8	1.5	-	-	-	-	-	-	0.2
Eupentacta quinquesemita		-	-	-	-	0.8	1.0	-	-	0.2
Alia spp.		-	-	0.3	0.5	-	-	0.3	0.5	0.1
Serpulorbis squamigerus		0.3	0.5	-	-	0.3	0.5	-	-	0.1
Bittium spp.		-	-	-	-	0.3	0.5	0.3	0.5	0.1
Lepidozona spp.		-	-	-	-	-	-	0.5	0.6	0.1
Tegula brunnea		-	-	-	-	0.3	0.5	-	-	<0.1
Crepidula spp.		-	-	-	-	0.3	0.5	-	-	<0.1
Lottia ochracea		0.3	0.5	-	-	-	-	-	-	<0.1
Hermissenda crassicornis		-	-	-	-	-	-	0.3	0.5	<0.1
Polychaeta unid.		-	-	0.3	0.5	-	-	-	-	<0.1
Diopatra ornata		-	-	-	-	0.3	0.5	-	-	<0.1
Halcampa decemtentaculata		0.3	0.5	-	-	-	-	-	-	<0.1
Pisaster giganteus		0.3	0.5	-	-	-	-	-	-	<0.1
Cucumaria spp.		-	-	0.3	0.5	-	-	-	-	<0.1
Mimulus foliatus		-	-	-	-	-	-	0.3	0.5	<0.1
Granulina margaritula		-	-	0.3	0.5	-	-	-	-	<0.1
Mytilidae		-	-	-	-	0.3	0.5	-	-	<0.1
Invertebrate Cover										
Spirorbidae		-	-	<0.1	-	<0.1	-	<0.1	-	<0.1
Porifera unid. (encrusting)		<0.1	<.01	<0.1	<.01	<0.1	<.01	<0.1	<.01	<0.1
Bryozoa, unid. (encrusting)		<0.1	<.01	<0.1	<.01	-	-	<0.1	-	<0.1
tunicates, colonial/social unid.		-	-	-	-	<0.1	<.01	-	-	<0.1
Bryozoa, unid. (erect)		-	-	-	-	<0.1	<.01	-	-	<0.1
Bryozoa, unid. (foliose)		-	-	-	-	-	-	<0.1	<.01	<0.1

Table G6. Subtidal Invertebrates (SFQ Method) Survey Means (abundance per 0.25 m^2 ; percent cover) Standard Deviations and Annual Mean, South Diablo Cove Station SDC 3 -4m.

Survey	124		125		126		127		
Survey Date	12-Mar-04		28-May-04		7-Sep-04		1-Dec-04		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Invertebrate Counts									
Balanophyllia elegans	20 0	11.3	8.8	9.6	8.0	6.6	10.3	10.7	11.8
Pelecypoda unid. boring	15.5	21.1	2.0	2.5	6.0	4.7	1.8	2.1	6.3
Strongylocentrotus purpuratus	8.3	9.1	4.5	5.3	1.5	1.9	2.5	1.9	4.2
Ophiactis simplex	-	-	3.0	3.8	3.8	2.6	-	-	1.7
Anthopleura elegantissima	2.3	1.5	2.0	1.2	1.0	0.8	1.3	1.0	1.6
Pagurus spp.	0.3	0.5	0.5	1.0	3.0	2.6	0.3	0.5	1.0
Anthozoa unid.	0.8	1.5	1.5	1.7	0.8	1.0	-	-	0.8
Serpulorbis squamigerus	1.0	1.4	1.0	2.0	0.3	0.5	0.5	1.0	0.7
Pista spp.	0.8	1.0	-	-	0.3	0.5	1.8	1.7	0.7
Diopatra ornata	1.0	0.8	-	-	0.5	1.0	1.0	1.2	0.6
Dendropoma spp.	2.5	0.6	-	-	-	-	-	-	0.6
Serpulidae unid.	1.0	0.8	0.3	0.5	0.5	1.0	0.5	0.6	0.6
Paracyathus stearnsii	1.0	2.0	0.3	0.5	0.5	1.0	0.5	1.0	0.6
Mitra idae	1.3	2.5	0.3	0.5	-	-	0.5	0.6	0.5
Phragmatopoma californica	1.8	2.4	-	-	-	-	-	-	0.4
Chaetopteridae	0.5	1.0	-	-	0.5	1.0	0.8	1.5	0.4
Acmaea mitra	1.5	1.3	-	-	-	-	-	-	0.4
Crepidula spp.	0.5	1.0	-	-	-	-	1.0	2.0	0.4
Tonicella lineata	0.3	0.5	0.3	0.5	0.5	0.6	-	-	0.3
Cucumaria spp.	-	-	0.8	1.0	0.3	0.5	-	-	0.3
Ophiothrix spp.	-	-	-	-	1.0	2.0	-	-	0.3
Alia spp.	0.3	0.5	-	-	-	-	0.5	1.0	0.2
Sabellidae	0.5	0.6	-	-	0.3	0.5	-	-	0.2
Lebbeus lagunae	-	-	-	-	0.5	0.6	0.3	0.5	0.2
Anthopleura artemisia	-	-	-	-	0.3	0.5	0.3	0.5	0.1
Tethya aurantia	0.3	0.5	0.3	0.5	-	-	-	-	0.1
Ophiuroidea unid.	-	-	-	-	0.5	1.0	-	-	0.1
Pugettia spp.	-	-	0.3	0.5	-	-	0.3	0.5	0.1
Ophioplocus spp.	-	-	-	-	0.3	0.5	0.3	0.5	0.1
Fissurella volcano	-	-	-	-	-	-	0.3	0.5	<0.1
Lithopoma gibberosum	-	-	-	-	0.3	0.5	-	-	<0.1
Hermissenda crassicornis	-	-	-	-	0.3	0.5	-	-	<0.1
Pycnogonida unid.	-	-	-	-	0.3	0.5	-	-	<0.1
Loxorhynchus spp.	-	-	-	-	0.3	0.5	-	-	<0.1
Ischnochitonidae	-	-	0.3	0.5	-	-	-	-	<0.1
Pisaster giganteus	-	-	-	-	-	-	0.3	0.5	<0.1
Eudistylia polymorpha	-	-	0.3	0.5	-	-	-	-	<0.1
Isopoda unid.	-	-	-	-	0.3	0.5	-	-	<0.1
Amphissa spp.	0.3	0.5	-	-	-	-	-	-	<0.1
Sipuncula unid.	0.3	0.5	-	-	-	-	-	-	<0.1
Invertebrate Cover									
Porifera unid. (encrusting)	0.6	0.8	0.1	0.3	0.1	0.3	-	-	0.2
Bryozoa, unid. (encrusting)	0.6	1.0	<0.1	<.01	<0.1	-	<0.1	-	0.2
tunicates, colonial/social unid.	0.3	0.7	<0.1	0.1	<0.1	<.01	<0.1	<.01	<0.1
Hymenamphiastra cyanocrypta	0.3	0.4	<0.1	0.1	-	-	<0.1	<.01	<0.1
Spirorbidae	<0.1	<.01	<0.1	<.01	<0.1	-	<0.1	<.01	<0.1
Hydroida	<0.1	<.01	-	-	-	-	-	-	<0.1
Salmacina tribranchiata	-	-	<0.1	<.01	-	-	-	-	<0.1

