TECHNICAL REPORT TO THE CALIFORNIA COASTAL COMMISSION

I. Soft Bottom Benthos

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July 1989

This report analyses and presents the results of studies of MEC Ecological Consultants, which were done on behalf of the MRC over the period 1980-1988, under the direction of Dr Arthur M. Barnett. Their Final Report to the MRC "MEC Biological Project San Onofre Generating Station Monitoring Studies on Mysids and Soft Bottom Benthos" (30 November 1987, MEC03287056) provided the starting point for the analyses in the present report.

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SUMMARY

Unconsolidated, or soft, sediment covers the sea floor in a large area around the San Onofre Nuclear Generating Station (SONGS). This bottom habitat supports a large and varied assemblage of species of invertebrates which live in and on the substrate. In 1980 the MRC predicted that the operation of the circulating water system of SONGS Units 2 and 3 might increase the numbers of soft sediment invertebrates by converting planktonic organisms withdrawn into the plant into detrital material. This material would be discharged by the diffusers and eventually fall to the sea floor where the bottom fauna would feed upon it. The major goal of the MRC soft benthos study was to test this prediction, and to determine whether, by contrast, the operation of SONGS reduced the abundance of organisms within this assemblage.

During this study benthic samples were taken at two depths, eight and 18 meters, at six locations downcoast from SONGS. The locations were 700, 1100, 1900, 3350 (at eight meters and 3200 m at the 18 meter depth), 6700 and 9400 meters downcoast from the generating station. Collecting samples at these sites allowed us to determine how far downcoast SONGS affected the biota; sampling at the two depths allowed comparison of effects on the benthos at the depth of the intake structures and of a depth equivalent to that just seaward of the end of the diffuser lines.

The biological variables measured were the numbers of organisms found in cores of sediment taken from the bottom. Since there was a noticeable change in the benthos throughout the study area between the Before period and the After period (probably due, in part, to the El Nino of 1982-1984) we focused our attention

on those species which were frequently encountered during both periods. Furthermore, since the great majority of species in this speciose assemblage (over 600 taxa were identified during the study) are of low abundance and infrequently sampled, we combined taxa into larger taxonomic groups, and into trophic-motility (TM) groups in which taxa with similar feeding behavior and motility characteristic were combined. These groups and those abundant and commonly occurring individual taxa were tested for abundance changes with a multivariate analysis of variance comparing the changes in the Impact area (defined as the four stations closest to SONGS within approximately four km downcoast of the plant) to those in the control area (the two most distant sampling locations). We estimated the distance from SONGS over effects occurred by comparing separately the changes in abundance at each of the Impact stations to those at Control.

We tested for temporal trends in the After Impact-Control differences in density. These trends would indicate if differences between Impact and Control changed over time and might give insight into whether effects will continue, or might change, beyond the period the samples were taken.

We tested for patterns of disappearance (or appearance) close to SONGS relative to Control among a large group of species at both depths by comparing the frequency of occurrence at an Impact and a Control site, first in the Before period and, again, in the After period. Forty-six taxa were tested for these changes at the eight meter depth and 85 at the eighteen meter depth. These species, collectively, accounted for over 95% of the total benthos at both depths.

We also measured various physical and chemical characteristics of the sediment at each of the sampling locations. These data were then correlated with

the abundance measures. This was done in an attempt to gain insight into any potential mechanism that might be responsible for the observed changes.

In general, the results of the study support the MRC's predictions. This is especially true for the benthos at the 18 meter depth. Among the aggregate measures of the benthos, the pooled taxa and TM groups, the was remarkable consistency of results. The benthos, combined, increased in the Impact area at various distances from SONGS. Increases were also detected in all of the combined taxonomic groups (polychaetes, molluscs, and crustaceans) and the major groupings based on the depth in the sediment the animals fed (surface and subsurface). When the TM groups were subdivided further, significant changes were almost universally increases. Among the individual taxa which showed significant changes in abundance five increased in relative abundances near SONGS relative to Control, one decreased, and the seventh increased at one Impact site and decreased at another.

Positive trends in the After deltas, indicating that abundances at Impact stations increased over time relative to Control, were detected in many TM groups. Again, they far outnumbered the number of negative trends detected (found in only one TM and one individual species).

A positive response on the part of the benthos at this depth is also indicated by the patterns in changes of frequency of occurrence among individual taxa. Eighteen species were sampled more frequently near SONGS relative to Control in the After period while only two became less frequently sampled. Finally, the total number of taxa found in samples also increased significantly near the plant in the After period.

At the eight meter depth, the pattern in the results was more variable. Among the seven individual taxa tested the only two that showed significant abundance changes increased in the Impact area relative to SONGS; *i.e.*, the same type of change as in deeper water. However, while three taxa showed positive trends in the After deltas, two showed negative trends, indicating that density at Impact stations was decreasing relative to that at Control over time. The major difference between 8 and 18 meters occurred among the TM groups. When all taxa are combined, a significant decrease in relative abundance was detected. Combined polychaetes declined, but combined crustaceans increased at several Impact locations. All surface feeding animals combined increased, while no change in the subsurface feeders was detected. As expected from the behavior of these large groupings, several of the smaller TM groups increased and several decreased. However, even though there was a mixture of increases and decreases in relative abundance among these TM groups, the number of TM groups (and individual species) that showed positive trends in the After deltas outnumbered those with negative trends.

The results regarding changes in frequency of occurrence also corroborate the mixture of increases and decreases in mean abundance. Seven species increased in the frequency of occurrence near SONGS relative to Control while three decreased. A change in the number of species found per sample was not detected at this depth.

Thus, it appears that the benthos at 18 meters in the Impact area has steadily increased over time relative to Control. In many cases the trend has been sufficiently strong that when averaged over the entire After period a change in abundance is observed. However, at eight meters during the early part of the After

period, the densities in the Impact area were less than at control. And while these Impact densities steadily increased relative to control through the After period, when averaged over the period a decrease in mean abundances was detected. Some of the reductions in the early part of the After period coincide with the release into the sea of the unconsolidated sand material in the construction laydown pad of Units 2 and 3.

There were discernible patterns in the distance over which effects were detected. At eight meters, declines in abundance were generally restricted to distances of 1100 meters downcoast and, conversely, increases were generally found from 1900 to 3350 meters downcoast. This spatial pattern is also consistent with the potential effects of the release of the sand laydown pad whose effects are likely to be localized to the region nearer SONGS.

At the 18 meter depth the pattern in effects with distance involves groups feeding at different depths in the sediment. The combined subsurface feeders increased only to 1100 meters downcoast, while various surface feeding TM groups increased in abundance throughout the Impact area to 3350 meters downcoast of the plant.

While there is strong evidence that plant affects the benthos to a distance of approximately 3 km, the evidence for effects at greater distance is not as strong. The strongest pattern in effects occurring from the vicinity of the plant to 6700 meters from the plant is found in the increases observed in two small TM groups found at the 18 meter depth.

While the exact mechanisms responsible for the observed increases in the benthos are unknown, increased detrital material remains a likely contributor. Correlations between physical/chemical (p/c) variables and densities were numerous but not very strong and did not explain much of the variability in the density measures. However, the p/c variables that were most often correlated with densities were measures associated with detrital material, organic carbon and phaeopigment content of the sediments. And while the measured relationships were not strong they were more common and stronger at the 18 meter depth, the depth where the discharge plume is more prevalent.

The effects of the operation of SONGS on the soft benthos, a general increase in abundance, suggest that they may relate to the results of MRC studies of other groups of organisms. Increases in mysid shrimps in the same general area may also result from the addition of particulate food on or near the bottom. The increases in the soft benthos may also be related to the observed increases in benthic fishes, many of which feed on the benthic invertebrates under study.

1.0 INTRODUCTION

A large portion of the sea floor in the vicinity of SONGS is unconsolidated, or soft, sediments. Except for the area approximately 0.5 to 2.0 km downcoast of the diffusers of Units 2 and 3 and between the depths of 11 and 16 meters, where rocky substrate supports the San Onofre kelp forest, the areas around SONGS are soft sediments. Particularly, the areas around the intakes of SONGS and the areas seaward of the diffusers are exclusively soft sediment. The average grain size of these sediments varies from coarse to fine (from sands to muds) as depth varies from shallow to deep (but see Technical Report B: Cohesive Sediments for a discussion of an anomaly in this grain size-depth relationship which appeared in the Impact area in the After period).

These sediments harbor a large number of invertebrate species representing many phyla. These species represent the largest faunal group (in number of species) potentially affected by SONGS. This group is not only diverse taxonomically but contains organisms exhibiting a large array of different feeding habits and patterns of habitat utilization. It is the extent of the habitat and the complex, diverse nature of the community within it that makes the effects of SONGS of interest. Furthermore, this species assemblage is a principal food source for benthic fishes and an impact of the operation of SONGS on this assemblage could, therefore, also result in changes in those species that feed upon it.

This report assesses the impact of the operation of San Onofre Nuclear Generating Station (SONGS) on the invertebrates living in and on soft sediments in the vicinity of the generating station. The MRC studies of these animals started in 1977 and ended in 1987. They were conducted by Marine Ecological Consultants,

Inc. (MEC). The earlier studies (1977-1979) estimated the effects of Unit 1. The results of these studies were used to predict the effects of Units 2 and 3 and to establish appropriate sampling designs to test for effects of Units 2 and 3.

The predicted effects of SONGS Units 2 and 3 on the soft benthos were that close to the diffusers (within one kilometer), sediments would be coarsened in grain size, but further away the sediments would become finer (Murdoch *et al.*, 1980). At all distances the sediment would be enriched with detrital material. The general result of these changes would be an increase in the abundance, number of species, and, perhaps, an increase in annual production of biomass. However, the predicted enrichment of the soft benthos was not expected to influence the production of sport and commercial fish.

The present report presents the results of the studies on the impact of Units 2 and 3. Data used to address this question were gathered from November, 1979 to December, 1986. The principal aim of the study was to determine if the abundance of infaunal and epifaunal invertebrates changed in the vicinity of SONGS' as a result of plant operation. As in other MRC reports the principal method of study was to compare the change in abundance that occurred in an Impact area from the preoperational (Before) period to the operational (After) period to the change that occurred at a distant Control location over the same time period. The relative difference in the changes observed between the two locations is a measure of the effect of the generating station.

The effects on both the soft sediments and the organisms in it were expected both to change gradually with distance from the generating station and to persist at a location. Furthermore, unlike local hard substrate, soft sediments are a

continuous and extensive habitat. The MRC, therefore, decided to sample the benthos at a number of stations at various distances along a gradient downcoast from SONGS. This gradient permits an estimate of the spatial extent of SONGS' influence.

A third line of investigation was to examine the relationships between various physical and chemical characteristics of the sediment and the abundance of the fauna. Previous studies (e.g. Biernbaum 1979, Bloom *et al.* 1972, Flint 1981, Gray 1974, Rhoads 1974, Young and Rhoads 1974) have shown that the soft benthos is often sensitive to the physical and chemical nature of the sediments in which they live. It was hoped, therefore, that examining these relationships in the area around SONGS would give insight into the possible mechanisms by which the generating station caused any observed changes.

While, the results presented in this report deal primarily with the effects of SONGS on the density (numbers per unit volume of sediment) of individual species and species groups, effect on changes in the species composition of the assemblage are also addressed. Changes in species composition were addressed at length in MEC's Final Report, which presents the results of a cluster analysis designed to group, by similarity of species composition, the species assemblages found at each sampling location in both Before and After sampling periods (Barnett, *et al.*, 1987). The results of the analysis indicated that the assemblages at all sampling locations in the Before period formed a group (cluster) distinct from the cluster formed by the assemblages found at all locations in the After period. These results indicated that a striking change in species composition occurred between the Before and After periods (probably in response to the El Nino of 1982-1984), but that, in general, the change occurred throughout the entire study area, including both Impact and

Control locations. In the present report a different analytical procedure is used to determine SONGS' effect on species composition. Many individual species are tested for Before-After differences in their frequency of occurrence at Impact and Control locations.

2.0 METHODS

2.1 Field Sampling

Benthic samples were collected, at depths of 8 m and 18 m, at six distances downcoast from SONGS Unit 1: 700m, 1100m, 1900m, 3200m (18m depth) or 3350m (8m depth), 6700m, and 9400m (Figure 1). Note that to obtain the distances in reference to the midpoint of Units 2 and 3 approximately 300 meters should be subtracted as the Units 2 and 3 diffusers are located downcoast from Unit 1.

The 8m depth was selected because it corresponded to the depth of water in which the SONGS intakes are located. The 18m depth corresponds to the depth at the seaward end of the Unit 2 diffuser, the diffuser which extends farthest offshore. It was predicted that the discharge plume of the diffusers would generally be directed offshore and that the plume would be pushed either upcoast or downcoast depending on ambient longshore current conditions. Longshore currents move in the downcoast direction approximately 60% of the time (Marine Review Committee Final Technical Report L: Physical and Chemical Oceanography) and the sampling stations were placed at six distances in this direction to provide an estimate of the distance over which the effects of SONGS would extend.

Each longshore station was permanently marked by a spar buoy attached to a steel plate on the bottom. On each survey, divers collected at least three sediment cores for physical/chemical (P/C cores) analysis and at least four cores for analysis of the benthos (BIO cores) at each station. The cores were taken at randomly chosen locations within a circle 20 m in diameter centered on the bottom plate (see Appendix B, Subsection B.2.1, of Barnett *et al.*, 1987, for a complete description of

the field program protocol).

The P/C core was 5.1 cm in diameter, had a surface area of 20.6 cm^2 and was inserted 8 cm into the sediment. The core was removed from the sediment and capped from beneath. The BIO core was 7.6 cm in diameter, had a surface area of 45.6 cm^2, and was inserted 10 cm into the sediment, dug out, and capped from beneath. Cores were placed in labeled bags and transported back to the laboratory for processing.

2.2 Laboratory Analysis

2.2.1 Analysis of BIO cores

Sediment from the BIO cores was washed through a 0.5 mm screen and the retained material fixed with 5-10% buffered Formalin-freshwater. After 48-72 hours, the Formalin was replaced with 70% isopropyl alcohol for long-term preservation of the sample.

Three of the four BIO cores taken at each station were analyzed and one was stored for possible future reference (see Appendix B, Subsection B.2.2, of Barnett, *et al.*, 1987, for a complete description of the laboratory analysis protocol). The fourth core collected at the station was usually the one stored. Samples designated for analysis were first sorted for animals under a dissecting microscope at 10-12X magnification. Animals were placed in labeled alcohol-filled vials according to four taxonomic categories: crustaceans, molluscs, polychaetes, and "others" (other phyla). Nematodes were counted but not removed from the sorted samples. Animals within each taxonomic category were identified to the lowest taxon possible.

After the animals were identified, animals from each of the replicate cores were combined according to taxonomic category, excess alcohol was removed by vacuum pump for 10 seconds, and wet weights of each of the four groups were measured to the nearest 0.01 gm.

After the animals were removed, the remaining material from each of the three replicates from a station were combined, and the average macrodetritus content of the samples was determined. The composite sample was swirled and the macrodetritus was poured off onto a preweighed filter. Macrodetritus was identified to categories of old (anoxic) and new terrestrial particles, marine macrophytic particles, animal tubes, organic particles, and inorganic particles. The percent composition (to the nearest 5%) of each category was visually estimated. The filter was then dried at 80° C for 10-12 hours and weighed (to nearest 0.01 gm). The dry weight of the composite macrodetritus samples was divided by three to yield an estimated macrodetritus dry weight per core. During the preoperational and interim period, the types of macrodetritus were not identified.

Counts for the identified taxa were reported as number per core. Composite wet weight biomass measurements were reported for each station as total wet weight. The estimated macrodetritus dry weight and percent composition were reported for each sample.

2.2.2 Analysis of P/C cores

In the laboratory, P/C samples were split longitudinally (Appendix B, Subsection B.2.1, of Barnett, *et al.*, 1987, contains a complete description of the protocol for sample processing in the laboratory). Two composite samples were

made from the halves of the three replicate cores. Each composite sample was then homogenized. One sample was analyzed for grain size and total organic carbon (TOC). The other was analyzed for chlorophyll-a, phaeopigments, and organic nitrogen. (Organic nitrogen analysis was discontinued in 1984 after no variation with distance longshore or time was observed.)

Sediment cores to be analyzed for grain size were stored at 0°C. For the analysis, a 20-50 ml subsample was transferred to a 240 ml bottle, mixed with 150 ml of deflocculent (sodium hexametaphosphate), and allowed to stand overnight. The sand fraction was shaken through and collected on eleven U.S.A. Standard Testing Sieves, which ranged in 0.5 phi intervals from 4.0 to -1.0 phi (see Appendix B, Subsection B.2.3.1 of Barnett, *et al., 1987*, for a complete grain size analysis protocol). When combined with the silt-clay weight, the weights of the fraction retained on each sieve and on the bottom catch plate gave the grain size distribution for each sample.

During the preoperational period, the fraction of particles smaller than 4 phi was reported as "percent silt/clay". Beginning with the March 1982 survey, pipette analysis of the silt/clay fraction (5 phi to 8 phi) in whole phi intervals was added to the sieve analysis of the sand fraction.

Total organic carbon (TOC) in sediment samples was measured with an Oceanography International model 524-B analyzer (Appendix B, Subsection B.2.3.2, of Barnett, *et al., 1987,* provides the protocol for TOC analysis). Subsamples (20-50 g) were dried at 70° C for 12 hours, ground to powder, placed in preweighed and precombusted ampules, and reweighed. Phosphoric acid and potassium persulfate were added, then oxygen was introduced to oxidize and purge the inorganic carbon.

The ampules were next sealed, heated in an autoclave, and the CO_2 measured with a non-dispersive infrared analyzer. A standard curve was generated by measuring the CO_2 evolved from known concentrations of potassium biphthalate.

2.3 The Study Periods

Sixteen Before surveys were made at both depths. Fifteen were made on a triweekly basis from November 1979 to November 1980, and an additional survey was conducted in June, 1981. During the After period 31 surveys at both 8 m and 18 m depths were conducted from June 1984 to December 1986. The sampling dates are presented in Appendix A.

The first After survey was made in June, 1984, approximately twelve months after Units 2 and 3 obtained operating levels characteristic of the After period. This delay was intended to allow any cumulative SONGS-induced changes in the benthic environment to be reflected in the benthic community.

2.4 Analytical Methodology

Numbers and biomass of particular taxa and in pooled groups of taxa ("trophic-motility", or TM, groups, see Section 2.4.2, below) were the basic variables used in the analytical procedures. The test variables were the total numbers of organisms per taxon or group in all cores combined from each location at a given depth.

Also basic to the analytical procedures was that data from the 8 m and 18 m depth contours were analyzed separately. In most of the analyses the 700, 1100,

1900 and 3200/3350 meter stations were treated as separate Impact locations and the values from the 6700 and 9400 meter locations were averaged and treated as the Control. The mean of the two far locations was used as a single Control for three reasons. First, SONGS' effects were not expected to extend as far as the 6700 meter location (see Final Technical Report L: Physical/Chemical Effects of SONGS) and our analyses indicate that this is true (Section 2.4.4). Second, the mean of the 6700 and 9400 meter locations makes for a more statistically stable and representative Control. Finally, combining the two distant stations gives a more straightforward and easily interpreted statistical analysis than would a set of analyses using each of these stations separately as a Control.

Previous experience with MRC data cautioned us to the effect of many zero abundance values on the results of the test for changes in abundance. Many zero values allow the constants added to the log transformation to overly influence the test results. Consequently, prior to statistical analysis, the taxa (both individual and pooled) and TM groups were screened for the occurrence of zeros; taxa or TM groups with over 50% zeros at any sampling location during either Before or After periods were eliminated from the analytical procedures.

2.4.1 Individual taxa

Over 600 taxa were identified in the laboratory. However, most occurred infrequently and at low abundance. From the 8 meter depth we tested seven individual taxa for abundance changes: the polychaete worms *Acesta catherinae, Amastigos acutus,* and *Prionospio pygmaea*; the amphipods *Jassa falcata* and *Rhepoxynius menziese*; the cumacean *Diastylopsis tenuis,* and unidentified nematode worms. The record of their frequency of occurrence is presented in Appendix B.

Sixteen taxa from the 18 meter depth were tested for abundance changes. They include five polychaetes (*Acesta catherinae, Aricidea wassai, Mediomastus californiensis/ambiseta, Paraprionospio pinnuata, Prionospio pygmaea,* and *Tauberia gracilis)*, four amphipods (*Jassa falcata, Rhepoxynius* sp. juveniles, *Rhepoxynius stenodes,* and *Sychelidium shoemakeri*), three ostracods (*Euphilomedes carcharodonta, Parasterope hulingsi,* and *Rutiderma rostrata*), a tanaid (*Leptochelia dubia*), a bivalve (*Tellina modesta*), and unidentified nematodes. The record of their frequency of occurrence is presented in Appendix B.

2.4.2 Pooled taxa and Trophic Motility groups

Two approaches have been used to reduce and simplify the complex information yielded by species assemblages. One approach is purely mathematical and uses multivariate techniques to classify sampling locations into pooled groups based on their species composition or to group species based upon their distribution (e.g., Boesch, 1973; Smith, 1976; Dorsey *et al.*, 1983; Stull *et al.*, 1986). Because the classification method is largely descriptive, tests of significance are of doubtful validity. In addition, this approach does not address the underlying factors that affect the organization of the community.

A second approach, followed here (and described in detail in Barnett *et al.*, 1987), entails analyzing taxa falling into groups defined on the basis of ecological information about life cycles, distribution, or trophic relationships (*e.g.*, Fauchald and Jones, 1978; Pearson and Rosenberg, 1978; Whitlatch, 1980; Dorsey *et al.*, 1983). The use of trophic groups provides numbers that are amenable to hypothesis testing, although it is sometimes difficult to assign unambiguously some species to a well-defined group, often because the feeding behavior is either variable or poorly

known. Despite limitations, the analysis of the abundance of these trophic groups may provide insight into the observed variations within and between habitats, and they are, therefore, useful tools for impact assessment.

As described in Barnett *et al.*, 1987, feeding type has been used widely for classifying benthic taxa (*e.g.*, Sanders, 1958 and 1960; Young and Rhoads,1971; Bloom *et al.*, 1972). More recently, feeding type has been supplemented with criteria such as species motility and preferred feeding site (Woodin,1976; Fauchald and Jumars, 1979; Whitlatch, 1980; Brenchley, 1981; Van Blaricom, 1982; Dorsey *et al.*, 1983). For this report we have followed MEC's defined functional groups in the benthos as collections of taxa sharing common trophic and motility characters. The macrofauna at 8 m and 18 m stations were assigned by Barnett *et al.* (1987) to trophic/motility (TM) groups (Appendix C) based on descriptions in the literature of their depth in the sediment and mode of feeding, and of the motility associated with feeding. Species belonging to the same genus were assumed to possess similar functional characteristics unless otherwise specified in the literature. Depth of feeding was defined as whether the organism feeds at the sediment-water interface (Surface) or below the sediment surface (Subsurface). Mode of feeding refers to whether an organism is a suspension-feeder, deposit-detritus feeder, carnivore, or omnivore. Further, the motility associated with feeding differentiates between organisms that either actively move in search of food (motile), forage within a restricted area (discretely motile), or feed from a stationary position (sessile).

Some taxa have been reported to use more than one feeding mode. In addition, feeding modes are poorly known for many benthic organisms, and distinctions between some modes can be artificial or obscure. For these reasons, information on depth in sediment and mode of feeding was organized into eight

categories: subsurface deposit feeders, surface deposit or detritus feeders, surface omnivore-deposit feeders, surface suspension-deposit feeders, surface suspension or filter feeders, surface carnivore-omnivores, and subsurface carnivore-deposit feeders. Thus, benthic animals were pooled into eight feeding types and three motility types and each taxon identified in the study fell into one of 24 potentially occurring TM groups. Of these, 18 actually occurred in this study, and 13 occurred with sufficient frequency to test for abundance changes (Appendix B). Several taxonomic groups, all the polychaetes for example, within a TM group were also tested. Finally, several combined categories, *i.e.*, all surface feeders, all subsurface feeders, all polychaetes, etc., were also tested. In total, 26 pooled taxa and TM groups were tested at the 8 meter depth and 42 at the 18 meter depth. A record of their frequency of occurrence is presented in Appendix B.

2.4.3 Biomass

At both depths, four aggregate measures of biomass (in gms of wet weight/core) were also tested for Before-After changes: *polychaete biomass, crustacean biomass, molluscan biomass*, and *total biomass*. A measure of biomass was made on almost every survey (as indicated in Appendix B).

2.4.4 Test for changes in abundance

The soft-bottom benthos was sampled at several longshore distances from SONGS. Therefore, to examine period-by-location interactions, *i.e.*, potential plant effects at the various distances in the After period, we used a multivariate form of the Before-After-Control-Impact-Paired test procedure used in other MRC analyses. We tested for significant Impact - Control differences (deltas) for all

Impact stations simultaneously. For preoperational (Before) and operational (After) periods we tested the null hypothesis of no difference in the vector of mean deltas against the alternative of any difference where the elements of the vectors were the deltas between each Impact station and the Control:

$$H_o: (\Delta_{700}, \Delta_{1100}, \Delta_{1900}, \Delta_{3350})_{Before} = (\Delta_{700}, \Delta_{1100}, \Delta_{1900}, \Delta_{3350})_{After}$$

against

$$H_1: (\Delta_{700}, \Delta_{1100}, \Delta_{1900}, \Delta_{3350})_{Before} \neq (\Delta_{700}, \Delta_{1100}, \Delta_{1900}, \Delta_{3350})_{After}$$

Thus our null hypothesis (H_o) states that the mean delta for *each* Impact - Control pair is the same in both the Before and After periods. According to our alternative hypothesis (H_1), we reject H_o if *any* of our four Impact - Control pairs has a different mean delta in Before and After periods. (For those variables where the results of this test on the vectors with four Impact deltas indicated effects at the 3350 meter locations, we ran the same multivariate analyses using the 6700 m station as an additional Impact station and the 9400 m station as Control. This analysis helped determine if SONGS' effect extended beyond the 3350 m station to the 6700 m station.)

The test procedure employed was a multivariate analysis of variance (SAS, 1985, GLM procedure). The data were log-transformed before deltas were calculated. Since there were instances of zero density, a constant was added before taking logs. The tests of assumptions and the t-test were run for a range of constants (.01, .1, and 1). In general, we present the results associated with the log $(x+1)$ when this transformation passed the assumption tests. Results associated with one

of the other transformations are presented otherwise. Note, however that the choice of constant rarely affected the alpha level of the test result.

As described in Interim Technical Report 2: Sampling design and Analytical procedures, additivity is the most important criterion for analyses involving Impact - Control differences. We tested for additivity on non-transformed, $\log(X+1)$, $\log(X+0.1)$ and $\log(X+0.01)$ using the Tukey test. In most instances $\log(X+1)$ passed Tukey's criterion for additivity. We do not report results for a variable which did not pass the test of additivity.

To estimate the size of the effects at each location and to test the indicated change at each station for statistical significance, we ran a separate BACIP analysis for each Impact station, comparing it with the Control. We chose to use individual BACIP tests over simultaneous tests for the following reason. Tests on individual Impact - Control pairs were performed on a slightly different data set than was the multivariate test, since we eliminated surveys of zero occurrence at both the Impact and Control sites being tested. Eliminating these zero-zero pairs has been commonly used in MRC studies to remove data which have no useful information with regards to differences but which tend to (falsely) reduce variance. We felt that it was better to eliminate zero-zero pairs and test individual differences with their estimated means and variances than to use simultaneous tests, which would include means and variances (and covariances) computed over zero-zero pairs, these zero-zero pairs occurring at not only the Impact - Control pair being tested but at other Impact- Controls pairs as well.

We calculate the percent relative change in the following manner:

The difference between preoperational and operational deltas, symbolically $\Delta\Delta$, based on log transformations, is given by:

$$\Delta\Delta = (\log(t*s*U) - \log(t*k*U)) - (\log(U) - \log(k*U)). \quad (1)$$

U is abundance at SONGS in the Before period. k is the multiplier relating Control abundance to Impact abundance (location effect). If Impact and Control were of equal abundance in the preoperational period, k would have been 1. t is the multiplier due to changes in time, from preoperational to operational periods. t is the same for both Impact and Control. s is the multiplier due to SONGS operation and only affects Impact. For example, if there were a 50% decline s would equal 0.5. Equation (1) can be simplified to:

$$\Delta\Delta = \log(s). \quad (2)$$

Back-calculating s from equation (2), the relative percent change is given by

$$\% \text{ change} = (\text{antilog}(\Delta\Delta)-1) \times 100.$$

Note that the estimate of percent relative change at each Impact location is based on the geometric means associated with the log transformation used in the BACIP test procedure, and not on the arithmetic means of the abundances observed at the various locations and periods. (The arithmetic means of the various taxa and TM groups are presented in Appendix D.)

In many cases, the estimate of percent relative change is not precise. Because zero abundances occur at times, a constant is added to the log transformation. Estimates of percent relative change can be sensitive to the

constant chosen, particularly in those species whose survey-by-survey data have a high proportion of zeros at either Impact or Control location. Also note the asymmetry in the reported percent increases and decreases. While a doubling is a 100% increase, a halving is a 50% decrease. Increases can exceed 100%, but decreases cannot. (Percent changes are translated into "factors" or "folds" in Appendix E).

2.4.5 Trends in Deltas with Time -- Analysis of Covariance:

We tested for potential effects of SONGS which change over time by testing for linear trends in the After deltas against time. Our test was an analysis of covariance, with time as the covariant and locations as a "class variable". We also examined plots of the deltas *vs.* time for each station. Trends in the deltas mean that values recorded at an Impact site steadily changed relative to values recorded at Control.

We performed an analysis of covariance for preoperational and operational periods separately as follows: (1) We tested whether the rate of change of the deltas through time varied among the Impact-Control pairs, i.e., was the trend for 700 m station - Control = trend for 1100 m station - Control, etc. (2) Failing to reject this hypothesis we tested whether the trend in deltas from all locations combined equaled zero. (3) If the hypothesis of equality of linear trends in time among stations was rejected, we tested for linear trends in deltas for each station separately with a simple linear regression. We plotted trends in deltas over time for both preoperational and operational periods by station-Control pair.

Test variables for which the deltas had significant temporal trends in the

preoperational period violate the assumption of a single mean delta, an assumption needed in testing the equality of equal preoperational and operational mean deltas. However, some trends detected in the preoperational period either changed direction or increased dramatically in the operational period. Consequently, rather than eliminate variables with significant trends in the deltas in the preoperational period we ask whether these trends have changed in the After period. Such a change would suggest a SONGS effect.

2.4.6 Correlations between Biological and Physical/Chemical Variables

We estimated the correlation and its statistical significance ($p < 0.05$) for the relationship between each of the physical/chemical variables and the abundance of the individual taxa, TM groups and biomass. The physical parameters of the sediment measured and tested were: (1) mean grain size, (2) grain size dispersion, (3) grain size skewness, (4) percent coarse sand, (5) percent silt/clay, and (6) median phi size. Chemical parameters measured and tested were: (1) chlorophyll concentration, (2) $CaCO_3$ concentration, (3) phaeopigment concentration, (4) chlorophyll-phaeopigment ratio, (5) organic carbon concentration, (6) organic nitrogen concentration, (7) carbon-nitrogen ratio, (8) percent inorganic particulates, (9) percent marine macrophyte particulates, (10) percent new terrestrial macrodetritus and (11) percent old terrestrial macrodetritus.

3.0 RESULTS

3.1 General description of the fauna

The benthos of the soft sediments in the study area was composed of a large number of species representing a wide variety of taxonomic groups. Over 600 taxa were found in the benthic samples during the study period. Most, however, were rare, infrequently found and in small numbers. Although over 500 taxa were found at each of the two depths sampled, there were obvious differences in the composition and abundances within the species assemblages from the two depths. Furthermore, the assemblages at both depths changed in relative composition from Before to After periods. Sorting the SONGS-induced changes in the benthos from larger scale changes which occurred throughout the study area is the subject of Sections 3.2 and 3.4 below. In this section, we present a brief overview of the gross characteristics of the benthos and the changes that occurred in it. A more detailed description of the fauna and its affinities is presented in Barnett *et al.* 1987.

Throughout the study period, polychaete worms, crustaceans, and molluscs generally accounted for 95% of the total individuals at sampling locations at both depths. Polychaetes were the most abundant taxonomic group, accounting for roughly 60% of the numbers throughout the study period. Crustaceans accounted for roughly 25% and molluscs 10% of total numbers. In spite of these similarities in large taxonomic groups, other aspects of the species assemblages at the two depths differed markedly. (Appendix I contains the frequencies of occurrence and mean abundances of all TM groups at all location/period combinations.)

The benthos at eight meters was not as speciose as at eighteen meters. If

only those taxa which occurred 50% of the time at any one sampling location in either period are counted (taxa occurring less frequently are considered too rare and are not considered further in this report, but see Appendix J for a complete listing of occurrences and abundances of all taxa), 46 were found at eight meters and 85 at eighteen meters. (These species are tested for changes in frequency of occurrence in Section 3.4 and are listed in Tables 16 and 17). The average number of taxa found per sample at eight meters was approximately 8 and at eighteen meters it was approximately 21 (Appendix K).

In the Before period, the mean total abundances were similar at both depths, between 56 and 83 individuals per sample. However, in the After period, this number dropped at eight meters to between 31 and 43, but increased at 18 meters to between 88 and 106 (Appendix D).

There were marked differences in species composition at the two depths. Reviewing the twenty most abundant taxa present at each sampling location during each sampling period (Appendix L), indicates that, in general, the most common species at one depth were uncommon at the other. During the Before period, the most abundant species at the eight meter depth were the polychaetes, *Owenia collaris* and *Amastigos acutus,* and the crustacean *Diastyopsis tenuis.* These species were uncommon at the 18 meter depth. Similarly, the most abundant taxa at the deeper sites were the polychaetes, *Mediomastus californiensis/ambiseta* and *Nepthys* sp., and unidentified nematode worms. These taxa, in turn, were uncommon at the shallow sites. Only the polychaete *Prionospio pygmaea*, and the mollusc, *Tellina modesta* were relatively common at most locations at both depths.

During the After period the dissimilarity between the two depths remained,

although the species ranks at both depths changed somewhat. *Mediomastus californiensis/ambiseta*, unidentified nematodes, and the crustacean *Acuminodeutopus heteruropus* were the three taxa with the highest average ranks at 18 meters in the After period. (Note that one of the major changes in the species assemblage at this depth was the decrease in abundance of *Nepthys* sp. throughout the study area.) Again, these three taxa were uncommon in shallow water.

The most striking change from Before to After in species ranks occurred at the eight meter depth. Here the two most abundant species in the Before period, *Owenia collaris* and *Amastigos acutus*, were greatly reduced in numbers and, in the case of *Owenia*, occurrence throughout the study area in the After period. In fact, the loss of these two species accounts for a large percentage of the decrease in total abundance seen throughout the area in the After period. During the After period, *Diastylopsis tenuis* and *Prionospio pygmaea* became the most abundant species at this depth.

It is important to note that in spite of pronounced changes in the abundance of individual species, most common taxa at both depths were present in both Before and After periods.

3.2 Changes and trends in abundance

In the following we present the results of both the multivariate test for abundance changes and the analyses for temporal trends in the After deltas. These results are presented for the 8 meter depth first and then for the 18 meter depth.

Note that in the Tables of results regarding changes and trends in TM groups

only the result for the combined TM group is presented if the abundance of that group is composed almost exclusively (90% or more) of a single taxonomic subgroup. This reduces redundancy among the test results presented. However, when a TM group has several taxonomic groups contributing significant portions to its total number, test results for both the subgroups and combined group are presented. Results of tests on all TM groups and subgroups are presented in Appendices F and G.

3.2.1 Eight meter depth

In general, TM groups and pooled taxa at the 8 meter depth were reduced at the Impact area relative to the Control. However, while the mean abundance in the After period appeared to decline, the TM groups also exhibited positive trends in the deltas, indicating that the values at Impact steadily increased relative to Control. In turn, this suggests that the benthos was "recovering" from an initial SONGS effect. The changes seen among the individual taxa were not as consistent. Increases in relative abundance, and both positive and negative trends in After deltas were detected. In general, among both taxa and TM groups, the detected changes occurred to at least 1100 meters downcoast of SONGS.

3.2.1.1 Individual taxa

Abundance changes

Two of the seven individual species tested displayed significant ($p < 0.05$) SONGS' effects, *i.e.*, location-by-period interactions (Table 1). Pair-wise tests of changes in abundance comparing the individual Impact locations and the Control indicate that the abundance of the polychaete *Prionospio pygmaea* increased at the

site nearest the diffuser. (However, as discussed below, this result must be considered in light of a significant temporal trend in the Before Impact - Control deltas). In contrast, results concerning a second species of polychaete, *Acesta catherinae*, are not as clearly interpreted as a SONGS' effect. This species increased at the location furthest from the diffuser but was not affected at the three nearer locations (Table 1).

Temporal trends

The two taxa which displayed significant BACIP results also exhibited significant ($p<0.05$) positive trends in the After deltas (Table 2). *Acesta catherinae* abundance increased throughout the Impact area relative to Control during the After period. *Prionospio pygmaea*, which increased dramatically at the 700 meter station, had a strong positive trend in the deltas at this location (Appendix H, page 3; Appendix H presents figures of Impact - Control deltas plotted against for all taxa and TM groups that showed either a significant change in abundance or trend in time). This species also had a significant ($p<0.05$) trend in the Before deltas; however, the trend was negative in contrast to that seen in the After period. This argues that the temporal trend in the After period is not a continuation of the trend in the Before and may indeed be an effect of SONGS.

Trends in the After deltas were found in two taxa which did not display significant changes in abundance. Unidentified nematode worms exhibited a positive ($p<0.01$) trend in the After deltas and *Rhepoxynius menziese* exhibited a negative trend ($p=0.02$; Appendix H, page 5). *Rhepoxynius* also showed a significant trend in the Before deltas. However, in contrast to the negative trend in the After period, there was a positive trend in the deltas of the Before period.

3.2.1.2 TM groups

Abundance changes

Significant ($p<0.05$) period-by-location interactions were detected in a number of pooled taxa and trophic-motility groups (Table 3). When *all taxa* are combined, the results ($p<0.01$) indicate a reduction in numbers to 1100 meters from SONGS. One subgroup, *all polychaetes*, also displayed a reduction in the Impact area at 700 meters from the diffusers. In contrast, another subgroup, *all crustaceans*, increased in abundance at the two distant locations (1900 and 3350 meters downcoast) in the Impact area.

When the organisms are sorted by their preferred feeding location in the substrate (either surface or subsurface) effects were seen primarily among the surface feeders. *All surface feeders* combined showed reductions ($p<0.01$) to 1100 meters. Among the five surface associated TM groups which displayed significant time-by-location interactions, four displayed comparative reductions in the Impact area. The density of *all surface, motile omnivore/deposit feeders*, which are almost exclusively crustaceans, appear to have declined ($p=0.03$) to 1100 meters from the diffusers. The density of *all discrete surface suspension/deposit feeders* declined ($p=0.01$) to 700 meters downcoast. The density of *all discrete surface carnivore/omnivores* show reductions ($p=0.03$) within the Impact area to 700 meters downcoast. Note that only the result associated with the combined TM group is presented in Table 3 although both crustaceans and polychaete subgroups comprise significant fractions of the total. The crustaceans, however, were not tested because they occurred too infrequently throughout the study area in the After period. The polychaete subgroup was tested and displayed a test result similar to that of the combined TM group (Appendix F).

Three TM groups increased in relative abundance in the Impact area. The density of *all crustaceans* displayed increases ($p=0.02$) at the two farthest Impact sites (however, the sign of the indicated change at the two Impact sites nearest SONGS was negative). *"Other" motile, surface carnivore/omnivores*, which are mostly nemerteans, increased at the 1100 and 1900 meter locations. Another subgroup, *motile, surface carnivore/omnivore polychaetes*, decreased at the 1100 meter station, but increased at the 1900 meter location.

The subsurface TM group *motile deposit feeders* was almost exclusively polychaete worms, and in the Before period almost exclusively capitellid polychaetes. However, in the After period paraonid polychaetes accounted for a significant fraction of this TM group. This last group of worms increased in density relative to Control at the two distant Impact locations (1900 and 3350 meters downcoast).

Temporal trends

Eleven TM groups exhibited significant ($p<0.05$) trends in the After deltas (Table 4). The density of *all taxa* combined and of a subgroup, *all polychaetes*, displayed significant ($p<0.01$) positive trends in the After deltas. These positive trends are noteworthy in that the results of the test on mean abundances indicated that the density of these groups declined in the Impact area relative to Control. The analysis of trends in the After period indicates, however, that Impact is increasing in abundance relative to Control. Examination of the delta plots (Appendix H, pages 6 and 8) shows that during the first year of the After sampling period (1984-1985), abundances at Impact were less than at Control. However, as the sampling period progressed this difference appears to go away and at the end of the After period,

abundances at Impact appear to be greater than at Control.

Two other groups that decreased in density in the Impact area but showed a positive trend in the After deltas were *all surface forms* combined and all of the *surface discrete carnivore-omnivore feeders* combined. Again, examination of the deltas plots (Appendix H, pages 13 and 14) indicates an initial period of about a year when abundances at Impact were less than at Control and a subsequent trend towards greater abundances at Impact.

The one group that showed positive trends in the deltas in the After period that also showed an increase in abundance was the *subsurface motile deposit feeding paraonid polychaetes*.

All subsurface forms combined, *all subsurface motile deposit-feeders,* and *surface motile molluscan carnivore-omnivores* also showed positive trends in the deltas in the After period. *All surface motile deposit feeders* was unusual in having a negative trend in the After deltas. None of these TM groups showed a change in mean abundance from Before to After.

Two TM groups which showed significant positive trends in deltas in the After period, *all subsurface motile carnivore-deposit feeders* (which are almost exclusively polychaetes) also showed significant ($p<0.05$) positive trends in the Before deltas. However, testing for differences between the slopes and intercepts of the Before and After trends indicated that the intercepts of the two lines were significantly different but that the slopes were not. Different intercepts suggest that the trend in the After period is not a continuation of the trend observed in the Before period.

Perhaps the most perplexing result is that of combined *surface motile omnivore/deposit feeders*. This group, which declined in abundance at the 700 and 1100 meters sites in the Impact area, exhibited trends in the After deltas that differed in slope among sampling locations (Appendix G; Appendix H, page 19). At 700 and 1100 meters, the trend was negative ($p<0.01$), but at 1900 meters the trend was positive ($p=0.01$).

3.2.1.3 Biomass

Abundance changes

Only one category of biomass exhibited a significant change in its mean value. *Polychaete biomass* declined ($p=0.02$) at the 700 meter and 1900 meter locations (Table 5).

