Pacific Gas and
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April 30, 2004

Certified/Return Receipt
#7001-0360-0000-2103-5941

PG&E Letter DCL-2004-539

Mr. Roger Briggs, Executive Officer
Central Coast Regional Water Quality Control Board
895 Aerovista Place, Suite 101
San Luis Obispo, CA 93401-7906

Re: PG&E Diablo Canyon Power Plant (DCPP) Submittal -
Receiving Water Monitoring Program 2003 Annual Report

Dear Mr. Briggs:

Enclosed is a copy of the Receiving Water Monitoring Program 2003 Annual Report for DCPP. This report presents the physical and biological data collected in the Receiving Water Monitoring Program during 2003. Per our agreement, no analysis or interpretation of the data were performed. Tables in the appendices provide summary statistics for each task.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, I certify that the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

If you have any questions regarding this report, please contact Drew Squyres of my staff at (805) 545-4439.

Sincerely,

James R. Becker
Vice President-Diablo Canyon Operations and Station Director

2004539/JLK/kmo

JE25

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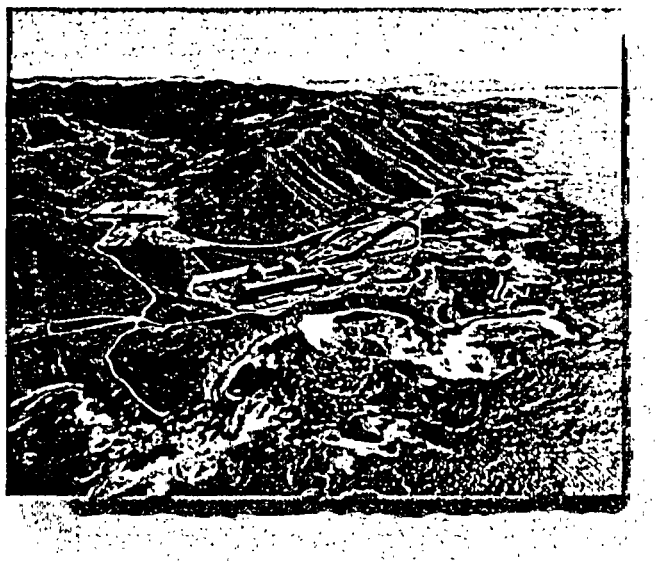
Diablo Canyon Power Plant

NPDES Receiving Water Monitoring Program: 2003 Annual Report



April 30, 2004

Prepared for:

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Diablo Canyon Power Plant
Avila Beach, CA 93424

Prepared by:

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ESLO2004-014

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RWMP Project Personnel

Key Project Personnel 2003 (TENERA):

Principal Investigator/ Project Manager:	Mr. John Steinbeck
Project Scientists:	Mr. Jay Carroll Mr. Chris Ehrler Mr. David Innis Mr. Scott Kimura Mr. Rich Moran Mr. Steve Pengilley Mr. Ben Stephens Mr. Jim Strampe
Project Staff:	Ms. Susan Helberg Mr. John Lindsey

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 through December 2003 from the program's intertidal and subtidal monitoring tasks (**Table 1**). The report sections are divided according to the program's individual tasks. Sampling methods for the intertidal and subtidal studies are followed by the results for the surveys completed in 2003. This report is mainly a data presentation and does not include any analysis or discussion of results. Comprehensive analyses of changes in the marine environment resulting from the DCPP discharge have been presented in Tenera Inc. (1988, 1997, 1999a, 1999b and 2002).

Table 1. Tasks, stations, and frequency of surveys for the DCPP Receiving Water Monitoring Program, 2003.

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

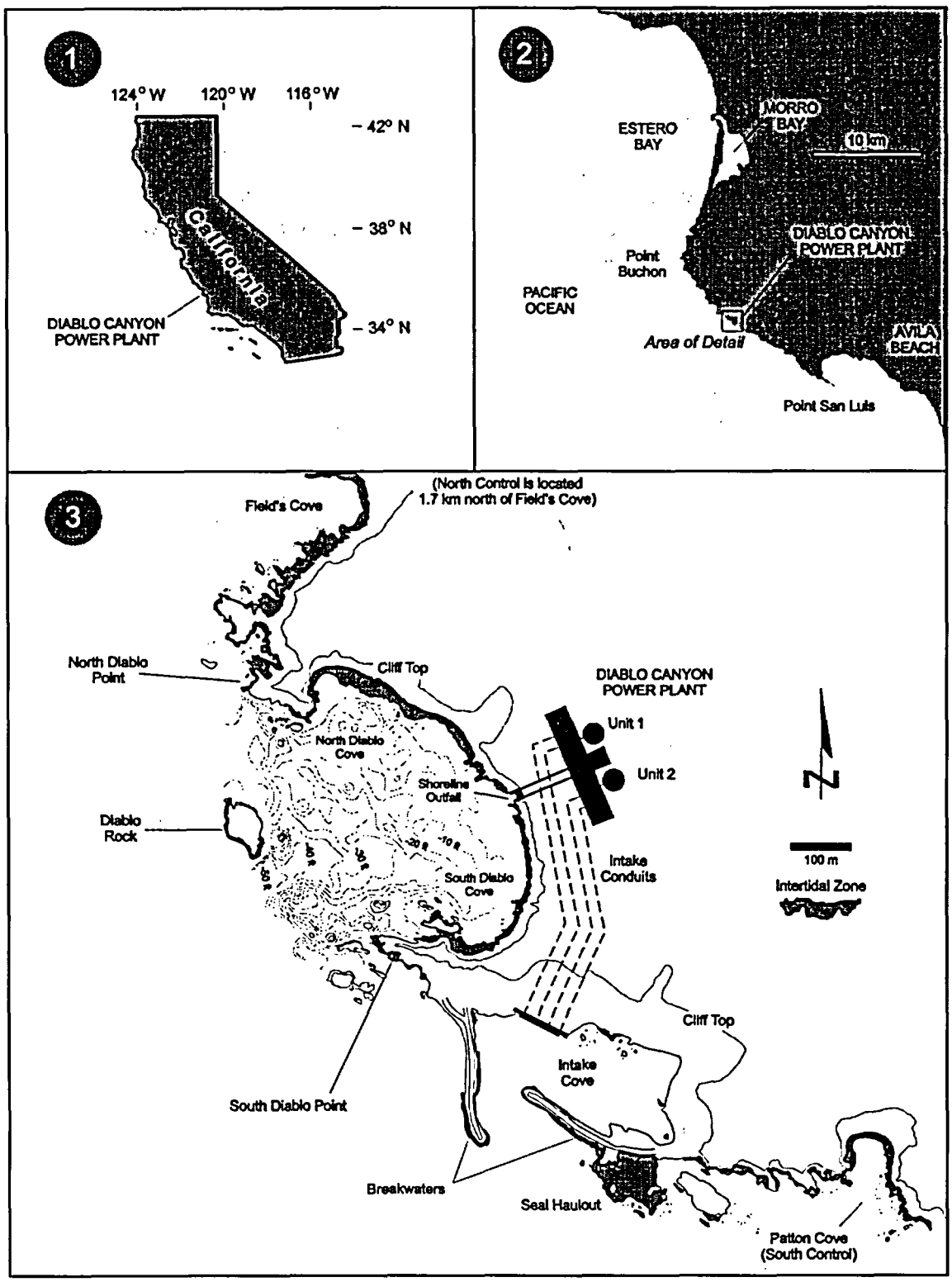

Figure 1. Location of the Diablo Canyon Power Plant.

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 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:

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

Subtidal FC 1 -3m.

The following six control stations measure 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.

Results

Results for all subtidal and intertidal temperature recording stations are presented in **Appendices A & B**. 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.

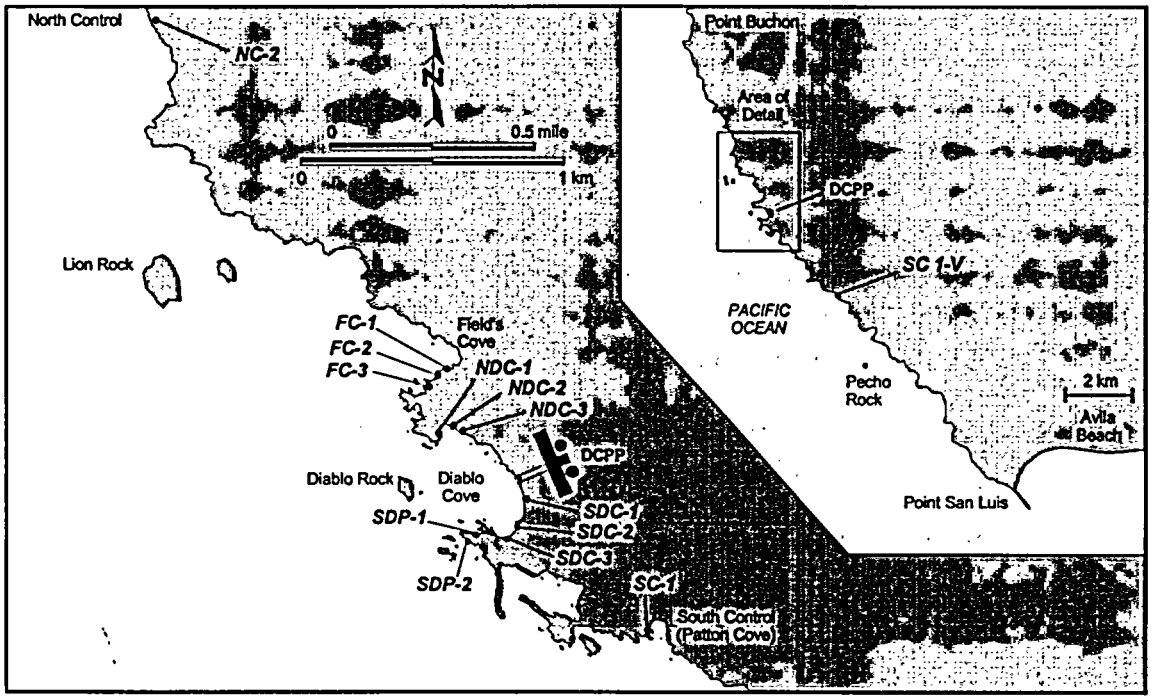

Figure 2. Locations of intertidal temperature monitoring stations.

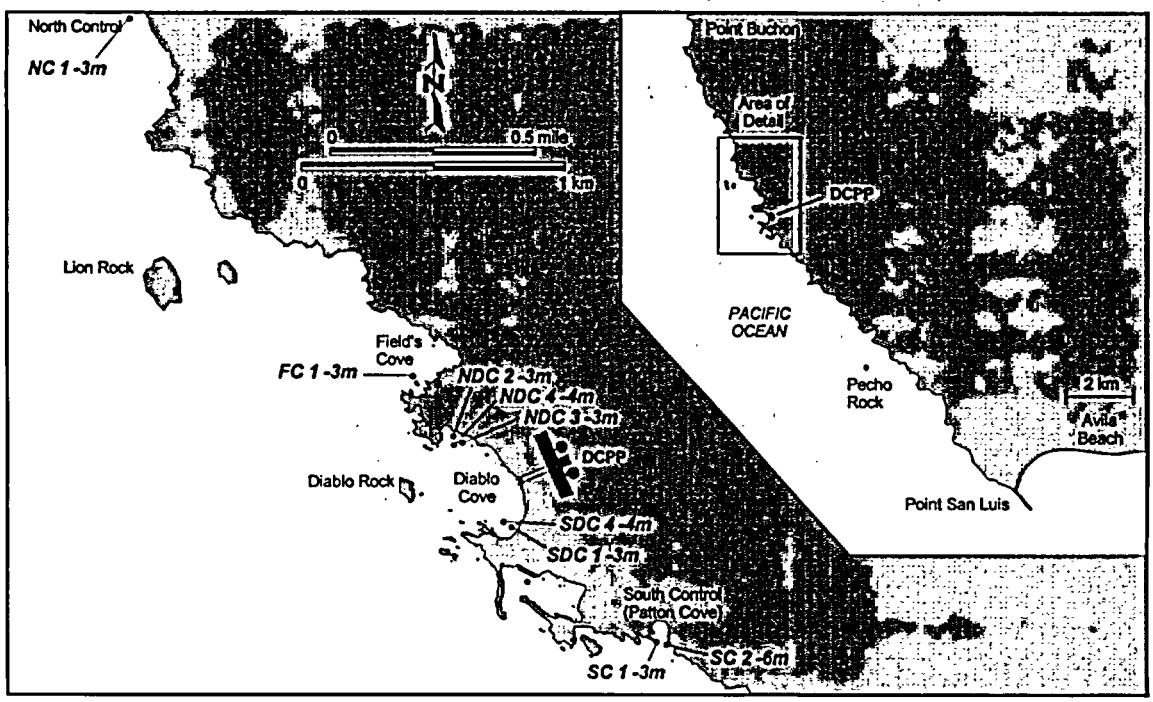

Figure 3. Locations of subtidal temperature monitoring stations.

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 often exceeded 100 percent in a quadrat due to layering of multiple algal taxa on the rocks.

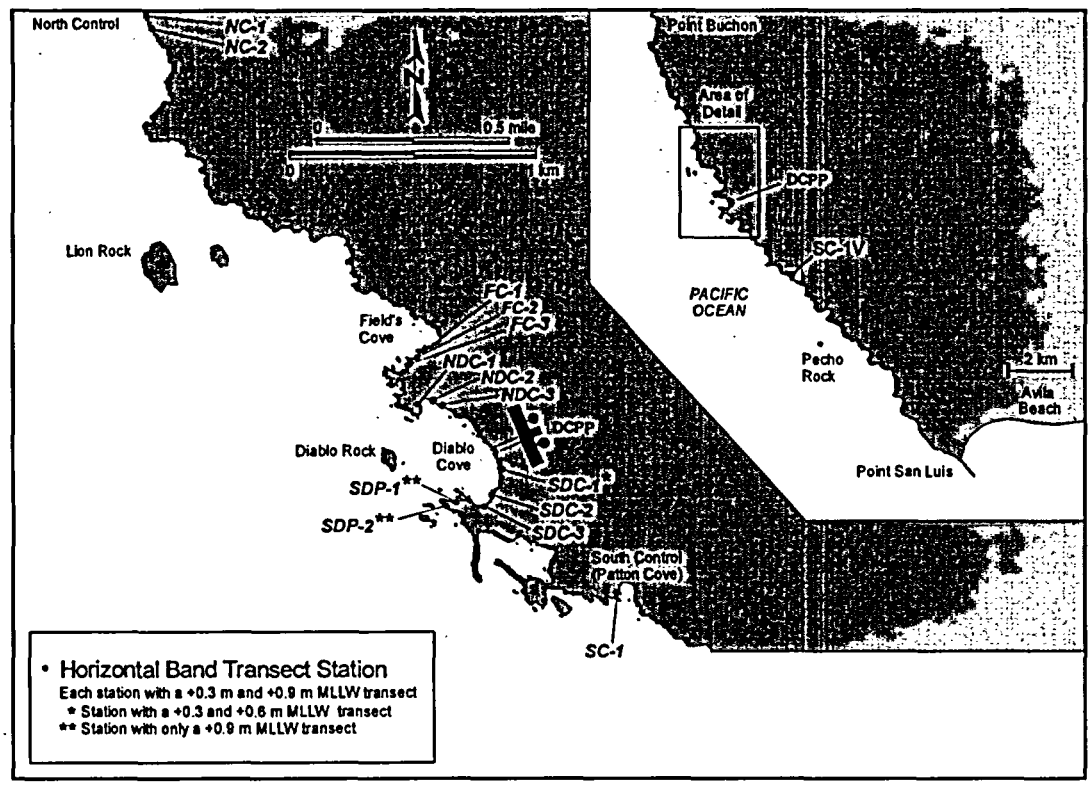

Figure 4. Horizontal band transect stations.

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.

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., *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.

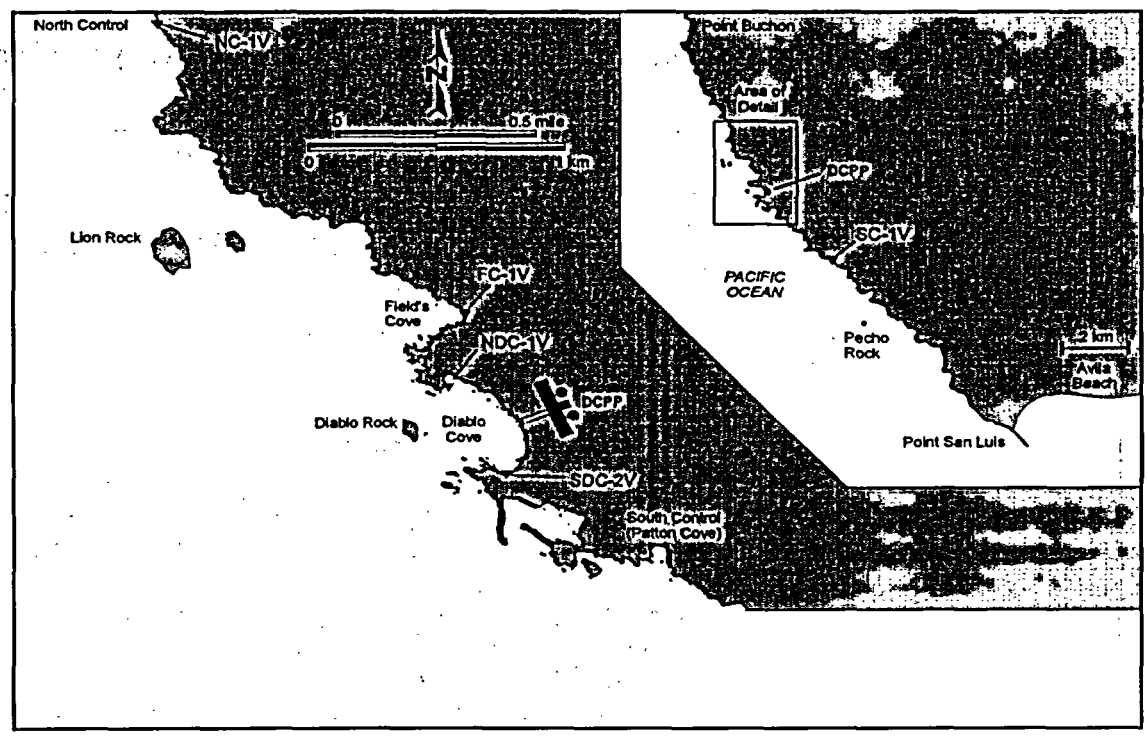

Figure 5. Vertical band transect stations.

5.0 Subtidal Algae and Invertebrates

Benthic Algae and Invertebrates

Subtidal algae and invertebrates were sampled at fixed stations (**Figure 6**) using three sampling methods. Each station was circular with a radius of 3.15 m and a sampling area of 28 m^2. The center 3.1 m^2 area, which contained a mooring wheel, was not sampled to avoid any unnatural algal and invertebrate growth associated with the mooring. Each station was divided into four equal sections, or "arc quadrants", 7 m^2 in area. All stations were established primarily on substrates of mixed bedrock and boulders with small amounts of cobble and sand. Depths ranged from -3 m to -6 m (-10 ft to -20 ft) MLLW.

Counts of individual species of kelp (brown algae of the order Laminariales and Fucales) and macroinvertebrates were estimated in each 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.

Other subtidal algal species are more difficult to count because they are usually small or

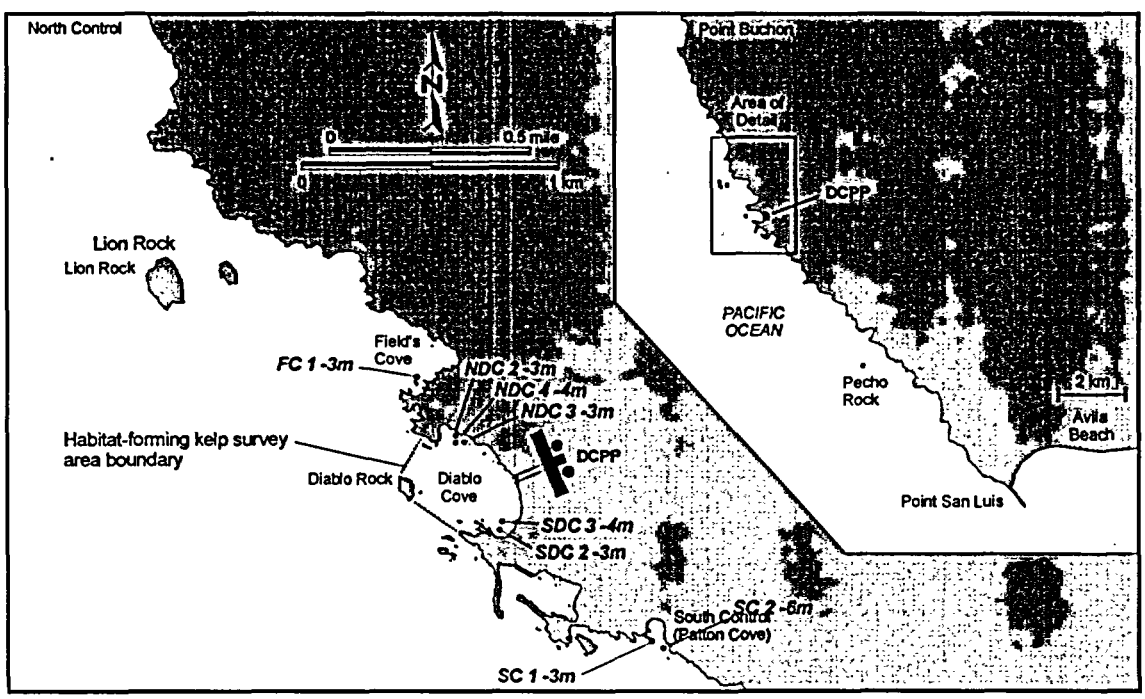

Figure 6. Subtidal benthic stations and habitat-forming kelp survey area in Diablo Cove.

occur as dense clumps. These species are often collectively referred to as the algal understory as they occur beneath kelp fronds. We quantified all understory species at the stations in 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, or 200 points per station, were randomly selected (using a random numbers table) before sampling. For each survey we sampled a unique set of randomly selected points 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.

Smaller motile or attached invertebrates were sampled using the subtidal fixed quadrat (SFQ) method. This task sampled four circular quadrats with an area of 0.25 m^2 at fixed locations within each subtidal station to determine the species composition and abundance of the smaller, cryptic, subtidal invertebrates. 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. Non-encrusting taxa were identified and counted regardless of size. 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, 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 for all the surveys for 2003 by station. (The fourth quarterly survey extended into January 2004, but was included in the 2003 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.

Surface Canopy Kelps

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

We conducted the annual habitat-forming kelp survey for *Nereocystis luetkeana* (bull kelp) and *Macrocystis pyrifera* (giant kelp) on October 28, 2003 for North and South Diablo Cove. The results from the survey showing the location of a single bull kelp plant and the distribution of giant kelp surface canopy in Diablo Cove are presented in **Figure 7**. There are no appendix figures or data tables for this task.

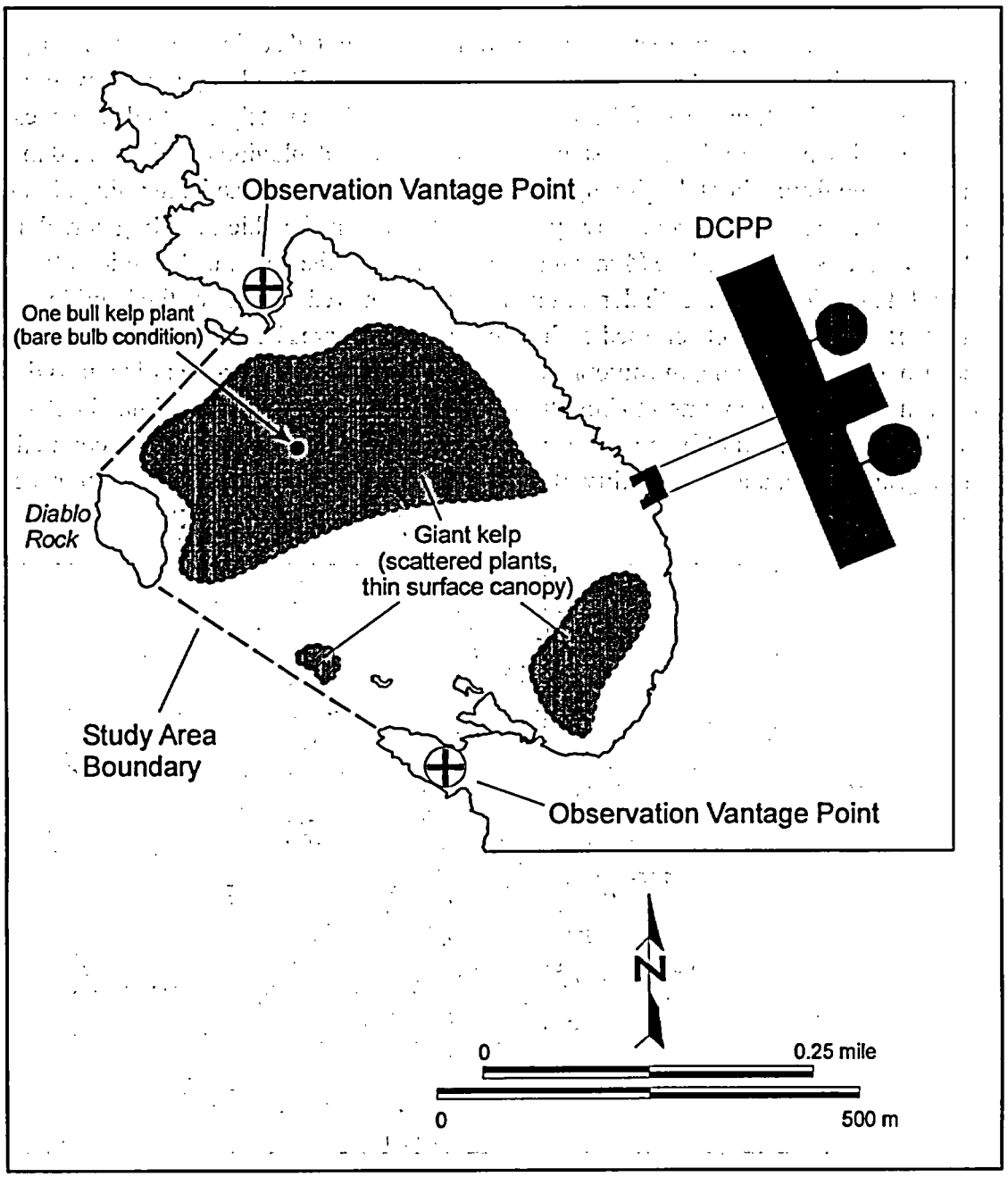

Figure 7. Map of surface bull kelp and giant kelp in Diablo Cove from the habitat-forming kelp survey completed in October 2003.

6.0 Subtidal Fishes

Visual counts of fishes were conducted within fixed subtidal stations shown in (**Figure 8**). Each fish assessment station consisted of a permanent 50 m long transect where midwater and benthic areas of the station were sampled separately due to differences in habitat and fish assemblages. A station was sampled by deploying a weighted 50 m transect line from a boat, beginning at a permanent marker buoy and extending along a pre-determined compass course away from the buoy. The benthic sampling corridor was 2 m to either side of the line (4 m width) and 1 m above the bottom. The midwater sampling corridor was a cylinder 4 m in diameter, centered 3 m above the benthic transect. 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.

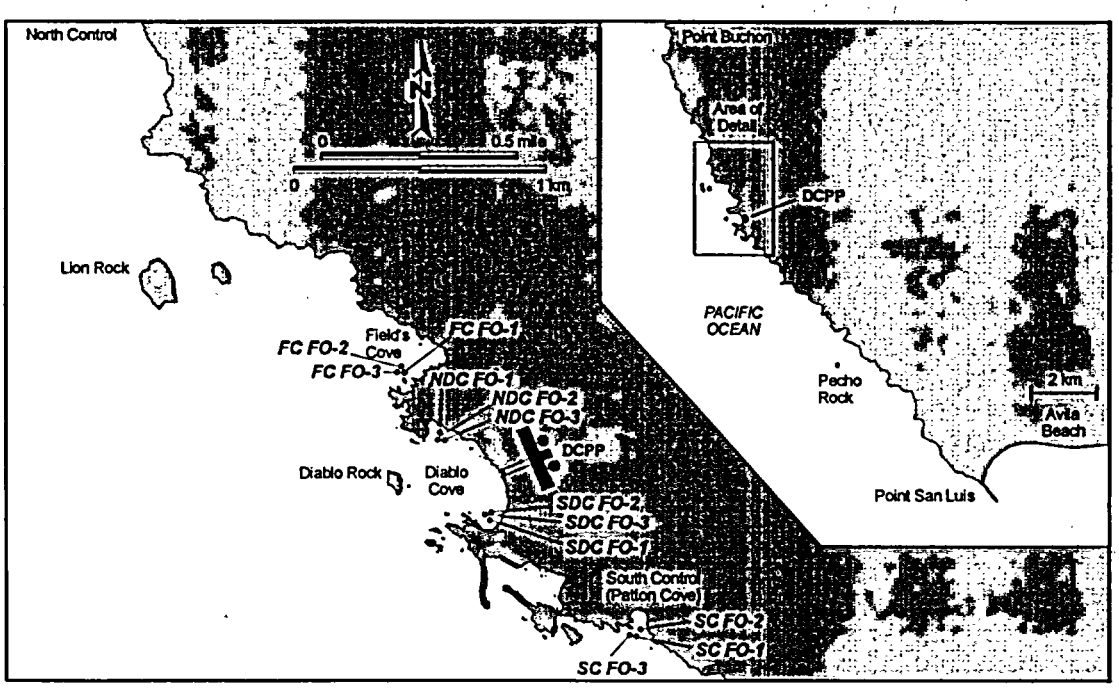

Figure 8. Subtidal fish observation transects.

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.

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.

7.0 Literature Cited

Tenera, Inc. 1988. Diablo Canyon Power Plant, Final Report, Thermal Effects Monitoring Program, Volume 1. Pacific Gas and Electric Company, San Francisco, CA.

Tenera, Inc. 1997. Thermal effects monitoring program, analysis report: Chapter 1 – Changes in the marine environment resulting from the Diablo Canyon Power Plant discharge. Pacific Gas and Electric Company, San Francisco, CA.

Tenera, Inc. 1999a. Receiving Water Monitoring Program – 1995-1997 Progress Report. Pacific Gas and Electric Company, San Francisco, CA.

Tenera, Inc. 1999b. Receiving Water Monitoring Program – 1995-1998 Progress Report. Pacific Gas and Electric Company, San Francisco, CA.

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

Appendix A

Subtidal Temperatures

Table A1. Monthly Statistical Summary of Subtidal Temperature (°C) Data, January – December 2003, North Control Station NC 1 -3m.

Month	Max	Min	Mean	Std. Dev	Sum	Sum SQ	N
Station: NC 1 -3m							
Jan	14.98	12.57	13.67	0.45	30,517	417,699	2,232
Feb	15.10	11.90	13.41	0.68	27,040	363,615	2,016
Mar	13.60	9.32	11.38	1.03	25,400	291,424	2,232
Apr	13.32	9.63	11.28	0.65	24,359	275,601	2,160
May	13.48	9.52	11.33	0.78	25,282	287,727	2,232
Jun	15.55	10.10	12.57	1.24	27,145	344,434	2,160
Jul	16.98	10.65	13.08	1.56	29,192	387,219	2,232
Aug	16.95	11.82	13.94	1.11	31,124	436,746	2,232
Sep	17.25	12.40	14.28	1.12	30,848	443,282	2,160
Oct	16.20	11.52	13.89	1.08	30,995	433,029	2,232
Nov	16.30	11.45	14.01	1.16	30,271	427,104	2,160
Dec	14.48	12.23	13.16	0.44	29,379	387,121	2,232

Table A2. Monthly Statistical Summary of Subtidal Temperature (°C) Data, January – December 2003, Field's Cove Station FC 1 -3m.

Month	Max	Min	Mean	Std. Dev	Sum	Sum SQ	N
Station: FC 1 -3m							
Jan	16.60	12.65	14.39	0.73	32,125	463,554	2,232
Feb	16.17	12.20	14.06	0.89	28,336	399,877	2,016
Mar	14.60	9.32	11.73	1.26	26,174	310,497	2,232
Apr	13.60	9.68	11.69	0.75	25,249	296,345	2,160
May	14.13	9.43	11.75	0.88	26,235	310,080	2,232
Jun	15.88	9.98	12.97	1.27	28,002	366,664	2,159
Jul	18.33	11.15	13.97	1.78	31,172	442,636	2,231
Aug	18.02	12.30	14.78	1.19	32,984	490,613	2,232
Sep	18.52	12.88	15.59	1.26	33,675	528,413	2,160
Oct	18.70	11.98	15.42	1.41	34,418	535,201	2,232
Nov	18.45	13.30	15.78	1.25	34,077	540,974	2,160
Dec	16.80	12.80	14.06	0.79	31,385	442,715	2,232

Table A3. Monthly Statistical Summary of Subtidal Temperature (°C) Data, January – December 2003, 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	22.08	12.77	17.09	2.27	38,154	663,697	2,232
Feb	22.23	12.45	16.83	2.02	33,924	579,035	2,016
Mar	20.17	9.27	14.33	2.44	31,989	471,703	2,232
Apr	20.88	11.75	15.86	1.79	34,247	549,878	2,160
May	21.05	9.48	16.41	2.28	36,626	612,558	2,232
Jun	21.98	11.95	17.54	2.03	37,881	673,222	2,160
Jul	23.27	12.70	17.79	2.22	39,718	717,774	2,232
Aug	23.38	13.75	17.66	1.77	39,410	702,808	2,232
Sep	23.63	15.45	18.84	1.58	40,697	772,132	2,160
Oct	23.73	12.07	18.63	1.98	41,589	783,656	2,232
Nov	23.23	14.57	18.99	1.59	41,018	784,416	2,160
Dec	21.85	13.00	16.97	1.98	37,884	651,766	2,232
Station: NDC 3 -3m							
Jan	22.88	13.00	17.70	2.45	39,502	712,455	2,232
Feb	22.55	12.63	16.98	2.00	34,238	589,529	2,016
Mar	20.83	9.32	14.59	2.43	32,559	488,140	2,232
Apr	20.85	11.95	15.98	1.82	34,507	558,436	2,160
May	21.15	9.63	16.45	2.34	36,710	615,977	2,232
Jun	22.30	12.85	17.39	2.15	37,571	663,482	2,160
Jul	23.40	12.65	17.44	2.21	38,934	690,071	2,232
Aug	23.80	13.50	17.24	1.88	38,489	671,607	2,232
Sep	23.45	14.75	18.50	1.69	39,963	745,521	2,160
Oct	24.27	12.13	18.68	1.92	41,701	787,305	2,232
Nov	23.05	13.93	19.03	1.61	41,098	787,514	2,160
Dec	23.38	12.98	17.37	2.14	38,781	684,051	2,232
Station: NDC 4 -4m							
Jan	21.88	12.82	17.14	2.22	38,247	666,350	2,232
Feb	21.33	12.57	16.21	1.79	32,687	536,392	2,016
Mar	19.88	9.30	13.89	2.23	30,997	441,532	2,232
Apr	20.52	11.57	15.21	1.70	32,853	505,958	2,160
May	20.65	9.48	15.59	2.22	34,798	553,495	2,232
Jun	21.10	11.80	16.23	1.97	35,054	577,226	2,160
Jul	22.42	12.27	16.28	2.07	36,345	601,384	2,232
Aug	22.55	12.13	16.29	1.87	36,354	599,895	2,232
Sep	22.95	13.38	17.66	1.84	38,151	681,119	2,160
Oct	23.48	11.98	18.01	1.89	40,195	731,854	2,232
Nov	22.63	13.10	18.44	1.61	39,833	740,156	2,160
Dec	21.63	11.80	16.86	1.95	37,053	632,955	2,198

Table A4. Monthly Statistical Summary of Subtidal Temperature (°C) Data, January – December 2003, 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	24.70	13.85	17.74	1.86	39,588	709,921	2,232
Feb	22.15	13.00	15.94	1.73	32,143	518,491	2,016
Mar	20.27	10.57	13.43	1.68	29,972	408,756	2,232
Apr	21.27	10.80	13.87	1.83	29,969	423,004	2,160
May	20.95	10.57	14.85	2.36	33,145	504,580	2,232
Jun	21.67	10.75	15.03	2.49	32,462	501,259	2,160
Jul	23.10	10.52	14.82	2.67	33,072	505,913	2,232
Aug	23.05	10.77	14.45	2.36	32,242	478,186	2,232
Sep	22.83	11.57	15.44	2.32	33,361	526,845	2,160
Oct	24.95	12.10	16.84	2.32	37,583	644,803	2,232
Nov	23.60	12.63	16.72	2.21	36,106	614,082	2,160
Dec	23.55	13.45	16.99	1.82	36,724	631,263	2,161
Station: SDC 4 -4m							
Jan	22.95	13.63	16.99	1.45	37,933	649,343	2,232
Feb	22.25	12.60	14.93	1.39	30,095	453,157	2,016
Mar	16.90	9.88	12.84	1.32	28,666	372,045	2,232
Apr	19.75	9.98	12.88	1.58	27,826	363,883	2,160
May	20.40	9.77	12.85	2.39	28,684	381,375	2,232
Jun	19.95	10.10	13.15	2.22	28,402	384,073	2,160
Jul	21.25	9.95	12.90	2.37	28,798	384,126	2,232
Aug	21.20	10.10	12.65	1.77	28,234	364,144	2,232
Sep	20.77	10.77	13.66	1.90	29,500	410,642	2,160
Oct	21.35	11.27	15.27	2.24	34,079	531,503	2,232
Nov	21.77	11.95	15.12	1.84	32,668	501,339	2,160
Dec	22.15	12.68	16.09	1.80	34,772	566,536	2,161

Table A5. Monthly Statistical Summary of Subtidal Temperature (°C) Data, January – December 2003, 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	14.60	12.48	13.66	0.38	29,503	403,463	2,159
Feb	14.82	12.13	13.43	0.64	27,071	364,354	2,016
Mar	13.50	9.32	11.33	1.09	25,276	289,145	2,230
Apr	12.95	9.45	11.06	0.68	23,885	265,125	2,160
May	18.63	9.35	10.96	0.75	24,468	269,359	2,233
Jun	14.93	9.98	12.28	1.04	26,478	327,357	2,157
Jul	17.15	10.15	12.74	1.62	28,429	367,953	2,232
Aug	16.42	11.18	13.09	1.15	29,213	385,267	2,232
Sep	16.58	11.82	13.76	1.22	29,721	412,176	2,160
Oct	16.30	11.82	14.07	1.04	31,404	444,274	2,232
Nov	15.90	11.73	14.08	1.07	30,414	430,734	2,160
Dec	14.57	12.40	13.21	0.44	29,398	388,854	2,225
Station: SC 2 -6m							
Jan	14.27	12.52	13.64	0.36	30,449	415,660	2,232
Feb	14.85	12.07	13.37	0.61	26,958	361,242	2,016
Mar	13.25	9.20	11.13	1.10	24,837	279,064	2,232
Apr	12.52	9.23	10.84	0.67	23,406	254,582	2,160
May	12.52	9.35	10.55	0.71	23,547	249,541	2,232
Jun	14.82	9.52	11.60	1.04	25,065	293,214	2,160
Jul	16.77	9.77	11.95	1.66	26,683	325,120	2,232
Aug	16.20	9.82	12.01	1.21	26,809	325,287	2,232
Sep	16.45	10.68	12.97	1.35	28,016	367,330	2,160
Oct	15.95	11.32	13.70	1.06	30,579	421,439	2,232
Nov	15.52	11.65	13.96	1.01	30,153	423,133	2,160
Dec	14.30	12.35	13.13	0.41	29,313	385,335	2,232

Appendix B

Intertidal Temperatures

Table B1. Monthly Statistical Summary of Intertidal Temperature (°C) Data, January – December 2003, North Control Station NC 2 +0.6m.

Month	Max	Min	Mean	Std. Dev	Sum	Sum SQ	N
Station: NC 2 +0.6m							
Jan	14.75	12.55	13.59	0.42	17,096	232,570	1,258
Feb	14.93	11.63	13.33	0.69	14,220	190,012	1,067
Mar	13.48	9.38	11.39	1.02	12,822	147,183	1,126
Apr	13.32	8.27	11.34	0.61	12,222	138,981	1,078
May	13.45	9.48	11.61	0.81	13,305	155,219	1,146
Jun	15.82	10.32	12.96	1.13	15,417	201,249	1,190
Jul	17.10	10.73	13.80	1.42	17,684	246,699	1,281
Aug	17.23	12.45	14.62	1.01	18,709	274,759	1,280
Sep	17.17	12.43	14.66	1.10	18,394	271,136	1,255
Oct	16.10	11.57	13.99	1.03	18,403	258,931	1,315
Nov	16.23	10.90	13.87	1.23	17,487	244,403	1,261
Dec	14.48	12.02	13.07	0.47	16,188	211,778	1,239

Table B2. Monthly Statistical Summary of Intertidal Temperature (°C) Data, January – December 2003, 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	16.08	12.50	14.28	0.69	21,506	307,818	1,506
Feb	16.25	12.13	13.96	0.89	17,986	252,187	1,288
Mar	15.15	9.20	11.79	1.26	15,768	187,965	1,338
Apr	14.38	6.60	11.78	0.86	14,917	176,699	1,266
May	15.35	8.45	12.06	1.04	16,184	196,616	1,342
Jun	17.25	10.55	13.62	1.45	18,770	258,564	1,378
Jul	19.80	10.30	14.93	1.90	22,614	343,019	1,515
Aug	19.63	10.88	15.85	1.40	23,607	377,181	1,489
Sep	19.52	12.95	16.24	1.24	23,139	377,897	1,425
Oct	19.08	12.00	15.49	1.38	22,733	354,827	1,468
Nov	18.25	13.20	15.72	1.25	20,917	330,793	1,331
Dec	16.48	12.52	13.94	0.77	20,512	286,897	1,471
Station: FC 2 +0.6m							
Jan	16.02	12.55	14.29	0.70	17,982	257,639	1,258
Feb	16.20	12.18	13.97	0.87	14,901	208,899	1,067
Mar	14.48	9.35	11.72	1.21	13,195	156,262	1,126
Apr	14.43	8.90	11.76	0.81	12,672	149,675	1,078
May	14.75	9.35	11.96	0.97	13,704	164,955	1,146
Jun	16.95	10.63	13.50	1.42	16,061	219,152	1,190
Jul	20.38	11.23	14.85	1.91	19,018	287,043	1,281
Aug	19.27	10.85	15.69	1.33	20,080	317,270	1,280
Sep	19.88	13.38	16.20	1.22	20,326	331,048	1,255
Oct	18.45	11.98	15.50	1.37	20,380	318,317	1,315
Nov	18.30	13.15	15.75	1.26	18,665	295,874	1,185
Dec	16.63	12.52	13.94	0.78	17,944	250,952	1,287
Station: FC 2 +0.6m							
Jan	16.05	12.52	14.33	0.70	18,028	258,976	1,258
Feb	16.25	12.20	14.00	0.86	14,939	209,939	1,067
Mar	14.25	9.30	11.68	1.21	13,154	155,335	1,126
Apr	15.32	7.00	11.66	0.83	12,574	147,421	1,078
May	16.38	8.05	11.86	0.98	13,587	162,201	1,146
Jun	17.08	10.13	13.35	1.39	15,885	214,351	1,190
Jul	20.02	10.35	14.68	1.92	18,801	280,649	1,281
Aug	18.70	10.45	15.50	1.27	19,835	309,428	1,280
Sep	19.17	12.75	16.13	1.20	20,241	328,271	1,255
Oct	18.52	11.98	15.48	1.37	20,357	317,604	1,315
Nov	18.38	13.23	15.76	1.26	18,677	296,274	1,185
Dec	16.63	11.18	13.95	0.79	17,958	251,367	1,287

Table B3. Monthly Statistical Summary of Intertidal Temperature (°C) Data, January – December 2003, 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	21.23	12.73	16.45	1.91	24,781	413,259	1,506
Feb	21.25	12.43	16.35	1.75	21,054	348,117	1,288
Mar	18.63	9.30	13.67	2.26	18,294	256,976	1,338
Apr	19.30	11.48	14.97	1.64	18,946	286,913	1,266
May	20.17	9.35	15.65	2.12	20,998	334,565	1,342
Jun	22.08	11.15	17.51	2.07	24,130	428,411	1,378
Jul	24.00	12.38	18.51	2.30	28,047	527,239	1,515
Aug	23.45	14.02	18.42	1.73	27,429	509,722	1,489
Sep	23.55	16.00	19.18	1.33	27,326	526,544	1,425
Oct	23.67	11.98	18.13	1.98	26,616	488,327	1,468
Nov	23.25	14.60	18.74	1.62	24,940	470,782	1,331
Dec	21.90	12.93	16.39	1.84	24,113	400,232	1,471
Station: NDC 2 +0.6m							
Jan	20.90	12.77	16.48	1.94	19,823	331,158	1,203
Feb	21.48	12.43	16.40	1.72	16,790	278,329	1,024
Mar	18.48	9.27	13.90	2.32	15,195	217,119	1,093
Apr	20.25	8.75	15.38	1.72	16,026	249,584	1,042
May	20.63	8.05	15.96	2.25	17,492	284,739	1,096
Jun	22.65	10.68	17.83	2.08	20,328	367,438	1,140
Jul	23.95	10.70	18.56	2.42	22,711	428,599	1,224
Aug	23.83	11.35	18.53	1.76	22,900	428,110	1,236
Sep	23.45	14.20	19.37	1.40	23,790	463,276	1,228
Oct	23.00	11.93	18.36	1.94	23,702	439,997	1,291
Nov	22.95	14.80	18.83	1.60	21,960	416,597	1,166
Dec	21.35	12.88	16.36	1.85	20,333	336,868	1,243
Station: NDC 3 +0.6m							
Jan	21.40	12.90	16.69	2.04	25,358	429,611	1,519
Feb	21.77	12.45	16.63	1.81	21,702	365,145	1,305
Mar	19.20	9.25	14.18	2.40	19,132	279,066	1,349
Apr	20.52	7.85	15.63	1.66	19,947	315,314	1,276
May	21.05	9.48	16.20	2.26	21,905	361,823	1,352
Jun	22.45	12.20	17.87	2.01	24,755	448,077	1,385
Jul	23.95	12.13	18.58	2.36	28,350	535,184	1,526
Aug	23.70	15.02	18.50	1.69	27,825	519,062	1,504
Sep	23.50	14.75	19.38	1.39	27,736	540,352	1,431
Oct	23.48	12.05	18.50	1.99	27,432	513,270	1,483
Nov	23.02	14.88	19.01	1.60	25,529	488,715	1,343
Dec	21.35	12.90	16.60	1.91	24,607	413,988	1,482

Table B4. Monthly Statistical Summary of Intertidal Temperature (°C) Data, January – December 2003, 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	24.52	16.20	19.39	2.33	29,725	584,657	1,533
Feb	23.13	14.20	17.47	1.70	22,971	405,069	1,315
Mar	21.60	11.20	14.25	2.04	19,359	281,395	1,359
Apr	21.40	10.88	14.48	1.89	18,667	274,919	1,289
May	22.17	12.63	16.31	2.21	22,240	369,288	1,364
Jun	23.80	13.93	17.66	1.92	24,638	440,296	1,395
Jul	24.20	14.45	18.68	1.93	28,792	543,658	1,541
Aug	24.48	14.23	18.49	1.60	28,146	524,400	1,522
Sep	23.20	15.20	18.78	1.38	27,181	513,327	1,447
Oct	24.60	15.48	18.56	1.60	27,656	517,117	1,490
Nov	24.17	15.27	18.51	1.83	26,669	498,375	1,441
Dec	24.45	14.27	17.99	2.06	26,926	490,673	1,497
Station: SDC 2 +0.6m							
Jan	22.30	13.75	17.19	1.25	21,620	373,515	1,258
Feb	22.25	14.10	16.98	1.40	18,119	309,765	1,067
Mar	20.92	10.85	13.82	1.89	15,556	218,943	1,126
Apr	20.95	8.80	14.26	1.70	15,378	222,467	1,078
May	22.00	10.52	15.93	2.09	18,256	295,800	1,146
Jun	23.80	12.73	17.42	2.06	20,728	366,120	1,190
Jul	24.15	12.75	18.64	2.10	23,876	450,685	1,281
Aug	24.38	14.02	18.57	1.68	23,773	445,136	1,280
Sep	22.90	14.73	18.70	1.37	23,470	441,278	1,255
Oct	24.88	14.77	18.12	1.54	23,830	434,970	1,315
Nov	23.30	14.88	18.16	1.68	22,906	419,645	1,261
Dec	22.30	13.75	17.19	1.25	21,620	373,515	1,258
Station: SDC 3 +0.6m							
Jan	19.15	13.75	16.67	1.06	23,590	394,862	1,415
Feb	20.23	13.85	16.72	1.20	19,875	333,929	1,189
Mar	18.42	10.25	13.32	1.65	16,662	225,310	1,251
Apr	16.95	8.60	13.45	1.16	15,857	214,866	1,179
May	18.42	11.48	14.64	1.28	18,393	271,407	1,256
Jun	20.55	12.82	16.18	1.45	21,084	343,910	1,303
Jul	22.30	13.55	17.44	1.88	24,929	439,914	1,429
Aug	21.70	13.50	17.41	1.58	24,238	425,515	1,392
Sep	21.23	14.02	17.64	1.33	23,756	421,329	1,347
Oct	22.20	14.27	17.42	1.29	24,303	425,716	1,395
Nov	20.63	13.45	17.39	1.15	21,981	383,920	1,264
Dec	18.70	13.45	16.24	0.86	22,511	366,625	1,386

Table B5. Monthly Statistical Summary of Intertidal Temperature (°C) Data, January – December 2003, 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	19.05	13.73	16.63	1.10	25,993	434,152	1,563
Feb	20.45	13.75	16.79	1.31	22,958	387,894	1,367
Mar	18.73	10.13	13.27	1.68	18,632	251,229	1,404
Apr	17.23	10.73	13.37	1.11	17,681	238,107	1,322
May	18.10	12.32	14.61	1.23	20,537	302,118	1,406
Jun	20.23	13.02	16.02	1.36	23,019	371,393	1,437
Jul	22.02	13.80	17.18	1.79	26,889	466,993	1,565
Aug	21.38	13.30	17.11	1.61	26,771	461,983	1,565
Sep	20.73	14.05	17.42	1.33	25,954	454,707	1,490
Oct	21.67	14.10	17.37	1.29	26,333	459,930	1,516
Nov	20.77	13.98	17.40	1.15	23,861	417,092	1,371
Dec	19.02	13.57	16.25	0.87	24,742	403,125	1,523
Station: SDP 2 +0.6m							
Jan	17.52	13.40	15.42	0.98	23,220	359,448	1,506
Feb	17.10	12.77	14.67	0.78	18,900	278,122	1,288
Mar	15.63	9.52	12.49	1.10	16,717	210,468	1,338
Apr	15.55	10.10	12.70	1.03	16,075	205,448	1,266
May	17.13	9.88	13.13	1.34	17,621	233,793	1,342
Jun	17.65	10.52	14.14	1.39	19,491	278,369	1,378
Jul	18.70	10.13	15.30	1.24	23,183	357,092	1,515
Aug	18.30	10.73	15.12	1.29	22,513	342,881	1,489
Sep	20.02	11.25	16.32	1.68	23,254	383,491	1,425
Oct	19.75	12.77	16.33	1.14	23,975	393,453	1,468
Nov	19.58	13.63	16.53	1.15	23,427	389,192	1,417
Dec	18.52	13.02	15.32	0.91	16,379	251,856	1,069

Table B6. Monthly Statistical Summary of Intertidal Temperature (°C) Data, January– December 2003, 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	14.35	12.50	13.61	0.35	19,073	259,832	1,401
Feb	14.85	12.13	13.40	0.64	15,757	211,611	1,176
Mar	13.35	9.30	11.22	1.09	13,821	156,506	1,232
Apr	12.75	9.45	10.98	0.64	12,743	140,328	1,161
May	12.82	9.32	10.91	0.72	13,513	148,121	1,238
Jun	14.93	10.27	12.37	1.03	15,887	197,934	1,284
Jul	17.13	10.15	13.12	1.58	18,406	244,968	1,403
Aug	16.42	11.13	13.47	1.15	18,615	252,570	1,382
Sep	16.58	11.82	13.98	1.20	18,711	263,586	1,338
Oct	15.98	11.80	13.97	1.02	19,379	272,204	1,387
Nov	15.73	11.73	13.99	1.09	17,603	247,813	1,258
Dec	14.35	12.32	13.10	0.44	18,029	236,498	1,376
Station: SC 1-V							
Jan	21.40	10.15	13.94	1.13	31,123	436,795	2,232
Feb	20.63	9.40	13.48	0.96	27,170	368,018	2,016
Mar	24.55	7.70	12.67	2.30	28,271	369,938	2,232
Apr	27.63	6.20	12.53	2.47	27,063	352,272	2,160
May	23.58	7.93	12.82	2.14	28,615	377,056	2,232
Jun	20.88	9.48	13.85	1.72	29,916	420,733	2,160
Jul	23.33	9.82	14.83	2.00	33,091	499,478	2,232
Aug	18.98	11.05	15.26	1.50	34,062	524,811	2,232
Sep	18.60	12.05	15.06	1.28	32,535	493,601	2,160
Oct	20.45	10.43	14.57	1.22	32,521	477,160	2,232
Nov	18.98	8.02	13.78	1.64	27,623	386,175	2,004
Dec	21.42	5.13	12.85	1.27	28,692	372,439	2,232

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 <0.1 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) Survey Means, Standard Deviations and 2003 Annual Means, North Control Station NC 1+0.3m.