Table G7. Subtidal Invertebrates (SFQ Method) Survey Means (abundance per 0.25 m^2; percent cover) Standard Deviations and Annual Mean, South Control Station SC1 -3m.

Taxon	Survey	124		125		126		127		Annual
	Survey Date	13-Feb-04		17-May-04		20-Aug-04		5-Feb-05		
		Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean
Invertebrate Counts										
Phragmatopoma californica		13.8	27.5	4.5	5.3	38.8	57.9	67.8	105.8	31.2
Homolo. luridum/Lirularia succincta		3.5	0.6	6.8	4.3	1.0	0.8	5.5	5.7	4.2
Tegula brunnea		2.8	3.6	1.3	2.5	2.5	4.4	4.5	2.1	2.8
Pagurus spp.		0.5	1.0	2.5	2.5	2.0	2.5	4.8	3.6	2.4
Dendropoma spp.		-	-	0.5	1.0	8.0	11.8	-	-	2.1
Serpulidae unid.		0.5	0.6	-	-	5.5	6.9	1.8	2.4	1.9
Pugettia spp.		2.5	3.3	0.5	1.0	-	-	2.8	3.8	1.4
Tonicella lineata		2.0	1.4	1.0	0.8	1.0	0.8	0.5	0.6	1.1
Balanus/Tetraclita spp.		1.0	2.0	-	-	2.5	3.7	0.8	1.0	1.1
Epiactis prolifera		-	-	1.0	1.2	1.3	1.5	1.0	0.8	0.8
Balanophyllia elegans		0.3	0.5	0.8	1.0	0.8	1.0	1.3	1.9	0.8
Anthopleura elegantissima		1.0	1.4	0.5	0.6	0.5	0.6	0.8	1.0	0.7
Lottia instabilis		0.3	0.5	1.0	1.4	1.3	2.5	-	-	0.6
Acmaeidae unid.		2.0	4.0	-	-	-	-	-	-	0.5
Pelecypoda unid. boring		-	-	0.5	1.0	1.3	2.5	0.3	0.5	0.5
Crepidula spp.		-	-	0.3	0.5	-	-	1.3	1.3	0.4
Cryptolithodes sitchensis		-	-	-	-	0.3	0.5	1.3	1.9	0.4
Pista spp.		-	-	-	-	1.3	1.5	-	-	0.3
Leucandra heathi		-	-	-	-	1.3	2.5	-	-	0.3
Discurria insessa		-	-	-	-	-	-	1.0	1.2	0.3
Pycnopodia helianthoides		0.3	0.5	0.5	0.6	-	-	0.3	0.5	0.3
Pseudomelatoma torosa		-	-	0.3	0.5	0.3	0.5	0.5	1.0	0.3
Mimulus foliatus		0.3	0.5	-	-	-	-	0.8	1.0	0.3
Leptasterias spp.		-	-	0.3	0.5	-	-	0.5	1.0	0.2
Lepidozona spp.		0.5	1.0	0.3	0.5	-	-	-	-	0.2
Acmaea mitra		-	-	0.3	0.5	-	-	0.3	0.5	0.1
Cancer antennarius		-	-	-	-	-	-	0.5	1.0	0.1
Asterina miniata		-	-	0.3	0.5	0.3	0.5	-	-	0.1
Fusinus luteopictus		-	-	-	-	-	-	0.5	0.6	0.1
Ocenebra spp.		-	-	-	-	-	-	0.5	0.6	0.1
Rostanga pulchra		0.5	0.6	-	-	-	-	-	-	0.1
Pisaster/Henricia (juv.)		-	-	-	-	-	-	0.5	1.0	0.1
Alia spp.		0.3	0.5	-	-	-	-	-	-	<0.1
Mopalia spp.		-	-	-	-	0.3	0.5	-	-	<0.1
Pododesmus cepio		0.3	0.5	-	-	-	-	-	-	<0.1
Lottia ochracea		-	-	-	-	-	-	0.3	0.5	<0.1
Nitidiscala/Opalia spp.		-	-	-	-	-	-	0.3	0.5	<0.1
Diopatra ornata		-	-	0.3	0.5	-	-	-	-	<0.1
Henricia leviuscula		0.3	0.5	-	-	-	-	-	-	<0.1
Idotea spp.		-	-	-	-	-	-	0.3	0.5	<0.1
Halcampa decemtentaculata		-	-	0.3	0.5	-	-	-	-	<0.1
Doriopsilla albopunctata		-	-	0.3	0.5	-	-	-	-	<0.1
Mitra idae		-	-	-	-	-	-	0.3	0.5	<0.1
Phidiana hiltoni		-	-	0.3	0.5	-	-	-	-	<0.1
Ischnochitonidae		0.3	0.5	-	-	-	-	-	-	<0.1
Flabellina trilineata		-	-	-	-	0.3	0.5	-	-	<0.1