Temporal trends

There were two categories of aggregate biomass at 8 meters that exhibited significant trends in their After deltas. *Total biomass* exhibited a significant ($p=0.02$) negative trend and its subgroup, *molluscan biomass*, also displayed a negative trend ($p<0.01$). Neither of the these categories displayed significant Before-After changes in mean values.

3.2.1.4 Number of taxa per sample

The number of taxa per sample did not exhibit a significant change from Before to After period at the eight meter depth (Table 6).

3.2.2 18 meter depth

In contrast to the mixture of increases and decreases in abundance observed at the shallow depth, both individual taxa and TM groups tended to increase in abundance within the Impact area at the 18 meter depth. As was the case in 8 meters, trends in the deltas occurring in the After period were almost exclusively positive.

3.2.2.1 Individual Taxa

Abundance changes

Eight of the 16 individual taxa tested for abundance changes exhibited significant ($p<0.05$) location-by-period interactions (Table 7). Six of these taxa increased at various locations in the Impact area relative to Control, one declined and one increased at two Impact locations and declined at a third.

The effects were most widespread among polychaetes. *Mediomastus californiensis/ambisettis*, increased ($p<0.01$) out to 1100 meters. *Acesta catherinae* ($p=0.02$), increased at 700 meters downcoast from the plant. *Tauberia gracilis* ($p<0.01$) increased to 1100 meters but decreased 3350 meters from the plant. *Aricidea wassi* ($p=0.01$), also gives evidence of tending to increase out to 1100 meters, although no single Impact location was detected to be significantly different from Control.

Unidentified nematode worms also increased in abundance to at least 700 meters ($p<0.01$), and the ostracod *Rutiderma rostrata* increased out to 1100 meters from the plant ($p<0.01$).

The two taxa that contrast with the others are the ostracod *Euphilomedes carcharodonta* ($p < 0.01$) which showed increases at the two distant locations, and the amphipod *Jassa falcata*, which showed a decrease ($p = 0.01$) at the 700 meter location only.

Temporal trends

Positive trends in After deltas were detected in seven taxa while a negative trend occurred in only one (Table 8).

Among those taxa which showed significant increases in mean abundance, *Acesta catherinae* showed a strong positive trend ($p < 0.01$) in the operational deltas at the 700, 1100, and 1900 meter locations. (The p value for the trend at the 3350 stations was 0.09.) Examination of the delta plot (Appendix H, page 20) indicates that initially the abundances at Control were slightly higher than at Impact, but over the operational period, Impact values increased relative to Control throughout the sampling period. This difference in abundance is also apparent in the mean abundances from the sampling locations (Appendix D).

Aricidea wassi exhibited a positive trend ($p << 0.01$) in the operational deltas. The delta plots (Appendix H, page 21) indicates that Control abundances were greater than Impact abundances during the initial part of the After period at all sampling locations. However, Impact abundances then began to increase and by the end of the sampling period the Impact abundances were greater than at Control. This taxon also showed a positive trend in the Impact-Control deltas in the Before period. However, testing for differences between the slopes and intercepts of the Before and After trends indicated that both the intercepts and slopes of the two

lines were significantly different (the slope of the After deltas was greater than that of the Before deltas). This suggests that the trend in the After period is quite different from and not a continuation of the trend observed in the Before period.

Unidentified nematodes also display a significant ($p<0.01$) positive trend in the After deltas. Throughout the Before period and at the beginning of the After period abundances at Control and Impact were similar (or, as at the 1100 and 3350 meter stations, Control was generally higher in abundance). However, during the After period Impact abundances increased relative to Control abundances (Appendix H, page 26).

The abundance of *Tauberia gracilis* in the Impact area increased relative to Control throughout the After period ($p<0.01$, Appendix H., page 30).

The density of *Rutiderma rostrata* had a significant positive trend in the After deltas ($p<0.01$). Examination of the delta plot (Appendix H, page 28) shows that while Control values were higher than Impact during the Before and initial After samples, Impact abundances increased relative to Control values during the sampling period.

The BACIP test of the mean abundances of the amphipod *Rhepoxynius stenodes* was not significant ($p=0.29$). However a positive trend in the After deltas occurred ($p<0.01$), suggesting that Impact abundances were increasing relative to Control during the After period.

Likewise, even though the BACIP result was not significant ($p=0.26$), the abundance of *Leptochilea dubia*, increased in the Impact area relative to Control in

the After period ($p < 0.01$). Note, however, that this species had significant positive trends in the Before deltas at two locations (700 and 1100 meters).

In contrast, the amphipod *Synchelidium shoemakeri* showed a significant negative trend in the After deltas where the Impact values continually decreased relative to Control values (Appendix H, page 29). However, a change in mean abundance was not detected (Table 7).

3.2.2.2 TM Groups

Abundance changes

As among the individual taxa, more TM groups in the Impact area increased in density relative to Control than declined (Table 9). In fact, only one significant decline was detected among the TM groups at any one location (and this particular TM group also displayed a significant increase at a second sampling site).

When *all taxa* are combined the result indicates ($p < 0.01$) increases at three (700, 1100, and 3350 meters downcoast) of the four sampling sites in the Impact area. When broken into the component taxonomic groups, *all crustaceans* ($p < 0.01$) increased in the Impact area from 1100 to 3350 meters. *All molluscs* ($p = 0.01$) and *all polychaetes* ($p < 0.01$) increased to 1100 meters from the plant.

Although both surface and subsurface TM groups increased, the increases were found further downcoast for the surface groups. The surface groups tend to show increases at locations throughout the Impact area (i.e., out to 3350 meters downcoast), while the increase in subsurface invertebrate groups were found at the two nearer locations (700 and 1100 meters from SONGS).

The pattern seen in combined subsurface forms (increases out to 1100 meters; $p<0.01$) was present in several of the various subsurface TM groups. The various *subsurface motile deposit feeders* (which are almost exclusively polycheate worms) and its largest subgroup, *capitellid polychaetes*, showed this pattern (Table 9). A more complex pattern was seen in a second, smaller subgroup, *paraonid polychaetes*. While this group increased at the 700 meter location, it decreased at the location 3350 meters downcoast (the only TM group to show a significant decrease at any location in the Impact area). Combined *subsurface motile carnivore/deposit feeders* (which are also almost exclusively polychaete worms), increased significantly at the 1100 meter location only, although the sign of the indicated change at 700 meters was also positive.

It should be noted that the TM groups, *all subsurface motile carnivore/deposit feeders*, and *all subsurface motile deposit feeders* had temporal trends in the Before deltas. The effect of these trends on the interpretation of the results will be discussed below.

When *all surface* forms are combined, increases are observed in the Impact area at the sites 1100 and 3350 meters downcoast. *All discrete surface deposit feeders* (and its *polychaete* subgroup) showed relative increases in densities out to 1100 meters ($p<0.01$). Another group of polychaetes, the *discrete, surface carnivore/omnivore polychaetes* were more abundant to 700 meters downcoast from the plant ($p<0.01$). The more inclusive group, *All discrete, surface carnivore/omnivores,* showed a significant ($p=0.01$) test result in the multivariate analysis, however, significant changes in density were not found when tests on individual locations were performed.

The TM group, *motile surface carnivore/omnivores*, is comprised of organisms of wide taxonomic variety. *All taxa* within this TM group increased in density at 1100 meters downcoast of SONGS. However, the largest subgroup of this TM group, *motile surface carnivore/omnivore molluscs*, increased at the 1900 meter location as well.

Among the remaining surface groups which displayed significant results, relative increases were seen at locations covering a larger portion of the Impact area, to 3350 meters away from the plant. The *motile surface omnivore/deposit feeders*, which are almost exclusively crustaceans, exhibited increases ($p=0.01$) from 1100 meters to 3350 meters from the plant

All discrete surface suspension/deposit feeders ($p<0.01$) and the three taxonomic subgroups that make up more than 90% percent of its abundance: *crustaceans* ($p<0.01$), *molluscs* ($p=0.03$), and *polychaetes* ($p<0.01$), exhibited relative increases in abundance at either 1100, 1900 or 3350 meters from the plant.

The combined *sessile surface suspension/deposit feeders* (which are almost exclusively crustaceans) show increases ($p<0.01$) at both 700 meters and 3350 meters from the plant.

Temporal trends

Eighteen TM groups had significant ($p<0.05$) positive trends in the After deltas while only one had a negative trend (Table 10). Of those with positive trends, 13 also showed significant increases in their mean abundances. *All Taxa* had a significant ($p<0.01$) positive trend in the After deltas. The delta plot (Appendix H,

page 31) shows that during the After sampling period the abundance at the Impact sites increased relative to the abundance at Control. Similar patterns are seen in two of the combined taxonomic groups, *all crustacea* ($p=0.01$) and *all polychaetes* ($p<0.01$).

Similar patterns in trends in After deltas were shown by *all surface forms* and *all subsurface forms*. Both had significant ($p<0.01$) positive trends indicating that abundances at the Impact sites were increasing relative to Control during the After period.

Among the trophic motility groups associated with the subsurface habitat, all except *motile subsurface deposit feeding capitellid polychaetes* exhibited significant ($p<0.01$) positive trends in the After deltas. However, several of these TM groups also exhibited significant ($p<0.05$) trends in the Before data. The group *all subsurface motile carnivore/deposit feeders*, showed a trend in the deltas from the Before period which had a negative slope in contrast to the positive slope of the After trend in the deltas. *All motile subsurface deposit feeders* also had a positive trend in the deltas in the Before period. However, testing for differences between the slopes and intercepts of the Before and After trends indicated that the intercepts (but not the slopes) of the two lines were significantly different. This argues that the trend in the After period is not a continuation of the trend observed in the Before period (Table 10).

Among the surface dwelling TM groups, *all discrete carnivore/omnivore feeders* displayed a positive trend in After deltas ($p<0.01$). Likewise, *all motile carnivore/omnivore feeders* showed such a trend ($p=0.01$). Two subgroups of this last TM group, *polychaetes* and *"other"*, also displayed similar trends in the After

deltas ($p<0.01$). These subgroups, however, did not show significant relative increases in density.

All discrete surface suspension/deposit feeders (and the subgroup, *crustacea*) showed significant ($p<0.01$) positive trends in the After deltas.

All motile surface omnivore/deposit feeders (which are almost exclusively crustacea) exhibited a positive trend ($p<0.01$) in the After deltas at only one location, 3350 meters.

All discrete, omnivore/deposit feeders (which are exclusively crustaceans), *All sessile suspension feeders* (and the subgroup *polychaetes*) exhibited significant ($p<0.01$) positive trends in the After deltas. These groups did not exhibit significant changes in relative mean abundance.

All surface deposit feeders (which are almost exclusively polychaetes) was the only TM group that showed a significant ($p<0.01$) negative trends in the After deltas indicating that the Impact abundances were declining relative to Control in the After period. This group did not show a significant change in mean abundance.

3.2.2.3 Biomass

Abundance changes

No significant changes in the mean values of biomass were detected.

Temporal trends

Crustacean biomass was the only category of aggregate biomass that exhibited a significant trend (positive $P=0.03$) in the After deltas.

3.2.2.4 Number of taxa per sample

The number of taxa found per sample increased at the 700 meter location relative to Control ($p<0.01$; Table 6).

3.2.3 Effects at 6700 meters from the plant

Results of some of the tests for abundance changes indicated that the changes occurred throughout the Impact area to 3350 meters downcoast from the plant. To test whether the effect is found further away, a second multivariate BACIP analysis was performed on these groups, comparing the mean deltas at five "Impact" locations (700, 1100, 1900, 3350, and 6700 meters away from the plant) to the mean deltas at the most distant sampling location (9400 meters). If this second analysis indicated that the percent relative change occurring at the 6700 site was similar in direction and significance to those at 3350 meters, it would suggest that the effects in the Impact area had extended to 6700 meters away from the plant. On the other hand, if the percent relative change was different, particularly if the sign of the change is different from those within 3350 meters, it suggests that the potential plant effect does not extend to 6700 meters.

This second analysis was performed on only one individual taxon, *Acesta catherinae*, and two TM groups, *combined crustaceans* and *subsurface motile deposit feeding paraonid polychaetes*, at the 8 meter depth because they were the only groups

at this depth that showed a significant effect at 3350 meters downcoast from SONGS (Tables 2 and 4). The result of the second analysis indicates that an effect was detected at the 6700 meters location in *all crustacea* only (a 49% relative increase, Table 11).

The results of the tests on the taxa and groups from the 18 meter depth suggest that effects seen within the Impact area on *Euphilomedes carcharodonta* do not extend to 6700 meters downcoast. The result concerning *Tauberia gracilis* is difficult to explain in terms of an effect of SONGS. While increasing significantly at the two locations near the generating station, it declined at both the 3350 (-46%) and 6700 (-49%) meter locations (Table 11).

Two TM groups tested give results that suggest the SONGS effect may, indeed, extend to the 6700 meter downcoast location. The effects are relative increases in *all surface sessile suspension/deposit feeders* (which are almost exclusively crustaceans) and in *discrete surface suspension/deposit feeding molluscs*. The result concerning a third group, *subsurface motile deposit feeding paraonid polychaetes*, is difficult to explain in terms of an effect of SONGS. While increasing significantly at the location nearest the generating station, it declined at the 1900 (-41%), 3350 (-48%) and 6700 (-42%) meter locations.

3.3 Relationships with physical/chemical characteristics

The densities of the individual taxa and TM groups were regressed against seventeen different measures of the physical/chemical characteristics of the sediment in which they were found. The results indicated that, in general, while they were often significantly correlated, the correlations between the p/c variables

and the densities were weak. The results also suggest that densities of animals were more tightly correlated with p/c variables at the 18 meter depth than at the 8 meter depth.

The physical/chemical parameters that were most frequently significantly ($p<0.05$) correlated with animal density varied somewhat between the eight meter depth and the 18 meter depth (Table 12). At 18 meters 50% or more of the TM groups exhibited significant relationships with the skewness in grain-size distribution, chlorophyll content, or phaeopigment content. These variables, in addition to dispersion of the grain size distribution, organic carbon content and percent old terrestrial particulates, were the most commonly correlated variables among the individual taxa at eighteen meters.

Among the taxa and groups from eight meters, correlations did not occur as frequently as at 18 meters. The maximum occurrence of correlations with particular variables was only 15%. Again the p/c variables that were significant most frequently among the TM groups were grain size dispersion, chlorophyll content and phaeopigment content. Several other characteristics, grain size skewness, mean grain size, median phi, percent coarse sand, and percent inorganics, were also frequently correlated with the abundances of individual taxa.

Biomass at 18 meters was most frequently correlated with chlorophyll content (80% of the tests), and grain size skewness (40%). Percent of inorganic particulates, chlorophyll content, organic carbon content, and percent old terrestrial particulates were the most commonly (20%) correlated parameters with biomass at the eight meter depth. Again, the frequency of significant correlations between p/c variables and densities of the benthos was higher at 18 meters than at the eight

meter depth.

However, while there were many significant correlations, the median R^2 of these correlates is very low, less than 0.07 (Table 13). Relationships with correlation coefficients greater than .20 were rare, occurring in less than 5% of the tests (Table 14). The strongest of the individual relationships between TM groups and P/C variables was the negative relationship ($p=0.01$, $R^2=0.81$) between the density of *discrete surface dwelling, omnivore-deposit feeding crustaceans* and the percent of $CaCO_3$ in the sediment at the 18 meter depth. These results indicate that, although there are relationships between abundance and the physical/chemical parameters measured, in general, they do not account for more than a very small portion of the variance in the abundance data.

3.4 Changes in frequency of occurrence

In Section 3.2 above, we considered those taxa whose frequency of occurrence exceeded 50% at *each* location in *both* periods. Thus we were able to test for changes in abundance relative to Control along a gradient of distances from SONGS. However, by selecting species based on this criterion, we may have missed potential SONGS effects that would result in decreases (or increases) in the frequency of occurrence in the Impact area in the After period. Therefore, in this Section we examine a larger suite of species for potential plant effects on the relative frequency of occurrence at Impact and Control locations. The results reinforce the conclusions based on the MANOVA analysis: more taxa increased than decreased in frequency of occurrence in the Impact area relative to Control, particularly at the 18 meter depth.

3.4.1 Eight meter depth

Most of the taxa enumerated by MEC were rare. For example, the list of taxa found at the 8 meter depth exceeds 500 (Appendix J). However, of these, only 46 occurred 50% of the time at *any one location in either period.* These 46 taxa, listed in Table 15, account for 90-98% of all individuals of the benthos at this depth, depending upon the location/period combination, and constitute the bulk of the most abundant taxa found at any location in either period (Appendix L).

To differentiate the effects of SONGS operation on these less frequently occurring taxa from larger scale phenomenon, such as the El Nino which occurred between the Before and After periods and which is expected to affect all sampling locations, we compared their frequency of occurrence at the 700 m location (the location most likely to be influenced by SONGS) with the most distant location, 9400 m, in both periods with a chi-square statistic.

Twenty-four taxa were present at least 50% of the time at any one sampling location in both periods. Of these, three *(Nymphon heterodenticulatum, Pectinaria californiensis,* and *Synchelidium shoemakeri*) showed significant increases in relative frequency between Impact and Control in the After period and suggest an effect of SONGS. Two taxa, *Goniada littorea* and *Tellina modesta*, showed relative decreases in frequency of occurrence.

Some taxa exceeded the occurrence criterion in the Before period only. A number of the "Before" taxa essentially disappeared throughout the study area (Appendix I). Perhaps the most striking of these results is that of *Owenia collaris*. This worm was the most abundant taxon at this depth in the Before period and all

but disappeared from all locations in the After period. Among these 13 "Before" taxa which either disappeared throughout the study area or whose frequency of occurrence was reduced, there is evidence of a plant effect on one only. *Typosyllis hyalina*, was the only taxon at either depth that became absent near SONGS while remaining present at Control in the After period.

Ten taxa met the occurrence criterion in the After period only. Of these "After" taxa, four (*Ampelisca agassizi, Dendraster excentricus, Paraonella platybranchiata, and Atylus tridens*) were significantly more frequent at the Impact location than at the Control. No taxa was significantly less frequent at Impact than at Control.

The observed changes in frequency of occurrence of all 46 taxa are summarized in Table 15. Seven taxa significantly ($p<0.05$) increased at Impact relative to Control and three decreased. Statistically significant changes were not detected in the remaining 36 taxa.

3.4.2 Eighteen meter depth

The number of taxa found at the 18 meter depth also exceeded 500, and as at the 8 meter depth, most of the taxa were rare (Appendix J). However, compared to the 8 meter depth, more taxa (85) occurred 50% of time at any one location in either period. These 85 taxa, listed in Table 16, account for 90-98% of all individuals of the benthos, depending upon the location/period combination and constitute the bulk of the most abundant taxa found at any location in either period (Appendix L).

The frequencies of occurrence of these 85 taxa at the 700 m location were compared to those at the Control location, 9400 m, in both periods with a chi-square statistic.

Forty-nine taxa were present at least 50% of the time at any one sampling location in both Before and After periods. Of these, 15 increased in relative frequency ($p<0.05$) at Impact from Before to After periods. These include six taxa which were less frequent at Impact than at Control in the Before, but equally frequent in the After. In contrast, no taxa were less frequent near SONGS in the After period. Statistically significant differences in the frequency of occurrence were not detected in the remaining 33 taxa that met the occurrence criterion in both periods. The observed changes in frequency of occurrence all 85 taxa are summarized in Table 16.

Fifteen taxa met the occurrence criterion only in the Before period. Of these taxa, only one showed a significant change in frequency of occurrence. *Campylaspis rubromaculatus* was more frequently found at Impact than at Control in the Before but not so in the After period. This change suggests that its occurrence was adversely affected by SONGS.

Twenty-one taxa met the occurrence criterion in the After period only (Table 16). Of these, three taxa, *Munnogonium tillerae, Podakeopsis brevipalpa,* and unidentified juvenile ophiuroids, increased in relative frequency of occurrence at Impact and one, *Spiophanes bombyx*, decreased. A second species, *Caprella angusta,* was less frequently found at Impact than at Control in the After period, but because it did not occur at any location in the Before period, it is not possible to determine if the After distribution is effected by SONGS. Statistically significant differences in

the frequency of occurrence were not detected in the remaining 16 After taxa.

When all changes are summed, 18 taxa increased at Impact relative to Control and two decreased. Statistically significant changes were not detected in the remaining 65 taxa.

These changes in frequency of occurrence at the 18 meter depth corroborate other patterns of change in the species assemblage. As presented above, the number of taxa per core was significantly higher at Impact in the After period. Furthermore, tests of abundance changes among the various TM groups and combined taxa, which incorporate the changes of the species discussed in this section, also indicate that there has been a general increase in the abundance and occurrence of many species of the benthos at this location. It also appears that those taxa which have been adversely effected by the plant at this depth constitute a relatively small portion of the species assemblage.

4.0 DISCUSSION

The results of the study indicate that the abundances of a number of species and groups of soft-substrate invertebrates have changed in the vicinity of SONGS since the generating station began operating. Changes have occurred at the eight meter depth to 3350 meters downcoast of SONGS and at the 18 meter depth to, perhaps, 6700 meters away from SONGS.

At a depth of 18 meters, there was a general increase in abundance of the benthos in the Impact area relative to Control. Six of seven species that showed significant relative changes in abundance in the Impact area increased in density. All but one of the significant changes in mean abundance among the TM groups were increases in the Impact area. The number of species per core was significantly higher at Impact and the number of species that increased in frequency of occurrence far outnumbered those that decreased. The positive temporal trends in the After deltas, to which there were only two exceptions among taxa and TM groups, suggest also that the benthos in the Impact area was continuing to increase in abundance relative to Control at the end of the sampling period. These trends suggest that further effects might continue to accrue as the plant continues to operate.

The observed changes in the abundances of individual species and trophic-motility groups at eight meters were different from those seen at 18 meters. Unlike the almost uniform increases in mean deltas seen at the greater depth, both relative increases and decreases in mean density occurred at eight meters. However, it is interesting to note that, with the exception of increases in one species (*Prionospio pygmaea*) and one TM group (*"other" surface motile carnivore-omnivores*), all of the

significant change detected among taxa and TM groups at the 700 and 1100 meter locations were decreases, and all significant changes detected 1900 and 3350 meters downcoast were increases.

Like the pattern seen at 18 meters, most of the trends in the After deltas among taxa and TM groups at eight meters were positive. Interestingly, positive trends were seen in a number of TM groups that declined in relative mean abundance from the Before to the After period near SONGS. The declines from Before to After appear to result from a change in the environment occurring at the beginning of the After period when the Impact abundances were less than those at Control. Thus, while the Impact values generally increased relative to Control throughout the After period, the differences which occurred during the early portion of the After period were enough to result in a decline when averaged over the entire period. It appears, therefore, that following an initial decline in the vicinity of the plant, members of the benthos responded to the operation of the plant by increasing in abundance relative to Control.

The most likely explanation for the positive trends in deltas through time and for the overall mean increases seen at the deeper sampling stations is that SONGS is increasing the amount of food material available to the benthos. The circulating water system of the generating stations withdraws and kill large amounts of planktonic organisms. For example, we estimate that approximately three tons of zooplankton alone are withdrawn daily by SONGS (MRC Interim Technical Report 4: Plankton). Other sources of detrital material made available to the benthos in this manner would include phytoplankton, large gelatinous zooplankton, drifting macroalgae, and mysids. All of these sources would increase the amount of material that could be made available to the benthos. We did not find that the presence of

detrital material accounted for a large degree of the variability in abundance data, but various measures of organic content of the sediments were the parameters most often significantly correlated with abundance, particularly at 18 meters.

The information gained concerning the interaction of the discharge flow and ambient currents corroborates the stronger results seen at the deeper location (Final Report L: Physical and Chemical Oceanography). The discharge flow is generally directed offshore and, therefore, material settling to the bottom would be expected to be more abundant in deeper water than in shallow water. Furthermore, the sorting of these particulates by normal oceanographic processes (wave action, etc.) would tend to move smaller particles into deeper water and therefore, it is likely that the deeper benthos would be most likely to receive it. Results of a study of seston flux (Technical Report K: Giant Kelp) indicated an increase within the Impact area in the After period in an area of kelp bed near the diffusers in water approximately 15 meters deep. The observation corroborates the argument of increasing food material available to the benthos.

While the temporal trends of increasing abundances at Impact relative to Control observed at the eight meter depth could also result from the influx of additional food, the reasons for the low abundances observed at Impact (relative to Control) during the early part of the After period are less well understood. One event that did occur in the Impact area and not at Control early in the After period (December, 1984-January, 1985) was the release into the wave zone of the sand held in the construction laydown pad. This large amount of unconsolidated material was moved offshore by wave action and there is evidence that various size fractions of the material moved through the Impact area in the months following its release (Technical Report L: Physical and Chemical Oceanography). This influx of new

sedimentary material into the Impact area may have resulted in a temporary decline in the resident benthos, and as the material was sorted and moved out of the area the benthic populations began to recover.

The distance to which effects of the generating station were detected was also consistent between the two depths. Changes in abundance were observed approximately 3.5 kilometers downcoast of SONGS at both depths. Furthermore, changes appear in more groups, particularly at the 18 meter depth, nearer the diffuser. This pattern suggests that the effects of SONGS form a gradient of decreasing strength with increasing distance. This gradient is supported by the fact that, while changes were observed at the stations 3.5 km downcoast, only a few were observed at the next location downcoast, the 6700 meter station. The strongest evidence for an effect of SONGS extending to the distant location concerns two small trophic-motility groups which when combined account for approximately 7% of the total abundance of the benthos at the 18 meter depth. These groups, *surface discrete suspension-deposit feeding molluscs* and *all surface sessile suspension feeders*, increased in abundance at all locations within the Impact area. The evidence that all crustaceans combined, the only group at the eight meter depth that appeared to have changed to a distance of 6700 meters, does not implicate SONGS as strongly because, while abundance changes (increases) were observed at the distant Impact locations, they did not occur at the two sites closest to SONGS.

The finding that SONGS alters the local biota to a distance of at least three kilometers is consistent with results seen in other aspects of the MRC program. Relative decreases in midwater fish have been detected to approximately 3 km downcoast of the generating station (Interim Technical Report 3: Midwater and Bottom Fish). Effects on kelp bed invertebrates (Technical Report I: Kelp Bed

Invertebrates), kelp bed fish (Technical Report J: Kelp Bed Fishes), and young stages of the giant kelp (Technical Report K:Giant Kelp) have been observed in the downcoast portions of the San Onofre kelp forest, approximately 2 km downcoast of the plant.

Perhaps the results from other MRC studies that tie most closely to the results seen in the soft benthos are those from the study of mysid shrimps (Technical Report G: Mysids) and bottom fish (Interim Technical Report 3: Midwater and Bottom Fish). Mysids, which are also associated with soft sediments in the study area, also increased in relative abundance in the Impact area. Two of the nine species tested for abundance change exhibited significant ($p < 0.05$) changes and six of the remaining seven suggested an increase in the Impact relative to the Control. These effects were also seen from 2 to 3 km downcoast of the generating station.

The other major group of animals associated with soft sediments studied by the MRC was the assemblage of fish found living on or immediately above the bottom. In general, this group also increased in abundance in the Impact area relative to Control. Not only did more species increase than decrease, the total aggregate biomass of these fish increased significantly. It is possible that these increases in fish are due, in part, to the increases in the benthic invertebrates that certainly are a food source for the fish.

Several results of the study of the soft benthos are difficult to explain. In general, the subsurface feeding forms were affected at only the two nearer Impact locations (700 m and 1100 m). This was particularly true at 18 meters. However, effects on surface feeding organisms were found throughout the Impact area, out to as far as 3350 meters from the plant. It is not clear why the effects on these two

groups would extend to different distances. Perhaps surface forms can feed on finer materials that are more likely to be prevalent at greater distances than larger particulate material.

Perhaps the most puzzling results of the study are those where the significant abundance changes that occurred at the more distant Impact locations were very different from the indicated changes, whether significant or not, observed closer to SONGS. These results were uncommon. At 8 meters, *Acesta catherinae*, the pooled taxon *all crustacea*, and the TM group, *subsurface motile deposit feeding paraonid polychaetes* increased relative to Control at either the 1900 or 3350 meters Impact locations. However, the indicated change in abundance at the 700 and 1100 meter locations were declines (or small increases), although these changes were not statistically significant. A similar pattern was seen at the 18 meter depth in *Euphilomedes carcharodonta*. The reverse pattern was seen in *Tauberia gracilis* at the 18 m depth. In this case, there were increases at 700 and 1100 meters downcoast and a significant decrease 3350 meters downcoast. While it is possible that these patterns result from SONGS' operation, perhaps they result from interactions with other groups of organisms more directly affected, assigning the results to SONGS must be done cautiously. Another pattern difficult to explain in terms of SONGS operation is that of the TM group *surface motile carnivore-omnivore polychaetes* at the eight meter depth. This group displayed a significant relative decline at the 1100 meter station and significant increase at 1900 meters, the next location downcoast.

Other results that appear puzzling concern biomass. At the 18 meter depth, in spite of the indicated relative increases in the numbers of organisms in the Impact area, an increase in aggregate biomass was not observed. Several factors may account for this. Turnover rates among the benthic species may be such that an

accumulation of the produced biomass may take longer to appear (there was a positive trend in the After period in crustacean biomass). Another factor that may be involved is simply the relatively greater degree of variability that occurs in measures of biomass due to the wide range in size and abundance of the various component organisms. The importance of this last factor is suggested by the very low power associated with the tests for changes biomass.

The effects on biomass at the eight meter depth are even more perplexing. Biomass appeared to decline in the Impact area in the After period and this corresponds to decreases seen in abundances. However, there were also significant negative trends in several categories of biomass, and these contradict the predominantly positive trends in the After deltas in density.

There are a number of distinctions that can be made between the results seen at the two depths. In general, consistent results are seen among the various taxa and groups at 18 meters. These results indicate that, as predicted, the abundance of the invertebrates in the soft sediment in the Impact area has increased relative to Control. The mechanism most likely responsible is, again as predicted, the shunting of planktonic organics via the circulating water system to the benthos. While we do not find strong corroborative evidence of this enrichment in the physical/chemical measurements, the patterns seem stronger at this depth than at the shallow one. Furthermore, results of other MRC studies corroborate these patterns and even suggest that the increase in the benthos may indeed result in increased populations of benthic feeding fish.

The effects seen among the taxa and groups at the eight meter depth were not entirely consistent with those at 18 meters. Many factors may contribute to the

differences. The effects of SONGS discharge may not be as strong in shallow water. Enrichment of the benthos via the discharge mechanism was not expected in shallow water, although the general positive trends in the After deltas suggest that some enrichment may be occurring. The fauna of the shallow water are subject to more physical disturbances, wave action, sand movement, etc., and SONGS may have affected these processes during the early portion of the After period, particularly by the release of the sand laydown pad. This would most likely have resulted in adverse effects on certain portions of the fauna. The localized (generally within 1100 meters of SONGS) occurrence of the negative effects is also supportive of this hypothesis as the effects of the sand pad release would be expected to diminish with distance downcoast. The positive trends in the After deltas may, therefore, reflect a recovery from a single, deleterious event that may be occurring independent of any additional food coming from SONGS.

All of the changes in the soft bottom benthos associated with SONGS operation were detected against a background of naturally occurring changes in populations found throughout the study area. Some of these changes were probably associated with the El Nino of 1982-1984. It is expected that such changes will occur in the future as local populations fluctuate in response to various physical and biological factors that, too, vary with time. It is also likely that the future effects of SONGS on the local benthos will remain quantitatively the same as during the sampling period. While it is unknown if, or for how long, plant operation will continue to augment the benthos (particularly at 18 meters) such that further increases in the benthos occur, food material will continue to be shunted from the plankton to the benthos and the benthos, whose species composition may change in response to larger-scale events, will continue to utilize it.

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6.0 TABLES

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6.0 TABLES

Table 1

Summary results of the tests for changes in abundance among individual taxa at the eight meter depth. Complete results are presented in Appendix F.

p= alpha level of the multivariate test. Relative % changes are derived from comparing each individual Impact location to the Control.

TAXA	SAMPLING LOCATIONS (M DOWNCOAST FROM SONGS)				
	700	1100	1900	3350	P
Acesta catherinae	-16	-16	26	43*	<0.01
Amastigos acutus					
Diastyolpsis tenuis					
Jassa falcata					
Nematode spp.					
Prionosopio pygmaea	153*	-23	61	23	<0.01[1]
Rhepoxynius menziese					

* a BACIP test comparing this location with Control gives a significant ($p<0.05$) period-by-location interaction

[1] significant ($p<0.05$) trend in Before deltas, see text for discussion

Table 2

Summary results of the test for trends in the deltas (Impact - Control) among individual taxa at the 8 meter depth during the operational period. Complete results are presented in Appendix G. See text for details.

TAXA	DIRECTION OF TREND	RESULTS OF TEST FOR TREND
Acesta catherinae	+	0.02
Amastigos acutus		
Diastylopsis tenuis		
Jassa falcata		
Nematodes spp.	+	<0.01
Prionospio pygmaea	+	<0.01[1]
Rhepoxynius menziese	-	0.02[2]

[1] Significant negative trend in Before deltas differs ($p<0.05$) in slope from positive trend in After deltas

[2] Significant positive trend in Before deltas differs ($p<0.05$) in slope from negative trend in After deltas

Table 3
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Summary results of the tests for changes in abundance among the trophic motility groups at the 8 meter depth. No entry means p level of the period-by-location interaction in the multivariate test was >0.05. Complete results are presented in Appendix F.

p= alpha level of the period-by-location interaction in the multivariate test. Relative % changes are derived from comparing each individual Impact location to the Control. Taxa: all = all taxa combined; c = crustaceans; m = mollusca; o = other; p = polychaetes; cap = capittelid polychaetes; para = paraonid polychaetes. Trophic motility groups: sub = subsurface feeding; surf = surface feeding; cdm = motile carnivore/deposit feeders; cod = discrete carnivore-omnivore feeders; com = motile carnivore-omnivore feeders; dfm = motile deposit feeders; dfd = discrete deposit feeders; dfs = sessile deposit feeders; odm = motile omnivore/deposit feeder; sdd = discrete suspension-deposit feeder; sdm = motile suspension-deposit feeders; sds = sessile suspension deposit feeder; sus = sessile suspension feeder; combined = all TM groups combined.

Trophic Motility Group	Taxa	Station (m Downcoast from SONGS) 700	1100	1900	3350	P
Combined	all	-35*	-31*	2	-6	<0.01
Combined	c	-4	-8	45*	37*	0.02
Combined	m					
Combined	p	-49*	-27	-17	-6	<0.01
sub	all					
sub cdm	all					
sub dfm	all					
sub dfm	para	3	-6	46*	43*	0.01
sub dfm	cap					
surf	all	-38*	-38*	-5	-8	<0.01
surf cod	all	-32*	-6	9	-21	0.03
surf com	all					
surf com	m					
surf com	o	17	50*	52*	-1	<0.01
surf com	p	0	-22*	29*	18	<0.01
surf dfd	all					
surf dfm	all					

Table 3
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Trophic Motility Group	Taxa	Station (m Downcoast from SONGS) 700	1100	1900	3350	P
surf odm	all	-28*	-34*	-11	11	0.03
surf sdd	all	-44*	-32	-27	-24	0.01
sus sessile	all					

* a BACIP test comparing this location with Control gives a significant ($p < 0.05$) period-by-location interaction

Table 4
page 1 of 2

Summary results of the test for trends in the deltas (Impact - Control) among trophic motility (TM) groups at the 8 meter depth during the operational period. See Appendix G for complete results. See text for details.

Taxa: all = all taxa combined; c = crustaceans; m = mollusca; p = polychaetes; cap = capittelid polychaetes; para = paraonid polychaetes. Trophic motility groups: sub = subsurface dwelling; surf = surface dwelling; cdm = motile carnivore/deposit feeders; cod = discrete carnivore-omnivore feeders; com = motile carnivore-omnivore feeders; dfm = motile deposit feeders; dfd = discrete deposit feeders; dfs = sessile deposit feeders; odm = motile omnivore/deposit feeder; sdd = discrete suspension-deposit feeder; sus = sessile suspension feeder; combined = all TM groups combined.

TROPHIC MOTILITY GROUP	TAXA	DIRECTION OF TREND	RESULTS OF TEST FOR TREND
Combined	all	+	<0.01
Combined	c		
Combined	m		
Combined	p	+	<0.01
sub	all	+	<0.01
sub cdm	all	+	0.01[1]
sub dfm	all	+	<0.01
sub dfm	para	+	0.01
sub dfm	cap		
surf	all	+	0.04
surf cod	all	+	0.04
surf com	all		
surf com	m	+	<0.01
surf com	o		
surf com	p		

Table 4
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TROPHIC MOTILITY GROUP	TAXA	DIRECTION OF TREND	RESULTS OF TEST FOR TREND
surf dfd	all		
surf dfm	all	-	0.05
surf odm	all	-/+[2]	see footnote [2]
surf sdd	all		
sus sessile	all		

[1] Significant trend in Before deltas differs ($p<0.05$) in intercept from trend in After deltas

[2] Trend was negative at the 700 m ($p<0.01$) and 1100 m ($p=0.05$) stations, positive at the 1900 m station ($p=0.01$).

Table 5

Summary results of the tests for changes in biomass at the eight meter depth. See Appendix F for complete results.

p = alpha level of the multivariate test. Relative % change is derived from a comparison of each individual Impact location to the Control.

TAXA	STATION (M DOWNCOAST FRON SONGS) 700	1100	1900	3350	P
Total biomass					
Crustacean biomass					
Mollusc biomass					
Polychaete biomass	-21*	-4	-15*	18	0.02

* a BACIP test comparing this location with Control gives a significant ($p<0.05$) period-by-location interaction

Table 6

Summary results of the tests for changes in number of taxa per sample at 8 meter and 18 meter depths.

p = alpha level of the multivariate test. Relative % change is derived from a comparison of each individual Impact location to the Control.

TAXA	STATION (M DOWNCOAST FRON SONGS) 700	1100	1900	3350	P
8 meter depth					
Taxa per sample	-6	-6	11	-4	0.15
18 meter depht					
Taxa per sample	27*	14	4	6	<0.01

* a BACIP test comparing this location with Control gives a significant ($p<0.05$) period-by-location interaction

Table 7

Summary results of the tests for changes in abundance among individual taxa at the 18 meter depth. See Appendix F for complete results.

p = alpha level of the multivariate test. Relative % changes derived from comparing the individual Impact location to the Control.

TAXA	STATION (M DOWNCOAST FROM SONGS) 700	1100	1900	3200	P
Acesta catherinae	78*	22	-4	-13	0.02
Aricidea wassi	36	35	-8	-21	0.011
Euphilomedes carcharodonta	7	-7	33*	31*	0.01
Jassa falcata	-68*	4	-13	83	0.01
Leptocheila dubia					
Mediomastus californiensis	133*	59*	21	13	<0.01
Nematode spp.	112*	40	24	6	<0.01
Paraprionospio pinnata					
Parasterope hulingsi					
Prionospio pygmaea					
Rhepoxynius sp. juv.					
Rhepoxynius stenodes					
Rutiderma rostrata	50*	106*	-20	21	<0.01
Synchelidium shoemakeri					
Tauberia gracilis	445*	128*	-16	-24*	<0.01
Tellina modesta					

* a BACIP test comparing this location with Control gives a significant ($p<0.05$) period-by-location interaction

[1] significant ($p<0.05$) trend in Before deltas, see text for discussion

Table 8

Summary results of the test for trends in the deltas (Impact - Control) among individual taxa at the 18 meter depth during the operational period. See Appendix G for complete results. See text for details.

TAXA	DIRECTION OF TREND	RESULTS OF TEST FOR TREND
Acesta catherinae	+	<0.01 at all but 3350
Aricidea wassi	+	<0.01[1]
Euphilomedes carcharodonta		
Jassa falcata		
Leptocheila dubia	+	<0.01[2]
Mediomastus californiensis		
Nematodes spp.	+	<0.01
Paraprionospio pinnata		
Parasterope hulingsi		
Prionospio pygmaea		
Rhepoxynius sp. juv.		
Rhepoxynius stenodes	+	<0.01
Rutiderma rostrata	+	<0.01
Synchelidium shoemakeri	-	0.01
Tauberia gracilis	+	<0.01
Tellina modesta		

[1] Significant positive trend in Before deltas has a smaller slope ($p<0.05$) than the positive trend in After deltas and also differs ($p<0.05$) in intercept from the trend in After deltas

[2] Significant postive trend in Before deltas at 700 m and 1100 m only.

Table 9
page 1 of 2

Summary results of the tests for changes in abundance among the TM groups at the eighteen meter depth. See Appendix F for complete results.

p= alpha level of the multivariate test. Relative % changes are derived from comparing each individual Impact location to the Control. Taxa: all = all taxa combined; c = crustaceans; m = mollusca; o = other; p = polychaetes; cap = capittelid polychaetes; para = paraonid polychaetes. Trophic motility groups: sub = subsurface dwelling; surf = surface dwelling; cdm = motile carnivore/deposit feeders; cod = discrete carnivor/omnivores; com = motile carnivore-omnivore feeders; dfm = motile deposit feeders; dfd = discrete deposit feeders; dfs = sessile deposit feeders; odd = discrete omnivore/deposit feeders; odm = motile omnivore/deposit feeders; sdd = discrete suspension-deposit feeder; sdm = motile suspension-deposit feeders; sds = sessile suspension deposit feeder; sus = sessile suspension feeder; combined = all TM groups combined.

TROPHIC MOTILITY GROUP	TAXA	STATION (M DOWNCOAST FROM SONGS) 700	1100	1900	3350	P
Combined	all	56*	35*	6	22*	<0.01
Combined	c	33*	50*	27*	79*	<0.01
Combined	m	42*	71*	23	18	0.01
Combined	p	102*	46*	8	6	<0.01
sub	all	133*	61*	-1	-9	<0.01
sub cdm	all	25	38*	-11	-18	<0.01[1]
sub dfm	all	159*	58*	-4	-6*	<0.01[1]
sub dfm	para	215*	42*	-20	-29*	<0.01
sub dfm	cap	122*	54*	13	12	<0.01
surf	all	27	34*	21	46*	0.01
surf cod	all	24	-4	-18	-17	0.01
surf cod	o					
surf cod	p	61*	15	1	0	<0.01
surf com	all	20	57*	0*	18	0.04
surf com	m	24	46*	32*	-11	0.01
surf com	o					
surf com	p					
surf dfd	all	62*	59*	11	20	<0.01
surf dfd	p	56*	45*	-5	21	<0.01

Table 9
page 2 of 2

TROPHIC MOTILITY GROUP	TAXA	STATION (M DOWNCOAST FROM SONGS) 700	1100	1900	3350	P
surf dfm	all					
surf dfm	c					
surf dfs	all					
surf odd	all					
surf odm	all	23	53*	34*	64*	0.01
surf sdd	all	30	35*	67*	60*	<0.01
surf sdd	c	48	63*	79*	54*	<0.01
surf sdd	m	28	57*	29*	41*	0.03
surf sdd	p	44	15	83*	83*	<0.01
surf sdm	all					
surf sds	all	65*	43	32	100*	<0.01
sus sessile	all					
sus sessile	m					
sus sessile	p					

* a BACIP test comparing this location with Control gives a significant ($p<0.05$) period-by-location interaction

[1] significant ($p<0.05$) trend in Before deltas, see text for discussion

Table 10
page 1 of 2

Summary results of the test for trends in the deltas (Impact - Control) among trophic motility (TM) groups at the 18 meter depth during the operational period. See text for details. See Appendix G for complete results.