Survey	132		133		134		135		
Survey Date	20-Feb-03		4-Jun-03		8-Aug-03		21-Nov-03		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Algae									
Mazzaella flaccida	17.8	8.4	41.4	12.2	37.7	15.1	16.3	9.5	28.3
Phyllospadix spp.	19.7	22.6	16.4	25.5	22.1	29.5	24.6	28.8	20.7
Mazzaella affinis	13.1	12.5	13.7	10.5	15.0	13.9	13.4	13.2	13.8
Chondracanthus canaliculatus	8.9	6.6	9.0	5.6	13.7	7.6	5.9	5.4	9.4
Gastroclonium subarticulatum	8.3	7.6	4.6	4.3	15.3	17.8	8.1	6.1	9.1
Non-coralline crust	9.7	7.5	4.3	3.6	3.5	3.9	9.9	8.8	6.9
Gelidium coulteri	5.8	5.0	6.2	6.6	4.0	4.1	5.1	3.6	5.3
Mastocarpus papillatus	3.9	4.5	7.7	4.8	5.1	6.2	3.6	4.0	5.1
Cryptopleura violacea	3.7	2.6	2.8	1.7	3.2	2.3	2.2	3.0	3.0
coralline crust	3.7	3.3	1.6	1.8	1.5	3.0	2.4	2.0	2.3
Endocladia muricata	3.9	11.6	1.6	5.1	1.9	5.9	1.0	3.1	2.1
Codium setchellii	1.9	3.4	2.6	4.1	1.0	1.6	1.8	3.9	1.8
Mazzaella leptorhynchos	3.8	4.4	1.6	1.8	<0.1	0.2	0.1	0.4	1.4
Smithora naiadum	<0.1	<0.1	-	-	2.6	4.9	2.9	2.7	1.4
filamentous red algae complex	1.1	2.0	3.3	3.6	0.6	1.1	-	-	1.2
Corallina vancouveriensis	2.7	2.3	0.8	1.1	0.3	0.5	0.8	1.1	1.2
Ulva/Enteromorpha spp.	<0.1	<0.1	0.8	1.6	2.2	3.5	1.4	1.4	1.1
Mastocarpus jardinii	0.9	1.6	0.9	1.8	0.6	1.4	0.8	1.4	0.8
Calliarthron/Bossiella spp. complex	0.6	1.2	0.4	1.1	0.3	0.9	0.6	0.8	0.5
Mazzaella heterocarpa	1.0	1.3	0.5	0.6	0.3	0.7	-	-	0.4
Egregia menziesii	-	-	-	-	0.9	2.1	0.3	1.1	0.3
Prionitis spp.	0.6	1.0	0.3	0.6	<0.1	<0.1	0.1	0.4	0.3
juv. articulated coralline algae	0.5	1.1	0.4	0.8	<0.1	<0.1	<0.1	<0.1	0.2
Corallina officinalis	0.9	2.4	-	-	<0.1	<0.1	-	-	0.2
Pterosiphonia dendroidea	0.2	0.3	-	-	-	-	0.6	0.8	0.2
Halymenia/Schizymenia spp. complex	0.5	0.6	<0.1	0.2	-	-	-	-	0.1
Gelidium pusillum	0.3	0.5	<0.1	<0.1	<0.1	<0.1	0.2	0.7	0.1
Osmundea spp.	0.2	0.3	<0.1	0.2	-	-	0.2	0.7	0.1
Polyneura latissima	0.3	1.1	-	-	-	-	-	-	<0.1
Mazzaella linearis	-	-	0.1	0.4	-	-	-	-	<0.1
Microcladia coulteri	-	-	<0.1	<0.1	<0.1	0.2	<0.1	<0.1	<0.1
Porphyra spp.	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	0.2	<0.1
Chrysophyta unid.	-	-	<0.1	0.2	<0.1	<0.1	-	-	<0.1
Sarcodiotheca gaudichaudii	-	-	<0.1	0.2	<0.1	<0.1	-	-	<0.1
Cryptosiphonia woodii	<0.1	0.2	-	-	-	-	-	-	<0.1
Grateloupia doryphora	-	-	-	-	-	-	<0.1	0.2	<0.1
Cladophora spp.	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Melobesia mediocris	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Spongomorpha/Acrosiphonia complex	-	-	-	-	<0.1	<0.1	-	-	<0.1
Callithamnion pikeanum	-	-	<0.1	<0.1	<0.1	<0.1	-	-	<0.1
Chondracanthus corymbiferus	<0.1	<0.1	-	-	-	-	-	-	<0.1
Colpomenia spp.	-	-	<0.1	<0.1	-	-	-	-	<0.1
Bryopsis spp.	<0.1	<0.1	-	-	-	-	-	-	<0.1
Chondria decipiens	<0.1	<0.1	-	-	-	-	-	-	<0.1

(continued)

Table C1 (continued). Intertidal Algae (percent cover) and Invertebrates (abundance per 1.0 m^2) Survey Means, Standard Deviations and 2003 Annual Means, North Control Station NC 1+0.3m.

Survey	132		133		134		135		
Survey Date	20-Feb-03		4-Jun-03		8-Aug-03		21-Nov-03		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Invertebrates									
*Tegula funebralis**	44.6	21.8	17.0	17.4	8.0	6.4	2-	24.0	22.4
Pagurus spp.*	26.8	13.7	16.4	14.2	19.0	15.2	6.0	5.2	17.1
Pista spp. (%)	6.8	6.0	3.2	2.9	3.6	4.5	12.0	10.2	6.4
*Anthopleura elegantissima**	1.8	1.9	2.2	4.4	0.6	1.3	1.0	1.7	1.4
Leptasterias spp.*	0.2	0.5	1.6	2.1	0.2	0.5	0.4	0.9	0.6
Tunicata unid. (colonial/social) (%)	<0.1	0.2	0.3	0.7	0.3	0.9	1.5	2.1	0.5
*Tectura scutum**	0.4	0.9	1.0	2.2	0.2	0.5	-	-	0.4
*Tetraclita rubescens**	1.2	2.7	-	-	-	-	-	-	0.3
Pugettia spp.	0.2	0.5	0.4	0.9	0.4	0.6	0.2	0.5	0.3
*Epiactis prolifera**	0.4	0.9	-	-	0.4	0.6	0.2	0.5	0.3
*Pachygrapsus crassipes**	-	-	0.6	0.9	0.4	0.6	-	-	0.3
Nemertea unid.	-	-	0.2	0.5	0.2	0.5	0.4	0.6	0.2
*Fissurella volcano**	0.4	0.9	0.2	0.5	0.2	0.5	-	-	0.2
Ocenebra spp.*	-	-	0.4	0.9	0.2	0.5	-	-	0.2
*Lottia pelta**	0.2	0.5	0.4	0.9	-	-	-	-	0.2
*Lottia scabra**	0.2	0.5	0.4	0.9	-	-	-	-	0.2
*Strongylocentrotus purpuratus**	0.4	0.9	0.2	0.5	-	-	-	-	0.2
*Lottia limatula**	-	-	0.6	1.3	-	-	-	-	0.2
*Tegula brunnea**	-	-	-	-	-	-	0.4	0.9	<0.1
Ophiothrix spp.	0.4	0.9	-	-	-	-	-	-	<0.1
Serpulidae unid.	<0.1	<0.1	0.2	0.5	-	-	<0.1	<0.1	<0.1
Homolop. luridum/Lirularia succincta	0.2	0.5	-	-	-	-	-	-	<0.1
Urticina spp.	-	-	0.2	0.5	-	-	-	-	<0.1
Diaulula sandiegensis	-	-	-	-	-	-	0.2	0.5	<0.1
Cancer spp. (juvenile)	-	-	0.2	0.5	-	-	-	-	<0.1
Haliclona spp. (%)	<0.1	<0.1	-	-	-	-	0.1	0.4	<0.1
Lacuna spp.	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Spirorbidae unid. (%)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Phragmatopoma californica (%)	<0.1	<0.1	<0.1	<0.1	-	-	<0.1	<0.1	<0.1
Porifera unid. (encrusting) (%)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Bryozoa unid. (encrusting) (%)	<0.1	<0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1
Lottia asmi	<0.1	<0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1
Crepidula spp.	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	<0.1
Alia spp.	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Bittium spp.	-	-	<0.1	<0.1	-	-	<0.1	<0.1	<0.1
Sipuncula unid.	-	-	<0.1	<0.1	<0.1	<0.1	-	-	<0.1
Lottiidae unid.	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1
Littorina spp.	-	-	-	-	-	-	<0.1	<0.1	<0.1
Nitidiscala/Opalia spp.	-	-	<0.1	<0.1	-	-	-	-	<0.1
Ischnochitonidae unid.	-	-	-	-	<0.1	<0.1	-	-	<0.1
Ophiuroidea unid.	<0.1	<0.1	-	-	-	-	-	-	<0.1
Heptacarpus spp.	<0.1	<0.1	-	-	-	-	-	-	<0.1
Salmacina tribranchiata	<0.1	<0.1	-	-	-	-	-	-	<0.1
Chthamalus fissus (%)	<0.1	<0.1	-	-	-	-	-	-	<0.1
Substrate									
sand (shell gravel)	12.9	11.4	5.6	5.0	5.1	5.2	16.7	16.0	10.1
rock	2.6	2.8	1.9	1.4	2.8	3.3	1.7	2.1	2.2
cobble	1.7	3.1	0.3	1.1	0.1	0.3	0.2	0.7	0.6

Table C2. Intertidal Algae (percent cover) and Invertebrates (abundance per 1.0 m^2) Survey Means, Standard Deviations and 2003 Annual Means, North Control Station NC 1+0.9m.

Survey	132		133		134		135		
Survey Date	26-Feb-03		4-Jun-03		8-Aug-03		21-Nov-03		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Algae									
Endocladia muricata	41.5	28.7	38.4	26.3	30.3	28.6	31.5	28.7	35.4
Mastocarpus papillatus	13.7	7.6	22.9	12.8	31.9	12.9	18.3	12.1	21.7
Mazzaella flaccida	19.7	13.9	14.9	13.3	25.2	18.9	17.6	12.3	19.4
Non-coralline crust	16.7	12.7	12.5	8.5	6.8	5.2	17.3	11.8	13.3
Pelvetia compressa	5.9	11.1	6.2	11.2	7.0	17.6	8.3	15.8	6.9
coralline crust	7.0	3.8	3.3	2.2	2.8	2.1	5.7	3.8	4.7
Codium setchellii	3.0	7.7	2.6	5.9	1.6	4.0	2.2	5.0	2.3
Gelidium coulteri	1.9	2.7	1.3	2.3	1.7	2.6	1.0	1.9	1.5
Corallina vancouveriensis	3.3	2.9	0.8	1.3	0.6	0.7	1.1	1.2	1.4
Mazzaella affinis	2.4	1.2	0.6	1.2	0.6	1.3	0.6	1.1	1.1
Mastocarpus jardinii	1.3	1.7	0.7	1.3	0.4	0.6	0.6	0.8	0.8
Gelidium pusillum	1.4	1.3	1.0	1.1	<0.1	<0.1	0.3	0.4	0.7
Porphyra spp.	<0.1	0.2	0.4	0.6	1.7	3.4	0.2	0.7	0.6
Cryptopleura violacea	0.2	0.7	0.2	0.7	1.0	3.1	0.6	2.0	0.5
Mazzaella heterocarpa	1.1	1.9	<0.1	0.2	<0.1	0.2	0.1	0.3	0.3
Chondracanthus canaliculatus	0.8	1.2	-	-	<0.1	<0.1	0.4	0.4	0.3
Prionitis spp.	0.5	0.9	0.2	0.5	0.2	0.5	0.2	0.3	0.3
juv. articulated coralline algae	0.1	0.3	0.4	0.8	<0.1	0.2	0.2	0.3	0.2
Mazzaella leptorhynchos	0.3	0.7	<0.1	0.2	<0.1	<0.1	<0.1	<0.1	<0.1
Calliarthron/Bossiella spp. complex	0.2	0.7	<0.1	0.2	<0.1	<0.1	<0.1	<0.1	<0.1
Analipus japonicus	0.1	0.4	<0.1	<0.1	<0.1	<0.1	<0.1	0.2	<0.1
Cladophora spp.	<0.1	-	<0.1	0.2	<0.1	0.2	<0.1	<0.1	<0.1
Ulva/Enteromorpha spp.	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	0.4	<0.1
Phyllospadix spp.	<0.1	0.2	-	-	-	-	-	-	<0.1
Gastroclonium subarticulatum	<0.1	<0.1	-	-	-	-	-	-	<0.1
Invertebrates									
*Tegula funebralis**	62.8	24.9	95.4	56.7	37.6	44.3	67.6	47.7	65.9
Pagurus spp.*	8.0	10.3	16.4	19.0	19.0	22.0	23.8	30.5	16.8
*Anthopleura elegantissima**	13.8	18.6	20.2	35.4	4.8	7.5	11.0	13.9	12.5
Pollicipes polymerus	9.6	21.5	3.6	8.1	5.2	11.6	4.2	9.4	5.7
*Tectura scutum**	1.0	2.2	1.2	1.1	1.4	3.1	3.2	6.6	1.7
*Nuttallina californica**	2.0	1.9	2.2	3.5	1.4	2.0	0.6	1.3	1.6
*Lottia scabra**	1.2	1.8	3.0	4.5	1.2	2.7	0.6	0.9	1.5
*Lottia limatula**	1.2	1.1	1.4	2.2	1.6	2.1	0.8	0.8	1.3
*Pachygrapsus crassipes**	1.8	1.3	0.6	0.9	2.0	1.4	0.4	0.6	1.2
Leptasterias spp.*	1.0	0.7	1.8	1.9	0.8	0.5	0.8	1.3	1.1
*Tetraclita rubescens**	0.6	1.3	-	-	-	-	1.2	2.7	0.5
*Strongylocentrotus purpuratus**	0.8	1.3	0.2	0.5	0.6	1.3	-	-	0.4
*Lottia pelta**	0.8	0.8	0.2	0.5	-	-	0.4	0.6	0.4
Mytilus californianus	0.6	1.3	0.4	0.9	-	-	0.4	0.9	0.4
Mopalia spp.*	0.4	0.6	0.2	0.5	0.2	0.5	0.2	0.5	0.3
*Fissurella volcano**	0.2	0.5	0.4	0.6	0.2	0.5	-	-	0.2
Haliotis spp.*	0.2	0.6	0.2	0.6	0.3	1.0	-	-	0.2
Nemertea unid.	0.4	0.9	-	-	0.2	0.5	-	-	0.2
Ocenebra spp.*	0.2	0.5	-	-	-	-	0.4	0.9	0.2
*Lottia digitalis**	-	-	-	-	-	-	0.6	1.3	0.2
Pugettia spp.	-	-	-	-	0.4	0.9	-	-	0.1
Acanthinucella spp.*	-	-	0.4	0.9	-	-	-	-	<0.1

(continued)

Table C2 (continued). Intertidal Algae (percent cover) and Invertebrates (abundance per 1.0 m^2) Survey Means, Standard Deviations and 2003 Annual Means, North Control Station NC 1+0.9m.

Survey	132		133		134		135		
Survey Date	26-Feb-03		4-Jun-03		8-Aug-03		21-Nov-03		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Invertebrates (continued)									
*Hemigrapsus nudus**	0.4	0.9	-	-	-	-	-	-	< 0.1
Haliclona spp. (%)	< 0.1	0.2	< 0.1	< 0.1	< 0.1	< 0.1	0.1	0.3	< 0.1
*Pisaster ochraceus**	-	-	-	-	0.2	0.5	-	-	< 0.1
Diaulula sandiegensis	-	-	-	-	0.2	0.5	-	-	< 0.1
Phragmatopoma californica (%)	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.2	< 0.1
Lottiidae unid.	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	-	< 0.1	< 0.1	< 0.1
Spirorbidae unid. (%)	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Crepidula spp.	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	-	-	< 0.1
Chthamalus fissus (%)	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Lottia asmi	< 0.1	< 0.1	< 0.1	< 0.1	-	-	< 0.1	< 0.1	< 0.1
Lacuna spp.	< 0.1	< 0.1	-	-	-	-	< 0.1	< 0.1	< 0.1
Cyanoplax spp.	-	-	-	-	< 0.1	< 0.1	-	-	< 0.1
Littorina spp.	< 0.1	< 0.1	-	-	-	-	< 0.1	< 0.1	< 0.1
Ischnochitonidae unid.	-	-	-	-	< 0.1	< 0.1	-	-	< 0.1
Heptacarpus spp.	< 0.1	< 0.1	-	-	-	-	-	-	< 0.1
Cirratulidae/Terebellidae unid.	-	-	< 0.1	< 0.1	-	-	-	-	< 0.1
Mytilus spp.	< 0.1	< 0.1	-	-	-	-	-	-	< 0.1
Pista spp. (%)	< 0.1	< 0.1	-	-	-	-	-	-	< 0.1
Porifera unid. (encrusting) (%)	< 0.1	< 0.1	-	-	-	-	-	-	< 0.1
Substrate									
rock	4.3	1.7	9.3	7.0	4.8	3.5	8.8	6.7	6.8
cobble	3.1	7.9	3.3	9.0	3.3	9.8	3.8	10.2	3.4
sand (shell gravel)	1.0	1.7	0.1	0.4	3.2	5.9	0.5	1.3	1.2

Table C3. Intertidal Algae (percent cover) and Invertebrates (abundance per 1.0 m^2) Survey Means, Standard Deviations and 2003 Annual Means, North Control Station NC 2+0.3m.

Survey	132		133		134		135		
Survey Date	18-Feb-03		5-Jun-03		13-Aug-03		9-Dec-03		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Algae									
Mazzaella flaccida	19.4	7.1	41.8	7.4	33.5	11.2	8.1	6.3	25.7
Non-coralline crust	16.9	7.2	11.1	8.9	8.3	9.3	28.5	14.7	16.2
Phyllospadix spp.	12.8	14.6	9.4	11.5	15.3	15.1	10.8	9.7	12.1
Mazzaella affinis	13.2	7.8	9.0	1-	7.5	8.2	14.2	9.6	11.0
Chondracanthus canaliculatus	-	-	10.3	5.8	17.6	13.4	11.9	4.7	1-
Gastroclonium subarticulatum	6.1	4.1	3.1	2.7	10.3	6.7	7.8	9.6	6.8
Mastocarpus papillatus	6.8	5.5	8.1	4.3	4.4	3.5	0.3	0.5	4.9
Egregia menziesii	0.7	2.0	6.1	14.5	8.5	13.9	0.9	2.6	4.0
Gelidium coulteri	2.0	1.3	3.7	4.4	4.3	3.2	3.8	6.2	3.5
coralline crust	4.1	2.6	1.7	1.5	0.3	0.7	4.4	2.2	2.6
Codium setchellii (prostrate)	3.3	5.3	1.8	3.4	1.5	3.1	3.7	5.7	2.6
Chrysophyta unid.	9.6	5.9	<0.1	0.2	-	-	-	-	2.4
Ulva/Enteromorpha spp.	0.8	1.0	1.9	1.8	6.0	5.4	0.8	0.8	2.4
Porphyra spp.	0.3	0.4	4.7	6.0	3.8	3.9	0.1	0.3	2.2
Mazzaella leptorhynchos	4.9	4.2	1.8	2.2	1.1	1.5	0.5	1.1	2.1
Mastocarpus jardinii	1.7	1.4	2.2	2.8	1.9	2.5	1.5	3.0	1.8
Neorhodomela larix	2.2	3.2	1.5	2.2	0.6	0.9	2.3	3.5	1.6
Cryptopleura violacea	1.8	1.8	1.5	1.9	0.8	2.0	<0.1	<0.1	1.0
Smithora naiadum	0.1	0.3	<0.1	<0.1	3.8	5.2	<0.1	<0.1	1.0
Mazzaella heterocarpa	1.7	1.2	1.3	1.3	0.3	0.6	<0.1	<0.1	0.9
Corallina vancouveriensis	1.8	2.5	0.2	0.3	0.2	0.7	1.1	1.8	0.8
Gelidium pusillum	0.3	0.6	1.3	2.1	<0.1	0.2	<0.1	<0.1	0.4
juv. articulated coralline algae	0.8	0.8	0.1	0.3	<0.1	<0.1	0.3	1.1	0.3
Pterosiphonia dendroidea	<0.1	<0.1	0.3	0.9	<0.1	<0.1	1.0	1.4	0.3
Endocladia muricata	0.3	0.7	0.6	1.0	0.1	0.4	0.1	0.3	0.3
Prionitis spp.	0.8	1.9	0.1	0.4	<0.1	<0.1	0.1	0.4	0.3
filamentous red algae complex	-	-	0.9	0.9	<0.1	0.2	<0.1	<0.1	0.2
Osmundea spp.	0.9	1.8	-	-	<0.1	0.2	<0.1	<0.1	0.2
Calliarthron/Bossiella spp. complex	0.3	0.9	0.6	0.8	<0.1	<0.1	<0.1	<0.1	0.2
Sarcodiotheca gaudichaudii	0.3	0.9	0.3	0.9	0.2	0.5	<0.1	0.2	0.2
Microcladia coulteri	-	-	<0.1	<0.1	0.7	1.4	-	-	0.2
Spongomorpha/Acrosiphonia complex	-	-	0.1	0.4	<0.1	<0.1	<0.1	0.2	<0.1
Halymenia/Schizymenia spp. complex	-	-	0.2	0.5	-	-	-	-	<0.1
Mazzaella lilacina	-	-	0.1	0.4	-	-	-	-	<0.1
Corallina officinalis	-	-	-	-	-	-	<0.1	0.2	<0.1
Nereocystis luetkeana	-	-	-	-	<0.1	0.2	-	-	<0.1
Cladophora spp.	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Melobesia mediocris	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Callithamnion pikeanum	-	-	<0.1	<0.1	-	-	-	-	<0.1
Halosaccion americanum	-	-	<0.1	<0.1	-	-	-	-	<0.1
Colpomenia spp.	-	-	<0.1	<0.1	-	-	-	-	<0.1
Grateloupia doryphora	-	-	-	-	<0.1	<0.1	-	-	<0.1
Laminariales	-	-	<0.1	<0.1	-	-	-	-	<0.1
Bryopsis spp.	-	-	-	-	<0.1	<0.1	-	-	<0.1
Invertebrates									
*Tegula funebralis**	27.8	15.0	13.2	5.9	6.8	5.4	12.8	16.4	15.2
Pagurus spp.*	14.8	6.8	12.6	14.1	5.0	2.4	10.4	11.2	10.7
*Anthopleura elegantissima**	9.6	20.9	8.8	19.1	3.8	6.9	8.6	13.9	7.7
*Tegula brunnea**	6.2	9.0	3.6	6.4	2.8	1.9	0.4	0.9	3.3

(continued)

Table C3 (continued). Intertidal Algae (percent cover) and Invertebrates (abundance per 1.0 m^2) Survey Means, Standard Deviations and 2003 Annual Means, North Control Station NC 2+0.3m.

Survey	132		133		134		135		
Survey Date	18-Feb-03		5-Jun-03		13-Aug-03		9-Dec-03		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Invertebrates (continued)									
*Tectura scutum**	6.0	5.4	2.6	2.8	1.8	3.5	1.2	2.2	2.9
Pista spp. (%)	1.2	2.6	0.8	0.8	0.7	1.2	4.5	4.3	1.8
*Epiactis prolifera**	1.0	1.2	0.8	1.3	1.8	2.5	0.6	0.9	1.1
*Lottia limatula**	1.2	2.2	1.0	2.2	0.8	1.1	0.8	1.3	1.0
*Lottia pelta**	2.0	1.6	0.4	0.9	0.4	0.9	-	-	0.7
Bryozoa unid. (foliose) (%)	2.6	4.1	-	-	-	-	-	-	0.7
Leptasterias spp.*	0.2	0.5	0.6	0.6	0.8	0.8	0.4	0.9	0.5
*Lottia scabra**	0.2	0.5	1.4	3.1	0.2	0.5	0.2	0.5	0.5
*Fissurella volcano**	0.8	1.8	0.4	0.9	0.2	0.5	0.2	0.5	0.4
Ocenebra spp.*	0.2	0.5	<0.1	<0.1	0.2	0.5	0.2	0.5	0.2
Nemertea unid.	-	-	0.2	0.5	0.2	0.5	0.2	0.5	0.2
Mopalia spp.*	0.4	0.6	0.2	0.5	-	-	-	-	0.2
*Nuttallina californica**	-	-	0.2	0.5	0.2	0.5	0.2	0.5	0.2
Pugettia spp.	-	-	0.2	0.5	0.4	0.9	-	-	0.2
Acmaea mitra	0.2	0.5	-	-	-	-	0.2	0.5	0.1
*Tetraclita rubescens**	0.2	0.5	<0.1	<0.1	0.2	0.5	-	-	0.1
Calliostoma ligatum	0.2	0.5	-	-	-	-	0.2	0.5	<0.1
Nereidae unid.	-	-	-	-	0.4	0.9	-	-	<0.1
Tonicella lineata	-	-	0.2	0.5	-	-	-	-	<0.1
*Pachygrapsus crassipes**	0.2	0.5	-	-	-	-	-	-	<0.1
Asterina miniata	-	-	0.2	0.5	-	-	-	-	<0.1
*Pisaster ochraceus**	0.2	0.5	-	-	-	-	-	-	<0.1
Lepidozona spp.	-	-	0.2	0.5	-	-	-	-	<0.1
Bryozoa unid. (encrusting) (%)	<0.1	0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Porifera unid. (encrusting) (%)	<0.1	0.2	<0.1	<0.1	-	-	<0.1	<0.1	<0.1
Spirorbidae unid. (%)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Tunicata unid. (colonial/social) (%)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Crepidula spp.	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Lottiidae unid.	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	<0.1
Lacuna spp.	<0.1	<0.1	<0.1	<0.1	-	-	-	-	<0.1
Lottia asmi	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	<0.1
Phragmatopoma californica (%)	<0.1	<0.1	-	-	-	-	<0.1	<0.1	<0.1
Chthamalus fissus (%)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	<0.1
Bittium spp.	-	-	<0.1	<0.1	<0.1	<0.1	-	-	<0.1
Grapsidae unid. (juvenile)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	<0.1
Cyanoplax spp.	-	-	-	-	<0.1	<0.1	-	-	<0.1
Alia spp.	-	-	<0.1	<0.1	<0.1	<0.1	-	-	<0.1
Ischnochitonidae unid.	-	-	-	-	<0.1	<0.1	-	-	<0.1
Pycnogonida unid.	-	-	-	-	<0.1	<0.1	-	-	<0.1
Pelecypoda unid. (boring)	-	-	-	-	<0.1	<0.1	-	-	<0.1
Serpulidae unid.	<0.1	<0.1	-	-	-	-	-	-	<0.1
Cancer spp. (juvenile)	-	-	<0.1	<0.1	-	-	-	-	<0.1
Salmacina tribranchiata	<0.1	<0.1	-	-	<0.1	<0.1	-	-	<0.1
Haliclona spp. (%)	-	-	<0.1	<0.1	-	-	-	-	<0.1
Substrate									
sand (shell gravel)	5.7	4.1	8.5	6.0	15.9	8.3	7.3	10.3	9.3
rock	5.0	3.3	3.4	3.6	2.2	1.5	4.3	4.1	3.7
cobble	4.5	8.2	2.3	2.8	1.0	2.2	1.9	2.3	2.4

Table C4. Intertidal Algae (percent cover) and Invertebrates (abundance per 1.0 m^2) Survey Means, Standard Deviations and 2003 Annual Means, North Control Station NC 2+0.9m.

Survey	132		133		134		135		
Survey Date	18-Feb-03		5-Jun-03		13-Aug-03		9-Dec-03		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Algae									
Endocladia muricata	43.3	27.2	36.8	3-	34.4	28.5	39.1	28.1	38.4
Mastocarpus papillatus	15.0	9.6	24.2	17.0	33.8	17.2	12.9	7.3	21.5
Non-coralline crust	17.2	8.0	10.3	4.5	9.4	5.1	15.9	10.6	13.2
Mazzaella flaccida	5.2	5.9	6.1	6.4	14.7	11.8	4.6	3.2	7.6
Mazzaella affinis	9.6	8.7	3.0	3.5	4.5	4.6	10.3	8.2	6.9
coralline crust	6.8	6.0	1.9	1.8	1.5	2.1	5.8	3.6	4.0
Mastocarpus jardinii	0.8	1.3	0.3	0.5	1.1	2.1	5.1	9.5	1.8
Porphyra spp.	<0.1	0.2	0.8	0.9	1.7	2.2	0.6	1.1	0.8
Corallina vancouveriensis	1.3	2.6	0.3	0.9	<0.1	<0.1	1.0	1.9	0.7
Gelidium coulteri	0.3	0.9	0.5	1.5	0.6	2.0	0.9	1.4	0.6
Mazzaella heterocarpa	0.1	0.3	<0.1	<0.1	0.5	0.7	0.5	1.1	0.3
Chondracanthus canaliculatus	0.1	0.4	0.3	0.9	0.3	1.1	0.1	0.4	0.2
Gastroclonium subarticulatum	0.3	1.1	0.1	0.4	0.3	1.1	-	-	0.2
Gelidium pusillum	0.4	0.6	0.1	0.4	<0.1	<0.1	0.2	0.5	0.2
Ulva/Enteromorpha spp.	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.6	1.5	0.1
Cryptopleura violacea	-	-	0.3	1.1	<0.1	<0.1	0.2	0.7	0.1
Pelvetia compressa	<0.1	0.2	<0.1	0.2	<0.1	0.2	0.3	1.1	0.1
Mazzaella leptorhynchos	<0.1	0.2	<0.1	<0.1	<0.1	<0.1	0.4	0.9	0.1
juv. articulated coralline algae	0.2	0.7	0.1	0.4	<0.1	<0.1	<0.1	<0.1	<0.1
Cladophora spp.	<0.1	0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Halymenia/Schizymenia spp. *complex*	-	-	-	-	-	-	<0.1	0.2	<0.1
Osmundea spp.	-	-	-	-	-	-	<0.1	0.2	<0.1
Prionitis spp.	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	<0.1
Calliarthron/Bossiella spp. *complex*	-	-	<0.1	<0.1	-	-	-	-	<0.1
Halosaccion americanum	-	-	<0.1	<0.1	-	-	-	-	<0.1
Invertebrates									
*Tegula funebralis**	65.0	13.9	97.2	39.2	125.0	70.9	167.2	118.4	113.6
*Anthopleura elegantissima**	33.8	12.9	23.0	9.4	19.2	12.2	18.0	15.5	23.5
*Lottia scabra**	17.2	6.2	31.8	14.7	33.2	2-	3.2	1.9	21.4
Pagurus spp.*	13.8	11.2	20.6	21.2	20.8	25.0	3.0	1.9	14.6
*Tectura scutum**	5.4	5.7	3.6	4.5	5.8	4.9	1.6	2.1	4.1
*Lottia limatula**	4.6	3.0	2.2	2.3	5.2	5.3	2.4	3.2	3.6
Ocenebra spp.*	4.6	2.6	1.4	0.9	1.4	2.1	1.0	0.7	2.1
*Lottia pelta**	1.8	1.8	0.2	0.5	1.4	2.6	0.8	1.3	1.1
*Pachygrapsus crassipes**	0.8	0.8	1.2	1.3	0.2	0.5	0.6	0.6	0.7
Mopalia spp.*	0.8	0.8	-	-	1.2	2.2	0.2	0.5	0.6
Chthamalus fissus (%)	1.3	1.8	0.2	0.7	<0.1	-	<0.1	<0.1	0.4
Acanthinucella spp.*	0.4	0.9	-	-	0.4	0.9	0.2	0.5	0.3
*Nuttallina californica**	0.2	0.5	0.2	0.5	0.2	0.5	0.2	0.5	0.2
Pollicipes polymerus	0.6	1.3	-	-	<0.1	<0.1	-	-	0.2
Lottia asmi	<0.1	-	<0.1	<0.1	<0.1	<0.1	0.4	0.9	0.1
*Lottia digitalis**	-	-	-	-	0.4	0.9	-	-	<0.1
*Tetraclita rubescens**	0.4	0.9	-	-	-	-	-	-	<0.1
Porifera unid. (encrusting) (%)	0.2	0.7	-	-	-	-	<0.1	<0.1	<0.1
Cyanoplax spp.	-	-	0.2	0.5	<0.1	<0.1	-	-	<0.1
*Nucella emarginata**	0.2	0.5	-	-	-	-	-	-	<0.1
*Tegula brunnea**	-	-	-	-	-	-	0.2	0.5	<0.1
Leptasterias spp.*	-	-	-	-	0.2	0.5	-	-	<0.1

(continued)

Table C4 (continued). Intertidal Algae (percent cover) and Invertebrates (abundance per 1.0 m^2) Survey Means, Standard Deviations and 2003 Annual Means, North Control Station NC 2+0.9m.

Survey	132		133		134		135		
Survey Date	18-Feb-03		5-Jun-03		13-Aug-03		9-Dec-03		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Invertebrates (continued)									
*Pisaster ochraceus**	-	-	-	-	-	-	0.2	0.5	< 0.1
Idotea spp.	-	-	-	-	0.2	0.5	-	-	< 0.1
Haliotis spp.*	< 0.1	0.3	-	-	-	-	-	-	< 0.1
Bryozoa unid. (encrusting) (%)	< 0.1	0.2	-	-	-	-	-	-	< 0.1
Lottiidae unid.	< 0.1	< 0.1	< 0.1	-	< 0.1	-	< 0.1	-	< 0.1
Spirorbidae unid. (%)	< 0.1	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	-	< 0.1
Littorina spp.	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Phragmatopoma californica (%)	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Crepidula spp.	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	-	-	< 0.1
Ischnochitonidae unid.	-	-	< 0.1	< 0.1	< 0.1	< 0.1	-	-	< 0.1
Grapsidae unid. (juvenile)	-	-	< 0.1	< 0.1	-	-	-	-	< 0.1
Tunicata unid. (colonial/social) (%)	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Lacuna spp.	-	-	-	-	< 0.1	< 0.1	-	-	< 0.1
Pista spp. (%)	-	-	< 0.1	< 0.1	-	-	< 0.1	< 0.1	< 0.1
Haliclona spp. (%)	-	-	-	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Cirratulidae/Terebellidae unid.	< 0.1	< 0.1	-	-	-	-	-	-	< 0.1
Substrate									
rock	15.0	7.7	15.3	12.7	14.4	6.7	12.6	13.1	14.3
cobble	5.5	4.5	10.8	8.8	8.3	7.6	8.2	6.3	8.2
sand (shell gravel)	0.3	1.1	< 0.1	0.2	1.0	1.2	0.6	1.1	0.5

Table C5. Intertidal Algae (percent cover) and Invertebrates (abundance per 1.0 m^2) Survey Means, Standard Deviations and 2003 Annual Means, Field's Cove Station FC 1+0.3m.

Survey	132		133		134		135		
Survey Date	16-Jan-03		14-May-03		1-Aug-03		10-Nov-03		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Algae									
Mazzaella flaccida	3.1	4.2	41.0	21.9	46.1	21.0	16.4	10.5	26.6
Non-coralline crust	24.7	7.6	13.5	6.8	15.7	7.8	18.1	9.1	18.0
Gastroclonium subarticulatum	11.9	10.3	12.4	11.7	11.4	7.3	31.0	17.7	16.7
Cryptopleura violacea	10.9	1-	0.7	1.0	7.2	8.2	13.8	10.2	8.1
coralline crust	7.7	3.4	6.8	6.6	4.4	2.0	7.0	4.3	6.5
Corallina vancouveriensis	10.1	6.3	5.8	6.7	2.4	2.8	7.4	7.1	6.4
Chondracanthus canaliculatus	3.5	3.6	8.4	5.2	6.9	5.1	5.1	4.6	6.0
Endocladia muricata	4.8	8.1	6.5	9.9	5.3	6.2	4.1	7.4	5.2
Gelidium coulteri	1.1	1.3	5.4	4.2	7.2	6.8	4.9	5.3	4.7
Phyllospadix spp.	6.4	8.7	2.2	4.1	1.9	2.7	4.7	6.2	3.8
Mastocarpus papillatus	1.2	1.7	5.1	6.6	4.9	5.4	2.6	3.4	3.5
Mazzaella affinis	1.3	2.6	2.2	3.7	4.4	7.3	1.7	3.4	2.4
Egregia menziesii	0.4	1.1	0.2	0.7	3.1	6.2	5.6	7.5	2.3
Ulva/Enteromorpha spp.	<0.1	<0.1	0.3	0.6	1.3	2.2	5.3	6.3	1.7
Mastocarpus jardinii	1.3	1.6	1.3	0.9	1.8	1.3	1.7	1.6	1.5
juv. articulated coralline algae	2.2	1.3	0.4	0.7	1.6	1.3	1.3	2.4	1.4
Porphyra spp.	<0.1	0.2	2.4	3.8	2.1	2.9	<0.1	<0.1	1.1
Calliarthron/Bossiella spp. complex	1.3	1.9	0.9	1.3	<0.1	<0.1	2.1	2.7	1.1
Prionitis spp.	1.5	2.1	<0.1	<0.1	0.1	0.4	0.7	1.0	0.6
Mazzaella heterocarpa	<0.1	0.2	0.6	0.8	1.1	1.1	0.2	0.5	0.5
Osmundea spp.	0.6	1.3	<0.1	<0.1	<0.1	<0.1	1.0	1.9	0.4
Mazzaella lilacina	1.0	2.3	-	-	-	-	-	-	0.3
Spongomorpha/Acrosiphonia complex	-	-	0.4	1.3	0.6	1.5	-	-	0.2
filamentous red algae complex	0.8	2.0	-	-	-	-	-	-	0.2
Mazzaella leptorhynchos	0.1	0.4	<0.1	<0.1	0.4	0.9	-	-	0.1
Smithora naiadum	<0.1	<0.1	-	-	<0.1	<0.1	0.4	1.1	0.1
Microcladia coulteri	-	-	-	-	0.2	0.3	0.2	0.5	0.1
Gelidium pusillum	0.3	0.6	<0.1	<0.1	-	-	<0.1	<0.1	<0.1
Cladophora spp.	<0.1	<0.1	<0.1	<0.1	0.1	0.3	<0.1	<0.1	<0.1
Callithamnion pikeanum	<0.1	<0.1	<0.1	0.2	<0.1	<0.1	-	-	<0.1
Cryptosiphonia woodii	-	-	<0.1	0.2	<0.1	<0.1	-	-	<0.1
Chondracanthus corymbiferus	-	-	<0.1	<0.1	<0.1	0.2	-	-	<0.1
Melobesia mediocris	<0.1	<0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1
Corallina officinalis	-	-	-	-	-	-	<0.1	<0.1	<0.1
Sarcodiotheca gaudichaudii	<0.1	<0.1	-	-	-	-	-	-	<0.1
Callithamnion/Pleonosporium complex	-	-	<0.1	<0.1	-	-	-	-	<0.1
Laminariales	<0.1	<0.1	-	-	-	-	-	-	<0.1
Invertebrates									
*Tegula funebralis**	20.8	22.9	106.8	145.0	4.0	4.9	1.0	1.7	33.2
*Strongylocentrotus purpuratus**	24.0	17.7	11.8	12.8	10.2	10.6	2.8	3.8	12.2
Pagurus spp.*	19.2	18.3	4.4	4.9	4.8	6.1	13.4	13.3	10.5
*Anthopleura elegantissima**	17.2	22.7	6.8	7.1	1.6	1.7	5.6	4.7	7.8
*Tegula brunnea**	16.0	27.7	2.0	2.4	6.8	9.2	4.8	6.0	7.4
*Nuttallina californica**	7.2	10.7	3.4	4.7	1.6	2.3	2.2	3.2	3.6
*Fissurella volcano**	9.4	4.7	0.4	0.6	1.4	2.6	3.0	2.5	3.6
*Lottia scabra**	7.8	17.4	1.2	2.7	1.4	3.1	1.2	2.7	2.9
*Tectura scutum**	4.6	3.6	2.2	2.5	2.6	3.1	0.6	0.9	2.5
*Lottia limatula**	1.2	2.7	3.4	5.1	1.6	2.2	0.8	0.5	1.8

(continued)

Table C5 (continued). Intertidal Algae (percent cover) and Invertebrates (abundance per 1.0 m^2) Survey Means, Standard Deviations and 2003 Annual Means, Field's Cove Station FC 1+0.3m.

Survey	132		133		134		135		
Survey Date	16-Jan-03		14-May-03		1-Aug-03		10-Nov-03		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Invertebrates (continued)									
*Pachygrapsus crassipes**	1.6	2.3	0.6	0.9	1.6	2.2	1.4	2.6	1.3
*Epiactis prolifera**	2.4	3.3	0.6	1.3	1.0	2.2	0.4	0.9	1.1
Pista spp. (%)	2.1	3.9	0.3	1.1	<0.1	0.2	1.7	3.9	1.1
Serpulorbis squamigerus	2.0	3.1	0.2	0.5	1.2	2.2	0.4	0.6	1.0
Ocenebra spp.*	2.6	2.6	0.8	0.8	0.2	0.5	-	-	0.9
*Tetraclita rubescens**	1.6	3.6	1.2	2.7	-	-	-	-	0.7
Serpulidae unid.	1.4	2.2	0.2	0.5	0.4	0.6	0.6	1.3	0.7
*Lottia pelta**	1.4	2.0	0.4	0.6	0.2	0.5	0.6	0.9	0.7
Leptasterias spp.*	-	-	1.0	1.0	0.6	0.6	-	-	0.4
Nemertea unid.	-	-	0.4	0.9	0.4	0.6	0.4	0.6	0.3
Acmaea mitra	<0.1	<0.1	<0.1	<0.1	0.2	0.5	0.8	0.5	0.3
*Pisaster ochraceus**	0.2	0.5	0.2	0.5	-	-	0.4	0.6	0.2
Pugettia spp.	0.2	0.5	-	-	0.4	0.9	-	-	0.2
Tonicella lineata	-	-	-	-	0.4	0.6	-	-	<0.1
Tunicata unid. (colonial/social) (%)	<0.1	<0.1	<0.1	<0.1	0.3	0.7	<0.1	<0.1	<0.1
Mopalia spp.*	-	-	-	-	<0.1	<0.1	0.2	0.5	<0.1
Octopus spp.	-	-	-	-	-	-	0.2	0.5	<0.1
Polychaeta unid.	-	-	0.2	0.5	-	-	-	-	<0.1
Cancer antennarius	-	-	0.2	0.5	-	-	-	-	<0.1
Stenoplax spp.	-	-	-	-	0.2	0.5	-	-	<0.1
Bryozoa unid. (encrusting) (%)	-	-	<0.1	<0.1	<0.1	0.2	<0.1	<0.1	<0.1
Phragmatopoma californica (%)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Lottiidae unid.	-	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1
Spirorbidae unid. (%)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Porifera unid. (encrusting) (%)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Chthamalus fissus (%)	<0.1	<0.1	<0.1	<0.1	-	-	<0.1	<0.1	<0.1
Sipuncula unid.	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1
Alia spp.	-	-	<0.1	<0.1	-	-	<0.1	<0.1	<0.1
Mitra idae	-	-	-	-	<0.1	<0.1	-	-	<0.1
Nitidiscala/Opalia spp.	-	-	-	-	<0.1	<0.1	-	-	<0.1
Nereidae unid.	-	-	-	-	<0.1	<0.1	-	-	<0.1
Pisaster/Henricia (juv.)	-	-	-	-	<0.1	<0.1	-	-	<0.1
Cirratulidae/Terebellidae unid.	-	-	-	-	-	-	<0.1	<0.1	<0.1
Erato spp.	<0.1	<0.1	-	-	-	-	-	-	<0.1
Haliclona spp. (%)	<0.1	<0.1	-	-	-	-	-	-	<0.1
Substrate									
rock	12.2	7.7	9.2	6.6	7.6	5.4	4.5	3.0	8.4
sand (shell gravel)	2.2	2.2	0.5	1.1	0.5	0.7	1.5	3.4	1.2
cobble	1.7	1.5	0.4	1.1	0.6	1.8	-	-	0.7

Table C6. Intertidal Algae (percent cover) and Invertebrates (abundance per 1.0 m^2) Survey Means, Standard Deviations and 2003 Annual Means, Field's Cove Station FC 1+0.9m.