(continued)

Table G7 (continued). Subtidal Invertebrates (SFQ Method) Survey Means (abundance per 0.25 m^2; percent cover) Standard Deviations and Annual Mean, South Control Station SC 1-3m.

Survey	124		125		126		127		
Survey Date	13-Feb-04		17-May-04		20-Aug-04		5-Feb-05		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Invertebrate Cover									
Porifera unid. (encrusting)	0.5	0.4	0.1	0.2	1.0	1.0	0.1	0.2	0.4
tunicates, colonial/social unid.	<0.1	0.1	0.2	0.3	0.8	0.2	<0.1	<.01	0.3
Bryozoa, unid. (encrusting)	<0.1	<.01	0.1	0.3	0.3	0.2	<0.1	<.01	<0.1
Salmacina tribranchiata	<0.1	<.01	-	-	0.1	0.3	0.1	0.3	<0.1
Spirorbidae	<0.1	<.01	<0.1	<.01	<0.1	<.01	<0.1	<.01	<0.1
Abiet./Sertularella/Sertularia	-	-	<0.1	<.01	-	-	<0.1	<.01	<0.1
Aglaophenia spp.	-	-	-	-	-	-	<0.1	<.01	<0.1

Table G8. Subtidal Invertebrates (SFQ Method) Survey Means (abundance per 0.25 m^2 ; percent cover) Standard Deviations and Annual Mean, South Control Station SC 2 -6m.