Taxa: all = all taxa combined; c = crustaceans; m = mollusca; p = polychaetes; cap = capittelid polychaetes; para = paraonid polychaetes; o = other. Trophic motility groups: sub = subsurface dwelling; surf = surface dwelling; cdm = motile carnivore/deposit feeders; cod = discrete carnivore-omnivore feeders; com = motile carnivore-omnivore feeders; dfm = motile deposit feeders; dfd = discrete deposit feeders; dfs = sessile deposit feeders; odd = discrete omnivore/deposit feeders; odm = motile omnivore/deposit feeders; sdd = discrete suspension-deposit feeder; sdm = motile suspension-deposit feeders; sds = sessile suspension deposit feeder; sus = sessile suspension feeder; combined = all TM groups combined.

TROPHIC MOTILITY GROUP	TAXA	DIRECTION OF TREND	RESULTS OF TEST FOR TREND
Combined	all	+	<0.01
Combined	c	+	<0.01
Combined	m		
Combined	p	+	<0.01
sub	all	+	<0.01
sub cdm	all	+	<0.01[12]
sub dfm	all	+	<0.01[2]
sub dfm	para	+	<0.01
sub dfm	cap		
surf	all	+	<0.01
surf cod	all	+	<0.01
surf cod	o		
surf cod	p		
surf com	all	+	0.01
surf com	m		
surf com	o	+	<0.01
surf com	p	+	<0.01
surf dfd	all		
surf dfd	p		

Table 10
page 2 of 2

TROPHIC MOTILITY GROUP	TAXA	DIRECTION OF TREND	RESULTS OF TEST FOR TREND
surf dfm	all		
surf dfm	c		
surf dfs	all	-	<0.01
surf odd	all	+	<0.01
surf odm	all	+	<0.01 at 3350 only
surf sdd	all	+	<0.01
surf sdd	c	+	<0.01
surf sdd	m		
surf sdd	p		
surf sdm	all		
surf sds	all		
sus	all	+	<0.01
sus	m		
sus	p	+	<0.01

[1] Significant trend in Before deltas differs ($p<0.05$) in slope from trend in After deltas. The slope was negative in the Before period and positive in the After.

[2] Significant trend in Before deltas differs ($p<0.05$) in intercept from trend in After deltas

Table 11

Summary results of the tests for changes in abundance among individual taxa and TM groups at the 8 and 18 meter depth when five Impact locations are tested against the far Control station.

p = alpha level of the multivariate test. Relative % change derived from a BACIP analysis comparing the individual Impact location to the Control. TM group abbreviations are explained in the legend to Table 8.

TAXON OR GROUP		STATION (M DOWNCOAST FROM SONGS) 700	1100	1900	3200/ 3350	6700	P
Eight meter depth							
Individual taxa							
Acesta catherinae		-33*	-33*	-1	13	-23	<0.01
TM groups							
Combined	c	30	25	96*	86*	49*	0.01
sub dfm	para	-14	-22	21	19	-19	0.01
Eighteen meter depth							
Individual taxa							
Euphilomedes carcharodonta		-7	-20	15	13	24	<0.01
Tauberia gracilis		284*	60*	-40	-46*	-49*	<0.01
TM Groups							
Combined	all	48*	28*	1	15	-6	<0.01
Combined	c	24	40	19	68*	-1	0.01
sub dfm	para	132*	5	-41*	-48*	-42*	0.01

Table 11
page 2 of 2

TAXON OR GROUP		STATION (M DOWNCOAST FROM SONGS) 700	1100	1900	3200/ 3350	6700	P
surf	all	22	28	16	39*	2	0.10
surf odm	all	29	60*	40*	71*	14	0.02
surf sdd	all	24	29	59*	52*	-2	0.01
surf sdd	c	28	41	54*	33*	-4	0.05
surf sdd	m	57*	93*	57*	73*	74*	0.02
surf sdd	p	18	-5	50*	50*	-22	0.01
surf sds	all	82*	58*	45*	121*	30*	<0.01

* a BACIP test comparing this location with Control gives a significant ($p<0.05$) period-by-location interaction

Table 12

Frequency with which physical/chemical variables correlate significantly ($p < 0.050$) with abundance.

P/C VARIABLE	TM GROUPS		TAXA		BIOMASS	
	8M	18M	8M	18M	8M	18M
Skewness	12%	58%	14%	38%	0%	40%
Dispersion	15	15	0	38	0	0
$CaCO_3$	4	23	0	6	0	0
Chlorophyll	15	65	14	38	20	80
C/N ratio	0	8	0	6	0	0
Cloro/Phaeo	8	5	0	0	0	0
Mean grain size	12	18	15	25	0	20
% Coarse sand	0	5	14	19	0	0
% Silt-Clay	8	15	0	31	0	20
% Inorganic Particulates	0	18	14	13	20	20
% Marine Macrophyte	4	0	0	6	0	0
% New Terrestrial	0	0	0	0	0	0
% Old Terrestrial	0	25	14	44	20	0
Median Phi	8	18	14	25	0	20
Organic N	0	13	0	0	0	0
Organic Carbon	12	30	14	38	20	20
Phaeopigment	15	53	0	38	0	20

Table 13

Median and maximum coefficients of determination.

	MEDIAN	MAXIMUM
TM 8 M	0.04	0.45
TM 18 M	0.07	0.81
Taxa 8 M	0.06	0.12
Taxa 18 M	0.07	0.34
Biomass 8 M	0.05	0.07
Biomass 18 M	0.05	0.06

Table 14

Frequency of coefficients of determination falling within specified ranges

	0-0.05	0.05-0.1	0.1-0.2	0.2-0.3	0.3-0.4	0.4-0.5	>0.5
TM 8 M	69.0	24.0	3.5	0	0	3.5	0
TM 18 M	25.5	41.8	24.8	2.5	1.8	1.8	1.8
Taxa 8 M	57.1	28.6	14.3	0	0	0	0
Taxa 18 M	31.0	43.1	24.1	1.7	0	0	0
Biomass 8 M	50.0	50.0	0	0	0	0	0
Biomass 18 M	30.8	69.0	0	0	0	0	0

Table 15
page 1 of 2

Results of tests on differences in frequency of occurrence at the 700 meter location (Impact = I) and the 9400 meter location (Control = C) at the 8 meter depth. Taxa listed are those which occurred at least 50% of the time at any sampling location in the Before (B), After (A), or both (BA) periods. (-) indicates taxon was not present during that period. I>C indicates frequency of occurrence greater ($P<0.05$) at Impact than Control. I<C indicates frequency of occurrence less ($P<0.05$) at Impact than Control. I=C indicates frequency of occurrence not significantly different.

	PERIOD(S) OF OCCURRENCE	BEFORE COMPARISON	AFTER COMPARISON
Polychaetes			
Acesta catherinae	*BA*	*I=C*	*I=C*
Amastigos acutus	*BA*	*I=C*	*I=C*
Goniada littorea	*BA*	*I=C*	*I<C*
Magelona sacculata	*A*	*I=C*	*I=C*
Mediomastus californiensis/ambiseta	*BA*	*I=C*	*I=C*
Nepthys sp.	*BA*	*I=C*	*I=C*
Owenia collaris	*B*	*I=C*	*I=C*
Paraonella platybranchiata	*A*	*I=C*	*I>C*
Pectinaria californiensis	*BA*	*I=C*	*I>C*
Prionospio cirrifera	*A*	-	*I=C*
Prionospio pygmaea	*BA*	*I=C*	*I=C*
Scoloplos armiger	*A*	*I=C*	*I=C*
Spiophanes bombyx	*BA*	*I=C*	*I=C*
Thalenessa spinosa	*BA*	*I=C*	*I=C*
Typosyllis hyalina	*B*	*I=C*	*I<C*
Crustaceans			
Ampelisca agassizi	*A*	*I=C*	*I>C*
Ancinus granulatus	*B*	*I=C*	*I=C*
Atylus tridens	*A*	*I=C*	*I>C*
Camplylaspis sp. C	*B*	*I=C*	*I=C*
Diastylopsis tenuis	*BA*	*I=C*	*I=C*
Edotea sublittoralis	*B*	*I=C*	*I=C*
Eohuastorius washingtonianus	*A*	*I=C*	*I=C*
Euphilomedes longiseta	*BA*	*I=C*	*I=C*
Gibberosus myersi	*B*	*I=C*	*I=C*
Jassa falcata	*BA*	*I=C*	*I=C*
Leptocuma forsmani	*BA*	*I=C*	*I=C*
Monoculodes hartmanae	*BA*	*I=C*	*I=C*
Nymphon cf. heterodenticulatum	*BA*	*I=C*	*I>C*
Parasterope hulingsi	*B*	*I=C*	*I=C*

Table 15
page 2 of 2

	PERIOD(S) OF OCCURRENCE	BEFORE COMPARISON	AFTER COMPARISON
Crustaceans (continued)			
Photis californica	*B*	*I=C*	*I=C*
Rhepoxynius abronius	*A*	*I=C*	*I=C*
Rhepoxynius menziese	*BA*	*I=C*	*I=C*
Rhepoxynius spp. juveniles	*BA*	*I=C*	*I=C*
Rhepoxynius sp. A	*BA*	*I=C*	*I=C*
Synchelidium shoemakeri	*BA*	*I=C*	*I>C*
Tiron tropakis	*B*	*I=C*	*I=C*
Molluscs			
Astenothaerus villosior	*B*	*I=C*	*I=C*
Olivella baetica	*B*	*I=C*	*I=C*
Solen rosaceus	*A*	-	*I=C*
Tellina modesta	*BA*	*I=C*	*I<C*
Others			
Dendraster excentricus	*A*	*I=C*	*I>C*
Nematodes spp.	*BA*	*I=C*	*I=C*
Nemertina unid.	*BA*	*I=C*	*I=C*
Paranemertes sp. A	*BA*	*I=C*	*I=C*
Tubulanidae sp. B	*B*	*I=C*	*I=C*
Zygeupolia sp.	*B*	*I=C*	*I=C*

Table 16
page 1 of 3

Results of tests on differences in frequency of occurrence at the 700 meter location (Impact) and the 9400 meter location (Control) at the 18 meter depth. Taxa listed are those which occurred at least 50% of the time at any sampling location in the Before (B), After (A), or both (BA) periods. (-) indicates taxon was not present during that period. Chi-square values associated with the significant test results are given.

	PERIOD(S) OF OCCURRENCE	BEFORE COMPARISON	AFTER COMPARISON
Polychaetes			
Acesta catherinae	*BA*	*I=C*	*I=C*
Anotomastus gordiodes	*BA*	*I=C*	*I=C*
Aricidea wassi	*BA*	*I=C*	*I>C*
Cirrophorus furcatus	*A*	*I=C*	*I=C*
Chaetozone setosa	*BA*	*I=C*	*I>C*
Cossura cf. candida	*A*	*I=C*	*I=C*
Drilonereis falcata	*B*	*I=C*	*I=C*
Euchone hancocki	*BA*	*I<C*	*I=C*
Glycinda armigera	*BA*	*I=C*	*I=C*
Goniada maculata	*BA*	*I=C*	*I=C*
Harmothoe priops	*B*	*I=C*	*I=C*
Lumbrinereis sp.	*BA*	*I=C*	*I=C*
Lumbrinereis sp. D	*BA*	*I=C*	*I=C*
Maladanidae unid.	*A*	*I=C*	*I=C*
Mediomastus californiensis	*BA*	*I=C*	*I=C*
Nephtys sp.	*B*	*I=C*	*I=C*
Nereis procera	*BA*	*I=C*	*I>C*
Onuphis iridescens	*B*	*I=C*	*I=C*
Owenia collaris	*B*	*I=C*	*I=C*
Paraprionospio pinnata	*BA*	*I>C*	*I>C*
Phyllodoce papillosa	*A*	*I=C*	*I=C*
Phyllodoce hartmanae	*BA*	*I=C*	*I=C*
Pista disjuncta	*BA*	*I=C*	*I<C*
Podakeopsis brevipalpa	*A*	*I=C*	*I>C*
Poecilochaetous johnsoni	*A*	*I=C*	*I=C*
Prionospio cirrifera	*BA*	*I=C*	*I>C*
Prionospio pygmaea	*BA*	*I=C*	*I=C*
Spiophanes bombyx	*A*	*I=C*	*I<C*
Spiophanes missionensis	*A*	*I=C*	*I=C*
Tauberia gracilis	*BA*	*I=C*	*I>C*
Thalenessa spinosa	*BA*	*I=C*	*I=C*
Tharyx sp.	*BA*	*I=C*	*I>C*
Typosyllis hyalina	*BA*	*I=C*	*I=C*

Table 16
page 2 of 3

	Period(s) of Occurrence	Before Comparison	After Comparison
Crustaceans			
Acuminodeutopus heteruropus	*BA*	*I<C*	*I=C*
Ampeliscus agassizi	*BA*	*I<C*	*I>C*
Ampeliscus brevisimulata	*BA*	*I=C*	*I=C*
Ampeliscus cristata	*BA*	*I<C*	*I=C*
Ampeliscus cristata microdentata	*A*	*I=C*	*I=C*
Amphideutopus oculatus	*BA*	*I=C*	*I=C*
Argrissa hamatipes	*BA*	*I=C*	*I=C*
Campylaspis rubromaculatus	*B*	*I>C*	*I=C*
Caprella angusta	*A*	-	*I<C*
Cumella sp. A	*BA*	*I<C*	*I=C*
Cyclaspis sp. C	*A*	*I=C*	*I=C*
Diastylopsis tenuis	*A*	*I=C*	*I=C*
Euphilomedes carcharodonta	*BA*	*I=C*	*I=C*
Foxiphalus golfensis/obtusidens	*A*	*I=C*	*I=C*
Harpacticoids unid.	*BA*	*I=C*	*I=C*
Hemilamprops californica	*BA*	*I=C*	*I=C*
Jassa falcata	*BA*	*I=C*	*I=C*
Leptocheila dubia	*BA*	*I=C*	*I>C*
Meliphisana bola	*B*	*I=C*	*I=C*
Monoculodes hartmanae	*A*	*I=C*	*I=C*
Munnogonium tillerae	*A*	*I=C*	*I>C*
Nebalia pugettensis	*BA*	*I=C*	*I=C*
Oxyurostylis pacificus	*A*	*I=C*	*I=C*
Pachynus barnardi	*A*	*I=C*	*I=C*
Parasterope hulingsi	*BA*	*I=C*	*I>C*
Pinnixia hiatus	*B*	*I=C*	*I=C*
Rhepoxynius daboius	*BA*	*I=C*	*I=C*
Rhepoxynius menziese	*BA*	*I<C*	*I=C*
Rhepoxynius sp. juv.	*BA*	*I=C*	*I=C*
Rhepoxynius stenodes	*BA*	*I=C*	*I=C*
Rhepoxynius variatus	*B*	*I=C*	*I=C*
Rudilemboides stengoropodus	*A*	*I=C*	*I=C*
Rutiderma rostrata	*BA*	*I=C*	*I>C*
Synchelidium shoesmakeri	*BA*	*I=C*	*I=C*

Table 16
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	Period(s) of Occurrence	Before Comparison	After Comparison
Molluscs			
Chione veleronis	*A*	*I=C*	*I=C*
Cooperella subdiaphana	*B*	*I=C*	*I=C*
Macoma yoldiformis	*B*	*I=C*	*I=C*
Mysella tumida	*B*	*I=C*	*I=C*
Nassarius perpinquis	*B*	*I=C*	*I=C*
Olivella baetica	*BA*	*I<C*	*I=C*
Sulcoretusa xystrum	*BA*	*I=C*	*I=C*
Tellina modesta	*BA*	*I=C*	*I=C*
Others			
Edwardsia sp. A	*BA*	*I=C*	*I=C*
Tubulanidae sp. B	*BA*	*I=C*	*I=C*
Tubulanus nothus	*B*	*I=C*	*I=C*
Glottidia albida	*A*	*I=C*	*I=C*
Hemicordates unid.	*BA*	*I=C*	*I=C*
Nematodes spp.	*BA*	*I=C*	*I=C*
Zygeupolis sp.	*B*	*I=C*	*I=C*
Nemertina spp.	*BA*	*I=C*	*I=C*
Paranemertes sp. A	*BA*	*I>C*	*I>C*
Ophiuroidea juv.	*A*	*I=C*	*I>C*

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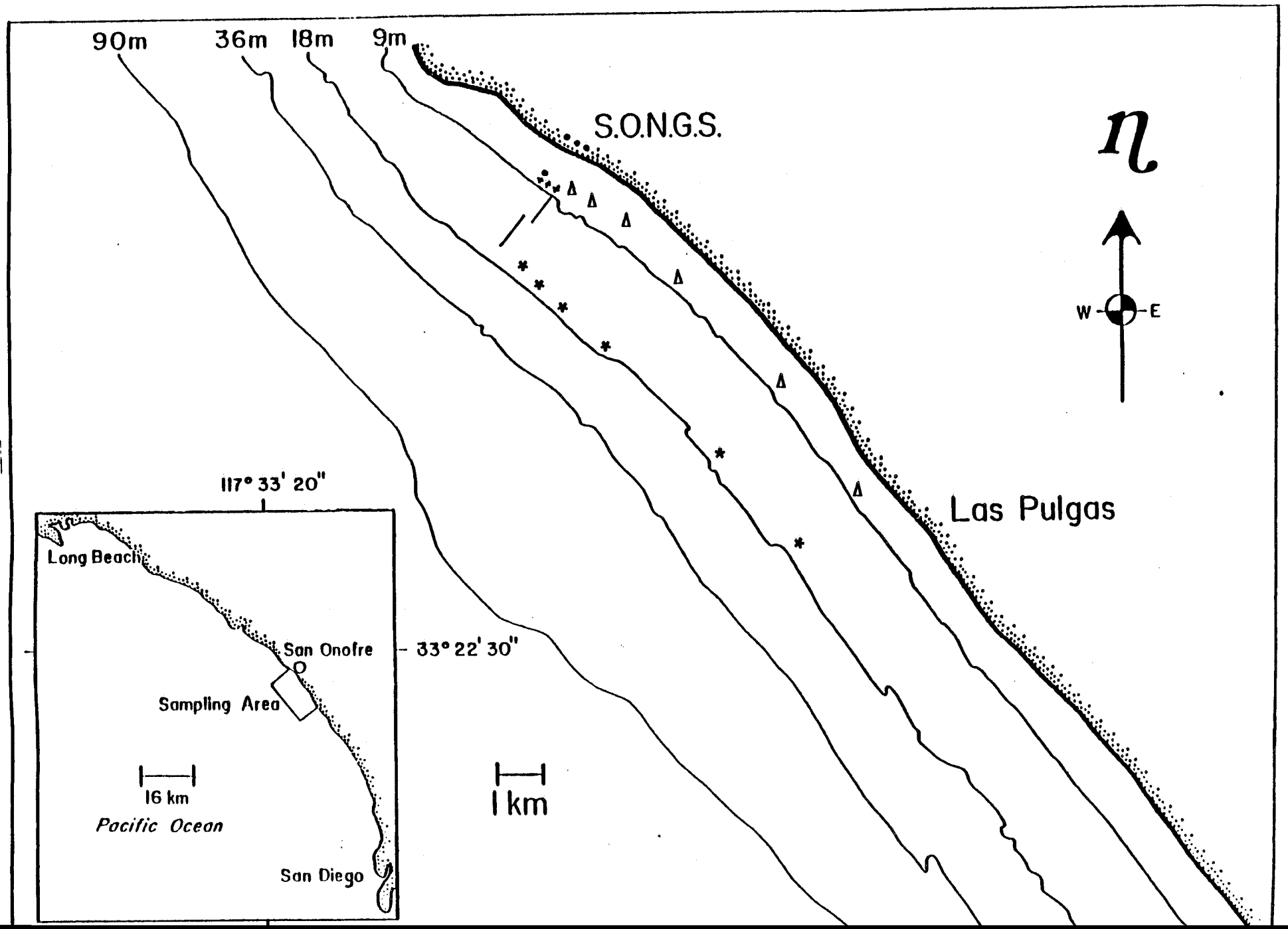
7.0 FIGURES

Figure 1: **Locations of benthic sampling stations. Δ indicates a depth of 8 m. * indicates a depth of 18 m.**


90m
36m
18m
9m
S.O.N.G.S.
n
W
E
Las Pulgas
117° 33' 20"
Long Beach
San Onofre
33° 22' 30"
Sampling Area
16 km
Pacific Ocean
San Diego
1 km

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APPENDICES

APPENDIX A. SURVEY DATES.

14 Nov 1979
04 Dec 1979
27 Dec 1979
04 Feb 1980
20 Mar 1980
07 Apr 1980
25 Apr 1980
20 May 1980
09 Jun 1980 Preoperational Surveys
30 Jun 1980
16 Jul 1980
04 Aug 1980
26 Aug 1980
15 Sep 1980
17 Nov 1980
26 Jun 1981

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20 Jun 1984
19 Sep 1984
04 Dec 1984
24 Jan 1985
25 Feb 1985
21 Mar 1985
19 Apr 1985
20 May 1985
17 Jun 1985
09 Jul 1985
02 Aug 1985
26 Aug 1985
19 Sep 1985
14 Oct 1985
07 Nov 1985 Operational Surveys
05 Dec 1985
30 Dec 1985
23 Jan 1986
20 Feb 1986
21 Mar 1986
15 Apr 1986
08 May 1986
02 Jun 1986
30 Jun 1986
21 Jul 1986
14 Aug 1986
08 Sep 1986
03 Oct 1986
05 Nov 1986
25 Nov 1986
17 Dec 1986

APPENDIX B. THE FREQUENCY OF ZERO ABUNDANCE VALUES OF INDIVIDUAL TAXA, TROPHIC-MOTILITY (TM) GROUPS, AND BIOMASS AT THE SAMPLING LOCATIONS.

Only those taxa and TM groups tested for changes in abundance are listed. Maximum number of surveys in the Before period is 16, maximum in the After is 31.

SOFT BENTHOS NUMBER OF ZERO OBSERVATIONS

DEPTH IS 8 METERS

SPECIES NAME	PERIOD	700 METERS ZEROS	700 METERS %	1100 METERS ZEROS	1100 METERS %	1900 METERS ZEROS	1900 METERS %	3350 METERS ZEROS	3350 METERS %	6700/9400 M ZEROS	6700/9400 M %
Acesta catherinae	PRE-OP	5	31.3	6	37.5	5	31.3	2	12.5	0	0.0
	OP	6	19.4	15	48.4	4	12.9	4	12.9	2	6.5
Amastigos acutus	PRE-OP	1	6.3	4	25.0	3	18.8	2	12.5	4	25.0
	OP	12	38.7	7	22.6	5	16.1	7	22.6	7	22.6
Diastylopsis tenuis	PRE-OP	0	0.0	1	6.3	1	6.3	0	0.0	0	0.0
	OP	2	6.5	2	6.5	1	3.2	2	6.5	0	0.0
Jassa falcata	PRE-OP	8	50.0	8	50.0	7	43.8	7	43.8	6	37.5
	OP	10	32.3	11	35.5	11	35.5	10	32.3	3	9.7
Nematodes unidentified	PRE-OP	5	31.3	9	56.3	7	43.8	7	43.8	4	25.0
	OP	9	29.0	10	32.3	4	12.9	11	35.5	1	3.2
Prionospio pygmaea	PRE-OP	3	18.8	0	0.0	2	12.5	1	6.3	0	0.0
	OP	1	3.2	0	0.0	0	0.0	3	9.7	3	9.7
Rhepoxynius menziese	PRE-OP	3	18.8	6	37.5	4	25.0	3	18.8	3	18.8
	OP	10	32.3	14	45.2	10	32.3	3	9.7	1	3.2

SOFT BENTHOS NUMBER OF ZERO OBSERVATIONS

DEPTH IS 18 METERS

SPECIES NAME	PERIOD	700 METERS ZEROS	%	1100 METERS ZEROS	%	1900 METERS ZEROS	%	3350 METERS ZEROS	%	6700/9400 M ZEROS	%
Acesta catherinae	PRE-OP	4	25.0	1	6.3	1	6.3	2	12.5	0	0.0
	OP	0	0.0	0	0.0	0	0.0	1	3.2	0	0.0
Aricidea wassi	PRE-OP	5	31.3	4	25.0	0	0.0	2	12.5	1	6.3
	OP	2	6.5	0	0.0	1	3.2	2	6.5	3	9.7
Euphilomedes carcharodonta	PRE-OP	6	37.5	2	12.5	7	43.8	6	37.5	0	0.0
	OP	6	19.4	9	29.0	3	9.7	2	6.5	1	3.2
Jassa falcata	PRE-OP	4	25.0	8	50.0	6	37.5	7	43.8	4	25.0
	OP	8	25.8	8	25.8	7	22.6	5	16.1	3	9.7
Leptochelia dubia	PRE-OP	6	37.5	5	31.3	4	25.0	6	37.5	2	12.5
	OP	1	3.2	1	3.2	0	0.0	1	3.2	2	6.5
Mediomastus californiensis/ambiseta	PRE-OP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
	OP	0	0.0	0	0.0	0	0.0	0	0.0	1	3.2
Nematodes unidentified	PRE-OP	4	25.0	4	25.0	4	25.0	3	18.8	2	12.5
	OP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Paraprionospio pinnata	PRE-OP	0	0.0	4	25.0	2	12.5	4	25.0	1	6.3
	OP	1	3.2	3	9.7	4	12.9	6	19.4	2	6.5
Parasterope hulingsi	PRE-OP	6	37.5	7	43.8	5	31.3	7	43.8	5	31.3
	OP	6	19.4	2	6.5	5	16.1	7	22.6	4	12.9
Prionospio pygmaea	PRE-OP	2	12.5	0	0.0	1	6.3	1	6.3	1	6.3
	OP	2	6.5	2	6.5	1	3.2	1	3.2	0	0.0
Rhepoxynius sp. juvenile	PRE-OP	6	37.5	1	6.3	1	6.3	1	6.3	0	0.0
	OP	15	48.4	13	41.9	6	19.4	4	12.9	2	6.5
Rhepoxynius stenodes	PRE-OP	6	37.5	7	43.8	5	31.3	6	37.5	3	18.8
	OP	3	9.7	3	9.7	2	6.5	3	9.7	1	3.2
Rutiderma rostrata	PRE-OP	0	0.0	1	6.3	0	0.0	3	18.8	0	0.0
	OP	0	0.0	1	3.2	4	12.9	11	35.5	10	32.3
Synchelidium shoemakeri	PRE-OP	5	31.3	9	56.3	3	18.8	2	12.5	1	6.3
	OP	4	12.9	4	12.9	2	6.5	1	3.2	1	3.2
Tauberia gracilis	PRE-OP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
	OP	0	0.0	0	0.0	1	3.2	7	22.6	7	22.6
Tellina modesta	PRE-OP	1	6.3	0	0.0	0	0.0	1	6.3	0	0.0
	OP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0

SOFT BENTHOS NUMBER OF ZERO OBSERVATIONS

DEPTH IS 8 METERS

SPECIES GROUP		PERIOD	700 METERS ZEROS	700 METERS %	1100 METERS ZEROS	1100 METERS %	1900 METERS ZEROS	1900 METERS %	3350 METERS ZEROS	3350 METERS %	6700/9400 M ZEROS	6700/9400 M %
COMBINED	All	PRE-OP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
		OP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Surface	All	PRE-OP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
		OP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Subsurface	All	PRE-OP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
		OP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
COMBINED	Crustaceans	PRE-OP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
		OP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
COMBINED	Polychaetes	PRE-OP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
		OP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
COMBINED	Molluscs	PRE-OP	0	0.0	1	6.3	1	6.3	0	0.0	0	0.0
		OP	1	3.2	3	9.7	0	0.0	1	3.2	0	0.0
Subsurface deposit feeder: Motile	All	PRE-OP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
		OP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
	Polychaetes	PRE-OP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
		OP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
	capitellid polychaetes	PRE-OP	1	6.3	3	18.8	2	12.5	2	12.5	1	6.3
		OP	7	22.6	1	3.2	1	3.2	6	19.4	1	3.2
	paraonid polychaetes	PRE-OP	4	25.0	3	18.8	4	25.0	2	12.5	0	0.0
		OP	1	3.2	5	16.1	0	0.0	2	6.5	1	3.2
Subsurface carnivore-deposit: Motile	All	PRE-OP	1	6.3	3	18.8	1	6.3	0	0.0	0	0.0
		OP	6	19.4	9	29.0	3	9.7	4	12.9	2	6.5
	Polychaetes	PRE-OP	1	6.3	3	18.8	1	6.3	0	0.0	0	0.0
		OP	6	19.4	9	29.0	3	9.7	4	12.9	2	6.5
Surface deposit feeder: Discrete	All	PRE-OP	5	31.3	4	25.0	2	12.5	5	31.3	0	0.0
		OP	7	22.6	8	25.8	6	19.4	8	25.8	3	9.7
Surface deposit feeder: Motile	All	PRE-OP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
		OP	0	0.0	1	3.2	1	3.2	0	0.0	0	0.0
	Crustaceans	PRE-OP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
		OP	0	0.0	1	3.2	1	3.2	0	0.0	0	0.0
Surface omnivore-deposit: Motile												

SOFT BENTHOS NUMBER OF ZERO OBSERVATIONS

DEPTH IS 8 METERS

SPECIES GROUP	PERIOD	700 METERS ZEROS	%	1100 METERS ZEROS	%	1900 METERS ZEROS	%	3350 METERS ZEROS	%	6700/9400 M ZEROS	%
All	PRE-OP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
	OP	0	0.0	2	6.5	0	0.0	0	0.0	0	0.0
Crustaceans	PRE-OP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
	OP	0	0.0	2	6.5	0	0.0	0	0.0	0	0.0
Surface suspension-deposit: Discrete											
All	PRE-OP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
	OP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Polychaetes	PRE-OP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
	OP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Suspension feeder: Sessile											
All	PRE-OP	2	12.5	5	31.3	7	43.8	3	18.8	0	0.0
	OP	12	38.7	13	41.9	15	48.4	11	35.5	1	3.2
Surface carnivore-omnivore: Discrete											
All	PRE-OP	0	0.0	1	6.3	2	12.5	0	0.0	0	0.0
	OP	1	3.2	4	12.9	4	12.9	2	6.5	0	0.0
Polychaetes	PRE-OP	0	0.0	2	12.5	8	50.0	2	12.5	1	6.3
	OP	11	35.5	10	32.3	6	19.4	9	29.0	1	3.2
Surface carnivore-omnivore: Motile											
All	PRE-OP	0	0.0	0	0.0	1	6.3	0	0.0	0	0.0
	OP	2	6.5	2	6.5	0	0.0	0	0.0	0	0.0
Molluscs	PRE-OP	3	18.8	4	25.0	7	43.8	4	25.0	3	18.8
	OP	10	32.3	12	38.7	13	41.9	8	25.8	0	0.0
Others	PRE-OP	1	6.3	3	18.8	2	12.5	0	0.0	0	0.0
	OP	6	19.4	4	12.9	5	16.1	10	32.3	1	3.2
Polychaetes	PRE-OP	1	6.3	2	12.5	5	31.3	2	12.5	0	0.0
	OP	4	12.9	13	41.9	4	12.9	4	12.9	1	3.2

SOFT BENTHOS NUMBER OF ZERO OBSERVATIONS

DEPTH IS 18 METERS

SPECIES GROUP	PERIOD	700 METERS ZEROS	%	1100 METERS ZEROS	%	1900 METERS ZEROS	%	3350 METERS ZEROS	%	6700/9400 M ZEROS	%
COMBINED											
All	PRE-OP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
	OP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Surface											
All	PRE-OP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
	OP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Subsurface											
All	PRE-OP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
	OP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
COMBINED											
Crustaceans	PRE-OP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
	OP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
COMBINED											
Polychaetes	PRE-OP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
	OP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
COMBINED											
Molluscs	PRE-OP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
	OP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Subsurface deposit feeder: Motile											
All	PRE-OP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
	OP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Polychaetes	PRE-OP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
	OP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
capitellid polychaetes	PRE-OP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
	OP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
paraonid polychaetes	PRE-OP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
	OP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Subsurface carnivore-deposit: Motile											
All	PRE-OP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
	OP	0	0.0	0	0.0	0	0.0	1	3.2	0	0.0
Polychaetes	PRE-OP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
	OP	0	0.0	0	0.0	0	0.0	1	3.2	0	0.0
Surface deposit feeder: Discrete											
All	PRE-OP	3	18.8	2	12.5	2	12.5	2	12.5	0	0.0
	OP	0	0.0	0	0.0	3	9.7	3	9.7	0	0.0
Polychaetes	PRE-OP	3	18.8	4	25.0	2	12.5	4	25.0	1	6.3
	OP	1	3.2	1	3.2	4	12.9	7	22.6	1	3.2
Surface deposit feeder: Motile											
All	PRE-OP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
	OP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Crustaceans	PRE-OP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0

SOFT BENTHOS NUMBER OF ZERO OBSERVATIONS

DEPTH IS 18 METERS

SPECIES GROUP	PERIOD	700 METERS ZEROS	%	1100 METERS ZEROS	%	1900 METERS ZEROS	%	3350 METERS ZEROS	%	6700/9400 M ZEROS	%
	OP	0	0.0	0	0.0	1	3.2	0	0.0	0	0.0
Surface deposit feeder: Sessile											
All	PRE-OP	4	25.0	3	18.8	4	25.0	2	12.5	4	25.0
	OP	6	19.4	6	19.4	4	12.9	3	9.7	2	6.5
Polychaetes	PRE-OP	4	25.0	3	18.8	4	25.0	3	18.8	4	25.0
	OP	6	19.4	7	22.6	4	12.9	4	12.9	2	6.5
Surface omnivore-deposit: Discrete											
All	PRE-OP	6	37.5	5	31.3	3	18.8	5	31.3	2	12.5
	OP	1	3.2	1	3.2	0	0.0	1	3.2	1	3.2
Crustaceans	PRE-OP	6	37.5	5	31.3	3	18.8	5	31.3	2	12.5
	OP	1	3.2	1	3.2	0	0.0	1	3.2	1	3.2
Surface omnivore-deposit: Motile											
All	PRE-OP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
	OP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Crustaceans	PRE-OP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
	OP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Surface suspension-deposit: Discrete											
All	PRE-OP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
	OP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Crustaceans	PRE-OP	6	37.5	7	43.8	3	18.8	4	25.0	0	0.0
	OP	0	0.0	1	3.2	1	3.2	0	0.0	1	3.2
Molluscs	PRE-OP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
	OP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Polychaetes	PRE-OP	0	0.0	0	0.0	1	6.3	1	6.3	0	0.0
	OP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Surface suspension-deposit: Motile											
All	PRE-OP	5	31.3	7	43.8	4	25.0	7	43.8	4	25.0
	OP	3	9.7	2	6.5	5	16.1	6	19.4	3	9.7
Crustaceans	PRE-OP	5	31.3	7	43.8	4	25.0	7	43.8	4	25.0
	OP	3	9.7	2	6.5	5	16.1	6	19.4	3	9.7
Surface suspension-deposit: Sessile											
All	PRE-OP	2	12.5	2	12.5	0	0.0	3	18.8	0	0.0
	OP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Crustaceans	PRE-OP	2	12.5	2	12.5	0	0.0	3	18.8	0	0.0
	OP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Suspension feeder: Sessile											
All	PRE-OP	2	12.5	1	6.3	1	6.3	0	0.0	0	0.0
	OP	0	0.0	1	3.2	0	0.0	1	3.2	0	0.0
Molluscs	PRE-OP	3	18.8	5	31.3	3	18.8	2	12.5	0	0.0
	OP	9	29.0	13	41.9	12	38.7	9	29.0	3	9.7
Polychaetes	PRE-OP	6	37.5	4	25.0	3	18.8	3	18.8	1	6.3
	OP	5	16.1	2	6.5	2	6.5	5	16.1	1	3.2
Surface carnivore-omnivore: Discrete											
All	PRE-OP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0

SOFT BENTHOS NUMBER OF ZERO OBSERVATIONS

DEPTH IS 18 METERS

SPECIES GROUP	PERIOD	700 METERS ZEROS	700 METERS %	1100 METERS ZEROS	1100 METERS %	1900 METERS ZEROS	1900 METERS %	3350 METERS ZEROS	3350 METERS %	6700/9400 M ZEROS	6700/9400 M %
	OP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Others	PRE-OP	0	0.0	3	18.8	0	0.0	1	6.3	1	6.3
	OP	4	12.9	2	6.5	8	25.8	7	22.6	1	3.2
Polychaetes	PRE-OP	0	0.0	0	0.0	0	0.0	0	0.0	1	6.3
	OP	1	3.2	0	0.0	1	3.2	0	0.0	0	0.0
Surface carnivore-omnivore: Motile											
All	PRE-OP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
	OP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Molluscs	PRE-OP	2	12.5	3	18.8	4	25.0	0	0.0	0	0.0
	OP	1	3.2	0	0.0	0	0.0	3	9.7	1	3.2
Others	PRE-OP	1	6.3	1	6.3	1	6.3	2	12.5	0	0.0
	OP	0	0.0	1	3.2	0	0.0	0	0.0	2	6.5
Polychaetes	PRE-OP	0	0.0	0	0.0	0	0.0	1	6.3	0	0.0
	OP	0	0.0	0	0.0	1	3.2	0	0.0	0	0.0

SOFT BENTHOS (BIOMASS) NUMBER OF ZERO OBSERVATIONS

DEPTH IS 8 METERS

GROUP BIOMASS	PERIOD	700 METERS ZEROS	%	1100 METERS ZEROS	%	1900 METERS ZEROS	%	3350 METERS ZEROS	%	6700/9400 M ZEROS	%
CRUSTACEAN BIOMASS (GM WET WEIGHT)	PRE-OP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
	OP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
MOLLUSC BIOMASS (GM WET WEIGHT)	PRE-OP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
	OP	1	3.1	3	9.4	0	0.0	0	0.0	0	0.0
OTHER BIOMASS (GM WET WEIGHT)	PRE-OP	0	0.0	2	11.1	0	0.0	0	0.0	0	0.0
	OP	0	0.0	1	3.1	1	3.1	2	6.3	0	0.0
POLYCHAETE BIOMASS (GM WET WEIGHT)	PRE-OP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
	OP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
TOTAL BIOMASS (GM WET WEIGHT)	PRE-OP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
	OP	0	0.0	1	3.1	0	0.0	0	0.0	0	0.0

SOFT BENTHOS (BIOMASS) NUMBER OF ZERO OBSERVATIONS

DEPTH IS 18 METERS

GROUP BIOMASS	PERIOD	700 METERS ZEROS	%	1100 METERS ZEROS	%	1900 METERS ZEROS	%	3350 METERS ZEROS	%	6700/9400 M ZEROS	%
CRUSTACEAN BIOMASS (GM WET WEIGHT)	PRE-OP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
	OP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
MOLLUSC BIOMASS (GM WET WEIGHT)	PRE-OP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
	OP	0	0.0	0	0.0	1	3.1	0	0.0	0	0.0
OTHER BIOMASS (GM WET WEIGHT)	PRE-OP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
	OP	0	0.0	0	0.0	0	0.0	1	3.1	0	0.0
POLYCHAETE BIOMASS (GM WET WEIGHT)	PRE-OP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
	OP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
TOTAL BIOMASS (GM WET WEIGHT)	PRE-OP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
	OP	0	0.0	0	0.0	1	3.1	0	0.0	0	0.0

APPENDIX C. THE TROPHIC-MOTILITY (TM) GROUPS AND THEIR COMPONENT TAXA.