Survey	132		133		134		135		
Survey Date	29-Jan-03		14-May-03		1-Aug-03		30-Oct-03		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Algae									
Endocladia muricata	38.2	23.4	41.2	25.3	34.7	20.8	34.4	2-	37.1
Non-coralline crust	21.9	9.2	12.5	9.3	16.7	10.2	20.4	10.3	17.9
Mastocarpus papillatus	3.5	3.5	7.0	6.4	15.1	10.2	8.5	4.0	8.5
Mazzaella flaccida	<0.1	<0.1	0.3	0.9	2.7	5.2	4.2	6.5	1.8
coralline crust	1.6	3.9	1.3	3.5	0.9	1.7	1.8	1.9	1.4
Pelvetia compressa	1.5	3.9	0.6	2.0	1.0	2.2	0.8	2.0	1.0
Gelidium coulteri	0.1	0.3	<0.1	<0.1	0.8	1.3	2.6	2.7	0.9
Phyllospadix spp.	0.4	1.3	0.3	1.1	1.0	2.8	1.5	2.5	0.8
Corallina vancouveriensis	0.8	2.2	0.5	1.5	<0.1	<0.1	1.5	1.5	0.7
Calliarthron/Bossiella spp. complex	0.6	1.8	0.6	2.0	0.7	2.2	0.8	1.8	0.7
Mazzaella leptorhynchos	<0.1	<0.1	<0.1	<0.1	0.3	0.7	0.8	1.0	0.3
Prionitis spp.	<0.1	<0.1	<0.1	<0.1	0.2	0.5	0.6	1.1	0.2
Mazzaella heterocarpa	<0.1	<0.1	0.1	0.3	<0.1	0.2	0.6	0.9	0.2
juv. articulated coralline algae	<0.1	<0.1	<0.1	<0.1	0.2	0.3	0.4	0.8	0.2
Mazzaella affinis	<0.1	<0.1	-	-	0.2	0.5	0.3	0.6	0.1
Porphyra spp.	-	-	<0.1	<0.1	0.3	0.9	<0.1	<0.1	<0.1
Cladophora spp.	<0.1	<0.1	<0.1	-	0.2	0.3	<0.1	0.2	<0.1
Callithamnion pikeanum	-	-	-	-	0.1	0.4	-	-	<0.1
Chondracanthus canaliculatus	-	-	-	-	<0.1	0.2	<0.1	0.2	<0.1
Cryptosiphonia woodii	<0.1	0.2	<0.1	<0.1	<0.1	<0.1	-	-	<0.1
Corallina officinalis	<0.1	0.2	-	-	-	-	-	-	<0.1
Gelidium pusillum	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Ulva/Enteromorpha spp.	-	-	-	-	<0.1	<0.1	-	-	<0.1
Smithora naiadum	<0.1	<0.1	-	-	-	-	<0.1	<0.1	<0.1
Cryptopleura violacea	-	-	-	-	<0.1	<0.1	-	-	<0.1
Hesperophycus californicus	<0.1	<0.1	-	-	-	-	-	-	<0.1
Gastroclonium subarticulatum	<0.1	<0.1	-	-	-	-	-	-	<0.1
Callithamnion/Pleonosporium complex	<0.1	<0.1	-	-	-	-	-	-	<0.1
Melobesia mediocris	-	-	-	-	-	-	<0.1	<0.1	<0.1
Invertebrates									
*Anthopleura elegantissima**	217.0	152.3	191.0	185.0	258.6	215.6	296.8	341.5	240.9
*Tegula funebralis**	108.6	37.8	284.0	124.5	244.6	192.6	258.2	50.9	223.9
Pagurus spp.*	34.8	16.0	29.4	26.1	14.2	7.4	19.4	29.0	24.5
*Lottia scabra**	28.4	21.9	3.4	6.5	20.6	26.4	33.6	41.5	21.5
*Lottia limatula**	1.8	2.1	1.4	1.3	5.4	4.0	12.4	14.4	5.3
Cyanoplax spp.	0.2	0.5	1.0	1.0	3.6	2.3	8.2	4.7	3.3
Acanthinucella spp.*	2.2	2.4	2.2	1.9	0.8	0.8	2.0	1.4	1.8
*Tectura scutum**	1.0	1.2	0.2	0.5	2.2	2.3	2.4	1.1	1.5
*Lottia pelta**	0.4	0.9	-	-	0.4	0.9	4.8	7.4	1.4
Ocenebra spp.*	3.2	2.3	0.2	0.5	0.2	0.5	1.2	0.8	1.2
*Pachygrapsus crassipes**	0.6	0.9	0.8	0.8	0.4	0.6	2.2	1.1	1.0
Phragmatopoma californica (%)	0.8	1.8	0.3	1.1	0.2	0.7	0.7	0.9	0.5
*Strongylocentrotus purpuratus**	0.4	0.9	0.6	1.3	-	-	0.2	0.5	0.3
Haliotis spp.*	0.2	0.6	0.3	0.7	0.3	1.0	0.3	1.0	0.3
Mopalia spp.*	0.4	0.6	-	-	-	-	0.2	0.5	0.2
Nemertea unid.	-	-	-	-	-	-	0.6	0.9	0.2
Chthamalus fissus (%)	0.4	0.9	<0.1	0.2	<0.1	<0.1	<0.1	<0.1	0.1
Leptasterias spp.*	-	-	-	-	0.2	0.5	0.2	0.5	<0.1

(continued)

Table C6 (continued). Intertidal Algae (percent cover) and Invertebrates (abundance per 1.0 m^2) Survey Means, Standard Deviations and 2003 Annual Means, Field's Cove Station FC 1+0.9m.

Survey	132		133		134		135		
Survey Date	29-Jan-03		14-May-03		1-Aug-03		30-Oct-03		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Invertebrates (continued)									
Cirratulidae/Terebellidae unid.	-	-	0.2	0.5	-	-	< 0.1	< 0.1	< 0.1
*Epiactis prolifera**	-	-	-	-	-	-	0.2	0.5	< 0.1
Tonicella lineata	-	-	-	-	0.2	0.5	-	-	< 0.1
Nereidae unid.	-	-	-	-	-	-	0.2	0.5	< 0.1
Lottiidae unid.	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	-	< 0.1	-	< 0.1
Lottia asmi	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Littorina spp.	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Sipuncula unid.	-	-	< 0.1	< 0.1	-	-	< 0.1	< 0.1	< 0.1
Haliclona spp. (%)	< 0.1	< 0.1	< 0.1	< 0.1	-	-	-	-	< 0.1
Nitidiscala/Opalia spp.	< 0.1	< 0.1	-	-	-	-	-	-	< 0.1
Serpulidae unid.	-	-	-	-	< 0.1	< 0.1	-	-	< 0.1
Grapsidae unid. (juvenile).	< 0.1	< 0.1	-	-	-	-	-	-	< 0.1
Spirorbidae unid. (%)	< 0.1	< 0.1	-	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acmaea mitra	< 0.1	< 0.1	-	-	-	-	-	-	< 0.1
Crepidula spp.	-	-	-	-	< 0.1	< 0.1	-	-	< 0.1
Bittium spp.	-	-	-	-	< 0.1	< 0.1	-	-	< 0.1
Heptacarpus spp.	-	-	-	-	-	-	< 0.1	< 0.1	< 0.1
Porifera unid. (encrusting) (%)	-	-	-	-	-	-	< 0.1	< 0.1	< 0.1
Substrate									
rock	22.2	12.6	33.3	14.9	30.2	11.1	16.5	10.7	25.6
cobble	3.5	4.5	3.9	6.5	5.2	9.0	1.3	2.9	3.5
sand (shell gravel)	5.6	5.6	0.3	0.8	0.3	1.1	3.3	5.8	2.4

Table C7. Intertidal Algae (percent cover) and Invertebrates (abundance per 1.0 m^2) Survey Means, Standard Deviations and 2003 Annual Means, Field's Cove Station FC 2+0.3m.

Survey	132		133		134		135		
Survey Date	20-Jan-03		14-May-03		1-Aug-03		10-Nov-03		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Algae									
Non-coralline crust	23.0	1-	14.8	7.6	15.2	12.1	24.4	9.7	19.3
Mazzaella flaccida	2.4	2.1	16.0	11.7	27.4	12.7	8.7	7.4	13.6
coralline crust	13.6	4.4	12.5	4.6	2.8	2.4	6.3	4.5	8.8
Gelidium coulteri	1.0	0.9	6.7	6.1	14.9	11.0	8.3	5.9	7.7
Corallina vancouveriensis	18.5	13.1	3.4	3.8	1.4	3.0	5.1	5.3	7.1
Endocladia muricata	6.7	13.3	7.5	11.7	7.4	13.0	6.6	14.6	7.0
Calliarthron/Bossiella spp. complex	8.5	6.6	4.4	4.6	2.5	4.9	5.8	5.2	5.3
Cryptopleura violacea	7.6	5.5	0.2	0.3	4.9	5.6	5.3	7.2	4.5
Egregia menziesii	1.5	2.3	0.8	1.3	6.1	10.6	9.6	10.7	4.5
Gastroclonium subarticulatum	3.6	3.8	2.2	5.2	4.7	9.5	6.0	9.0	4.1
Chondracanthus canaliculatus	1.9	2.2	4.0	5.6	3.9	5.9	4.9	11.5	3.7
Mastocarpus papillatus	0.6	1.0	3.9	4.2	7.2	6.9	2.2	3.3	3.4
Phyllospadix spp.	4.2	9.8	2.8	7.0	2.7	5.3	3.2	7.9	3.2
juv. articulated coralline algae	4.5	1.9	2.2	2.3	3.1	4.7	0.8	1.0	2.7
Mazzaella affinis	1.3	1.9	1.6	3.5	1.4	2.5	1.5	2.4	1.4
Ulva/Enteromorpha spp.	<0.1	<0.1	0.3	0.9	1.0	0.9	3.7	6.2	1.2
Prionitis spp.	1.9	2.5	0.4	0.9	0.5	0.7	1.5	1.9	1.1
Mastocarpus jardinii	1.2	1.3	1.3	1.3	0.8	1.2	1.0	1.2	1.1
Porphyra spp.	-	-	1.3	2.1	2.6	3.1	<0.1	0.2	1.0
Mazzaella heterocarpa	0.3	0.7	0.8	0.9	1.3	3.0	<0.1	<0.1	0.6
Osmundea spp.	0.3	0.9	0.2	0.7	0.2	0.7	0.9	1.5	0.4
Spongomorpha/Acrosiphonia complex	<0.1	<0.1	0.4	1.3	0.9	1.4	-	-	0.3
Gelidium pusillum	0.1	0.3	<0.1	<0.1	0.6	2.0	-	-	0.2
Microcladia coulteri	-	-	-	-	0.4	1.1	<0.1	<0.1	0.1
Cryptosiphonia woodii	<0.1	0.2	<0.1	<0.1	0.3	0.7	<0.1	<0.1	<0.1
Mazzaella leptorhynchos	<0.1	<0.1	<0.1	<0.1	0.2	0.5	-	-	<0.1
Laminaria setchellii	-	-	-	-	-	-	0.2	0.7	<0.1
Corallina officinalis	0.1	0.3	-	-	<0.1	<0.1	<0.1	<0.1	<0.1
Microcladia borealis	<0.1	<0.1	<0.1	0.2	<0.1	0.2	-	-	<0.1
Smithora naladum	<0.1	<0.1	-	-	<0.1	0.2	<0.1	<0.1	<0.1
Cladophora spp.	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
filamentous red algae complex	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	<0.1
Callithamnion/Pleonosporium complex	<0.1	<0.1	<0.1	<0.1	-	-	-	-	<0.1
Melobesia mediocris	<0.1	<0.1	-	-	-	-	<0.1	<0.1	<0.1
Sarcodiotheca gaudichaudii	-	-	-	-	<0.1	<0.1	-	-	<0.1
Callophyllis spp.	<0.1	<0.1	-	-	-	-	-	-	<0.1
Mazzaella lilacina	-	-	-	-	<0.1	<0.1	-	-	<0.1
Chrysophyta unid.	-	-	<0.1	<0.1	-	-	-	-	<0.1
Invertebrates									
*Tegula funebralis**	180.2	105.5	151.8	121.9	14.8	9.0	47.2	40.5	98.5
*Strongylocentrotus purpuratus**	63.6	21.4	113.8	63.8	21.6	13.4	24.4	18.2	55.9
Pagurus spp.*	62.6	83.1	20.4	8.8	16.2	15.7	18.2	12.1	29.4
*Lottia scabra**	38.0	76.3	26.8	57.2	14.8	32.0	26.8	53.9	26.6
*Anthopleura elegantissima**	23.2	20.1	22.8	18.4	19.6	25.2	9.0	7.4	18.7
*Tegula brunnea**	28.0	50.6	1.6	3.6	3.2	3.4	1.6	3.1	8.6
*Nuttallina californica**	12.4	12.8	11.4	15.5	3.8	7.4	4.8	7.1	8.1
*Lottia limatula**	4.0	1.2	1.8	0.8	0.8	1.1	2.2	1.6	2.2
*Tectura scutum**	2.4	1.5	2.4	1.8	1.4	2.2	2.2	1.3	2.1
*Lottia pelta**	2.2	1.8	2.8	1.3	2.4	4.3	0.6	0.9	2.0

(continued)

Table C7 (continued). Intertidal Algae (percent cover) and Invertebrates (abundance per 1.0 m^2) Survey Means, Standard Deviations and 2003 Annual Means, Field's Cove Station FC 2+0.3m.

Survey	132		133		134		135		
Survey Date	20-Jan-03		14-May-03		1-Aug-03		10-Nov-03		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Invertebrates (continued)									
*Fissurella volcano**	3.8	6.3	0.4	0.9	1.0	1.0	2.4	3.1	1.9
Serpulorbis squamigerus	1.6	3.1	3.0	4.2	0.8	1.1	1.8	4.0	1.8
*Tetraclita rubescens**	0.4	0.9	3.4	5.3	-	-	1.0	2.2	1.2
*Pachygrapsus crassipes**	0.2	0.5	1.4	0.6	2.0	2.8	0.2	0.5	1.0
Acmaea mitra	2.4	2.2	<0.1	<0.1	-	-	0.2	0.5	0.7
*Epiactis prolifera**	1.2	1.3	0.8	0.8	0.4	0.6	0.2	0.5	0.7
Leptasterias spp.*	1.2	1.3	0.6	0.9	0.6	0.9	-	-	0.6
Nemertea unid.	0.4	0.9	0.8	1.1	-	-	0.6	0.9	0.5
*Pisaster ochraceus**	0.2	0.5	0.2	0.5	0.4	0.6	0.6	0.9	0.4
Serpulidae unid.	0.8	1.3	<0.1	<0.1	<0.1	<0.1	0.2	0.5	0.3
Mopalia spp.*	0.8	0.8	-	-	-	-	0.2	0.5	0.3
Ocenebra spp.*	0.6	0.9	-	-	-	-	0.2	0.5	0.2
*Lottia digitalis**	0.4	0.9	-	-	0.4	0.9	-	-	0.2
Tonicella lineata	0.4	0.6	-	-	0.2	0.5	-	-	0.2
Cyanoplax spp.	-	-	-	-	0.6	0.9	-	-	0.2
Chthamalus fissus (%)	0.1	0.4	<0.1	<0.1	0.2	0.7	0.1	0.4	0.1
Lottia gigantea	0.2	0.5	-	-	-	-	-	-	<0.1
Cancer antennarius	-	-	0.2	0.5	-	-	-	-	<0.1
Pugettia spp.	-	-	-	-	0.2	0.5	-	-	<0.1
Platyhelminthes unid.	-	-	-	-	-	-	0.2	0.5	<0.1
Phragmatopoma californica (%)	0.1	0.4	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Pista spp. (%)	0.1	0.4	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Lottiidae unid.	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1
Lottia asmi	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Spirorbidae unid. (%)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Ischnochitonidae unid.	<0.1	<0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1
Porifera unid. (encrusting) (%)	<0.1	<0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1
Tunicata unid. (colonial/social) (%)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Sipuncula unid.	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	<0.1
Grapsidae unid. (juvenile)	<0.1	<0.1	-	-	-	-	-	-	<0.1
Calliostoma ligatum	<0.1	<0.1	<0.1	<0.1	-	-	-	-	<0.1
Dodecaceria fewkesi	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Pelecypoda unid. (boring)	<0.1	<0.1	-	-	-	-	-	-	<0.1
Heptacarpus spp.	<0.1	<0.1	<0.1	<0.1	-	-	-	-	<0.1
Bryozoa unid. (encrusting) (%)	<0.1	<0.1	-	-	-	-	<0.1	<0.1	<0.1
Alia spp.	-	-	<0.1	<0.1	-	-	-	-	<0.1
Lottia ochracea	<0.1	<0.1	-	-	-	-	-	-	<0.1
Nereidae unid.	-	-	-	-	<0.1	<0.1	-	-	<0.1
*Pseudomelatoma torosa**	-	-	<0.1	<0.1	-	-	-	-	<0.1
Lacuna spp.	-	-	-	-	<0.1	<0.1	-	-	<0.1
Amphissa spp.	<0.1	<0.1	-	-	-	-	-	-	<0.1
Cirratulidae/Terebellidae unid.	-	-	<0.1	<0.1	-	-	-	-	<0.1
Eurystomella bilabiata (%)	-	-	<0.1	<0.1	-	-	-	-	<0.1
Haliclona spp. (%)	-	-	-	-	-	-	<0.1	<0.1	<0.1
Substrate									
rock	11.0	9.2	22.2	15.4	14.1	14.5	10.7	10.6	14.5
sand (shell gravel)	2.1	3.3	0.9	2.0	1.0	1.9	1.5	2.5	1.4
cobble	1.6	2.1	0.6	0.8	0.4	0.8	0.8	2.0	0.9

Table C8. Intertidal Algae (percent cover) and Invertebrates (abundance per 1.0 m^2) Survey Means, Standard Deviations and 2003 Annual Means, Field's Cove Station FC 2+0.9m.

Survey	132		133		134		135		
Survey Date	20-Jan-03		14-May-03		28-Aug-03		10-Nov-03		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Algae									
Endocladia muricata	44.4	12.9	43.0	14.6	32.4	14.8	34.6	8.0	38.6
Non-coralline crust	14.9	12.5	13.6	8.4	9.9	11.3	17.1	11.0	13.9
Mastocarpus papillatus	3.5	1.2	7.5	5.0	14.7	7.5	8.9	6.9	8.6
Pelvetia compressa	5.1	9.4	3.9	6.3	5.3	9.0	5.0	7.2	4.8
Mazzaella flaccida	<0.1	<0.1	<0.1	<0.1	1.2	2.2	1.0	1.9	0.6
Porphyra spp.	<0.1	<0.1	<0.1	<0.1	1.5	1.3	0.3	0.5	0.4
Gelidium coulteri	-	-	<0.1	0.2	1.1	2.3	<0.1	0.2	0.3
coralline crust	0.4	0.5	<0.1	0.2	0.5	0.6	<0.1	0.2	0.3
Hesperophycus californicus	<0.1	0.2	<0.1	<0.1	0.2	0.5	0.4	1.1	0.2
Prionitis spp.	<0.1	0.2	0.3	0.9	0.3	0.7	<0.1	<0.1	0.2
Cladophora spp.	<0.1	<0.1	<0.1	0.2	0.2	0.5	0.3	0.5	0.1
Corallina vancouveriensis	<0.1	<0.1	0.1	0.4	0.4	0.9	<0.1	<0.1	0.1
Mazzaella affinis	0.3	0.5	-	-	<0.1	0.2	0.1	0.3	0.1
Ulva/Enteromorpha spp.	-	-	-	-	0.3	0.6	<0.1	<0.1	<0.1
Mazzaella leptorhynchos	<0.1	<0.1	-	-	0.2	0.7	<0.1	0.2	<0.1
Spongomorpha/Acrosiphonia complex	-	-	-	-	0.2	0.7	-	-	<0.1
Grateloupia doryphora	-	-	-	-	0.1	0.4	-	-	<0.1
juv. articulated coralline algae	<0.1	0.2	-	-	<0.1	<0.1	<0.1	<0.1	<0.1
Mazzaella heterocarpa	-	-	-	-	<0.1	<0.1	<0.1	0.2	<0.1
Chrysophyta unid.	-	-	-	-	<0.1	0.2	-	-	<0.1
Mastocarpus jardinii	<0.1	0.2	-	-	-	-	-	-	<0.1
filamentous red algae complex	-	-	-	-	<0.1	0.2	-	-	<0.1
Gastroclonium subarticulatum	-	-	-	-	-	-	<0.1	0.2	<0.1
Gelidium pusillum	<0.1	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1
Cryptosiphonia woodii	-	-	<0.1	<0.1	-	-	-	-	<0.1
Chondracanthus canaliculatus	-	-	-	-	-	-	<0.1	<0.1	<0.1
Invertebrates									
*Tegula funebralis**	132.8	59.9	163.2	94.1	164.6	149.4	108.0	45.1	142.2
*Anthopleura elegantissima**	112.6	58.3	102.0	61.5	70.8	56.6	125.0	90.1	102.6
*Lottia scabra**	14.0	6.8	6.4	10.6	20.4	18.7	37.4	16.0	19.6
*Lottia limatula**	3.2	2.6	1.0	1.0	10.8	4.8	6.8	6.1	5.5
Pagurus spp.*	7.0	9.3	9.6	19.8	3.8	4.1	1.4	1.7	5.5
*Tectura scutum**	1.8	1.8	0.6	1.3	7.4	10.3	2.4	2.2	3.1
*Lottia digitalis**	-	-	0.4	0.9	8.2	18.3	2.8	4.8	2.9
Cyanoplax spp.	1.8	3.0	2.2	1.5	2.4	1.8	1.8	2.1	2.1
*Pachygrapsus crassipes**	0.6	0.9	1.6	0.6	2.0	0.7	1.2	0.5	1.4
Acanthinucella spp.*	2.0	2.6	1.2	1.8	1.2	1.6	0.4	0.9	1.2
*Lottia pelta**	1.8	1.3	0.4	0.9	2.0	2.1	0.6	0.9	1.2
Ocenebra spp.*	3.0	2.4	-	-	0.8	1.3	0.4	0.6	1.1
Pollicipes polymerus	-	-	-	-	-	-	1.4	3.1	0.4
Cirratulidae/Terebellidae unid.	-	-	<0.1	<0.1	1.0	1.7	-	-	0.3
Mopalia spp.*	0.4	0.9	-	-	-	-	0.2	0.5	0.2
*Strongylocentrotus purpuratus**	0.2	0.5	0.2	0.5	0.2	0.5	-	-	0.2
*Nucella emarginata**	0.4	0.9	-	-	-	-	-	-	<0.1
Leptasterias spp.*	0.2	0.5	0.2	0.5	-	-	-	-	<0.1
*Pisaster ochraceus**	-	-	-	-	0.4	0.6	-	-	<0.1
Phragmatopoma californica (%)	0.3	0.9	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1
Haliotis spp.*	0.2	0.4	-	-	-	-	<0.1	0.3	<0.1

(continued)

Table C8 (continued). Intertidal Algae (percent cover) and Invertebrates (abundance per 1.0 m^2) Survey Means, Standard Deviations and 2003 Annual Means, Field's Cove Station FC 2+0.9m.

Survey	132		133		134		135		
Survey Date	20-Jan-03		14-May-03		28-Aug-03		10-Nov-03		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Invertebrates (continued)									
Lottia gigantea	0.2	0.5	-	-	-	-	-	-	< 0.1
Nereidae unid.	-	-	-	-	0.2	0.5	-	-	< 0.1
Serpulidae unid.	-	-	-	-	-	-	0.2	0.5	< 0.1
Lottiidae unid.	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	-	< 0.1	-	< 0.1
Chthamalus fissus (%)	< 0.1	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Littorina spp.	< 0.1	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Lottia asmi	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Sipuncula unid.	< 0.1	< 0.1	-	-	< 0.1	< 0.1	-	-	< 0.1
Ischnochitonidae unid.	< 0.1	< 0.1	-	-	< 0.1	< 0.1	-	-	< 0.1
Grapsidae unid. (juvenile)	< 0.1	< 0.1	-	-	-	-	-	-	< 0.1
Mytilus californianus	-	-	-	-	-	-	< 0.1	< 0.1	< 0.1
Nitidiscala/Opalia spp.	< 0.1	< 0.1	-	-	-	-	-	-	< 0.1
Spirorbidae unid. (%)	-	-	-	-	< 0.1	< 0.1	-	-	< 0.1
Haliclona spp. (%)	< 0.1	< 0.1	-	-	-	-	-	-	< 0.1
Substrate									
rock	26.7	16.1	36.4	16.9	46.4	21.9	35.9	18.1	36.4
sand (shell gravel)	6.3	10.5	2.6	4.8	0.6	1.2	8.1	16.2	4.4
cobble	0.8	1.1	1.3	3.1	1.0	2.2	-	-	0.8

Table C9. Intertidal Algae (percent cover) and Invertebrates (abundance per 1.0 m^2) Survey Means, Standard Deviations and 2003 Annual Means, Field's Cove Station FC 3+0.3m.

Survey	132		133		134		135		
Survey Date	29-Jan-03		18-May-03		14-Aug-03		9-Nov-03		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Algae									
Mazzaella flaccida	11.4	11.4	49.0	19.6	46.1	22.8	28.5	20.6	33.8
Non-coralline crust	29.7	11.9	21.1	10.8	14.8	6.4	23.8	7.2	22.3
Gastroclonium subarticulatum	14.9	16.3	6.9	11.6	16.6	22.2	19.2	21.9	14.4
Cryptopleura violacea	14.0	8.0	0.8	0.9	3.1	3.6	6.9	7.7	6.2
Phyllospadix spp.	6.3	12.5	3.7	8.9	4.7	9.7	5.5	11.6	5.0
Mastocarpus papillatus	3.5	4.1	7.7	8.9	6.3	9.5	1.9	2.5	4.9
Mastocarpus Jardinii	4.3	7.0	3.1	3.7	5.0	6.1	5.0	7.8	4.4
Chondracanthus canaliculatus	5.1	4.0	4.6	4.7	3.8	2.1	3.8	3.9	4.3
coralline crust	6.7	2.9	3.0	2.9	3.5	3.7	3.1	4.0	4.1
Gelidium coulteri	3.0	1.9	3.9	3.6	4.4	4.1	3.8	3.0	3.8
Ulva/Enteromorpha spp.	1.0	1.8	0.7	1.5	3.5	3.9	8.1	6.2	3.4
Calliarthron/Bossiella spp. complex	4.3	5.4	2.5	4.2	3.1	4.7	3.5	6.1	3.3
Egregia menziesii	0.8	1.8	0.1	0.3	5.8	9.1	2.6	7.2	2.3
Corallina vancouveriensis	5.0	3.3	0.4	0.5	1.6	2.9	2.2	4.0	2.3
Mazzaella affinis	1.0	1.4	2.0	3.4	1.5	3.5	2.1	5.9	1.7
Endocladia muricata	1.3	1.6	1.5	2.1	1.3	1.9	0.8	1.1	1.2
Mazzaella heterocarpa	1.6	2.5	2.4	2.7	0.3	0.5	0.3	0.6	1.1
Smithora naiadum	-	-	-	-	1.3	3.7	1.3	4.0	0.6
Cryptosiphonia woodii	1.3	3.0	<0.1	0.2	0.6	1.3	<0.1	<0.1	0.5
juv. articulated coralline algae	1.0	1.2	0.2	0.7	0.2	0.5	0.4	0.9	0.5
Prionitis spp.	0.8	1.0	<0.1	0.2	0.5	0.6	0.3	0.7	0.4
Porphyra spp.	<0.1	<0.1	0.3	0.7	1.3	2.3	-	-	0.4
Chrysophyta unid.	-	-	0.3	0.9	1.2	2.5	-	-	0.4
Spongomorpha/Acrosiphonia complex	-	-	1.1	3.3	0.2	0.7	<0.1	<0.1	0.3
Callithamnion pikeanum	0.6	1.1	0.5	1.1	<0.1	0.2	<0.1	<0.1	0.3
Mazzaella leptorhynchos	0.3	0.5	0.3	0.7	0.1	0.3	<0.1	<0.1	0.2
filamentous red algae complex	0.6	1.0	0.1	0.3	-	-	<0.1	<0.1	0.2
Gelidium pusillum	0.3	0.9	0.1	0.4	<0.1	<0.1	<0.1	<0.1	0.1
Osmundea spp.	0.3	0.5	<0.1	<0.1	<0.1	<0.1	<0.1	0.2	0.1
Sarcodiotheca gaudichaudii	0.1	0.4	0.1	0.4	<0.1	0.2	<0.1	<0.1	<0.1
Corallina officinalis	-	-	-	-	<0.1	<0.1	0.3	0.9	<0.1
Melobesia mediocris	-	-	-	-	-	-	0.1	0.4	<0.1
Chondracanthus corymbiferus	<0.1	0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Callophyllis spp.	<0.1	0.2	-	-	-	-	-	-	<0.1
Cladophora spp.	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Microcladia coulteri	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1
Colpomenia spp.	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Callithamnion/Pleonosporium complex	-	-	<0.1	<0.1	-	-	-	-	<0.1
Laminariales	-	-	-	-	-	-	<0.1	<0.1	<0.1
Invertebrates									
*Strongylocentrotus purpuratus**	64.4	112.4	46.2	85.0	16.8	17.5	37.6	63.0	41.3
*Tegula funebralis**	60.2	74.4	11.2	12.8	3.2	4.6	2.6	4.0	19.3
Pagurus spp.*	17.0	9.0	8.0	5.4	16.2	14.7	21.2	5.8	15.6
*Anthopleura elegantissima**	8.2	3.8	7.0	3.7	5.0	1.4	6.6	3.8	6.7
*Tegula brunnea**	6.6	7.0	2.4	3.6	6.4	9.3	7.0	5.5	5.6
*Fissurella volcano**	2.8	2.3	1.2	0.8	5.2	5.4	2.2	3.0	2.9
Serpulorbis squamigerus	4.6	7.8	0.4	0.9	1.6	2.6	1.4	2.6	2.0
*Lottia limatula**	4.4	3.4	0.2	0.5	3.2	4.6	-	-	2.0

(continued)

Table C9 (continued). Intertidal Algae (percent cover) and Invertebrates (abundance per 1.0 m^2) Survey Means, Standard Deviations and 2003 Annual Means, Field's Cove Station FC 3+0.3m.

Survey	132		133		134		135		
Survey Date	29-Jan-03		18-May-03		14-Aug-03		9-Nov-03		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Invertebrates (continued)									
*Lottia scabra**	7.4	12.3	0.2	0.5	-	-	0.2	0.5	2.0
Pista spp. (%)	2.2	3.2	0.2	0.7	0.9	2.0	1.1	2.1	1.1
*Lottia pelta**	1.0	1.4	1.0	1.0	2.2	3.4	0.2	0.5	1.1
*Tetraclita rubescens**	3.8	5.8	0.4	0.9	-	-	-	-	1.1
*Tectura scutum**	1.0	0.7	0.6	0.9	0.4	0.9	1.8	3.0	1.0
Leptasterias spp.*	1.0	1.7	0.2	0.5	1.0	0.7	0.2	0.5	0.6
Phragmatopoma californica (%)	2.0	4.2	<0.1	<0.1	<0.1	0.2	<0.1	0.2	0.5
Serpulidae unid.	1.4	1.7	<0.1	<0.1	<0.1	<0.1	0.6	1.3	0.5
*Nuttallina californica**	0.8	1.8	0.6	1.3	0.6	0.9	<0.1	<0.1	0.5
*Epiactis prolifera**	0.2	0.5	0.4	0.6	1.0	1.0	0.2	0.5	0.5
Acmaea mitra	1.4	1.5	-	-	0.4	0.9	-	-	0.5
Ocenebra spp.*	1.2	0.8	0.2	0.5	0.4	0.6	-	-	0.5
Nemertea unid.	0.2	0.5	0.6	1.3	0.4	0.6	0.2	0.5	0.4
Tonicella lineata	0.6	0.6	-	-	0.2	0.5	0.4	0.9	0.3
*Pachygrapsus crassipes**	0.6	1.3	-	-	0.2	0.5	-	-	0.2
*Pisaster ochraceus**	-	-	0.2	0.5	0.2	0.5	0.4	0.6	0.2
Pugettia spp.	0.2	0.5	-	-	0.2	0.5	0.2	0.5	0.2
Sipuncula unid.	0.4	0.9	-	-	-	-	<0.1	<0.1	0.1
Tunicata unid. (colonial/social) (%)	<0.1	<0.1	<0.1	<0.1	0.2	0.5	<0.1	<0.1	<0.1
Homolo. luridum/Lirularia succincta	-	-	-	-	<0.1	<0.1	0.2	0.5	<0.1
Cyanoplax spp.	-	-	-	-	0.2	0.5	-	-	<0.1
Diodora spp.	-	-	-	-	0.2	0.5	-	-	<0.1
Pisaster/Henricia (juv.)	-	-	0.2	0.5	-	-	-	-	<0.1
Lottiidae unid.	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1
Chthamalus fissus (%)	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	-	<0.1
Spirorbidae unid. (%)	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Lottia asmi	<0.1	<0.1	-	-	<0.1	<0.1	-	-	<0.1
Bryozoa unid. (encrusting) (%)	<0.1	<0.1	-	-	<0.1	<0.1	-	-	<0.1
Lacuna spp.	<0.1	<0.1	<0.1	<0.1	-	-	-	-	<0.1
Crepidula spp.	<0.1	<0.1	-	-	-	-	<0.1	<0.1	<0.1
Nitidiscala/Opalia spp.	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1
Ischnochitonidae unid.	-	-	-	-	<0.1	<0.1	-	-	<0.1
Bittium spp.	-	-	-	-	<0.1	<0.1	-	-	<0.1
Porifera unid. (encrusting) (%)	<0.1	<0.1	-	-	-	-	<0.1	<0.1	<0.1
Alia spp.	-	-	-	-	<0.1	<0.1	-	-	<0.1
Pelecypoda unid. (boring)	-	-	-	-	<0.1	<0.1	-	-	<0.1
Amphissa spp.	<0.1	<0.1	-	-	-	-	-	-	<0.1
Lissothuria nutriens	-	-	-	-	<0.1	<0.1	-	-	<0.1
Grapsidae unid. (juvenile)	-	-	-	-	<0.1	<0.1	-	-	<0.1
Dodecaceria fewkesi	<0.1	<0.1	-	-	-	-	-	-	<0.1
Substrate									
rock	6.9	4.1	5.7	4.8	5.3	4.5	5.1	3.7	5.7
sand (shell gravel)	3.5	3.4	1.7	2.2	1.6	2.5	4.4	5.8	2.8
cobble	1.0	2.0	0.7	2.0	1.5	3.1	0.3	1.1	0.9

Table C10. Intertidal Algae (percent cover) and Invertebrates (abundance per 1.0 m^2) Survey Means, Standard Deviations and 2003 Annual Means, Field's Cove Station FC 3+0.9m.

Survey	132		133		134		135		
Survey Date	29-Jan-03		18-May-03		14-Aug-03		9-Nov-03		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Algae									
Endocladia muricata	36.5	15.4	46.3	2-	23.4	19.3	27.2	13.0	33.3
Mastocarpus papillatus	15.2	12.1	23.4	17.2	44.4	28.0	41.2	20.4	31.0
Non-coralline crust	30.5	10.2	14.5	8.9	12.5	6.6	26.6	6.3	21.0
Mazzaella flaccida	2.4	1.8	1.6	2.0	6.7	5.7	4.6	2.5	3.8
Gelidium coulteri	3.5	4.6	<0.1	<0.1	1.9	4.7	0.7	0.9	1.5
Pelvetia compressa	1.7	3.9	0.4	1.1	0.8	2.4	1.3	2.5	1.0
coralline crust	1.9	1.6	0.6	0.7	0.6	1.3	0.9	1.1	1.0
Corallina vancouveriensis	1.5	1.8	0.6	1.1	1.2	3.1	0.6	1.0	1.0
Cladophora spp.	0.1	0.3	<0.1	-	2.5	3.3	0.3	0.4	0.7
Mazzaella affinis	1.0	1.5	<0.1	<0.1	<0.1	<0.1	0.8	1.0	0.5
Chondracanthus canaliculatus	0.3	0.7	-	-	<0.1	<0.1	1.3	1.7	0.4
Spongomorpha/Acrosiphonia complex	-	-	-	-	1.6	4.0	-	-	0.4
Gelidium pusillum	1.0	2.2	0.1	0.4	<0.1	0.2	<0.1	<0.1	0.3
Mazzaella heterocarpa	0.8	1.0	<0.1	0.2	0.2	0.5	0.1	0.3	0.3
Mastocarpus jardinii	0.6	1.1	<0.1	0.2	0.1	0.4	<0.1	0.2	0.2
Porphyra spp.	<0.1	<0.1	0.1	0.3	0.6	1.0	<0.1	<0.1	0.2
Mazzaella leptorhynchos	0.5	0.9	<0.1	<0.1	<0.1	<0.1	0.1	0.3	0.2
Prionitis spp.	<0.1	0.2	<0.1	<0.1	<0.1	<0.1	0.4	1.1	0.1
Cryptosiphonia woodii	0.3	0.7	<0.1	<0.1	-	-	<0.1	<0.1	<0.1
Phyllospadix spp.	-	-	-	-	0.2	0.7	-	-	<0.1
juv. articulated coralline algae	<0.1	0.2	<0.1	<0.1	<0.1	<0.1	<0.1	0.2	<0.1
Ulva/Enteromorpha spp.	-	-	-	-	-	-	0.1	0.4	<0.1
Cryptopleura violacea	<0.1	0.2	-	-	-	-	-	-	<0.1
Calliarthron/Bossiella spp. complex	-	-	<0.1	<0.1	<0.1	<0.1	-	-	<0.1
Colpomenia spp.	-	-	-	-	<0.1	<0.1	-	-	<0.1
Invertebrates									
*Tegula funebralis**	175.0	108.8	162.4	56.0	324.4	273.2	211.4	72.1	218.3
*Anthopleura elegantissima**	10.8	8.4	2-	26.2	15.0	19.3	18.2	17.4	16.0
*Lottia scabra**	6.0	5.4	1.8	1.5	8.4	9.3	31.8	47.4	12.0
Pagurus spp.*	14.6	10.8	1.8	2.1	11.0	8.2	18.6	27.3	11.5
*Lottia limatula**	1.0	1.7	0.2	0.5	1.2	2.2	0.8	0.8	0.8
Ocenebra spp.*	2.2	1.8	-	-	-	-	0.2	0.5	0.6
Acanthinucella spp.*	1.4	2.1	0.4	0.9	0.2	0.5	0.4	0.9	0.6
*Tectura scutum**	0.2	0.5	1.2	1.8	-	-	1.0	2.2	0.6
Cyanoplax spp.	0.8	1.1	0.4	0.9	0.4	0.9	0.4	0.9	0.5
Phragmatopoma californica (%)	1.7	1.8	<0.1	<0.1	<0.1	<0.1	0.1	0.4	0.5
*Lottia pelta**	0.2	0.5	0.6	0.9	-	-	0.8	1.3	0.4
*Pachygrapsus crassipes**	0.8	0.8	-	-	0.2	0.5	0.2	0.5	0.3
*Nuttallina californica**	0.4	0.9	-	-	0.2	0.5	-	-	0.2
Leptasterias spp.*	-	-	-	-	0.4	0.6	-	-	<0.1
Littorina spp.	0.2	0.5	<0.1	<0.1	-	-	-	-	<0.1
Nemertea unid.	-	-	-	-	-	-	0.2	0.5	<0.1
*Fissurella volcano**	-	-	0.2	0.5	-	-	-	-	<0.1
*Pisaster ochraceus**	-	-	-	-	-	-	0.2	0.5	<0.1
Pugettia spp.	-	-	-	-	-	-	0.2	0.5	<0.1
Lottia asmi	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Lottiidae unid.	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Chthamalus fissus (%)	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	-	<0.1

(continued)

Table C10 (continued). Intertidal Algae (percent cover) and Invertebrates (abundance per 1.0 m^2) Survey Means, Standard Deviations and 2003 Annual Means, Field's Cove Station FC 3+0.9m.

Survey	132		133		134		135		
Survey Date	29-Jan-03		18-May-03		14-Aug-03		9-Nov-03		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Invertebrates (continued)									
Crepidula spp.	< 0.1	< 0.1	-	-	< 0.1	< 0.1	-	-	< 0.1
Serpulidae unid.	< 0.1	< 0.1	-	-	-	-	-	-	< 0.1
Haliclona spp. (%)	< 0.1	< 0.1	-	-	-	-	-	-	< 0.1
Spirorbidae unid. (%)	-	-	-	-	< 0.1	< 0.1	-	-	< 0.1
Substrate									
rock	16.5	16.3	21.2	18.3	18.3	12.8	16.5	8.5	18.1
sand (shell gravel)	5.2	8.2	5.2	8.4	1.8	2.3	0.8	1.2	3.3
cobble	0.3	1.1	< 0.1	< 0.1	0.1	0.3	< 0.1	0.2	0.1

Table C11. Intertidal Algae (percent cover) and Invertebrates (abundance per 1.0 m^2) Survey Means, Standard Deviations and 2003 Annual Means, North Diablo Cove Station NDC 1+0.3m.

Survey	132		133		134		135		
Survey Date	21-Jan-03		19-Jun-03		31-Jul-03		11-Nov-03		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Algae									
Non-coralline crust	22.2	10.1	26.7	14.2	28.1	9.6	28.3	9.6	26.3
Mastocarpus papillatus	<0.1	0.2	1.7	1.8	6.3	4.4	8.1	5.6	4.0
coralline crust	3.7	2.3	2.5	3.4	3.2	2.0	3.3	2.5	3.2
Gelidium coulteri	<0.1	<0.1	0.3	0.4	2.8	3.0	1.9	2.9	1.3
Corallina vancouveriensis	1.5	1.6	-	-	0.2	0.3	2.6	2.9	1.1
Ulva/Enteromorpha spp.	-	-	<0.1	<0.1	1.7	2.4	0.3	0.5	0.5
Mazzaella affinis	-	-	<0.1	0.2	0.5	0.9	1.2	1.1	0.4
juv. articulated coralline algae	0.4	0.4	0.1	0.3	<0.1	0.2	0.6	1.1	0.3
Chondracanthus canaliculatus	-	-	<0.1	<0.1	<0.1	0.2	0.6	1.6	0.2
Mazzaella leptorhynchos	-	-	<0.1	<0.1	0.6	0.9	<0.1	<0.1	0.2
Prionitis spp.	-	-	-	-	<0.1	<0.1	0.3	1.1	<0.1
Halymenia/Schizymenia spp. complex	-	-	-	-	-	-	0.1	0.3	<0.1
Gastroclonium subarticulatum	-	-	-	-	0.1	0.4	<0.1	<0.1	<0.1
Colpomenia spp.	-	-	-	-	<0.1	0.2	<0.1	<0.1	<0.1
Endocladia muricata	-	-	-	-	-	-	<0.1	0.2	<0.1
Gelidium pusillum	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Cladophora spp.	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Mazzaella heterocarpa	-	-	-	-	-	-	<0.1	<0.1	<0.1
Spongomorpha/Acrosiphonia complex	-	-	-	-	-	-	<0.1	<0.1	<0.1
Calliarthron/Bossiella spp. complex	<0.1	<0.1	-	-	-	-	-	-	<0.1
Pterosiphonia dendroidea	-	-	-	-	-	-	<0.1	<0.1	<0.1
Mazzaella flaccida	-	-	<0.1	<0.1	-	-	-	-	<0.1
Invertebrates									
*Lottia scabra**	427.2	248.7	597.0	207.4	457.4	97.9	448.0	74.8	482.4
*Tegula funebralis**	212.4	68.7	122.2	109.4	16.0	33.1	1.6	2.6	88.1
Pagurus spp.*	100.2	82.6	32.6	26.7	9.0	6.2	55.0	26.7	49.2
*Tetraclita rubescens**	15.0	7.5	50.8	27.2	45.4	19.3	42.4	30.5	38.4
*Lottia digitalis**	10.8	14.9	16.4	27.0	24.6	32.4	16.6	11.7	17.1
*Lottia pelta**	17.2	24.0	4.4	1.1	19.2	5.0	18.8	4.2	14.9
*Lottia limatula**	3.6	5.0	9.8	5.9	13.2	5.8	12.0	9.4	9.7
*Tectura scutum**	7.8	4.8	11.2	6.0	14.0	9.7	5.4	3.4	9.6
Chthamalus fissus (%)	10.4	8.0	9.8	7.7	7.8	7.3	7.6	7.4	8.9
*Strongylocentrotus purpuratus**	1.6	1.3	2.2	2.9	19.0	11.9	6.8	3.6	7.4
Balanus spp.*	-	-	2.2	2.9	20.4	20.6	-	-	5.7
*Tegula brunnea**	-	-	-	-	17.8	19.3	4.4	1.1	5.6
*Anthopleura elegantissima**	5.2	3.3	4.0	2.4	6.8	6.1	4.2	3.1	5.1
*Pachygrapsus crassipes**	2.0	2.0	2.4	1.7	5.6	2.4	1.4	1.3	2.9
*Fissurella volcano**	2.4	3.1	1.2	1.3	3.4	1.5	2.4	3.9	2.4
Serpulidae unid.	1.0	0.7	1.0	1.0	4.2	2.7	2.6	2.9	2.2
Phragmatopoma californica (%)	2.6	2.8	2.5	2.2	0.9	1.5	2.2	2.7	2.0
Ocenebra spp.*	0.4	0.6	1.8	1.8	3.2	4.4	-	-	1.4
*Nuttallina californica**	0.2	0.5	0.6	0.9	2.8	2.8	0.6	0.9	1.1
Mytilus californianus	0.6	0.9	0.4	0.9	1.8	2.2	0.6	1.3	0.9
*Anthopleura xanthogrammica**	0.2	0.5	1.2	1.3	0.8	0.5	0.8	0.5	0.8
Pollicipes polymerus	-	-	<0.1	<0.1	2.2	4.9	0.6	1.3	0.7
Lottia gigantea	0.2	0.5	-	-	0.8	1.1	0.4	0.6	0.4
Cyanoplax spp.	-	-	0.2	0.5	0.6	0.9	-	-	0.2

(continued)

Table C11 (continued). Intertidal Algae (percent cover) and Invertebrates (abundance per 1.0 m^2) Survey Means, Standard Deviations and 2003 Annual Means, North Diablo Cove Station NDC 1+0.3m.

Survey	132		133		134		135		
Survey Date	21-Jan-03		19-Jun-03		31-Jul-03		11-Nov-03		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Invertebrates (continued)									
Acmaea mitra	-	-	-	-	0.4	0.6	-	-	< 0.1
Ophiothrix spp.	-	-	-	-	0.2	0.5	-	-	< 0.1
Lottiidae unid.	< 0.1	-	< 0.1	-	< 0.1	-	< 0.1	< 0.1	< 0.1
Spirorbidae unid. (%)	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Littorina spp.	-	-	< 0.1	< 0.1	< 0.1	< 0.1	-	-	< 0.1
Lottia asmi	< 0.1	< 0.1	-	-	-	-	-	-	< 0.1
Amphissa spp.	-	-	-	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Heptacarpus spp.	-	-	-	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Tunicata unid. (colonial/social) (%)	-	-	< 0.1	< 0.1	< 0.1	< 0.1	-	-	< 0.1
Bittium spp.	-	-	-	-	< 0.1	< 0.1	-	-	< 0.1
Bryozoa unid. (encrusting) (%)	-	-	-	-	-	-	< 0.1	< 0.1	< 0.1
Ischnochitonidae unid.	-	-	-	-	-	-	< 0.1	< 0.1	< 0.1
Grapsidae unid. (juvenile)	< 0.1	< 0.1	-	-	-	-	-	-	< 0.1
Mytilus spp.	-	-	-	-	< 0.1	< 0.1	-	-	< 0.1
Haliclona spp. (%)	-	-	-	-	-	-	< 0.1	< 0.1	< 0.1
Porifera unid. (encrusting) (%)	-	-	-	-	< 0.1	< 0.1	-	-	< 0.1
Substrate									
rock	40.6	10.5	44.1	10.8	21.0	11.0	28.7	15.0	33.6
cobble	15.8	5.3	13.3	5.8	23.3	14.8	12.1	7.4	16.1
sand (shell gravel)	5.1	3.6	1.2	2.3	6.1	5.3	4.6	5.6	4.3

Table C12. Intertidal Algae (percent cover) and Invertebrates (abundance per 1.0 m^2) Survey Means, Standard Deviations and 2003 Annual Means, North Diablo Cove Station NDC 1+0.9m.

Survey	132		133		134		135		
Survey Date	21-Jan-03		19-Jun-03		31-Jul-03		25-Nov-03		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Algae									
Non-coralline crust	36.5	18.2	29.6	16.5	28.6	15.0	33.9	17.2	32.2
Endocladia muricata	7.2	10.4	4.8	6.9	8.3	11.6	4.7	6.6	6.3
Mastocarpus papillatus	0.8	1.1	1.5	2.4	3.4	2.3	6.4	5.3	3.0
coralline crust	1.3	1.4	0.9	1.6	0.6	0.6	0.3	0.7	0.8
Mazzaella leptorhynchos	<0.1	0.2	<0.1	<0.1	0.8	1.1	<0.1	0.2	0.2
Gelidium coulteri	-	-	0.2	0.7	0.4	0.9	0.2	0.3	0.2
Mazzaella affinis	<0.1	0.2	<0.1	<0.1	0.2	0.5	<0.1	0.2	<0.1
juv. articulated coralline algae	0.1	0.3	-	-	-	-	<0.1	<0.1	<0.1
Gelidium pusillum	<0.1	<0.1	<0.1	<0.1	<0.1	0.2	<0.1	<0.1	<0.1
Chondracanthus canaliculatus	<0.1	0.2	-	-	<0.1	<0.1	-	-	<0.1
Mastocarpus jardinii	-	-	-	-	-	-	<0.1	0.2	<0.1
Cladophora spp.	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Ulva/Enteromorpha spp.	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1
Gastroclonium subarticulatum	-	-	-	-	-	-	<0.1	<0.1	<0.1
Prionitis spp.	-	-	<0.1	<0.1	-	-	-	-	<0.1
Halymenia/Schizymenia spp. complex	-	-	-	-	-	-	<0.1	<0.1	<0.1
Invertebrates									
*Tegula funebralis**	236.0	48.1	181.4	75.4	347.2	34.8	473.8	331.3	309.6
*Lottia scabra**	153.0	32.0	149.6	62.8	175.8	41.2	196.0	80.9	168.6
*Anthopleura elegantissima**	48.6	61.0	59.8	59.3	58.8	69.3	77.8	90.3	61.3
Pagurus spp.*	38.8	26.9	9.0	10.1	4.2	4.4	12.2	10.1	16.1
*Lottia digitalis**	1.4	3.1	19.6	19.7	10.4	21.1	-	-	7.9
*Lottia pelta**	2.4	2.3	1.8	1.1	14.2	21.7	1.2	1.6	4.9
*Lottia limatula**	3.0	1.9	2.6	1.1	1.6	1.5	4.6	4.7	3.0
Chthamalus fissus (%)	3.2	5.6	3.1	7.8	1.9	2.6	2.4	5.9	2.6
*Tectura scutum**	2.8	0.8	3.8	4.0	1.8	1.1	1.8	3.0	2.6
*Pachygrapsus crassipes**	1.0	0.7	1.6	1.5	2.8	2.2	0.2	0.5	1.4
Mytilus californianus	2.2	1.3	0.4	0.6	0.4	0.9	0.2	0.5	0.8
Ocenebra spp.*	1.0	1.0	0.4	0.6	0.4	0.6	0.8	0.5	0.7
*Fissurella volcano**	1.0	1.0	0.6	0.9	0.4	0.9	0.4	0.6	0.6
Acanthinucella spp.*	0.8	1.3	0.4	0.9	0.2	0.5	0.6	1.3	0.5
Cyanoplax spp.	0.2	0.5	-	-	1.6	2.1	-	-	0.5
Mopalia spp.*	0.6	0.6	0.2	0.5	-	-	-	-	0.2
*Strongylocentrotus purpuratus**	0.2	0.5	-	-	0.6	0.9	-	-	0.2
*Nuttallina californica**	-	-	0.2	0.5	0.2	0.5	-	-	<0.1
*Tetraclita rubescens**	0.4	0.9	-	-	-	-	-	-	<0.1
*Anthopleura xanthogrammica**	-	-	-	-	-	-	0.2	0.5	<0.1
Nemertea unid.	-	-	-	-	-	-	0.2	0.5	<0.1
*Hemigrapsus nudus**	-	-	-	-	0.2	0.5	-	-	<0.1
Phragmatopoma californica (%)	<0.1	<0.1	<0.1	0.2	<0.1	<0.1	<0.1	<0.1	<0.1
Lottiidae unid.	<0.1	-	<0.1	-	<0.1	<0.1	<0.1	-	<0.1
Littorina spp.	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Lottia asmi	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	<0.1
Spirorbidae unid. (%)	<0.1	<0.1	<0.1	<0.1	-	-	<0.1	<0.1	<0.1
Sipuncula unid.	<0.1	<0.1	-	-	<0.1	<0.1	-	-	<0.1
Lophopanopeus spp.	<0.1	<0.1	-	-	-	-	-	-	<0.1
Grapsidae unid. (juvenile)	-	-	-	-	<0.1	<0.1	-	-	<0.1

(continued)

Table C12 (continued). Intertidal Algae (percent cover) and Invertebrates (abundance per 1.0 m^2) Survey Means, Standard Deviations and 2003 Annual Means, North Diablo Cove Station NDC 1+0.9m.