	Survey	124		125		126		127		
	Survey Date	23-Mar-04		25-May-04		24-Aug-04		4-Feb-05		
Taxon		Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Invertebrate Counts										
Balanus/Tetraclita spp.		16.3	32.5	33.8	65.5	249.8	499.5			74.9
Balanophyllia elegans		62.5	47.6	25.5	18.9	50.3	34.7	70.5	50.2	52.2
Corynactis californica		38.3	35.6	12.3	9.8	42.5	59.0	58.3	57.7	37.8
Tetraclita rubescens		-	-			-	-	112.0	218.7	28.0
Phragmatopoma californica		11.3	11.1	5.5	2.7	2.5	5.0	30.8	39.6	12.5
Serpulorbis squamigerus		8.3	10.5	2.5	1.7	7.5	13.1	8.8	14.9	6.8
Dendropoma spp.		5.0	8.7	-	-	2.5	5.0	5.3	7.5	3.2
Serpulidae unid.		3.5	3.1	1.3	2.5	1.5	1.9	3.3	2.5	2.4
Lottia instabilis		2.0	2.5	2.0	1.6	3.8	4.9	0.8	1.5	2.1
Tonicella lineata		3.5	2.7	2.0	1.4	1.5	1.7	1.3	1.3	2.1
Homolo. luridum/Lirularia succincta		2.3	3.2	2.5	0.6	1.3	1.9	1.8	1.7	1.9
Tegula brunnea		2.0	1.8	1.3	1.0	2.0	1.6	0.8	1.5	1.5
Pelecypoda unid. boring		0.8	1.0	1.5	3.0	1.8	2.1	0.8	1.0	1.2
Epiactis prolifera		1.5	2.4	0.5	0.6	0.5	1.0	1.3	1.5	0.9
Ocenebra spp.		1.8	1.5	-	-	1.5	1.3	-	-	0.8
Acmaea mitra		1.3	1.0	0.5	0.6	0.3	0.5	0.8	1.0	0.7
Asterina miniata		0.5	1.0	0.3	0.5	1.3	1.9	0.8	1.0	0.7
Lottia ochracea		0.5	0.6	-	-	0.3	0.5	1.8	2.9	0.6
Pisaster/Henricia (juv.)		0.3	0.5	0.5	0.6	-	-	1.5	1.3	0.6
Eupentacta quinquesemita		1.0	1.2	-	-	0.8	1.5	-	-	0.4
Pagurus spp.		0.5	1.0	0.5	1.0	-	-	0.5	0.6	0.4
Sabellidae		0.8	1.0	-	-	-	-	0.5	0.6	0.3
Strongylocentrotus purpuratus		0.3	0.5	0.5	1.0	0.5	0.6	-	-	0.3
Pseudomelatoma torosa		0.3	0.5	0.5	1.0	-	-	0.3	0.5	0.3
Pugettia spp.		0.5	1.0	0.3	0.5	0.3	0.5	-	-	0.3
Ceratostoma foliatum		-	-	-	-	-	-	1.0	2.0	0.3
Amphissa spp.		-	-	0.3	0.5	0.8	1.0	-	-	0.3
Chaetopteridae		0.8	1.0	-	-	-	-	0.3	0.5	0.3
Archidoris spp.		-	-	-	-	0.5	1.0	0.5	0.6	0.3
Anthopleura elegantissima		0.3	0.5	0.5	0.6	-	-	-	-	0.2
Diodora spp.		0.3	0.5	-	-	0.5	1.0	-	-	0.2
Crepidula spp.		0.5	0.6	-	-	-	-	0.3	0.5	0.2
tunicate, solitary unid.		-	-	-	-	0.3	0.5	0.5	0.6	0.2
Mitra idae		0.3	0.5	0.3	0.5	-	-	0.3	0.5	0.2
Cucumaria spp.		-	-	0.8	0.5	-	-	-	-	0.2
Mimulus foliatus		-	-	-	-	0.3	0.5	0.5	0.6	0.2
Tegula pulligo		-	-	-	-	0.5	0.6	-	-	0.1
Placiphorella velata		-	-	-	-	0.3	0.5	0.3	0.5	0.1
Sipuncula unid.		-	-	-	-	0.5	0.6	-	-	0.1
Cadlina spp.		0.3	0.5	-	-	-	-	0.3	0.5	0.1
Anthopleura artemisia		0.3	0.5	-	-	-	-	-	-	<0.1
Anthozoa unid.		-	-	-	-	-	-	0.3	0.5	<0.1
Calliostoma ligatum		-	-	0.3	0.5	-	-	-	-	<0.1
Pododesmus cepio		0.3	0.5	-	-	-	-	-	-	<0.1
Pycnopodia helianthoides		-	-	0.3	0.5	-	-	-	-	<0.1
Loxorhynchus spp.		0.3	0.5	-	-	-	-	-	-	<0.1
Tethya aurantia		0.3	0.5	-	-	-	-	-	-	<0.1

(continued)

Table G8 (continued). Subtidal Invertebrates (SFQ Method) Survey Means (abundance per 0.25 m^2; percent cover) Standard Deviations and Annual Mean, South Control Station SC 2 -6m.

Survey	124		125		126		127		
Survey Date	23-Mar-04		25-May-04		24-Aug-04		4-Feb-05		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Invertebrate Counts (continued)									
Fusinus luteopictus	-	-	-	-	-	-	0.3	0.5	<0.1
Triopha catalinae	0.3	0.5	-	-	-	-	-	-	<0.1
Ischnochitonidae	-	-	-	-	0.3	0.5	-	-	<0.1
Scyra acutifrons	-	-	-	-	0.3	0.5	-	-	<0.1
Flabellina trilineata	-	-	0.3	0.5	-	-	-	-	<0.1
Lissothuria nutriens	0.3	0.5	-	-	-	-	-	-	<0.1
Melibe leonina	0.3	0.5	-	-	-	-	-	-	<0.1
Invertebrate Cover									
Bryozoa, unid. (encrusting)	2.8	2.4	0.8	0.7	2.1	1.4	3.2	1.1	2.2
Hymenamphiastra cyanocrypta	2.0	2.9	0.4	0.5	2.2	2.5	3.9	4.5	2.1
Porifera unid. (encrusting)	0.6	0.5	0.3	0.2	2.0	1.6	1.7	1.2	1.2
Bryozoa, unid. (erect)	0.9	0.9	0.1	0.3	-	-	1.6	1.7	0.7
tunicates, colonial/social unid.	0.1	0.2	<0.1	-	0.1	0.3	<0.1	-	<0.1
Hydroida	<0.1	0.1	<0.1	<.01	0.2	0.4	<0.1	-	<0.1
Bryozoa, unid. (foliose)	<0.1	0.1	-	-	<0.1	<.01	0.1	0.2	<0.1
Spirorbidae	<0.1	-	<0.1	<.01	-	-	<0.1	<.01	<0.1
Abiet./Sertularella/Sertularia	-	-	-	-	-	-	<0.1	<.01	<0.1

Appendix H

Subtidal Fish Results
(SFO Method)

Table H1. Subtidal Fishes Survey Means (abundance per 50x4 m transect), Standard Deviations and Annual Means, Field's Cove Stations (FC FO-1, FC FO-2, FC FO-3).