TM GROUPS AND THE SPECIES ASSOCIATED WITH THEM
TABLE 2.2

TMGROUP		PHYLUM	SPCIES
Subsurface deposit feeder:	Discrete	Molluscs	Scaphopoda juvenile Cadulus cf. fusiformis Cadulus sp. Dentalium neonexagonum Dentalium sp. Cadulus quadrifissatus MSCA0999
Subsurface deposit feeder:	Discrete	Others	Hemichordate unidentified
Subsurface deposit feeder:	Motile	Echinoderms	Caudina arenicola Leptosynapta sp Segmented white holothurian
Subsurface deposit feeder:	Motile	Polychaetes	Amastigos acutus Mediomastus californiensis/ambiseta Mediomastus acutus Notomastus (C.) tenuis Notomastus (N.) magnus Notomastus sp. Anotomastus gordiodes Anotomastus sp. Decamastus gracilus Capitella capitata Dasybranchus sp. Capitellidae unidentified Cossura cf. candida Cossura sp. Cossurella sp. A Cossuridae unidentified Fauvelliopsis sp. Fauvelliopsidae unidentified Armandia bioculata Ophelia assimilis Ophelia pulchella Travisia gigas Travisia brevis Travisia sp. Polyophthalmus pictus Ophelina acuminata Opheliidae unidentified Leitoscoloplos elongatus Leitoscoloplos sp. Naineris dendritica Naineris uncinata Naineris sp. Scoloplos acmeceps Scoloplos armiger

TM GROUPS AND THE SPECIES ASSOCIATED WITH THEM
TABLE 2.2

TMGROUP	PHYLUM	SPCIES
Subsurface deposit feeder: Motile	Polychaetes	Scoloplos sp.
		Phylo felix
		Phylo sp.
		Orbiniidae unidentified
		F. orbiniidae unidentified
		Acesta catherinae
		Acesta horikoshii
		Acesta sp. B
		Acesta, nr. assimilis
		Acesta sp.
		Aedicira pacifica
		Aedicira sp.
		Aricidea sp. A
		Aricidea wassi
		Aricidea sp. B
		Cirrophorus furcatus
		Cirrophorus lyra
		Cirrophorus sp.
		Paraonella platybranchiata
		Paraonella sp.
		Tauberia gracilis
		Allia ramosa
		Allia antennata
		Allia sp.
		Paraonidae unidentified
		F. paraonidae unidentified
		Pectinaria californiensis
		Pectinaria sp.
		Amphictenidae unidentified
		Scalibregma inflatum
		Sphaerodoropsis minuta
		Sphaerodoropsis biserialis
		Sphaerodoropsis sp.
		Ephesiella brevicapitis
		Clavodorum clavatum
		Sphaerodoridae unidentified
		Sternaspis fossor

TM GROUPS AND THE SPECIES ASSOCIATED WITH THEM
TABLE 2.2

TMGROUP	PHYLUM	SPCIES
Subsurface deposit feeder: Motile	capitellid polychaetes	Amastigos acutus Mediomastus californiensis/ambiseta Mediomastus acutus Notomastus (C.) tenuis Notomastus (N.) magnus Notomastus sp. Anotomastus gordiodes Anotomastus sp. Decamastus gracilus Capitella capitata Dasybranchus sp. Capitellidae unidentified
Subsurface deposit feeder: Motile	paraonid polychaetes	Acesta catherinae Acesta horikoshii Acesta sp. B Acesta, nr. assimilis Acesta sp. Aedicira pacifica Aedicira sp. Aricidea sp. A Aricidea wassi Aricidea sp. B Cirrophorus furcatus Cirrophorus lyra Cirrophorus sp. Paraonella platybranchiata Paraonella sp. Tauberia gracilis Allia ramosa Allia antennata Allia sp. Paraonidae unidentified F. paraonidae unidentified
Subsurface deposit feeder: Sessile	Polychaetes	Asychis disparidentata Asychis sp. Axiothella rubrocincta Axiothella sp. Clymenura gracilis Petaloproctus sp. Rhodine bitorquata Praxillella affinis pacifica Euclymeninae sp. A Maladanidae unidentified F. maldanidae unidentified Myriochele sp. M

TM GROUPS AND THE SPECIES ASSOCIATED WITH THEM
TABLE 2.2

TMGROUP		PHYLUM	SPCIES
Subsurface carnivore-deposit:	Motile	Polychaetes	Arabella iricolor Arabella sp. Drilonereis falcata Drilonereis filum Drilonereis longa Drilonereis sp. juvenile Notocirrus attenuatus Notocirrus californiensus Arabellidae Lumbrineris californiensis Lumbrineris cruzensis Lumbrineris sp. D Lumbrineris lagunae Lumbrineris platypygos Lumbrineris japonica Lumbrineris index Lumbrineris sp. Lumbrineris limicola Lumbrineris tetraura Ninoe gemmea Lumbrineridae unidentified F. lumbrineridae unidentified Nephtys caecoides Nephtys californiensis Nephtys ferruginea Nephtys cornuta franciscana Nephtys sp. Nephtyidae unidentified F. nephtyidae unidentified
Surface deposit feeder:	Discrete	Crustaceans	Atylus tridens Rudilemboides stenopropodus Metopa sp. A
Surface deposit feeder:	Discrete	Molluscs	Nucula sp. A Nuculana hindsii Nuculana taphira Nuculana sp. Yoldia cooperi Nuculana sp. B Nucula sp. Nucula tenuis

TM GROUPS AND THE SPECIES ASSOCIATED WITH THEM
TABLE 2.2

TMGROUP	PHYLUM	SPCIES
Surface deposit feeder: Discrete	Polychaetes	? Branchiomaldane sp. Tharyx tesselata Tharyx monilaris Tharyx sp. Brada villosa Pherusa neopapillata Flabelligeridae unidentified Magelona pitelkai Magelona sacculata Magelona hartmanae Magelona sp. Magelonidae unidentified Poecilochaetous johnsoni Poecilochaetous sp. A Poecilochaetous sp. Poecilochaetidae unidentified Amaeana occidentalis Polycirrus californicus Polycirrus sp.
Surface deposit feeder: Motile	Crustaceans	Argissa hamatipes Gibberosus myersi Meliphisana bola Monoculodes hartmanae Tiron tropakis Tiron biocellata Westwoodilla caecula Monoculodes emarginatus Anchicolurus occidentalis Campylaspis canaliculata Campylaspis rubromaculata Campylaspis sp. C SCAMIT Cumella sp. A SCAMIT Cumella sp. D Cyclaspis nubila Cyclaspis sp.A SCAMIT Cyclaspis sp.C SCAMIT Cyclaspis sp.B SCAMIT Leptostylis B SCAMIT Diastylis californica Diastylopsis tenuis Eudorella pacifica Hemilamprops californica Lamprops carinata Lamprops quadriplicata Lampropidae juvenile Cumacea unidentified Leptocuma forsmani

TM GROUPS AND THE SPECIES ASSOCIATED WITH THEM
TABLE 2.2

TMGROUP	PHYLUM	SPCIES
Surface deposit feeder: Motile	Crustaceans	Leucon subnasica Mesolamprops bispinosa Mesolamprops dillonensis Oxyurostylis pacifica CCUM0999
Surface deposit feeder: Motile	Echinoderms	Lovenia cordiformis Echinoid juvenile
Surface deposit feeder: Motile	Molluscs	Falcidens sp. E Calliostoma tricolor Haminoea sp. Haminoea virescens Calliostoma sp.
Surface deposit feeder: Motile	Polychaetes	Caulleriella bioculata Caulleriella alata Caulleriella sp. Chaetozone corona Chaetozone setosa Chaetozone sp. Cirratulus cirratus cingulatus Cirratulus sp. Cirriformia luxuriosa Cirriformia spirabrancha Cirriformia sp. Cirratulidae unidentified F. cirratulidae unidentified
Surface deposit feeder: Sessile	Echinoderms	Listriolobus pelodes Echiuroid A Echiuroid juvenile
Surface deposit feeder: Sessile	Others	Golfingia catharinae Golfingia misakiana Siphonosoma ingens Sipunculida unidentified

TM GROUPS AND THE SPECIES ASSOCIATED WITH THEM
TABLE 2.2

TMGROUP	PHYLUM	SPCIES
Surface deposit feeder: Sessile	Polychaetes	Ampharete labrops
		Ampharete sp.
		Amphicteis scaphobranchiata
		Amphicteis sp.
		Lysippe labiata
		Lysippe sp.
		Melinna oculata
		Melinna heterodonta
		Anobothrus gracilis
		Ampharetidae juvenile
		Ampharetidae unidentified
		Pista moorei
		Pista alata
		Pista disjuncta
		Pista elongata
		Pista sp. B
		Pista sp.
		Streblosoma crassibranchia
		Loimia medusa
		Terebellidae juvenile
		Terebellides stroemii
		Terebellides californica
D	Crustaceans	Podocerus cristata
		Podocerus brasiliensis
D	Echinoderms	Eupentacta sp.
Surface omnivore-deposit: Discrete	Crustaceans	Ampithoe humeralis
		Metopella aporpis
		Hyale frequeus
		Parametopella ninis
		Stenothoe estacola
		Stenothoides bicoma
		Neotanais normani
		Leptochelia dubia
		Leptognatha sp. S
Surface omnivore-deposit: Discrete	Echinoderms	Dendraster excentricus

TM GROUPS AND THE SPECIES ASSOCIATED WITH THEM
TABLE 2.2

TMGROUP	PHYLUM	SPCIES
Surface omnivore-deposit: Motile	Crustaceans	Mandibulophoxus gilesi
		Eobrolgus spinosus
		Rhepoxynius abronius
		Rhepoxynius sp. A
		Rhepoxynius menziese
		Rhepoxynius heterocuspidatus
		Rhepoxynius daboius
		Foxiphalus obtusidens
		Rhepoxynius lucubrans
		Rhepoxynius stenodes
		Rhepoxynius variatus
		Foxiphalus cognatus
		Foxiphalus golfensis/obtusidens
		Rhepoxinius fatigens
		Metaphoxus frequens
		Metaphoxus fultoni
		Rhepoxynius bicuspidatus
		Heterophoxus oculatus
		Rhepoxynius sp. juvenile
		Acidostoma hancocki
		Anonyx carinatus
		Gammaropsis thompsoni
		Elasmopus antennatus
		Orchomene magdalenensis
		Pachynus barnardi
		Orchomene holmesi
		Orchomene anaquela
		Orchomene pinguis
		Pleustes platypa
		Parapleustes pugettensis
		Lepidepecreum sp. A SCAMIT
		Tiburonella viscana
		Synchelidium shoemakeri
		Pleusymtes subglaber
		Orchestoides sp.
		Pontogeneia rostrata
		Pontogeneia intermedia
		Lysianassa oculata
		Lysianassidae juvenile
		Hippomedom zetesimus
		Pontogeneia minuta
		Prachynella lodo
		Orchomene index
		Lysianassa holmesi
		Orchomene obtusa
		Hippomedon coecus
		Orchomene spp. juvenile
		Synchelidium rectipalmum

TM GROUPS AND THE SPECIES ASSOCIATED WITH THEM
TABLE 2.2

TMGROUP	PHYLUM	SPCIES
Surface omnivore-deposit: Motile	Crustaceans	Nebalia pugettensis Euphilomedes spp. (juvenile) Euphilomedes carcharodonta Euphilomedes longiseta Rutiderma lomae Rutiderma rostrata Rutiderma judayi Sarsiella sp. B Rutiderma sp. A Sarsiella sp. A SCAMIT Harbansus bradmyersi
Surface omnivore-deposit: Motile	Echinoderms	Lytechinus anamesus
Surface omnivore-deposit: Motile	Molluscs	Caecum crebricinctum Caecum californicum Fartulum occidentale Lacuna unifasciata Bittium sp.
Surface suspension-deposit: Discrete	Crustaceans	Acuminodeutopus heteruropus Amphideutopus oculatus Aoroides columbiae Corophium californianum Cerapus tubularis Listriella sp. juvenile Listriella diffusa Listriella goleta Listriella melanica Listriella eriopisa Photis brevipes Photis californica Photis macrotica Photis bifurcata Photis lacia Corophium baconi Aoroides inermis Callianassa californiensis Callianassa sp. juvenile

TM GROUPS AND THE SPECIES ASSOCIATED WITH THEM
TABLE 2.2

TMGROUP		PHYLUM	SPCIES
Surface suspension-deposit:	Discrete	Molluscs	Macoma sp. Macoma yoldiformis Macoma nr. secta Tellina meropsis Tellina modesta Tellinidae sp. B Macoma indentata Tellina idae Macoma carlottensis Tellina carpenteri Macoma cf. balthica Macoma acolasta Tellina bodegensis
Surface suspension-deposit:	Discrete	Others	Renilla kolleri
Surface suspension-deposit:	Discrete	Polychaetes	Owenia collaris Owenilidae Boccardia sp. Laonice cirrata Laonice sp. Paraprionospio pinnata Polydora bioccipitalis Carazziella citrona Polydora nuchalis Polydora neocardalia Polydora sp. Prionospio cirrifera Prionospio cf. steenstrupi Prionospio pygmaea Prionospio heterobranchia Prionospio sp. Microspio maculata Microspio pigmentata Microspio sp. Scolelepis foliosa Scolelepis squamata Scolelepis sp. Spiophanes bombyx Spiophanes missionensis Spiophanes berkeleyorum Spiophanes sp. Aonides sp. A Spionidae unidentified Diospio uncinata Spio sp. F. spionidae unidentified

TM GROUPS AND THE SPECIES ASSOCIATED WITH THEM
TABLE 2.2

TMGROUP		PHYLUM	SPCIES
Surface suspension-deposit:	Motile	Crustaceans	Eohaustorius washingtonianus Eohaustorius nr. sawyeri Blepharipoda occidentalis Acanthomysis macropsis Holmesimysis costata Acanthomysis davisi Acanthomysis nephrophthalma Acanthomysis sp. juvenile Metamysidopsis elongata Mysidopsis californica Mysidopsis intii Neomysis rayii Mysidacea unidentified Asteropella slatteryi Leuroleberis sharpei Parasterope hulingsi Parasterope barnesi
Surface suspension-deposit:	Motile	Others	Branchiostoma californiense
Surface suspension-deposit:	Sessile	Crustaceans	Ampelisca cristata microdentata Ampelisca lobata Ampelisca pugetica Ampelisca juvenile Ampelisca brevisimulata Ampelisca agassizi Ampelisca cristata Ampelisca pacifica Byblis veleronis Ampelisca careyi
Surface suspension-deposit:	Sessile	Polychaetes	Spiochaetopterus costarum Chaetopterus variopedatus Chaetopteridae unidentified Praxillura maculata
F		Molluscs	Axinopsida serricata Petricola californiensis Corbula porcella Paramya sp. A Saxidomus sp. Psephidia sp. Pristes sp. Thracia curta Thracia sp. Psephidia lordi Periploma planiscutum Orobitella sp.

TM GROUPS AND THE SPECIES ASSOCIATED WITH THEM
TABLE 2.2

TMGROUP		PHYLUM	SPCIES
F		Molluscs	Myidae unidentified Pseudochama exogyra Saxidomus nuttalli Psephidia cymata Axinopsida sp. Montacutidae spp. Pandora sp. Lucina richtofeni Crenella descissela Pandora punctuata Semele sp. Crassinella pacifica Turtonia sp. Lucina nuttalli Rhamphidonta sp. Branchidontes sp. Petricola tellimyalis Lyonsia californica
Suspension feeder:	Discrete	Crustaceans	Erichthonius brasiliensis
Suspension feeder:	Discrete	Echinoderms	Cucumaria sp.
Suspension feeder:	Discrete	Molluscs	Aligena sp. Chione californiensis Ensis myrae Transenella unidentified Leptopecten latiauratus Mactra sp. S Mysella tumida Siliqua lucida Solen rosaceus Solen sicarius Spisula hemphilli Panopea sp. Mactra sp. W Mysella grippi Mactra sp. Chione sp. Transenella tantilla Trachycardium quadragenarium Mysella sp. A Mysella compressa Solen sp. Mactra sp. A Mysella sp. Chione undatella Solen sp.

TM GROUPS AND THE SPECIES ASSOCIATED WITH THEM
TABLE 2.2

TMGROUP	PHYLUM	SPCIES
Suspension feeder: Discrete	Molluscs	Mysella gollschi Mysella cf. aleutica Mactra californica Mysella sp. C
Suspension feeder: Discrete	Polychaetes	Heterospio catalinensis
Suspension feeder: Motile	Crustaceans	Emerita analoga Bathyleberis garthi
Suspension feeder: Sessile	Crustaceans	Balanus sp. juvenile Scapellid barnacle
Suspension feeder: Sessile	Molluscs	Crepidula coei Crepidula onyx Crepidula nummaria Crepidula spp. Acila sp. Amiantis callosa Asthenothaerus villosior Kellia sp. Lepton sp. Epilucina californica Compsomyax subdiaphana Felaniella sp. Cooperella subdiaphana Cyathodonta dubiosa Modiolus sp. A Modiolus neglectus Mytilus sp. Parvilucina tenuisculpta Veneridae unidentified Nemocardium centrifilosum Modiolus rectus Musculus sp. Felaniella cornea *Mytilidae* unidentified Cyathodonta sp. A Thecondonta oblongus Modiolus spp. Veneridae unidentified Cooperella sp. Kellia laperousii Mya cf. arenaria Diplodonta sp. Thyasira flexuosa Montacuta sp. A Adontorhina sp.

TM GROUPS AND THE SPECIES ASSOCIATED WITH THEM
TABLE 2.2

TMGROUP		PHYLUM	SPCIES
Suspension feeder:	Sessile	Molluscs	Entodesma saxicolum Mytilus edulis
Suspension feeder:	Sessile	Others	Glottidia albida Zaolutus actius Pennatulacea Stylatula elongata Phoronis spp. Porifera unidentified
Suspension feeder:	Sessile	Polychaetes	Chone veleronis Chone ecaudata Chone albocincta Chone sp. Euchone hancocki Euchone sp. Amphigiena ? pacifica Sabella crassicornis Megalomma pigmentum Megalomna sp. ? Potamilla sp. Sabellidae unidentified Sabellaria sp. Sabellaria nanella Sabellaria cementarium Sabellaridae unidentified Crucigera sp. A Spirorbidae unidentified
G		Crustaceans	Amphilocus neopolitanus Amphilocus litoralis
Surface carnivore-omnivore:	Discrete	Crustaceans	Alpheus clamator Crangon alaskensis elongata Crangon munitellus Hemisquilla ensigera Crangon sp. juvenile Ancinus granulatus Edotea sp.A Edotea sublittoralis Exosphaeroma inornata Gnathia crenulatifrons Caecianiropsis psammophila Silophasma geminatum Idotea fewkesi Idotea rufescens cf. Ianiropsis sp. Idoteid

TM GROUPS AND THE SPECIES ASSOCIATED WITH THEM
TABLE 2.2

TMGROUP		PHYLUM	SPCIES
Surface carnivore-omnivore:	Discrete	Crustaceans	Jaeropsis dubia Neastacilla californica Paracerceis cordata Synidotea hartfordi Serolis carinata Synidotea magnifica Eurydice caudata
Surface carnivore-omnivore:	Discrete	Molluscs	Balcis micans Epitonium sp. Epitonilidae unidentified Odostomia (Evalea) sp. B Odostomia spp. Odostomia (Evalea) sp. D Pyramidillidae unidentified Turbonilla (Chemnitzia) sp. B Turbonilla (Pyrgiscus) sp. Turbonilla (Pyrgolampros) sp. Epitonium bellastriatum Balcis catalinensis Turbonilla (Chemnitzia) sp. A Turbonilla (Chemnitzia) sp. Turbonilla spp. Odostomia (Evalea) sp. Odostomia (Evalea) sp. A Balcis rutila Odostomia (Ivara) turricula Balcis sp. D Odostomia eucosmia Turbonilla (Pyrgiscus) sp. A Eulima almo Odostomia (Evalea) sp.C Turbonilla (Pyrgiscus) sp. F Balcis spp. Odostomia (Evalea) sp. E Odostomia (Evalea) sp. F Turbonilla (Chemnitzia) sp. C Odostomia (Evalea) sp. E Odostomia (Evalea) sp. H Turbonilla (Chemnitzia) sp. D Odostomia (Evalea) sp. B Turbonilla (Pyrgiscus) sp. G Turbonilla (Pyrgolampos) sp. E Turbonilla (Chemnitzia) sp. E Turbonilla (Chemnitzia) sp. F Turbonilla (Pyrgolampros) sp. F Turbonilla (Chemnitzia) sp. G Balcis sp. A

TM GROUPS AND THE SPECIES ASSOCIATED WITH THEM
TABLE 2.2

TMGROUP		PHYLUM	SPCIES
Surface carnivore-omnivore:	Discrete	Others	Edwardsia sp. A (orange w/ white base) Metedwardsia sp. A Edwardsia sp. B (white w/white base) Scolanthus sp. A SCAMIT Tubulanus pellucidus (red) Tubulanidae sp. B Tubulanus nothus (black) Tubulanus sp. P
Surface carnivore-omnivore:	Discrete	Polychaetes	Glycera convoluta Glycera oxycephala Glycera ? robusta Glycera americana Glycera siphonostoma Glycera capitata Glycera sp. Hemipodus borealis Hemipodus sp. Glyceridae unidentified F. glyceridae unidentified Glycinde armigera Glycinde sp. juvenile Goniada maculata Goniada littorea Goniada sp. PGON0029 Goniadidae unidentified F. gondadidae unidentified Nereis latescens Nereis procera Nereis grubei Nereis sp. Platynereis bicanaliculata Gymnonereis americana Nereidae unidentified F. nereidae unidentified Diopatra splendidissima Diopatra tridentata Diopatra sp. Onuphis iridescens Nothria sp. juvenile Onuphis eremita Mooreonuphis nebulosa Onuphis sp. Onuphidae unidentified

TM GROUPS AND THE SPECIES ASSOCIATED WITH THEM
TABLE 2.2

TMGROUP		PHYLUM	SPCIES
Surface carnivore-omnivore:	Motile	Crustaceans	Crab zoea Cancer antennarius Cancer gracilis Cancer anthonyi Cancer spp. juvenile Heptacarpus sp. Heterocrypta occidentalis Isocheles pilosus Lepidopa californica Majidae sp. A Megalops juvenile Pinnixa hiatus Paguristes ulreyi Pagurus turgidus Pinnixa sp. juvenile Pinnixa tubicola/tomentosa Pinnixa littoralis Portunus xantusii Randallia ornata Pinnixa longipes Pinnixa faba Pagurus sp. Pinnixa occidentalis Pyromaia tuberculata Loxorhynchus crispatus Munnogonium tillerae Munna ubiquita Munna sp. C Munnogonium erratum
Surface carnivore-omnivore:	Motile	Echinoderms	Astropecten spp. juvenile Astropecten verrilli Asteroid juvenile
Surface carnivore-omnivore:	Motile	Molluscs	Coryphella sp. Acteocina harpa Acteocina culcitella Atys sp. Melanochlamys diomeda Cylichna attonsa Dendronotus frondosus Diaphana californica Gastropteron pacificum Granulina margaritula Kurtziella sp.unidentified Kurtziella beta Kurtziella plumbea Nassarius perpinquis

TM GROUPS AND THE SPECIES ASSOCIATED WITH THEM
TABLE 2.2

TMGROUP		PHYLUM	SPCIES
Surface carnivore-omnivore:	Motile	Molluscs	Cephalaspidea sp. A Tricolia sp. Philine sp. A Tricolia rubrilineata Rissoina sp. Ophiodermella inermis Acanthodoris rhodoceras MGAS0401
Surface carnivore-omnivore:	Motile	Others	Procephalothrix Zygeupolia sp. Lineus bilineatus Paranemertes sp. A Paranemertes sp. B Cerebratulus or Micrura spp. Tetrastemma spp. Amphiporus spp. Carinoma mutabilis Nemertine N Nemertina unidentified Flatworm 1 Flatworm 3 Flatworm 4 Flatworm "white" Flatworm 6 Flatworm 7 Flatworm 8 Flatworm juvenile
Surface carnivore-omnivore:	Motile	Polychaetes	Aphrodita sp. Pareurythoe californica Chloeia pinnata Paleanotus bellis Dorvilleidae sp. Protodorvillea gracilus Schistomeringus longicornis Schistomeringos ? caeca Schistomeringus sp. Dorvilleidae juvenile Pareulepis fimbriata Eulepethidae unidentified Marphysa belli oculata Euphrosinidae unidentified Podakeopsis brevipalpa Podakeopsis sp. Nesionidae,genus a Syllidia sp. A Syllidia sp. B

TM GROUPS AND THE SPECIES ASSOCIATED WITH THEM
TABLE 2.2

TMGROUP	PHYLUM	SPCIES
Surface carnivore-omnivore: Motile	Polychaetes	Syllidia sp. C
		Micropodarke dubia
		Ophiodromus pugettensis
		Nesionidae unidentified
		Hirudinea leech
		Pholoides aspera
		Eteone dilatae
		Eteone sp.
		Genetyllis castanea
		Nesionura coineaui difficilis
		Phyllodoce (Aponaitides) hartmanae
		Phyllodoce (Anaitides) papillosa
		Phyllodoce sp.
		Paranaitis polynoides
		Eumida sanguinea
		Eumida sp.
		Phyllodocidae unidentified
		F. phyllodocidae unidentified
		Ancistrosyllis hamata
		Ancistrosyllis sp.
		Sigambra tentaculata
		Sigambra sp.
		Parandalia fauveli
		Pilargis berkeleyi
		Pilargis maculata
		Pilargis sp.
		Pilarglidae unidentified
		Harmothoe cf. lunulata
		Harmothoe priops
		Harmothoe sp.
		Lepidasthenia longicirrata
		Halosydna brevisetosa
		Halosydna johnsoni
		Halosydna latior
		? Halosydna sp.
		Polynoidae unidentified
		Sthenelais verruculosa
		Sthenelais tertiaglabra
		Sthenelais sp.
		Sthenelanella uniformis
		Thalenessa spinosa
		Pholoe glabra
		Sigalionidae unidentified
		Sphaerosyllis californiensis
		Streptosyllis sp. A
		Streptosyllis latipalpa
		Streptosyllis sp.
		Haplosyllis spongicola

TM GROUPS AND THE SPECIES ASSOCIATED WITH THEM
TABLE 2.2

TMGROUP	PHYLUM	SPCIES
Surface carnivore-omnivore: Motile	Polychaetes	Iyposyllis hyalina Typosyllis sp. Odontosyllis phosphorea Odontosyllis sp. Syllis gracilis Autolytus sp. Syllidae unidentified Ehlersia cf. heterochaeta Ehlersia sp. Brania sp. F. syllidae unidentified
Surface carnivore-omnivore: Sessile	Others	Stalked anemone Cerianthidae sp. B Epiactis prolifera Cerianthidae sp. A Hydroid unidentified Nematostella ? cf. Cactosoma arenaria Acanthoptilum gracile
Multi-feeding strategy: Discrete	Echinoderms	Ophiuroconis bispinosa Amphiura sp. A Amphipholis spp. Amphiura arcystata Amphiodia urtica Amphiodia digitata Amphiodia spp. juvenile Amphiodia occidentalis Amphioplus hexacanthus Ophiacantha phragma Ophiacantha sp. Ophiactis sp. Ophiuroidea juvenile

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APPENDIX D. THE MEAN (AND STANDARD ERROR) DENSITIES (PER CORE) OF INDIVIDUAL TAXA, TROPHIC-MOTILITY (TM) GROUPS, AND BIOMASS (GMS WET WEIGHT) AT THE SAMPLING LOCATIONS IN BOTH SAMPLING PERIODS.

Only those taxa and TM groups tested for changes in abundance are listed. Number of surveys in the Before period is 16, number in the After is 31. A single average value is presented for the two far (Control) locations, 6700 and 9400 meters. Please note errata concerning the TM groups: Subsurface deposit feeder: Motile at both 8 and 18 meters. Correct values are presented in Appendix I.

SOFT BENTHOS AVERAGE ABUNDANCE

DEPTH IS 8 METERS

SPECIES NAME	PERIOD	700 METERS MEAN	SE	1100 METERS MEAN	SE	1900 METERS MEAN	SE	3350 METERS MEAN	SE	6700/9400 M MEAN	SE
Acesta catherinae	PRE-OP	1.00	0.24	0.50	0.13	0.62	0.16	0.46	0.08	1.57	0.20
	OP	0.80	0.14	0.37	0.08	1.35	0.22	1.51	0.22	2.06	0.29
Amastigos acutus	PRE-OP	10.37	4.11	9.83	3.54	8.08	2.05	10.62	5.24	9.43	2.84
	OP	0.83	0.17	2.34	0.52	3.54	0.60	1.02	0.18	1.35	0.21
Diastylopsis tenuis	PRE-OP	8.04	2.26	5.96	1.75	6.04	1.81	6.58	2.11	7.08	1.57
	OP	6.42	1.65	4.54	1.34	7.50	2.10	5.38	1.48	3.96	0.91
Jassa falcata	PRE-OP	1.08	0.57	0.48	0.25	0.40	0.13	0.35	0.09	0.85	0.25
	OP	1.04	0.24	0.57	0.11	1.30	0.46	0.96	0.23	1.57	0.40
Nematodes unidentified	PRE-OP	0.85	0.21	0.83	0.28	0.87	0.32	0.69	0.24	0.82	0.17
	OP	0.75	0.17	0.45	0.09	1.63	0.27	0.55	0.11	1.37	0.22
Prionospio pygmaea	PRE-OP	4.48	1.71	16.08	5.19	4.90	1.30	7.81	2.26	2.70	0.53
	OP	3.95	0.80	4.53	0.67	3.72	0.81	3.53	0.80	2.20	0.38
Rhepoxynius menziese	PRE-OP	0.56	0.13	0.37	0.11	0.75	0.22	0.69	0.15	0.49	0.10
	OP	0.40	0.07	0.44	0.11	0.62	0.12	0.83	0.11	1.14	0.47

SOFT BENTHOS AVERAGE ABUNDANCE

DEPTH IS 18 METERS

SPECIES NAME	PERIOD	700 METERS MEAN	700 METERS SE	1100 METERS MEAN	1100 METERS SE	1900 METERS MEAN	1900 METERS SE	3350 METERS MEAN	3350 METERS SE	6700/9400 M MEAN	6700/9400 M SE
Acesta catherinae	PRE-OP	0.94	0.33	1.25	0.21	1.75	0.46	1.15	0.24	0.94	0.14
	OP	6.24	0.73	4.71	0.33	3.94	0.34	2.93	0.32	3.31	0.35
Aricidea wassi	PRE-OP	0.54	0.14	0.71	0.17	1.94	0.31	2.02	0.33	1.34	0.16
	OP	1.51	0.25	1.59	0.16	2.11	0.24	1.64	0.18	2.02	0.28
Euphilomedes carcharodonta	PRE-OP	0.40	0.10	0.58	0.10	0.40	0.15	0.35	0.10	0.75	0.08
	OP	0.58	0.09	0.61	0.12	0.99	0.16	0.89	0.12	0.91	0.12
Jassa falcata	PRE-OP	5.10	2.37	0.77	0.45	1.21	0.33	0.75	0.45	1.14	0.37
	OP	0.78	0.14	0.84	0.18	1.69	0.36	1.65	0.32	1.64	0.43
Leptochelia dubia	PRE-OP	1.21	0.47	0.94	0.39	1.94	0.58	2.71	1.16	3.96	1.63
	OP	4.59	1.02	3.27	0.65	6.57	1.17	8.73	2.22	11.62	3.17
Mediomastus californiensis/ambiseta	PRE-OP	15.08	4.31	13.44	1.99	18.19	4.57	11.48	2.30	11.90	1.95
	OP	17.39	2.63	12.12	1.42	10.80	1.65	6.75	1.08	6.71	1.02
Nematodes unidentified	PRE-OP	5.02	1.09	3.94	1.16	4.79	1.03	3.77	0.80	5.22	1.30
	OP	13.32	2.91	6.88	1.83	7.54	1.96	5.75	1.70	6.18	1.05
Paraprionospio pinnata	PRE-OP	0.56	0.07	0.54	0.12	0.67	0.11	0.65	0.15	0.64	0.07
	OP	1.02	0.12	0.78	0.10	1.02	0.14	0.62	0.09	0.72	0.07
Parasterope hulingsi	PRE-OP	0.44	0.19	0.37	0.12	0.50	0.16	0.27	0.08	0.48	0.12
	OP	1.02	0.20	1.16	0.44	0.68	0.10	0.59	0.10	0.83	0.27
Prionospio pygmaea	PRE-OP	4.62	1.17	4.56	0.99	2.40	0.45	2.15	0.44	3.31	0.58
	OP	3.57	0.45	3.28	0.38	3.15	0.35	3.54	0.48	2.56	0.36
Rhepoxynius sp. juvenile	PRE-OP	0.62	0.19	1.00	0.23	1.79	0.64	1.17	0.25	2.18	0.28
	OP	0.38	0.11	0.37	0.07	0.75	0.10	0.90	0.13	1.13	0.12
Rhepoxynius stenodes	PRE-OP	0.46	0.15	0.37	0.11	0.54	0.15	0.58	0.16	0.60	0.10
	OP	0.88	0.17	0.99	0.13	1.54	0.16	2.19	0.25	1.23	0.15
Rutiderma rostrata	PRE-OP	2.27	0.32	1.04	0.10	3.10	0.44	1.29	0.28	2.64	0.22
	OP	1.68	0.16	1.52	0.20	0.77	0.11	0.47	0.09	1.35	0.25
Synchelidium shoemakeri	PRE-OP	0.69	0.19	0.37	0.14	1.08	0.33	0.73	0.15	1.11	0.21
	OP	1.37	0.22	1.21	0.19	1.87	0.25	1.65	0.21	1.84	0.20
Tauberia gracilis	PRE-OP	3.35	0.41	6.46	0.74	4.12	0.66	3.02	0.39	1.69	0.21
	OP	14.14	1.04	9.24	0.55	1.65	0.23	1.13	0.37	0.67	0.10
Tellina modesta	PRE-OP	2.15	0.56	1.44	0.18	2.79	0.73	2.52	0.45	2.99	0.41
	OP	2.90	0.36	3.28	0.46	3.31	0.42	4.38	0.55	3.80	0.52

SOFT BENTHOS AVERAGE ABUNDANCE

DEPTH IS 18 METERS

SPECIES GROUP		PERIOD	700 METERS MEAN	700 METERS SE	1100 METERS MEAN	1100 METERS SE	1900 METERS MEAN	1900 METERS SE	3350 METERS MEAN	3350 METERS SE	6700/9400 M MEAN	6700/9400 M SE
COMBINED	All	PRE-OP	67.57	10.65	61.73	4.76	79.83	10.15	63.71	7.45	83.41	8.04
		OP	106.87	5.99	93.42	8.02	88.07	4.61	103.19	26.60	97.14	8.71
Surface	All	PRE-OP	35.46	4.86	29.46	1.93	39.29	4.68	32.67	4.04	53.19	6.22
		OP	55.12	3.26	56.17	7.35	59.70	3.68	81.75	26.16	73.32	7.75
Subsurface	All	PRE-OP	29.32	5.63	29.73	2.97	35.98	5.59	26.23	3.02	24.71	1.97
		OP	46.46	3.83	33.72	1.88	24.16	2.03	17.07	1.53	18.46	1.25
COMBINED	Crustaceans	PRE-OP	16.73	3.66	12.00	1.71	18.75	3.28	15.60	3.69	28.36	5.10
		OP	30.54	2.26	33.45	7.16	36.60	2.99	60.40	26.19	49.04	7.27
COMBINED	Polychaetes	PRE-OP	40.63	6.56	40.87	3.45	49.50	6.74	35.87	3.01	40.56	2.57
		OP	65.55	5.63	49.37	2.83	42.22	3.04	32.60	2.53	34.65	1.98
COMBINED	Molluscs	PRE-OP	5.48	0.66	4.17	0.34	6.85	0.93	7.21	0.86	9.57	0.59
		OP	7.37	0.83	7.31	0.88	6.94	0.58	7.63	0.74	9.08	0.86
Subsurface deposit feeder: Motile	All	PRE-OP	20.77	4.68	23.06	2.65	27.81	4.99	19.02	2.54	17.90	1.94
		OP	41.75	3.82	29.68	1.78	20.90	2.01	14.64	1.40	15.25	1.12
	Polychaetes	PRE-OP	21.15	4.68	23.50	2.71	28.37	5.08	19.17	2.56	18.46	2.00
		OP	43.07	3.95	30.86	1.85	22.07	2.03	15.47	1.41	16.24	1.18
	capitellid polychaetes	PRE-OP	15.48	4.36	13.73	2.00	19.02	4.58	12.08	2.32	12.78	1.97
		OP	17.79	2.62	12.49	1.41	11.18	1.67	7.26	1.06	7.41	1.01
	paraonid polychaetes	PRE-OP	4.92	0.72	8.85	0.98	8.23	0.80	6.79	0.50	4.55	0.34
		OP	22.64	1.66	16.00	0.71	8.54	0.63	6.56	0.69	6.82	0.69
Subsurface carnivore-deposit: Motile	All	PRE-OP	7.32	1.17	5.54	0.83	7.21	0.83	6.42	0.76	5.87	0.37
		OP	3.71	0.27	3.24	0.27	2.49	0.21	1.97	0.22	2.41	0.18
	Polychaetes	PRE-OP	7.32	1.17	5.54	0.83	7.21	0.83	6.42	0.76	5.87	0.37
		OP	3.71	0.27	3.24	0.27	2.49	0.21	1.97	0.22	2.41	0.18
Surface deposit feeder: Discrete	All	PRE-OP	1.56	0.44	1.29	0.31	2.54	0.59	1.56	0.31	2.59	0.51
		OP	2.32	0.44	2.05	0.42	2.55	0.91	1.69	0.39	2.14	0.57
	Polychaetes	PRE-OP	0.62	0.13	0.52	0.13	1.58	0.37	0.67	0.14	1.24	0.18
		OP	1.23	0.12	0.91	0.10	0.98	0.12	0.80	0.12	0.90	0.07
Surface deposit feeder: Motile	All	PRE-OP	2.79	0.55	2.40	0.34	3.04	0.51	2.54	0.38	4.29	0.38
		OP	6.06	0.69	4.59	0.45	5.04	0.58	4.34	0.46	6.38	0.58
	Crustaceans	PRE-OP	2.17	0.50	1.85	0.33	2.02	0.38	1.79	0.35	2.85	0.28

SOFT BENTHOS AVERAGE ABUNDANCE

DEPTH IS 18 METERS

SPECIES GROUP	PERIOD	700 METERS MEAN	700 METERS SE	1100 METERS MEAN	1100 METERS SE	1900 METERS MEAN	1900 METERS SE	3350 METERS MEAN	3350 METERS SE	6700/9400 M MEAN	6700/9400 M SE
	OP	4.84	0.69	3.47	0.44	4.08	0.56	3.83	0.47	5.54	0.60
Surface deposit feeder: Sessile											
All	PRE-OP	0.52	0.15	0.56	0.11	0.65	0.12	0.71	0.12	0.71	0.16
	OP	1.58	0.35	1.34	0.27	2.20	0.39	1.54	0.34	2.41	0.37
Polychaetes	PRE-OP	0.50	0.15	0.52	0.10	0.60	0.13	0.60	0.12	0.62	0.14
	OP	1.55	0.35	1.30	0.27	2.19	0.39	1.53	0.34	2.36	0.37
Surface omnivore-deposit: Discrete											
All	PRE-OP	1.29	0.46	0.94	0.39	2.12	0.57	2.73	1.16	4.07	1.61
	OP	4.67	1.02	3.29	0.66	6.60	1.17	8.80	2.22	11.79	3.17
Crustaceans	PRE-OP	1.29	0.46	0.94	0.39	2.12	0.57	2.73	1.16	4.07	1.61
	OP	4.67	1.02	3.29	0.66	6.60	1.17	8.80	2.22	11.79	3.17
Surface omnivore-deposit: Motile											
All	PRE-OP	5.52	0.74	3.94	0.38	6.75	0.82	4.79	0.51	9.62	0.58
	OP	6.91	0.51	7.05	0.60	9.10	0.60	8.64	0.64	10.09	0.62
Crustaceans	PRE-OP	5.52	0.74	3.94	0.38	6.75	0.82	4.77	0.51	9.62	0.58
	OP	6.91	0.51	7.03	0.60	9.09	0.60	8.64	0.64	10.06	0.62
Surface suspension-deposit: Discrete											
All	PRE-OP	12.08	2.20	9.50	0.97	10.69	2.21	10.23	2.01	16.02	2.85
	OP	17.93	1.45	16.69	1.15	20.55	1.48	19.30	1.36	19.52	1.52
Crustaceans	PRE-OP	3.83	1.72	2.08	0.79	4.04	1.81	4.04	1.86	6.57	2.54
	OP	7.56	0.87	7.10	0.83	10.65	1.25	8.53	0.90	10.42	1.34
Molluscs	PRE-OP	2.54	0.53	1.75	0.19	3.23	0.76	3.15	0.46	4.15	0.38
	OP	3.24	0.39	3.55	0.48	3.53	0.41	4.69	0.56	4.28	0.55
Polychaetes	PRE-OP	5.71	1.22	5.67	1.06	3.42	0.55	3.04	0.51	5.30	0.72
	OP	7.13	0.90	6.04	0.82	6.37	0.66	6.07	0.72	4.80	0.48
Surface suspension-deposit: Motile											
All	PRE-OP	0.48	0.19	0.40	0.13	0.58	0.17	0.27	0.08	0.52	0.12
	OP	1.09	0.19	1.23	0.44	0.74	0.11	0.61	0.10	0.87	0.27
Crustaceans	PRE-OP	0.48	0.19	0.40	0.13	0.58	0.17	0.27	0.08	0.52	0.12
	OP	1.09	0.19	1.23	0.44	0.73	0.10	0.61	0.10	0.87	0.27
Surface suspension-deposit: Sessile											
All	PRE-OP	2.06	0.69	1.44	0.47	1.69	0.25	0.92	0.20	2.52	0.35
	OP	3.84	0.49	2.59	0.28	3.09	0.32	3.46	0.42	2.94	0.29
Crustaceans	PRE-OP	2.06	0.69	1.40	0.47	1.69	0.25	0.90	0.20	2.48	0.34
	OP	3.76	0.49	2.51	0.27	2.99	0.32	3.39	0.42	2.80	0.29
Suspension feeder: Sessile											
All	PRE-OP	1.31	0.24	1.06	0.22	1.90	0.32	2.40	0.43	3.28	0.47
	OP	3.90	1.02	2.58	0.43	3.33	0.47	3.63	0.69	4.28	0.50
Molluscs	PRE-OP	0.69	0.15	0.42	0.09	0.83	0.17	1.29	0.32	1.78	0.32
	OP	0.57	0.11	0.44	0.09	0.57	0.12	0.69	0.14	1.02	0.13
Polychaetes	PRE-OP	0.44	0.14	0.40	0.10	0.77	0.23	0.81	0.16	0.98	0.16
	OP	2.80	1.03	1.77	0.43	2.32	0.49	2.49	0.70	2.54	0.52
Surface carnivore-omnivore: Discrete											
All	PRE-OP	3.96	0.48	4.54	0.47	4.48	0.53	3.81	0.38	4.45	0.57

SOFT BENTHOS AVERAGE ABUNDANCE

DEPTH IS 18 METERS

SPECIES GROUP	PERIOD	700 METERS MEAN	700 METERS SE	1100 METERS MEAN	1100 METERS SE	1900 METERS MEAN	1900 METERS SE	3350 METERS MEAN	3350 METERS SE	6700/9400 M MEAN	6700/9400 M SE
Others	OP	3.98	0.36	3.28	0.26	2.67	0.23	2.28	0.22	3.21	0.21
	PRE-OP	2.12	0.41	2.10	0.47	1.33	0.17	1.40	0.26	1.43	0.34
Polychaetes	OP	1.31	0.21	1.14	0.13	0.74	0.15	0.77	0.13	1.27	0.18
	PRE-OP	1.35	0.30	1.92	0.20	2.58	0.48	2.06	0.23	2.34	0.37
	OP	1.90	0.32	1.52	0.16	1.54	0.17	1.26	0.14	1.34	0.14
Surface carnivore-omnivore: Motile											
All	PRE-OP	5.15	0.44	4.44	0.38	6.75	0.70	5.10	0.32	8.34	0.55
	OP	6.73	0.50	14.05	7.26	7.16	0.71	31.10	25.58	13.95	5.75
Molluscs	PRE-OP	0.90	0.20	0.79	0.18	0.81	0.19	1.27	0.19	1.71	0.20
	OP	1.84	0.26	2.07	0.25	1.76	0.20	1.39	0.16	2.28	0.24
Others	PRE-OP	1.00	0.13	1.06	0.17	1.29	0.23	1.12	0.20	1.49	0.21
	OP	1.92	0.22	2.05	0.25	1.88	0.16	1.75	0.27	2.39	0.32
Polychaetes	PRE-OP	2.67	0.27	1.94	0.26	4.06	0.52	2.33	0.24	4.14	0.27
	OP	2.27	0.23	2.17	0.23	2.55	0.26	2.17	0.21	2.88	0.22

SOFT BENTHOS AVERAGE BIOMASS

DEPTH IS 8 METERS

GROUP BIOMASS	PERIOD	700 METERS MEAN	700 METERS SE	1100 METERS MEAN	1100 METERS SE	1900 METERS MEAN	1900 METERS SE	3350 METERS MEAN	3350 METERS SE	6700/9400 M MEAN	6700/9400 M SE
CRUSTACEAN BIOMASS (GM WET WEIGHT)	PRE-OP	0.02	0.00	0.02	0.01	0.02	0.00	0.02	0.00	0.03	0.01
	OP	0.06	0.02	0.06	0.02	0.15	0.10	1.46	1.40	0.04	0.00
MOLLUSC BIOMASS (GM WET WEIGHT)	PRE-OP	0.05	0.02	0.02	0.00	0.06	0.02	0.09	0.07	0.05	0.04
	OP	0.22	0.05	0.07	0.03	0.09	0.04	0.17	0.06	0.27	0.07
OTHER BIOMASS (GM WET WEIGHT)	PRE-OP	0.08	0.03	0.48	0.42	0.77	0.72	0.05	0.03	0.05	0.03
	OP	0.60	0.20	0.67	0.24	0.93	0.25	0.44	0.17	0.25	0.22
POLYCHAETE BIOMASS (GM WET WEIGHT)	PRE-OP	0.69	0.22	0.10	0.03	0.27	0.09	0.07	0.01	0.20	0.06
	OP	0.36	0.08	0.16	0.03	0.16	0.05	0.20	0.04	0.33	0.06
TOTAL BIOMASS (GM WET WEIGHT)	PRE-OP	0.83	0.21	0.61	0.42	1.12	0.73	0.21	0.08	0.34	0.06
	OP	1.25	0.23	0.95	0.24	1.34	0.30	2.27	1.40	0.89	0.23

SOFT BENTHOS AVERAGE BIOMASS

DEPTH IS 18 METERS

GROUP BIOMASS	PERIOD	700 METERS MEAN	700 METERS SE	1100 METERS MEAN	1100 METERS SE	1900 METERS MEAN	1900 METERS SE	3350 METERS MEAN	3350 METERS SE	6700/9400 M MEAN	6700/9400 M SE
CRUSTACEAN BIOMASS (GM WET WEIGHT)	PRE-OP	0.05	0.01	0.04	0.01	0.04	0.01	0.03	0.01	0.05	0.01
	OP	0.11	0.02	0.07	0.02	0.07	0.00	0.09	0.01	0.10	0.02
MOLLUSC BIOMASS (GM WET WEIGHT)	PRE-OP	0.09	0.06	0.11	0.05	0.03	0.01	0.06	0.02	0.08	0.04
	OP	0.10	0.02	0.36	0.22	0.38	0.14	0.18	0.05	0.15	0.04
OTHER BIOMASS (GM WET WEIGHT)	PRE-OP	0.24	0.04	0.22	0.04	0.13	0.04	0.20	0.08	0.14	0.03
	OP	0.15	0.06	1.02	0.42	0.46	0.20	0.06	0.03	0.27	0.12
POLYCHAETE BIOMASS (GM WET WEIGHT)	PRE-OP	0.17	0.03	0.23	0.03	0.18	0.02	0.16	0.02	0.17	0.03
	OP	0.29	0.03	0.28	0.03	0.36	0.04	0.30	0.03	0.36	0.04
TOTAL BIOMASS (GM WET WEIGHT)	PRE-OP	0.54	0.09	0.60	0.08	0.38	0.05	0.44	0.10	0.44	0.08
	OP	0.64	0.08	1.73	0.49	1.26	0.26	0.63	0.06	0.88	0.13

APPENDIX E. CONVERSION OF PERCENT RELATIVE CHANGE INTO FACTORS OF CHANGE.