Survey	132		133		134		135		
Survey Date	21-Jan-03		19-Jun-03		31-Jul-03		25-Nov-03		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Invertebrates (continued)									
Porifera unid. (encrusting) (%)	-	-	-	-	-	-	< 0.1	< 0.1	< 0.1
Substrate									
rock	36.1	23.8	46.2	21.1	39.2	26.2	41.8	22.4	40.8
cobble	8.3	6.7	8.8	6.8	9.9	10.6	8.0	8.2	8.7
sand (shell gravel)	6.9	5.4	5.2	4.8	8.3	10.5	3.5	3.7	6.0

Table C13. Intertidal Algae (percent cover) and Invertebrates (abundance per 1.0 m^2) Survey Means, Standard Deviations and 2003 Annual Means, North Diablo Cove Station NDC 2+0.3m.

Survey	132		133		134		135		
Survey Date	17-Jan-03		16-May-03		30-Jul-03		22-Nov-03		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Algae									
Non-coralline crust	17.4	12.7	20.8	17.8	20.2	15.0	28.8	17.7	21.8
Phyllospadix spp.	13.9	19.7	15.7	25.0	19.4	24.2	2-	25.8	17.2
filamentous red algae complex	2.0	3.4	7.9	11.5	14.7	15.4	7.6	11.3	8.1
Pterosiphonia dendroidea	9.9	9.3	0.8	1.8	-	-	0.6	0.8	2.8
Ulva/Enteromorpha spp.	0.3	0.5	0.1	0.3	9.4	10.5	0.9	1.1	2.7
coralline crust	3.8	3.4	1.5	2.1	2.3	2.2	2.5	2.4	2.5
Gastroclonium subarticulatum	0.7	1.0	0.9	1.6	6.0	6.1	0.7	1.0	2.1
Mastocarpus papillatus	0.1	0.3	1.7	2.7	3.6	5.3	0.6	0.9	1.5
Mazzaella affinis	0.3	0.9	2.6	3.3	1.7	2.3	0.3	0.6	1.2
Gelidium coulteri	0.1	0.3	0.7	0.8	3.3	2.1	0.1	0.3	1.1
juv. articulated coralline algae	1.2	1.3	<0.1	0.2	0.3	0.8	1.1	1.6	0.7
Corallina vancouveriensis	1.6	1.5	<0.1	0.2	0.4	0.8	0.2	0.7	0.6
Prionitis spp.	0.3	0.5	<0.1	<0.1	0.6	1.0	1.0	1.6	0.5
Chondracanthus canaliculatus	0.7	0.9	0.6	1.0	0.1	0.4	0.4	0.6	0.5
Chrysophyta unid.	1.6	3.1	<0.1	<0.1	-	-	-	-	0.4
Mazzaella leptorhynchos	<0.1	0.2	0.4	0.6	0.8	1.8	<0.1	<0.1	0.3
Calliarthron/Bossiella spp. complex	0.6	1.2	0.2	0.7	-	-	<0.1	<0.1	0.2
Corallina officinalis	-	-	-	-	0.6	1.3	<0.1	<0.1	0.2
Osmundea spp.	-	-	-	-	0.4	0.9	<0.1	<0.1	0.1
Smithora naiadum	-	-	-	-	<0.1	<0.1	0.2	0.7	<0.1
Sarcodiotheca gaudichaudii	-	-	-	-	0.2	0.7	<0.1	<0.1	<0.1
Codium fragile	-	-	-	-	<0.1	<0.1	0.1	0.4	<0.1
Gelidium pusillum	<0.1	0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Colpomenia spp.	<0.1	<0.1	<0.1	<0.1	<0.1	0.2	<0.1	<0.1	<0.1
Mazzaella heterocarpa	<0.1	<0.1	<0.1	0.2	-	-	<0.1	<0.1	<0.1
Endocladia muricata	-	-	<0.1	<0.1	<0.1	0.2	<0.1	<0.1	<0.1
Bryopsis spp.	<0.1	0.2	-	-	-	-	-	-	<0.1
Cladophora spp.	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	<0.1
Melobesia mediocris	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1
Laminariales	<0.1	<0.1	-	-	-	-	-	-	<0.1
Cryptopleura violacea	<0.1	<0.1	-	-	<0.1	<0.1	-	-	<0.1
Halymenia/Schizymenia spp. complex	-	-	-	-	-	-	<0.1	<0.1	<0.1
Mastocarpus jardinii	<0.1	<0.1	-	-	-	-	-	-	<0.1
Invertebrates									
*Lottia scabra**	270.4	420.8	350.8	376.8	239.2	241.8	360.2	210.9	305.2
*Tetraclita rubescens**	50.6	86.2	60.6	12-	57.6	104.3	142.2	285.1	77.8
*Strongylocentrotus purpuratus**	38.4	43.5	63.4	75.2	72.6	109.7	37.6	54.1	53.0
*Lottia pelta**	16.2	16.5	2.6	2.8	1-	10.8	5.6	4.8	8.6
*Anthopleura elegantissima**	7.6	11.7	6.2	9.1	3.6	2.8	1-	19.6	6.9
*Tegula funebralis**	20.6	29.2	1.0	2.2	1.8	2.5	0.4	0.6	6.0
*Lottia limatula**	7.0	4.7	11.4	2-	0.4	0.9	2.0	2.9	5.2
*Lottia digitalis**	-	-	2.8	5.2	11.6	25.9	5.2	11.6	4.9
Pagurus spp.*	9.4	7.4	2.6	4.3	6.8	5.9	0.2	0.5	4.8
*Fissurella volcano**	3.0	2.9	2.0	2.1	8.6	13.7	5.0	1.9	4.7
*Tectura scutum**	5.4	7.5	3.6	4.8	3.2	3.1	5.2	9.1	4.4
Mytilus californianus	6.2	8.6	1.0	1.4	0.6	1.3	0.2	0.5	2.0
Lottia gigantea	3.4	7.1	2.0	4.5	-	-	2.2	3.9	1.9

(continued)

Table C13 (continued). Intertidal Algae (percent cover) and Invertebrates (abundance per 1.0 m^2) Survey Means, Standard Deviations and 2003 Annual Means, North Diablo Cove Station NDC 2+0.3m.

Survey	132		133		134		135		
Survey Date	17-Jan-03		16-May-03		30-Jul-03		22-Nov-03		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Invertebrates (continued)									
Chthamalus fissus (%)	3.1	9.9	1.6	5.1	0.8	2.0	< 0.1	-	1.4
*Tegula brunnea**	-	-	2.0	2.0	2.8	3.4	0.2	0.5	1.3
Cyanoplax spp.	0.6	1.3	0.8	1.8	2.2	2.5	0.8	1.1	1.1
*Pachygrapsus crassipes**	1.0	1.4	0.2	0.5	1.0	1.4	0.2	0.5	0.6
Balanus spp.*	2.0	4.5	-	-	0.4	0.9	-	-	0.6
*Nuttallina californica**	0.2	0.5	0.6	1.3	0.4	0.9	0.4	0.6	0.4
Pista spp. (%)	0.8	1.5	0.1	0.4	0.1	0.4	< 0.1	0.2	0.3
Ocenebra spp.*	0.4	0.9	0.2	0.5	0.2	0.5	0.2	0.5	0.3
Pugettia spp.	-	-	-	-	0.8	1.8	-	-	0.2
Phragmatopoma californica (%)	0.6	1.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.1
*Epiactis prolifera**	0.2	0.5	-	-	0.2	0.5	-	-	< 0.1
Acanthinucella spp.*	-	-	0.4	0.9	-	-	-	-	< 0.1
Acmaea mitra	0.4	0.9	-	-	-	-	-	-	< 0.1
Mopalia spp.*	-	-	-	-	-	-	0.2	0.5	< 0.1
Serpulidae unid.	-	-	-	-	-	-	0.2	0.5	< 0.1
Stenoplax spp.	-	-	0.2	0.5	-	-	-	-	< 0.1
Lottiidae unid.	< 0.1	-	< 0.1	-	< 0.1	< 0.1	< 0.1	-	< 0.1
Spirorbidae unid. (%)	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	-	< 0.1
Lacuna spp.	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	-	-	< 0.1
Lottia asmi	-	-	-	-	< 0.1	< 0.1	-	-	< 0.1
Ischnochitonidae unid.	-	-	-	-	-	-	< 0.1	< 0.1	< 0.1
Littorina spp.	-	-	< 0.1	< 0.1	-	-	-	-	< 0.1
Onchidella borealis	-	-	-	-	-	-	< 0.1	< 0.1	< 0.1
Heptacarpus spp.	-	-	< 0.1	< 0.1	-	-	-	-	< 0.1
Sipuncula unid.	-	-	< 0.1	< 0.1	-	-	-	-	< 0.1
Ophiactis simplex	-	-	< 0.1	< 0.1	-	-	-	-	< 0.1
Porifera unid. (encrusting) (%)	-	-	-	-	-	-	< 0.1	< 0.1	< 0.1
Substrate									
rock	38.6	2-	37.8	22.6	22.3	22.4	36.5	12.0	33.8
cobble	4.9	9.6	5.8	6.1	6.3	7.6	5.9	7.5	5.7
sand (shell gravel)	5.0	9.8	7.2	12.2	5.6	8.9	2.2	4.3	5.0

Table C14. Intertidal Algae (percent cover) and Invertebrates (abundance per 1.0 m^2) Survey Means, Standard Deviations and 2003 Annual Means, North Diablo Cove Station NDC 2+0.9m.

Survey	132		133		134		135		
Survey Date	17-Jan-03		16-May-03		12-Jul-03		11-Nov-03		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Algae									
Endocladia muricata	10.3	11.1	13.2	12.9	14.9	15.6	15.4	14.4	13.5
Non-coralline crust	2.4	2.3	3.1	3.2	7.5	6.7	4.6	2.3	4.4
coralline crust	3.2	2.7	1.2	1.2	1.5	1.7	2.6	1.9	2.1
Mastocarpus papillatus	1.3	1.9	1.7	4.4	2.6	3.4	2.8	1.6	2.1
Gelidium coulteri	0.2	0.5	<0.1	0.2	0.3	0.5	3.0	4.0	0.9
Corallina vancouveriensis	0.3	0.7	-	-	0.3	0.6	0.5	1.3	0.3
Mazzaella affinis	0.3	0.5	<0.1	<0.1	<0.1	<0.1	0.7	1.0	0.2
Ulva/Enteromorpha spp.	-	-	<0.1	<0.1	0.1	0.3	0.1	0.3	<0.1
juv. articulated coralline algae	<0.1	0.2	<0.1	0.2	<0.1	<0.1	<0.1	0.2	<0.1
Gastroclonium subarticulatum	-	-	-	-	<0.1	<0.1	0.2	0.7	<0.1
Calliarthron/Bossiella spp. *complex*	-	-	-	-	-	-	0.2	0.7	<0.1
Prionitis spp.	<0.1	0.2	<0.1	<0.1	<0.1	<0.1	<0.1	0.2	<0.1
Mazzaella leptorhynchos	<0.1	<0.1	-	-	-	-	<0.1	0.2	<0.1
Porphyra spp.	-	-	<0.1	0.2	-	-	-	-	<0.1
Sarcodiotheca gaudichaudii	<0.1	0.2	-	-	-	-	-	-	<0.1
filamentous red algae complex	-	-	-	-	-	-	<0.1	0.2	<0.1
Cladophora spp.	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Gelidium pusillum	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1
Chondracanthus canaliculatus	-	-	-	-	-	-	<0.1	<0.1	<0.1
Invertebrates									
*Lottia scabra**	152.4	36.9	181.2	84.3	264.2	144.5	262.2	149.1	215.0
*Anthopleura elegantissima**	65.6	74.4	8-	74.4	98.0	90.4	119.0	111.0	90.7
*Tegula funebralis**	74.2	14.9	164.2	101.0	51.8	43.7	49.6	33.6	85.0
*Lottia digitalis**	13.0	18.1	3.4	5.0	14.2	28.5	12.0	10.8	10.7
Chthamalus fissus (%)	7.5	6.4	8.1	7.1	10.7	8.8	8.2	6.4	8.6
*Lottia limatula**	17.2	16.1	5.0	7.3	3.8	3.8	8.0	8.9	8.5
*Lottia pelta**	2.4	2.8	-	-	13.6	23.9	9.2	10.1	6.3
Pagurus spp.*	8.4	9.1	2.8	2.8	8.2	11.4	5.6	7.6	6.3
Cyanoplax spp.	2.2	1.3	7.0	4.3	7.4	7.4	5.0	3.0	5.4
Mytilus californianus	1.8	2.5	1.4	2.6	1.4	2.0	3.8	6.9	2.1
*Pachygrapsus crassipes**	1.8	1.6	0.8	0.8	3.8	4.2	1.0	0.7	1.9
*Tectura scutum**	2.6	3.0	1.4	3.1	2.0	2.8	1.0	1.2	1.8
Lottia gigantea	1.8	3.0	1.0	1.7	2.0	2.8	1.2	2.7	1.5
*Strongylocentrotus purpuratus**	1.4	2.6	2.0	3.5	1.6	3.1	0.8	1.3	1.5
*Fissurella volcano**	0.2	0.5	-	-	3.2	5.0	1.2	2.2	1.2
*Nuttallina californica**	-	-	0.4	0.9	2.2	3.9	0.8	1.8	0.9
Acanthinucella spp.*	-	-	0.4	0.6	0.6	0.6	1.2	1.3	0.6
Ocenebra spp.*	0.6	0.9	0.2	0.5	0.8	1.8	0.4	0.6	0.5
Mopalia spp.*	0.6	0.9	0.6	0.6	0.4	0.9	-	-	0.4
Phragmatopoma californica (%)	0.5	0.9	<0.1	<0.1	<0.1	<0.1	0.6	1.1	0.3
*Tetraclita rubescens**	-	-	-	-	0.4	0.9	0.2	0.5	0.2
*Anthopleura xanthogrammica**	-	-	-	-	0.6	1.3	-	-	0.2
Pollicipes polymerus	-	-	<0.1	<0.1	0.2	0.5	-	-	<0.1
Lottiidae unid.	<0.1	-	<0.1	-	<0.1	-	<0.1	-	<0.1
Littorina spp.	<0.1	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1
Lottia asmi	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	<0.1
Spirorbidae unid. (%)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1

(continued)

Table C14 (continued). Intertidal Algae (percent cover) and Invertebrates (abundance per 1.0 m^2) Survey Means, Standard Deviations and 2003 Annual Means, North Diablo Cove Station NDC 2+0.9m.

Survey	132		133		134		135		
Survey Date	17-Jan-03		16-May-03		12-Jul-03		11-Nov-03		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Invertebrates (continued)									
Tonicella lineata	-	-	-	-	< 0.1	< 0.1	-	-	< 0.1
Sipuncula unid.	-	-	-	-	< 0.1	< 0.1	-	-	< 0.1
Mytilus galloprovincialis	-	-	-	-	< 0.1	< 0.1	-	-	< 0.1
Substrate									
rock	73.2	8.8	72.0	13.3	60.7	12.3	59.4	13.4	66.3
cobble	1.3	2.2	1.4	2.2	2.1	2.2	2.7	2.8	1.9
sand (shell gravel)	< 0.1	< 0.1	< 0.1	0.2	0.8	2.0	0.5	1.3	0.3

Table C15. Intertidal Algae (percent cover) and Invertebrates (abundance per 1.0 m^2) Survey Means, Standard Deviations and 2003 Annual Means, North Diablo Cove Station NDC 3+0.3m.

Survey	132		133		134		135		
Survey Date	17-Jan-03		16-May-03		12-Jul-03		22-Nov-03		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Algae									
Non-coralline crust	18.7	18.5	15.4	21.8	19.1	25.8	19.4	20.3	18.1
coralline crust	3.2	2.1	1.2	1.5	3.8	4.3	1.5	0.9	2.4
juv. articulated coralline algae	0.5	0.7	<0.1	<0.1	0.3	0.4	4.7	4.5	1.4
Corallina vancouveriensis	0.3	0.5	1.1	3.1	2.1	3.0	0.3	0.8	1.0
Calliarthron/Bossiella spp. complex	2.8	6.6	0.4	1.3	<0.1	<0.1	-	-	0.8
Gelidium coulteri	0.1	0.3	<0.1	<0.1	0.8	1.4	<0.1	<0.1	0.2
filamentous red algae complex	-	-	<0.1	<0.1	0.1	0.4	0.4	1.1	0.1
Ulva/Enteromorpha spp.	-	-	<0.1	<0.1	0.3	0.5	0.1	0.3	0.1
Chrysophyta unid.	-	-	-	-	<0.1	<0.1	<0.1	0.2	<0.1
Mazzaella affinis	-	-	-	-	<0.1	0.2	-	-	<0.1
Gelidium pusillum	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Cladophora spp.	-	-	<0.1	<0.1	<0.1	<0.1	-	-	<0.1
Mastocarpus papillatus	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Colpomenia spp.	-	-	-	-	-	-	<0.1	<0.1	<0.1
Codium fragile	<0.1	<0.1	-	-	-	-	<0.1	<0.1	<0.1
Codium setchellii (prostrate)	-	-	-	-	<0.1	<0.1	-	-	<0.1
Spongomorpha/Acrosiphonia complex	-	-	-	-	-	-	<0.1	<0.1	<0.1
Chondracanthus canaliculatus	-	-	-	-	<0.1	<0.1	-	-	<0.1
Prionitis spp.	-	-	-	-	-	-	<0.1	<0.1	<0.1
Endarachne/Petalonia complex	-	-	-	-	-	-	<0.1	<0.1	<0.1
Invertebrates									
*Lottia scabra**	132.2	66.7	234.4	83.7	399.2	193.5	371.4	122.6	284.3
*Tetraclita rubescens**	20.6	15.6	83.4	8-	82.8	82.3	71.8	73.7	64.7
*Strongylocentrotus purpuratus**	14.4	8.9	38.2	29.0	36.0	25.2	26.8	23.8	28.9
*Lottia pelta**	13.8	19.2	2.8	3.9	33.2	23.2	4.8	3.8	13.7
*Lottia digitalis**	5.2	11.6	15.0	28.1	2.4	4.3	23.2	43.2	11.5
*Tectura scutum**	14.0	9.6	6.4	9.5	14.2	6.8	4.6	8.2	9.8
*Lottia limatula**	1.4	2.2	16.8	13.9	6.2	3.8	12.2	13.9	9.2
*Fissurella volcano**	1.6	2.1	1.4	1.3	8.6	5.4	13.6	9.7	6.3
Lottia gigantea	5.2	6.8	6.0	4.4	4.2	2.6	8.4	5.2	6.0
*Nuttallina californica**	4.4	4.7	2.6	3.8	2.6	2.1	1.2	1.6	2.7
Serpulidae unid.	2.2	2.5	<0.1	<0.1	6.4	7.4	0.6	0.9	2.3
Mytilus californianus	2.2	2.7	0.4	0.9	0.4	0.9	2.2	4.9	1.3
*Pachygrapsus crassipes**	1.6	1.3	0.6	0.9	2.0	1.9	0.8	1.3	1.3
*Anthopleura elegantissima**	0.6	0.9	0.6	0.9	2.0	2.9	0.6	0.9	1.0
Pagurus spp.*	1.6	2.6	-	-	1.6	1.8	-	-	0.8
Cyanoplax spp.	0.2	0.5	0.4	0.9	0.4	0.6	1.0	1.2	0.5
*Tegula brunnea**	-	-	0.2	0.5	1.4	3.1	-	-	0.4
*Tegula funebralis**	0.2	0.5	-	-	1.2	1.6	-	-	0.4
Phragmatopoma californica (%)	0.1	0.3	0.3	1.1	0.3	0.9	0.3	0.9	0.3
Chthamalus fissus (%)	<0.1	<0.1	0.1	0.4	0.1	0.4	0.6	1.0	0.2
*Epiactis prolifera**	-	-	-	-	0.8	1.3	-	-	0.2
Mopalia spp.*	0.4	0.6	-	-	-	-	-	-	<0.1
Haliotis spp.*	-	-	0.2	0.4	<0.1	0.3	-	-	<0.1
Diaulula sandiegensis	-	-	-	-	0.2	0.5	-	-	<0.1
Lottiidae unid.	<0.1	-	<0.1	-	<0.1	-	<0.1	-	<0.1
Spirorbidae unid. (%)	<0.1	<0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1

(continued)

Table C15 (continued). Intertidal Algae (percent cover) and Invertebrates (abundance per 1.0 m^2) Survey Means, Standard Deviations and 2003 Annual Means, North Diablo Cove Station NDC 3+0.3m.

Survey	132		133		134		135		
Survey Date	17-Jan-03		16-May-03		12-Jul-03		22-Nov-03		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Invertebrates (continued)									
Pelecypoda unid. (boring)	-	-	-	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Pollicipes polymerus	-	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Porifera unid. (encrusting) (%)	-	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Sipuncula unid.	-	-	-	-	< 0.1	< 0.1	-	-	< 0.1
Littorina spp.	-	-	-	-	< 0.1	< 0.1	-	-	< 0.1
Ocenebra spp.*	-	-	-	-	-	-	< 0.1	< 0.1	< 0.1
Ophiuroidea unid.	-	-	-	-	< 0.1	< 0.1	-	-	< 0.1
Lissothuria nutriens	-	-	-	-	< 0.1	< 0.1	-	-	< 0.1
Mytilus galloprovincialis	-	-	-	-	< 0.1	< 0.1	-	-	< 0.1
Hydroida unid.	-	-	-	-	-	-	< 0.1	< 0.1	< 0.1
Bryozoa unid. (encrusting) (%)	-	-	-	-	< 0.1	< 0.1	-	-	< 0.1
Substrate									
rock	70.8	20.8	73.1	23.2	64.5	29.7	68.9	23.1	69.3
cobble	4.5	4.8	8.3	11.2	8.7	11.9	6.0	6.7	6.9
sand (shell gravel)	0.1	0.4	-	-	-	-	-	-	< 0.1

Table C16. Intertidal Algae (percent cover) and Invertebrates (abundance per 1.0 m^2) Survey Means, Standard Deviations and 2003 Annual Means, North Diablo Cove Station NDC 3+0.9m.

Survey	132		133		134		135		
Survey Date	17-Jan-03		16-May-03		30-Jul-03		22-Nov-03		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Algae									
Non-coralline crust	12.7	9.3	10.7	9.9	16.5	6.6	14.2	11.5	13.5
Endocladia muricata	2.0	5.0	2.8	7.0	2.7	4.8	0.8	2.0	2.1
coralline crust	1.5	1.4	0.3	0.8	1.3	2.0	0.2	0.3	0.8
Gelidium coulteri	<0.1	0.2	<0.1	<0.1	0.8	1.1	0.6	0.7	0.3
Ulva/Enteromorpha spp.	<0.1	<0.1	-	-	1.0	3.1	<0.1	<0.1	0.2
Mazzaella affinis	<0.1	<0.1	-	-	0.5	0.9	-	-	0.1
juv. articulated coralline algae	<0.1	0.2	<0.1	<0.1	<0.1	<0.1	0.3	0.7	<0.1
Mastocarpus papillatus	<0.1	0.2	<0.1	<0.1	0.3	0.5	<0.1	<0.1	<0.1
Calliarthron/Bossiella spp. complex	0.2	0.7	-	-	<0.1	<0.1	-	-	<0.1
Gelidium pusillum	<0.1	-	<0.1	<0.1	<0.1	0.2	<0.1	<0.1	<0.1
Prionitis spp.	<0.1	0.2	<0.1	<0.1	-	-	<0.1	<0.1	<0.1
Cladophora spp.	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Corallina vancouveriensis	<0.1	<0.1	<0.1	<0.1	-	-	<0.1	<0.1	<0.1
Colpomenia spp.	-	-	-	-	-	-	<0.1	<0.1	<0.1
Codium fragile	-	-	-	-	-	-	<0.1	<0.1	<0.1
Chrysophyta unid.	-	-	<0.1	<0.1	-	-	-	-	<0.1
Invertebrates									
*Lottia scabra**	410.6	184.4	496.6	362.9	473.8	131.7	507.8	201.4	472.2
*Lottia digitalis**	105.8	77.0	44.8	74.0	61.0	66.6	96.0	105.3	76.9
*Tegula funebralis**	24.6	21.4	26.6	38.7	129.4	202.0	13.8	19.3	48.6
*Strongylocentrotus purpuratus**	18.4	13.3	23.2	29.6	26.8	40.4	17.6	3-	21.5
Chthamalus fissus (%)	21.2	19.6	15.4	12.1	2-	14.0	19.1	17.0	18.9
*Lottia limatula**	2.8	3.3	7.0	5.0	7.4	14.9	28.6	48.7	11.5
*Tectura scutum**	20.6	25.5	7.6	9.7	15.0	10.3	2.0	2.8	11.3
*Tetraclita rubescens**	1-	13.0	9.6	11.2	9.6	10.3	10.2	12.3	9.9
Lottia gigantea	6.4	6.2	6.8	5.9	11.4	11.0	9.2	9.1	8.5
Pagurus spp.*	15.8	14.5	5.6	6.5	1.6	2.3	-	-	5.8
*Lottia pelta**	4.0	4.4	1.0	2.2	15.8	13.8	0.4	0.9	5.3
Mytilus californianus	6.4	13.2	3.8	4.3	3.6	3.8	4.6	5.7	4.6
*Pachygrapsus crassipes**	1.8	1.1	2.2	1.1	6.2	2.9	0.4	0.6	2.7
*Fissurella volcano**	0.4	0.9	1.2	1.8	0.6	0.9	4.4	5.8	1.7
Cyanoplax spp.	1.6	3.1	0.6	0.6	2.6	3.2	1.4	1.5	1.6
Ocenebra spp.*	2.6	2.6	0.2	0.5	0.4	0.6	0.8	0.8	1.0
Serpulidae unid.	1.2	1.8	0.4	0.9	1.2	1.3	0.4	0.9	0.8
Pollicipes polymerus	0.6	1.3	<0.1	<0.1	0.8	1.8	0.6	1.3	0.5
Phragmatopoma californica (%)	1.0	3.1	0.3	1.1	0.1	0.3	0.1	0.4	0.4
*Anthopleura elegantissima**	0.6	0.9	0.6	0.6	0.2	0.5	-	-	0.4
Mopalia spp.*	0.6	0.6	0.2	0.5	-	-	0.4	0.9	0.3
*Nuttallina californica**	-	-	0.2	0.5	0.6	1.3	0.4	0.6	0.3
Mytilus galloprovincialis	0.6	1.3	-	-	-	-	-	-	0.2
Littorina spp.	0.4	0.9	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1
*Tegula brunnea**	-	-	0.2	0.5	-	-	-	-	<0.1
Tonicella lineata	-	-	-	-	0.2	0.5	-	-	<0.1
Heptacarpus spp.	-	-	-	-	0.2	0.5	-	-	<0.1
Ophiothrix spp.	-	-	-	-	0.2	0.5	-	-	<0.1
Haliotis spp.*	<0.1	0.3	-	-	-	-	-	-	<0.1

(continued)

Table C16 (continued). Intertidal Algae (percent cover) and Invertebrates (abundance per 1.0 m^2) Survey Means, Standard Deviations and 2003 Annual Means, North Diablo Cove Station NDC 3+0.9m.

Survey	132		133		134		135		
Survey Date	17-Jan-03		16-May-03		30-Jul-03		22-Nov-03		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Invertebrates (continued)									
Lottiidae unid.	< 0.1	-	< 0.1	-	< 0.1	< 0.1	< 0.1	-	< 0.1
Spirorbidae unid. (%)	< 0.1	< 0.1	< 0.1	< 0.1	-	-	< 0.1	< 0.1	< 0.1
Lottia asmi	-	-	-	-	< 0.1	< 0.1	-	-	< 0.1
Cirratulidae/Terebellidae unid.	-	-	-	-	< 0.1	< 0.1	-	-	< 0.1
Balanus spp.*	< 0.1	< 0.1	-	-	-	-	-	-	< 0.1
Porifera unid. (encrusting) (%)	-	-	-	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Ischnochitonidae unid.	-	-	-	-	< 0.1	< 0.1	-	-	< 0.1
Lacuna spp.	-	-	< 0.1	< 0.1	-	-	-	-	< 0.1
Sipuncula unid.	-	-	-	-	< 0.1	< 0.1	-	-	< 0.1
Substrate									
rock	58.3	15.0	67.5	15.9	53.1	13.8	59.4	15.0	59.6
cobble	3.6	7.8	3.8	7.9	6.4	8.5	6.9	12.4	5.2
sand (shell gravel)	< 0.1	0.2	< 0.1	< 0.1	-	-	-	-	< 0.1

Table C17. Intertidal Algae (percent cover) and Invertebrates (abundance per 1.0 m^2) Survey Means, Standard Deviations and 2003 Annual Means, South Diablo Cove Station SDC 1+0.3m.

Survey	132		133		134		135		
Survey Date	18-Jan-03		15-May-03		11-Aug-03		24-Nov-03		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Algae									
Non-coralline crust	25.9	20.9	48.6	26.4	22.7	14.1	34.2	15.3	32.9
filamentous red algae complex	0.3	0.7	1.1	1.9	23.7	16.7	25.6	6.9	12.7
coralline crust	12.4	17.2	9.8	18.9	3.1	6.5	9.4	13.6	8.7
Ulva/Enteromorpha spp.	<0.1	<0.1	3.5	7.0	20.7	14.9	1.4	1.6	6.4
Corallina vancouveriensis	11.1	16.0	0.2	0.5	0.6	1.1	<0.1	<0.1	3.0
Gelidium coulteri	-	-	0.1	0.4	6.2	8.2	<0.1	0.2	1.6
juv. articulated coralline algae	1.9	1.5	0.6	0.6	0.3	0.6	2.4	2.5	1.3
Prionitis spp.	<0.1	<0.1	-	-	1.9	4.6	2.5	3.7	1.1
Cryptopleura violacea	0.3	0.6	<0.1	<0.1	0.5	0.6	0.4	1.3	0.3
Sargassum muticum	0.3	1.1	0.3	0.9	0.1	0.4	<0.1	0.2	0.2
Halymenia/Schizymenia spp. complex	-	-	<0.1	<0.1	0.6	0.9	0.3	0.9	0.2
Mastocarpus papillatus	-	-	<0.1	<0.1	0.6	1.1	-	-	0.1
Pterosiphonia dendroidea	-	-	-	-	<0.1	0.2	0.2	0.3	<0.1
Grateloupia doryphora	-	-	<0.1	<0.1	0.3	0.7	-	-	<0.1
Chrysophyta unid.	-	-	0.3	0.5	-	-	-	-	<0.1
Colpomenia spp.	-	-	0.2	0.5	-	-	-	-	<0.1
Calliarthron/Bossiella spp. complex	0.1	0.4	<0.1	0.2	-	-	-	-	<0.1
Acrosorium uncinatum	-	-	-	-	-	-	0.1	0.3	<0.1
Sarcodiotheca gaudichaudii	-	-	-	-	<0.1	<0.1	0.1	0.3	<0.1
Mazzaella heterocarpa	-	-	<0.1	<0.1	<0.1	0.2	-	-	<0.1
Cladophora spp.	<0.1	<0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1
Gelidium pusillum	<0.1	<0.1	<0.1	<0.1	-	-	-	-	<0.1
Mazzaella affinis	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1
Cystoseira osmundacea	<0.1	<0.1	<0.1	<0.1	-	-	-	-	<0.1
Spongomorpha/Acrosiphonia complex	<0.1	<0.1	-	-	-	-	-	-	<0.1
Chondracanthus canaliculatus	-	-	-	-	<0.1	<0.1	-	-	<0.1
Bryopsis spp.	-	-	-	-	-	-	<0.1	<0.1	<0.1
Invertebrates									
Mytilus californianus	135.6	248.2	-	-	72.2	112.4	92.4	143.6	75.1
*Lottia scabra**	21.8	21.8	68.8	49.6	81.4	78.4	121.0	109.8	73.3
*Tetraclita rubescens**	50.4	30.5	81.2	59.3	41.6	52.7	29.8	27.1	50.8
Mytilus spp.	-	-	195.0	268.3	-	-	-	-	48.8
*Strongylocentrotus purpuratus**	19.0	16.7	42.6	38.6	6.0	4.3	8.8	5.4	19.1
*Anthopleura elegantissima**	19.0	7.2	15.8	5.3	15.0	11.5	22.0	19.4	18.0
*Tegula funebralis**	1.4	2.2	55.0	123.0	-	-	3.6	8.1	15.0
*Fissurella volcano**	18.4	10.2	2.4	1.7	3.2	1.3	20.8	7.9	11.2
*Lottia pelta**	4.6	4.3	5.6	3.1	10.4	2.6	4.8	1.6	6.4
*Lottia limatula**	7.0	9.1	9.2	8.3	2.2	2.5	0.4	0.6	4.7
Phragmatopoma californica (%)	3.9	5.7	5.8	13.4	1.7	4.4	3.8	4.0	3.8
Ophiothrix spp.	0.2	0.5	2.4	5.4	0.6	1.3	0.6	0.6	1.0
Cyanoplax spp.	1.0	1.7	0.4	0.9	1.4	3.1	0.2	0.5	0.8
Hermissenda crassicornis	-	-	-	-	2.8	4.1	-	-	0.7
Lottia gigantea	0.6	0.9	0.4	0.9	0.6	1.3	0.4	0.9	0.5
*Tectura scutum**	2.0	2.5	-	-	-	-	-	-	0.5
Pista spp. (%)	1.8	3.0	<0.1	<0.1	-	-	<0.1	0.2	0.5
Mytilus galloprovincialis	1.4	2.2	-	-	-	-	-	-	0.4
Pagurus spp.*	1.2	1.3	-	-	-	-	-	-	0.3

(continued)

Table C17 (continued). Intertidal Algae (percent cover) and Invertebrates (abundance per 1.0 m^2) Survey Means, Standard Deviations and 2003 Annual Means, South Diablo Cove Station SDC 1+0.3m.

Survey	132		133		134		135		
Survey Date	18-Jan-03		15-May-03		11-Aug-03		24-Nov-03		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Invertebrates (continued)									
Mopalia spp.*	1.0	1.7	-	-	-	-	-	-	0.3
*Pachygrapsus crassipes**	0.4	0.9	0.6	0.9	-	-	-	-	0.3
*Pisaster ochraceus**	-	-	0.4	0.9	-	-	0.2	0.5	0.2
Serpulidae unid.	0.4	0.6	-	-	-	-	0.2	0.5	0.2
Serpulorbis squamigerus	0.6	1.3	-	-	-	-	-	-	0.2
*Lottia digitalis**	0.4	0.9	-	-	-	-	-	-	< 0.1
*Nuttallina californica**	0.2	0.5	-	-	-	-	0.2	0.5	< 0.1
Balanus spp.*	-	-	-	-	0.2	0.5	-	-	< 0.1
Pugettia spp.	-	-	-	-	0.2	0.5	-	-	< 0.1
Septifer bifurcatus	0.2	0.5	-	-	-	-	-	-	< 0.1
Ophiopteris papillosa	-	-	0.2	0.5	-	-	-	-	< 0.1
Lottiidae unid.	< 0.1	-	< 0.1	-	< 0.1	-	< 0.1	-	< 0.1
Chthamalus fissus (%)	< 0.1	< 0.1	< 0.1	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Spirorbidae unid. (%)	-	-	-	-	< 0.1	< 0.1	< 0.1	-	< 0.1
Ophiactis simplex	-	-	< 0.1	< 0.1	-	-	-	-	< 0.1
Acmaea mitra	-	-	-	-	-	-	< 0.1	< 0.1	< 0.1
Sipuncula unid.	-	-	< 0.1	< 0.1	-	-	< 0.1	< 0.1	< 0.1
Barleeia spp.	< 0.1	< 0.1	-	-	-	-	-	-	< 0.1
Lottia ochracea	-	-	-	-	< 0.1	< 0.1	-	-	< 0.1
Pollicipes polymerus	-	-	-	-	-	-	< 0.1	< 0.1	< 0.1
Porifera unid. (encrusting) (%)	< 0.1	< 0.1	-	-	-	-	< 0.1	< 0.1	< 0.1
Bryozoa unid. (encrusting) (%)	-	-	-	-	-	-	< 0.1	< 0.1	< 0.1
Ophiuroidea unid.	-	-	-	-	< 0.1	< 0.1	-	-	< 0.1
Lacuna spp.	-	-	< 0.1	< 0.1	-	-	-	-	< 0.1
Grapsidae unid. (juvenile)	< 0.1	< 0.1	-	-	-	-	-	-	< 0.1
Dodecaceria fewkesi	-	-	-	-	-	-	< 0.1	< 0.1	< 0.1
Substrate									
rock	22.8	13.7	2-	14.2	14.4	9.3	16.0	6.5	18.3
cobble	8.4	12.2	4.0	4.9	3.8	5.5	3.8	4.2	5.0
sand (shell gravel)	1.9	3.0	2.3	4.9	1.4	2.0	5.1	4.9	2.7

Table C18. Intertidal Algae (percent cover) and Invertebrates (abundance per 1.0 m^2) Survey Means, Standard Deviations and 2003 Annual Means, South Diablo Cove Station SDC 1+.6m.

Survey	132		133		134		135		
Survey Date	18-Jan-03		15-May-03		29-Jul-03		24-Nov-03		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Algae									
Non-coralline crust	34.0	12.1	38.8	10.2	35.8	9.4	53.3	7.9	40.5
Ulva/Enteromorpha spp.	<0.1	<0.1	0.6	2.0	24.3	14.9	0.3	0.6	6.3
coralline crust	6.0	4.8	6.4	1-	4.8	3.1	1.3	2.0	4.6
Gelidium coulteri	1.0	2.8	<0.1	0.2	11.6	5.7	0.9	1.0	3.4
filamentous red algae complex	0.1	0.3	-	-	2.0	3.8	7.4	11.8	2.4
Sargassum muticum	1.0	1.2	2.0	5.9	1.9	5.1	1.6	5.1	1.6
Corallina vancouveriensis	1.3	2.2	<0.1	<0.1	2.7	2.6	0.6	1.3	1.1
Prionitis spp.	<0.1	<0.1	<0.1	<0.1	2.1	2.2	1.2	2.2	0.8
juv. articulated coralline algae	1.1	1.4	<0.1	<0.1	<0.1	0.2	1.3	2.1	0.6
Mastocarpus papillatus	<0.1	<0.1	<0.1	<0.1	1.9	1.3	0.1	0.4	0.5
Calliarthron/Bossiella spp. complex	1.1	2.1	0.9	2.2	-	-	-	-	0.5
Cryptopleura violacea	<0.1	0.2	0.3	0.9	1.2	3.0	0.4	0.9	0.5
Gastroclonium subarticulatum	-	-	-	-	0.5	1.0	0.4	1.1	0.2
Gelidium pusillum	0.5	1.1	<0.1	<0.1	<0.1	<0.1	-	-	0.1
Endocladia muricata	-	-	-	-	-	-	0.4	1.3	0.1
Colpomenia spp.	-	-	<0.1	<0.1	0.3	0.9	-	-	<0.1
Chondracanthus canaliculatus	0.2	0.7	-	-	-	-	-	-	<0.1
Acrosorium uncinatum	<0.1	<0.1	-	-	-	-	<0.1	0.2	<0.1
Cladophora spp.	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	<0.1
Mazzaella affinis	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1
Mazzaella heterocarpa	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Chrysophyta unid.	-	-	<0.1	<0.1	-	-	-	-	<0.1
Pterosiphonia dendroidea	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1
Porphyra spp.	-	-	-	-	<0.1	<0.1	-	-	<0.1
Halymenia/Schizymenia spp. complex	-	-	-	-	<0.1	<0.1	-	-	<0.1
Invertebrates									
*Lottia scabra**	74.0	64.5	62.2	26.6	92.8	70.4	140.8	59.9	92.5
Mytilus californianus	152.0	128.8	-	-	-	-	170.2	153.5	80.6
*Tetraclita rubescens**	73.0	39.8	117.6	76.0	22.4	17.6	66.0	40.5	69.8
Mytilus spp.	-	-	160.8	136.3	106.2	109.7	-	-	66.8
*Tegula funebralis**	9-	82.9	159.8	121.8	-	-	2.4	5.4	63.1
*Anthopleura elegantissima**	64.2	55.2	67.2	58.2	61.2	33.6	43.8	39.7	59.1
*Strongylocentrotus purpuratus**	7.0	5.4	12.2	12.2	5.8	9.2	5.0	3.6	7.5
*Fissurella volcano**	7.6	4.0	1.2	1.8	1.4	1.5	19.0	31.2	7.3
*Lottia pelta**	6.0	3.5	5.2	2.8	7.8	2.2	2.6	2.2	5.4
*Lottia limatula**	2.8	3.0	7.2	5.3	3.8	1.9	1.2	0.5	3.8
Mytilus galloprovincialis	9.2	8.8	-	-	-	-	-	-	2.3
Cyanoplax spp.	1.0	1.4	3.0	2.7	3.0	3.7	0.2	0.5	1.8
Pagurus spp.*	3.6	3.4	-	-	3.2	4.1	-	-	1.7
Barleeia spp.	6.0	13.4	-	-	-	-	-	-	1.5
Phragmatopoma californica (%)	2.4	5.1	0.8	0.9	1.3	2.6	0.8	1.5	1.3
*Tectura scutum**	3.0	5.1	-	-	0.4	0.6	-	-	0.9
Serpulorbis squamigerus	2.0	2.1	0.4	0.9	0.4	0.9	0.6	0.9	0.9
*Pachygrapsus crassipes**	0.6	0.9	1.0	1.0	1.6	1.1	-	-	0.8
Mopalia spp.*	1.6	0.9	0.6	0.6	0.4	0.9	-	-	0.7
*Lottia digitalis**	-	-	-	-	-	-	2.4	5.4	0.6
Chthamalus fissus (%)	1.0	1.1	0.6	1.2	0.5	0.7	<0.1	-	0.5

(continued)

Table C18 (continued). Intertidal Algae (percent cover) and Invertebrates (abundance per 1.0 m^2) Survey Means, Standard Deviations and 2003 Annual Means, South Diablo Cove Station SDC 1+.6m.

Survey	132		133		134		135		
Survey Date	18-Jan-03		15-May-03		29-Jul-03		24-Nov-03		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Invertebrates (continued)									
Balanus spp.*	-	-	-	-	-	-	1.4	3.1	0.4
Lottia gigantea	-	-	0.4	0.9	-	-	0.6	1.3	0.3
*Pisaster ochraceus**	-	-	0.4	0.6	0.4	0.9	-	-	0.2
*Nuttallina californica**	-	-	-	-	-	-	0.6	0.9	0.2
Sipuncula unid.	-	-	-	-	<0.1	<0.1	0.4	0.9	0.1
Heptacarpus spp.	-	-	0.4	0.9	-	-	-	-	<0.1
Septifer bifurcatus	0.4	0.9	-	-	-	-	-	-	<0.1
Pista spp. (%)	0.3	0.9	<0.1	<0.1	-	-	<0.1	<0.1	<0.1
Pelecypoda unid. (boring)	0.2	0.5	<0.1	<0.1	-	-	-	-	<0.1
*Epiactis prolifera**	-	-	-	-	-	-	0.2	0.5	<0.1
Nemertea unid.	-	-	-	-	-	-	0.2	0.5	<0.1
Acanthinucella spp.*	-	-	0.2	0.5	-	-	-	-	<0.1
Acmaea mitra	0.2	0.5	-	-	-	-	-	-	<0.1
Ocenebra spp.*	0.2	0.5	-	-	-	-	-	-	<0.1
Pugettia spp.	-	-	-	-	0.2	0.5	-	-	<0.1
Lottiidae unid.	<0.1	-	<0.1	-	<0.1	-	<0.1	-	<0.1
Spirorbidae unid. (%)	<0.1	<0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1
Nitidiscala/Opalia spp.	<0.1	<0.1	-	-	<0.1	<0.1	-	-	<0.1
Ischnochitonidae unid.	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1
Lacuna spp.	-	-	<0.1	<0.1	-	-	-	-	<0.1
Alia spp.	-	-	<0.1	<0.1	-	-	-	-	<0.1
Lottia asmi	-	-	<0.1	<0.1	-	-	-	-	<0.1
Megatebennus bimaculatus	-	-	<0.1	<0.1	-	-	-	-	<0.1
Dodecaceria fewkesi	-	-	-	-	-	-	<0.1	<0.1	<0.1
Substrate									
rock	26.4	14.9	24.9	13.2	11.3	5.1	10.6	5.4	18.3
cobble	7.8	9.0	12.7	18.4	7.7	9.6	7.4	8.4	8.9
sand (shell gravel)	5.4	4.1	3.4	3.9	2.8	3.5	6.3	6.1	4.5

Table C19. Intertidal Algae (percent cover) and Invertebrates (abundance per 1.0 m^2) Survey Means, Standard Deviations and 2003 Annual Means, South Diablo Cove Station SDC 2+0.3m.

Survey	132		133		134		135		
Survey Date	30-Jan-03		15-May-03		10-Jul-03		26-Nov-03		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Algae									
Non-coralline crust	44.8	20.6	50.4	29.6	12.1	13.0	57.0	22.2	41.1
Ulva/Enteromorpha spp.	<0.1	<0.1	0.6	1.2	31.7	16.6	<0.1	0.2	8.1
Mastocarpus papillatus	<0.1	0.2	3.6	6.8	17.1	12.8	2.8	3.7	5.9
coralline crust	9.2	10.3	6.3	3.8	3.3	1.5	3.4	5.9	5.5
Prionitis spp.	1.0	2.0	2.6	4.4	11.1	10.7	5.4	6.4	5.0
Gelidium coulteri	<0.1	<0.1	4.4	5.3	9.3	8.4	1.5	1.5	3.8
filamentous red algae complex	<0.1	<0.1	1.9	5.9	2.8	6.9	4.9	7.7	2.4
Corallina vancouveriensis	4.4	7.6	1.0	3.1	0.1	0.3	<0.1	0.2	1.4
Halymenia/Schizymenia spp. complex	<0.1	<0.1	2.4	4.6	1.0	1.1	0.1	0.4	0.9
Chondria decipiens	-	-	0.6	1.3	0.8	1.0	1.0	1.8	0.6
Chondracanthus canaliculatus	<0.1	0.2	1.6	3.9	0.6	1.1	<0.1	0.2	0.6
Cryptopleura violacea	<0.1	<0.1	0.3	0.9	1.6	3.9	0.1	0.4	0.5
Mazzaella affinis	<0.1	<0.1	0.4	0.8	1.4	1.2	<0.1	<0.1	0.5
juv. articulated coralline algae	0.1	0.4	0.3	0.6	<0.1	<0.1	1.0	1.5	0.4
Gastroclonium subarticulatum	<0.1	<0.1	0.3	1.1	-	-	0.7	1.5	0.3
Mazzaella leptorhynchos	<0.1	<0.1	<0.1	0.2	0.7	1.2	<0.1	<0.1	0.2
Chondracanthus corymbiferus	-	-	-	-	0.7	1.5	-	-	0.2
Chrysophyta unid.	<0.1	0.2	-	-	0.6	2.0	-	-	0.2
Mastocarpus jardinii	<0.1	<0.1	-	-	-	-	0.6	1.4	0.2
Pterosiphonia dendroidea	0.3	0.7	-	-	-	-	<0.1	0.2	0.1
Sargassum muticum	<0.1	<0.1	-	-	0.4	1.1	-	-	0.1
Gelidium pusillum	<0.1	0.2	<0.1	<0.1	-	-	<0.1	0.2	<0.1
Mazzaella heterocarpa	<0.1	<0.1	-	-	<0.1	0.2	<0.1	<0.1	<0.1
Colpomenia spp.	-	-	<0.1	<0.1	<0.1	0.2	-	-	<0.1
Calliarthron/Bossiella spp. complex	<0.1	0.2	<0.1	<0.1	-	-	<0.1	<0.1	<0.1
Endocladia muricata	-	-	-	-	-	-	<0.1	0.2	<0.1
Cladophora spp.	-	-	<0.1	<0.1	<0.1	<0.1	-	-	<0.1
Spongomorpha/Acrosiphonia complex	<0.1	<0.1	-	-	<0.1	<0.1	-	-	<0.1
Porphyra spp.	-	-	<0.1	<0.1	<0.1	<0.1	-	-	<0.1
Mazzaella flaccida	<0.1	<0.1	-	-	-	-	-	-	<0.1
Invertebrates									
*Tegula funebralis**	392.0	288.7	233.0	64.4	44.4	27.9	250.8	95.0	230.1
*Anthopleura elegantissima**	40.2	5.9	60.2	29.3	41.8	24.0	50.6	21.5	48.2
*Lottia scabra**	4.6	4.4	7.8	11.5	6.4	5.3	33.2	31.9	13.0
Pagurus spp.*	11.4	9.7	0.6	1.3	12.2	12.1	0.8	1.8	6.3
*Lottia limatula**	0.8	0.8	1.0	1.4	13.8	4.6	5.2	5.2	5.2
*Tetraclita rubescens**	13.6	21.5	-	-	0.2	0.5	3.0	3.5	4.2
*Fissurella volcano**	0.2	0.5	-	-	0.2	0.5	7.0	3.8	1.9
*Lottia pelta**	0.6	0.9	1.0	1.0	1.4	1.3	3.4	2.9	1.6
Serpulorbis squamigerus	2.0	2.6	-	-	0.6	1.3	0.6	0.9	0.8
Balanus spp.*	-	-	-	-	-	-	2.6	5.8	0.7
*Strongylocentrotus purpuratus**	0.4	0.9	0.8	1.1	1.2	1.6	-	-	0.6
*Pachygrapsus crassipes**	0.4	0.9	0.2	0.5	1.2	0.8	0.6	0.6	0.6
*Tegula brunnea**	-	-	-	-	2.2	4.9	-	-	0.6
Cyanoplax spp.	0.2	0.5	0.2	0.5	0.8	1.3	0.6	0.9	0.5
*Tectura scutum**	0.2	0.5	0.2	0.5	-	-	0.8	0.8	0.3
Acanthinucella spp.*	0.4	0.9	0.2	0.5	-	-	0.2	0.5	0.2

(continued)

Table C19 (continued). Intertidal Algae (percent cover) and Invertebrates (abundance per 1.0 m^2) Survey Means, Standard Deviations and 2003 Annual Means, South Diablo Cove Station SDC 2+0.3m.