Survey	122		123		124		125		
Survey Date	12-Apr-04		29-Jun-04		5-Oct-04		Not Sampled		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Midwater									
Oxyjulis californica	10.8	13.6	4.1	6.9	1.9	2.3			5.6
Oxyjulis californica (juv.)	-	-	14.5	30.0	1.8	2.5			5.4
Brachyistius frenatus	2.6	6.3	-	-	0.5	1.0			1.0
Atherinopsis californiensis	-	-	-	-	2.1	4.4			0.7
Sebastes serranoides/S. flavidus (yoy)	-	-	1.6	2.5	-	-			0.5
Aulorhynchus flavidus	-	-	0.2	0.3	1.3	2.4			0.5
Aulorhynchus flavidus (juv.)	-	-	0.8	2.0	-	-			0.3
Damalichthys vacca	<.1	0.2	0.5	0.6	0.2	0.4			0.3
Sebastes mystinus	<.1	0.2	0.5	0.8	-	-			0.2
Rhacochilus toxotes	0.4	1.0	-	-	-	-			0.1
Embiotoca lateralis	0.3	0.3	-	-	0.2	0.4			0.1
Embiotoca jacksoni	-	-	0.3	0.4	-	-			<.1
Embiotoca lateralis (juv.)	0.2	0.4	-	-	-	-			<.1
Sebastes melanops (yoy)	-	-	0.2	0.4	-	-			<.1
Sebastes serranoides	-	-	-	-	<.1	0.2			<.1
Sebastes atrovirens	-	-	<.1	0.2	-	-			<.1
Damalichthys vacca (juv.)	-	-	<.1	0.2	-	-			<.1
Embiotoca jacksoni (juv.)	-	-	<.1	0.2	-	-			<.1
Triakis semifasciata	-	-	<.1	0.2	-	-			<.1
Benthic									
Oxyjulis californica	12.4	28.2	<.1	0.2	1.8	1.3			4.8
Oxyjulis californica (juv.)	-	-	6.3	11.2	0.2	0.3			2.1
Oxylebius pictus	0.9	0.5	1.7	1.3	1.7	1.5			1.4
Embiotoca jacksoni	1.3	0.3	1.0	1.8	0.8	0.9			1.0
Embiotoca lateralis	1.2	0.9	0.5	0.6	1.0	1.2			0.9
Sebastes chrysomelas	0.4	0.4	0.8	0.8	1.1	0.4			0.8
Scorpaenichthys marmoratus	0.5	0.5	0.4	0.4	0.8	0.8			0.6
Damalichthys vacca	0.5	0.5	0.9	1.2	0.3	0.6			0.6
Embiotoca lateralis (juv.)	0.3	0.4	0.3	0.6	0.8	0.7			0.4
Aulorhynchus flavidus (juv.)	-	-	1.0	2.5	<.1	0.2			0.4
Gibbonsia spp.	0.3	0.3	0.3	0.5	0.3	0.3			0.3
Embiotoca jacksoni (juv.)	0.2	0.4	0.5	0.8	0.3	0.6			0.3
Rhacochilus toxotes	0.3	0.4	<.1	0.2	0.5	0.6			0.3
Sebastes chrysomelas (juv.)	-	-	0.5	0.6	0.2	0.3			0.2
Hypsurus caryi	-	-	-	-	0.6	1.4			0.2
Cebidichthys violaceus	<.1	0.2	0.2	0.3	0.3	0.4			0.2
Sebastes rastrelliger	0.3	0.4	0.2	0.4	<.1	0.2			0.2
Damalichthys vacca (juv.)	<.1	0.2	<.1	0.2	0.3	0.6			0.2
Brachyistius frenatus	-	-	<.1	0.2	0.3	0.4			0.1
Sebastes mystinus	-	-	0.3	0.8	-	-			0.1
Hypsurus caryi (juv.)	-	-	-	-	0.3	0.6			<.1
Orthonopias triacis	0.2	0.4	-	-	<.1	0.2			<.1
Aulorhynchus flavidus	0.2	0.4	-	-	-	-			<.1
Hexagrammos decagrammus	<.1	0.2	-	-	<.1	0.2			<.1
Sebastes atrovirens	<.1	0.2	-	-	<.1	0.2			<.1
Artedius spp.	<.1	0.2	-	-	<.1	0.2			<.1
Triakis semifasciata	<.1	0.2	<.1	0.2	-	-			<.1
Ophiodon elongatus	-	-	<.1	0.2	-	-			<.1
Embiotocidae unid. (juv.)	-	-	<.1	0.2	-	-			<.1
Sebastes serranoides/S. flavidus (yoy)	-	-	-	-	<.1	0.2			<.1
Sebastes chrysomelas/S. carnatus (yoy)	-	-	-	-	<.1	0.2			<.1

Table H2. Subtidal Fishes Survey Means (abundance per 50x4 m transect), Standard Deviations and Annual Means, North Diablo Cove Stations (NDC FO-1, NDC FO-2, NDC FO-3).