% DECREASE	% INCREASE	FACTOR OF CHANGE
-10%	11%	1.1
-20%	25%	1.3
-30%	43%	1.4
-40%	67%	1.7
-50%	100%	2.0
-60%	150%	2.5
-70%	233%	3.3
-80%	400%	5.0
-90%	900%	10.0

APPENDIX F. SUMMARY OF THE RESULTS OF THE MULTIVARIATE BACIP TEST FOR CHANGES IN ABUNDANCE.

The p value presented is that associated with the test of the hypothesis that the vector of station deltas is the same from Before to After period. The transformation used in the analysis is indicated. The percent changes (relative to the change at Control) at each Impact location are indicated.

RELATIVE PERCENT CHANGE AND MULTIVARIATE BACI RESULTS
IMPACT VS CONTROL

DEPTH IS 8 METERS

	STATION LOCATION 700	1100	1900	3350	TRANSFORM	F	DF	PR>D
Acesta catherinae	-15.6	-15.6	25.6	43.2	LOG(X+1)	4.78	41	0.0029
Amastigos acutus	-22.1	27.6	47.1	-1.9	LOG(X+1)	1.60	39	0.1938
Diastylopsis tenuis	35.0	37.6	93.8	42.3	LOG(X+1)	2.39	42	0.0657
Jassa falcata	-23.1	-23.3	-9.1	-11.8	LOG(X+.1)	0.13	41	0.9704
Nematodes unidentified	-25.0	-29.2	12.2	-23.0	LOG(X+1)	1.80	39	0.1484
Prionospio pygmaea	152.8	-22.7	61.0	-22.9	LOG(X+.1)	7.28	42	0.0002
Rhepoxynius menziese	-25.6	-16.2	-22.5	-10.4	LOG(X+1)	1.69	42	0.1710

RELATIVE PERCENT CHANGE AND MULTIVARIATE BACI RESULTS
IMPACT VS CONTROL

DEPTH IS 18 METERS

	STATION LOCATION 700	1100	1900	3350	TRANSFORM	F	DF	PR>D
Acesta catherinae	78.0	22.4	-4.2	-13.3	LOG(X+1)	3.20	42	0.0223
Aricidea wassi	36.2	34.6	-8.3	-21.4	LOG(X+1)	4.05	42	0.0072
Euphilomedes carcharodonta	7.0	-7.3	32.7	30.5	LOG(X+1)	3.94	42	0.0084
Jassa falcata	-68.3	4.1	-13.4	82.9	LOG(X+.1)	3.53	40	0.0147
Leptochelia dubia	91.0	63.4	63.1	131.2	LOG(X+.1)	1.38	42	0.2566
Mediomastus californiensis/ambiset	133.3	58.7	21.1	12.6	LOG(X+1)	5.38	42	0.0014
Nematodes unidentified	112.1	40.0	24.2	6.0	LOG(X+1)	4.45	40	0.0045
Paraprionospio pinnata	19.3	11.0	11.9	-4.2	LOG(X+1)	1.04	42	0.3963
Parasterope hulingsi	19.2	18.9	-0.3	6.7	LOG(X+1)	0.50	42	0.7373
Prionospio pygmaea	24.2	-12.7	69.1	86.4	LOG(X+.1)	1.70	42	0.1675
Rhepoxynius sp. juvenile	28.0	5.7	10.2	33.2	LOG(X+1)	1.83	42	0.1417
Rhepoxynius stenodes	-5.8	5.6	22.5	45.1	LOG(X+1)	1.29	42	0.2891
Rutiderma rostrata	50.4	106.4	-20.2	20.6	LOG(X+1)	15.75	42	0.0001
Syncheilidium shoemakeri	1.3	15.2	4.4	9.0	LOG(X+1)	0.36	42	0.8327
Tauberia gracilis	445.1	127.5	-16.1	-23.7	LOG(X+1)	30.06	42	0.0001
Tellina modesta	18.9	39.3	13.5	37.0	LOG(X+1)	1.99	42	0.1130

RELATIVE PERCENT CHANGE AND MULTIVARIATE BACI RESULTS
IMPACT VS CONTROL

DEPTH IS 8 METERS

		STATION LOCATION 700	1100	1900	3350	TRANSFORM	F	DF	PR>D
COMBINED	All	-35.3	-31.2	2.2	-5.6	LOG(X+1)	5.46	42	0.0012
COMBINED	Crustaceans	-4.0	-7.7	45.0	37.2	LOG(X+1)	3.19	42	0.0224
COMBINED	Molluscs	-17.2	-19.1	-4.3	-36.1	LOG(X+1)	1.47	42	0.2291
COMBINED	Polychaetes	-49.2	-27.2	-17.4	-5.8	LOG(X+1)	5.69	42	0.0009
Subsurface	All	7.6	22.1	53.1	8.4	LOG(X+1)	1.33	42	0.2758
Subsurface carnivore-deposit: Motile	All	11.9	4.9	-2.8	-4.9	LOG(X+1)	0.50	42	0.7347
Subsurface carnivore-deposit: Motile	Polychaetes	11.9	4.9	-2.8	-4.9	LOG(X+1)	0.50	42	0.7347
Subsurface deposit feeder: Motile	capitellid po	-0.7	37.6	82.5	-1.7	LOG(X+1)	1.82	42	0.1429
Subsurface deposit feeder: Motile	paraonid poly	3.1	-6.1	45.9	43.3	LOG(X+1)	3.65	42	0.0123
Subsurface deposit feeder: Motile	All	-0.8	21.8	60.9	15.5	LOG(X+1)	1.61	42	0.1900
Subsurface deposit feeder: Motile	Polychaetes	6.7	26.7	55.2	17.4	LOG(X+1)	1.43	42	0.2410
Surface	All	-38.2	-38.3	-5.0	-8.1	LOG(X+1)	5.96	42	0.0007
Surface carnivore-omnivore: Discrete	All	-31.9	-6.3	8.6	-20.7	LOG(X+1)	3.04	42	0.0275
Surface carnivore-omnivore: Discrete	Polychaetes	-28.2	-5.4	16.1	-16.9	LOG(X+1)	5.50	42	0.0012
Surface carnivore-omnivore: Motile	All	-14.1	-4.1	33.6	3.0	LOG(X+1)	2.41	42	0.0642
Surface carnivore-omnivore: Motile	Molluscs	-25.7	-11.0	-14.8	-8.1	LOG(X+1)	1.18	42	0.3316
Surface carnivore-omnivore: Motile	Others	16.8	50.5	51.7	-1.0	LOG(X+1)	4.53	42	0.0039
Surface carnivore-omnivore: Motile	Polychaetes	0.4	-22.1	29.4	17.7	LOG(X+1)	6.63	42	0.0003
Surface deposit feeder: Discrete	All	18.8	-3.2	-10.8	-8.8	LOG(X+1)	0.70	42	0.5942
Surface deposit feeder: Motile	All	6.9	3.3	58.1	9.3	LOG(X+1)	1.77	42	0.1519
Surface deposit feeder: Motile	Crustaceans	7.4	8.0	64.9	13.5	LOG(X+1)	1.92	42	0.1243
Surface omnivore-deposit: Motile	All	-27.7	-33.6	-11.0	11.0	LOG(X+1)	3.02	42	0.0280
Surface omnivore-deposit: Motile	Crustaceans	-35.9	-44.9	-20.2	16.2	LOG(X+.1)	2.65	42	0.0464
Surface suspension-deposit: Discrete	All	-44.1	-32.4	-26.7	-23.9	LOG(X+1)	3.50	42	0.0148
Surface suspension-deposit: Discrete	Polychaetes	-44.4	-30.2	-27.6	-4.9	LOG(X+1)	2.41	42	0.0641
Suspension feeder: Sessile	All	-42.6	-9.4	10.7	-34.1	LOG(X+.1)	0.64	42	0.6336

RELATIVE PERCENT CHANGE AND MULTIVARIATE BACI RESULTS
IMPACT VS CONTROL

DEPTH IS 18 METERS

		STATION LOCATION 700	1100	1900	3350	TRANSFORM	F	DF	PR>D
COMBINED	All	56.2	35.3	6.5	22.2	LOG(X+1)	5.86	42	0.0008
COMBINED	Crustaceans	32.6	49.8	27.4	79.0	LOG(X+1)	6.19	42	0.0005
COMBINED	Molluscs	41.9	70.7	22.6	18.5	LOG(X+1)	3.78	42	0.0103
COMBINED	Polychaetes	101.5	46.3	7.9	5.8	LOG(X+1)	12.17	42	0.0001
Subsurface	All	132.7	61.2	-1.4	-9.4	LOG(X+1)	17.25	42	0.0001
Subsurface carnivore-deposit: Motile	All	24.6	38.3	-11.4	-18.3	LOG(X+1)	4.40	42	0.0046
Subsurface carnivore-deposit: Motile	Polychaetes	24.6	38.3	-11.4	-18.3	LOG(X+1)	4.40	42	0.0046
Subsurface deposit feeder: Motile	capitellid po	121.9	54.0	12.6	12.1	LOG(X+1)	6.13	42	0.0006
Subsurface deposit feeder: Motile	paraonid poly	215.0	42.4	-19.8	-28.8	LOG(X+1)	24.25	42	0.0001
Subsurface deposit feeder: Motile	All	158.7	58.2	-4.1	-6.4	LOG(X+1)	17.02	42	0.0001
Subsurface deposit feeder: Motile	Polychaetes	153.0	56.5	-3.3	-4.6	LOG(X+1)	16.35	42	0.0001
Surface	All	27.1	34.1	21.0	45.7	LOG(X+1)	4.12	42	0.0066
Surface carnivore-omnivore: Discrete	All	24.5	-4.2	-18.1	-16.9	LOG(X+1)	3.59	42	0.0133
Surface carnivore-omnivore: Discrete	Others	-20.7	-17.0	-25.1	-20.8	LOG(X+1)	1.96	42	0.1185
Surface carnivore-omnivore: Discrete	Polychaetes	61.2	15.3	1.4	-0.0	LOG(X+1)	4.20	42	0.0060
Surface carnivore-omnivore: Motile	All	19.5	56.6	0.4	18.0	LOG(X+1)	2.78	42	0.0387
Surface carnivore-omnivore: Motile	Molluscs	24.1	45.8	32.5	-10.9	LOG(X+1)	4.01	42	0.0076
Surface carnivore-omnivore: Motile	Others	9.7	11.1	0.4	-2.7	LOG(X+1)	0.25	42	0.9065
Surface carnivore-omnivore: Motile	Polychaetes	18.7	46.0	-4.9	28.0	LOG(X+1)	2.08	42	0.1000
Surface deposit feeder: Discrete	All	62.2	58.6	10.6	20.4	LOG(X+1)	5.35	42	0.0014
Surface deposit feeder: Discrete	Polychaetes	55.9	44.6	-5.0	20.8	LOG(X+1)	5.48	42	0.0012
Surface deposit feeder: Motile	All	37.6	19.9	9.0	11.7	LOG(X+1)	1.37	42	0.2596
Surface deposit feeder: Motile	Crustaceans	10.2	-6.1	-0.9	7.3	LOG(X+1)	0.44	42	0.7766
Surface deposit feeder: Sessile	All	-19.7	-28.2	-9.4	-29.9	LOG(X+1)	2.34	42	0.0710
Surface deposit feeder: Sessile	Polychaetes	-21.4	-29.7	-9.2	-27.3	LOG(X+1)	2.45	42	0.0605
Surface omnivore-deposit: Discrete	All	82.6	68.5	36.3	124.1	LOG(X+.1)	1.44	42	0.2380
Surface omnivore-deposit: Discrete	Crustaceans	82.6	68.5	36.3	124.1	LOG(X+.1)	1.44	42	0.2380
Surface omnivore-deposit: Motile	All	23.3	53.1	34.1	63.8	LOG(X+1)	3.84	42	0.0095
Surface omnivore-deposit: Motile	Crustaceans	23.7	53.1	34.4	64.8	LOG(X+1)	3.99	42	0.0078
Surface suspension-deposit: Discrete	All	30.3	35.2	66.8	59.8	LOG(X+1)	5.89	42	0.0007
Surface suspension-deposit: Discrete	Crustaceans	48.3	63.3	78.6	53.9	LOG(X+1)	4.49	42	0.0041
Surface suspension-deposit: Discrete	Molluscs	27.9	56.7	27.8	40.6	LOG(X+1)	2.90	42	0.0330
Surface suspension-deposit: Discrete	Polychaetes	43.5	15.1	83.2	83.0	LOG(X+1)	4.54	42	0.0039
Surface suspension-deposit: Motile	All	21.6	21.5	-1.3	8.7	LOG(X+1)	0.73	42	0.5747
Surface suspension-deposit: Motile	Crustaceans	21.6	21.5	-1.8	8.7	LOG(X+1)	0.76	42	0.5595

RELATIVE PERCENT CHANGE AND MULTIVARIATE BACI RESULTS
IMPACT VS CONTROL

DEPTH IS 18 METERS

			STATION LOCATION 700	1100	1900	3350	TRANSFORM	F	DF	PR>D
Surface suspension-deposit:	Sessile	All	65.3	43.4	31.9	100.5	LOG(X+1)	6.89	42	0.0002
Surface suspension-deposit:	Sessile	Crustaceans	66.5	49.2	31.9	104.7	LOG(X+1)	7.40	42	0.0001
Suspension feeder:	Sessile	All	47.8	35.5	20.9	1.2	LOG(X+1)	2.47	42	0.0588
Suspension feeder:	Sessile	Molluscs	42.2	63.8	9.3	-1.4	LOG(X+.1)	0.73	40	0.5790
Suspension feeder:	Sessile	Polychaetes	16.3	9.0	5.8	-7.7	LOG(X+1)	0.55	42	0.6967

RELATIVE PERCENT CHANGE AND MULTIVARIATE BACI RESULTS
IMPACT VS CONTROL

DEPTH IS 8 METERS

	STATION LOCATION 700	1100	1900	3350	TRANSFORM	F	DF	PR>D
BMCRUS	2.7	2.2	6.8	16.3	LOG(X+1)	1.09	45	0.3717
BMMOL	-2.8	-11.1	-12.8	-8.7	LOG(X+1)	1.37	45	0.2584
BMOTHR	24.0	13.1	26.9	17.5	LOG(X+1)	0.65	45	0.6263
BMPOLY	-20.8	-3.5	-14.6	2.4	LOG(X+1)	3.35	45	0.0175
BMTOTL	-9.6	-2.1	-3.9	23.5	LOG(X+1)	0.57	45	0.6841

RELATIVE PERCENT CHANGE AND MULTIVARIATE BACI RESULTS
IMPACT VS CONTROL

DEPTH IS 18 METERS

	STATION LOCATION 700	1100	1900	3350	TRANSFORM	F	DF	PR>D
BMCRUS	0.4	-2.4	-2.4	0.6	LOG(X+1)	1.81	45	0.1425
BMMOL	-3.6	2.6	16.1	3.8	LOG(X+1)	1.03	45	0.4023
BMOTHR	-13.1	14.4	6.2	-13.2	LOG(X+1)	1.76	45	0.1527
BMPOLY	-4.1	-9.9	-0.9	-3.6	LOG(X+1)	1.63	45	0.1825
BMTOTL	-15.9	2.3	11.6	-10.2	LOG(X+1)	1.54	45	0.2057

APPENDIX G. SUMMARY OF THE RESULTS OF THE TESTS FOR TRENDS WITH TIME OF THE IMPACT-CONTROL DELTAS IN ABUNDANCE.

Results of analyses for both Before (preop) and After (op) trends are presented. The test for equality of slopes indicates if significant differences in the relationship between magnitude of the deltas and time occurred among the several Impact locations. If so, the p values associated with the correlation at each of the locations is presented. If not, the deltas of all stations were regressed against time simultaneously. The overall p value is the result associated with this test. The B column presents the direction of the observed slope (+) indicates a positive slope and (-) a negative slope in the deltas with time.

COMPARISON OF THE DELTA OF ABUNDANCES THROUGH TIME
PRE-OP DATA ONLY

DEPTH IS 8 METERS

SPECIES	EQUALITY OF SLOPES	STATION SLOPES (NOT EQUAL) 700 B	700 PR	1100 B	1100 PR	1900 B	1900 PR	3350 B	3350 PR	EQUALITY OF INTERCEPTS	OVERALL B	OVERALL PR
Acesta catherinae	0.61	.	.	.	.	.	.	.	.	0.42	+	0.92
Amastigos acutus	0.86	.	.	.	.	.	.	.	.	0.96	-	0.94
Diastyiopsis tenuis	0.77	.	.	.	.	.	.	.	.	0.77	-	0.88
Jassa falcata	0.77	.	.	.	.	.	.	.	.	0.85	+	0.03
Nematodes unidentified	0.33	.	.	.	.	.	.	.	.	0.85	-	0.81
Prionospio pygmaea	0.80	.	.	.	.	.	.	.	.	0.02	-	0.03
Rhepoxynius menziese	0.81	.	.	.	.	.	.	.	.	0.59	+	0.02

COMPARISON OF THE DELTA OF ABUNDANCES THROUGH TIME
OP DATA ONLY

DEPTH IS 8 METERS

SPECIES	EQUALITY OF SLOPES	STATION SLOPES (NOT EQUAL) 700 B	700 PR	1100 B	1100 PR	1900 B	1900 PR	3350 B	3350 PR	EQUALITY OF INTERCEPTS	OVERALL B	OVERALL PR
Acesta catherinae	0.16	.	.	.	.	.	.	.	.	0.00	+	0.02
Amastigos acutus	0.73	.	.	.	.	.	.	.	.	0.00	+	0.73
Diastylopsis tenuis	0.68	.	.	.	.	.	.	.	.	0.13	-	0.08
Jassa falcata	0.76	.	.	.	.	.	.	.	.	0.59	-	0.11
Nematodes unidentified	0.73	.	.	.	.	.	.	.	.	0.00	+	0.00
Prionospio pygmaea	0.35	.	.	.	.	.	.	.	.	0.07	+	0.00
Rhepoxynius menziese	0.75	.	.	.	.	.	.	.	.	0.16	-	0.01

COMPARISON OF THE DELTA OF ABUNDANCES THROUGH TIME
PRE-OP DATA ONLY

DEPTH IS 18 METERS

SPECIES	EQUALITY OF SLOPES	STATION SLOPES (NOT EQUAL) 700 B	700 PR	1100 B	1100 PR	1900 B	1900 PR	3350 B	3350 PR	EQUALITY OF INTERCEPTS	OVERALL B	OVERALL PR
Acesta catherinae	0.17	.	.	.	.	.	.	.	.	0.38	+	0.65
Aricidea wassi	0.52	.	.	.	.	.	.	.	.	0.00	+	0.04
Euphilomedes carcharodonta	0.96	.	.	.	.	.	.	.	.	0.41	-	0.17
Jassa falcata	0.07	.	.	.	.	.	.	.	.	0.02	-	0.10
Leptochelia dubia	0.01	+	0.00	+	0.00	+	0.23	+	0.85	.	.	.
Mediomastus californiensis/amb	0.19	.	.	.	.	.	.	.	.	0.35	+	0.31
Nematodes unidentified	0.78	.	.	.	.	.	.	.	.	0.75	+	0.17
Paraprionospio pinnata	0.38	.	.	.	.	.	.	.	.	0.89	-	0.11
Parasterope hulingsi	0.80	.	.	.	.	.	.	.	.	0.91	-	0.01
Prionospio pygmaea	0.98	.	.	.	.	.	.	.	.	0.06	+	0.27
Rhepoxynius sp. juvenile	0.98	.	.	.	.	.	.	.	.	0.15	+	0.29
Rhepoxynius stenodes	0.47	.	.	.	.	.	.	.	.	0.88	-	0.75
Rutiderma rostrata	0.91	.	.	.	.	.	.	.	.	0.00	-	0.52
Synchelidium shoemakeri	0.24	.	.	.	.	.	.	.	.	0.12	+	0.93
Tauberia gracilis	0.37	.	.	.	.	.	.	.	.	0.00	+	0.58
Tellina modesta	0.07	.	.	.	.	.	.	.	.	0.27	-	0.56

COMPARISON OF THE DELTA OF ABUNDANCES THROUGH TIME
OP DATA ONLY

DEPTH IS 18 METERS

SPECIES	EQUALITY OF SLOPES	STATION SLOPES (NOT EQUAL) 700 B	700 PR	1100 B	1100 PR	1900 B	1900 PR	3350 B	3350 PR	EQUALITY OF INTERCEPTS	OVERALL B	OVERALL PR
Acesta catherinae	0.03	+	0.00	+	0.00	+	0.00	+	0.09	.	.	.
Aricidea wassi	0.43	.	.	.	.	.	.	.	.	0.48	+	0.00
Euphilomedes carcharodonta	0.33	.	.	.	.	.	.	.	.	0.11	-	0.15
Jassa falcata	0.34	.	.	.	.	.	.	.	.	0.13	-	0.91
Leptochelia dubia	1.00	.	.	.	.	.	.	.	.	0.01	+	0.00
Mediomastus californiensis/amb	0.49	.	.	.	.	.	.	.	.	0.00	+	0.77
Nematodes unidentified	0.57	.	.	.	.	.	.	.	.	0.00	+	0.00
Paraprionospio pinnata	0.34	.	.	.	.	.	.	.	.	0.07	-	0.56
Parasterope hulingsi	0.57	.	.	.	.	.	.	.	.	0.56	+	0.29
Prionospio pygmaea	0.63	.	.	.	.	.	.	.	.	0.98	-	0.08
Rhepoxynius sp. juvenile	0.95	.	.	.	.	.	.	.	.	0.01	+	0.26
Rhepoxynius stenodes	0.69	.	.	.	.	.	.	.	.	0.00	+	0.00
Rutiderma rostrata	0.06	.	.	.	.	.	.	.	.	0.00	+	0.00
Synchelidium shoemakeri	0.86	.	.	.	.	.	.	.	.	0.10	-	0.00
Tauberia gracilis	0.96	.	.	.	.	.	.	.	.	0.00	+	0.00
Tellina modesta	0.32	.	.	.	.	.	.	.	.	0.09	+	0.27

COMPARISON OF THE DELTA OF ABUNDANCES THROUGH TIME
PRE-OP DATA ONLY

DEPTH IS 8 METERS

SPECIES GROUP		EQUALITY OF SLOPES	STATION SLOPES (NOT EQUAL) 700 B	700 PR	1100 B	1100 PR	1900 B	1900 PR	3350 B	3350 PR	EQUALITY OF INTERCEPTS	OVERALL B	OVERALL PR
COMBINED													
	All	0.37	.	.	.	.	.	.	.	.	0.20	-	0.56
	Crustaceans	0.38	.	.	.	.	.	.	.	.	0.69	+	0.77
	Molluscs	0.40	.	.	.	.	.	.	.	.	0.12	-	0.19
	Polychaetes	0.45	.	.	.	.	.	.	.	.	0.04	+	0.93
Subsurface													
	All	0.81	.	.	.	.	.	.	.	.	0.95	+	0.50
Subsurface carnivore-deposit: Motile													
	All	0.47	.	.	.	.	.	.	.	.	0.21	+	0.03
	Polychaetes	0.47	.	.	.	.	.	.	.	.	0.21	+	0.03
Subsurface deposit feeder: Motile													
	capitellid polychaetes	0.82	.	.	.	.	.	.	.	.	0.97	+	0.93
	paraonid polychaetes	0.51	.	.	.	.	.	.	.	.	0.41	-	0.98
	All	0.76	.	.	.	.	.	.	.	.	0.94	+	0.67
	Polychaetes	0.75	.	.	.	.	.	.	.	.	0.97	+	0.54
Surface													
	All	0.18	.	.	.	.	.	.	.	.	0.24	-	0.23
Surface carnivore-omnivore: Discrete													
	All	0.44	.	.	.	.	.	.	.	.	0.07	+	0.31
	Polychaetes	0.53	.	.	.	.	.	.	.	.	0.04	-	0.91
Surface carnivore-omnivore: Motile													
	All	0.42	.	.	.	.	.	.	.	.	0.21	-	0.47
	Molluscs	0.09	.	.	.	.	.	.	.	.	0.46	-	0.15
	Others	0.72	.	.	.	.	.	.	.	.	0.09	+	0.30
	Polychaetes	0.94	.	.	.	.	.	.	.	.	0.17	-	0.40
Surface deposit feeder: Discrete													
	All	0.53	.	.	.	.	.	.	.	.	0.14	+	0.81
Surface deposit feeder: Motile													
	All	0.76	.	.	.	.	.	.	.	.	0.60	-	0.87
	Crustaceans	0.77	.	.	.	.	.	.	.	.	0.61	-	0.82
Surface omnivore-deposit: Motile													
	All	0.17	.	.	.	.	.	.	.	.	0.39	+	0.23
	Crustaceans	0.17	.	.	.	.	.	.	.	.	0.37	+	0.23
Surface suspension-deposit: Discrete													
	All	0.25	.	.	.	.	.	.	.	.	0.31	-	0.13
	Polychaetes	0.23	.	.	.	.	.	.	.	.	0.15	-	0.10
Suspension feeder: Sessile													
	All	0.03	-	0.00	-	0.01	-	0.00	+	0.78	.	.	.

COMPARISON OF THE DELTA OF ABUNDANCES THROUGH TIME
OP DATA ONLY

DEPTH IS 8 METERS

SPECIES GROUP		EQUALITY OF SLOPES	STATION SLOPES (NOT EQUAL) 700 B	700 PR	1100 B	1100 PR	1900 B	1900 PR	3350 B	3350 PR	EQUALITY OF INTERCEPTS	OVERALL B	OVERALL PR
COMBINED													
	All	0.45	.	.	.	.	.	.	.	.	0.00	+	0.01
	Crustaceans	0.28	.	.	.	.	.	.	.	.	0.02	-	0.21
	Molluscs	0.09	.	.	.	.	.	.	.	.	0.03	-	0.86
	Polychaetes	0.48	.	.	.	.	.	.	.	.	0.26	+	0.00
Subsurface													
	All	0.74	.	.	.	.	.	.	.	.	0.00	+	0.00
Subsurface carnivore-deposit: Motile													
	All	0.83	.	.	.	.	.	.	.	.	0.20	+	0.02
	Polychaetes	0.83	.	.	.	.	.	.	.	.	0.20	+	0.02
Subsurface deposit feeder: Motile													
	capitellid polychaetes	0.75	.	.	.	.	.	.	.	.	0.00	+	0.36
	paraonid polychaetes	0.24	.	.	.	.	.	.	.	.	0.01	+	0.01
	All	0.85	.	.	.	.	.	.	.	.	0.00	+	0.00
	Polychaetes	0.97	.	.	.	.	.	.	.	.	0.04	+	0.00
Surface													
	All	0.42	.	.	.	.	.	.	.	.	0.01	+	0.04
Surface carnivore-omnivore: Discrete													
	All	0.98	.	.	.	.	.	.	.	.	0.73	+	0.04
	Polychaetes	0.97	.	.	.	.	.	.	.	.	0.77	+	0.05
Surface carnivore-omnivore: Motile													
	All	0.23	.	.	.	.	.	.	.	.	0.23	+	0.13
	Molluscs	0.35	.	.	.	.	.	.	.	.	0.76	+	0.00
	Others	0.93	.	.	.	.	.	.	.	.	0.70	+	0.82
	Polychaetes	0.93	.	.	.	.	.	.	.	.	0.22	+	0.82
Surface deposit feeder: Discrete													
	All	0.63	.	.	.	.	.	.	.	.	0.71	-	0.58
Surface deposit feeder: Motile													
	All	0.75	.	.	.	.	.	.	.	.	0.31	-	0.05
	Crustaceans	0.72	.	.	.	.	.	.	.	.	0.32	-	0.03
Surface omnivore-deposit: Motile													
	All	0.00	-	0.00	-	0.05	+	0.01	+	0.58	.	.	.
	Crustaceans	0.00	-	0.00	-	0.05	+	0.01	+	0.59	.	.	.
Surface suspension-deposit: Discrete													
	All	0.31	.	.	.	.	.	.	.	.	0.19	+	0.14
	Polychaetes	0.22	.	.	.	.	.	.	.	.	0.33	+	0.19
Suspension feeder: Sessile													
	All	0.28	.	.	.	.	.	.	.	.	0.93	-	0.53

COMPARISON OF THE DELTA OF ABUNDANCES THROUGH TIME
PRE-OP DATA ONLY

DEPTH IS 18 METERS

SPECIES GROUP	EQUALITY OF SLOPES	STATION SLOPES (NOT EQUAL) 700 B	700 PR	1100 B	1100 PR	1900 B	1900 PR	3350 B	3350 PR	EQUALITY OF INTERCEPTS	OVERALL B	OVERALL PR
COMBINED												
All	0.09	.	.	.	.	.	.	.	.	0.20	+	0.22
Crustaceans	0.38	.	.	.	.	.	.	.	.	0.01	+	0.18
Molluscs	0.14	.	.	.	.	.	.	.	.	0.01	-	0.25
Polychaetes	0.16	.	.	.	.	.	.	.	.	0.26	+	0.26
Subsurface												
All	0.12	.	.	.	.	.	.	.	.	0.30	+	0.37
Subsurface carnivore-deposit: Motile												
All	0.99	.	.	.	.	.	.	.	.	0.31	-	0.00
Polychaetes	0.99	.	.	.	.	.	.	.	.	0.31	-	0.00
Subsurface deposit feeder: Motile												
capitellid polychaetes	0.21	.	.	.	.	.	.	.	.	0.30	+	0.30
paraonid polychaetes	0.66	.	.	.	.	.	.	.	.	0.01	+	0.32
All	0.14	.	.	.	.	.	.	.	.	0.21	+	0.04
Polychaetes	0.13	.	.	.	.	.	.	.	.	0.20	+	0.03
Surface												
All	0.15	.	.	.	.	.	.	.	.	0.15	+	0.12
Surface carnivore-omnivore: Discrete												
All	0.86	.	.	.	.	.	.	.	.	0.83	-	1.00
Others	0.70	.	.	.	.	.	.	.	.	0.60	+	0.90
Polychaetes	0.78	.	.	.	.	.	.	.	.	0.17	-	0.84
Surface carnivore-omnivore: Motile												
All	0.76	.	.	.	.	.	.	.	.	0.10	+	0.33
Molluscs	0.83	.	.	.	.	.	.	.	.	0.27	-	0.62
Others	0.98	.	.	.	.	.	.	.	.	0.93	+	0.04
Polychaetes	0.67	.	.	.	.	.	.	.	.	0.00	-	0.94
Surface deposit feeder: Discrete												
All	0.87	.	.	.	.	.	.	.	.	0.14	-	0.52
Polychaetes	0.99	.	.	.	.	.	.	.	.	0.04	-	0.82
Surface deposit feeder: Motile												
All	0.86	.	.	.	.	.	.	.	.	0.74	+	0.01
Crustaceans	0.82	.	.	.	.	.	.	.	.	0.86	+	0.18
Surface deposit feeder: Sessile												
All	0.87	.	.	.	.	.	.	.	.	0.84	-	0.48
Polychaetes	0.78	.	.	.	.	.	.	.	.	0.93	-	0.33
Surface omnivore-deposit: Discrete												
All	0.02	+	0.00	+	0.00	+	0.18	-	0.86	.	.	.
Crustaceans	0.02	+	0.00	+	0.00	+	0.18	-	0.86	.	.	.
Surface omnivore-deposit: Motile												
All	0.61	.	.	.	.	.	.	.	.	0.03	-	0.10
Crustaceans	0.60	.	.	.	.	.	.	.	.	0.03	-	0.10
Surface suspension-deposit: Discrete												
All	0.13	.	.	.	.	.	.	.	.	0.86	+	0.17
Crustaceans	0.27	.	.	.	.	.	.	.	.	0.48	+	0.22
Molluscs	0.07	.	.	.	.	.	.	.	.	0.23	-	0.08
Polychaetes	0.99	.	.	.	.	.	.	.	.	0.17	+	0.11
Surface suspension-deposit: Motile												
All	0.90	.	.	.	.	.	.	.	.	0.73	-	0.01

COMPARISON OF THE DELTA OF ABUNDANCES THROUGH TIME
PRE-OP DATA ONLY

DEPTH IS 18 METERS

SPECIES GROUP	EQUALITY OF SLOPES	STATION SLOPES (NOT EQUAL) 700 B	700 PR	1100 B	1100 PR	1900 B	1900 PR	3350 B	3350 PR	EQUALITY OF INTERCEPTS	OVERALL B	OVERALL PR
Crustaceans	0.90	.	.	.	.	.	.	.	.	0.73	-	0.01
Surface suspension-deposit: Sessile												
All	0.83	.	.	.	.	.	.	.	.	0.20	+	0.25
Crustaceans	0.82	.	.	.	.	.	.	.	.	0.17	+	0.28
Suspension feeder: Sessile												
All	0.33	.	.	.	.	.	.	.	.	0.03	-	0.66
Molluscs	0.84	.	.	.	.	.	.	.	.	0.07	+	0.59
Polychaetes	0.38	.	.	.	.	.	.	.	.	0.36	-	0.12

COMPARISON OF THE DELTA OF ABUNDANCES THROUGH TIME
OP DATA ONLY

DEPTH IS 18 METERS

SPECIES GROUP	EQUALITY OF SLOPES	STATION SLOPES (NOT EQUAL) 700 B	700 PR	1100 B	1100 PR	1900 B	1900 PR	3350 B	3350 PR	EQUALITY OF INTERCEPTS	OVERALL B	OVERALL PR
COMBINED												
All	0.84	.	.	.	.	.	.	.	.	0.04	+	0.00
Crustaceans	0.52	.	.	.	.	.	.	.	.	0.08	+	0.00
Molluscs	0.21	.	.	.	.	.	.	.	.	0.97	+	0.35
Polychaetes	0.67	.	.	.	.	.	.	.	.	0.00	+	0.00
Subsurface												
All	0.69	.	.	.	.	.	.	.	.	0.00	+	0.00
Subsurface carnivore-deposit: Motile												
All	0.90	.	.	.	.	.	.	.	.	0.00	+	0.00
Polychaetes	0.90	.	.	.	.	.	.	.	.	0.00	+	0.00
Subsurface deposit feeder: Motile												
capitellid polychaetes	0.44	.	.	.	.	.	.	.	.	0.00	+	0.35
paraonid polychaetes	0.61	.	.	.	.	.	.	.	.	0.00	+	0.00
All	0.63	.	.	.	.	.	.	.	.	0.00	+	0.00
Polychaetes	0.62	.	.	.	.	.	.	.	.	0.00	+	0.00
Surface												
All	0.62	.	.	.	.	.	.	.	.	0.49	+	0.00
Surface carnivore-omnivore: Discrete												
All	0.25	.	.	.	.	.	.	.	.	0.00	+	0.00
Others	0.74	.	.	.	.	.	.	.	.	0.03	+	0.19
Polychaetes	0.15	.	.	.	.	.	.	.	.	0.45	+	0.40
Surface carnivore-omnivore: Motile												
All	0.70	.	.	.	.	.	.	.	.	0.76	+	0.01
Molluscs	0.87	.	.	.	.	.	.	.	.	0.29	-	0.76
Others	0.72	.	.	.	.	.	.	.	.	0.80	+	0.00
Polychaetes	0.84	.	.	.	.	.	.	.	.	0.81	+	0.00
Surface deposit feeder: Discrete												
All	0.21	.	.	.	.	.	.	.	.	0.17	-	0.78
Polychaetes	0.12	.	.	.	.	.	.	.	.	0.07	-	0.21
Surface deposit feeder: Motile												
All	0.32	.	.	.	.	.	.	.	.	0.11	+	0.35
Crustaceans	0.44	.	.	.	.	.	.	.	.	0.38	+	0.65
Surface deposit feeder: Sessile												
All	0.99	.	.	.	.	.	.	.	.	0.18	-	0.00
Polychaetes	0.99	.	.	.	.	.	.	.	.	0.15	-	0.00
Surface omnivore-deposit: Discrete												
All	1.00	.	.	.	.	.	.	.	.	0.01	+	0.00
Crustaceans	1.00	.	.	.	.	.	.	.	.	0.01	+	0.00
Surface omnivore-deposit: Motile												
All	0.01	+	0.97	-	0.19	+	0.15	+	0.00	.	.	.
Crustaceans	0.01	+	0.94	-	0.19	+	0.14	+	0.00	.	.	.
Surface suspension-deposit: Discrete												
All	0.92	.	.	.	.	.	.	.	.	0.33	+	0.00
Crustaceans	0.27	.	.	.	.	.	.	.	.	0.06	+	0.00
Molluscs	0.21	.	.	.	.	.	.	.	.	0.10	+	0.22
Polychaetes	0.86	.	.	.	.	.	.	.	.	0.60	-	0.30
Surface suspension-deposit: Motile												
All	0.55	.	.	.	.	.	.	.	.	0.43	+	0.29

COMPARISON OF THE DELTA OF ABUNDANCES THROUGH TIME
OP DATA ONLY

DEPTH IS 18 METERS

SPECIES GROUP	EQUALITY OF SLOPES	STATION SLOPES (NOT EQUAL) 700 B	700 PR	1100 B	1100 PR	1900 B	1900 PR	3350 B	3350 PR	EQUALITY OF INTERCEPTS	OVERALL B	OVERALL PR
Crustaceans	0.55	.	.	.	.	.	.	.	.	0.42	+	0.30
Surface suspension-deposit: Sessile												
All	0.90	.	.	.	.	.	.	.	.	0.41	-	0.17
Crustaceans	0.92	.	.	.	.	.	.	.	.	0.41	-	0.14
Suspension feeder: Sessile												
All	0.22	.	.	.	.	.	.	.	.	0.26	+	0.00
Molluscs	0.77	.	.	.	.	.	.	.	.	0.62	-	0.33
Polychaetes	0.29	.	.	.	.	.	.	.	.	0.53	+	0.00

COMPARISON OF THE DELTA OF BIOMASS THROUGH TIME
PRE-OP DATA ONLY

DEPTH IS 8 METERS

SPECIES	EQUALITY OF SLOPES	STATION SLOPES (NOT EQUAL) 700 B	700 PR	1100 B	1100 PR	1900 B	1900 PR	3350 B	3350 PR	EQUALITY OF INTERCEPTS	OVERALL B	OVERALL PR
CRUSTACEAN BIOMASS (GM WET WEIGHT)	0.89	.	.	.	.	.	.	.	.	0.84	-	0.07
MOLLUSC BIOMASS (GM WET WEIGHT)	0.32	.	.	.	.	.	.	.	.	0.81	+	0.00
OTHER BIOMASS (GM WET WEIGHT)	0.04	+	0.80	+	0.05	+	0.00	-	0.91	.	.	.
POLYCHAETE BIOMASS (GM WET WEIGHT)	0.94	.	.	.	.	.	.	.	.	0.00	-	0.36
TOTAL BIOMASS (GM WET WEIGHT)	0.17	.	.	.	.	.	.	.	.	0.07	+	0.01

COMPARISON OF THE DELTA OF BIOMASS THROUGH TIME
OP DATA ONLY

DEPTH IS 8 METERS

SPECIES	EQUALITY OF SLOPES	STATION SLOPES (NOT EQUAL) 700 B	700 PR	1100 B	1100 PR	1900 B	1900 PR	3350 B	3350 PR	EQUALITY OF INTERCEPTS	OVERALL B	OVERALL PR
CRUSTACEAN BIOMASS (GM WET WEIGHT)	0.91	.	.	.	.	.	.	.	.	0.51	+	0.82
MOLLUSC BIOMASS (GM WET WEIGHT)	0.13	.	.	.	.	.	.	.	.	0.20	-	0.00
OTHER BIOMASS (GM WET WEIGHT)	0.94	.	.	.	.	.	.	.	.	0.53	+	0.83
POLYCHAETE BIOMASS (GM WET WEIGHT)	0.76	.	.	.	.	.	.	.	.	0.09	-	0.06
TOTAL BIOMASS (GM WET WEIGHT)	0.89	.	.	.	.	.	.	.	.	0.76	-	0.02