Survey	132		133		134		135		
Survey Date	30-Jan-03		15-May-03		10-Jul-03		26-Nov-03		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Invertebrates (continued)									
Chthamalus fissus (%)	0.3	0.6	< 0.1	-	< 0.1	< 0.1	0.2	0.3	0.1
Mytilus californianus	< 0.1	< 0.1	0.4	0.9	-	-	-	-	0.1
*Pisaster ochraceus**	0.2	0.5	-	-	0.2	0.5	-	-	< 0.1
Anthopleura artemisia	-	-	-	-	0.2	0.5	-	-	< 0.1
*Lottia digitalis**	0.2	0.5	-	-	-	-	-	-	< 0.1
Mopalia spp.*	0.2	0.5	-	-	-	-	-	-	< 0.1
Cancer antennarius	-	-	-	-	-	-	0.2	0.5	< 0.1
Ocenebra spp.*	0.2	0.5	-	-	-	-	-	-	< 0.1
Pugettia spp.	-	-	-	-	0.2	0.5	-	-	< 0.1
Septifer bifurcatus	0.2	0.5	-	-	-	-	-	-	< 0.1
Phragmatopoma californica (%)	< 0.1	0.2	< 0.1	< 0.1	-	-	< 0.1	< 0.1	< 0.1
Lottiidae unid.	< 0.1	-	< 0.1	-	< 0.1	-	< 0.1	-	< 0.1
Lottia asmi	< 0.1	< 0.1	< 0.1	< 0.1	-	-	< 0.1	< 0.1	< 0.1
Spirorbidae unid. (%)	< 0.1	< 0.1	-	-	-	-	< 0.1	< 0.1	< 0.1
Sipuncula unid.	-	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Alia spp.	-	-	-	-	< 0.1	< 0.1	-	-	< 0.1
Littorina spp.	< 0.1	< 0.1	-	-	-	-	-	-	< 0.1
Nitidiscala/Opalia spp.	-	-	-	-	< 0.1	< 0.1	-	-	< 0.1
Pista spp. (%)	< 0.1	< 0.1	< 0.1	< 0.1	-	-	-	-	< 0.1
Lepidozona spp.	-	-	-	-	< 0.1	< 0.1	-	-	< 0.1
Porifera unid. (encrusting) (%)	-	-	< 0.1	< 0.1	-	-	< 0.1	< 0.1	< 0.1
Pelecypoda unid. (boring)	-	-	-	-	< 0.1	< 0.1	-	-	< 0.1
Aeolidia papillosa	-	-	< 0.1	< 0.1	-	-	-	-	< 0.1
Cirratulidae/Terebellidae unid.	< 0.1	< 0.1	-	-	-	-	-	-	< 0.1
Bryozoa unid. (encrusting) (%)	-	-	-	-	-	-	< 0.1	< 0.1	< 0.1
Substrate									
rock	32.2	24.1	26.7	25.8	6.5	4.4	16.7	21.2	20.5
sand (shell gravel)	6.5	10.3	2.8	5.7	5.0	5.2	3.9	6.1	4.5
cobble	1.7	3.9	1.8	3.4	1.9	1.2	1.7	5.0	1.8

Table C20. Intertidal Algae (percent cover) and Invertebrates (abundance per 1.0 m^2) Survey Means, Standard Deviations and 2003 Annual Means, South Diablo Cove Station SDC 2+0.9m.

Survey	132		133		134		135		
Survey Date	30-Jan-03		19-May-03		10-Jul-03		26-Nov-03		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Algae									
Non-coralline crust	6.9	13.5	13.3	21.0	12.2	23.9	15.3	24.5	11.9
Mastocarpus papillatus	0.3	0.9	0.7	2.0	3.1	7.0	1.8	3.3	1.5
Prionitis spp.	<0.1	0.2	0.3	0.8	1.3	2.6	0.4	0.9	0.5
Endocladia muricata	<0.1	0.2	0.3	1.1	0.2	0.7	0.3	0.7	0.2
Halymenia/Schizymenia spp. *complex*	-	-	-	-	0.4	0.8	-	-	0.1
coralline crust	0.1	0.4	<0.1	<0.1	<0.1	0.2	<0.1	0.2	<0.1
Mazzaella leptorhynchos	<0.1	<0.1	<0.1	<0.1	0.3	0.5	<0.1	<0.1	<0.1
Grateloupia doryphora	-	-	0.3	0.9	-	-	-	-	<0.1
Chondracanthus corymbiferus	-	-	-	-	0.3	0.9	-	-	<0.1
Gelidium pusillum	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.2	<0.1
Cladophora spp.	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	<0.1
juv. articulated coralline algae	<0.1	<0.1	<0.1	<0.1	-	-	<0.1	<0.1	<0.1
Gelidium coulteri	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1
Mazzaella affinis	<0.1	<0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1
Corallina officinalis	<0.1	<0.1	-	-	-	-	-	-	<0.1
Corallina vancouveriensis	<0.1	<0.1	-	-	-	-	-	-	<0.1
Chondracanthus canaliculatus	-	-	-	-	<0.1	<0.1	-	-	<0.1
Invertebrates									
*Tegula funebralis**	156.4	172.9	175.2	132.6	425.0	104.5	175.6	147.6	233.1
*Anthopleura elegantissima**	124.0	71.4	208.4	142.8	175.8	96.9	127.4	77.0	158.9
*Lottia scabra**	26.4	28.3	23.8	16.5	59.8	61.9	67.8	59.1	44.5
Pagurus spp.*	6.8	1-	11.8	16.2	1.4	2.0	-	-	5.0
Mytilus californianus	0.8	1.1	13.8	29.2	1.0	1.4	2.8	5.2	4.6
*Lottia limatula**	1.2	1.8	7.6	5.2	2.4	2.5	0.6	0.9	3.0
*Tectura scutum**	1.0	2.2	1.6	2.0	4.8	9.1	3.2	4.0	2.7
*Lottia pelta**	-	-	2.2	1.8	4.6	2.9	2.4	3.6	2.3
*Lottia digitalis**	0.8	0.8	-	-	0.6	0.9	1.6	2.6	0.8
*Pachygrapsus crassipes**	-	-	-	-	0.6	0.9	0.8	1.3	0.4
Cyanoplax spp.	-	-	-	-	1.2	1.1	-	-	0.3
Acanthinucella spp.*	0.6	0.9	-	-	0.4	0.9	-	-	0.3
Chthamalus fissus (%)	0.3	0.6	<0.1	<0.1	<0.1	<0.1	0.3	0.6	0.2
Serpulorbis squamigerus	-	-	-	-	-	-	0.2	0.5	<0.1
*Strongylocentrotus purpuratus**	-	-	-	-	0.2	0.5	-	-	<0.1
Chaetopteridae	0.2	0.5	-	-	-	-	-	-	<0.1
Mytilus spp.	-	-	0.2	0.5	-	-	-	-	<0.1
Lottiidae unid.	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1
Littorina spp.	<0.1	<0.1	<0.1	-	<0.1	<0.1	-	-	<0.1
Lottia asmi	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Serpulidae unid.	<0.1	<0.1	<0.1	<0.1	-	-	-	-	<0.1
Lottia gigantea	<0.1	<0.1	-	-	-	-	-	-	<0.1
Nitidiscala/Opalia spp.	-	-	-	-	<0.1	<0.1	-	-	<0.1
Septifer bifurcatus	-	-	<0.1	<0.1	-	-	-	-	<0.1
Phragmatopoma californica (%)	-	-	-	-	-	-	<0.1	<0.1	<0.1
Spirorbidae unid. (%)	<0.1	<0.1	-	-	-	-	-	-	<0.1
Substrate									
rock	58.1	26.3	55.2	26.1	48.6	17.6	50.2	18.8	53.0
sand (shell gravel)	10.8	13.1	8.3	8.4	17.0	11.1	23.1	21.6	14.8
cobble	16.0	24.1	16.0	22.7	13.1	15.9	2.8	6.0	11.9

Table C21. Intertidal Algae (percent cover) and Invertebrates (abundance per 1.0 m^2) Survey Means, Standard Deviations and 2003 Annual Means, South Diablo Cove Station SDC 3+0.3m.

Survey	132		133		134		135		
Survey Date	31-Jan-03		19-May-03		11-Jul-03		12-Nov-03		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Algae									
Non-coralline crust	39.5	12.8	42.7	18.7	38.1	18.6	33.8	17.6	38.5
Mastocarpus papillatus	3.5	5.6	6.3	5.9	24.9	17.0	28.9	13.0	15.9
Ulva/Enteromorpha spp.	-	-	-	-	2.4	3.3	0.6	0.7	0.8
coralline crust	0.2	0.5	0.4	0.7	0.3	0.5	0.2	0.5	0.3
Gelidium pusillum	< 0.1	-	0.2	0.5	0.5	0.7	< 0.1	< 0.1	0.2
Mazzaella affinis	< 0.1	0.2	< 0.1	0.2	0.3	0.5	0.1	0.3	0.1
Gelidium coulteri	-	-	< 0.1	< 0.1	< 0.1	0.2	0.3	0.4	< 0.1
Mazzaella leptorhynchos	< 0.1	0.2	< 0.1	0.2	0.1	0.3	< 0.1	< 0.1	< 0.1
Endocladia muricata	< 0.1	0.2	< 0.1	0.2	0.1	0.4	< 0.1	< 0.1	< 0.1
Prionitis spp.	< 0.1	< 0.1	-	-	-	-	0.1	0.4	< 0.1
Mastocarpus jardinii	< 0.1	< 0.1	-	-	< 0.1	0.2	-	-	< 0.1
Cladophora spp.	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	-	< 0.1	< 0.1	< 0.1
Gastroclonium subarticulatum	-	-	-	-	-	-	< 0.1	< 0.1	< 0.1
Chondracanthus canaliculatus	-	-	-	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
juv. articulated coralline algae	< 0.1	< 0.1	< 0.1	< 0.1	-	-	-	-	< 0.1
Cryptopleura violacea	< 0.1	< 0.1	-	-	< 0.1	< 0.1	-	-	< 0.1
Corallina vancouveriensis	-	-	-	-	< 0.1	< 0.1	-	-	< 0.1
Cryptosiphonia woodii	-	-	< 0.1	< 0.1	-	-	-	-	< 0.1
Mazzaella heterocarpa	< 0.1	< 0.1	-	-	-	-	-	-	< 0.1
Porphyra spp.	-	-	-	-	< 0.1	< 0.1	-	-	< 0.1
Invertebrates									
*Tegula funebralis**	140.4	69.5	23-	130.1	66.0	46.7	82.0	113.4	129.6
Pagurus spp.*	41.0	30.5	52.4	60.9	96.8	108.3	102.0	45.9	73.1
*Lottia scabra**	7.6	12.0	19.0	12.4	172.2	278.9	8.4	9.0	51.8
*Anthopleura elegantissima**	37.8	70.3	18.2	27.5	25.6	48.5	34.8	75.0	29.1
*Lottia limatula**	2.8	1.9	9.8	4.2	21.8	14.7	7.0	10.3	10.4
*Tetraclita rubescens**	4.2	5.9	9.4	16.0	9.0	14.7	8.2	15.0	7.7
*Tectura scutum**	0.2	0.5	1.6	2.3	4.6	4.3	1.0	1.7	1.9
*Strongylocentrotus purpuratus**	1.6	2.1	0.4	0.6	5.2	4.4	-	-	1.8
*Lottia pelta**	0.4	0.9	1.4	2.2	3.0	4.2	2.2	3.4	1.8
*Pachygrapsus crassipes**	0.4	0.6	0.6	0.9	3.2	3.9	-	-	1.1
*Tegula brunnea**	-	-	1.4	2.2	0.4	0.9	-	-	0.5
*Pisaster ochraceus**	-	-	0.4	0.9	1.2	1.3	-	-	0.4
*Fissurella volcano**	1.0	1.2	-	-	0.4	0.9	0.2	0.5	0.4
Chthamalus fissus (%)	< 0.1	< 0.1	0.5	0.7	0.3	0.7	0.1	0.4	0.2
*Anthopleura xanthogrammica**	0.2	0.5	0.2	0.5	0.4	0.9	-	-	0.2
*Lottia digitalis**	0.4	0.9	-	-	-	-	-	-	< 0.1
Ocenebra spp.*	0.2	0.5	0.2	0.5	-	-	-	-	< 0.1
Spirorbidae unid. (%)	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.2	0.5	< 0.1
Cyanoplax spp.	-	-	< 0.1	< 0.1	0.2	0.5	-	-	< 0.1
Acanthinucella spp.*	0.2	0.5	-	-	-	-	-	-	< 0.1
Pugettia spp.	-	-	-	-	0.2	0.5	-	-	< 0.1
Serpulidae unid.	-	-	-	-	-	-	0.2	0.5	< 0.1
Lepidozona spp.	-	-	-	-	0.2	0.5	-	-	< 0.1
Lottiidae unid.	< 0.1	-	< 0.1	-	< 0.1	< 0.1	< 0.1	-	< 0.1
Phragmatopoma californica (%)	< 0.1	< 0.1	< 0.1	< 0.1	-	-	< 0.1	< 0.1	< 0.1
Lottia asmi	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	-	-	< 0.1

(continued)

Table C21 (continued). Intertidal Algae (percent cover) and Invertebrates (abundance per 1.0 m^2) Survey Means, Standard Deviations and 2003 Annual Means, South Diablo Cove Station SDC 3+0.3m.

Survey	132		133		134		135		
Survey Date	31-Jan-03		19-May-03		11-Jul-03		12-Nov-03		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Invertebrates (continued)									
Acmaea mitra	<0.1	<0.1	-	-	-	-	-	-	<0.1
Nitidiscala/Opalia spp.	-	-	<0.1	<0.1	-	-	-	-	<0.1
Diopatra ornata	-	-	-	-	-	-	<0.1	<0.1	<0.1
Pista spp. (%)	<0.1	<0.1	-	-	-	-	-	-	<0.1
Asterina miniata	-	-	-	-	<0.1	<0.1	-	-	<0.1
Ischnochitonidae unid.	-	-	-	-	<0.1	<0.1	-	-	<0.1
Grapsidae unid. (juvenile)	-	-	-	-	<0.1	<0.1	-	-	<0.1
Homolo. luridum/Lirularia succincta	-	-	-	-	<0.1	<0.1	-	-	<0.1
Bryozoa unid. (encrusting) (%)	-	-	-	-	-	-	<0.1	<0.1	<0.1
Substrate									
cobble	29.7	13.8	29.4	2-	19.0	15.2	14.9	6.2	23.2
rock	26.0	10.8	21.4	13.1	16.5	7.2	22.5	18.7	21.6
sand (shell gravel)	2.4	0.8	0.8	1.3	1.6	1.7	3.5	1.8	2.1

Table C22. Intertidal Algae (percent cover) and Invertebrates (abundance per 1.0 m^2) Survey Means, Standard Deviations and 2003 Annual Means, South Diablo Cove Station SDC 3+0.9m.

Survey	132		133		134		135		
Survey Date	31-Jan-03		19-May-03		11-Jul-03		12-Nov-03		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Algae									
Non-coralline crust	29.4	17.7	21.0	14.8	26.5	21.1	22.3	10.1	24.8
Mastocarpus papillatus	0.5	0.7	< 0.1	0.2	1.0	1.6	21.0	11.2	5.6
coralline crust	0.2	0.5	< 0.1	0.2	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Gelidium coulteri	-	-	-	-	-	-	0.1	0.3	< 0.1
Gelidium pusillum	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Cladophora spp.	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Mazzaella leptorhynchos	< 0.1	< 0.1	-	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Mazzaella affinis	-	-	-	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
juv. articulated coralline algae	< 0.1	< 0.1	< 0.1	< 0.1	-	-	< 0.1	< 0.1	< 0.1
Corallina vancouveriensis	< 0.1	< 0.1	-	-	< 0.1	< 0.1	-	-	< 0.1
Endocladia muricata	-	-	< 0.1	< 0.1	-	-	< 0.1	< 0.1	< 0.1
Ulva/Enteromorpha spp.	-	-	-	-	< 0.1	< 0.1	-	-	< 0.1
Invertebrates									
*Tegula funebralis**	147.6	119.0	255.0	117.6	230.6	94.8	259.2	192.4	223.1
*Anthopleura elegantissima**	89.6	121.3	86.6	109.4	104.2	106.4	59.4	74.9	85.0
Pagurus spp.*	25.0	28.2	6.0	10.7	23.0	20.6	55.4	26.4	27.4
*Lottia scabra**	7.6	8.4	16.6	20.1	25.4	23.7	39.2	25.4	22.2
*Lottia limatula**	1.2	0.8	1.6	1.5	7.8	6.1	2.4	2.8	3.3
*Tectura scutum**	2.0	1.9	0.2	0.5	5.6	9.3	0.4	0.6	2.1
Pollicipes polymerus	1.8	4.0	2.6	5.8	-	-	0.8	1.8	1.3
*Pachygrapsus crassipes**	0.6	0.6	0.8	0.8	2.6	3.2	0.2	0.5	1.1
Mytilus californianus	0.2	0.5	3.0	6.7	0.4	0.9	< 0.1	< 0.1	0.9
Acanthinucella spp.*	1.4	1.7	-	-	0.4	0.9	0.4	0.6	0.6
Chthamalus fissus (%)	0.7	1.5	0.8	1.5	0.4	1.1	0.2	0.3	0.5
*Tegula brunnea**	0.4	0.9	-	-	1.2	2.7	-	-	0.4
Mytilus spp.	1.6	3.6	-	-	-	-	-	-	0.4
*Lottia pelta**	-	-	-	-	0.2	0.5	1.0	1.2	0.3
Lottiidae unid.	< 0.1	< 0.1	< 0.1	< 0.1	0.4	0.6	< 0.1	-	0.1
Ocenebra spp.*	0.4	0.6	-	-	-	-	-	-	< 0.1
Cyanoplax spp.	-	-	-	-	0.2	0.5	-	-	< 0.1
*Tetraclita rubescens**	-	-	0.2	0.5	-	-	-	-	< 0.1
*Pisaster ochraceus**	0.2	0.5	-	-	-	-	-	-	< 0.1
Littorina spp.	< 0.1	< 0.1	< 0.1	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Lottia asmi	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Spirorbidae unid. (%)	-	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Phragmatopoma californica (%)	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	-	-	< 0.1
Nitidiscala/Opalia spp.	-	-	< 0.1	< 0.1	< 0.1	< 0.1	-	-	< 0.1
Sipuncula unid.	-	-	-	-	< 0.1	< 0.1	-	-	< 0.1
Cirratulidae/Terebellidae unid.	-	-	-	-	< 0.1	< 0.1	-	-	< 0.1
Homolo. luridum/Lirularia succincta	-	-	< 0.1	< 0.1	-	-	-	-	< 0.1
Substrate									
rock	35.9	31.7	36.4	29.3	39.9	28.0	27.5	25.6	34.9
cobble	29.9	19.3	34.8	22.8	23.4	16.2	21.2	13.7	27.3
sand (shell gravel)	3.8	2.2	5.8	6.9	7.1	8.5	7.8	4.0	6.1

Table C23. Intertidal Algae (percent cover) and Invertebrates (abundance per 1.0 m^2) Survey Means, Standard Deviations and 2003 Annual Means, South Diablo Point Station SDP 1+0.9m.

Survey	132		133		134		135		
Survey Date	12-Feb-03		20-May-03		11-Aug-03		28-Oct-03		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Algae									
Non-coralline crust	46.5	28.8	43.8	23.7	50.8	19.1	56.4	18.6	49.4
coralline crust	9.5	5.5	1-	6.1	7.1	5.0	8.8	8.1	8.9
Gelidium coulteri	0.8	1.9	3.3	3.8	12.4	10.4	8.2	7.4	6.2
Ulva/Enteromorpha spp.	<0.1	<0.1	<0.1	<0.1	8.7	11.8	0.2	0.5	2.2
juv. articulated coralline algae	3.9	4.8	1.5	1.4	0.5	0.5	0.7	1.0	1.6
Corallina vancouveriensis	2.9	5.1	1.0	1.8	0.2	0.3	1.5	1.9	1.4
Mastocarpus papillatus	-	-	0.6	0.8	2.0	2.5	0.2	0.3	0.7
Mastocarpus jardinii	0.2	0.3	0.3	0.5	0.4	0.5	1.0	1.3	0.5
Prionitis spp.	-	-	<0.1	<0.1	<0.1	<0.1	1.6	4.1	0.4
Mazzaella affinis	<0.1	0.2	<0.1	0.2	0.6	1.1	<0.1	<0.1	0.2
Mazzaella flaccida	-	-	0.3	0.5	0.4	0.8	<0.1	0.2	0.2
Endocladia muricata	0.2	0.5	-	-	0.2	0.7	0.3	0.9	0.2
Calliarthron/Bossiella spp. complex	0.1	0.4	0.1	0.3	<0.1	0.2	<0.1	0.2	0.1
Chrysophyta unid.	-	-	0.3	0.7	-	-	-	-	<0.1
Spongomorpha/Acrosiphonia complex	-	-	-	-	0.1	0.4	-	-	<0.1
Porphyra spp.	-	-	<0.1	0.2	<0.1	<0.1	-	-	<0.1
Cladophora spp.	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Gelidium pusillum	<0.1	<0.1	-	-	<0.1	<0.1	-	-	<0.1
Mazzaella heterocarpa	-	-	-	-	-	-	<0.1	<0.1	<0.1
Colpomenia spp.	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Callithamnion/Pleonosporium complex	-	-	<0.1	<0.1	-	-	-	-	<0.1
Cryptopleura violacea	-	-	<0.1	<0.1	-	-	-	-	<0.1
Laminariales	-	-	-	-	<0.1	<0.1	-	-	<0.1
Bryopsis spp.	<0.1	<0.1	-	-	-	-	-	-	<0.1
Codium fragile	-	-	-	-	<0.1	<0.1	-	-	<0.1
Invertebrates									
Mytilus californianus	415.2	533.9	273.0	374.8	44.4	98.7	1.8	4.0	183.6
*Anthopleura elegantissima**	109.2	66.5	128.8	83.2	105.2	42.3	130.8	81.0	118.5
*Lottia scabra**	124.8	89.1	181.6	148.7	53.0	37.0	62.6	55.4	105.5
*Tetraclita rubescens**	43.2	29.8	49.4	53.4	35.6	30.6	16.8	19.4	36.3
*Strongylocentrotus purpuratus**	26.0	20.4	15.6	16.7	29.4	34.2	26.4	23.6	24.4
*Lottia pelta**	3.8	3.7	23.6	11.2	6.4	3.9	11.4	7.8	11.3
Balanus spp.*	34.0	70.6	-	-	-	-	0.2	0.5	8.6
Pollicipes polymerus	14.0	8.2	7.6	7.7	7.4	9.4	<0.1	<0.1	7.3
*Lottia limatula**	0.6	0.9	16.4	31.2	1.0	1.0	3.8	4.0	5.5
Lottia gigantea	5.8	4.2	5.2	3.6	3.0	2.2	5.4	3.4	4.9
*Pisaster ochraceus**	8.2	5.6	2.6	3.1	3.0	1.7	2.4	1.7	4.1
*Lottia digitalis**	0.8	1.8	12.6	14.9	-	-	-	-	3.4
*Fissurella volcano**	1.4	2.6	5.0	4.4	3.2	3.8	1.8	1.5	2.9
*Nuttallina californica**	3.8	4.1	3.0	2.8	1.0	0.7	0.6	0.9	2.1
*Pachygrapsus crassipes**	0.2	0.5	0.4	0.6	5.2	2.6	1.8	1.1	1.9
*Tectura scutum**	0.8	1.8	6.4	8.7	-	-	-	-	1.8
*Anthopleura xanthogrammica**	0.6	0.6	2.4	2.1	1.6	1.1	1.2	1.3	1.5
Phragmatopoma californica (%)	1.7	3.1	2.0	3.4	0.3	0.8	0.2	0.5	1.1
Pagurus spp.*	2.0	3.4	-	-	0.2	0.5	-	-	0.6
Cyanoplax spp.	0.4	0.6	0.2	0.5	1.0	1.2	0.2	0.5	0.5
*Nucella emarginata**	0.6	0.6	0.6	0.6	0.2	0.5	-	-	0.4

(continued)

Table C23 (continued). Intertidal Algae (percent cover) and Invertebrates (abundance per 1.0 m^2) Survey Means, Standard Deviations and 2003 Annual Means, South Diablo Point Station SDP 1+0.9m.

Survey	132		133		134		135		
Survey Date	12-Feb-03		20-May-03		11-Aug-03		28-Oct-03		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Invertebrates (continued)									
Serpulidae unid.	0.2	0.5	0.4	0.9	-	-	0.4	0.9	0.3
Ocenebra spp.*	0.8	0.8	-	-	< 0.1	< 0.1	-	-	0.2
Nemertea unid.	-	-	-	-	0.8	0.8	-	-	0.2
*Tegula brunnea**	-	-	-	-	< 0.1	< 0.1	0.4	0.6	0.1
Lottia ochracea	-	-	-	-	0.4	0.9	-	-	0.1
Dodecaceria fewkesi	< 0.1	< 0.1	0.2	0.5	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
*Tegula funebralis**	-	-	0.2	0.5	-	-	-	-	< 0.1
Lottia instabilis	0.2	0.5	-	-	-	-	-	-	< 0.1
Ophioplocus spp.	-	-	-	-	0.2	0.5	-	-	< 0.1
Chthamalus fissus (%)	< 0.1	-	< 0.1	-	< 0.1	-	< 0.1	0.2	< 0.1
Lottiidae unid.	< 0.1	-	< 0.1	< 0.1	< 0.1	-	< 0.1	-	< 0.1
Spirorbidae unid. (%)	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Sipuncula unid.	-	-	-	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Mytilus spp.	< 0.1	< 0.1	< 0.1	< 0.1	-	-	-	-	< 0.1
Porifera unid. (encrusting) (%)	< 0.1	< 0.1	< 0.1	< 0.1	-	-	-	-	< 0.1
Ischnochitonidae unid.	< 0.1	< 0.1	-	-	-	-	-	-	< 0.1
Pelecypoda unid. (boring)	-	-	-	-	-	-	< 0.1	< 0.1	< 0.1
Lepidozona spp.	-	-	-	-	< 0.1	< 0.1	-	-	< 0.1
Cirratulidae/Terebellidae unid.	-	-	-	-	< 0.1	< 0.1	-	-	< 0.1
Bryozoa unid. (encrusting) (%)	< 0.1	< 0.1	-	-	-	-	-	-	< 0.1
Substrate									
rock	7.7	5.1	16.6	11.9	15.1	17.1	16.0	15.0	13.9
cobble	-	-	-	-	-	-	< 0.1	0.2	< 0.1

Table C24. Intertidal Algae (percent cover) and Invertebrates (abundance per 1.0 m^2) Survey Means, Standard Deviations and 2003 Annual Means, South Diablo Point Station SDP 2+0.9m.

Survey	132		133		134		135		
Survey Date	13-Feb-03		20-May-03		13-Jul-03		23-Nov-03		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Algae									
Gelidium coulteri	13.5	7.4	22.6	16.3	26.5	18.6	8.4	9.9	17.8
Mazzaella flaccida	8.3	8.7	18.5	20.5	17.8	14.8	10.3	13.0	13.8
coralline crust	17.8	12.5	15.3	9.1	9.2	4.4	10.9	6.6	13.3
Corallina vancouveriensis	13.3	10.2	14.5	8.6	9.4	6.4	15.6	9.5	13.2
Non-coralline crust	13.1	5.2	6.9	6.4	5.8	4.9	13.0	8.1	9.7
Cryptopleura violacea	8.3	8.1	6.5	6.2	9.0	5.4	14.7	13.4	9.6
Prionitis spp.	5.8	7.3	5.6	6.5	9.9	8.8	14.7	11.6	9.0
Gastroclonium subarticulatum	2.9	4.2	4.0	6.1	6.4	9.8	5.9	7.8	4.8
Calliarthron/Bossiella spp. complex	6.3	6.6	2.8	4.9	5.5	6.5	3.8	5.2	4.6
Chondracanthus canaliculatus	3.5	4.3	2.6	2.9	4.3	6.2	2.9	4.8	3.3
Callithamnion/Pleonosporium complex	0.6	0.8	4.0	3.1	5.9	7.5	2.8	5.0	3.3
Egregia menziesii	0.8	1.0	2.8	6.9	2.8	3.7	4.2	3.4	2.7
juv. articulated coralline algae	3.3	3.7	1.5	1.2	1.3	2.0	2.6	2.8	2.2
Chrysophyta unid.	2.8	3.7	1.7	2.4	1.6	2.5	0.3	1.1	1.6
Mastocarpus jardinii	1.0	1.7	1.3	3.1	1.7	4.0	1.3	3.2	1.3
filamentous red algae complex	0.6	1.3	1.4	3.2	2.2	4.7	-	-	1.1
Corallina officinalis	1.6	1.4	0.1	0.4	0.2	0.5	0.3	0.9	0.6
Osmundea spp.	1.5	2.9	0.1	0.3	0.4	0.8	<0.1	<0.1	0.5
Mastocarpus papillatus	0.7	0.7	0.5	1.1	0.1	0.4	<0.1	0.2	0.3
Gelidium pusillum	1.3	2.6	-	-	-	-	-	-	0.3
Mazzaella affinis	0.5	1.1	0.3	0.6	0.3	0.7	<0.1	0.2	0.3
Mazzaella heterocarpa	0.3	0.5	<0.1	0.2	0.5	0.9	0.1	0.3	0.3
Bryopsis spp.	0.6	0.8	0.1	0.3	0.1	0.3	<0.1	0.2	0.2
Codium fragile	<0.1	0.2	-	-	<0.1	<0.1	0.1	0.4	<0.1
Laminariales	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	0.4	<0.1
Halymenia/Schizymenia spp. complex	-	-	<0.1	<0.1	-	-	0.1	0.4	<0.1
Ulva/Enteromorpha spp.	<0.1	0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Chondracanthus corymbiferus	<0.1	<0.1	<0.1	<0.1	-	-	<0.1	0.2	<0.1
Callithamnion pikeanum	-	-	<0.1	0.2	<0.1	<0.1	-	-	<0.1
Mazzaella leptorhynchos	<0.1	<0.1	-	-	-	-	-	-	<0.1
Microcladia borealis	-	-	<0.1	<0.1	<0.1	<0.1	-	-	<0.1
Porphyra spp.	-	-	<0.1	<0.1	<0.1	<0.1	-	-	<0.1
Cladophora spp.	<0.1	<0.1	-	-	<0.1	<0.1	-	-	<0.1
Endocladia muricata	<0.1	<0.1	-	-	<0.1	<0.1	-	-	<0.1
Callophyllis spp.	<0.1	<0.1	-	-	<0.1	<0.1	-	-	<0.1
Colpomenia spp.	<0.1	<0.1	-	-	-	-	<0.1	<0.1	<0.1
Spongomorpha/Acrosiphonia complex	-	-	<0.1	<0.1	-	-	-	-	<0.1
Desmarestia spp.	-	-	-	-	<0.1	<0.1	-	-	<0.1
Grateloupia doryphora	-	-	<0.1	<0.1	-	-	-	-	<0.1
Invertebrates									
*Strongylocentrotus purpuratus**	140.2	90.3	116.0	62.8	173.6	121.4	93.0	69.5	130.7
*Anthopleura elegantissima**	145.2	119.4	119.4	112.1	78.2	123.0	73.2	64.8	104.0
*Tetraclita rubescens**	19.2	37.4	27.6	52.4	17.8	39.3	-	-	16.2
Serpulorbis squamigerus	9.8	7.4	4.2	4.9	10.6	10.7	2.4	2.3	6.8
*Lottia scabra**	8.6	19.2	5.0	11.2	3.4	7.6	-	-	4.3
Serpulidae unid.	10.2	11.0	0.8	1.1	2.0	2.1	3.4	2.4	4.1
*Pisaster ochraceus**	3.0	1.0	2.6	2.0	3.4	0.9	3.6	2.4	3.2

(continued)

Table C24 (continued). Intertidal Algae (percent cover) and Invertebrates (abundance per 1.0 m^2) Survey Means, Standard Deviations and 2003 Annual Means, South Diablo Point Station SDP 2+0.9m.

Survey	132		133		134		135		
Survey Date	13-Feb-03		20-May-03		13-Jul-03		23-Nov-03		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Invertebrates (continued)									
Leptasterias spp.*	1.8	1.3	2.2	1.5	3.2	3.6	0.8	1.3	2.0
*Anthopleura xanthogrammica**	2.8	4.2	1.8	3.0	3.0	5.7	-	-	1.9
*Lottia pelta**	2.0	2.8	0.2	0.5	3.6	4.0	0.6	0.6	1.6
*Pachygrapsus crassipes**	-	-	1.2	1.8	2.6	3.8	1.2	0.8	1.3
*Tegula brunnea**	1.6	1.8	0.4	0.9	2.4	4.8	0.4	0.6	1.2
Tonicella lineata	1.6	1.5	0.6	1.3	1.6	2.3	0.8	0.8	1.2
Nemertea unid.	0.6	0.6	1.6	1.7	0.8	0.8	1.4	1.1	1.1
*Fissurella volcano**	0.4	0.6	-	-	1.2	1.1	2.0	1.2	0.9
Balanus spp.*	-	-	-	-	-	-	3.4	7.6	0.9
*Lottia digitalis**	-	-	2.0	4.5	0.6	1.3	-	-	0.7
Acmaea mitra	<0.1	<0.1	<0.1	<0.1	0.2	0.5	1.2	1.3	0.4
Dodecaceria fewkesi	0.3	0.6	0.6	1.3	<0.1	0.2	0.4	0.5	0.3
*Lottia limatula**	0.2	0.5	-	-	1.0	1.2	-	-	0.3
*Tegula funebralis**	1.2	2.7	-	-	-	-	-	-	0.3
*Epiactis prolifera**	0.4	0.9	0.2	0.5	0.2	0.5	-	-	0.2
Mopalia spp.*	-	-	0.2	0.5	-	-	0.4	0.6	0.2
Lissothuria nutriens	-	-	-	-	-	-	0.6	1.3	0.2
Pugettia spp.	0.2	0.5	-	-	0.4	0.6	-	-	0.2
*Nucella emarginata**	-	-	0.6	0.9	-	-	-	-	0.2
Pagurus spp.*	0.2	0.5	-	-	-	-	0.2	0.5	<0.1
Cancer antennarius	-	-	-	-	0.4	0.9	-	-	<0.1
Lepidozona spp.	-	-	-	-	0.2	0.5	0.2	0.5	<0.1
Haliotis spp.*	-	-	<0.1	0.3	0.3	0.7	-	-	<0.1
Polynoidae	-	-	-	-	0.2	0.5	-	-	<0.1
Pachycheles spp.	-	-	-	-	0.2	0.5	-	-	<0.1
Cyanoplax spp.	0.2	0.5	-	-	-	-	-	-	<0.1
Hermissenda crassicornis	-	-	-	-	-	-	0.2	0.5	<0.1
*Nuttallina californica**	-	-	0.2	0.5	-	-	-	-	<0.1
Nereidae unid.	-	-	-	-	0.2	0.5	-	-	<0.1
Pollicipes polymerus	0.2	0.5	-	-	-	-	-	-	<0.1
Cirratulidae/Terebellidae unid.	-	-	-	-	0.2	0.5	-	-	<0.1
Chthamalus fissus (%)	<0.1	<0.1	<0.1	0.2	<0.1	<0.1	<0.1	<0.1	<0.1
Spirorbidae unid. (%)	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1
Pelecypoda unid. (boring)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	<0.1
Lottiidae unid.	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Porifera unid. (encrusting) (%)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Sipuncula unid.	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Bryozoa unid. (encrusting) (%)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Phragmatopoma californica (%)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	<0.1
Tunicata unid. (colonial/social) (%)	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Lottia ochracea	-	-	<0.1	<0.1	-	-	-	-	<0.1
Corynactis californica	-	-	<0.1	<0.1	<0.1	<0.1	-	-	<0.1
Calliostoma ligatum	<0.1	<0.1	-	-	-	-	-	-	<0.1
Mytilus californianus	-	-	<0.1	<0.1	-	-	-	-	<0.1
Idotea spp.	-	-	<0.1	<0.1	-	-	<0.1	<0.1	<0.1
Ischnochitonidae unid.	-	-	<0.1	<0.1	-	-	<0.1	<0.1	<0.1
Mytilus spp.	<0.1	<0.1	<0.1	<0.1	-	-	-	-	<0.1
Pycnogonida unid.	<0.1	<0.1	-	-	-	-	-	-	<0.1

(continued)

Table C24 (continued). Intertidal Algae (percent cover) and Invertebrates (abundance per 1.0 m^2) Survey Means, Standard Deviations and 2003 Annual Means, South Diablo Point Station SDP 2+0.9m.

Survey	132		133		134		135		
Survey Date	13-Feb-03		20-May-03		13-Jul-03		23-Nov-03		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Invertebrates (continued)									
Lacuna spp.	-	-	-	-	-	-	< 0.1	< 0.1	< 0.1
Amphissa spp.	< 0.1	< 0.1	-	-	-	-	-	-	< 0.1
Salmacina tribranchiata	-	-	< 0.1	< 0.1	-	-	-	-	< 0.1
Elysia hedgpethi	-	-	< 0.1	< 0.1	-	-	-	-	< 0.1
Substrate									
rock	3.1	1.5	4.0	3.3	2.5	3.1	3.5	1.7	3.3
cobble	< 0.1	< 0.1	-	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
sand (shell gravel)	< 0.1	< 0.1	-	-	-	-	< 0.1	< 0.1	< 0.1

Table C25. Intertidal Algae (percent cover) and Invertebrates (abundance per 1.0 m^2) Survey Means, Standard Deviations and 2003 Annual Means, South Control Station SC 1+0.3m.

Survey	132		133		134		135		
Survey Date	30-Jan-03		17-May-03		27-Aug-03		29-Oct-03		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Algae									
Mazzaella flaccida	17.7	14.2	58.0	15.3	41.9	15.5	34.3	14.9	38.0
Chondracanthus canaliculatus	26.3	12.9	28.8	12.3	32.1	11.8	20.7	15.9	27.0
Non-coralline crust	22.4	7.5	7.6	3.4	10.1	7.1	7.7	4.7	11.9
Gastroclonium subarticulatum	5.8	4.9	3.3	3.8	8.1	6.7	13.8	12.2	7.7
coralline crust	10.4	6.0	5.4	5.7	4.9	5.3	6.7	5.2	6.9
Egregia menziesii	3.0	5.1	1.3	4.2	14.3	22.0	7.0	9.9	6.4
Ulva/Enteromorpha spp.	2.4	2.7	4.0	5.8	9.1	7.7	5.9	8.7	5.3
Mastocarpus papillatus	1.4	0.9	4.7	3.5	5.3	3.6	2.6	1.7	3.5
Cryptopleura violacea	1.3	1.9	2.8	3.1	3.3	2.1	3.1	2.5	2.6
Phyllospadix spp.	1.6	2.5	1.8	3.9	2.5	4.6	4.0	6.5	2.5
Mastocarpus jardinii	0.4	0.9	0.6	1.2	2.2	4.2	3.1	4.1	1.6
Mazzaella heterocarpa	3.5	3.6	1.6	0.9	0.9	1.0	0.1	0.4	1.5
Porphyra spp.	<0.1	<0.1	2.5	3.7	2.2	2.5	0.4	0.9	1.3
Gelidium coulteri	<0.1	0.2	<0.1	0.2	0.8	2.0	2.7	5.2	0.9
Halosaccion americanum	<0.1	0.2	0.6	2.0	1.6	4.4	0.8	2.4	0.8
Prionitis spp.	1.5	1.7	<0.1	0.2	0.3	0.7	0.6	1.2	0.6
Corallina vancouveriensis	1.4	1.1	<0.1	0.2	0.5	1.3	0.3	1.1	0.6
Calliarthron/Bossiella spp. complex	1.8	3.0	<0.1	0.2	<0.1	<0.1	0.2	0.3	0.5
Mazzaella affinis	0.3	0.5	0.9	1.2	0.8	1.2	0.1	0.4	0.5
juv. articulated coralline algae	0.8	0.6	0.2	0.7	<0.1	<0.1	0.9	1.6	0.5
Endocladia muricata	0.3	0.5	0.7	1.0	0.4	0.9	0.3	0.6	0.4
Osmundea spp.	0.8	0.8	<0.1	0.2	<0.1	<0.1	0.8	1.1	0.4
Microcladia coulteri	-	-	<0.1	<0.1	1.5	2.5	0.1	0.4	0.4
Chondracanthus corymbiferus	0.9	0.8	0.1	0.4	0.6	1.2	-	-	0.4
Gelidium pusillum	1.0	1.7	0.2	0.5	0.1	0.3	<0.1	0.2	0.3
Halymenia/Schizymenia spp. complex	0.7	0.8	<0.1	<0.1	0.1	0.4	-	-	0.2
Sarcodiotheca gaudichaudii	0.2	0.5	0.1	0.4	0.2	0.7	-	-	0.1
Polyneura latissima	0.6	1.3	-	-	<0.1	<0.1	-	-	0.1
Corallina officinalis	0.2	0.3	-	-	<0.1	<0.1	0.1	0.3	<0.1
Mazzaella lilacina	-	-	<0.1	0.2	0.3	0.9	-	-	<0.1
Rhodymenia spp.	0.1	0.4	-	-	-	-	-	-	<0.1
Smithora naiadum	-	-	-	-	<0.1	0.2	<0.1	<0.1	<0.1
Mazzaella leptorhynchos	-	-	<0.1	0.2	-	-	-	-	<0.1
Melobesia mediocris	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1
Callithamnion pikeanum	<0.1	<0.1	<0.1	<0.1	-	-	-	-	<0.1
Cladophora spp.	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
filamentous red algae complex	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	<0.1
Spongomorpha/Acrosiphonia complex	-	-	<0.1	<0.1	<0.1	<0.1	-	-	<0.1
Callithamnion./Pleonosporium complex	<0.1	<0.1	<0.1	<0.1	-	-	-	-	<0.1
Chrysophyta unid.	-	-	<0.1	<0.1	<0.1	<0.1	-	-	<0.1
Erythrophyllum delesserioides	-	-	-	-	<0.1	<0.1	-	-	<0.1
Ahnfeltiopsis linearis	<0.1	<0.1	-	-	-	-	-	-	<0.1
Invertebrates									
*Tetraclita rubescens**	63.4	35.3	9.2	10.3	11.8	10.4	9.2	7.0	23.4
Pagurus spp.*	11.2	4.8	5.2	5.3	6.0	4.7	1.8	3.0	6.1
*Lottia scabra**	4.8	8.0	1.4	2.0	2.8	5.2	0.8	1.3	2.5
*Tegula brunnea**	5.2	4.3	0.6	0.6	0.4	0.9	1.0	1.0	1.8
*Anthopleura elegantissima**	4.6	2.1	0.6	0.9	0.8	1.1	1.0	1.0	1.8

(continued)

Table C25 (continued). Intertidal Algae (percent cover) and Invertebrates (abundance per 1.0 m^2) Survey Means, Standard Deviations and 2003 Annual Means, South Control Station SC 1+0.3m.

Survey	132		133		134		135		
Survey Date	30-Jan-03		17-May-03		27-Aug-03		29-Oct-03		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Invertebrates (continued)									
*Lottia pelta**	0.2	0.5	1.4	3.1	1.6	2.0	0.4	0.6	0.9
*Lottia limatula**	0.6	0.9	0.2	0.5	0.4	0.9	1.8	2.5	0.8
Serpulidae unid.	1.2	1.8	-	-	0.2	0.5	0.8	1.8	0.6
Nemertea unid.	-	-	-	-	1.4	1.1	0.8	0.8	0.6
Mopalia spp.*	0.4	0.6	-	-	0.6	0.9	0.8	0.8	0.5
*Tegula funebralis**	1.6	3.6	-	-	-	-	-	-	0.4
*Epiactis prolifera**	-	-	0.2	0.5	0.8	0.8	0.2	0.5	0.3
Diopatra ornata	1.0	1.7	-	-	-	-	-	-	0.3
*Fissurella volcano**	0.6	0.6	-	-	-	-	0.2	0.5	0.2
*Tectura scutum**	0.2	0.5	-	-	0.4	0.9	0.2	0.5	0.2
Tonicella lineata	-	-	-	-	0.8	0.8	-	-	0.2
Asterina miniata	0.4	0.6	0.4	0.9	-	-	-	-	0.2
Ocenebra spp.*	-	-	-	-	0.2	0.5	0.6	0.6	0.2
Pugettia spp.	-	-	-	-	0.4	0.6	0.4	0.6	0.2
Acmaea mitra	0.4	0.9	-	-	<0.1	<0.1	0.2	0.5	0.2
Tunicata unid. (colonial/social) (%)	0.1	0.3	<0.1	<0.1	0.2	0.5	0.2	0.5	0.1
Phragmatopoma californica (%)	0.4	0.9	<0.1	<0.1	<0.1	-	<0.1	<0.1	0.1
Cyanoplax spp.	-	-	-	-	<0.1	<0.1	0.4	0.9	0.1
*Pisaster ochraceus**	0.4	0.9	-	-	-	-	-	-	<0.1
Cryptochiton stelleri	0.2	0.5	-	-	0.2	0.5	-	-	<0.1
Pisaster/Henricia (juv.)	-	-	-	-	-	-	0.4	0.9	<0.1
Spirorbidae unid. (%)	<0.1	0.2	<0.1	<0.1	<0.1	-	0.3	0.5	<0.1
Discurria insessa	0.2	0.5	-	-	-	-	<0.1	<0.1	<0.1
*Anthopleura xanthogrammica**	0.2	0.5	-	-	-	-	-	-	<0.1
Calliostoma ligatum	-	-	-	-	-	-	0.2	0.5	<0.1
*Nuttallina californica**	-	-	-	-	-	-	0.2	0.5	<0.1
Nereidae unid.	-	-	-	-	-	-	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
Pycnopodia helianthoides	-	-	-	-	0.2	0.5	-	-	<0.1
Fusinus luteopictus	0.2	0.5	-	-	-	-	-	-	<0.1
Porifera unid. (encrusting) (%)	<0.1	0.2	<0.1	<0.1	-	-	<0.1	<0.1	<0.1
Lottiidae unid.	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1
Bryozoa unid. (encrusting) (%)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Ischnochitonidae unid.	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Lacuna spp.	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Chthamalus fissus (%)	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Crepidula spp.	<0.1	<0.1	-	-	<0.1	<0.1	-	-	<0.1
Sipuncula unid.	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1
Lepidozona spp.	<0.1	<0.1	<0.1	<0.1	-	-	-	-	<0.1
Homolo. luridum/Lirularia succincta	<0.1	<0.1	-	-	-	-	-	-	<0.1
Alia spp.	-	-	-	-	-	-	<0.1	<0.1	<0.1
Lottia ochracea	-	-	-	-	-	-	<0.1	<0.1	<0.1
Pycnogonida unid.	-	-	-	-	-	-	<0.1	<0.1	<0.1
Bittium spp.	<0.1	<0.1	-	-	-	-	-	-	<0.1
Amphissa spp.	<0.1	<0.1	-	-	-	-	-	-	<0.1
Platyhelminthes unid.	-	-	<0.1	<0.1	-	-	-	-	<0.1

(continued)

Table C25 (continued). Intertidal Algae (percent cover) and Invertebrates (abundance per 1.0 m^2) Survey Means, Standard Deviations and 2003 Annual Means, South Control Station SC 1+0.3m.

Survey	132		133		134		135		
Survey Date	30-Jan-03		17-May-03		27-Aug-03		29-Oct-03		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Invertebrates (continued)									
Lissothuria nutriens	-	-	-	-	< 0.1	< 0.1	-	-	< 0.1
Substrate									
rock	8.0	2.9	4.4	3.9	12.7	3.6	6.8	4.3	8.0
cobble	7.6	4.9	2.7	3.3	4.4	3.9	2.0	1.9	4.2
sand (shell gravel)	6.6	6.7	4.0	4.3	3.1	5.0	3.1	4.0	4.2

Table C26. Intertidal Algae (percent cover) and Invertebrates (abundance per 1.0 m^2) Survey Means, Standard Deviations and 2003 Annual Means, South Control Station SC 1+0.9m.