Survey	122		123		124		125		
Survey Date	12-Apr-04		29-Jun-04		1-Oct-04		Not Sampled		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Midwater									
Oxyjulis californica	5.7	6.3	2.8	3.3	1.6	1.2			3.4
Atherinopsis californiensis	-	-	-	-	4.2	6.3			1.4
Brachyistius frenatus (juv.)	-	-	3.3	4.1	<.1	0.2			1.1
larval/post-larval fish, unid.	-	-	2.5	6.1	-	-			0.8
Brachyistius frenatus	-	-	1.1	1.0	1.3	1.5			0.8
Atherinidae unid.	-	-	-	-	1.7	2.6			0.6
Embiotoca jacksoni	0.8	0.9	0.3	0.4	0.5	0.6			0.5
Oxyjulis californica (juv.)	0.8	1.8	0.6	1.4	<.1	0.2			0.5
Girella nigricans	-	-	<.1	0.2	1.0	2.0			0.4
Triakis semifasciata	0.4	0.6	0.2	0.4	<.1	0.2			0.2
Myliobatis californica	-	-	0.2	0.3	0.4	0.5			0.2
Damalichthys vacca	<.1	0.2	0.3	0.3	0.2	0.3			0.2
Sebastes atrovirens	<.1	0.2	0.2	0.4	-	-			<.1
Embiotoca lateralis	0.2	0.4	-	-	-	-			<.1
Gibbonsia spp.	-	-	-	-	<.1	0.2			<.1
Damalichthys vacca (juv.)	-	-	-	-	<.1	0.2			<.1
Embiotoca jacksoni (juv.)	-	-	<.1	0.2	-	-			<.1
Paralabrax clathratus	-	-	<.1	0.2	-	-			<.1
Benthic									
Oxyjulis californica	24.6	39.2	4.9	3.7	3.8	2.2			11.1
Embiotoca jacksoni	6.3	1.9	4.8	2.9	2.3	1.0			4.5
Damalichthys vacca	4.3	4.8	2.1	1.1	0.6	0.2			2.3
Damalichthys vacca (juv.)	<.1	0.2	1.9	1.9	4.0	4.6			2.0
Coryphopterus nicholsi	2.9	1.4	1.0	0.6	1.5	1.0			1.8
Rhacochilus toxotes	4.5	6.4	0.2	0.3	-	-			1.6
Brachyistius frenatus	2.6	4.1	1.6	1.2	0.3	0.4			1.5
Embiotoca jacksoni (juv.)	0.7	0.8	1.9	1.5	1.4	0.8			1.3
Oxylebius pictus	1.1	0.9	1.1	1.3	1.1	0.7			1.1
Embiotoca lateralis	1.3	1.2	0.7	0.9	0.6	0.7			0.8
Girella nigricans	1.2	1.7	0.5	1.0	0.5	0.8			0.7
Oxyjulis californica (juv.)	1.4	2.0	<.1	0.2	0.2	0.3			0.6
Sebastes serranoides/S. flavidus (yoy)	-	-	1.1	1.9	0.3	0.6			0.4
Sebastes chrysomelas	<.1	0.2	0.9	0.6	<.1	0.2			0.4
Embiotoca lateralis (juv.)	0.2	0.3	-	-	0.8	0.8			0.3
Sebastes chrysomelas (juv.)	0.5	0.8	0.3	0.4	-	-			0.3
Sebastes atrovirens	0.6	1.4	<.1	0.2	-	-			0.2
Atherinopsis californiensis	-	-	-	-	0.7	1.6			0.2
Sebastes serranoides	0.4	1.0	-	-	-	-			0.1
Scorpaenichthys marmoratus	0.2	0.3	<.1	0.2	0.2	0.4			0.1
Triakis semifasciata	0.2	0.4	<.1	0.2	<.1	0.2			0.1
Brachyistius frenatus (juv.)	-	-	<.1	0.2	0.3	0.4			0.1
Gibbonsia spp.	-	-	<.1	0.2	0.2	0.4			<.1
Ophiodon elongatus	<.1	0.2	-	-	0.2	0.3			<.1
Artedius spp.	-	-	-	-	0.3	0.3			<.1
Sebastes rastrelliger	-	-	<.1	0.2	<.1	0.2			<.1
Myliobatis californica	-	-	-	-	0.2	0.4			<.1
Orthonopias triacis	<.1	0.2	-	-	-	-			<.1
Cebidichthys violaceus	-	-	<.1	0.2	-	-			<.1
Semicossyphus pulcher	-	-	<.1	0.2	-	-			<.1

Table H3. Subtidal Fishes Survey Means (abundance per 50x4 m transect), Standard Deviations and Annual Means, South Diablo Cove Stations (SDC FO-1, SDC FO-2, SDC FO-3).