COMPARISON OF THE DELTA OF BIOMASS THROUGH TIME
PRE-OP DATA ONLY

DEPTH IS 18 METERS

SPECIES	EQUALITY OF SLOPES	STATION SLOPES (NOT EQUAL) 700 B	700 PR	1100 B	1100 PR	1900 B	1900 PR	3350 B	3350 PR	EQUALITY OF INTERCEPTS	OVERALL B	OVERALL PR
CRUSTACEAN BIOMASS (GM WET WEIGHT)	0.66	.	.	.	.	.	.	.	.	0.59	-	0.27
MOLLUSC BIOMASS (GM WET WEIGHT)	0.93	.	.	.	.	.	.	.	.	0.77	-	0.20
OTHER BIOMASS (GM WET WEIGHT)	0.70	.	.	.	.	.	.	.	.	0.48	-	0.05
POLYCHAETE BIOMASS (GM WET WEIGHT)	0.73	.	.	.	.	.	.	.	.	0.22	-	0.00
TOTAL BIOMASS (GM WET WEIGHT)	0.89	.	.	.	.	.	.	.	.	0.28	-	0.00

COMPARISON OF THE DELTA OF BIOMASS THROUGH TIME
OP DATA ONLY

DEPTH IS 18 METERS

SPECIES	EQUALITY OF SLOPES	STATION SLOPES (NOT EQUAL) 700 B	700 PR	1100 B	1100 PR	1900 B	1900 PR	3350 B	3350 PR	EQUALITY OF INTERCEPTS	OVERALL B	OVERALL PR
CRUSTACEAN BIOMASS (GM WET WEIGHT)	0.97	.	.	.	.	.	.	.	.	0.52	+	0.03
MOLLUSC BIOMASS (GM WET WEIGHT)	0.74	.	.	.	.	.	.	.	.	0.42	+	0.24
OTHER BIOMASS (GM WET WEIGHT)	0.95	.	.	.	.	.	.	.	.	0.09	-	0.00
POLYCHAETE BIOMASS (GM WET WEIGHT)	0.78	.	.	.	.	.	.	.	.	0.60	-	0.89
TOTAL BIOMASS (GM WET WEIGHT)	0.75	.	.	.	.	.	.	.	.	0.16	-	0.14

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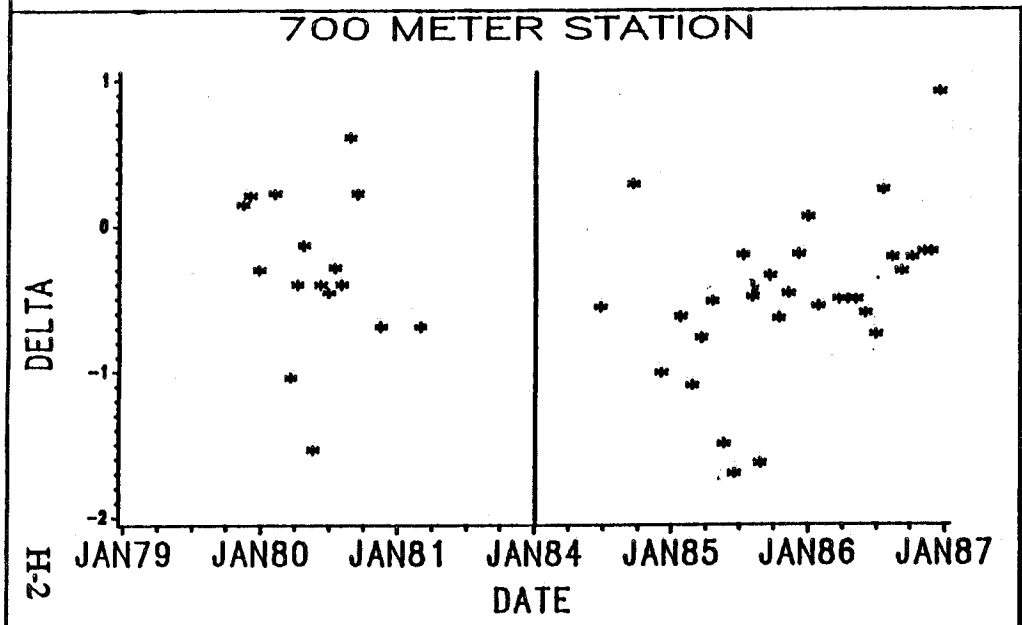
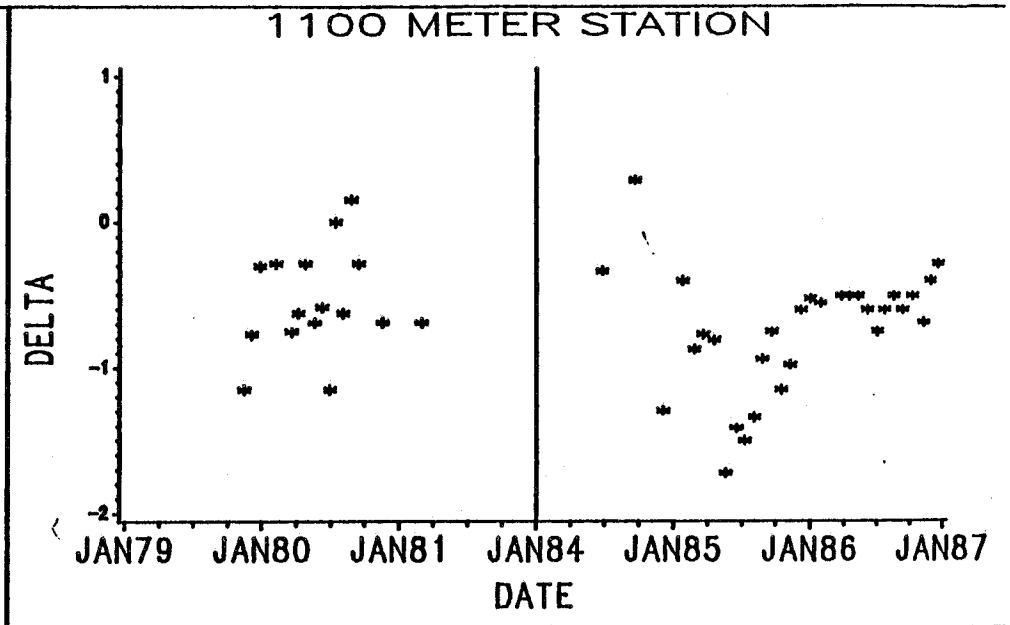
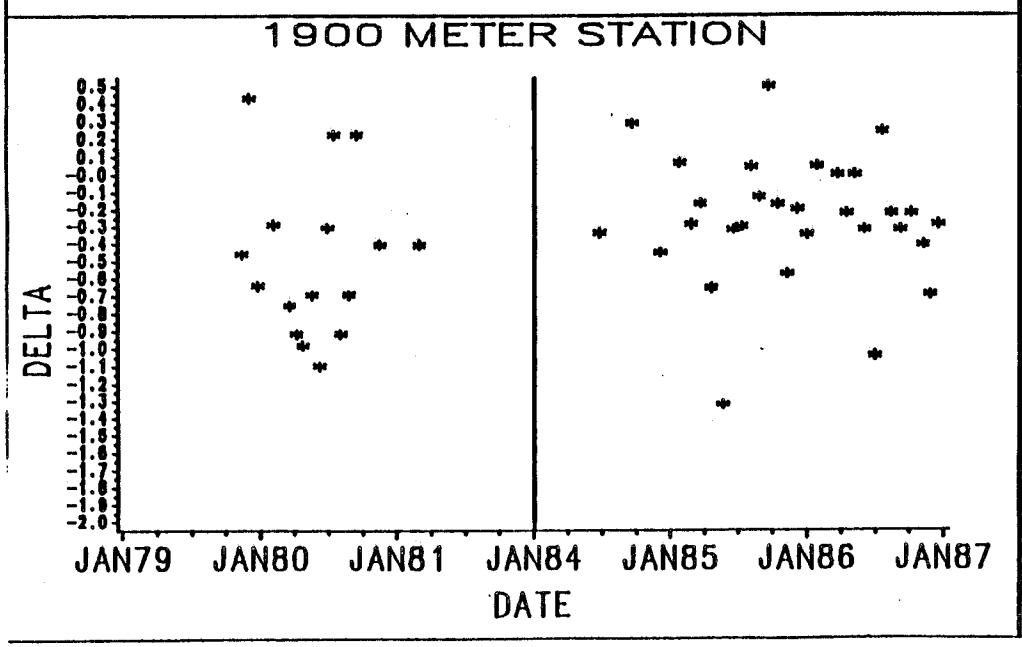
APPENDIX H. PLOTS OF THE IMPACT-CONTROL DELTAS AGAINST TIME FOR THOSE INDIVIDUAL TAXA, TROPHIC MOTILITY GROUPS, AND BIOMASS MEASURES WHICH DISPLAYED A SIGNFICANT CHANGE IN ABUNDANCE OR A SIGNIFICANT TREND IN DELTAS IN THE AFTER PERIOD.

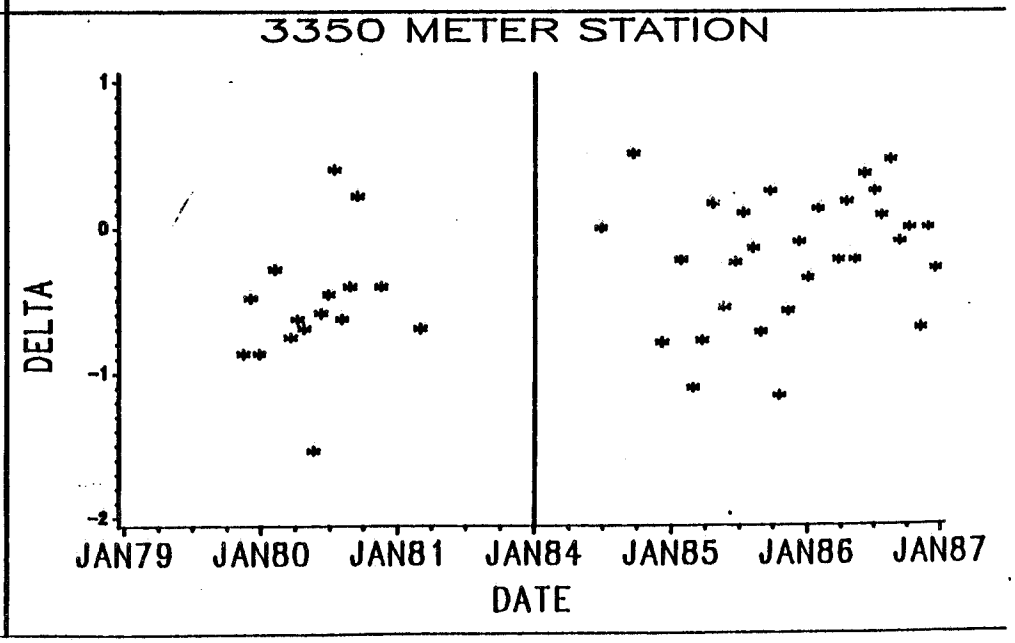
Separate plots are presented for each of the four Results of analyses for both Before (preop) and After (op) trends are presented. The vertical bar demarks the Before and After periods.