Survey	132		133		134		135		
Survey Date	30-Jan-03		17-May-03		27-Aug-03		29-Oct-03		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Algae									
Non-coralline crust	26.3	24.9	19.9	15.0	16.0	12.1	12.6	6.7	18.7
Mastocarpus papillatus	5.0	2.3	13.5	9.9	27.2	9.5	20.9	9.2	16.6
Pelvetia compressa	11.3	13.2	11.7	14.1	14.7	18.4	14.6	17.4	13.1
Endocladia muricata	8.1	4.5	15.9	7.8	12.8	9.5	10.3	11.0	11.8
coralline crust	6.8	4.2	4.3	2.6	3.0	3.3	2.6	3.3	4.2
Mazzaella flaccida	0.6	0.6	1.9	2.6	7.8	5.0	5.3	7.4	3.9
Porphyra spp.	<0.1	<0.1	1.5	2.6	3.1	4.3	1.5	2.4	1.5
Mastocarpus jardinii	0.4	0.9	0.7	1.0	4.1	6.3	0.9	2.9	1.5
Mazzaella heterocarpa	1.3	1.8	1.3	1.9	0.3	0.6	0.8	0.8	0.9
Gelidium pusillum	1.4	2.9	0.8	2.0	0.3	0.4	<0.1	0.2	0.6
Ulva/Enteromorpha spp.	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	1.5	2.4	0.4
Mazzaella affinis	0.1	0.3	<0.1	<0.1	0.3	0.5	0.1	0.4	0.2
Corallina vancouveriensis	0.3	0.4	<0.1	0.2	<0.1	<0.1	<0.1	<0.1	0.1
juv. articulated coralline algae	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.3	0.7	<0.1
Fucus gardneri	0.2	0.7	<0.1	<0.1	-	-	-	-	<0.1
Cryptopleura violacea	-	-	-	-	<0.1	0.2	0.1	0.4	<0.1
Cladophora spp.	<0.1	<0.1	<0.1	0.2	<0.1	<0.1	<0.1	<0.1	<0.1
Gelidium coulteri	<0.1	0.2	-	-	<0.1	<0.1	<0.1	<0.1	<0.1
Chondracanthus canaliculatus	<0.1	0.2	<0.1	<0.1	-	-	-	-	<0.1
Hesperophycus californicus	-	-	<0.1	<0.1	<0.1	0.2	<0.1	<0.1	<0.1
Corallina officinalis	-	-	-	-	<0.1	<0.1	<0.1	0.2	<0.1
Microcladia coulteri	-	-	-	-	-	-	<0.1	0.2	<0.1
Chrysophyta unid.	-	-	-	-	<0.1	<0.1	-	-	<0.1
Spongomorpha/Acrosiphonia complex	-	-	-	-	<0.1	<0.1	-	-	<0.1
Calliarthron/Bossiella spp. complex	-	-	-	-	-	-	<0.1	<0.1	<0.1
Callithamnion pikeanum	-	-	<0.1	<0.1	-	-	-	-	<0.1
Codium setchellii	-	-	-	-	-	-	<0.1	<0.1	<0.1
Halosaccion americanum	-	-	-	-	<0.1	<0.1	-	-	<0.1
Phyllospadix spp.	<0.1	<0.1	-	-	-	-	-	-	<0.1
Halymenia/Schizymenia spp. complex	-	-	-	-	<0.1	<0.1	-	-	<0.1
Invertebrates									
*Tegula funebralis**	102.6	28.5	98.4	66.9	31.0	39.6	58.8	77.6	72.7
*Tectura scutum**	3.2	4.4	5.4	3.2	27.0	15.8	19.6	11.2	13.8
Pagurus spp.*	21.4	19.5	5.2	4.8	5.0	5.1	17.4	27.0	12.3
*Lottia scabra**	5.6	6.5	9.4	10.4	17.8	21.2	7.2	8.2	10.0
*Lottia limatula**	1.2	1.1	2.2	2.2	8.6	6.9	1-	6.6	5.5
*Anthopleura elegantissima**	5.6	6.5	5.4	7.2	2.8	2.4	1.8	1.9	3.9
*Lottia pelta**	2.0	2.6	3.8	4.6	3.6	3.0	0.2	0.5	2.4
*Tetraclita rubescens**	2.2	4.9	2.4	3.4	-	-	-	-	1.2
*Pachygrapsus crassipes**	0.2	0.5	0.2	0.5	0.8	0.5	1.0	0.7	0.6
*Hemigrapsus nudus**	-	-	0.6	0.9	0.4	0.6	0.2	0.5	0.3
Phragmatopoma californica (%)	0.6	1.2	0.3	0.9	<0.1	<0.1	<0.1	0.2	0.2
Cyanoplax spp.	0.2	0.5	-	-	0.4	0.9	0.2	0.5	0.2
Nemertea unid.	-	-	-	-	0.2	0.5	0.6	1.3	0.2
Leptasterias spp.*	0.2	0.5	-	-	0.2	0.5	0.2	0.5	0.2
*Pisaster ochraceus**	0.2	0.5	-	-	-	-	0.4	0.6	0.2
Ocenebra spp.*	-	-	0.4	0.9	-	-	-	-	<0.1
*Anthopleura xanthogrammica**	-	-	-	-	-	-	0.2	0.5	<0.1

(continued)

Table C26 (continued). Intertidal Algae (percent cover) and Invertebrates (abundance per 1.0 m^2) Survey Means, Standard Deviations and 2003 Annual Means, South Control Station SC 1+0.9m.

Survey	132		133		134		135		
Survey Date	30-Jan-03		17-May-03		27-Aug-03		29-Oct-03		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Invertebrates (continued)									
*Lottia digitalis**	-	-	0.2	0.5	-	-	-	-	<0.1
Tegula pulligo	0.2	0.5	-	-	-	-	-	-	<0.1
*Nuttallina californica**	-	-	-	-	0.2	0.5	-	-	<0.1
Idotea spp.	0.2	0.5	-	-	-	-	-	-	<0.1
Haliotis spp.*	-	-	-	-	<0.1	0.3	-	-	<0.1
Tunicata unid. (colonial/social) (%)	-	-	-	-	<0.1	0.2	-	-	<0.1
Chthamalus fissus (%)	<0.1	-	<0.1	-	<0.1	-	<0.1	<0.1	<0.1
Lottiidae unid.	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1
Littorina spp.	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	<0.1
Lottia asmi	<0.1	<0.1	<0.1	<0.1	-	-	-	-	<0.1
Spirorbidae unid. (%)	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1
Mytilus spp.	<0.1	<0.1	-	-	<0.1	<0.1	-	-	<0.1
Crepidula spp.	<0.1	<0.1	<0.1	<0.1	-	-	-	-	<0.1
Ischnochitonidae unid.	-	-	<0.1	<0.1	-	-	<0.1	<0.1	<0.1
Nitidiscala/Opalia spp.	-	-	-	-	<0.1	<0.1	-	-	<0.1
Lacuna spp.	-	-	-	-	<0.1	<0.1	-	-	<0.1
Substrate									
rock	26.9	13.5	22.2	12.1	23.5	10.4	26.1	14.5	24.7
cobble	20.1	14.5	23.8	19.6	13.5	12.2	12.8	13.1	17.5
sand (shell gravel)	3.5	2.3	5.3	7.6	7.2	10.8	3.3	5.2	4.8

Appendix D

Intertidal Fish Results
(VBT Method)

Table D1. Intertidal Fish Survey Totals, 2003 Annual Means, and Standard Deviations, North Control Station NC-1V.

Survey	92	93	94	95		
Survey Date	27-Feb-03	21-May-03	12-Aug-03	22-Dec-03		
Taxon	Total	Total	Total	Total	Annual Mean	Std. Dev.
Pholididae/Stichaeidae unid.	3	277	41	9	82.5	130.7
Xiphister atropurpureus	7	2	34	14	14.3	14.1
Xiphister mucosus	11	9	11	11	10.5	1.0
Gobiesox maeandricus	4	4	3	9	5.0	2.7
Anoplarchus purpurescens	2	2	2	10	4.0	4.0
Oligocottus snyderi	-	1	7	2	2.5	3.1
Xererpes fucorum	-	2	5	-	1.8	2.4
Cottidae unid.	1	5	-	-	1.5	2.4
Anoplarchus/Cebidichthys spp.	-	1	3	-	1.0	1.4
Gibbonsia spp.	-	3	-	-	-0.8	1.5
Cebidichthys violaceus	-	-	3	-	-0.8	1.5

Table D2. Intertidal Fish Survey Totals, 2003 Annual Means, and Standard Deviations, Field's Cove Station FC-1V.

Survey	92	93	94	95		
Survey Date	31-Jan-03	17-Jun-03	28-Aug-03	12-Nov-03		
Taxon	Total	Total	Total	Total	Annual Mean	Std. Dev.
Xiphister mucosus	20	18	-	19	14.3	9.5
Oligocottus snyderi	26	6	-	3	8.8	11.8
Cebidichthys violaceus	21	3	4	4	8.0	8.7
Gobiesox maeandricus	18	4	-	-	5.5	8.5
Anoplarchus purpurescens	9	8	-	-	4.3	4.9
Pholididae/Stichaeidae unid.	3	1	3	3	2.5	1.0
Xiphister atropurpureus	6	-	-	-	1.5	3.0
Gibbonsia spp.	-	-	-	1	-0.3	-0.5
Xererpes fucorum	-	-	1	-	-0.3	-0.5
Liparis mucosus	-	-	-	1	-0.3	-0.5
Sardinops sagax	-	-	-	1	-0.3	-0.5

Table D3. Intertidal Fish Survey Totals, 2003 Annual Means, and Standard Deviations, North Diablo Cove Station NDC-1V.

Survey	92	93	94	95		
Survey Date	28-Jan-03	18-Jun-03	15-Jul-03	8-Dec-03		
Taxon	Total	Total	Total	Total	Annual Mean	Std. Dev.
Cebidichthys violaceus	12	33	61	25	32.8	20.7
Pholididae/Stichaeidae unid.	3	5	12	8	7.0	3.9
Anoplarchus purpurescens	-	17	2	8	6.8	7.6
Xiphister mucosus	2	10	1	5	4.5	4.0
Anoplarchus/Cebidichthys spp.	-	-	17	-	4.3	8.5
Xiphister atropurpureus	3	9	3	1	4.0	3.5
Xiphister spp.	-	7	-	-	1.8	3.5
Xererpes fucorum	5	-	1	1	1.8	2.2
Scytalina cerdale	-	3	3	-	1.5	1.7
Oligocottus snyderi	-	5	-	-	1.3	2.5
Gobiesox maeandricus	-	2	1	-	-0.8	1.0
Cottidae unid.	1	-	-	-	-0.3	-0.5

Table D5. Intertidal Fish Survey Totals, 2003 Annual Means, and Standard Deviations, South Diablo Cove Station SDC-2V.

Survey	92	93	94	95		
Survey Date	1-Feb-03	3-Jun-03	16-Jul-03	23-Dec-03		
Taxon	Total	Total	Total	Total	Annual Mean	Std. Dev.
Cebidichthys violaceus	-	-	13	7	5.0	6.3
Pholididae/Stichaeidae unid.	1	9	3	-	3.3	4.0
Anoplarchus/Cebidichthys spp.	-	5	3	-	2.0	2.5
Xiphister atropurpureus	2	-	1	-	-0.8	1.0
Cottidae unid.	-	3	-	-	-0.8	1.5
Gobiesox maeandricus	2	-	-	-	-0.5	1.0
Oligocottus snyderi	2	-	-	-	-0.5	1.0
Xererpes fucorum	1	-	-	-	-0.3	-0.5
Xiphister mucosus	-	-	-	1	-0.3	-0.5

Table D6. Intertidal Fish Survey Totals, 2003 Annual Means, and Standard Deviations, South Control Station SC-1V.

Survey Survey Date Taxon	92 17-Feb-03 Total	93 6-Jun-03 Total	94 14-Jul-03 Total	95 21-Dec-03 Total	Annual Mean	Std. Dev.
Cebidichthys violaceus	20	28	29	78	38.8	26.5
Pholididae/Stichaeidae unid.	13	94	23	13	35.8	39.1
Anoplarchus purpurescens	16	21	3	91	32.8	39.6
Xiphister mucosus	12	16	8	18	13.5	4.4
Gobiesox maeandricus	17	9	7	20	13.3	6.2
Oligocottus snyderi	5	3	13	5	6.5	4.4
Xiphister atropurpureus	1	9	4	8	5.5	3.7
Cottidae unid.	-	7	3	-	2.5	3.3
Anoplarchus/Cebidichthys spp.	-	-	8	-	2.0	4.0
Gibbonsia spp.	4	-	-	1	1.3	1.9
Xererpes fucorum	-	-	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	120		121		122		123		
Survey Date	1-Apr-03		27-Jun-03		22-Aug-03		6-Jan-04		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Algae									
Laminaria setchellii	118.3	9.2	95.8	53.9	119.8	32.9	106.3	13.5	110.0
Nereocystis luetkeana	1.3	2.5	10.8	7.8	14.0	5.0	1.0	1.4	6.8
Cystoseira osmundacea	4.3	2.1	5.3	2.9	7.0	2.9	5.3	4.3	5.4
Laminariales unid.	9.8	2.6	-	-	-	-	5.5	5.6	3.8
Pterygophora californica	-	-	-	-	2.0	2.8	0.5	0.6	0.6
Macrocystis spp.	-	-	0.3	0.5	0.3	0.5	-	-	0.1
Invertebrates									
Tegula brunnea	211.5	50.6	112.5	103.4	246.0	160.3	120.8	34.5	172.7
Acmaea mitra	29.3	16.0	9.0	2.5	19.5	15.6	1.5	1.7	14.8
Tonicella lineata	10.5	3.9	6.8	2.9	6.0	2.5	3.8	2.9	6.8
Asterina miniata	4.3	1.9	3.5	0.6	3.0	1.4	4.8	1.7	3.9
Pagurus spp.	2.0	0.8	3.5	2.4	2.5	1.3	3.0	2.3	2.8
Cryptochiton stelleri	2.5	2.7	1.8	1.0	2.5	1.0	3.0	2.0	2.4
Calliostoma ligatum	3.0	4.2	1.5	1.7	-	-	3.0	3.5	1.9
Anthopleura elegantissima	2.0	1.4	1.5	1.7	2.5	1.3	1.0	2.0	1.8
Tegula montereyi	2.3	1.5	0.8	1.5	0.8	1.5	0.8	1.5	1.1
Discurria insessa	2.5	2.1	-	-	0.5	0.6	1.0	1.4	1.0
Epiactis prolifera	-	-	0.5	0.6	3.3	2.5	-	-	0.9
Pycnopodia helianthoides	0.8	0.5	0.3	0.5	0.5	0.6	1.3	1.5	0.7
Mitra idae	0.8	1.0	0.8	1.0	-	-	0.8	1.0	0.6
Leptasterias spp.	0.5	0.6	0.8	1.5	0.5	1.0	0.3	0.5	0.5
Hermissenda crassicornis	0.3	0.5	0.5	0.6	0.5	1.0	0.3	0.5	0.4
Pisaster giganteus	0.3	0.5	-	-	0.5	1.0	0.8	1.5	0.4
Pelecypoda unid. (boring)	0.8	1.5	-	-	0.5	1.0	-	-	0.3
Diopatra ornata	0.5	1.0	0.5	1.0	-	-	-	-	0.3
Loxorhynchus spp.	0.5	0.6	0.3	0.5	0.3	0.5	-	-	0.3
Halcampa decemtentaculata	0.3	0.5	-	-	0.8	1.0	-	-	0.3
Strongylocentrotus purpuratus	0.3	0.5	-	-	0.5	1.0	-	-	0.2
Pugettia spp.	0.8	0.5	-	-	-	-	-	-	0.2
Lithopoma gibberosum	0.3	0.5	-	-	0.3	0.5	-	-	0.1
Tethya aurantia	0.3	0.5	0.3	0.5	-	-	-	-	0.1
Fusinus luteopictus	0.3	0.5	0.3	0.5	-	-	-	-	0.1
Paraxanthias taylori	-	-	-	-	0.5	0.6	-	-	0.1
Calliostoma annulatum	-	-	-	-	-	-	0.3	0.5	< 0.1
Diodora spp.	0.3	0.5	-	-	-	-	-	-	< 0.1
Cancer antennarius	0.3	0.5	-	-	-	-	-	-	< 0.1
Pisaster ochraceus	-	-	0.3	0.5	-	-	-	-	< 0.1
Phidiana hiltoni	-	-	-	-	-	-	0.3	0.5	< 0.1
Cucumaria spp.	-	-	-	-	0.3	0.5	-	-	< 0.1
Pisaster/Henricia (juv.)	-	-	-	-	-	-	0.3	0.5	< 0.1
Megathura crenulata	-	-	-	-	0.3	0.5	-	-	< 0.1
Archidoris spp.	-	-	-	-	0.3	0.5	-	-	< 0.1
Pectinidae unid.	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	120		121		122		123		
Survey Date	12-Mar-03		6-May-03		19-Aug-03		6-Jan-04		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Algae									
Cystoseira osmundacea	12.8	6.5	10.5	7.3	9.3	5.7	8.3	6.3	10.2
Macrocystis spp.	15.3	10.7	11.0	4.6	6.0	3.2	5.0	2.0	9.3
Laminariales unid.	3.0	1.4	1.0	2.0	-	-	-	-	1.0
Sargassum muticum	1.5	1.3	1.3	1.5	-	-	-	-	0.7
Invertebrates									
Strongylocentrotus purpuratus	64.5	33.3	114.8	100.9	45.3	36.6	104.8	92.9	82.3
Acmaea mitra	20.3	10.8	9.0	2.5	20.3	9.9	3.0	-	13.1
Anthopleura elegantissima	4.8	1.0	5.8	1.0	3.8	1.3	4.8	2.2	4.8
Phidiana hiltoni	1.0	0.8	0.3	0.5	1.5	1.0	2.3	1.0	1.3
Ophiothrix spp.	0.5	0.6	1.0	1.4	1.3	2.5	-	-	0.7
Diopatra ornata	0.5	1.0	1.3	1.5	0.5	1.0	-	-	0.6
Serpulorbis squamigerus	-	-	1.3	1.3	-	-	0.5	0.6	0.4
Parastichopus spp.	0.5	0.6	0.5	0.6	0.8	1.5	-	-	0.4
Tonicella lineata	1.5	1.7	-	-	-	-	-	-	0.4
Epiactis prolifera	0.3	0.5	0.8	1.0	-	-	0.3	0.5	0.3
Fissurella volcano	-	-	0.8	1.0	0.5	0.6	-	-	0.3
Haliotis spp.	0.8	1.5	0.3	0.5	0.3	0.5	-	-	0.3
Archidoris spp.	-	-	-	-	0.3	0.5	1.0	1.4	0.3
Doriopsilla albopunctata	-	-	-	-	0.5	0.6	-	-	0.1
Pectinidae unid.	-	-	-	-	0.5	1.0	-	-	0.1
Anthopleura artemisia	-	-	-	-	0.3	0.5	-	-	< 0.1
Diodora spp.	-	-	-	-	-	-	0.3	0.5	< 0.1
Mopalia spp.	-	-	-	-	0.3	0.5	-	-	< 0.1
Octopus spp.	-	-	0.3	0.5	-	-	-	-	< 0.1
Asterina miniata	-	-	-	-	-	-	0.3	0.5	< 0.1
Porifera unid. (encrusting)	-	-	0.3	0.5	-	-	-	-	< 0.1
Halcampa decemtentaculata	-	-	-	-	0.3	0.5	-	-	< 0.1
Diaulula sandiegensis	-	-	-	-	-	-	0.3	0.5	< 0.1
Triopha catalinae	-	-	-	-	-	-	0.3	0.5	< 0.1
Mimulus foliatus	-	-	0.3	0.5	-	-	-	-	< 0.1
Pugettia spp.	-	-	-	-	-	-	0.3	0.5	< 0.1
Cancer spp.	-	-	-	-	0.3	0.5	-	-	< 0.1
Flabellina trilineata	-	-	-	-	0.3	0.5	-	-	< 0.1
Ophioplocus spp.	-	-	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	120		121		122		123		
Survey Date	7-Mar-03		2-May-03		7-Aug-03		7-Jan-04		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Algae									
Sargassum muticum	1.0	1.4	0.8	1.5	1.0	2.0	155.0	156.8	39.4
Cystoseira osmundacea	9.3	11.1	3.5	3.5	3.0	3.8	32.3	15.3	12.0
Macrocystis spp.	-	-	-	-	8.8	5.6	6.8	4.0	3.9
Laminaria setchellii	-	-	-	-	-	-	0.3	0.5	< 0.1
Invertebrates									
Strongylocentrotus purpuratus	893.5	404.0	869.8	202.5	59.0	28.8	291.5	71.0	528.4
Acmaea mitra	35.3	28.8	16.5	5.2	2.3	2.9	11.3	8.6	16.3
Ophiothrix spp.	-	-	12.3	10.6	2.3	3.9	2.3	1.7	4.2
Anthopleura elegantissima	3.0	2.5	3.5	2.1	4.0	0.8	5.8	2.2	4.1
Balanus spp.	-	-	11.0	9.7	-	-	-	-	2.8
Serpulorbis squamigerus	1.0	2.0	3.8	2.2	0.8	1.5	-	-	1.4
Fissurella volcano	2.8	3.2	1.3	1.3	-	-	0.3	0.5	1.1
Epiactis prolifera	-	-	0.5	0.6	-	-	2.5	3.3	0.8
Parastichopus spp.	0.5	1.0	1.3	1.0	0.3	0.5	0.3	0.5	0.6
Lottia ochracea	1.3	1.9	0.5	0.6	-	-	-	-	0.4
Phidiana hiltoni	-	-	0.3	0.5	0.3	0.5	1.0	0.8	0.4
Pelecypoda unid. (boring)	-	-	1.0	1.4	-	-	0.3	0.5	0.3
Serpulidae unid.	1.0	2.0	-	-	-	-	-	-	0.3
Diodora spp.	-	-	0.3	0.5	0.3	0.5	0.3	0.5	0.2
Pisaster giganteus	0.5	1.0	-	-	-	-	0.3	0.5	0.2
Ophioplocus spp.	-	-	0.8	1.0	-	-	-	-	0.2
Pagurus spp.	-	-	0.5	0.6	-	-	-	-	0.1
Archidoris spp.	-	-	-	-	-	-	0.5	0.6	0.1
Mopalia spp.	0.3	0.5	-	-	-	-	-	-	< 0.1
Pododesmus cepio	0.3	0.5	-	-	-	-	-	-	< 0.1
Diopatra ornata	0.3	0.5	-	-	-	-	-	-	< 0.1
Asterina miniata	-	-	-	-	0.3	0.5	-	-	< 0.1
Pisaster ochraceus	-	-	-	-	-	-	0.3	0.5	< 0.1
Pycnopodia helianthoides	-	-	0.3	0.5	-	-	-	-	< 0.1
Mitra idae	-	-	-	-	-	-	0.3	0.5	< 0.1
Mimulus foliatus	-	-	-	-	-	-	0.3	0.5	< 0.1
Haliotis spp.	0.3	0.5	-	-	-	-	-	-	< 0.1
Megathura crenulata	-	-	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	120		121		122		123		
Survey Date	7-Mar-03		1-May-03		20-Aug-03		6-Nov-03		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Algae									
Cystoseira osmundacea	13.3	8.7	13.5	8.3	8.5	3.7	8.8	1.7	11.0
Macrocystis spp.	14.8	1.7	12.8	4.4	7.0	1.4	7.3	2.9	10.4
Laminariales unid.	2.3	3.9	1.3	1.3	-	-	1.0	1.2	1.1
Laminaria setchellii	0.8	1.0	1.3	1.3	-	-	-	-	0.5
Pterygophora californica	-	-	-	-	-	-	0.3	0.5	< 0.1
Invertebrates									
Strongylocentrotus purpuratus	45.8	47.5	42.8	35.6	16.8	11.9	22.0	19.8	31.8
Tegula brunnea	0.8	1.5	-	-	1.5	3.0	54.8	31.6	14.3
Acmaea mitra	3.8	1.5	6.8	2.9	15.8	5.1	12.8	2.9	9.8
Anthopleura elegantissima	11.0	3.9	9.0	2.5	8.5	4.5	8.8	2.6	9.3
Tethya aurantia	1.8	2.4	1.5	1.0	1.8	1.0	1.8	1.0	1.7
Diopatra ornata	1.5	1.3	1.0	0.8	2.0	1.4	2.0	1.8	1.6
Parastichopus spp.	2.3	2.2	1.3	0.5	1.3	1.0	-	-	1.2
Phidiana hiltoni	-	-	1.8	1.0	1.5	1.3	1.5	1.3	1.2
Serpulorbis squamigerus	0.5	0.6	1.5	0.6	-	-	-	-	0.5
Asterina miniata	0.3	0.5	0.3	0.5	0.8	1.0	0.5	0.6	0.4
Pycnopodia helianthoides	0.3	0.5	0.3	0.5	1.0	1.4	0.3	0.5	0.4
Ophiothrix spp.	-	-	0.8	1.0	0.3	0.5	0.8	1.0	0.4
Anthopleura artemisia	-	-	0.5	1.0	0.5	0.6	0.5	0.6	0.4
Epiactis prolifera	-	-	-	-	0.8	1.0	0.8	1.0	0.4
Pagurus spp.	-	-	-	-	0.5	0.6	0.8	0.5	0.3
Loxorhynchus spp.	-	-	-	-	-	-	1.3	1.0	0.3
Mitra idae	0.3	0.5	-	-	0.8	1.5	0.3	0.5	0.3
Pisaster giganteus	0.5	0.6	0.3	0.5	-	-	0.3	0.5	0.3
Anthozoa unid.	-	-	-	-	0.3	0.5	0.5	0.6	0.2
Tonicella lineata	-	-	-	-	0.8	1.5	-	-	0.2
Diaulula sandiegensis	-	-	-	-	0.8	1.0	-	-	0.2
Eudistylia polymorpha	-	-	0.3	0.5	-	-	0.5	0.6	0.2
Ophioplocus spp.	-	-	-	-	-	-	0.8	1.0	0.2
Pisaster ochraceus	0.3	0.5	-	-	-	-	0.3	0.5	0.1
Halcampa decemtentaculata	-	-	-	-	0.3	0.5	0.3	0.5	0.1
Doriopsilla albopunctata	-	-	0.3	0.5	-	-	0.3	0.5	0.1
Pugettia spp.	-	-	-	-	0.3	0.5	0.3	0.5	0.1
Archidoris spp.	-	-	-	-	0.3	0.5	0.3	0.5	0.1
Diodora spp.	-	-	0.3	0.5	-	-	-	-	< 0.1
Fissurella volcano	-	-	0.3	0.5	-	-	-	-	< 0.1
Pelecypoda unid. (boring)	-	-	0.3	0.5	-	-	-	-	< 0.1
Cucumaria spp.	-	-	-	-	0.3	0.5	-	-	< 0.1
Eupentacta quinquesemita	-	-	0.3	0.5	-	-	-	-	< 0.1
Ophiactis simplex	-	-	0.3	0.5	-	-	-	-	< 0.1
Pteropurpura festiva	-	-	-	-	0.3	0.5	-	-	< 0.1
Pectinidae unid.	-	-	-	-	-	-	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	120		121		122		123		
Survey Date	26-Mar-03		7-May-03		4-Sep-03		13-Nov-03		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Algae									
Cystoseira osmundacea	11.0	4.6	17.3	3.9	9.3	4.6	9.0	3.7	11.6
Macrocystis spp.	5.3	2.6	9.0	2.2	7.0	3.9	3.5	1.3	6.2
Sargassum muticum	1.5	1.3	5.0	2.9	-	-	-	-	1.6
Laminariales unid.	-	-	3.0	2.9	-	-	-	-	0.8
Invertebrates									
Acmaea mitra	0.8	1.5	3.0	2.5	6.8	3.8	6.0	2.5	4.1
Anthopleura elegantissima	2.5	1.0	2.8	2.1	3.5	1.9	4.8	1.3	3.4
Cucumaria spp.	-	-	-	-	7.5	1.3	3.3	2.2	2.7
Halcampa decemtentaculata	-	-	0.8	1.0	1.0	0.8	3.3	1.9	1.3
Anthopleura artemisia	0.3	0.5	1.8	1.7	0.8	0.5	2.0	0.8	1.2
Strongylocentrotus purpuratus	2.3	2.1	1.3	0.5	0.5	0.6	0.8	1.0	1.2
Pisaster brevispinus	0.8	1.0	1.0	0.8	0.8	1.0	1.5	1.3	1.0
Diopatra ornata	-	-	1.3	1.0	0.8	1.0	0.8	1.0	0.7
Asterina miniata	0.5	0.6	0.5	0.6	0.8	1.0	0.8	0.5	0.6
Parastichopus spp.	0.3	0.5	1.0	0.8	0.5	1.0	0.5	0.6	0.6
Mitra idae	0.3	0.5	0.3	0.5	0.5	0.6	1.3	1.0	0.6
Pagurus spp.	-	-	-	-	0.5	0.6	1.3	1.3	0.4
Pycnopodia helianthoides	0.5	0.6	-	-	0.3	0.5	0.5	1.0	0.3
Serpulorbis squamigerus	-	-	1.0	0.8	-	-	-	-	0.3
Pisaster ochraceus	1.0	2.0	-	-	-	-	-	-	0.3
Doriopsilla albopunctata	-	-	0.5	0.6	0.5	1.0	-	-	0.3
Pelecypoda unid. (boring)	-	-	0.3	0.5	-	-	0.8	1.0	0.3
Anthozoa unid.	-	-	-	-	0.3	0.5	0.5	1.0	0.2
Tegula brunnea	-	-	0.8	1.5	-	-	-	-	0.2
Tonicella lineata	0.8	1.5	-	-	-	-	-	-	0.2
Phidiana hiltoni	-	-	-	-	0.5	0.6	0.3	0.5	0.2
Eupentacta quinquesemita	-	-	0.8	1.0	-	-	-	-	0.2
Epiactis prolifera	-	-	0.5	1.0	-	-	-	-	0.1
Loxorhynchus spp.	-	-	-	-	0.3	0.5	0.3	0.5	0.1
Pugettia spp.	-	-	-	-	0.5	0.6	-	-	0.1
Anthopleura xanthogrammica	-	-	0.3	0.5	-	-	-	-	< 0.1
Hermissenda crassicornis	-	-	-	-	0.3	0.5	-	-	< 0.1
Leptasterias spp.	-	-	0.3	0.5	-	-	-	-	< 0.1
Diaulula sandiegensis	-	-	-	-	-	-	0.3	0.5	< 0.1
Cryptochiton stelleri	-	-	0.3	0.5	-	-	-	-	< 0.1
Pisaster giganteus	-	-	-	-	0.3	0.5	-	-	< 0.1
Mimulus foliatus	-	-	-	-	-	-	0.3	0.5	< 0.1
Pisaster/Henricia (juv.)	-	-	0.3	0.5	-	-	-	-	< 0.1
Nudibranchia unid.	-	-	-	-	-	-	0.3	0.5	< 0.1
Aplysia californica	-	-	0.3	0.5	-	-	-	-	< 0.1
Norrisia norrisi	0.3	0.5	-	-	-	-	-	-	< 0.1
Pteropurpura festiva	-	-	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	120		121		122		123		
Survey Date	2-Apr-03		19-Jun-03		3-Sep-03		7-Nov-03		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Algae									
Macrocystis spp.	4.0	0.8	4.8	1.9	2.3	1.7	2.8	1.9	3.4
Laminariales unid.	7.0	5.5	3.3	1.3	-	-	-	-	2.6
Cystoseira osmundacea	5.5	2.4	2.3	1.0	0.5	0.6	1.5	0.6	2.4
Pterygophora californica	3.0	3.4	1.5	2.4	1.0	1.2	2.8	4.3	2.1
Laminaria setchellii	1.3	1.0	2.3	1.9	-	-	2.3	2.2	1.4
Sargassum muticum	0.5	1.0	-	-	-	-	-	-	0.1
Invertebrates									
Anthopleura elegantissima	13.0	6.5	16.3	2.5	26.3	8.4	17.5	5.3	18.3
Diopatra ornata	15.3	7.4	14.5	7.3	11.8	12.8	21.8	22.9	15.8
Strongylocentrotus purpuratus	40.5	22.4	4.3	2.8	2.0	2.5	8.8	9.6	13.9
Acmaea mitra	19.5	5.2	1.5	1.7	-	-	7.5	5.2	7.1
Tegula brunnea	-	-	-	-	-	-	14.3	7.5	3.6
Corynactis californica	-	-	-	-	-	-	8.0	2.5	2.0
Mitra idae	5.0	2.7	1.0	0.8	0.8	1.0	1.3	0.5	2.0
Asterina miniata	3.0	1.4	1.3	1.0	1.5	1.3	1.8	1.0	1.9
Pisaster giganteus	2.5	3.1	0.5	0.6	1.8	1.0	1.8	1.5	1.6
Anthopleura artemisia	2.0	0.8	0.8	0.5	0.5	1.0	1.3	0.5	1.1
Halcampa decemtentaculata	2.8	1.3	0.8	1.5	-	-	0.8	1.0	1.1
Tonicella lineata	1.5	1.7	0.8	1.5	-	-	1.5	1.7	0.9
Cryptochiton stelleri	1.3	1.0	0.3	0.5	1.0	0.8	1.3	1.3	0.9
Pisaster brevispinus	1.3	1.3	0.5	0.6	-	-	1.3	0.5	0.8
Pycnopodia helianthoides	1.0	0.8	1.3	1.0	0.3	0.5	0.3	0.5	0.7
Pagurus spp.	2.5	1.7	-	-	-	-	-	-	0.6
Urticina spp.	-	-	-	-	1.8	1.0	0.3	0.5	0.5
Doriopsilla albopunctata	1.3	1.9	-	-	0.5	1.0	0.3	0.5	0.5
Parastichopus spp.	0.5	0.6	0.3	0.5	-	-	0.8	1.0	0.4
Pectinidae	-	-	0.5	1.0	0.3	0.5	0.8	0.5	0.4
Pisaster ochraceus	-	-	-	-	0.5	0.6	0.8	1.0	0.3
Lithopoma undosa	0.5	0.6	0.3	0.5	-	-	0.3	0.5	0.3
Anthozoa unid.	0.5	1.0	-	-	-	-	0.3	0.5	0.2
Sabellidae unid.	0.5	0.6	0.3	0.5	-	-	-	-	0.2
Loxorhynchus spp.	0.3	0.5	-	-	-	-	0.5	0.6	0.2
Cucumaria spp.	-	-	-	-	-	-	0.5	0.6	0.1
Mimulus foliatus	-	-	-	-	-	-	0.5	1.0	0.1
Ophioplocus spp.	-	-	-	-	-	-	0.5	1.0	0.1
Archidoris spp.	-	-	-	-	-	-	0.5	0.6	0.1
Serpulorbis squamigerus	-	-	-	-	0.3	0.5	-	-	< 0.1
Pugettia spp.	-	-	-	-	0.3	0.5	-	-	< 0.1
Orthasterias koehleri	0.3	0.5	-	-	-	-	-	-	< 0.1
Megathura crenulata	-	-	0.3	0.5	-	-	-	-	< 0.1
Ophiactis simplex	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	120		121		122		123		
Survey Date	10-Mar-03		23-Jun-03		10-Sep-03		7-Jan-04		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Algae									
Pterygophora californica	81.3	34.8	54.5	13.2	57.5	21.3	48.0	15.6	60.3
Laminaria setchellii	26.0	7.3	57.3	13.3	68.3	11.7	48.8	13.9	50.1
Laminariales unid.	11.3	22.5	41.8	6.2	45.8	23.4	54.0	42.5	38.2
Nereocystis luetkeana	-	-	13.3	8.3	7.5	6.0	1.5	1.3	5.6
Cystoseira osmundacea	5.5	3.7	5.5	1.0	5.5	4.2	4.3	2.1	5.2
Egregia menziesii	-	-	-	-	0.3	0.5	-	-	< 0.1
Invertebrates									
Tegula brunnea	29.3	10.8	24.8	13.1	6.0	2.5	57.0	51.0	29.3
Tonicella lineata	9.0	8.1	16.5	3.9	1.5	1.7	6.8	7.9	8.4
Acmaea mitra	3.8	3.8	18.8	12.1	0.8	1.5	3.8	1.5	6.8
Anthopleura elegantissima	6.0	1.4	6.5	2.5	0.8	1.0	8.8	2.2	5.5
Asterina miniata	5.0	0.0	3.8	1.5	3.3	2.6	6.8	2.9	4.7
Diopatra ornata	4.8	2.2	3.5	6.4	-	-	4.3	7.2	3.1
Pisaster spp.	9.0	3.7	-	-	-	-	-	-	2.3
Pycnopodia helianthoides	1.8	1.0	1.0	1.4	3.0	1.4	0.5	0.6	1.6
Epiactis prolifera	-	-	4.0	0.8	-	-	1.8	1.0	1.4
Cryptochiton stelleri	1.0	1.2	1.3	0.5	0.5	0.6	1.5	1.3	1.1
Tegula montereyi	-	-	0.8	1.5	-	-	1.5	1.7	0.6
Pagurus spp.	-	-	0.8	1.5	-	-	1.0	1.2	0.4
Discurria insessa	-	-	0.8	0.5	-	-	0.8	1.0	0.4
Urticina spp.	0.8	1.0	0.3	0.5	-	-	0.3	0.5	0.3
Halcampa decemtentaculata	-	-	0.5	1.0	0.3	0.5	0.5	1.0	0.3
Pisaster giganteus	0.5	0.6	-	-	-	-	0.8	1.0	0.3
Mopalia spp.	1.0	0.8	-	-	-	-	-	-	0.3
Doriopsilla albopunctata	0.3	0.5	-	-	0.8	1.5	-	-	0.3
Calliostoma ligatum	0.8	1.5	-	-	-	-	-	-	0.2
Lottia instabilis	-	-	-	-	0.8	1.0	-	-	0.2
Anthopleura artemisia	0.3	0.5	0.3	0.5	-	-	-	-	0.1
Leptasterias spp.	-	-	0.3	0.5	-	-	0.3	0.5	0.1
Strongylocentrotus purpuratus	-	-	0.5	1.0	-	-	-	-	0.1
Loxorhynchus spp.	-	-	-	-	-	-	0.5	1.0	0.1
Phidiana hiltoni	-	-	-	-	-	-	0.5	0.6	0.1
Lottia ochracea	-	-	-	-	0.3	0.5	-	-	< 0.1
Hermissenda crassicornis	-	-	-	-	-	-	0.3	0.5	< 0.1
Henricia leviuscula	-	-	0.3	0.5	-	-	-	-	< 0.1
Tethya aurantia	-	-	-	-	0.3	0.5	-	-	< 0.1
Mitra idae	-	-	0.3	0.5	-	-	-	-	< 0.1
Pugettia spp.	-	-	-	-	0.3	0.5	-	-	< 0.1
Ceratostoma foliatum	-	-	0.3	0.5	-	-	-	-	< 0.1
Dirona albolineata	-	-	-	-	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	120		121		122		123		
Survey Date	6-Mar-03		30-Apr-03		2-Sep-03		7-Jan-04		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Algae									
Nereocystis luetkeana	42.3	39.9	218.5	132.2	31.5	9.5	2.0	1.8	73.6
Pterygophora californica	30.0	10.8	25.5	17.5	37.8	9.6	42.0	28.2	33.8
Laminaria setchellii	27.5	9.3	26.0	14.9	21.3	9.1	42.5	22.2	29.3
Laminariales unid.	8.8	10.3	22.5	5.9	-	-	-	-	7.8
Cystoseira osmundacea	2.3	1.3	1.5	0.6	0.8	1.0	1.0	0.8	1.4
Invertebrates									
Tegula brunnea	75.8	19.7	24.0	7.4	14.3	5.1	13.5	7.6	31.9
Acmaea mitra	42.8	7.5	22.5	7.1	16.5	7.1	3.8	1.5	21.4
Asterina miniata	11.0	5.2	10.8	1.3	10.8	1.5	15.3	9.6	11.9
Tonicella lineata	12.8	5.7	15.0	6.5	9.0	4.2	4.5	1.7	10.3
Anthopleura elegantissima	13.0	9.7	7.3	2.6	9.5	2.4	8.8	6.4	9.6
Pisaster giganteus	3.0	1.4	2.8	1.3	1.5	1.3	4.5	3.0	2.9
Calliostoma ligatum	3.0	2.5	2.3	1.5	0.8	1.5	4.5	3.9	2.6
Serpulorbis squamigerus	7.3	8.8	2.8	2.2	-	-	-	-	2.5
Epiactis prolifera	1.0	1.4	2.0	1.4	5.8	2.9	-	-	2.2
Cryptochiton stelleri	2.5	1.3	2.3	1.3	0.3	0.5	0.3	0.5	1.3
Diopatra ornata	0.8	1.5	3.0	1.8	1.3	1.5	-	-	1.3
Pagurus spp.	-	-	2.0	0.8	0.5	1.0	2.3	2.9	1.2
Pisaster ochraceus	1.0	0.8	0.8	1.0	1.3	1.3	1.3	1.5	1.1
Pycnopodia helianthoides	0.8	0.5	1.5	1.3	0.5	0.6	0.8	1.0	0.9
Haliotis spp.	-	-	1.3	1.9	1.3	2.5	0.8	1.5	0.8
Tegula montereyi	0.8	1.5	1.5	1.7	0.8	1.5	-	-	0.8
Pisaster spp.	3.0	2.7	-	-	-	-	-	-	0.8
Orthasterias koehleri	0.3	0.5	0.5	0.6	1.0	0.8	0.8	1.0	0.6
Tethya aurantia	0.5	0.6	0.5	1.0	0.3	0.5	1.0	2.0	0.6
Doriopsilla albopunctata	1.0	0.8	-	-	1.3	1.0	-	-	0.6
Mitra idae	1.5	0.6	0.3	0.5	0.5	0.6	-	-	0.6
Mopalia spp.	0.5	0.6	1.3	0.5	0.3	0.5	-	-	0.5
Anthopleura artemisia	-	-	0.8	1.0	0.3	0.5	0.5	1.0	0.4
Leptasterias spp.	0.5	0.6	0.5	0.6	0.5	1.0	-	-	0.4
Urticina spp.	-	-	0.3	0.5	0.3	0.5	0.3	0.5	0.2
Lithopoma gibberosum	0.5	0.6	-	-	0.3	0.5	-	-	0.2
Diodora spp.	-	-	0.5	0.6	-	-	-	-	0.1
Eudistylia polymorpha	-	-	0.5	0.6	-	-	-	-	0.1
Ceratostoma foliatum	0.3	0.5	0.3	0.5	-	-	-	-	0.1
Cadlina spp.	-	-	-	-	-	-	0.5	1.0	0.1
Archidoris spp.	-	-	-	-	-	-	0.5	0.6	0.1
Discurria insessa	-	-	0.3	0.5	-	-	-	-	< 0.1
Lottia ochracea	-	-	0.3	0.5	-	-	-	-	< 0.1
Porifera unid. (encrusting)	-	-	-	-	0.3	0.5	-	-	< 0.1
Halcampa decemtentaculata	-	-	-	-	0.3	0.5	-	-	< 0.1
Pseudomelatoma torosa	0.3	0.5	-	-	-	-	-	-	< 0.1
Mimulus foliatus	-	-	-	-	0.3	0.5	-	-	< 0.1
Pugettia spp.	0.3	0.5	-	-	-	-	-	-	< 0.1
Cancer spp.	-	-	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	120		121		122		123		
Survey Date	1-Apr-03		27-Jun-03		22-Aug-03		6-Jan-04		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Algae									
coralline crust	59.0	4.2	91.5	5.0	91.0	2.6	23.5	11.7	66.3
Calliarthron/Bossiella spp. complex	54.5	4.4	7.0	14.0	37.0	8.7	60.0	15.4	39.6
Chondracanthus corymbiferus	11.0	6.0	11.5	5.7	11.0	6.2	9.5	4.4	10.8
Cryptopleura ruprechtiana	8.5	1.9	10.5	4.4	7.5	3.4	5.0	6.0	7.9
Prionitis spp.	11.0	3.8	7.0	4.8	4.5	1.9	6.5	4.4	7.3
Rhodymenia spp.	9.5	2.5	4.5	2.5	8.0	3.3	6.5	4.4	7.1
Amplisiphonia pacifica	-	-	27.0	18.9	-	-	-	-	6.8
Laminaria setchellii	6.0	2.3	4.5	2.5	4.0	1.6	5.5	1.9	5.0
non-coralline crust	7.5	1.0	0.5	1.0	3.5	1.9	1.5	1.0	3.3
Gelidium robustum	<0.1	<0.1	2.5	2.5	3.5	3.0	3.0	3.5	2.3
Farlowia/Pikea spp. complex	<0.1	0.0	3.0	2.6	3.5	3.0	<0.1	<0.1	1.6
Cystoseira osmundacea	2.0	2.3	1.5	1.9	2.0	2.3	0.5	1.0	1.5
Prionitis australis	3.0	2.0	1.0	2.0	2.0	2.8	-	-	1.5
Microcladia coulteri	<0.1	-	3.5	1.0	0.5	1.0	<0.1	<0.1	1.0
Pterygophora californica	-	-	2.0	2.8	-	-	-	-	0.5
Neoptilota densa	0.5	1.0	0.5	1.0	<0.1	-	0.5	1.0	0.4
Callophyllis spp.	<0.1	<0.1	1.0	2.0	0.5	1.0	<0.1	<0.1	0.4
Nereocystis luetkeana	<0.1	<0.1	0.5	1.0	1.0	2.0	<0.1	<0.1	0.4
Halymenia/Schizymenia spp. complex	1.5	1.9	-	-	-	-	-	-	0.4
Osmundea spp.	1.0	1.2	<0.1	<0.1	<0.1	<0.1	-	-	0.3
Desmarestia spp.	0.5	1.0	-	-	0.5	1.0	-	-	0.3
Ahnfeltiopsis linearis	-	-	1.0	2.0	-	-	-	-	0.3
Macrocystis spp.	-	-	-	-	-	-	0.5	1.0	0.1
Desmarestia ligulata var. firma	-	-	0.5	1.0	-	-	-	-	0.1
Ectocarpales unid.	0.5	1.0	-	-	-	-	-	-	0.1
Ulva/Enteromorpha spp. complex	<0.1	<0.1	-	-	-	-	-	-	<0.1
Smithora naiadum	-	-	<0.1	<0.1	-	-	-	-	<0.1
Pterosiphonia dendroidea	-	-	<0.1	<0.1	-	-	-	-	<0.1
Laminariales unid.	<0.1	<0.1	-	-	-	-	-	-	<0.1
Cladophora spp.	-	-	-	-	<0.1	<0.1	-	-	<0.1
Coilodesme californica	-	-	-	-	-	-	<0.1	<0.1	<0.1
Sarcodiotheca gaudichaudii	<0.1	<0.1	-	-	-	-	-	-	<0.1
Cryptopleura violacea	<0.1	<0.1	-	-	-	-	-	-	<0.1
Mazzaella lilacina	<0.1	<0.1	-	-	-	-	-	-	<0.1
Halicystis ovalis	<0.1	<0.1	-	-	-	-	-	-	<0.1
Callophyllis firma	<0.1	<0.1	-	-	-	-	-	-	<0.1
Hymenena spp.	-	-	<0.1	<0.1	-	-	-	-	<0.1
Mazzaella rosea	<0.1	<0.1	-	-	-	-	-	-	<0.1
Delesseria decipiens	<0.1	<0.1	-	-	-	-	-	-	<0.1
Substrate									
colonized rock	59.5	40.0	91.0	5.0	90.0	8.6	76.5	15.1	79.3
colonized cobble	14.5	5.3	7.5	5.0	9.0	8.4	5.0	6.2	9.0
rock	22.0	42.7	-	-	-	-	4.0	3.7	6.5
cobble	4.0	5.4	1.5	1.9	1.0	1.2	14.5	7.9	5.3