Survey	122		123		124		125		
Survey Date	13-Apr-04		30-Jun-04		1-Oct-04		30-Nov-04		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Midwater									
Atherinidae unid.	-	-	54.2	100.5	-	-	-	-	13.5
Oxyjulis californica (juv.)	-	-	-	-	12.3	29.5	-	-	3.1
Brachyistius frenatus	2.7	4.7	0.8	1.4	3.7	4.4	-	-	1.8
Atherinopsis californiensis	-	-	0.4	0.7	2.9	3.4	2.7	4.6	1.5
Brachyistius frenatus (juv.)	-	-	1.0	1.2	1.3	2.6	-	-	0.6
Aulorhynchus flavidus (juv.)	-	-	-	-	2.1	5.1	-	-	0.5
Oxyjulis californica	0.6	0.8	0.7	1.2	0.8	1.2	-	-	0.5
Damalichthys vacca	<.1	0.2	<.1	0.2	0.9	1.6	0.2	0.3	0.3
Sebastes serranoides/S. flavidus (yoy)	-	-	0.6	1.4	-	-	-	-	0.1
Embiotoca jacksoni	-	-	0.2	0.4	0.2	0.3	0.2	0.3	0.1
Sebastes atrovirens	-	-	-	-	0.4	0.8	-	-	0.1
Rhacochilus toxotes	-	-	-	-	<.1	0.2	0.2	0.3	<.1
Embiotoca lateralis	<.1	0.2	<.1	0.2	<.1	0.2	-	-	<.1
Damalichthys vacca (juv.)	-	-	0.3	0.6	-	-	-	-	<.1
Paralabrax clathratus	-	-	-	-	0.2	0.4	-	-	<.1
Myliobatis californica	-	-	-	-	<.1	0.2	-	-	<.1
Sebastes chrysomelas/S. carnatus (yoy)	-	-	<.1	0.2	-	-	-	-	<.1
Benthic									
Aulorhynchus flavidus (juv.)	-	-	3.7	6.5	11.9	14.8	-	-	3.9
Oxyjulis californica (juv.)	-	-	-	-	4.2	6.7	-	-	1.0
Damalichthys vacca	1.0	1.3	1.1	1.1	0.8	0.5	0.3	0.6	0.8
Embiotoca jacksoni	0.7	0.8	1.1	1.2	0.3	0.5	0.8	1.0	0.7
Sebastes serranoides/S. flavidus (yoy)	-	-	2.1	4.0	-	-	-	-	0.5
Sebastes chrysomelas	0.2	0.3	0.3	0.6	0.5	0.6	0.8	0.3	0.5
Embiotoca lateralis	0.2	0.3	0.4	0.7	0.6	0.5	0.3	0.6	0.4
Sebastes melanops (yoy)	-	-	1.1	2.7	-	-	-	-	0.3
Rhacochilus toxotes	<.1	0.2	0.3	0.4	0.3	0.5	0.3	0.6	0.3
Ophiodon elongatus	-	-	0.3	0.4	0.2	0.3	0.5	0.9	0.3
Oxylebius pictus	0.3	0.4	0.3	0.4	<.1	0.2	0.2	0.3	0.2
Gibbonsia spp.	0.2	0.4	0.3	0.3	<.1	0.2	0.2	0.3	0.2
Brachyistius frenatus (juv.)	-	-	-	-	0.3	0.6	0.3	0.6	0.1
Scorpaenichthys marmoratus	<.1	0.2	0.3	0.3	-	-	0.2	0.3	0.1
Coryphopterus nicholsi	<.1	0.2	-	-	<.1	0.2	0.3	0.3	0.1
Pleuronichthys coenosus	<.1	0.2	<.1	0.2	<.1	0.2	0.2	0.3	0.1
Oxyjulis californica	-	-	<.1	0.2	0.3	0.6	-	-	<.1
Brachyistius frenatus	-	-	0.3	0.6	<.1	0.2	-	-	<.1
Citharichthys spp.	-	-	0.3	0.4	<.1	0.2	-	-	<.1
Sebastes rastrelliger	<.1	0.2	-	-	<.1	0.2	-	-	<.1
Scorpaenichthys marmoratus (juv.)	<.1	0.2	<.1	0.2	-	-	-	-	<.1
Artedius spp.	-	-	<.1	0.2	<.1	0.2	-	-	<.1
Aulorhynchus flavidus	-	-	-	-	<.1	0.2	-	-	<.1
Embiotoca lateralis (juv.)	-	-	-	-	<.1	0.2	-	-	<.1
Platyrhinoidis triseriata	-	-	-	-	<.1	0.2	-	-	<.1
Myliobatis californica	-	-	-	-	<.1	0.2	-	-	<.1

Table H4. Subtidal Fishes Survey Means (abundance per 50x4 m transect), Standard Deviations and Annual Means, South Control Stations (SC FO-1, SC FO-2, SC FO-3).