8 METER DEPTH
Acesta catherinae





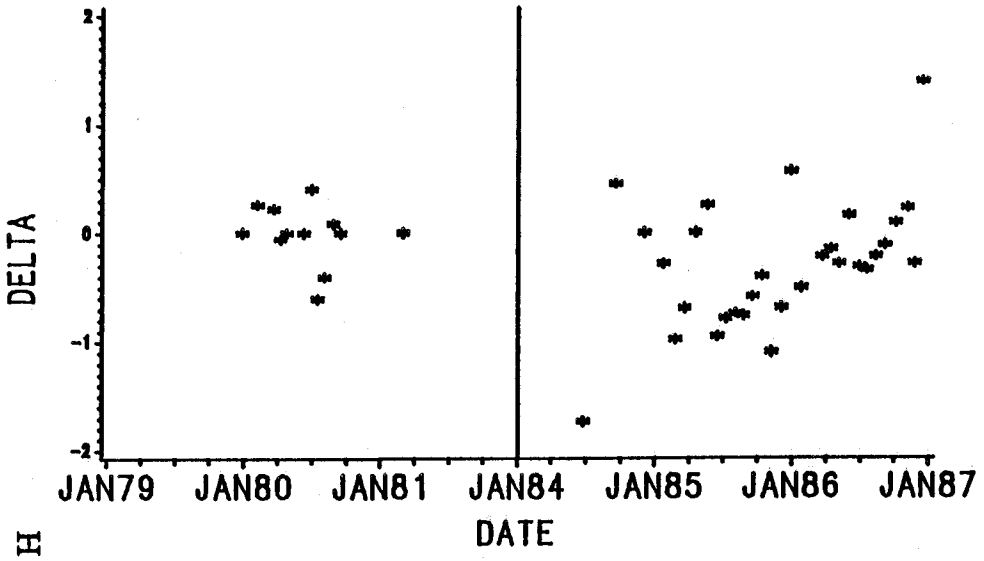




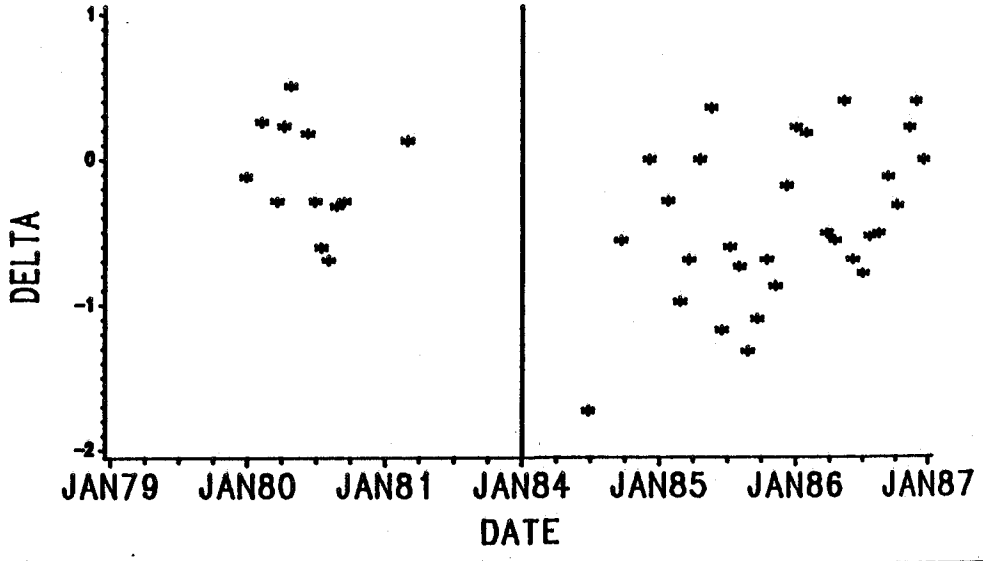
H-2

8 METER DEPTH
Nematodes unidentified

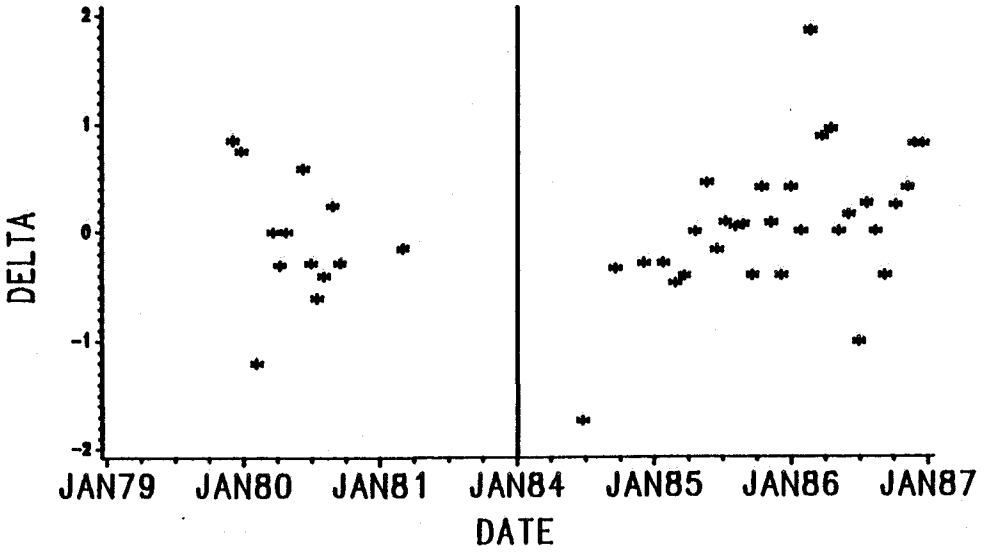
700 METER STATION



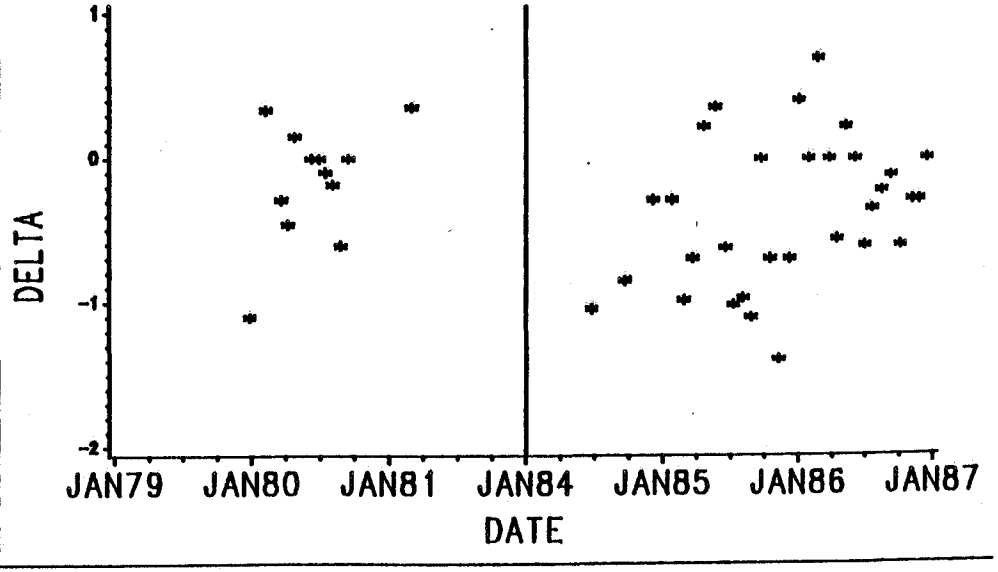
1100 METER STATION



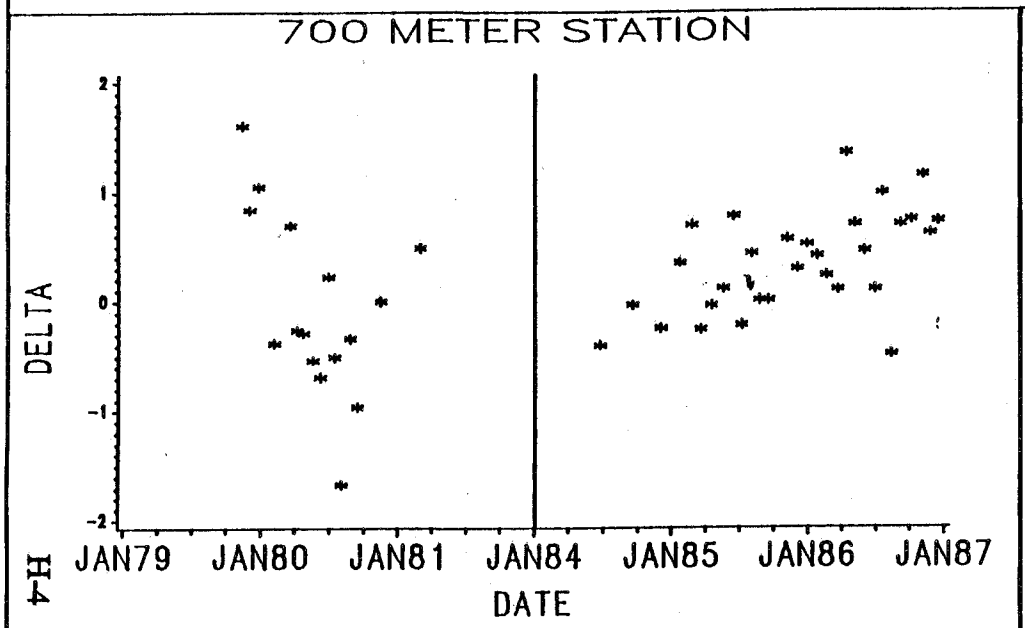
1900 METER STATION

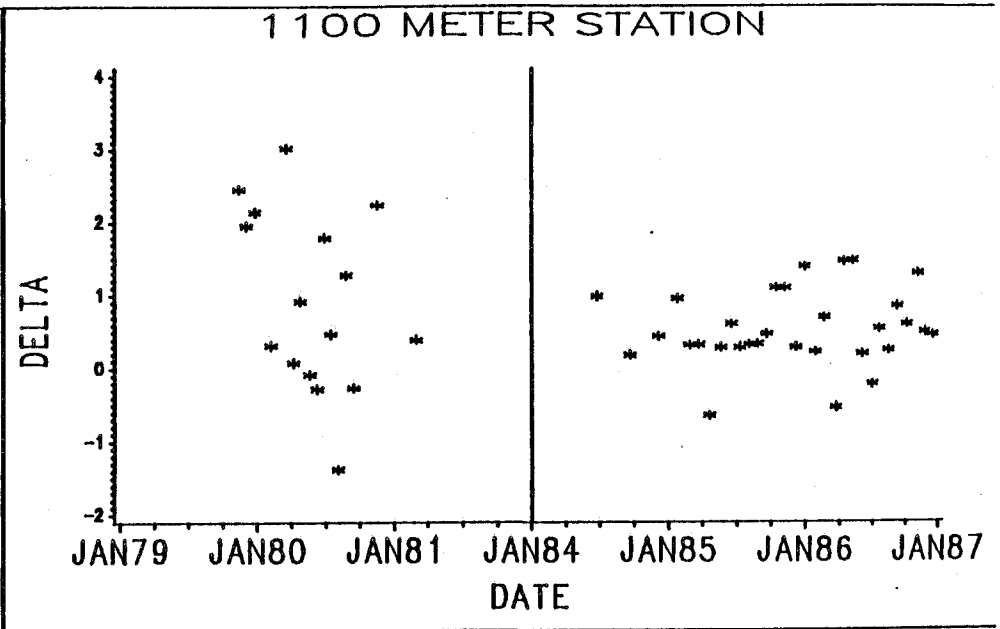


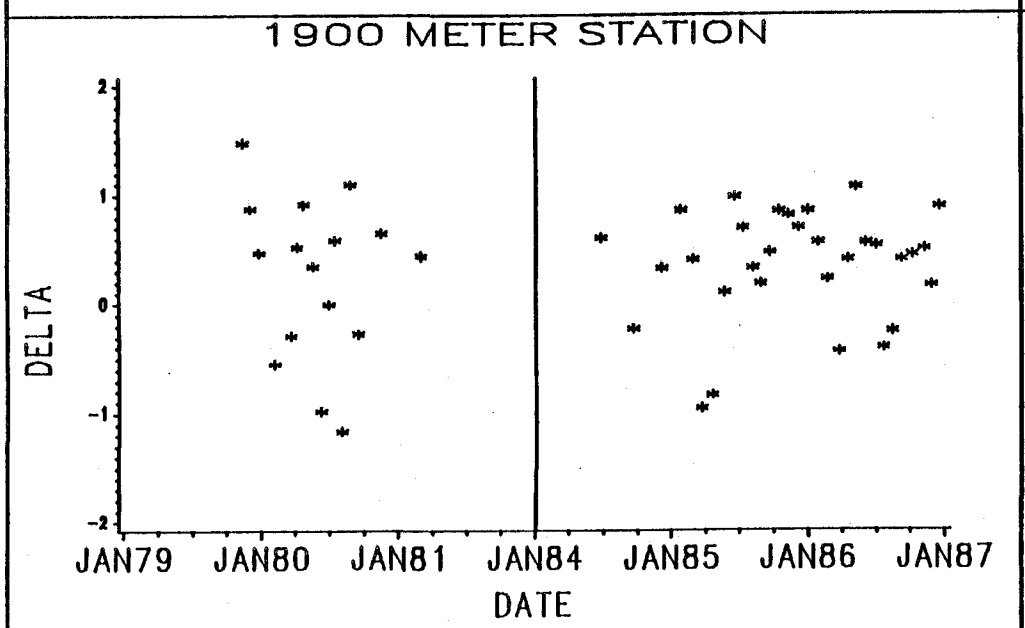
3350 METER STATION

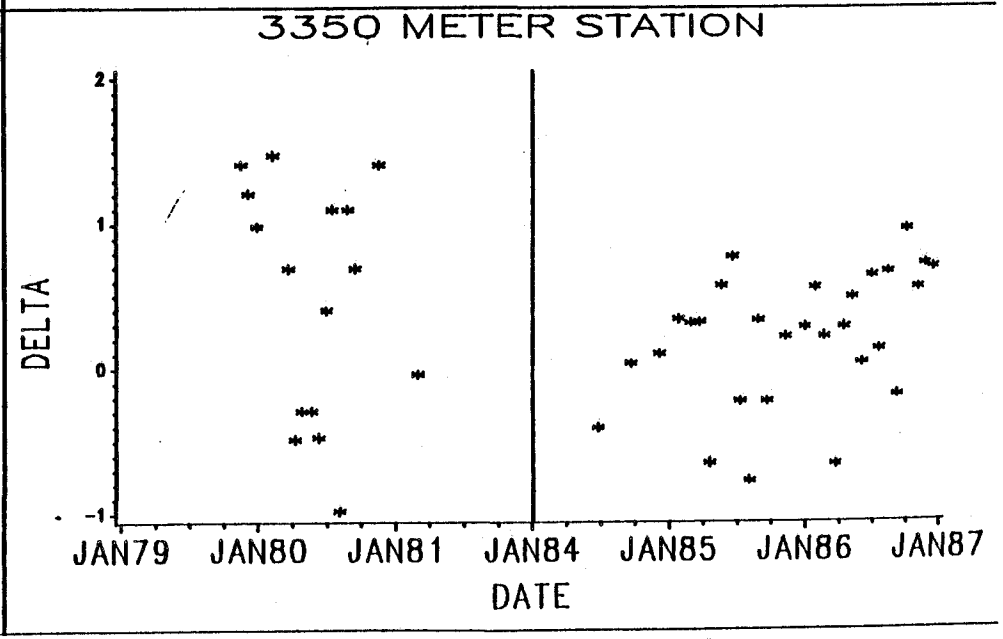


8 METER DEPTH
Prionospio pygmaea

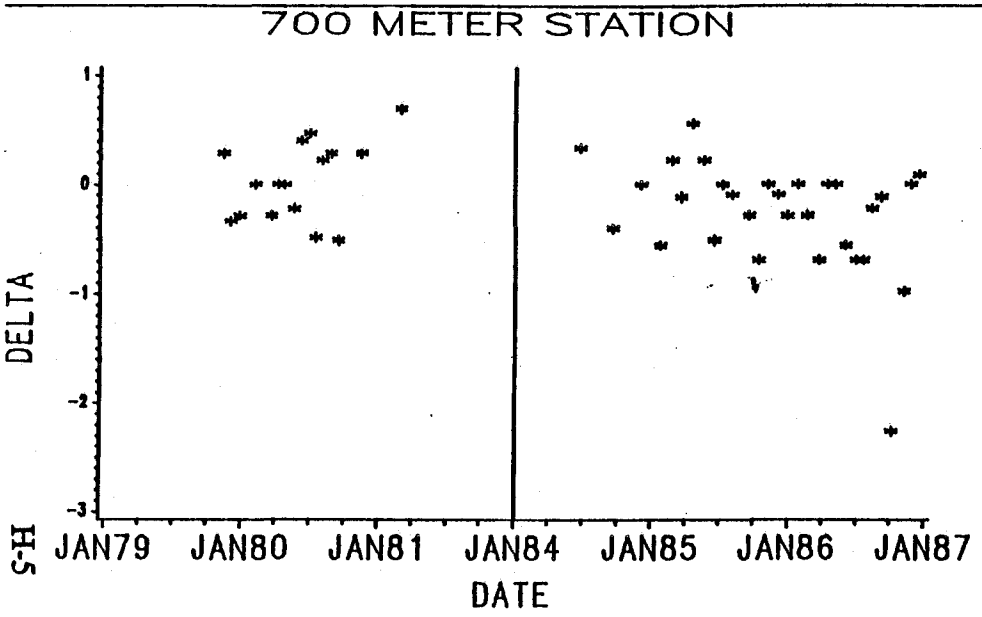


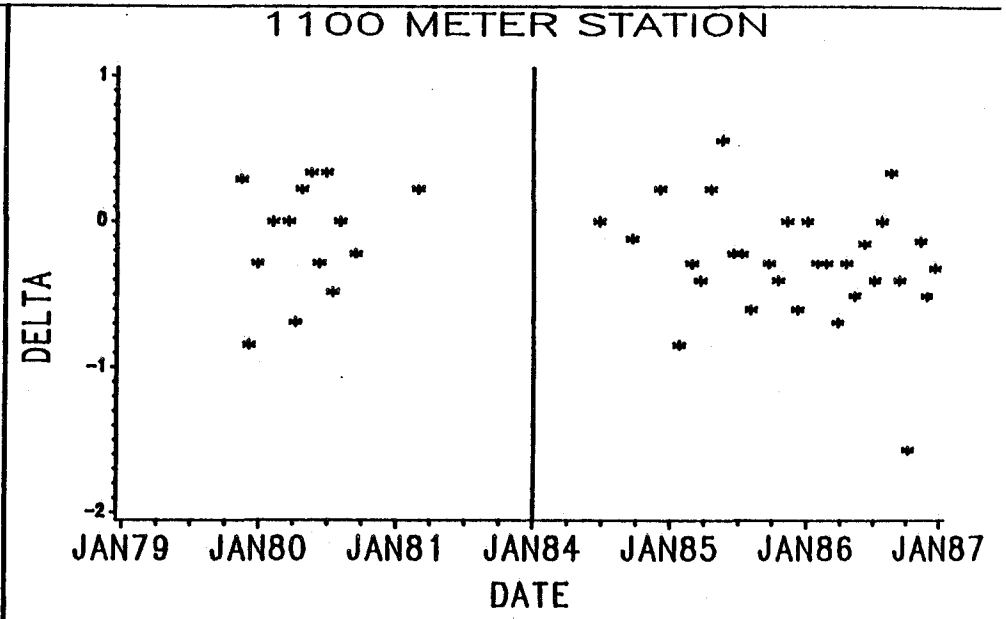


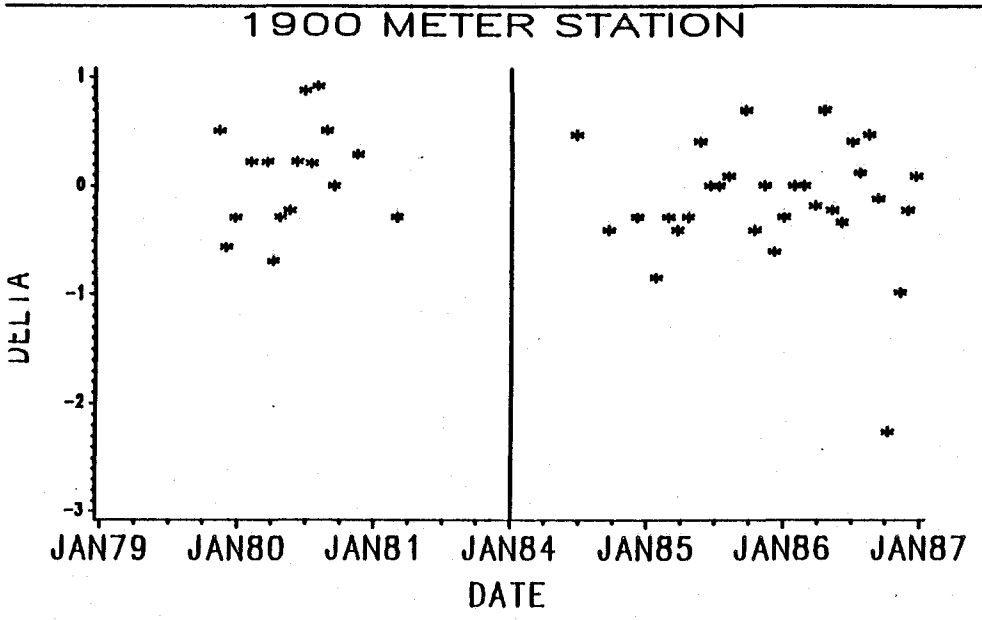


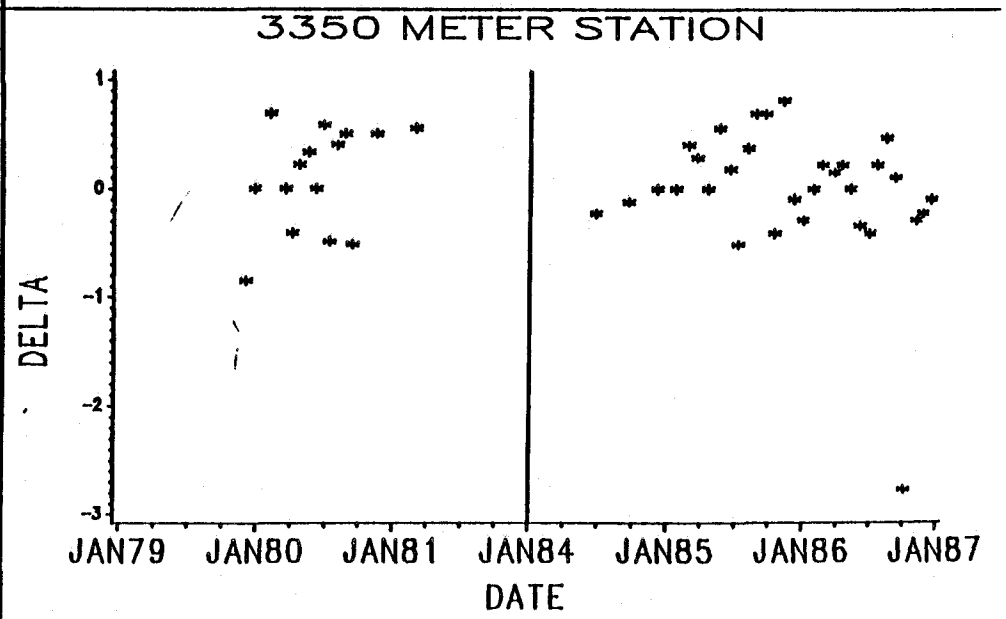


8 METER DEPTH
Rhepoxynius menziese



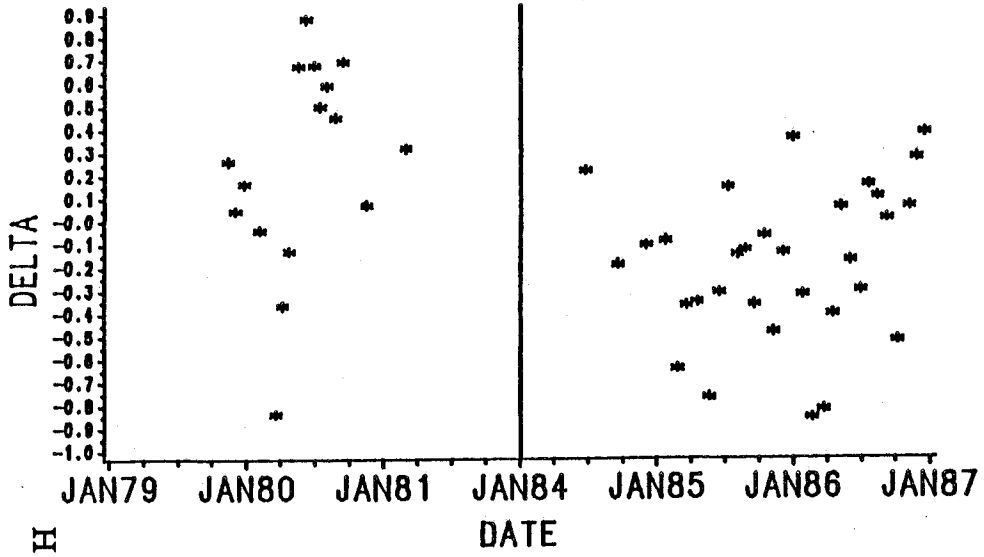




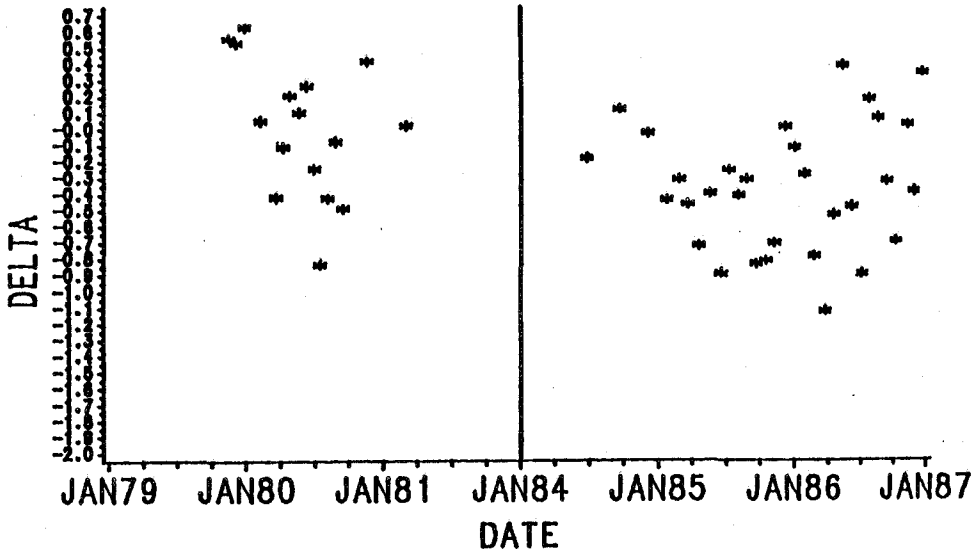


8 METER DEPTH
COMBINED
All

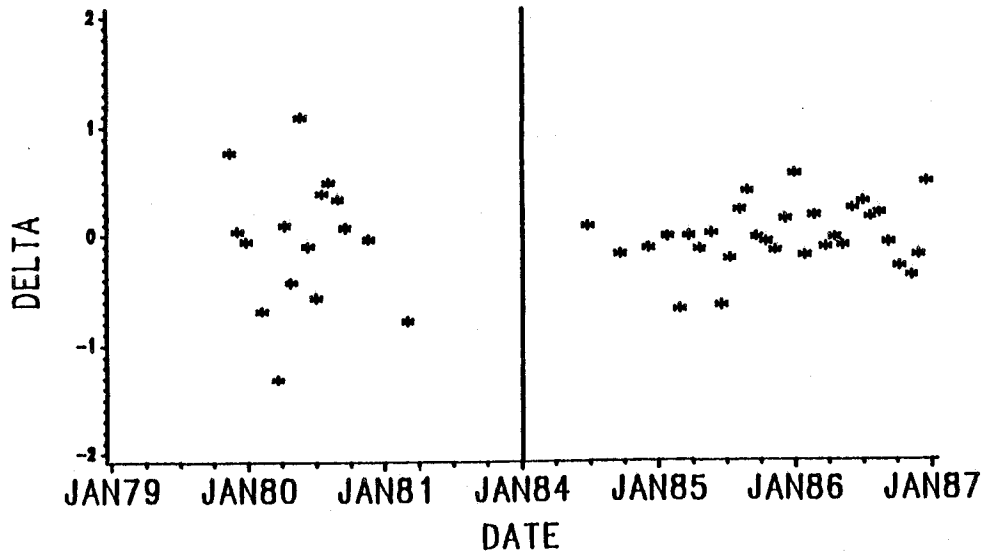
700 METER STATION



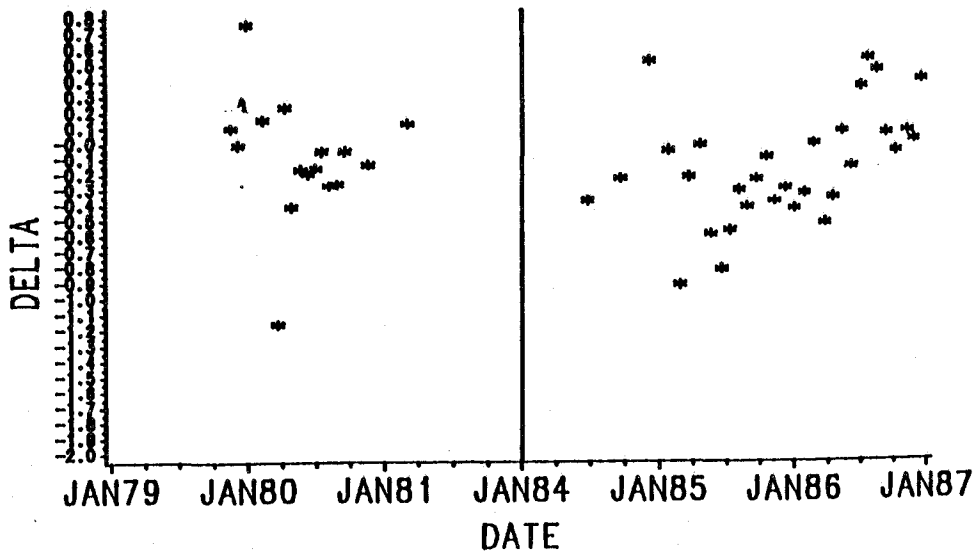
1100 METER STATION

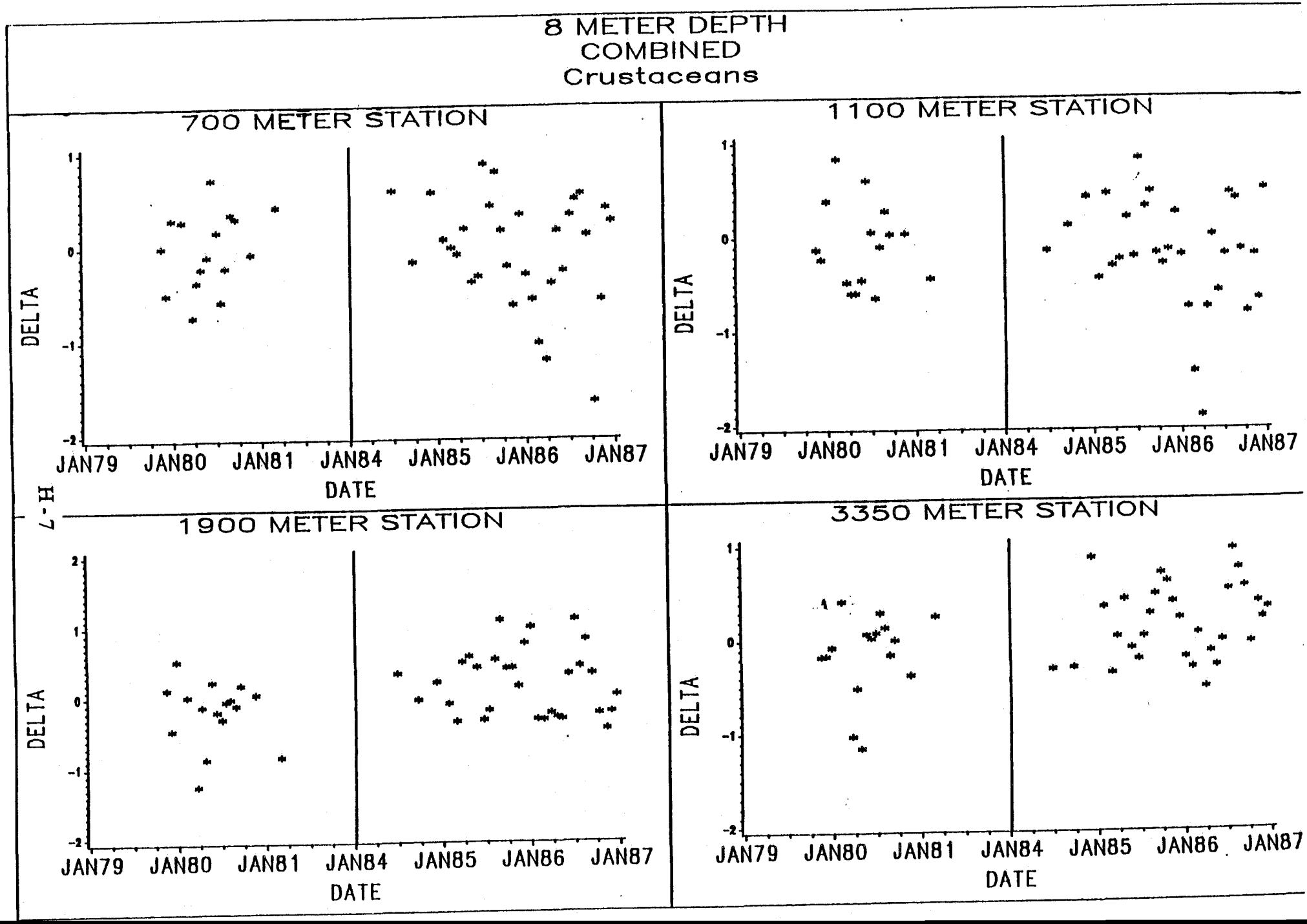


1900 METER STATION



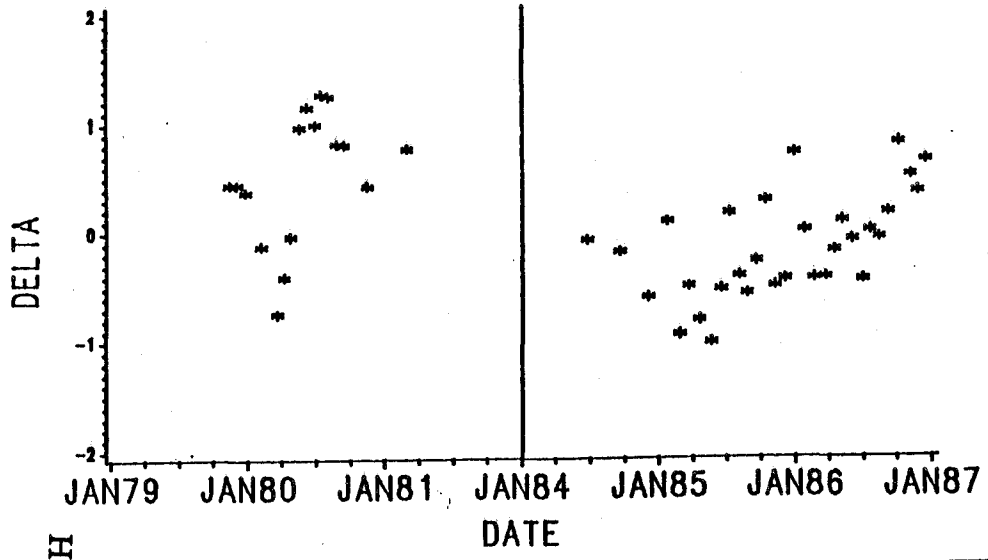
3350 METER STATION



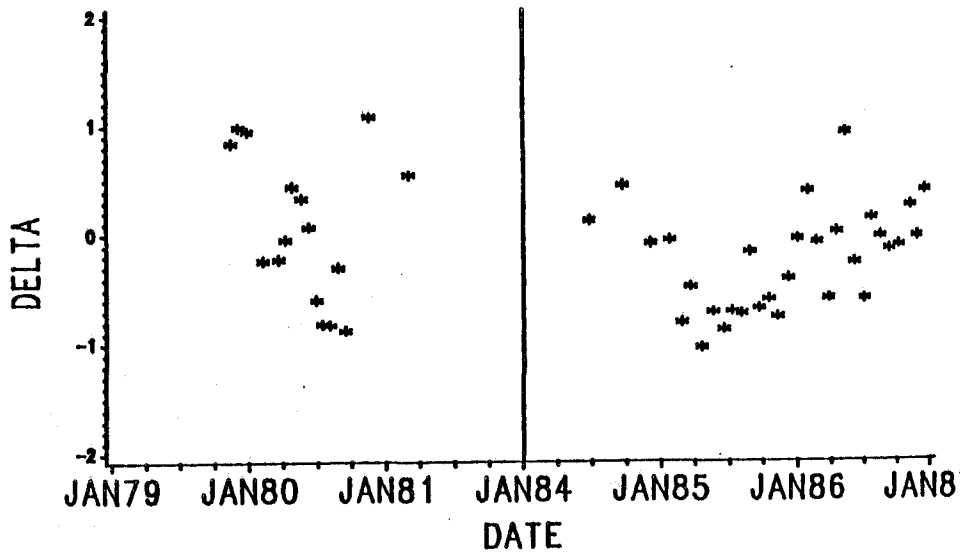

8 METER DEPTH
COMBINED
Crustaceans
700 METER STATION
1100 METER STATION
1900 METER STATION
3350 METER STATION
DELTA
DATE
JAN79
JAN80
JAN81
JAN84
JAN85
JAN86
JAN87

8 METER DEPTH
COMBINED
Polychaetes

700 METER STATION



1100 METER STATION



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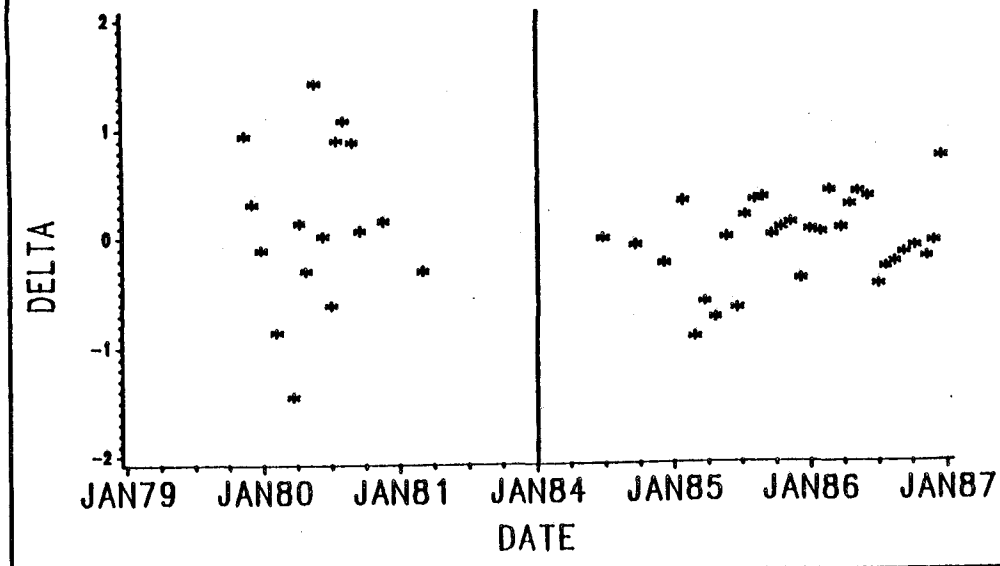
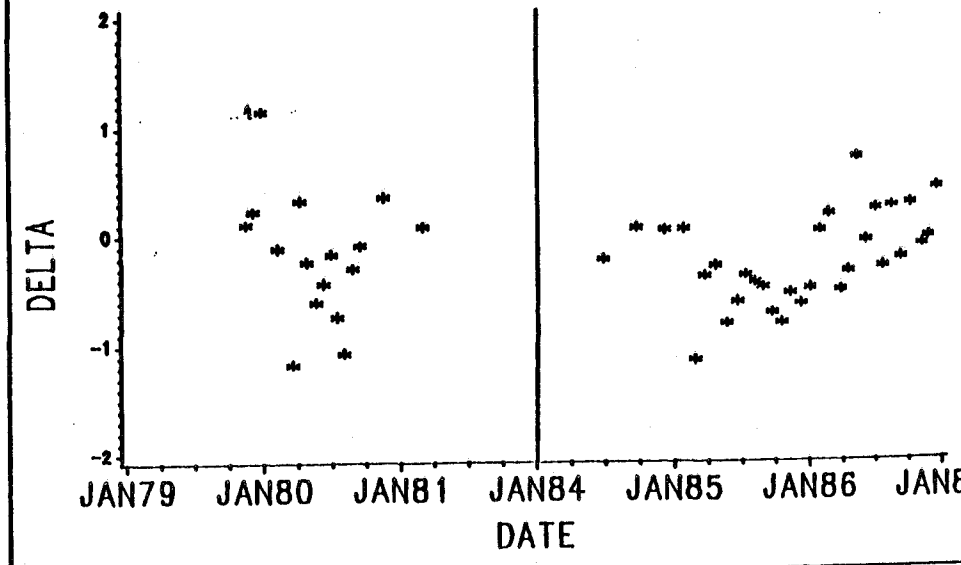


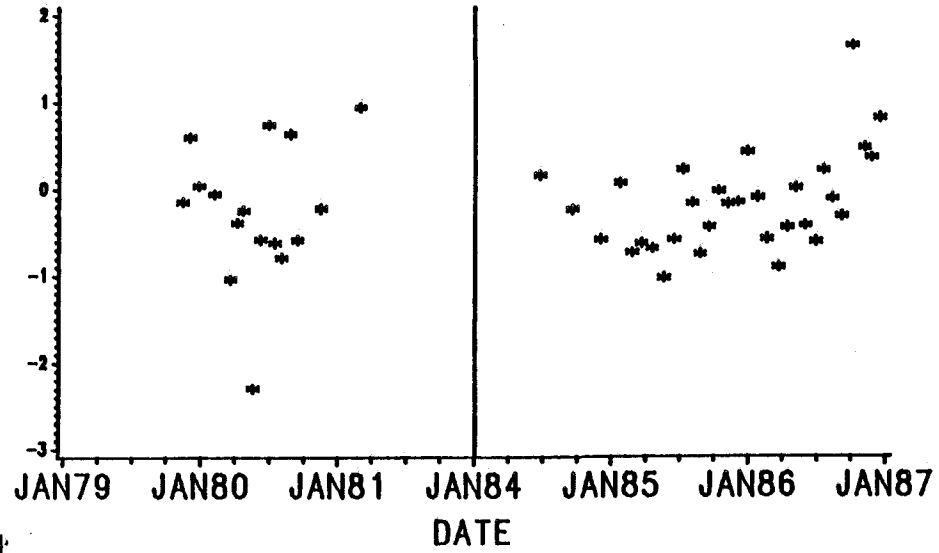
3350 METER STATION



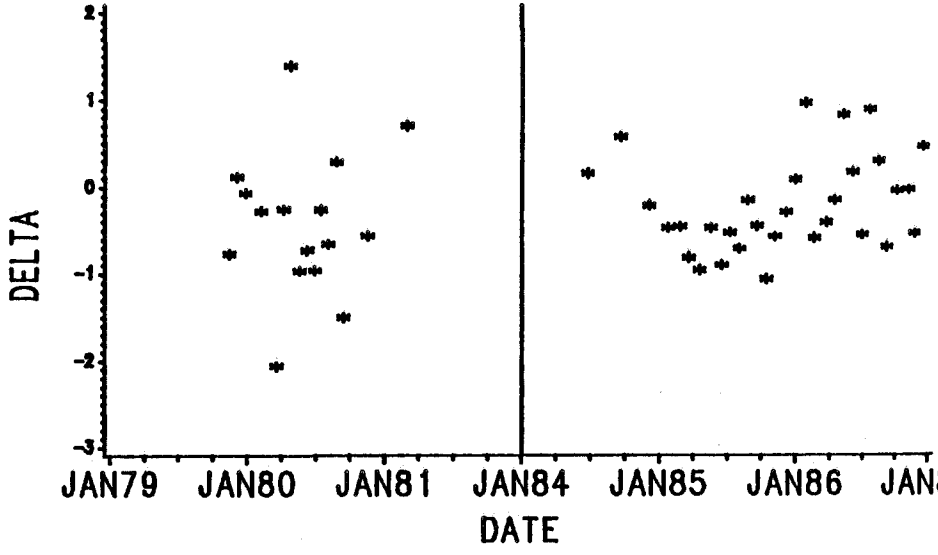
8-H

8 METER DEPTH
Subsurface
All

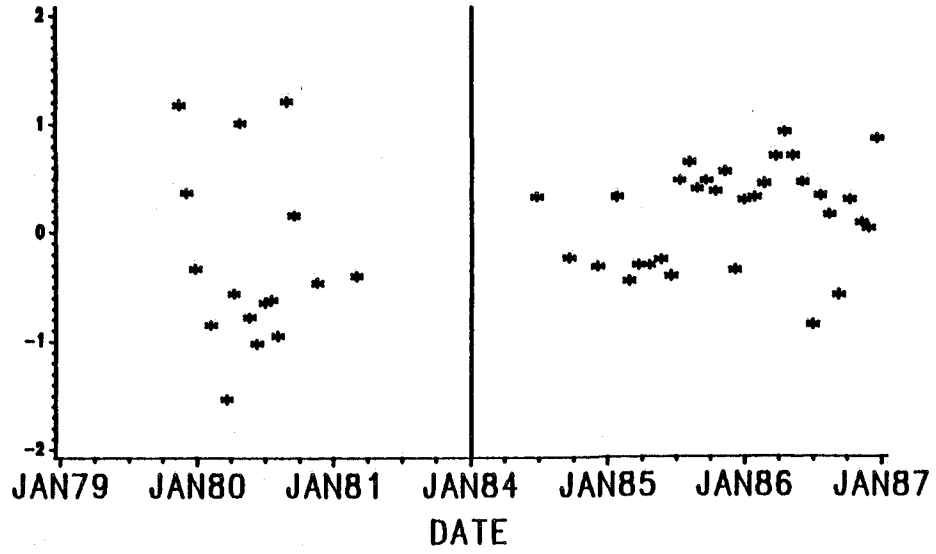
700 METER STATION



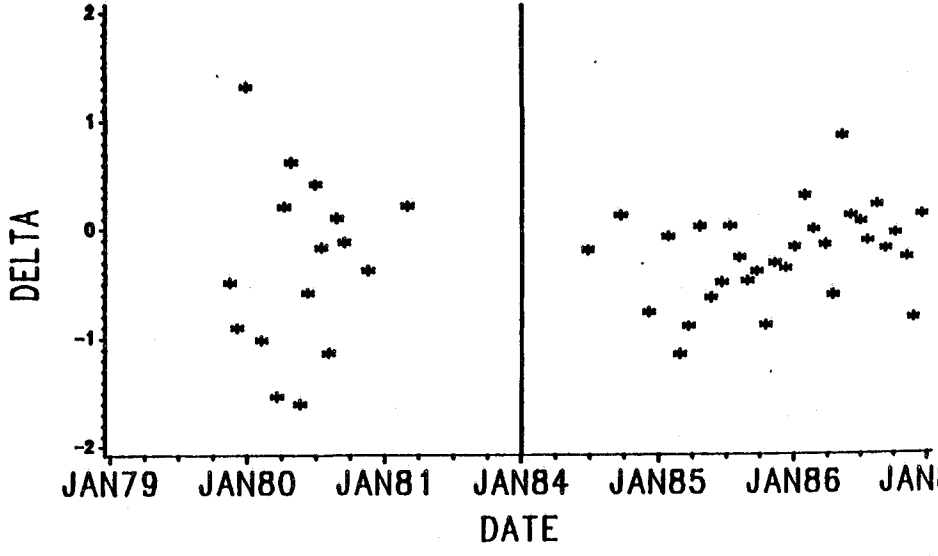
1100 METER STATION



1900 METER STATION

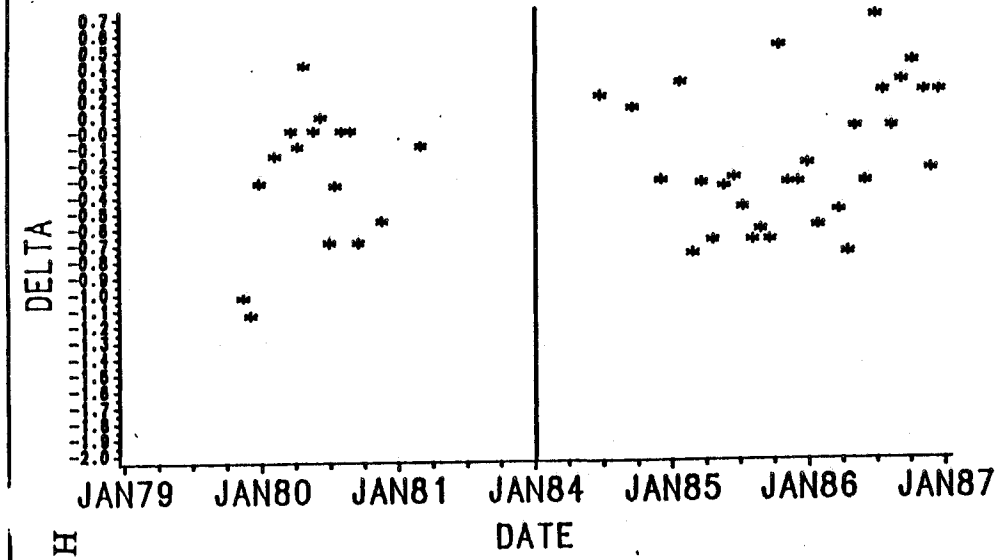


3350 METER STATION



8 METER DEPTH
Subsurface carnivore—deposit: Motile
All

700 METER STATION



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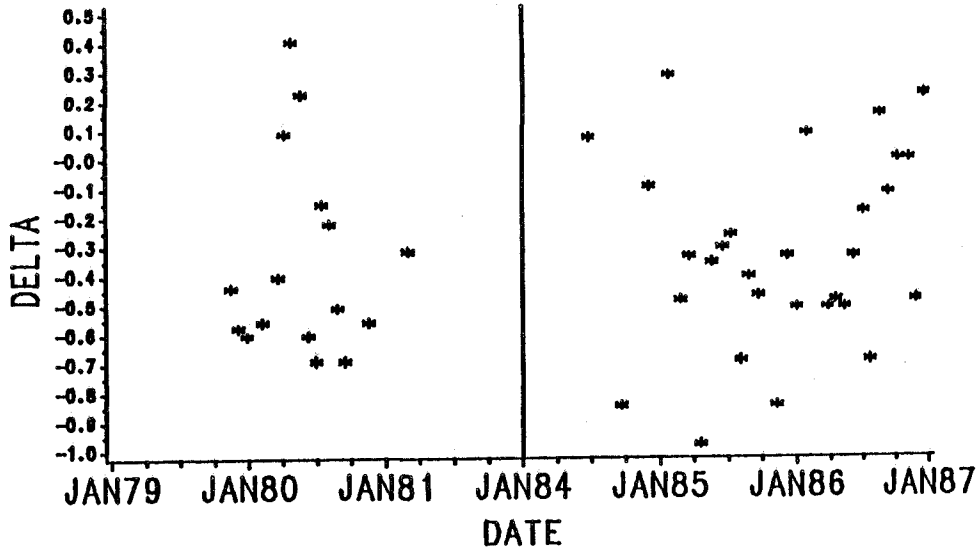

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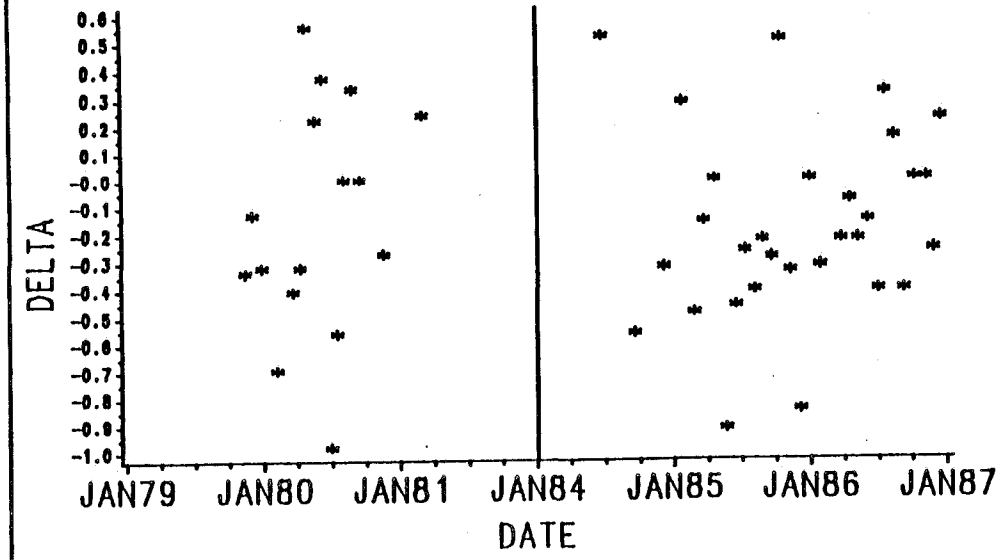
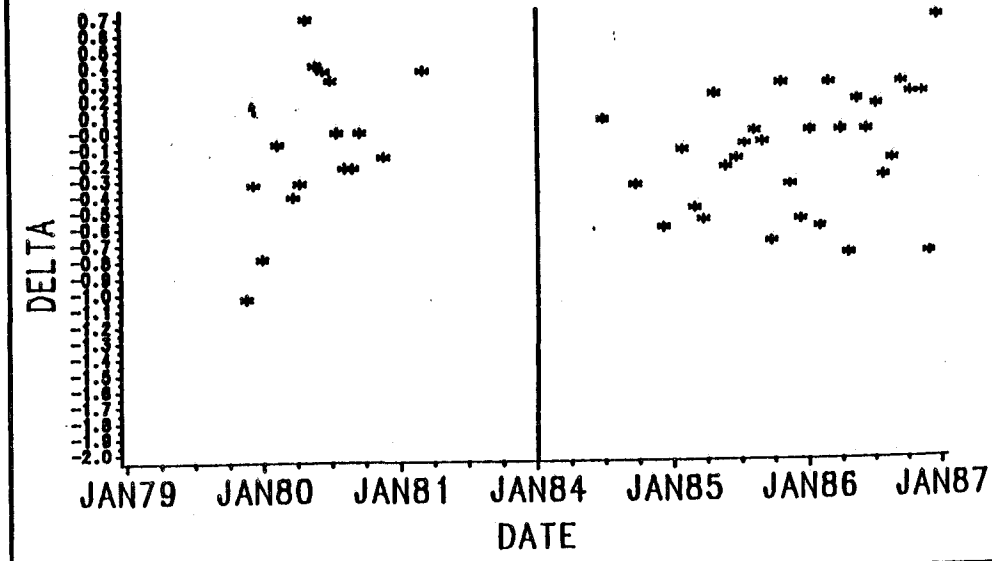
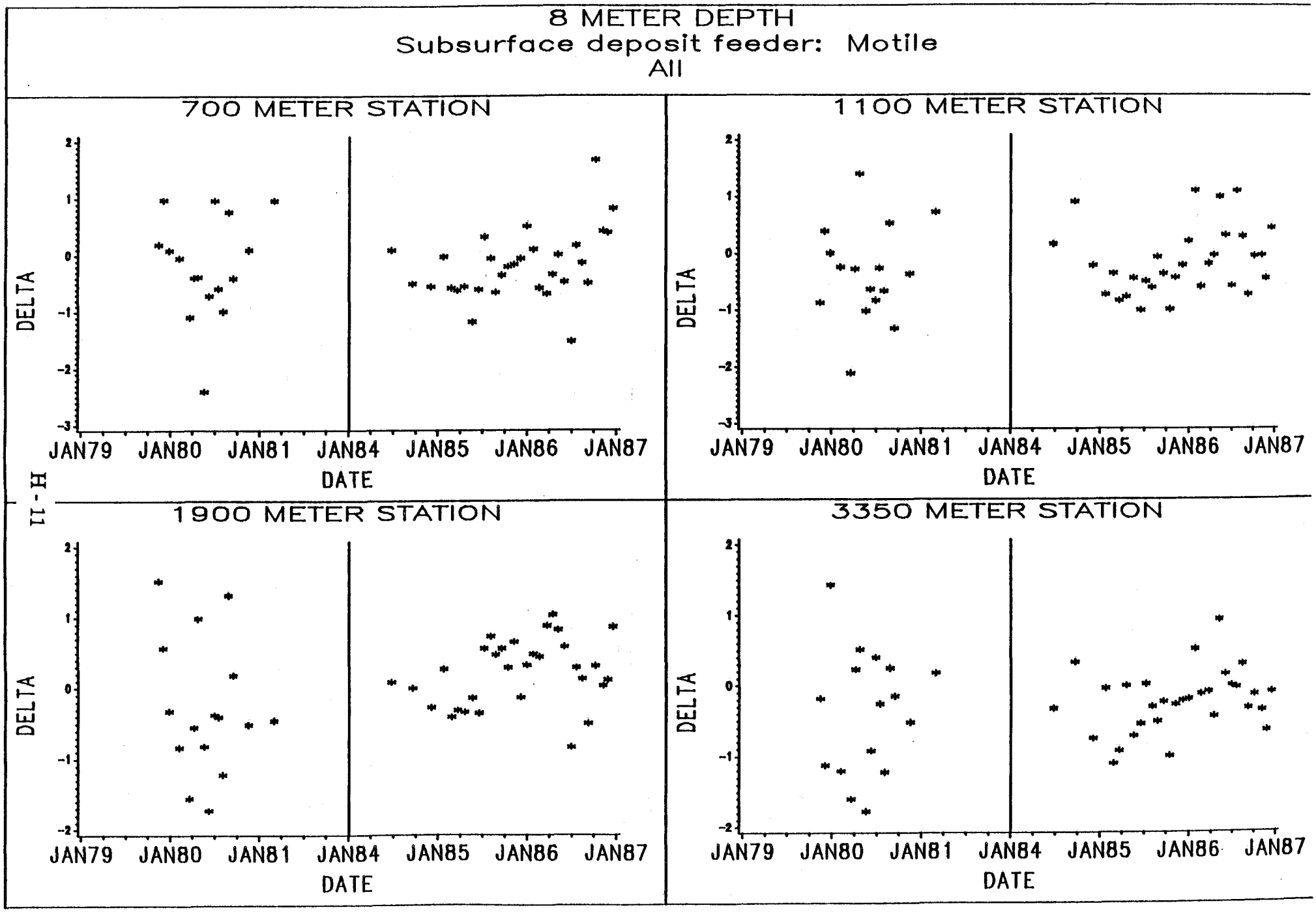


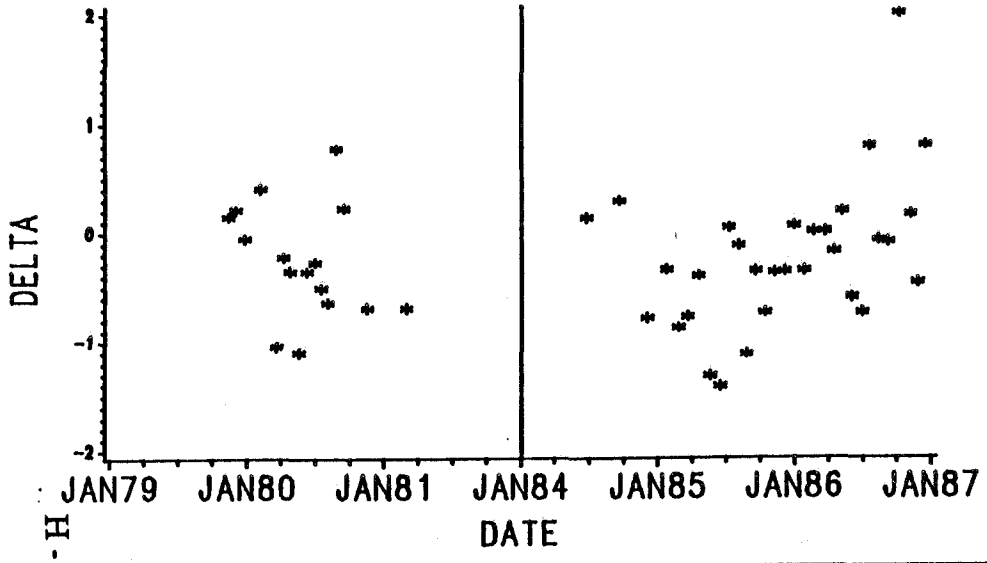
3350 METER STATION



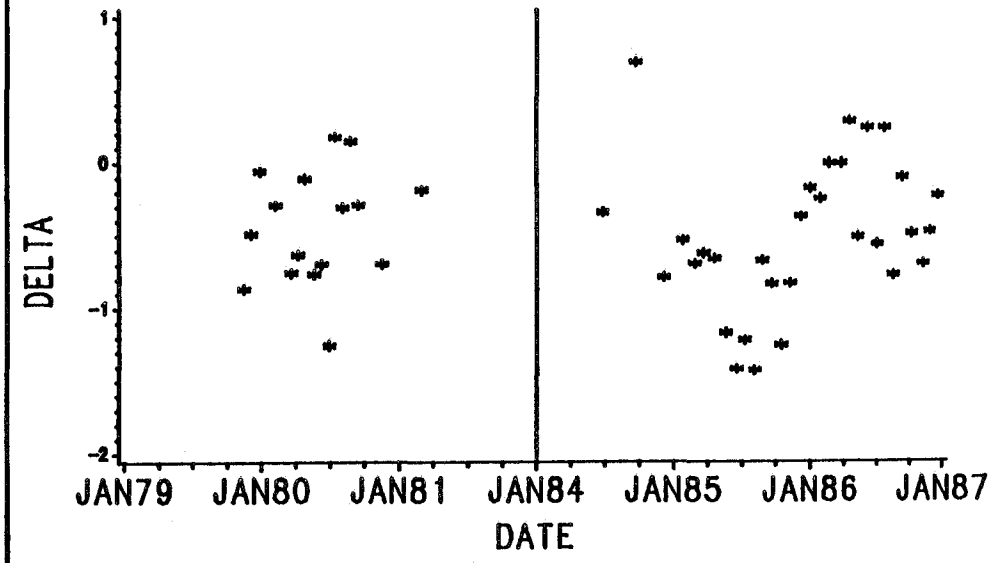

8 METER DEPTH
Subsurface deposit feeder: Motile
All
700 METER STATION
1100 METER STATION
1900 METER STATION
3350 METER STATION
DELTA
DATE
JAN79
JAN80
JAN81
JAN84
JAN85
JAN86
JAN87

8 METER DEPTH
Subsurface deposit feeder: Motile
paraonid polychaetes

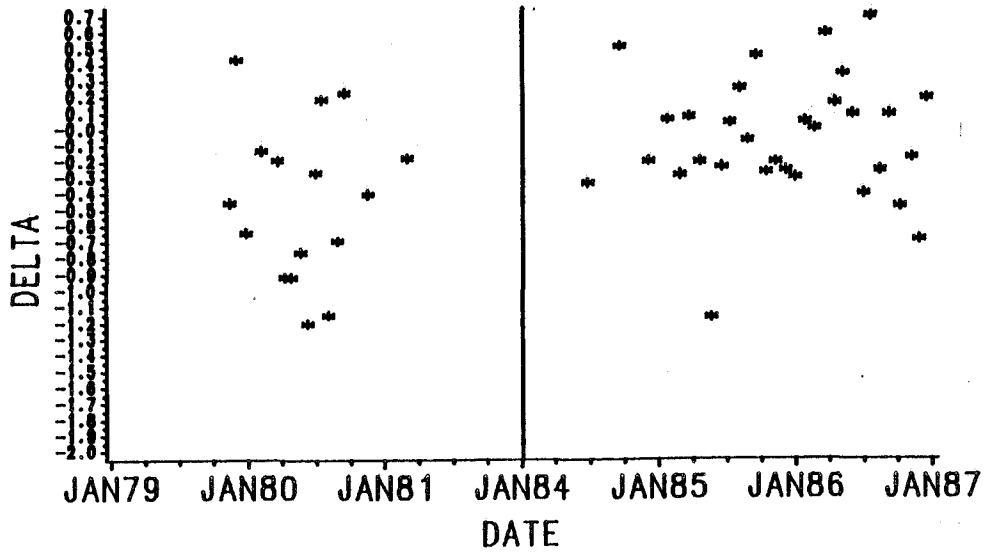
700 METER STATION



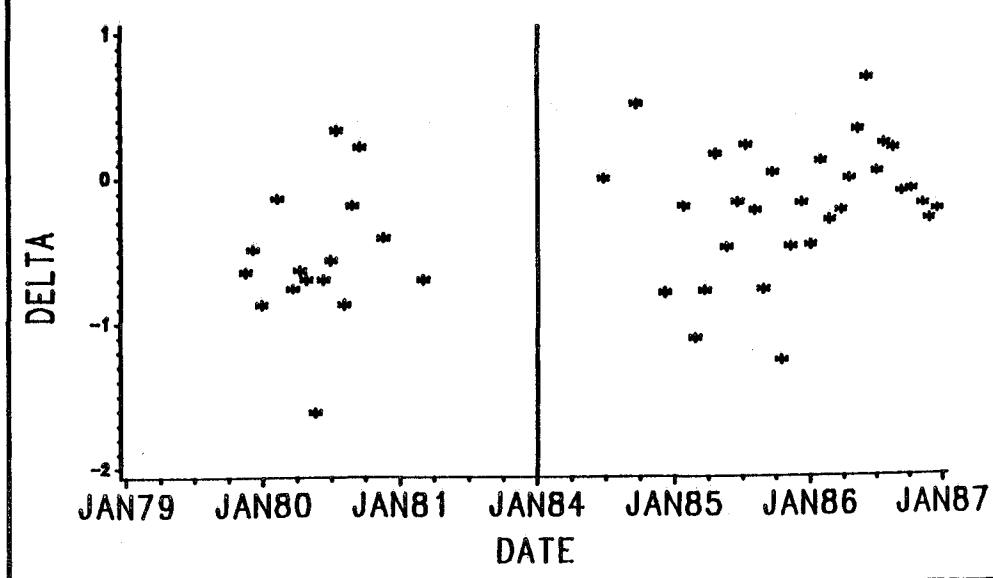
1100 METER STATION

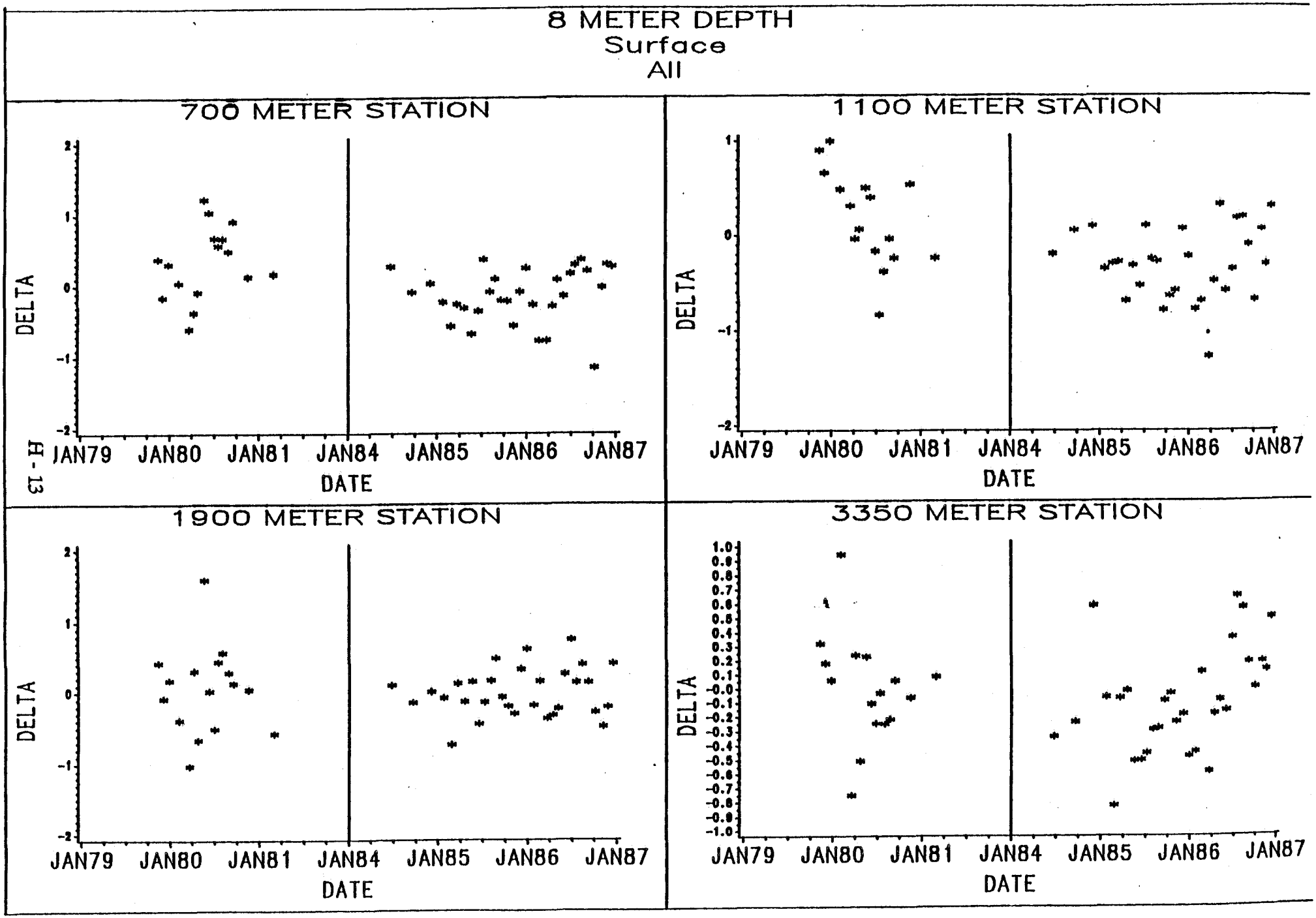


1900 METER STATION

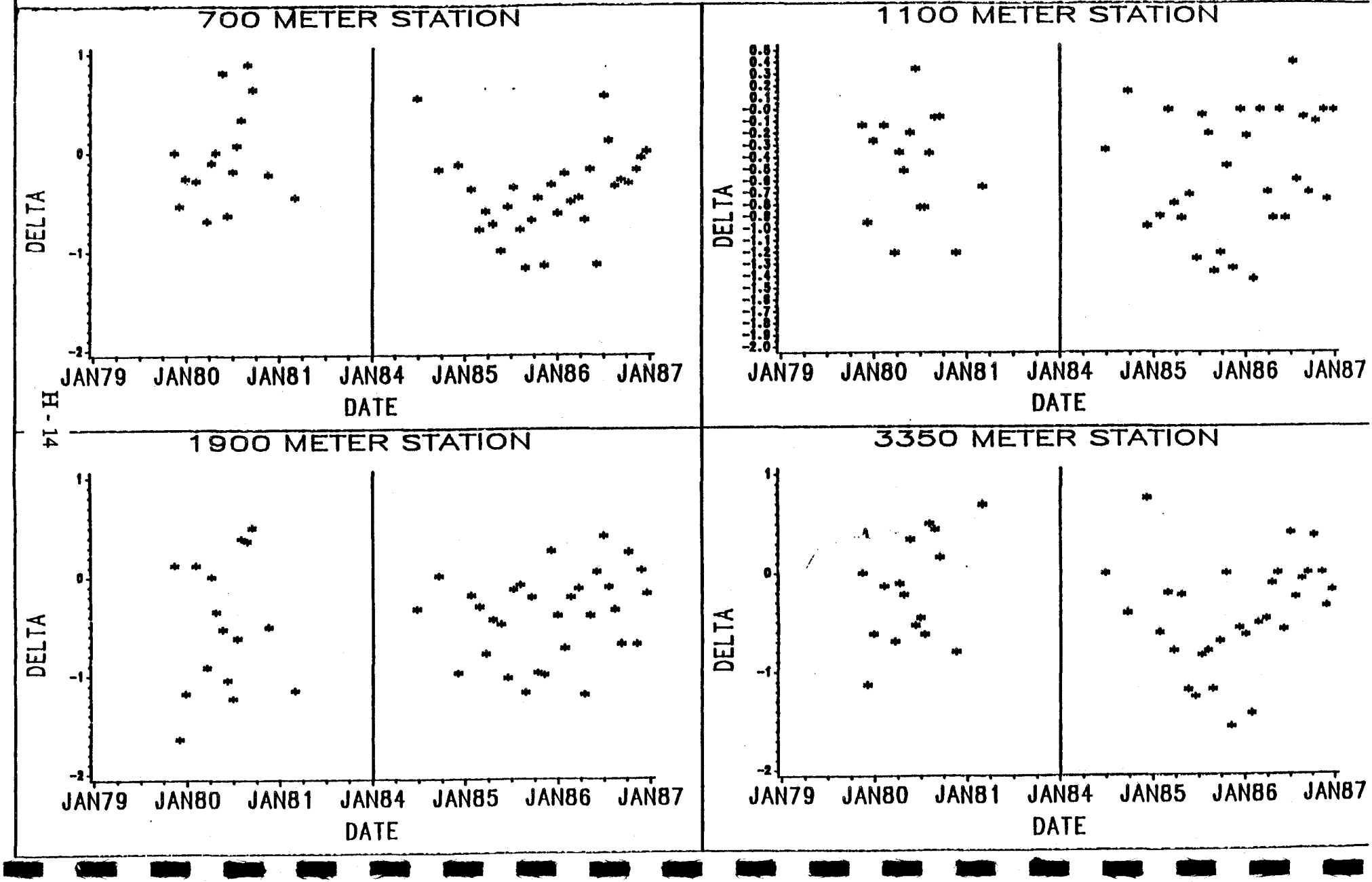


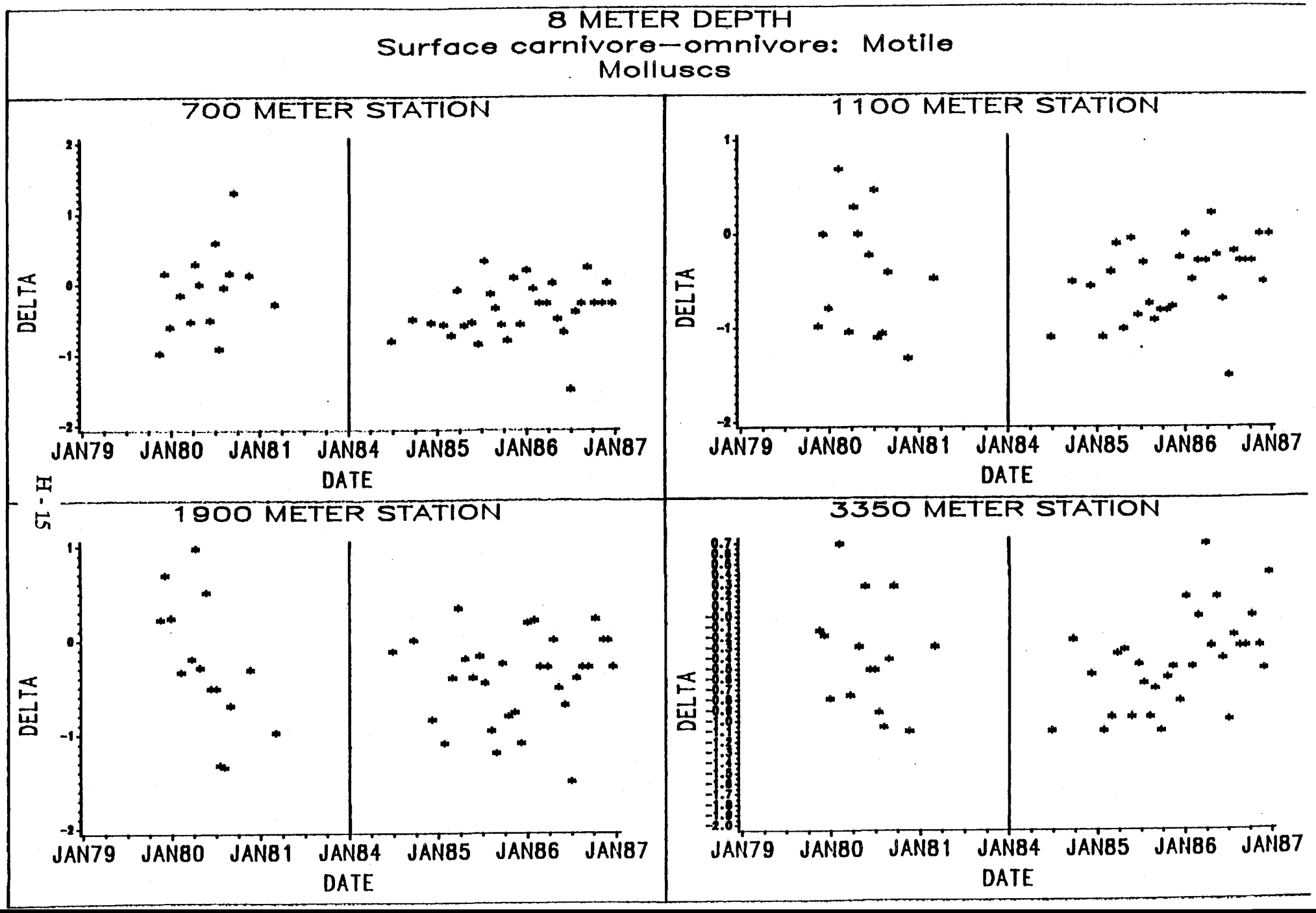
3350 METER STATION




8 METER DEPTH
Surface
All
700 METER STATION
1100 METER STATION
1900 METER STATION
3350 METER STATION
DELTA
DATE
JAN79
JAN80
JAN81
JAN84
JAN85
JAN86
JAN87