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

Survey	120		121		122		123		
Survey Date	12-Mar-03		6-May-03		19-Aug-03		6-Jan-04		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Algae									
coralline crust	91.0	3.5	25.5	10.0	88.5	6.0	30.0	1.6	58.8
Calliarthron/Bossiella spp. complex	26.0	8.6	32.5	18.0	28.5	14.0	15.5	6.8	25.6
Chrysophyta unid.	26.0	8.6	-	-	2.5	5.0	3.0	2.0	7.9
Farlowia/Pikea spp. complex	8.0	7.8	5.5	4.4	9.0	3.5	3.5	4.1	6.5
Macrocystis spp.	8.0	2.8	7.0	6.6	3.5	1.9	3.5	3.0	5.5
Prionitis spp.	6.5	1.0	3.5	3.4	4.5	2.5	4.0	3.7	4.6
Cryptopleura violacea	3.5	1.9	5.5	5.0	1.5	1.9	4.5	5.3	3.8
Cystoseira osmundacea	3.5	3.0	4.5	3.4	4.5	4.4	0.5	1.0	3.3
filamentous red algae complex	< 0.1	0.0	12.5	5.0	< 0.1	< 0.1	-	-	3.1
Chondracanthus corymbiferus	2.0	2.3	4.5	4.4	2.5	2.5	0.5	1.0	2.4
Desmarestia spp.	-	-	7.5	9.7	1.5	1.9	-	-	2.3
non-coralline crust	-	-	< 0.1	-	1.0	1.2	5.0	2.0	1.5
Halymenia/Schizymenia spp. complex	1.5	1.9	4.5	3.0	-	-	-	-	1.5
Gelidium robustum	1.5	1.0	1.0	1.2	2.0	2.3	1.0	2.0	1.4
Acrosorium uncinatum	2.5	1.9	2.0	2.8	0.5	1.0	-	-	1.3
Rhodymenia spp.	1.5	1.9	0.5	1.0	2.0	1.6	< 0.1	< 0.1	1.0
Sargassum muticum	2.5	1.9	1.0	2.0	-	-	-	-	0.9
Colpomenia spp.	2.0	1.6	< 0.1	< 0.1	-	-	-	-	0.5
Ulva/Enteromorpha spp. complex	< 0.1	< 0.1	1.0	2.0	< 0.1	-	-	-	0.3
Osmundea spp.	< 0.1	< 0.1	< 0.1	< 0.1	0.5	1.0	-	-	0.1
Pterosiphonia dendroidea	-	-	0.5	1.0	< 0.1	-	< 0.1	< 0.1	0.1
Corallina officinalis	-	-	0.5	1.0	-	-	< 0.1	< 0.1	0.1
Callophyllis flabellulata	< 0.1	< 0.1	0.5	1.0	-	-	-	-	0.1
Cladophora spp.	-	-	0.5	1.0	-	-	< 0.1	< 0.1	0.1
Mazzaella lilacina	-	-	< 0.1	< 0.1	0.5	1.0	-	-	0.1
Mazzaella heterocarpa	0.5	1.0	-	-	-	-	-	-	0.1
Sarcodiotheca gaudichaudii	-	-	0.5	1.0	-	-	-	-	0.1
Ectocarpales unid.	-	-	0.5	1.0	-	-	-	-	0.1
Ahnfeltiopsis linearis	-	-	0.5	1.0	-	-	-	-	0.1
Callophyllis spp.	< 0.1	< 0.1	-	-	< 0.1	< 0.1	-	-	< 0.1
Mazzaella rosea	-	-	< 0.1	-	-	-	-	-	< 0.1
Nienburgia andersoniana	-	-	-	-	-	-	< 0.1	< 0.1	< 0.1
Chondracanthus harveyanus/spinosus	-	-	< 0.1	< 0.1	-	-	-	-	< 0.1
Invertebrates									
Phragmatopoma californica	-	-	-	-	-	-	0.5	1.0	0.1
Substrate									
colonized rock	82.5	9.3	61.5	14.6	76.0	12.1	43.5	13.3	65.9
colonized cobble	17.0	8.9	13.0	10.0	17.0	9.3	13.0	3.8	15.0
cobble	0.5	1.0	20.5	3.4	1.0	2.0	35.5	9.2	14.4
rock	-	-	2.0	2.8	2.0	1.6	8.0	3.7	3.0
sand (shell gravel)	-	-	2.5	3.0	4.0	3.3	-	-	1.6

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

Survey	120		121		122		123		
Survey Date	7-Mar-03		2-May-03		7-Aug-03		7-Jan-04		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Algae									
coralline crust	50.5	6.4	79.0	4.8	92.0	4.9	91.5	8.1	78.3
Sargassum muticum	1.0	2.0	0.5	1.0	11.0	5.8	26.0	20.9	9.6
Calliarthron/Bossiella spp. complex	6.0	2.8	12.5	3.4	9.5	7.0	5.5	1.9	8.4
Cryptopleura violacea	6.5	7.6	2.5	3.0	6.5	7.6	3.0	3.5	4.6
Acrosorium uncinatum	8.0	9.2	0.5	1.0	3.0	3.5	5.5	4.1	4.3
Chrysophyta unid.	6.5	7.6	1.5	3.0	4.0	3.7	0.5	1.0	3.1
Cladophora spp.	-	-	-	-	11.0	4.8	-	-	2.8
Rhodymenia spp.	1.5	1.9	2.0	2.8	4.5	4.4	2.5	1.9	2.6
Prionitis spp.	1.5	3.0	<0.1	<0.1	3.0	4.8	5.5	3.0	2.5
non-coralline crust	3.0	2.6	5.0	3.5	0.5	1.0	1.5	1.9	2.5
Cystoseira osmundacea	2.5	3.0	2.0	2.8	2.5	3.0	2.5	2.5	2.4
Colpomenia spp.	<0.1	<0.1	-	-	8.5	5.5	<0.1	<0.1	2.1
Pterosiphonia dendroidea	0.5	1.0	<0.1	<0.1	0.5	1.0	5.0	4.2	1.5
Macrocystis spp.	-	-	-	-	2.0	2.3	2.5	2.5	1.1
Gelidium robustum	2.5	3.8	0.5	1.0	0.5	1.0	0.5	1.0	1.0
filamentous red algae complex	3.5	4.4	<0.1	<0.1	0.5	1.0	-	-	1.0
Farlowia/Pikea spp. complex	<0.1	<0.1	0.5	1.0	0.5	1.0	2.5	3.8	0.9
Desmarestia spp.	-	-	<0.1	<0.1	2.5	3.8	-	-	0.6
Chondracanthus corymbiferus	<0.1	<0.1	<0.1	<0.1	1.0	2.0	1.0	2.0	0.5
Spongomorpha/Acrosiphonia complex	-	-	1.5	3.0	-	-	-	-	0.4
Halymenia/Schizymenia spp. complex	-	-	-	-	1.0	1.2	-	-	0.3
Prionitis australis	-	-	-	-	-	-	1.0	2.0	0.3
Sarcodiotheca gaudichaudii	-	-	0.5	1.0	<0.1	<0.1	-	-	0.1
Gastroclonium subarticulatum	<0.1	<0.1	0.5	1.0	-	-	-	-	0.1
Grateloupia doryphora	-	-	-	-	0.5	1.0	-	-	0.1
Ulva/Enteromorpha spp. complex	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1
Ahnfeltiopsis linearis	<0.1	<0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1
Gymnogongrus chiton	-	-	-	-	<0.1	<0.1	-	-	<0.1
Nienburgia andersoniana	-	-	-	-	-	-	<0.1	<0.1	<0.1
Corallina officinalis	<0.1	<0.1	-	-	-	-	-	-	<0.1
Callophyllis spp.	-	-	-	-	<0.1	<0.1	-	-	<0.1
Ahnfeltiopsis leptophylla	-	-	<0.1	<0.1	-	-	-	-	<0.1
Mazzaella rosea	-	-	-	-	<0.1	<0.1	-	-	<0.1
Laminariales unid.	-	-	<0.1	<0.1	-	-	-	-	<0.1
Bryopsis spp.	-	-	<0.1	<0.1	-	-	-	-	<0.1
Antitham./Platytham. spp. complex	<0.1	<0.1	-	-	-	-	-	-	<0.1
Invertebrates									
Phragmatopoma californica	1.0	2.0	0.5	1.0	-	-	-	-	0.4
Substrate									
colonized rock	58.0	18.8	70.5	7.0	87.5	4.7	84.0	10.7	75.0
colonized cobble	15.5	6.2	15.5	7.6	7.5	3.4	11.0	6.2	12.4
rock	19.5	11.5	12.5	6.6	2.0	2.8	3.0	2.6	9.3
cobble	5.5	6.0	1.5	1.9	-	-	2.0	2.8	2.3
sand (shell gravel)	1.5	1.0	-	-	3.0	2.0	-	-	1.1

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

Survey	120		121		122		123		
Survey Date	7-Mar-03		1-May-03		20-Aug-03		6-Nov-03		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Algae									
coralline crust	32.0	2.3	20.0	4.3	85.0	6.0	60.5	11.0	**49.4**
Calliarthron/Bossiella spp. complex	26.0	2.3	31.0	8.1	28.0	15.1	39.0	13.7	**31.0**
Cryptopleura violacea	14.0	5.4	20.5	6.2	5.5	3.4	10.0	7.1	**12.5**
Farlowia/Pikea spp. complex	13.5	3.8	11.0	3.5	9.0	2.6	10.5	3.0	**11.0**
Desmarestia spp.	< 0.1	< 0.1	41.0	17.2	2.0	2.3	-	-	**10.8**
Acrosorium uncinatum	20.5	7.2	6.0	4.0	0.5	1.0	8.0	2.8	**8.8**
Chondracanthus corymbiferus	4.0	2.3	5.5	1.9	7.0	2.6	8.5	3.0	**6.3**
Rhodymenia spp.	12.5	7.7	5.0	3.5	2.5	3.0	4.5	4.4	**6.1**
Cystoseira osmundacea	2.5	2.5	5.5	4.7	4.5	4.1	7.0	7.8	**4.9**
Prionitis spp.	8.5	1.9	2.0	1.6	2.5	2.5	6.5	3.4	**4.9**
Macrocystis spp.	2.5	1.9	2.0	1.6	3.5	4.4	4.0	3.3	**3.0**
Chrysophyta unid.	12.0	3.7	-	-	-	-	-	-	**3.0**
filamentous red algae complex	4.0	3.3	7.0	4.2	-	-	0.5	1.0	**2.9**
non-coralline crust	< 0.1	< 0.1	0.5	1.0	1.5	3.0	3.0	1.2	**1.3**
Gelidium robustum	2.0	2.3	< 0.1	< 0.1	0.5	1.0	1.5	1.9	**1.0**
Ahnfeltiopsis linearis	< 0.1	< 0.1	0.5	1.0	-	-	3.0	2.0	**0.9**
Prionitis australis	< 0.1	< 0.1	-	-	2.0	2.8	1.0	2.0	**0.8**
Callophyllis spp.	2.5	3.8	-	-	0.5	1.0	< 0.1	< 0.1	**0.8**
Pterosiphonia dendroidea	1.5	1.9	-	-	< 0.1	< 0.1	1.0	2.0	**0.6**
Callophyllis flabellulata	0.5	1.0	1.0	1.2	< 0.1	-	< 0.1	< 0.1	**0.4**
Nienburgia andersoniana	-	-	-	-	-	-	1.0	2.0	**0.3**
Cryptopleura ruprechtiana	-	-	0.5	1.0	-	-	0.5	1.0	**0.3**
Chondracanthus harveyanus/spinosus	1.0	1.2	-	-	-	-	-	-	**0.3**
Laminaria setchellii	< 0.1	< 0.1	-	-	0.5	1.0	< 0.1	< 0.1	**0.1**
Halymenia/Schizymenia spp. complex	< 0.1	< 0.1	< 0.1	< 0.1	-	-	< 0.1	< 0.1	**< 0.1**
Ulva/Enteromorpha spp. complex	< 0.1	< 0.1	< 0.1	< 0.1	-	-	< 0.1	< 0.1	**< 0.1**
Colpomenia spp.	< 0.1	< 0.1	-	-	-	-	-	-	**< 0.1**
Osmundea spp.	-	-	-	-	< 0.1	< 0.1	-	-	**< 0.1**
Antitham./Platytham. spp. complex	< 0.1	< 0.1	-	-	-	-	-	-	**< 0.1**
Cladophora spp.	-	-	-	-	-	-	< 0.1	< 0.1	**< 0.1**
Corallina officinalis	-	-	-	-	-	-	< 0.1	< 0.1	**< 0.1**
Grateloupia doryphora	-	-	< 0.1	< 0.1	-	-	-	-	**< 0.1**
Plocamium cartilagineum	-	-	-	-	-	-	< 0.1	< 0.1	**< 0.1**
Polyneura latissima	-	-	< 0.1	< 0.1	-	-	-	-	**< 0.1**
Sargassum muticum	< 0.1	< 0.1	-	-	-	-	-	-	**< 0.1**
Invertebrates									
Phragmatopoma californica	2.0	2.8	1.5	1.9	-	-	9.0	10.9	**3.1**
Substrate									
colonized rock	76.5	6.0	72.0	8.3	82.0	7.3	76.5	10.9	**76.8**
sand (shell gravel)	14.0	11.6	10.5	12.3	8.0	3.3	11.0	7.4	**10.9**
colonized cobble	7.0	5.8	2.5	3.8	8.0	5.2	11.0	4.2	**7.1**
rock	-	-	9.5	7.2	1.0	2.0	0.5	1.0	**2.8**
cobble	2.5	1.9	5.5	3.0	1.0	2.0	1.0	1.2	**2.5**

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

Survey	120		121		122		123		
Survey Date	26-Mar-03		7-May-03		4-Sep-03		13-Nov-03		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Algae									
coralline crust	87.0	4.8	93.0	1.2	31.0	6.0	55.0	7.4	66.5
Cryptopleura violacea	29.0	2.6	30.5	6.2	21.5	7.2	27.5	7.0	27.1
Cystoseira osmundacea	12.5	8.5	7.5	3.0	9.5	6.0	6.5	4.1	9.0
Calliarthron/Bossiella spp. complex	2.0	2.8	0.5	1.0	5.5	3.4	16.5	5.0	6.1
Chondracanthus corymbiferus	7.5	3.4	7.5	3.0	4.0	3.3	5.0	1.2	6.0
Rhodymenia spp.	4.5	3.8	3.5	3.0	9.5	1.9	3.0	2.6	5.1
Farlowia/Pikea spp. complex	4.5	2.5	6.0	3.7	0.5	1.0	7.0	7.4	4.5
Macrocystis spp.	0.5	1.0	3.5	2.5	5.0	4.8	7.5	4.4	4.1
Prionitis spp.	1.5	1.0	2.0	1.6	2.0	1.6	9.5	4.1	3.8
Desmarestia spp.	4.0	1.6	9.5	6.2	-	-	1.0	2.0	3.6
Acrosorium uncinatum	7.5	2.5	4.0	2.3	-	-	1.5	3.0	3.3
Nienburgia andersoniana	0.5	1.0	2.5	1.9	-	-	5.0	2.0	2.0
Gelidium robustum	2.0	-	3.0	3.8	<0.1	<0.1	2.0	1.6	1.8
Chondracanthus harveyanus/spinosus	-	-	-	-	3.5	5.7	3.5	4.1	1.8
Chrysophyta unid.	4.0	2.8	-	-	2.0	2.3	-	-	1.5
Ahnfeltiopsis linearis	-	-	-	-	1.0	1.2	3.0	3.8	1.0
Gracilariopsis lemaneiformis	2.0	-	1.5	1.0	-	-	-	-	0.9
Pterosiphonia dendroidea	1.0	1.2	<0.1	-	0.5	1.0	1.5	1.9	0.8
non-coralline crust	-	-	<0.1	<0.1	<0.1	-	2.5	1.0	0.6
Corallina officinalis	-	-	1.5	3.0	-	-	1.0	2.0	0.6
Osmundea spp.	-	-	0.5	1.0	1.0	1.2	<0.1	<0.1	0.4
Prionitis australis	1.5	1.0	-	-	-	-	-	-	0.4
Sarcodiotheca gaudichaudii	-	-	-	-	0.5	1.0	0.5	1.0	0.3
filamentous red algae complex	<0.1	<0.1	<0.1	-	-	-	0.5	1.0	0.1
Halymenia/Schizymenia spp. complex	0.5	1.0	<0.1	<0.1	-	-	-	-	0.1
Callophyllis spp.	<0.1	<0.1	0.5	1.0	-	-	-	-	0.1
Scinaia confusa	-	-	0.5	1.0	-	-	-	-	0.1
Erythrophyllum delesserioides	-	-	0.5	1.0	-	-	-	-	0.1
Ulva/Enteromorpha spp. complex	<0.1	-	<0.1	-	-	-	<0.1	<0.1	<0.1
Ahnfeltiopsis leptophylla	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	<0.1
Sargassum muticum	<0.1	<0.1	<0.1	<0.1	-	-	-	-	<0.1
Callophyllis flabellulata	<0.1	<0.1	-	-	-	-	<0.1	<0.1	<0.1
Microcladia coulteri	<0.1	<0.1	-	-	-	-	<0.1	<0.1	<0.1
Spongomorpha/Acrosiphonia complex	-	-	<0.1	<0.1	-	-	-	-	<0.1
Gelidium spp.	-	-	-	-	-	-	<0.1	<0.1	<0.1
Gymnogongrus chiton	<0.1	<0.1	<0.1	<0.1	-	-	-	-	<0.1
Pterygophora californica	-	-	<0.1	<0.1	-	-	-	-	<0.1
Polyneura latissima	<0.1	<0.1	-	-	-	-	-	-	<0.1
Kallymenia spp.	-	-	-	-	-	-	<0.1	<0.1	<0.1
Substrate									
colonized rock	87.0	3.5	92.5	3.4	48.0	4.3	64.5	2.5	73.0
sand (shell gravel)	5.5	3.4	4.0	1.6	45.0	5.0	26.0	7.1	20.1
colonized cobble	3.5	1.9	3.5	1.9	1.5	1.9	4.5	3.4	3.3
cobble	2.5	1.9	-	-	2.5	2.5	5.0	2.6	2.5
rock	1.5	1.9	0.5	1.0	3.0	2.0	-	-	1.3

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

Survey	120		121		122		123		
Survey Date	2-Apr-03		18-Jun-03		3-Sep-03		7-Nov-03		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Algae									
coralline crust	91.0	6.2	89.0	2.0	75.5	3.4	87.5	6.4	85.8
Calliarthron/Bossiella spp. complex	19.0	3.5	17.0	5.3	42.5	5.0	18.5	8.4	24.3
Cryptopleura violacea	8.0	4.3	6.0	0.0	12.5	6.0	21.5	5.3	12.0
Rhodymenia spp.	18.0	5.9	10.5	3.4	9.5	4.7	9.0	2.0	11.8
Chondracanthus corymbiferus	6.0	3.7	10.5	4.4	4.5	3.4	5.0	4.2	6.5
Acrosorium uncinatum	9.0	3.5	2.5	1.9	-	-	2.0	1.6	3.4
Farlowia/Pikea spp. complex	2.5	2.5	3.5	1.9	4.0	2.8	2.5	1.9	3.1
Cryptopleura ruprechtiana	-	-	-	-	8.5	4.1	3.5	4.4	3.0
Macrocystis spp.	2.0	2.8	4.0	3.3	1.5	1.0	3.0	2.0	2.6
Prionitis spp.	2.0	1.6	1.5	1.9	5.5	6.4	0.5	1.0	2.4
Chrysophyta unid.	3.0	2.6	6.0	5.9	-	-	-	-	2.3
Desmarestia spp.	2.5	1.9	5.0	5.0	<0.1	<0.1	-	-	1.9
Cystoseira osmundacea	2.0	0.0	3.0	2.6	1.5	1.9	<0.1	<0.1	1.6
non-coralline crust	0.5	1.0	0.5	1.0	0.5	1.0	2.5	2.5	1.0
Gelidium robustum	0.5	1.0	1.0	1.2	1.0	2.0	1.0	1.2	0.9
Nienburgia andersoniana	0.5	1.0	-	-	-	-	2.0	2.3	0.6
filamentous red algae complex	0.5	1.0	<0.1	<0.1	0.5	1.0	<0.1	<0.1	0.3
Callophyllis spp.	0.5	1.0	0.5	1.0	-	-	<0.1	<0.1	0.3
Ahnfeltiopsis linearis	-	-	0.5	1.0	-	-	0.5	1.0	0.3
Gracilariopsis lemaneiformis	1.0	1.2	-	-	-	-	-	-	0.3
Hymenena spp.	-	-	1.0	2.0	-	-	-	-	0.3
Gymnogongrus chiton	-	-	1.0	2.0	-	-	-	-	0.3
Pterosiphonia dendroidea	<0.1	0.0	<0.1	<0.1	<0.1	<0.1	0.5	1.0	0.1
Laminaria setchellii	-	-	0.5	1.0	<0.1	<0.1	<0.1	<0.1	0.1
Rhodoptilum plumosum	0.5	1.0	-	-	-	-	-	-	0.1
Prionitis australis	-	-	<0.1	<0.1	-	-	0.5	1.0	0.1
Erythrophyllum delesserioides	-	-	0.5	1.0	-	-	-	-	0.1
Callophyllis flabellulata	<0.1	<0.1	<0.1	<0.1	<0.1	0.0	<0.1	<0.1	<0.1
Laminariales unid.	<0.1	<0.1	<0.1	<0.1	-	-	<0.1	<0.1	<0.1
Neoptilota densa	<0.1	<0.1	-	-	-	-	<0.1	<0.1	<0.1
Nereocystis luetkeana	<0.1	<0.1	-	-	-	-	-	-	<0.1
Pterygophora californica	-	-	-	-	-	-	<0.1	<0.1	<0.1
Microcladia coulteri	-	-	-	-	<0.1	<0.1	-	-	<0.1
Ulva/Enteromorpha spp. complex	-	-	-	-	-	-	<0.1	<0.1	<0.1
Invertebrates									
Diopatra ornata	-	-	-	-	0.5	1.0	-	-	0.1
Bryozoa unid. (encrusting)	-	-	-	-	0.5	1.0	-	-	0.1
Substrate									
colonized rock	88.5	4.7	87.5	3.4	84.0	2.8	87.0	5.8	86.8
colonized cobble	8.5	2.5	7.0	2.6	4.5	1.9	7.0	2.6	6.8
sand (shell gravel)	3.0	4.8	4.0	5.4	8.5	5.0	3.5	4.1	4.8
cobble	-	-	1.0	2.0	2.5	1.0	3.0	2.0	1.6
rock	-	-	1.0	1.2	0.5	1.0	-	-	0.4

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

Survey	120		121		122		123		
Survey Date	10-Mar-03		23-Jun-03		10-Sep-03		7-Jan-04		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Algae									
coralline crust	89.5	1.0	31.5	9.2	23.0	10.9	67.5	7.2	52.9
Rhodymenia spp.	18.5	3.0	27.5	4.1	36.0	15.6	18.5	3.4	25.1
Calliarthron/Bossiella spp. complex	19.5	12.0	24.0	11.8	30.0	23.0	15.5	5.0	22.3
Pterygophora californica	2.5	1.9	5.5	4.1	3.0	2.6	16.5	7.9	6.9
Laminaria setchellii	5.5	1.0	4.5	3.0	3.5	1.9	9.0	6.0	5.6
Chondracanthus corymbiferus	7.5	1.9	3.5	4.4	3.0	3.8	6.0	2.8	5.0
Desmarestia spp.	1.5	1.0	8.0	4.3	4.0	4.0	-	-	3.4
Cystoseira osmundacea	1.5	1.9	1.5	1.9	4.0	5.4	3.0	2.0	2.5
Prionitis spp.	2.0	2.8	3.5	1.9	1.5	1.9	1.0	1.2	2.0
Nereocystis luetkeana	-	-	3.5	4.4	2.5	1.9	<0.1	<0.1	1.5
Gelidium robustum	3.0	1.2	<0.1	<0.1	0.5	1.0	1.5	1.9	1.3
Ulva/Enteromorpha spp. complex	3.5	2.5	<0.1	<0.1	<0.1	0.0	<0.1	0.0	0.9
Delesseria decipiens	3.5	3.4	-	-	-	-	-	-	0.9
Microcladia coulteri	1.0	1.2	-	-	-	-	1.0	2.0	0.5
filamentous red algae complex	2.0	1.6	-	-	-	-	-	-	0.5
Farlowia/Pikea spp. complex	0.5	1.0	0.5	1.0	<0.1	<0.1	0.5	1.0	0.4
Prionitis australis	1.5	1.9	-	-	-	-	-	-	0.4
Callophyllis spp.	0.5	1.0	<0.1	<0.1	-	-	0.5	1.0	0.3
non-coralline crust	-	-	-	-	<0.1	<0.1	1.0	1.2	0.3
Laminariales unid.	0.5	1.0	<0.1	<0.1	-	-	<0.1	<0.1	0.1
Cryptopleura ruprechtiana	-	-	0.5	1.0	<0.1	<0.1	<0.1	<0.1	0.1
Rhodoptilum plumosum	0.5	1.0	-	-	-	-	-	-	0.1
Halymenia/Schizymenia spp. complex	0.5	1.0	-	-	-	-	-	-	0.1
Nienburgia andersoniana	-	-	0.5	1.0	-	-	-	-	0.1
Pterosiphonia dendroidea	<0.1	<0.1	-	-	-	-	-	-	<0.1
Neoptilota densa	<0.1	<0.1	-	-	-	-	<0.1	<0.1	<0.1
Phyllospadix spp.	<0.1	<0.1	-	-	<0.1	<0.1	-	-	<0.1
Mazzaella lilacina	-	-	<0.1	<0.1	-	-	-	-	<0.1
Scinaia confusa	-	-	<0.1	<0.1	-	-	-	-	<0.1
Osmundea spp.	-	-	-	-	-	-	<0.1	<0.1	<0.1
Ahnfeltiopsis linearis	-	-	-	-	-	-	<0.1	<0.1	<0.1
Invertebrates									
Phragmatopoma californica	0.5	1.0	-	-	-	-	-	-	0.1
Substrate									
colonized rock	93.0	7.4	84.5	8.5	88.0	5.9	90.0	2.8	88.9
rock	-	-	12.5	7.6	6.0	5.9	0.5	1.0	4.8
sand (shell gravel)	3.0	2.6	1.5	1.0	2.0	1.6	4.0	2.8	2.6
colonized cobble	4.0	5.7	-	-	0.5	1.0	6.0	3.7	2.6
cobble	-	-	1.5	3.0	3.0	1.2	-	-	1.1

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

Survey	120		121		122		123		
Survey Date	6-Mar-03		30-Apr-03		2-Sep-03		7-Jan-04		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Algae									
coralline crust	66.5	12.9	85.5	4.4	81.5	5.3	80.0	5.9	78.4
Calliarthron/Bossiella spp. complex	32.0	11.2	19.0	7.6	20.5	9.2	17.5	6.2	22.3
Desmarestia spp.	2.5	5.0	20.5	6.8	15.5	3.4	<.1	<.01	9.6
Rhodymenia spp.	11.5	3.4	11.5	7.6	10.0	7.1	5.0	5.3	9.5
Chondracanthus corymbiferus	9.0	5.8	10.0	2.8	4.5	2.5	1.5	1.9	6.3
Pterygophora californica	4.0	4.6	2.5	2.5	5.5	1.9	4.0	3.7	4.0
Laminaria setchellii	1.5	1.0	3.5	3.0	4.5	1.0	0.5	1.0	2.5
Nereocystis luetkeana	<.1	<.01	2.0	1.6	5.0	2.6	1.0	1.2	2.0
Cryptopleura ruprechtiana	5.5	2.5	0.0	0.0	0.0	0.0	0.0	0.0	1.4
Rhodoptilum plumosum	<.1	<.01	0.5	1.0	3.5	4.4	0.0	0.0	1.0
Polyneura latissima	3.0	3.8	0.5	1.0	0.0	0.0	0.0	0.0	0.9
Halymenia/Schizymenia spp. complex	2.5	5.0	0.5	1.0	0.0	0.0	0.0	0.0	0.8
Dictyota binghamiae	0.5	1.0	1.0	2.0	1.5	1.0	0.0	0.0	0.8
filamentous red algae complex	2.5	3.8	<.1	<.01	0.0	0.0	0.0	0.0	0.6
Ulva/Enteromorpha spp.	1.0	2.0	0.5	1.0	<.1	<.01	0.0	0.0	0.4
Non-coralline crust	<.1	<.01	1.0	1.2	0.5	1.0	<.1	<.01	0.4
Prionitis spp.	0.5	1.0	1.0	1.2	0.0	0.0	<.1	0.0	0.4
Scinaia confusa	0.0	0.0	0.0	0.0	1.5	3.0	0.0	0.0	0.4
Callophyllis firma	1.5	1.9	0.0	0.0	0.0	0.0	0.0	0.0	0.4
Gelidium robustum	<.1	<.01	0.5	1.0	<.1	<.01	0.5	1.0	0.3
Cryptopleura violacea	0.0	0.0	1.0	2.0	0.0	0.0	0.0	0.0	0.3
Cystoseira osmundacea	0.0	0.0	0.5	1.0	0.0	0.0	<.1	<.01	0.1
Coilodesme californica	0.0	0.0	0.5	1.0	0.0	0.0	0.0	0.0	0.1
Chrysophyta unid.	0.0	0.0	0.5	1.0	0.0	0.0	0.0	0.0	0.1
Microcladia coulteri	<.1	<.01	<.1	0.0	<.1	<.01	0.0	0.0	<.1
Callophyllis flabellulata	<.1	<.01	<.1	<.01	0.0	0.0	0.0	0.0	<.1
Laminariales	<.1	<.01	0.0	0.0	0.0	0.0	0.0	0.0	<.1
Neoptilota densa	0.0	0.0	<.1	<.01	0.0	0.0	0.0	0.0	<.1
Porphyra spp.	<.1	<.01	0.0	0.0	0.0	0.0	0.0	0.0	<.1
Pterosiphonia dendroidea	<.1	<.01	<.1	<.01	0.0	0.0	0.0	0.0	<.1
Farlowia/Pikea spp. complex	<.1	<.01	0.0	0.0	0.0	0.0	<.1	<.01	<.1
Erythrophyllum delesserioides	<.1	<.01	0.0	0.0	0.0	0.0	0.0	0.0	<.1
Callophyllis spp.	0.0	0.0	0.0	0.0	<.1	<.01	0.0	0.0	<.1
Phycodrys spp.	<.1	<.01	0.0	0.0	0.0	0.0	0.0	0.0	<.1
Invertebrates									
Bryozoa, unid. (encrusting)	6.5	1.9	0.0	0.0	0.0	0.0	4.0	1.6	2.6
Porifera unid. (encrusting)	1.5	1.9	1.5	1.0	1.0	2.0	4.0	3.7	2.0
Balanus spp.	0.0	0.0	0.0	0.0	1.0	1.2	0.0	0.0	0.3
Phragmatopoma californica	0.5	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Substrate									
colonized rock	91.5	6.6	94.5	6.4	92.5	7.7	94.5	6.8	93.3
colonized cobble	6.0	5.9	2.5	3.0	5.0	5.3	2.0	4.0	3.9
sand (shell gravel)	1.5	1.0	1.0	1.2	2.0	2.3	1.0	1.2	1.4
cobble	0.0	0.0	1.5	1.9	0.0	0.0	2.5	3.0	1.0
rock	1.0	1.2	0.5	1.0	0.5	1.0	0.0	0.0	0.5

Appendix G

Subtidal Invertebrate Results (SFQ Method)

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

Survey	120		121		122		123		
Survey Date	1-Apr-03		27-Jun-03		22-Aug-03		6-Jan-04		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Invertebrates									
Pelecypoda unid. (boring)	9.3	15.4	11.0	8.7	1.8	1.3	-	-	5.5
Porifera unid. (encrusting)	9.3	12.5	5.0	4.4	2.3	2.1	2.8	4.9	4.8
Pagurus spp.	6.8	2.2	1.5	1.3	1.0	1.2	7.3	4.5	4.1
Tegula brunnea	4.0	4.3	2.0	1.6	4.8	3.0	4.5	3.1	3.8
Pugettia spp.	2.0	0.8	2.5	3.1	0.5	0.6	2.3	2.6	1.8
Homolopo. luridum/Lirularia succincta	1.8	1.0	0.3	0.5	0.5	1.0	4.3	3.3	1.7
Lissothuria nutriens	2.0	1.4	1.5	1.7	1.5	1.3	0.5	0.6	1.4
Tunicata unid. (colonial/social)	1.8	2.2	1.8	2.9	1.3	1.5	<0.1	<0.1	1.2
Sipuncula unid.	2.8	5.5	1.3	1.3	-	-	-	-	1.0
Phragmatopoma californica	2.8	2.5	0.8	1.0	-	-	-	-	0.9
Bryozoa unid. (encrusting)	1.3	1.5	1.8	1.0	<0.1	<0.1	<0.1	<0.1	0.8
Leptasterias spp.	0.8	1.0	1.3	1.0	0.5	0.6	0.5	0.6	0.8
Eurystomella bilabiata	-	-	2.5	2.7	0.5	1.0	-	-	0.8
Amphissa spp.	0.8	1.0	1.0	0.8	1.0	0.8	-	-	0.7
Fusinus luteopictus	2.3	1.3	-	-	-	-	-	-	0.6
Tonicella lineata	0.3	0.5	1.3	1.3	0.3	0.5	0.3	0.5	0.5
Strongylocentrotus purpuratus	0.3	0.5	0.5	0.6	0.8	1.0	0.3	0.5	0.4
Serpulidae unid.	-	-	1.3	1.3	0.3	0.5	0.3	0.5	0.4
Epiactis prolifera	-	-	1.3	1.3	0.3	0.5	-	-	0.4
Fissurella volcano	0.8	0.5	0.3	0.5	0.5	0.6	-	-	0.4
Alia spp.	0.5	0.6	0.8	1.5	-	-	-	-	0.3
Ophiothrix spp.	0.5	0.6	0.3	0.5	0.5	0.6	-	-	0.3
Acmaea mitra	0.3	0.5	0.5	0.6	0.3	0.5	-	-	0.3
Lottia instabilis	1.0	2.0	-	-	-	-	-	-	0.3
Scyra acutifrons	-	-	0.8	1.0	0.3	0.5	-	-	0.3
Corynactis californica	-	-	-	-	-	-	0.8	1.5	0.2
Pseudomelatoma torosa	0.3	0.5	0.5	1.0	-	-	-	-	0.2
Cadlina spp.	-	-	-	-	0.3	0.5	0.5	0.6	0.2
Calliostoma ligatum	-	-	-	-	-	-	0.5	1.0	0.1
Henricia leviuscula	-	-	-	-	0.5	0.6	-	-	0.1
Mitra idae	0.5	0.6	-	-	-	-	-	-	0.1
Ocenebra spp.	0.3	0.5	-	-	-	-	0.3	0.5	0.1
Pisaster/Henricia spp. complex (juv.)	-	-	0.5	1.0	-	-	-	-	0.1
Lophopanopeus spp.	-	-	0.5	1.0	-	-	-	-	0.1
Paraxanthias taylori	0.3	0.5	-	-	-	-	0.3	0.5	0.1
Haliotis spp.	0.5	0.6	-	-	-	-	-	-	0.1
Spirorbidae unid.	<0.1	<0.1	0.3	0.5	<0.1	<0.1	<0.1	<0.1	<0.1
Serpulorbis squamigerus	0.3	0.5	-	-	-	-	-	-	<0.1
Hermissenda crassicornis	0.3	0.5	-	-	-	-	-	-	<0.1
Tegula pulligo	-	-	-	-	-	-	0.3	0.5	<0.1
Cactosoma arenaria	-	-	-	-	0.3	0.5	-	-	<0.1
Sabellidae unid.	-	-	-	-	0.3	0.5	-	-	<0.1
Pista spp.	0.3	0.5	-	-	-	-	-	-	<0.1
Asterina miniata	-	-	0.3	0.5	-	-	-	-	<0.1
Pycnopodia helianthoides	-	-	-	-	-	-	0.3	0.5	<0.1
Balanophyllia elegans	-	-	-	-	0.3	0.5	-	-	<0.1
Ischnochitonidae unid.	-	-	0.3	0.5	-	-	-	-	<0.1
Cryptochiton stelleri	-	-	0.3	0.5	-	-	-	-	<0.1
Ophiuroidea unid.	0.3	0.5	-	-	-	-	-	-	<0.1

(continued)

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

Survey	120		121		122		123		
Survey Date	1-Apr-03		27-Jun-03		22-Aug-03		6-Jan-04		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Invertebrates (continued)									
Isopoda unid.	-	-	-	-	0.3	0.5	-	-	< 0.1
Lacuna spp.	-	-	0.3	0.5	-	-	-	-	< 0.1
Cancer spp.	0.3	0.5	-	-	-	-	-	-	< 0.1
Flabellina trilineata	-	-	0.3	0.5	-	-	-	-	< 0.1
Hopkinsia rosacea	-	-	0.3	0.5	-	-	-	-	< 0.1
Modiolus spp.	-	-	-	-	0.3	0.5	-	-	< 0.1
Eupentacta quinquesemita	0.3	0.5	-	-	-	-	-	-	< 0.1
Clavularia spp.	0.3	0.5	-	-	-	-	-	-	< 0.1
Erato spp.	0.3	0.5	-	-	-	-	-	-	< 0.1

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

Survey	120		121		122		123		
Survey Date	12-Mar-03		6-May-03		19-Aug-03		6-Jan-04		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Invertebrates									
Phragmatopoma californica	10.0	5.7	6.3	5.1	13.3	21.5	21.0	7.8	12.6
Strongylocentrotus purpuratus	10.0	5.6	9.3	5.7	13.3	6.7	13.0	3.6	11.4
Ophiactis simplex	4.5	7.1	2.8	2.2	3.0	2.2	9.0	6.5	4.8
Pelecypoda unid. (boring)	< 0.1	< 0.1	7.8	9.5	3.5	1.3	1.8	2.1	3.3
Lissothuria nutriens	1.0	2.0	2.0	2.5	2.0	2.5	0.8	1.5	1.4
Acmaea mitra	1.5	1.7	1.8	1.7	0.8	1.0	-	-	1.0
Fissurella volcano	1.0	0.8	1.8	1.7	-	-	1.0	0.8	0.9
Pista spp.	0.8	1.5	1.0	1.4	0.8	1.5	1.0	2.0	0.9
Pagurus spp.	1.0	1.4	1.3	1.0	0.3	0.5	-	-	0.6
Pugettia spp.	-	-	0.5	1.0	0.5	0.6	1.3	1.5	0.6
Serpulidae unid.	0.8	0.5	0.8	1.0	0.5	1.0	0.3	0.5	0.6
Serpulorbis squamigerus	0.3	0.5	0.3	0.5	-	-	1.5	1.9	0.5
Ancula pacifica	-	-	-	-	2.0	1.8	-	-	0.5
Porifera unid. (encrusting)	< 0.1	< 0.1	0.5	0.6	0.8	1.0	0.3	0.5	0.4
Lottia ochracea	-	-	1.0	0.8	0.3	0.5	0.3	0.5	0.4
Ophiothrix spp.	0.5	0.6	0.3	0.5	0.3	0.5	0.3	0.5	0.3
Spirorbidae unid.	-	-	0.8	0.5	< 0.1	-	-	-	0.2
Anthopleura elegantissima	0.3	0.5	0.3	0.5	0.3	0.5	-	-	0.2
Dodecaceria fewkesi	0.5	1.0	0.3	0.5	-	-	-	-	0.2
Phidiana hiltoni	0.3	0.5	-	-	-	-	0.5	1.0	0.2
Anthopleura artemisia	-	-	0.3	0.5	0.3	0.5	-	-	0.1
Sabellidae unid.	-	-	0.3	0.5	0.3	0.5	-	-	0.1
Doriopsilla albopunctata	-	-	-	-	0.5	0.6	-	-	0.1
Lepidozona spp.	-	-	-	-	0.3	0.5	0.3	0.5	0.1
Natantia unid.	0.3	0.5	0.3	0.5	-	-	-	-	0.1
Archidoris spp.	-	-	-	-	-	-	0.5	0.6	0.1
Tunicata unid. (colonial/social)	< 0.1	< 0.1	< 0.1	< 0.1	0.3	0.5	-	-	< 0.1
Diopatra ornata	-	-	0.3	0.5	-	-	-	-	< 0.1
Diaulula sandiegensis	-	-	-	-	-	-	0.3	0.5	< 0.1
Bittium spp.	-	-	0.3	0.5	-	-	-	-	< 0.1
Ophiuroidea unid.	-	-	-	-	0.3	0.5	-	-	< 0.1
Cucumaria spp.	-	-	-	-	-	-	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
Ophioplocus spp.	-	-	-	-	-	-	0.3	0.5	< 0.1
Hapalogaster cavicauda	0.3	0.5	-	-	-	-	-	-	< 0.1
Clathrina spp.	-	-	-	-	-	-	< 0.1	< 0.1	< 0.1
Barentsia spp.	-	-	-	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1

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

Survey	120		121		122		123		
Survey Date	12-Mar-03		2-May-03		7-Aug-03		7-Jan-04		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Invertebrates									
Phragmatopoma californica	21.0	8.8	40.3	16.8	9.3	12.5	57.5	79.3	**32.0**
Ophiactis simplex	26.5	12.6	38.3	13.6	22.8	16.7	35.5	35.2	**30.8**
Strongylocentrotus purpuratus	41.8	22.9	47.0	18.2	4.8	4.1	10.3	7.1	**25.9**
Pelecypoda unid. (boring)	29.3	45.8	35.8	33.8	2.3	1.7	19.0	32.3	**21.6**
Balanus/Tetraclita spp. complex	-	-	9.3	7.9	0.3	0.5	3.8	5.2	**3.3**
Serpulidae unid.	2.3	3.2	2.3	3.3	0.3	0.5	3.0	4.1	**1.9**
Acmaea mitra	3.3	2.1	2.5	1.3	-	-	0.8	1.0	**1.6**
Tunicata unid. (colonial/social)	6.0	7.8	-	-	-	-	< 0.1	< 0.1	**1.5**
Fissurella volcano	1.5	0.6	1.8	0.5	-	-	2.3	2.6	**1.4**
Lissothuria nutriens	1.0	2.0	0.8	1.0	1.3	2.5	1.8	2.4	**1.2**
Lottia ochracea	-	-	2.0	1.8	1.3	1.5	0.8	1.0	**1.0**
Ophiothrix spp.	-	-	1.3	1.9	1.0	2.0	1.3	2.5	**0.9**
Porifera unid. (encrusting)	< 0.1	< 0.1	< 0.1	< 0.1	0.3	0.5	2.8	3.1	**0.8**
Epiactis prolifera	-	-	0.8	1.0	0.3	0.5	1.3	1.5	**0.6**
Serpulorbis squamigerus	0.3	0.5	0.8	0.5	0.8	1.0	0.5	0.6	**0.6**
Anthopleura elegantissima	0.5	1.0	0.3	0.5	0.5	0.6	0.8	0.5	**0.5**
Balanus spp.	1.8	2.1	-	-	-	-	-	-	**0.4**
Cucumaria spp.	-	-	1.0	-	-	-	0.5	1.0	**0.4**
Dendropoma spp.	-	-	-	-	-	-	1.3	2.5	**0.3**
Mitra idae	-	-	-	-	0.8	1.0	-	-	**0.2**
Pugettia spp.	0.5	0.6	-	-	-	-	0.3	0.5	**0.2**
Sipuncula unid.	-	-	-	-	0.5	0.6	0.3	0.5	**0.2**
Chaetopteridae unid	0.3	0.5	-	-	-	-	0.5	0.6	**0.2**
Corynactis californica	-	-	0.5	1.0	-	-	-	-	**0.1**
Mopalia spp.	-	-	-	-	0.5	0.6	-	-	**0.1**
Pista spp.	-	-	-	-	-	-	0.5	0.6	**0.1**
Phidiana hiltoni	-	-	-	-	-	-	0.5	0.6	**0.1**
Hydroida unid.	-	-	-	-	-	-	0.3	0.5	**< 0.1**
Pagurus spp.	-	-	-	-	0.3	0.5	-	-	**< 0.1**
Diaulula sandiegensis	-	-	-	-	0.3	0.5	-	-	**< 0.1**
Doriopsilla albopunctata	-	-	-	-	-	-	0.3	0.5	**< 0.1**
Pisaster giganteus	-	-	-	-	-	-	0.3	0.5	**< 0.1**
Ophiuroidea unid.	-	-	-	-	-	-	0.3	0.5	**< 0.1**
Cancer spp.	-	-	0.3	0.5	-	-	-	-	**< 0.1**
Ancula pacifica	-	-	-	-	-	-	0.3	0.5	**< 0.1**
Homolopo. luridum/Lirularia succincta	-	-	-	-	-	-	0.3	0.5	**< 0.1**
Spirorbidae unid.	< 0.1	< 0.1	-	-	< 0.1	< 0.1	< 0.1	< 0.1	**< 0.1**
Salmacina tribranchiata	-	-	-	-	< 0.1	< 0.1	< 0.1	< 0.1	**< 0.1**

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

Survey	120		121		122		123		
Survey Date	10-Mar-03		1-May-03		20-Aug-03		6-Nov-03		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Invertebrates									
Phragmatopoma californica	45.8	30.2	44.5	41.2	87.0	91.5	146.3	93.9	80.9
Ophiactis simplex	16.8	20.2	2.3	2.6	21.8	42.2	4.3	7.2	11.3
Strongylocentrotus purpuratus	6.8	6.7	8.8	10.2	4.8	6.2	5.3	7.2	6.4
Pelecypoda unid. (boring)	3.8	5.0	-	-	6.8	7.9	1.0	1.4	2.9
Serpulidae unid.	1.0	0.8	1.8	1.3	1.8	0.5	2.8	2.4	1.8
Acmaea mitra	2.0	2.3	0.8	0.5	1.0	1.2	1.5	1.0	1.3
Porifera unid. (encrusting)	0.3	0.5	1.0	1.2	0.5	0.6	3.3	2.6	1.3
Pugettia spp.	0.8	1.0	1.3	1.0	0.8	0.5	2.0	2.2	1.2
Anthopleura elegantissima	1.0	0.8	0.8	1.0	1.0	0.8	1.0	0.8	0.9
Tunicata unid. (colonial/social)	1.3	1.0	0.3	0.5	1.5	3.0	0.3	0.5	0.8
Fissurella volcano	0.5	0.6	2.0	0.8	-	-	-	-	0.6
Pelecypoda unid.	-	-	2.5	3.8	-	-	-	-	0.6
Lissothuria nutriens	0.3	0.5	0.8	0.5	0.3	0.5	1.3	1.9	0.6
Lottia ochracea	1.0	0.8	1.3	1.5	-	-	-	-	0.6
Ophiothrix spp.	0.5	0.6	0.8	1.0	1.0	1.4	-	-	0.6
Serpulorbis squamigerus	0.5	0.6	0.5	0.6	0.3	0.5	0.5	0.6	0.4
Balanus/Tetraclita spp. complex	1.5	3.0	0.3	0.5	-	-	-	-	0.4
Ischnochitonidae unid.	0.3	0.5	0.5	0.6	-	-	0.8	1.0	0.4
Chaetopteridae	0.5	1.0	-	-	1.0	2.0	-	-	0.4
Lacuna spp.	1.0	1.2	0.3	0.5	-	-	-	-	0.3
Bryozoa unid. (encrusting)	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	1.0	0.8	0.3
Tegula brunnea	0.3	0.5	-	-	-	-	0.8	1.0	0.3
Mitra idae	0.3	0.5	-	-	0.8	1.5	-	-	0.3
Cucumaria spp.	0.5	1.0	-	-	0.3	0.5	0.3	0.5	0.3
Diodora spp.	0.3	0.5	-	-	-	-	0.5	0.6	0.2
Sabellidae unid.	-	-	0.5	1.0	0.3	0.5	-	-	0.2
Eudistylia polymorpha	0.3	0.5	-	-	0.3	0.5	0.3	0.5	0.2
Sipuncula unid.	-	-	0.5	1.0	-	-	0.3	0.5	0.2
Dendropoma spp.	0.8	1.5	-	-	-	-	-	-	0.2
Tegula spp.	-	-	-	-	-	-	0.8	1.5	0.2
Epiactis prolifera	-	-	-	-	-	-	0.5	0.6	0.1
Tonicella lineata	0.3	0.5	-	-	0.3	0.5	-	-	0.1
Pagurus spp.	0.3	0.5	-	-	-	-	0.3	0.5	0.1
Leucandra heathi	-	-	-	-	-	-	0.5	0.6	0.1
Salmacina tribranchiata	-	-	-	-	-	-	0.3	0.5	< 0.1
Nemertea unid.	0.3	0.5	-	-	-	-	-	-	< 0.1
Mopalia spp.	-	-	-	-	-	-	0.3	0.5	< 0.1
Lithopoma gibberosum	-	-	-	-	-	-	0.3	0.5	< 0.1
Polychaeta unid.	-	-	-	-	-	-	0.3	0.5	< 0.1
Diopatra ornata	0.3	0.5	-	-	-	-	-	-	< 0.1
Cancer antennarius	-	-	0.3	0.5	-	-	-	-	< 0.1
Leptasterias spp.	-	-	0.3	0.5	-	-	-	-	< 0.1
Asterina miniata	-	-	-	-	-	-	0.3	0.5	< 0.1
Leucilla nuttingi	0.3	0.5	-	-	-	-	-	-	< 0.1
Doriopsilla albopunctata	-	-	0.3	0.5	-	-	-	-	< 0.1
Ophiuroidea unid.	-	-	0.3	0.5	-	-	-	-	< 0.1
Mimulus foliatus	-	-	-	-	-	-	0.3	0.5	< 0.1
Scyra acutifrons	-	-	-	-	0.3	0.5	-	-	< 0.1

(continued)

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

Survey	120		121		122		123		
Survey Date	10-Mar-03		1-May-03		20-Aug-03		6-Nov-03		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	**Annual Mean**
Invertebrates (continued)									
Ophioplocus spp.	-	-	-	-	0.3	0.5	-	-	**< 0.1**
Eupentacta quinquesemita	-	-	0.3	0.5	-	-	-	-	**< 0.1**
Archidoris spp.	-	-	-	-	-	-	0.3	0.5	**< 0.1**
Homolopo. luridum/Lirularia succincta	-	-	0.3	0.5	-	-	-	-	**< 0.1**
Spirorbidae unid.	-	-	-	-	< 0.1	< 0.1	< 0.1	-	**< 0.1**
Hydroida unid.	< 0.1	< 0.1	-	-	-	-	-	-	**< 0.1**