Survey	122		123		124		125		
Survey Date	19-Apr-04		30-Jun-04		4-Oct-04		30-Nov-04		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Midwater									
Aulorhynchus flavidus	-	-	-	-	9.3	22.6	26.7	30.6	9.0
Oxyjulis californica	10.3	17.0	-	-	16.4	23.4	3.7	3.8	7.6
Aulorhynchus flavidus (juv.)	-	-	-	-	10.8	17.1	-	-	2.7
Atherinidae unid.	-	-	-	-	9.5	14.9	-	-	2.4
larval/post-larval fish, unid.	-	-	2.9	7.1	-	-	-	-	0.7
Oxyjulis californica (juv.)	-	-	-	-	2.7	3.3	-	-	0.7
Brachyistius frenatus	1.5	2.6	-	-	<.1	0.2	0.7	0.8	0.6
Sebastes mystinus	-	-	0.2	0.3	-	-	1.0	1.3	0.3
Embiotoca lateralis	0.3	0.6	<.1	0.2	0.8	1.6	-	-	0.3
Damalichthys vacca	-	-	-	-	<.1	0.2	0.5	0.5	0.1
Embiotoca jacksoni	0.3	0.3	-	-	-	-	-	-	<.1
Sebastes atrovirens	-	-	0.3	0.4	-	-	-	-	<.1
Rhacochilus toxotes	-	-	-	-	<.1	0.2	0.2	0.3	<.1
Brachyistius frenatus (juv.)	-	-	-	-	0.3	0.4	-	-	<.1
Sebastes serranoides	-	-	-	-	0.2	0.4	-	-	<.1
Sebastes serranoides/S. flavidus (yoy)	-	-	-	-	<.1	0.2	-	-	<.1
Rimicola muscarum	-	-	<.1	0.2	-	-	-	-	<.1
Benthic									
Oxylebius pictus	1.2	0.3	2.0	1.5	2.7	1.7	1.7	0.8	1.9
Embiotoca lateralis	0.5	0.5	1.3	0.6	1.9	1.2	2.8	2.5	1.6
Sebastes chrysomelas	1.2	0.3	0.9	0.6	0.9	0.4	2.7	0.8	1.4
Embiotoca jacksoni	0.2	0.3	1.0	0.8	2.0	1.1	0.7	0.6	1.0
Hypsurus caryi	-	-	-	-	2.4	3.1	0.2	0.3	0.6
Hexagrammos decagrammus	0.3	0.6	0.5	0.6	0.8	0.7	0.7	0.3	0.6
Oxyjulis californica	-	-	<.1	0.2	1.1	1.7	1.0	1.0	0.5
Orthonopias triacis	0.3	0.6	0.7	0.8	0.5	0.6	0.7	0.8	0.5
Sebastes atrovirens	0.3	0.3	0.3	0.6	0.8	0.7	0.8	0.8	0.5
Damalichthys vacca	0.5	0.9	0.4	0.6	0.5	0.6	0.3	0.3	0.4
Embiotoca lateralis (juv.)	-	-	0.2	0.3	1.1	0.6	0.5	0.9	0.4
Scorpaenichthys marmoratus	0.3	0.6	0.4	0.6	0.6	0.6	0.3	0.3	0.4
Aulorhynchus flavidus (juv.)	-	-	-	-	1.7	4.1	-	-	0.4
Brachyistius frenatus	0.7	0.6	<.1	0.2	0.4	0.6	-	-	0.3
Sebastes chrysomelas (juv.)	-	-	0.3	0.4	0.3	0.3	0.5	0.5	0.3
Sebastes mystinus	0.2	0.3	<.1	0.2	<.1	0.2	0.5	0.5	0.2
Sebastes mystinus (juv.)	0.2	0.3	0.3	0.5	0.3	0.5	-	-	0.2
Artedius spp.	0.2	0.3	<.1	0.2	<.1	0.2	0.5	0.9	0.2
Sebastes melanops (yoy)	-	-	0.8	1.8	-	-	-	-	0.2
Sebastes melanops	-	-	<.1	0.2	0.3	0.4	0.3	0.3	0.2
Hypsurus caryi (juv.)	-	-	-	-	0.5	0.6	-	-	0.1
Embiotoca jacksoni (juv.)	-	-	0.4	0.4	-	-	-	-	0.1
Sebastes rastrelliger	0.2	0.3	<.1	0.2	-	-	0.2	0.3	0.1
Ophiodon elongatus	-	-	0.2	0.3	0.2	0.3	-	-	<.1
Cebidichthys violaceus	-	-	0.3	0.3	<.1	0.2	-	-	<.1
Sebastes atrovirens (yoy)	-	-	-	-	0.3	0.4	-	-	<.1
Gibbonsia spp.	-	-	0.2	0.3	<.1	0.2	-	-	<.1
Sebastes chrysomelas/S. carnatus (yoy)	-	-	-	-	-	-	0.2	0.3	<.1
Gobiesocidae unid. a	-	-	<.1	0.2	-	-	-	-	<.1
Rhacochilus toxotes	-	-	-	-	<.1	0.2	-	-	<.1
Sebastes serranoides	-	-	<.1	0.2	-	-	-	-	<.1
Coryphopterus nicholsi	-	-	<.1	0.2	-	-	-	-	<.1
Hexagrammos decagrammus (juv.)	-	-	<.1	0.2	-	-	-	-	<.1
Ophiodon elongatus (juv.)	-	-	-	-	<.1	0.2	-	-	<.1