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

Survey	120		121		122		123		
Survey Date	26-Mar-03		7-May-03		4-Sep-03		13-Nov-03		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Invertebrates									
Pelecypoda unid. (boring)	-	-	-	-	4.5	5.2	8.3	9.7	3.2
Pista spp.	1.5	1.0	-	-	8.8	17.5	1.0	1.4	2.8
Sipuncula unid.	0.8	1.0	6.0	7.4	1.3	1.5	3.0	1.6	2.8
Phragmatopoma californica	0.5	1.0	1.8	2.1	0.5	1.0	5.5	6.7	2.1
Ophiactis simplex	-	-	4.0	4.9	0.5	1.0	2.0	4.0	1.6
Balanus spp.	-	-	-	-	6.3	12.5	-	-	1.6
Pelecypoda unid.	-	-	3.8	3.3	-	-	-	-	0.9
Ophiothrix spp.	0.3	0.5	2.3	4.5	0.5	0.6	0.5	0.6	0.9
Bryozoa unid. (encrusting)	-	-	< 0.1	< 0.1	< 0.1	-	2.0	1.8	0.5
Pagurus spp.	0.8	1.0	0.8	1.0	0.3	0.5	0.3	0.5	0.5
Serpulorbis squamigerus	0.5	1.0	0.8	1.5	0.3	0.5	0.3	0.5	0.4
Mitra idae	0.3	0.5	0.8	1.5	0.8	0.5	-	-	0.4
Serpulidae unid.	-	-	0.5	0.6	-	-	1.3	1.0	0.4
Chaetopteridae	-	-	-	-	0.3	0.5	1.0	0.8	0.3
Cirratulidae/Terebellidae unid.	-	-	0.3	0.5	-	-	0.8	0.5	0.3
Anthopleura artemisia	-	-	0.3	0.5	-	-	0.5	0.6	0.2
Epiactis prolifera	-	-	0.3	0.5	0.3	0.5	0.3	0.5	0.2
Alia spp.	0.8	1.0	-	-	-	-	-	-	0.2
Balanus/Tetraclita spp. complex	-	-	-	-	-	-	0.8	1.0	0.2
Diopatra ornata	-	-	0.3	0.5	0.3	0.5	-	-	0.1
Strongylocentrotus purpuratus	-	-	-	-	0.3	0.5	0.3	0.5	0.1
Halcampa decemtentaculata	-	-	0.3	0.5	-	-	0.3	0.5	0.1
Ischnochitonidae unid.	-	-	-	-	-	-	0.5	0.6	0.1
Ophiuroidea unid.	-	-	-	-	0.5	0.6	-	-	0.1
Mimulus foliatus	-	-	-	-	-	-	0.5	0.6	0.1
Pugettia spp.	-	-	0.3	0.5	0.3	0.5	-	-	0.1
Laila cockerelli	-	-	-	-	0.5	1.0	-	-	0.1
Porifera unid. (encrusting)	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.3	0.5	< 0.1
Hymenamphiastra cyanocrypta	-	-	-	-	-	-	0.3	0.5	< 0.1
Anthopleura elegantissima	-	-	-	-	-	-	0.3	0.5	< 0.1
Anthozoa unid.	-	-	-	-	-	-	0.3	0.5	< 0.1
Fissurella volcano	-	-	-	-	-	-	0.3	0.5	< 0.1
Lottia ochracea	-	-	0.3	0.5	-	-	-	-	< 0.1
Nereidae unid.	-	-	0.3	0.5	-	-	-	-	< 0.1
Sabellidae unid.	-	-	-	-	-	-	0.3	0.5	< 0.1
Pycnogonida unid.	0.3	0.5	-	-	-	-	-	-	< 0.1
Asterina miniata	-	-	-	-	-	-	0.3	0.5	< 0.1
Pycnopodia helianthoides	-	-	-	-	-	-	0.3	0.5	< 0.1
Tunicata unid. (solitary)	-	-	-	-	-	-	0.3	0.5	< 0.1
Parastichopus spp.	-	-	-	-	0.3	0.5	-	-	< 0.1
Leucandra heathi	-	-	-	-	-	-	0.3	0.5	< 0.1
Balanophyllia elegans	-	-	-	-	-	-	0.3	0.5	< 0.1
Doriopsilla albopunctata	0.3	0.5	-	-	-	-	-	-	< 0.1
Pisaster giganteus	-	-	-	-	0.3	0.5	-	-	< 0.1
Majidae unid.	-	-	0.3	0.5	-	-	-	-	< 0.1
Pisaster/Henricia spp. complex (juv.)	-	-	-	-	0.3	0.5	-	-	< 0.1
Lacuna spp.	0.3	0.5	-	-	-	-	-	-	< 0.1
Cancer spp.	-	-	-	-	0.3	0.5	-	-	< 0.1

(continued)

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

Survey	120		121		122		123		
Survey Date	26-Mar-03		7-May-03		4-Sep-03		13-Nov-03		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Invertebrates (continued)									
Heptacarpus spp.	-	-	-	-	0.3	0.5	-	-	< 0.1
Crangon spp.	-	-	0.3	0.5	-	-	-	-	< 0.1
Lophopanopeus spp.	-	-	-	-	-	-	0.3	0.5	< 0.1
Chama spp.	-	-	-	-	0.3	0.5	-	-	< 0.1
Lissothuria nutriens	-	-	-	-	-	-	0.3	0.5	< 0.1
Lepidozona spp.	0.3	0.5	-	-	-	-	-	-	< 0.1
Homolopo. luridum/Lirularia succincta	-	-	0.3	0.5	-	-	-	-	< 0.1
Spirorbidae unid.	-	-	-	-	< 0.1	< 0.1	< 0.1	-	< 0.1
Tunicata unid. (colonial/social)	-	-	-	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Salmacina tribranchiata	-	-	-	-	< 0.1	< 0.1	-	-	< 0.1
Dodecaceria fewkesi	< 0.1	< 0.1	-	-	-	-	-	-	< 0.1
Bryozoa unid. (foliose)	< 0.1	< 0.1	-	-	-	-	-	-	< 0.1

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

Survey	120		121		122		123		
Survey Date	2-Apr-03		19-Jun-04		3-Sep-03		7-Nov-03		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Invertebrates									
Balanophyllia elegans	8.5	10.0	22.0	15.2	8.0	5.7	11.8	10.0	12.6
Pelecypoda unid. (boring)	4.8	2.8	3.0	3.5	17.3	24.1	14.3	7.5	9.8
Ophiactis simplex	2.0	0.8	-	-	-	-	20.3	10.3	5.6
Strongylocentrotus purpuratus	3.0	3.8	2.0	2.5	1.5	1.3	4.3	7.9	2.7
Pagurus spp.	1.8	0.5	0.8	1.0	6.0	7.0	1.5	1.9	2.5
Bryozoa unid. (encrusting)	0.3	0.5	1.0	0.8	4.8	3.6	2.0	1.4	2.0
Porifera unid. (encrusting)	0.3	0.5	2.5	2.7	3.3	3.8	2.0	2.2	2.0
Serpulidae unid.	2.0	0.8	2.0	2.7	1.3	1.3	1.5	1.3	1.7
Anthopleura elegantissima	1.0	0.8	2.3	1.9	1.0	1.4	1.3	1.3	1.4
Chaetopteridae	<0.1	<0.1	2.0	2.5	3.0	3.4	-	-	1.3
Hymenamphiastra cyanocrypta	<0.1	<0.1	1.8	1.7	2.3	2.1	0.3	0.5	1.1
Corynactis californica	-	-	4.3	8.5	-	-	-	-	1.1
Diopatra ornata	0.3	0.5	-	-	3.0	5.4	0.5	1.0	0.9
Mitra idae	1.8	1.5	-	-	1.3	1.0	0.8	0.5	0.9
Pista spp.	2.3	2.1	0.5	1.0	-	-	0.5	1.0	0.8
Phragmatopoma californica	-	-	2.5	5.0	0.5	1.0	-	-	0.8
Serpulorbis squamigerus	-	-	1.3	1.9	1.3	1.9	0.3	0.5	0.7
Acmaea mitra	1.5	0.6	0.3	0.5	0.3	0.5	0.3	0.5	0.6
Amphissa spp.	1.3	1.0	0.5	1.0	0.5	0.6	-	-	0.6
Dendropoma spp.	-	-	-	-	2.3	3.3	-	-	0.6
Tunicata unid. (colonial/social)	-	-	0.3	0.5	1.8	1.3	<0.1	<0.1	0.5
Pugettia spp.	0.3	0.5	-	-	0.5	0.6	1.3	1.0	0.5
Tonicella lineata	0.3	0.5	0.5	1.0	0.5	0.6	0.5	1.0	0.4
Alia spp.	0.3	0.5	-	-	0.5	1.0	0.8	1.5	0.4
Leucilla nuttingi	1.3	2.5	-	-	0.3	0.5	-	-	0.4
Paracyathus stearnsii	-	-	0.3	0.5	0.8	1.0	0.5	1.0	0.4
Tegula brunnea	-	-	-	-	-	-	1.3	2.5	0.3
Ophiothrix spp.	0.5	1.0	0.8	1.0	-	-	-	-	0.3
Ophioplocus spp.	-	-	0.3	0.5	0.8	1.5	0.3	0.5	0.3
Anthopleura artemisia	-	-	-	-	-	-	1.0	1.4	0.3
Anthozoa unid.	0.5	0.6	0.3	0.5	-	-	0.3	0.5	0.3
Sabellidae unid.	-	-	0.5	1.0	0.5	1.0	-	-	0.3
Doriopsilla albopunctata	0.5	0.6	0.3	0.5	-	-	-	-	0.2
Sipuncula unid.	-	-	-	-	0.8	0.5	-	-	0.2
Flabellina trilineata	-	-	-	-	0.8	1.5	-	-	0.2
Urticina spp.	-	-	0.3	0.5	-	-	0.3	0.5	0.1
Hermissenda crassicornis	0.5	0.6	-	-	-	-	-	-	0.1
Cucumaria spp.	0.3	0.5	-	-	-	-	0.3	0.5	0.1
Scyra acutifrons	-	-	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
Crepidula spp.	-	-	-	-	-	-	0.3	0.5	<0.1
Cancer antennarius	-	-	-	-	-	-	0.3	0.5	<0.1
Pycnopodia helianthoides	0.3	0.5	-	-	-	-	-	-	<0.1
Tethya aurantia	-	-	-	-	-	-	0.3	0.5	<0.1
Pisaster giganteus	-	-	0.3	0.5	-	-	-	-	<0.1
Mimulus foliatus	0.3	0.5	-	-	-	-	-	-	<0.1
Doridacea unid.	-	-	-	-	0.3	0.5	-	-	<0.1

(continued)

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

Survey	120		121		122		123		
Survey Date	2-Apr-03		19-Jun-04		3-Sep-03		7-Nov-03		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Invertebrates (continued)									
Lepidozona spp.	-	-	-	-	-	-	0.3	0.5	< 0.1
Cirratulidae/Terebellidae unid. complex	-	-	-	-	0.3	0.5	-	-	< 0.1
Homolopo. luridum/Lirularia succincta	-	-	0.3	0.5	-	-	-	-	< 0.1
Pectinidae unid	-	-	-	-	-	-	0.3	0.5	< 0.1
Lithopoma undosa	0.3	0.5	-	-	-	-	-	-	< 0.1
Spirorbidae unid.	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	-	< 0.1
Bryozoa unid. (foliose)	-	-	-	-	< 0.1	< 0.1	-	-	< 0.1
Bryozoa, unid. (erect)	-	-	-	-	-	-	< 0.1	< 0.1	< 0.1

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

Survey	120		121		122		123		
Survey Date	10-Mar-03		23-Jun-03		10-Sep-03		7-Jan-04		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Invertebrates									
Dendropoma spp.	72.8	86.2	-	-	-	-	35.0	57.5	26.9
Phragmatopoma californica	16.8	10.4	0.8	1.5	-	-	13.8	14.9	7.8
Homolopo. luridum/Lirularia succincta	9.3	2.1	1.5	1.3	6.0	4.2	6.8	4.2	5.9
Porifera unid. (encrusting)	7.8	5.8	0.8	1.0	2.3	2.1	10.3	10.6	5.3
Balanus/Tetraclita spp. complex	12.3	18.7	-	-	0.5	1.0	2.3	2.6	3.8
Pagurus spp.	0.3	0.5	0.5	1.0	7.0	8.4	2.0	2.2	2.4
Tonicella lineata	1.3	1.0	1.8	0.5	0.8	1.0	1.0	1.2	1.2
Pista spp.	0.5	0.6	2.0	4.0	1.3	2.5	0.8	1.0	1.1
Lottia ochracea	2.0	1.8	0.8	1.0	-	-	0.8	1.5	0.9
Tegula brunnea	1.0	0.8	1.8	2.4	0.5	1.0	-	-	0.8
Pugettia spp.	0.8	1.0	-	-	1.0	2.0	1.5	3.0	0.8
Tunicata unid. (colonial/social)	1.0	0.8	0.3	0.5	1.8	1.7	< 0.1	< 0.1	0.8
Pelecypoda unid. (boring)	0.8	1.0	2.0	2.5	0.3	0.5	-	-	0.8
Anthopleura elegantissima	0.5	0.6	0.5	0.6	0.8	0.5	0.8	1.0	0.6
Acmaea mitra	0.8	1.0	1.0	1.2	0.8	1.0	-	-	0.6
Bryozoa unid. (encrusting)	< 0.1	0.0	< 0.1	< 0.1	< 0.1	< 0.1	2.3	1.3	0.6
Balanophyllia elegans	1.0	1.4	0.5	1.0	0.5	0.6	0.3	0.5	0.6
Epiactis prolifera	0.5	1.0	-	-	0.8	0.5	0.8	1.0	0.5
Crepidula spp.	1.0	0.8	-	-	-	-	0.8	0.5	0.4
Pycnopodia helianthoides	0.5	0.6	0.5	1.0	0.5	0.6	0.3	0.5	0.4
Loxorhynchus spp.	-	-	-	-	-	-	1.8	2.2	0.4
Serpulidae unid.	0.5	0.6	-	-	0.3	0.5	1.0	0.8	0.4
Pseudomelatoma torosa	1.0	1.4	0.3	0.5	-	-	0.3	0.5	0.4
Pisaster/Henricia spp. complex (juv.)	0.8	1.0	-	-	0.3	0.5	0.5	0.6	0.4
Mopalia spp.	0.3	0.5	-	-	0.5	1.0	0.5	1.0	0.3
Ischnochitonidae unid.	0.5	0.6	-	-	-	-	0.8	1.0	0.3
Amphissa spp.	-	-	-	-	-	-	1.3	0.5	0.3
Anthopleura artemisia	0.8	1.0	-	-	-	-	0.3	0.5	0.3
Alia spp.	0.5	0.6	-	-	-	-	0.5	0.6	0.3
Lottia instabilis	0.8	1.5	0.3	0.5	-	-	-	-	0.3
Tunicata unid. (solitary)	0.3	0.5	-	-	-	-	0.8	1.5	0.3
Diopatra ornata	0.3	0.5	0.5	0.6	-	-	-	-	0.2
Strongylocentrotus purpuratus	-	-	-	-	0.5	1.0	0.3	0.5	0.2
Chaetopteridae unid.	0.5	0.6	-	-	-	-	0.3	0.5	0.2
Salmacina tribranchiata	-	-	-	-	< 0.1	< 0.1	0.5	1.0	0.1
Hermissenda crassicornis	-	-	-	-	0.3	0.5	0.3	0.5	0.1
Nitidiscala/Opalia spp.	-	-	-	-	-	-	0.5	1.0	0.1
Ocenebra spp.	0.5	1.0	-	-	-	-	-	-	0.1
Cancer spp.	-	-	-	-	-	-	0.5	1.0	0.1
Urticina spp.	-	-	-	-	-	-	0.3	0.5	< 0.1
Cancer antennarius	0.3	0.5	-	-	-	-	-	-	< 0.1
Asterina miniata	-	-	-	-	-	-	0.3	0.5	< 0.1
Doriopsilla albopunctata	-	-	0.3	0.5	-	-	-	-	< 0.1
Rostanga pulchra	-	-	-	-	0.3	0.5	-	-	< 0.1
Triopha maculata	0.3	0.5	-	-	-	-	-	-	< 0.1
Placiphorella velata	0.3	0.5	-	-	-	-	-	-	< 0.1
Scyra acutifrons	-	-	-	-	0.3	0.5	-	-	< 0.1
Sipuncula unid.	0.3	0.5	-	-	-	-	-	-	< 0.1

(continued)

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

Survey	120		121		122		123		
Survey Date	10-Mar-03		23-Jun-03		10-Sep-03		7-Jan-04		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	**Annual Mean**
Invertebrates (continued)									
Lophopanopeus spp.	-	-	0.3	0.5	-	-	-	-	**< 0.1**
Lepidozona spp.	-	-	0.3	0.5	-	-	-	-	**< 0.1**
Spirorbidae unid.	-	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	-	**< 0.1**
Hydroida unid.	-	-	-	-	< 0.1	< 0.1	-	-	**< 0.1**

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

Survey	120		121		122		123		
Survey Date	6-Mar-03		30-Apr-03		2-Sep-03		7-Jan-04		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Invertebrates									
Balanophyllia elegans	35.3	24.7	17.5	12.8	13.8	16.1	23.3	16.2	22.4
Corynactis californica	27.3	29.2	5.5	7.6	24.8	14.4	12.8	16.6	17.6
Balanus spp.	-	-	-	-	8.5	14.4	49.5	50.6	14.5
Bryozoa unid. (encrusting)	12.8	6.5	1.8	1.7	6.5	3.5	8.0	7.5	7.3
Phragmatopoma californica	10.3	9.3	9.3	4.6	1.0	2.0	2.3	2.6	5.7
Pelecypoda unid. (boring)	3.3	2.9	11.5	7.1	4.3	1.7	-	-	4.8
Serpulorbis squamigerus	8.5	5.1	1.5	1.9	3.8	4.5	2.8	2.5	4.1
Hymenamphiastra cyanocrypta	8.3	7.7	1.3	1.5	1.8	2.1	4.5	5.3	3.9
Homolopo. luridum/Lirularia succincta	2.8	1.7	2.0	2.2	2.3	2.1	3.8	3.5	2.7
Bryozoa unid. (erect)	3.0	2.5	0.5	1.0	0.5	1.0	5.8	4.7	2.4
Serpulidae unid.	4.8	2.9	1.3	1.0	1.0	1.2	1.3	1.0	2.1
Tegula brunnea	3.0	2.9	2.5	1.7	1.3	1.0	1.3	1.0	2.0
Tonicella lineata	2.5	2.1	1.5	1.9	2.3	1.3	1.8	1.0	2.0
Pagurus spp.	0.8	1.0	2.3	1.7	1.5	1.9	1.0	1.2	1.4
Porifera unid. (encrusting)	3.5	1.0	0.8	1.0	1.0	1.2	< 0.1	< 0.1	1.3
Acmaea mitra	2.0	1.4	1.5	0.6	0.5	0.6	1.3	1.5	1.3
Dendropoma spp.	4.3	8.5	-	-	-	-	-	-	1.1
Ocenebra spp.	-	-	1.0	0.8	0.8	0.5	1.0	2.0	0.7
Tunicata unid. (colonial/social)	0.8	1.0	< 0.1	< 0.1	1.3	1.5	0.5	1.0	0.6
Epiactis prolifera	1.0	1.4	-	-	1.0	1.2	0.3	0.5	0.6
Lottia instabilis	-	-	1.0	1.4	0.8	1.0	0.5	0.6	0.6
Asterina miniata	0.8	1.5	0.3	0.5	0.8	1.0	0.5	0.6	0.6
Pugettia spp.	-	-	-	-	1.3	1.3	0.5	0.6	0.4
Anthopleura elegantissima	0.3	0.5	0.5	0.6	0.3	0.5	0.5	1.0	0.4
Amphissa spp.	-	-	-	-	1.5	1.3	-	-	0.4
Fusinus luteopictus	1.3	1.0	-	-	-	-	-	-	0.3
Lottia ochracea	0.8	1.0	-	-	0.3	0.5	-	-	0.3
Mitra idae	0.3	0.5	0.3	0.5	-	-	0.5	0.6	0.3
Balanus/Tetraclita spp. complex	1.0	2.0	-	-	-	-	-	-	0.3
Chaetopteridae unid.	1.0	1.4	-	-	-	-	-	-	0.3
Crepidula spp.	0.8	1.5	-	-	-	-	-	-	0.2
Cucumaria spp.	0.3	0.5	-	-	0.5	0.6	-	-	0.2
Mimulus foliatus	-	-	0.3	0.5	-	-	0.5	0.6	0.2
Anthopleura artemisia	-	-	-	-	0.3	0.5	0.3	0.5	0.1
Calliostoma ligatum	-	-	-	-	0.5	0.6	-	-	0.1
Calliostoma canaliculatum	0.3	0.5	-	-	-	-	0.3	0.5	0.1
Pseudomelatoma torosa	0.5	1.0	-	-	-	-	-	-	0.1
Pisaster/Henricia spp. complex (juv.)	-	-	-	-	-	-	0.5	1.0	0.1
Orthasterias koehleri	-	-	-	-	0.3	0.5	0.3	0.5	0.1
Lepidozona spp.	-	-	0.3	0.5	0.3	0.5	-	-	0.1
Haliotis spp.	-	-	-	-	0.5	0.6	-	-	0.1
Anthozoa unid.	-	-	-	-	0.3	0.5	-	-	< 0.1
Mopalia spp.	0.3	0.5	-	-	-	-	-	-	< 0.1
Pododesmus cepio	-	-	0.3	0.5	-	-	-	-	< 0.1
Tegula montereyi	0.3	0.5	-	-	-	-	-	-	< 0.1
Polynoidae unid	0.3	0.5	-	-	-	-	-	-	< 0.1
Sabellidae unid.	-	-	-	-	0.3	0.5	-	-	< 0.1
Henricia leviuscula	-	-	0.3	0.5	-	-	-	-	< 0.1

(continued)

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

Survey	120		121		122		123		
Survey Date	6-Mar-03		30-Apr-03		2-Sep-03		7-Jan-04		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Invertebrates (continued)									
Pycnopodia helianthoides	-	-	-	-	-	-	0.3	0.5	< 0.1
Strongylocentrotus purpuratus	-	-	-	-	0.3	0.5	-	-	< 0.1
Tethya aurantia	-	-	-	-	0.3	0.5	-	-	< 0.1
Doriopsilla albopunctata	0.3	0.5	-	-	-	-	-	-	< 0.1
Phidiana hiltoni	-	-	-	-	-	-	0.3	0.5	< 0.1
Triopha catalinae	-	-	-	-	-	-	0.3	0.5	< 0.1
Ceratostoma foliatum	0.3	0.5	-	-	-	-	-	-	< 0.1
Sipuncula unid.	0.3	0.5	-	-	-	-	-	-	< 0.1
Crangon spp.	-	-	-	-	-	-	0.3	0.5	< 0.1
Alpheus spp.	-	-	-	-	0.3	0.5	-	-	< 0.1
Archidoris spp.	-	-	-	-	-	-	0.3	0.5	< 0.1
Bryozoa unid. (foliose)	< 0.1	< 0.1	-	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Spirorbidae unid.	< 0.1	< 0.1	< 0.1	< 0.1	-	-	-	-	< 0.1
Hydroida unid.	< 0.1	< 0.1	-	-	-	-	-	-	< 0.1
Aglaophenia spp.	-	-	< 0.1	< 0.1	-	-	-	-	< 0.1
Abiet./Sertularella/Sertularia complex	-	-	-	-	< 0.1	< 0.1	-	-	< 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	118		119		120		121		
Survey Date	7-Apr-03		10-Jul-03		17-Sep-03		6-Jan-04		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Midwater									
Oxyjulis californica	1.2	1.0	0.5	0.4	0.7	0.9	47.2	31.6	12.4
Damalichthys vacca	5.0	8.2	-	-	< 0.1	0.2	0.2	0.3	1.3
Sebastes chrysomelas/S. carnatus (yoy)	-	-	2.7	4.1	0.2	0.4	-	-	0.7
Aulorhynchus flavidus (juv.)	-	-	2.0	4.5	-	-	-	-	0.5
Sebastes atrovirens (yoy)	-	-	-	-	1.3	3.0	-	-	0.3
Oxyjulis californica (juv.)	-	-	1.0	2.2	-	-	-	-	0.3
Atherinidae unid.	-	-	-	-	0.8	2.0	-	-	0.2
larval/post-larval fish, unid.	-	-	-	-	0.7	1.6	-	-	0.2
Sebastes serranoides/S. flavidus (yoy)	-	-	0.3	0.7	0.3	0.4	-	-	0.1
Sebastes atrovirens	-	-	0.2	0.3	< 0.1	0.2	0.2	0.3	0.1
Sebastes mystinus	0.3	0.6	< 0.1	0.2	-	-	-	-	0.1
Aulorhynchus flavidus	-	-	0.4	0.7	-	-	-	-	< 0.1
Embiotoca jacksoni	0.2	0.3	< 0.1	0.2	< 0.1	0.2	-	-	< 0.1
Semicossyphus pulcher	-	-	< 0.1	0.2	-	-	0.2	0.3	< 0.1
Sebastes melanops (yoy)	-	-	0.2	0.5	-	-	-	-	< 0.1
Brachyistius frenatus	-	-	-	-	0.2	0.3	-	-	< 0.1
Embiotoca lateralis (juv.)	-	-	-	-	0.2	0.4	-	-	< 0.1
Brachyistius frenatus (juv.)	-	-	-	-	0.2	0.4	-	-	< 0.1
Gibbonsia spp.	-	-	< 0.1	0.2	-	-	-	-	< 0.1
Sebastes mystinus (juv.)	-	-	< 0.1	0.2	-	-	-	-	< 0.1
Triakis semifasciata	-	-	< 0.1	0.2	-	-	-	-	< 0.1
Sebastes serranoides/S. flavidus (juv.)	-	-	-	-	< 0.1	0.2	-	-	< 0.1
Benthic									
Oxyjulis californica	5.0	9.0	0.2	0.4	4.4	7.7	27.5	18.9	9.3
Oxylebius pictus	1.1	0.9	1.8	1.7	2.5	1.0	1.8	0.3	1.8
Embiotoca lateralis	1.8	0.9	1.3	1.3	0.5	0.5	1.2	0.8	1.2
Damalichthys vacca	3.5	5.0	0.4	0.4	0.4	0.4	-	-	1.1
Embiotoca jacksoni	1.2	1.1	0.8	0.6	1.1	1.6	0.3	0.3	0.8
Oxyjulis californica (juv.)	-	-	3.1	7.6	-	-	-	-	0.8
Sebastes chrysomelas/S. carnatus (yoy)	-	-	-	-	2.1	1.7	1.0	1.0	0.8
Embiotoca lateralis (juv.)	0.2	0.4	0.6	0.4	0.4	0.4	1.3	1.3	0.6
Sebastes chrysomelas	0.3	0.4	0.5	0.6	0.8	0.9	0.8	0.8	0.6
Scorpaenichthys marmoratus	0.5	0.6	< 0.1	0.2	0.8	0.7	0.7	0.8	0.5
Sebastes atrovirens (yoy)	-	-	-	-	1.7	2.9	-	-	0.4
Sebastes serranoides/S. flavidus (yoy)	-	-	0.8	2.0	0.5	1.2	-	-	0.3
Embiotoca jacksoni (juv.)	-	-	0.3	0.6	0.8	1.0	-	-	0.3
Sebastes chrysomelas (juv.)	< 0.1	0.2	0.3	0.3	0.3	0.6	0.5	0.5	0.3
Gibbonsia spp.	0.2	0.3	0.2	0.3	0.5	0.8	0.2	0.3	0.3
Sebastes rastrelliger	0.2	0.3	< 0.1	0.2	< 0.1	0.2	0.3	0.3	0.2
Sebastes mystinus (juv.)	-	-	0.4	1.0	< 0.1	0.2	0.2	0.3	0.2
Hypsurus caryi (juv.)	-	-	-	-	0.6	1.2	-	-	0.1
Damalichthys vacca (juv.)	-	-	0.2	0.3	0.4	0.7	-	-	0.1
Rhacochilus toxotes	0.2	0.4	-	-	-	-	0.3	0.6	0.1
Hexagrammos decagrammus	-	-	0.3	0.4	0.2	0.3	-	-	0.1
Sebastes mystinus	-	-	-	-	0.2	0.3	0.2	0.3	< 0.1
Ophiodon elongatus	-	-	-	-	-	-	0.3	0.6	< 0.1
Coryphopterus nicholsi	0.3	0.6	< 0.1	0.2	-	-	-	-	< 0.1

(continued)

Table H1 (continued). 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	118		119		120		121		
Survey Date	7-Apr-03		10-Jul-03		17-Sep-03		6-Jan-04		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Benthic (continued)									
Artedius spp.	-	-	< 0.1	0.2	0.3	0.3	-	-	< 0.1
Aulorhynchus flavidus	-	-	-	-	0.3	0.4	-	-	< 0.1
Orthonopias triacis	-	-	-	-	< 0.1	0.2	0.2	0.3	< 0.1
Sebastes atrovirens	< 0.1	0.2	0.2	0.3	-	-	-	-	< 0.1
Cebidichthys violaceus	0.3	0.4	-	-	-	-	-	-	< 0.1
Sebastes chrysomelas/S. carnatus (juv.)	-	-	-	-	0.2	0.4	-	-	< 0.1
Semicossyphus pulcher	-	-	-	-	-	-	0.2	0.3	< 0.1
Sebastes melanops (yoy)	-	-	< 0.1	0.2	< 0.1	0.2	-	-	< 0.1
Cottidae unid. a	-	-	< 0.1	0.2	-	-	-	-	< 0.1
Hypsurus caryi	-	-	< 0.1	0.2	-	-	-	-	< 0.1
Sebastes serranoides	-	-	-	-	< 0.1	0.2	-	-	< 0.1
Girella nigricans	-	-	-	-	< 0.1	0.2	-	-	< 0.1
Triakis semifasciata	< 0.1	0.2	-	-	-	-	-	-	< 0.1
Sebastes mystinus (yoy)	-	-	-	-	< 0.1	0.2	-	-	< 0.1

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	118		119		120		121		
Survey Date	3-Apr-03		2-Jul-03		16-Sep-03		7-Jan-04		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Midwater									
Oxyjulis californica	2.9	3.0	7.4	6.2	4.7	3.6	13.1	6.6	7.0
Damalichthys vacca	16.0	25.2	1.0	0.6	0.4	0.8	1.2	1.1	4.6
Brachyistius frenatus	0.3	0.5	2.8	0.9	0.7	0.9	5.2	6.6	2.3
Sebastes serranoides/S. flavidus (yoy)	-	-	5.3	6.5	0.3	0.4	0.3	0.4	1.5
Atherinidae unid.	-	-	-	-	3.5	3.6	-	-	0.9
Embiotoca jacksoni	0.8	1.8	-	-	0.4	0.4	1.0	1.4	0.5
Brachyistius frenatus (juv.)	-	-	1.8	1.3	< 0.1	0.2	< 0.1	0.2	0.5
Sebastes chrysomelas/S. carnatus (yoy)	-	-	1.4	2.6	-	-	-	-	0.4
Paralabrax clathratus	0.3	0.4	0.3	0.6	< 0.1	0.2	0.2	0.3	0.2
Triakis semifasciata	0.3	0.4	0.2	0.3	-	-	< 0.1	0.2	0.1
Damalichthys vacca (juv.)	-	-	-	-	0.3	0.6	0.3	0.8	0.1
Oxyjulis californica (juv.)	0.4	1.0	< 0.1	0.2	-	-	-	-	0.1
Atherinopsis californiensis	-	-	-	-	0.5	1.2	-	-	0.1
Sebastes atrovirens	< 0.1	0.2	0.3	0.6	-	-	< 0.1	0.2	0.1
Girella nigricans	0.3	0.6	0.2	0.3	-	-	-	-	0.1
Sebastes serranoides	< 0.1	0.2	0.2	0.4	-	-	< 0.1	0.2	< 0.1
Sebastes paucispinis (juv.)	-	-	0.3	0.4	-	-	-	-	< 0.1
Embiotoca jacksoni (juv.)	-	-	0.3	0.6	-	-	-	-	< 0.1
Myliobatis californica	< 0.1	0.2	0.2	0.3	-	-	-	-	< 0.1
Semicossyphus pulcher	0.3	0.6	-	-	-	-	-	-	< 0.1
Rhacochilus toxotes	0.2	0.4	-	-	-	-	-	-	< 0.1
Embiotoca lateralis	-	-	0.2	0.4	-	-	-	-	< 0.1
Sebastes atrovirens (yoy)	-	-	-	-	-	-	0.2	0.4	< 0.1
Sebastes serranoides/S. flavidus (juv.)	-	-	-	-	-	-	< 0.1	0.2	< 0.1
Benthic									
Oxyjulis californica	11.0	14.2	5.3	4.1	8.3	6.0	10.8	9.6	8.9
Embiotoca jacksoni	11.6	5.1	5.9	2.3	5.4	2.3	6.8	2.9	7.4
Damalichthys vacca (juv.)	-	-	9.6	6.2	7.3	5.7	4.4	3.7	5.3
Damalichthys vacca	13.7	12.4	2.4	1.5	1.3	1.0	2.1	3.3	4.9
Embiotoca jacksoni (juv.)	1.6	1.0	3.2	1.8	10.6	9.8	3.6	2.0	4.7
Coryphopterus nicholsi	4.3	3.3	2.0	0.8	4.0	1.1	4.8	3.0	3.8
Oxylebius pictus	1.3	0.5	2.3	0.7	3.0	1.5	2.8	0.7	2.4
Sebastes serranoides/S. flavidus (yoy)	-	-	7.8	10.6	0.3	0.4	0.5	0.5	2.1
Girella nigricans	4.4	4.6	1.7	3.6	0.8	1.2	0.2	0.3	1.8
Sebastes chrysomelas/S. carnatus (yoy)	-	-	1.1	1.3	4.0	2.6	1.3	2.1	1.6
Oxyjulis californica (juv.)	5.4	8.1	< 0.1	0.2	-	-	0.2	0.4	1.4
Embiotoca lateralis	3.1	3.6	1.3	1.4	0.3	0.6	0.8	0.9	1.4
Sebastes atrovirens (yoy)	-	-	-	-	2.1	2.1	1.3	2.2	0.8
Brachyistius frenatus	0.2	0.4	1.0	1.6	0.3	0.4	1.6	1.1	0.8
Gibbonsia spp.	0.6	0.2	0.4	0.6	1.1	0.9	0.7	0.5	0.7
Triakis semifasciata	1.5	1.8	0.2	0.3	< 0.1	0.2	-	-	0.4
Sebastes atrovirens	0.3	0.8	0.5	1.0	< 0.1	0.2	0.6	1.0	0.4
Embiotoca lateralis (juv.)	< 0.1	0.2	0.9	1.1	-	-	0.3	0.6	0.3
Brachyistius frenatus (juv.)	-	-	0.2	0.4	0.3	0.6	0.8	1.6	0.3
Scorpaenichthys marmoratus	0.3	0.5	-	-	0.5	0.6	0.3	0.4	0.3
Sebastes chrysomelas (juv.)	0.2	0.3	0.5	0.5	-	-	0.4	0.8	0.3
Rhacochilus toxotes	0.7	0.9	< 0.1	0.2	< 0.1	0.2	0.2	0.3	0.3

(continued)

Table H2 (continued). 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	118		119		120		121		
Survey Date	3-Apr-03		2-Jul-03		16-Sep-03		7-Jan-04		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Benthic (continued)									
Sebastes chrysomelas	0.2	0.4	0.4	0.6	< 0.1	0.2	0.3	0.3	**0.2**
Hypsurus caryi (juv.)	-	-	-	-	0.8	1.6	< 0.1	0.2	**0.2**
Semicossyphus pulcher	0.5	0.6	< 0.1	0.2	< 0.1	0.2	0.2	0.3	**0.2**
Ophiodon elongatus	0.2	0.4	-	-	0.4	0.4	0.2	0.3	**0.2**
Coryphopterus nicholsi (juv.)	0.4	0.7	< 0.1	0.2	0.2	0.3	< 0.1	0.2	**0.2**
Sebastes melanops (yoy)	-	-	0.6	0.8	-	-	-	-	**0.1**
Paralabrax clathratus	0.3	0.4	0.2	0.3	< 0.1	0.2	-	-	**0.1**
Artedius spp.	-	-	0.3	0.3	< 0.1	0.2	< 0.1	0.2	**0.1**
Myliobatis californica	0.2	0.3	0.2	0.4	< 0.1	0.2	-	-	**0.1**
Hypsurus caryi	-	-	-	-	< 0.1	0.2	0.3	0.6	**< 0.1**
Sebastes rastrelliger	0.2	0.3	< 0.1	0.2	< 0.1	0.2	-	-	**< 0.1**
Cebidichthys violaceus	< 0.1	0.2	< 0.1	0.2	-	-	0.2	0.3	**< 0.1**
Orthonopias triacis	-	-	< 0.1	0.2	< 0.1	0.2	-	-	**< 0.1**
Sebastes paucispinis (juv.)	-	-	-	-	0.2	0.4	-	-	**< 0.1**
Sebastes caurinus (yoy)	-	-	-	-	0.2	0.4	-	-	**< 0.1**
Cottidae unid. a	-	-	-	-	< 0.1	0.2	-	-	**< 0.1**
Aulorhynchus flavidus	-	-	< 0.1	0.2	-	-	-	-	**< 0.1**
Sebastes melanops	-	-	< 0.1	0.2	-	-	-	-	**< 0.1**
Hexagrammos decagrammus	< 0.1	0.2	-	-	-	-	-	-	**< 0.1**
Oxylebius pictus (juv.)	-	-	-	-	< 0.1	0.2	-	-	**< 0.1**
Hypsypops rubicundus	< 0.1	0.2	-	-	-	-	-	-	**< 0.1**

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	118		119		120		121		
Survey Date	29-Mar-03		2-Jul-03		17-Sep-03		6-Jan-04		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Midwater									
Atherinidae unid.	6.3	12.5	4.8	11.6	45.2	88.9	3.3	5.3	14.9
Sebastes serranoides/S. flavidus (yoy)	-	-	12.7	12.5	-	-	-	-	3.2
Oxyjulis californica	1.3	1.3	1.0	1.1	5.6	6.3	-	-	2.0
Damalichthys vacca	0.1	0.3	3.3	3.3	0.5	0.5	1.4	1.1	1.3
Brachyistius frenatus	0.3	0.5	0.6	1.0	1.9	3.5	0.5	0.6	0.8
Atherinopsis californiensis	-	-	-	-	2.3	4.1	0.8	2.0	0.8
Sebastes atrovirens (yoy)	-	-	-	-	3.1	4.2	-	-	0.8
Sebastes melanops (yoy)	-	-	2.8	4.7	-	-	-	-	0.7
Sebastes chrysomelas/S. carnatus (yoy)	-	-	1.7	2.8	1.1	2.7	-	-	0.7
Engraulis mordax	-	-	2.5	6.1	-	-	-	-	0.6
Brachyistius frenatus (juv.)	-	-	2.3	1.9	-	-	-	-	0.6
Embiotoca jacksoni	0.1	0.3	0.4	0.6	0.3	0.6	0.3	0.4	0.3
Damalichthys vacca (juv.)	-	-	0.8	1.2	-	-	-	-	0.2
Sebastes paucispinis (juv.)	-	-	0.7	1.6	-	-	-	-	0.2
Triakis semifasciata	0.1	0.3	0.2	0.3	-	-	0.2	0.3	0.1
Sebastes atrovirens	-	-	0.3	0.4	-	-	0.2	0.3	0.1
Paralabrax clathratus	-	-	<0.1	0.2	<0.1	0.2	0.2	0.4	<0.1
Embiotoca lateralis	-	-	-	-	0.2	0.4	<0.1	0.2	<0.1
Aulorhynchus flavidus	-	-	-	-	-	-	0.2	0.4	<0.1
Oxyjulis californica (juv.)	-	-	0.2	0.4	-	-	-	-	<0.1
Myliobatis californica	-	-	0.2	0.4	-	-	-	-	<0.1
Hypsurus caryi (juv.)	-	-	<0.1	0.2	-	-	-	-	<0.1
Sebastes serranoides	-	-	<0.1	0.2	-	-	-	-	<0.1
Embiotoca lateralis (juv.)	-	-	<0.1	0.2	-	-	-	-	<0.1
Benthic									
Sebastes serranoides/S. flavidus (yoy)	-	-	17.5	12.1	0.2	0.3	-	-	4.4
Sebastes melanops (yoy)	-	-	14.7	16.2	-	-	-	-	3.7
Damalichthys vacca	1.3	0.9	5.8	5.8	0.9	0.6	1.7	1.7	2.4
Sebastes chrysomelas/S. carnatus (yoy)	-	-	0.5	0.8	6.3	4.3	<0.1	0.2	1.7
Oxyjulis californica	1.5	2.5	0.3	0.4	2.4	2.6	-	-	1.1
Oxylebius pictus	1.3	1.0	0.3	0.4	1.5	1.8	0.9	0.7	1.0
Damalichthys vacca (juv.)	-	-	3.4	4.8	-	-	-	-	0.9
Embiotoca jacksoni	0.5	0.6	1.0	1.2	0.4	0.8	1.3	1.1	0.8
Sebastes atrovirens (yoy)	-	-	-	-	3.0	3.4	-	-	0.8
Brachyistius frenatus	-	-	0.3	0.4	1.3	1.9	0.8	0.9	0.6
Embiotoca lateralis	0.2	0.3	1.0	0.6	0.8	0.4	0.2	0.4	0.5
Sebastes chrysomelas	0.8	0.4	0.4	0.4	0.4	0.5	0.3	0.4	0.5
Coryphopterus nicholsi	0.5	0.6	0.5	0.8	<0.1	0.2	0.2	0.4	0.3
Embiotoca jacksoni (juv.)	<0.1	0.2	0.3	0.6	0.6	1.2	-	-	0.3
Gibbonsia spp.	0.2	0.3	0.2	0.3	0.4	0.5	0.2	0.3	0.2
Oxyjulis californica (juv.)	0.8	1.2	-	-	-	-	-	-	0.2
Aulorhynchus flavidus	0.4	0.6	<0.1	0.2	<0.1	0.2	-	-	0.1
Ophiodon elongatus	0.3	0.4	-	-	0.3	0.4	-	-	0.1
Citharichthys spp.	0.3	0.4	-	-	0.3	0.6	-	-	0.1
Rhacochilus toxotes	0.2	0.4	0.3	0.6	<0.1	0.2	-	-	0.1
Scorpaenichthys marmoratus	<0.1	0.2	0.3	0.5	<0.1	0.2	-	-	0.1
Artedius spp.	0.2	0.3	<0.1	0.2	0.2	0.3	-	-	0.1

(continued)

Table H3 (continued). 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	118		119		120		121		
Survey Date	29-Mar-03		2-Jul-03		17-Sep-03		6-Jan-04		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	**Annual Mean**
Benthic (continued)									
Triakis semifasciata	< 0.1	0.2	< 0.1	0.2	< 0.1	0.2	0.2	0.3	**0.1**
Hypsurus caryi	-	-	0.3	0.5	-	-	-	-	**< 0.1**
Sebastes atrovirens	-	-	0.2	0.4	0.2	0.3	-	-	**< 0.1**
Sebastes rastrelliger	0.2	0.3	-	-	< 0.1	0.2	-	-	**< 0.1**
Hexagrammos decagrammus	-	-	0.2	0.4	< 0.1	0.2	-	-	**< 0.1**
Embiotoca lateralis (juv.)	0.3	0.6	-	-	-	-	-	-	**< 0.1**
Aulorhynchus flavidus (juv.)	0.3	0.6	-	-	-	-	-	-	**< 0.1**
Citharicthys spp. (juv)	-	-	-	-	-	-	0.3	0.6	**< 0.1**
Pleuronichthys coenosus	-	-	-	-	0.2	0.3	-	-	**< 0.1**
Sebastes chrysomelas/S. carnatus (juv.)	-	-	-	-	0.2	0.4	-	-	**< 0.1**
Brachyistius frenatus (juv.)	-	-	< 0.1	0.2	< 0.1	0.2	-	-	**< 0.1**
Paralabrax clathratus	-	-	-	-	-	-	0.2	0.4	**< 0.1**
Myliobatis californica	0.2	0.4	-	-	-	-	-	-	**< 0.1**
Paralichthys californicus	-	-	0.2	0.3	-	-	-	-	**< 0.1**
Cottidae unid. a	-	-	-	-	< 0.1	0.2	-	-	**< 0.1**
Anarrhichthys ocellatus	-	-	-	-	< 0.1	0.2	-	-	**< 0.1**
Orthonopias triacis	-	-	-	-	-	-	< 0.1	0.2	**< 0.1**
Scorpaenichthys marmoratus (juv.)	-	-	-	-	< 0.1	0.2	-	-	**< 0.1**
Platyrhinoidis triseriata	-	-	-	-	< 0.1	0.2	-	-	**< 0.1**
Semicossyphus pulcher	-	-	-	-	-	-	< 0.1	0.2	**< 0.1**

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	118		119		120		121		
Survey Date	24-Mar-03		5-Jul-03		16-Sep-03		5-Jan-04		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Midwater									
Aulorhynchus flavidus	18.1	36.3	-	-	0.3	0.4	42.5	36.7	15.2
Oxyjulis californica	8.4	12.3	3.4	5.4	1.4	1.0	12.8	9.6	6.5
Sebastes atrovirens (yoy)	-	-	-	-	1.8	2.9	-	-	0.5
Damalichthys vacca	0.3	0.3	0.7	1.4	-	-	0.5	0.9	0.4
Brachyistius frenatus	0.8	1.5	0.2	0.4	-	-	0.2	0.3	0.3
Sebastes atrovirens	-	-	0.3	0.5	-	-	0.7	1.2	0.3
Sebastes mystinus (juv.)	-	-	-	-	0.4	0.7	0.5	0.9	0.2
Sebastes chrysomelas/S. carnatus (yoy)	-	-	0.9	2.0	-	-	-	-	0.2
Sebastes mystinus	-	-	0.2	0.4	0.4	0.7	0.2	0.3	0.2
Embiotoca jacksoni	0.4	0.8	-	-	0.3	0.4	-	-	0.2
Sebastes serranoides	-	-	0.2	0.4	-	-	0.3	0.6	0.1
Phanerodon furcatus	-	-	-	-	-	-	0.2	0.3	< 0.1
Embiotoca jacksoni (juv.)	-	-	-	-	-	-	0.2	0.3	< 0.1
Rhacochilus toxotes	-	-	-	-	< 0.1	0.2	-	-	< 0.1
Embiotoca lateralis	-	-	< 0.1	0.2	-	-	-	-	< 0.1
Sebastes mystinus (yoy)	-	-	-	-	< 0.1	0.2	-	-	< 0.1
Sebastes serranoides/S. flavidus (yoy)	-	-	-	-	< 0.1	0.2	-	-	< 0.1
Sebastes melanops (yoy)	-	-	-	-	< 0.1	0.2	-	-	< 0.1
Benthic									
Oxyjulis californica	0.8	2.0	2.5	6.1	0.7	1.4	7.2	3.3	2.8
Oxylebius pictus	1.5	0.6	1.3	0.4	4.2	2.3	2.8	1.0	2.5
Embiotoca jacksoni	2.1	1.5	0.8	0.9	1.5	1.4	3.8	3.3	2.0
Damalichthys vacca	1.3	0.8	2.2	3.4	0.8	0.7	2.7	3.3	1.7
Embiotoca lateralis	1.3	1.3	2.0	0.8	1.5	0.7	1.7	0.3	1.6
Sebastes chrysomelas	1.3	0.9	1.0	0.3	0.4	0.4	0.8	1.4	0.9
Embiotoca jacksoni (juv.)	0.5	0.6	0.5	0.5	1.7	1.3	0.5	0.5	0.8
Sebastes atrovirens	0.6	0.4	0.3	0.6	0.6	0.7	1.7	1.5	0.8
Sebastes serranoides/S. flavidus (yoy)	-	-	2.4	2.2	0.7	0.6	-	-	0.8
Sebastes melanops (yoy)	-	-	1.5	2.5	0.9	0.9	-	-	0.6
Sebastes mystinus (yoy)	-	-	-	-	0.8	1.1	1.5	1.8	0.6
Rhacochilus toxotes	0.4	0.7	-	-	0.2	0.4	1.7	1.6	0.6
Sebastes chrysomelas/S. carnatus (yoy)	-	-	-	-	1.9	2.0	0.2	0.3	0.5
Orthonopias triacis	0.6	0.4	0.3	0.5	0.4	0.7	0.7	0.8	0.5
Embiotoca lateralis (juv.)	0.2	0.4	0.3	0.4	1.1	1.8	0.5	0.9	0.5
Sebastes mystinus (juv.)	0.6	1.0	-	-	0.8	0.5	0.2	0.3	0.4
Sebastes rastrelliger	0.3	0.4	0.3	0.4	0.3	0.4	0.7	0.3	0.4
Sebastes atrovirens (yoy)	-	-	-	-	0.5	0.8	1.0	1.7	0.4
Ophiodon elongatus	0.7	0.8	0.2	0.3	0.2	0.4	0.3	0.3	0.3
Scorpaenichthys marmoratus	0.4	0.5	0.2	0.3	0.3	0.4	0.3	0.3	0.3
Hexagrammos decagrammus	0.3	0.4	0.3	0.4	0.5	0.5	-	-	0.3
Brachyistius frenatus	0.3	0.8	-	-	< 0.1	0.2	0.5	0.9	0.2
Aulorhynchus flavidus	-	-	0.3	0.4	-	-	0.5	0.9	0.2
Gibbonsia spp.	-	-	< 0.1	0.2	0.3	0.3	0.3	0.6	0.2
Sebastes chrysomelas/S. carnatus (juv.)	-	-	-	-	-	-	0.7	0.8	0.2
Damalichthys vacca (juv.)	-	-	-	-	0.4	0.7	0.2	0.3	0.1
Sebastes melanops	0.2	0.4	-	-	0.2	0.3	0.2	0.3	0.1
Sebastes mystinus	0.3	0.8	-	-	0.2	0.3	-	-	0.1

(continued)

Table II4 (continued). 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	118		119		120		121		
Survey Date	24-Mar-03		5-Jul-03		16-Sep-03		5-Jan-04		
Taxon	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Annual Mean
Benthic (continued)									
Sebastes chrysomelas (juv.)	-	-	-	-	0.4	1.0	-	-	0.1
Cebidichthys violaceus	0.3	0.3	< 0.1	0.2	-	-	-	-	0.1
Hypsurus caryi	-	-	-	-	0.3	0.4	-	-	< 0.1
Sebastes serranoides	< 0.1	0.2	< 0.1	0.2	-	-	-	-	< 0.1
Coryphopterus nicholsi	-	-	-	-	-	-	0.2	0.3	< 0.1
Artedius spp.	-	-	< 0.1	0.2	< 0.1	0.2	-	-	< 0.1
Oxylebius pictus (juv.)	-	-	-	-	0.2	0.4	-	-	< 0.1
Scorpaenichthys marmoratus (juv.)	-	-	-	-	< 0.1	0.2	-	-	< 0.1
Sebastes caurinus (yoy)	-	-	-	-	< 0.1	0.2	-	-	< 0.1
Sebastes miniatus (yoy)	-	-	-	-	< 0.1	0.2	-	-	< 0.1