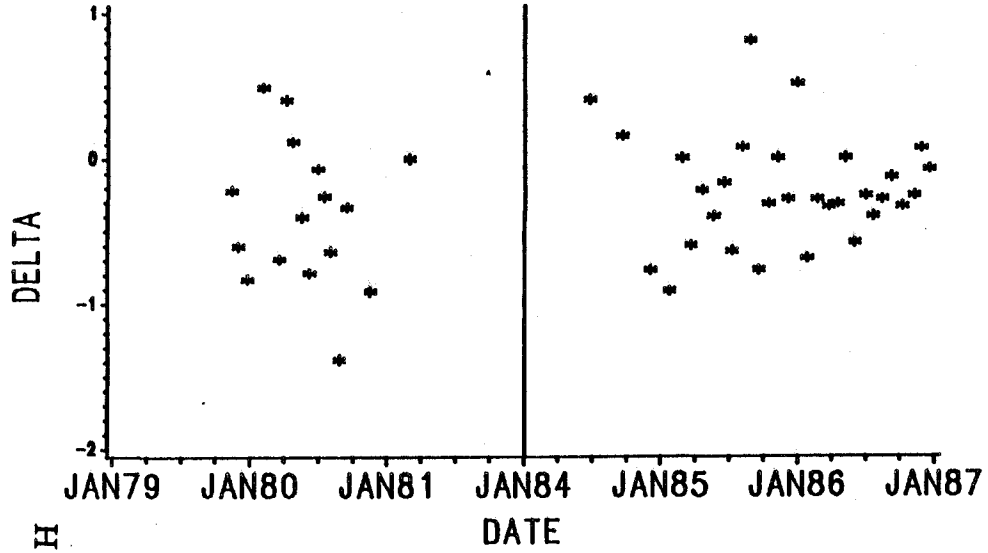
8 METER DEPTH
Surface carnivore—omnivore: Discrete
All




8 METER DEPTH
Surface carnivore—omnivore: Motile Molluscs
700 METER STATION
1100 METER STATION
1900 METER STATION
3350 METER STATION
DELTA
DATE
JAN79
JAN80
JAN81
JAN84
JAN85
JAN86
JAN87
ST-H

8 METER DEPTH
Surface carnivore—omnivore: Motile
Others

700 METER STATION



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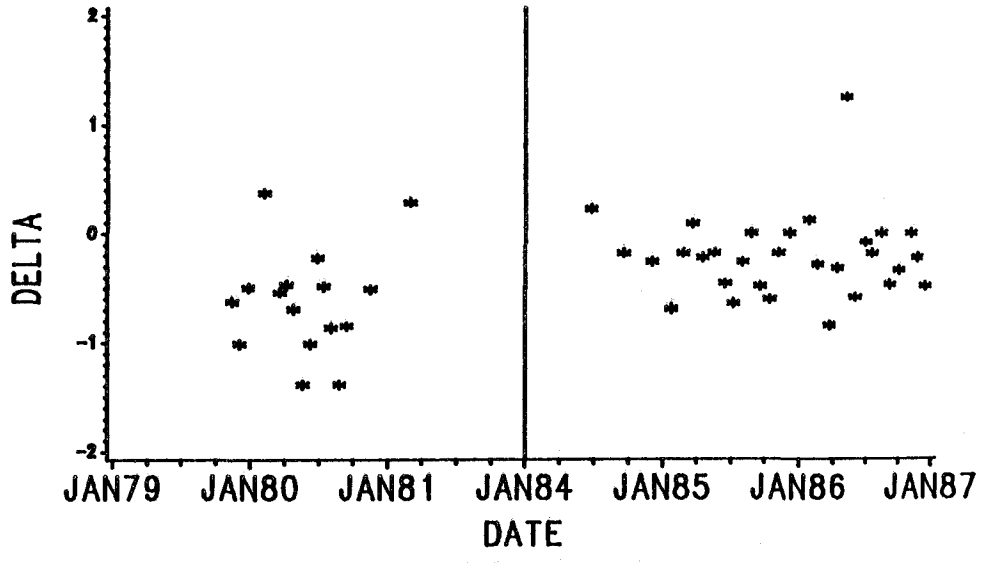

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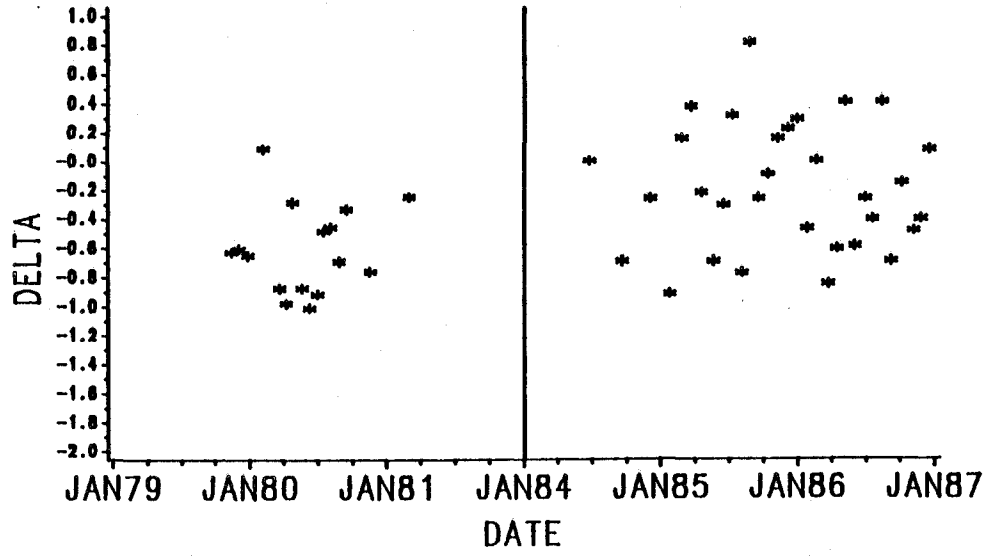
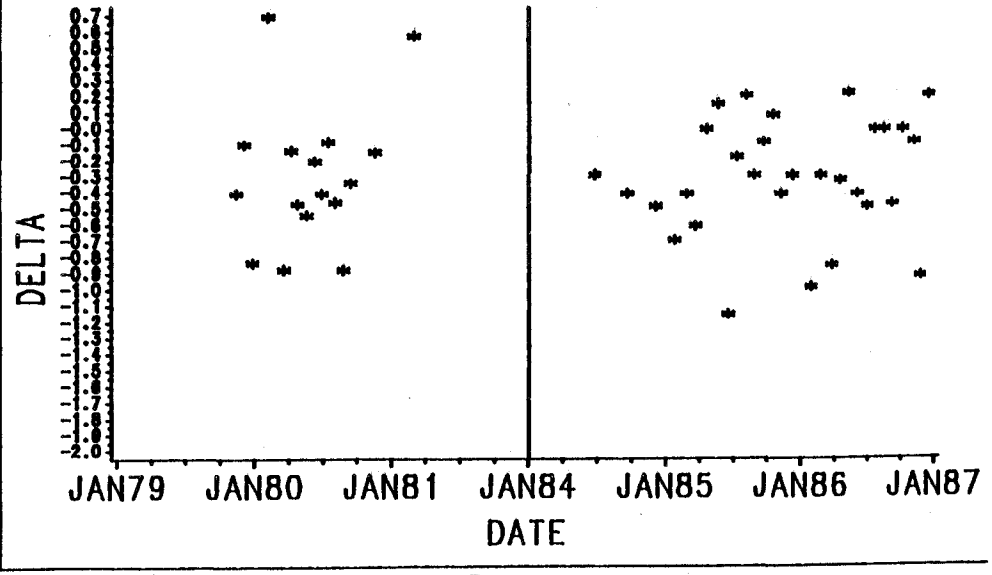
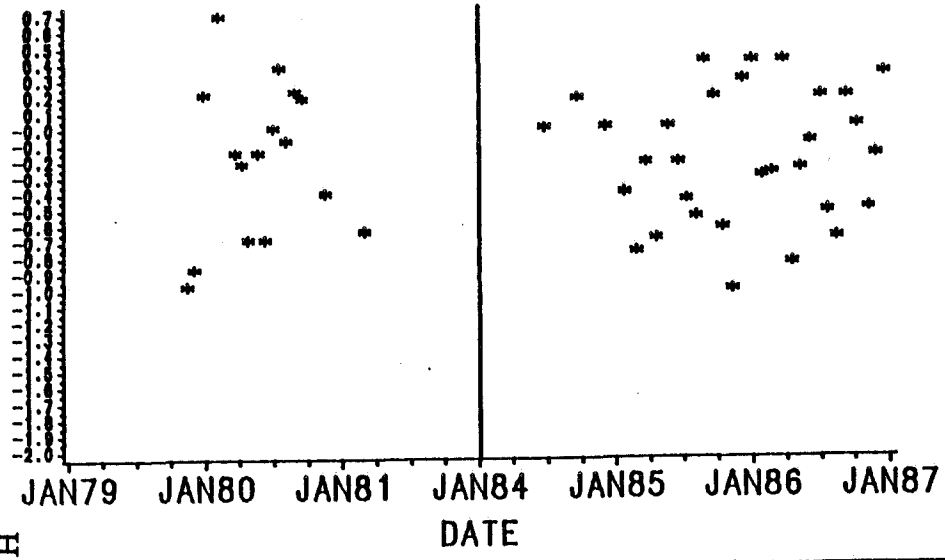


3350 METER STATION

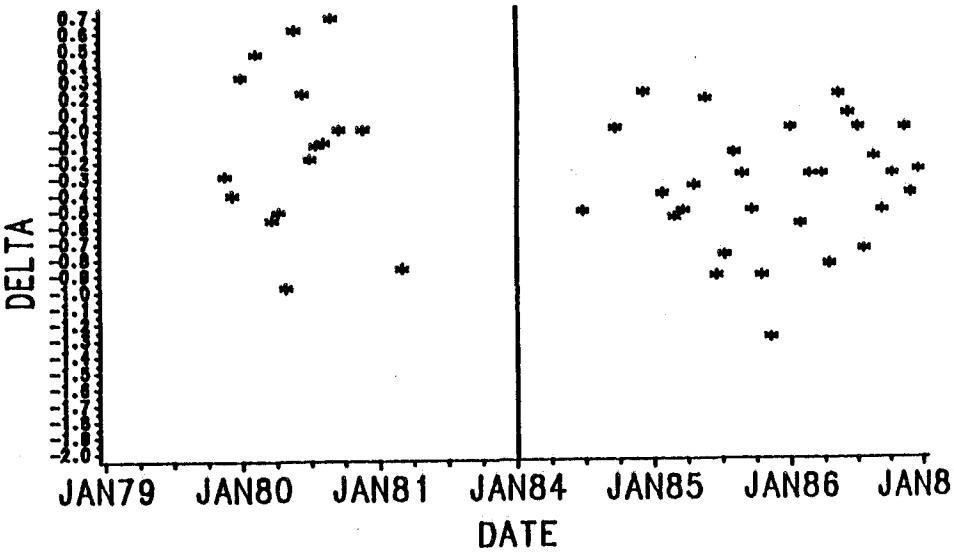


8 METER DEPTH
Surface carnivore—omnivore: Motile
Polychaetes

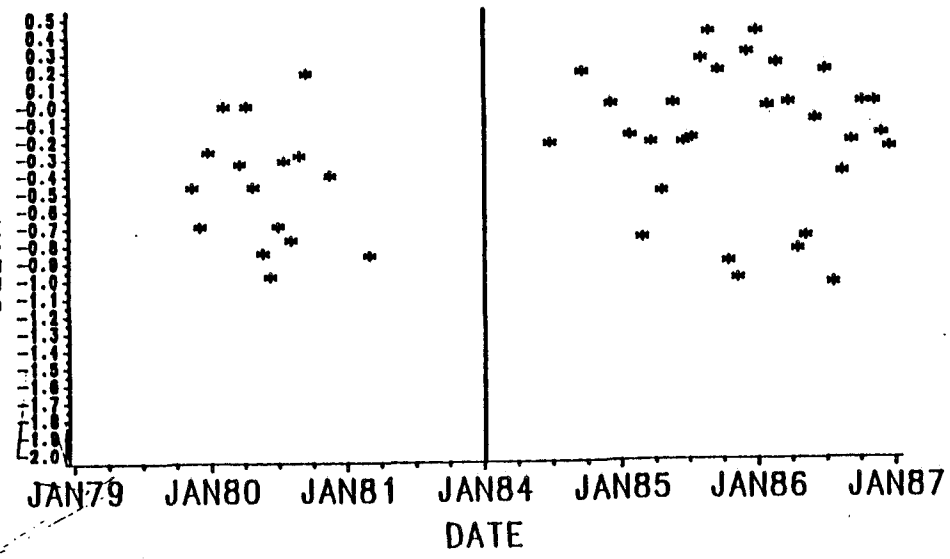
700 METER STATION



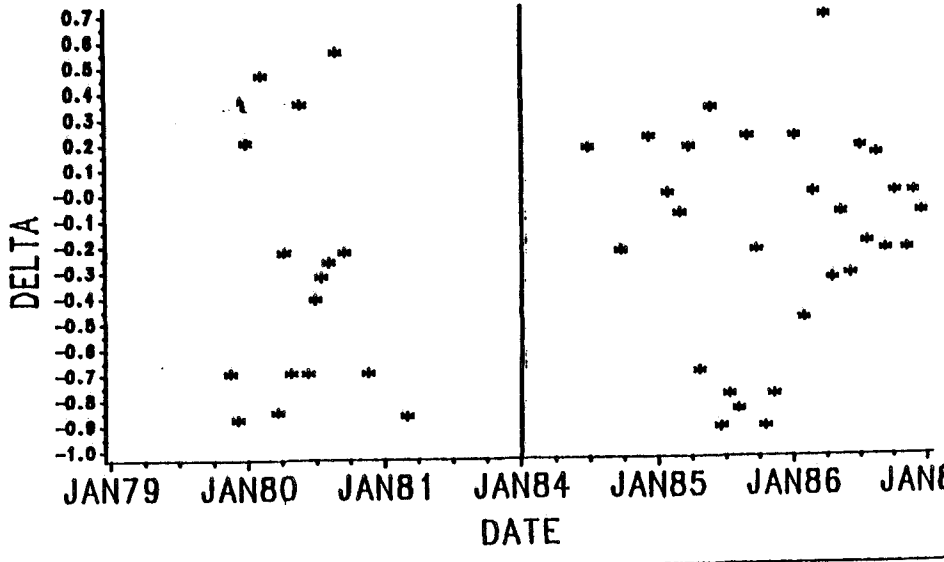
1100 METER STATION

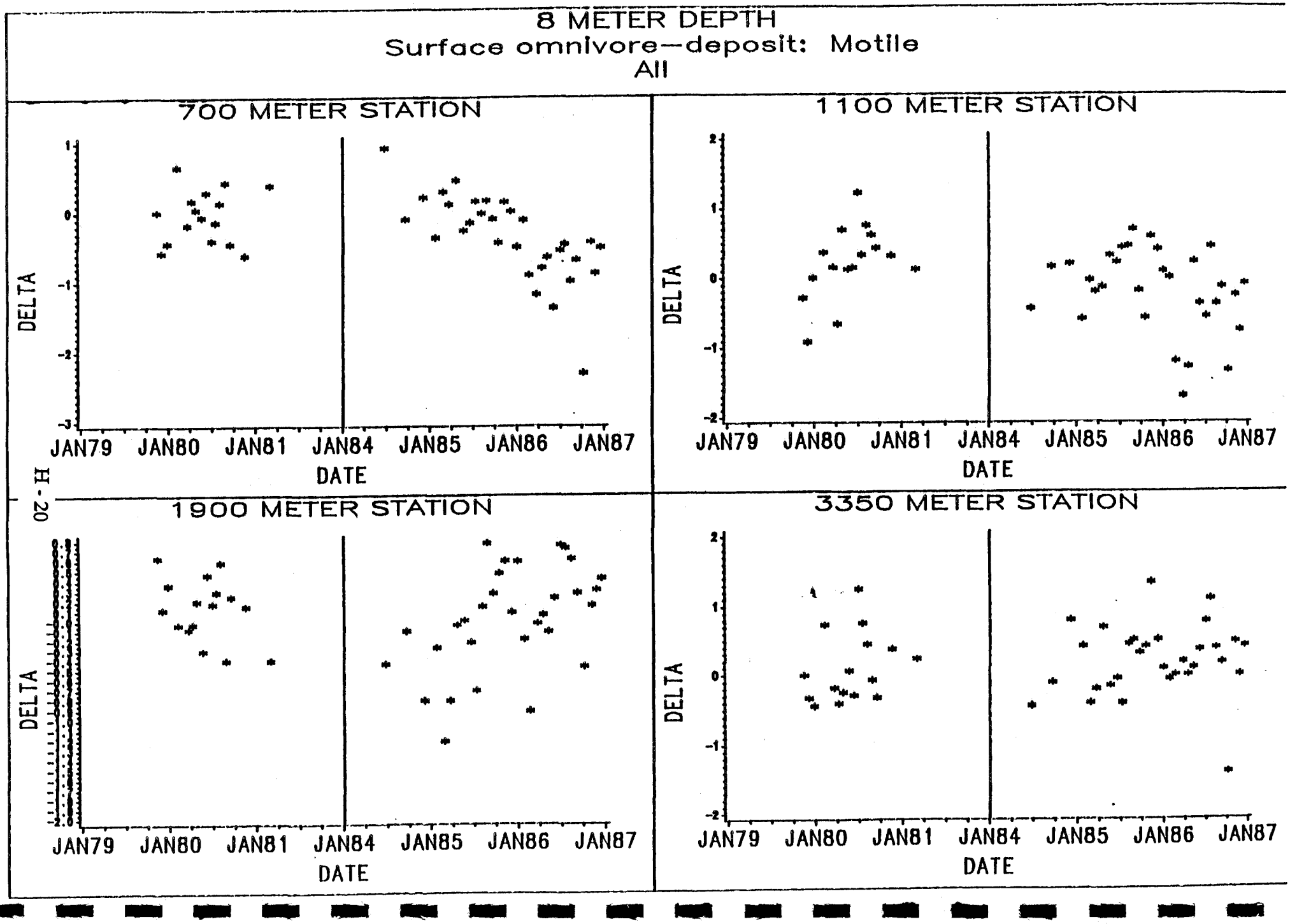


1900 METER STATION

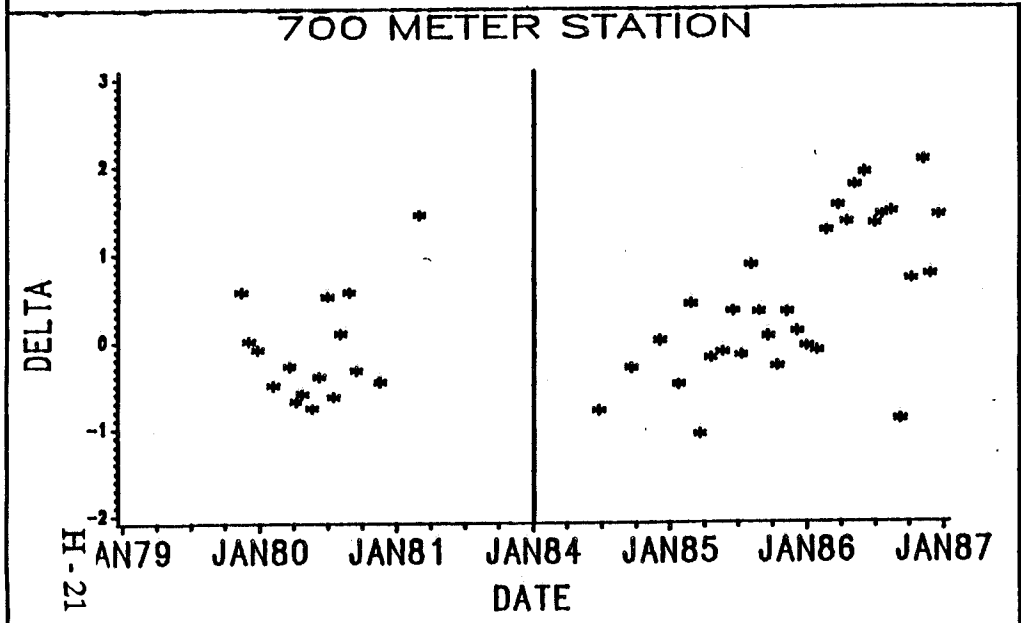


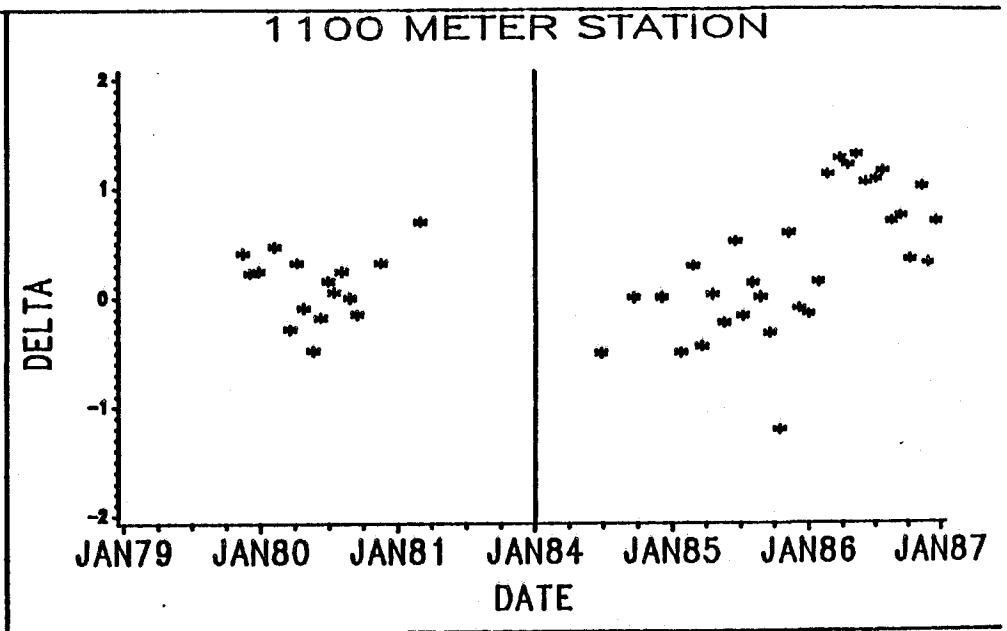
3350 METER STATION

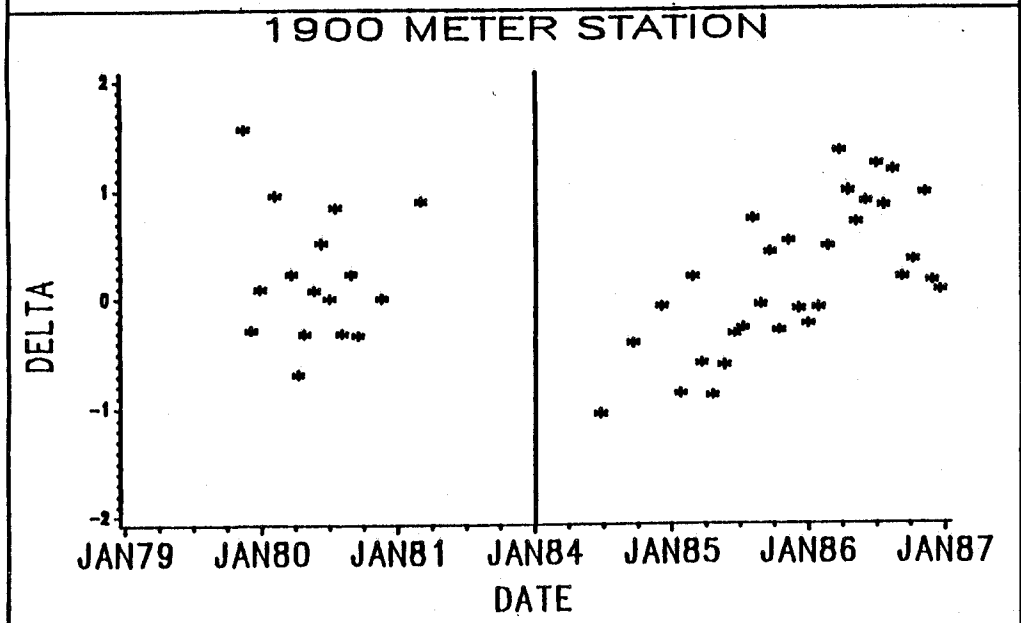


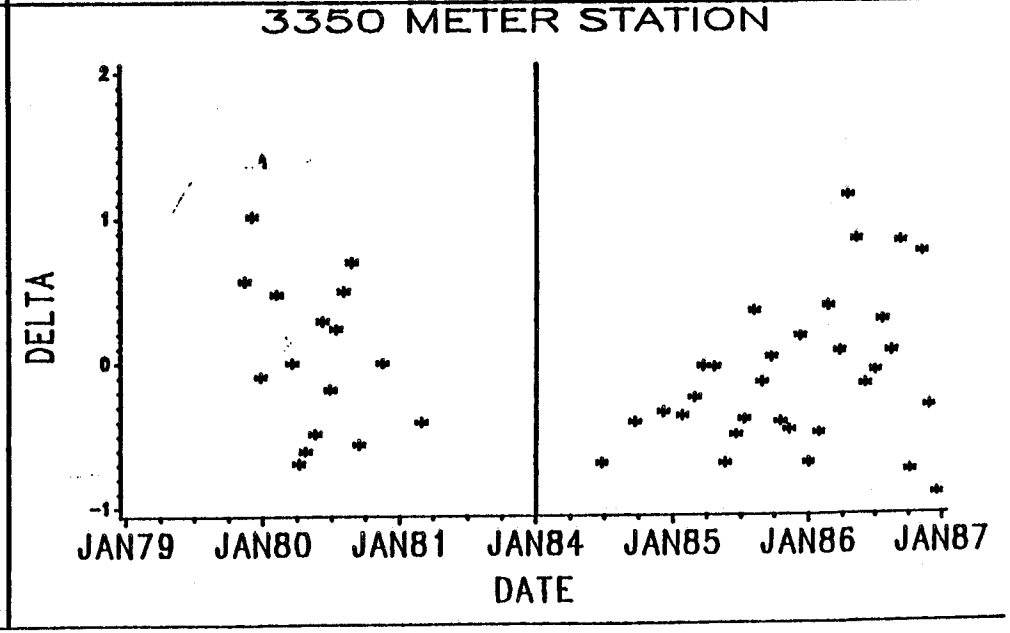

8 METER DEPTH
Surface omnivore—deposit: Motile
All
700 METER STATION
1100 METER STATION
1900 METER STATION
3350 METER STATION
DELTA
DATE
JAN79
JAN80
JAN81
JAN84
JAN85
JAN86
JAN87

18 METER DEPTH
Acesta catherinae

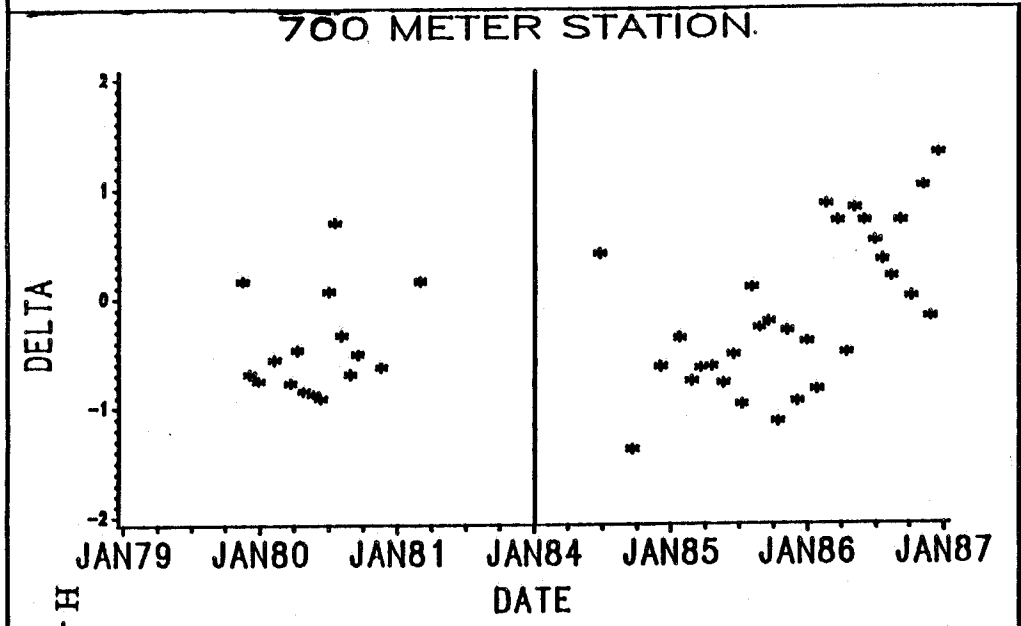


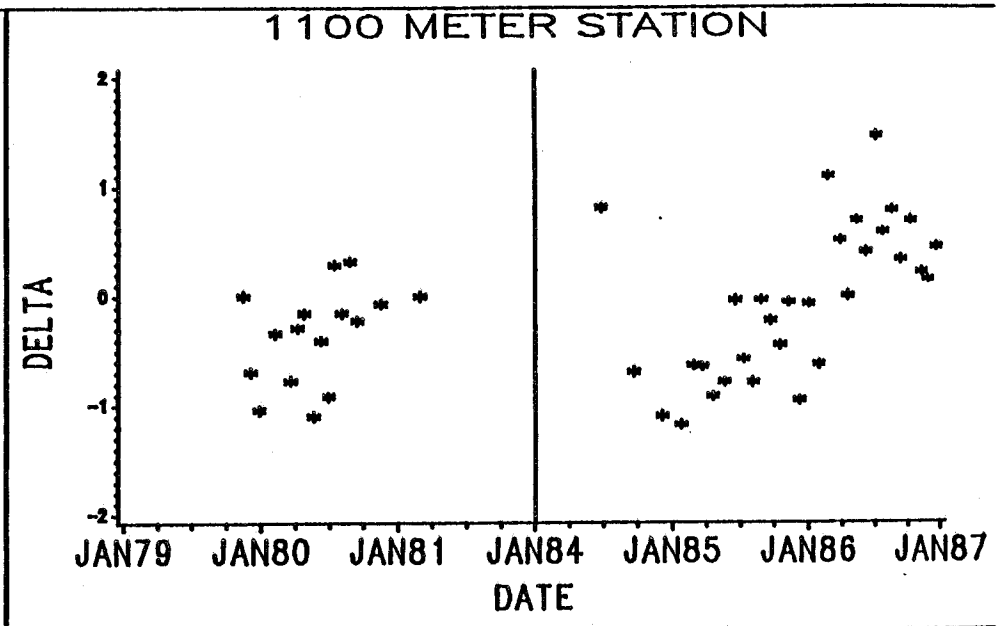


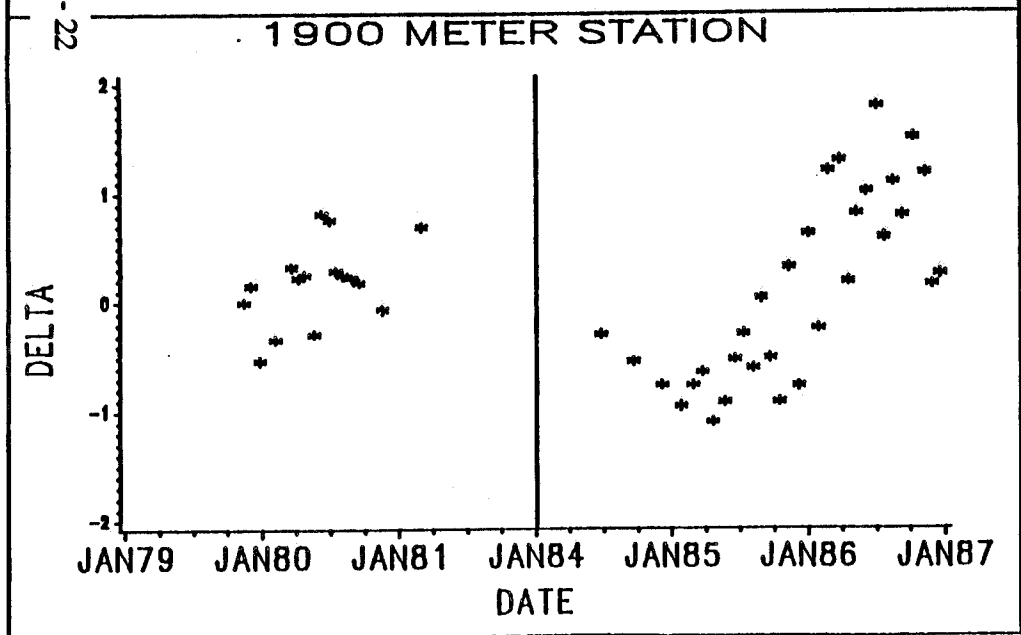


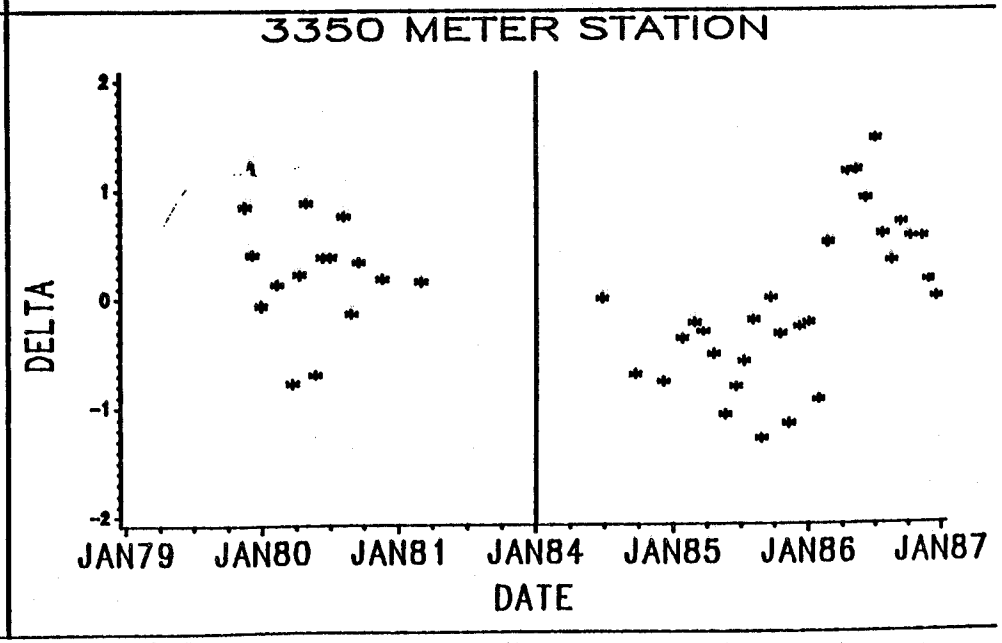


18 METER DEPTH
Aricidea wassi



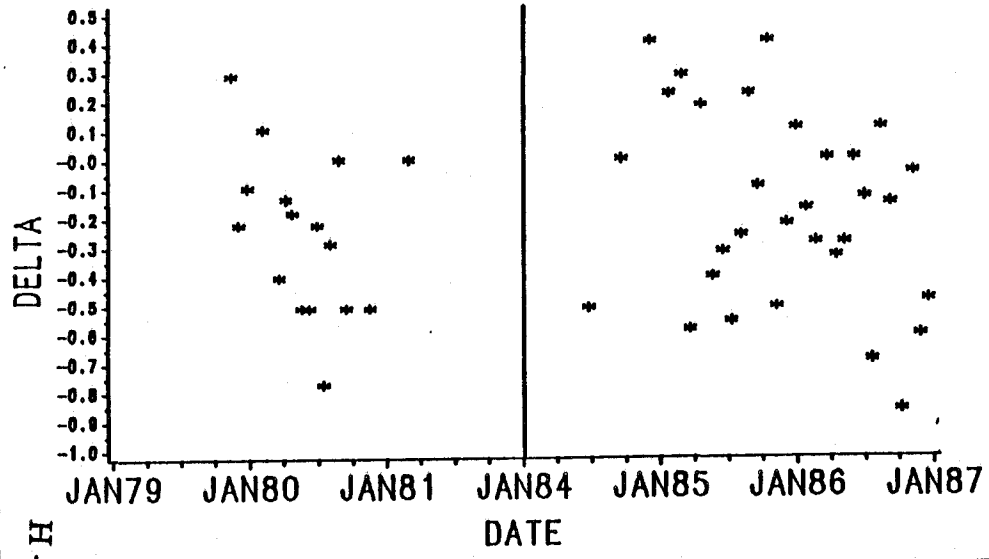




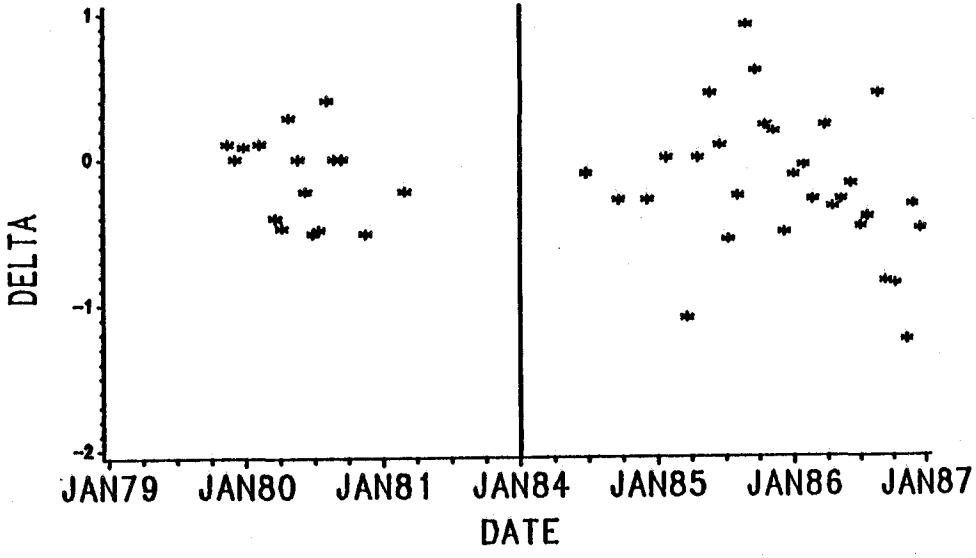


18 METER DEPTH
Euphilomedes carcharodonta

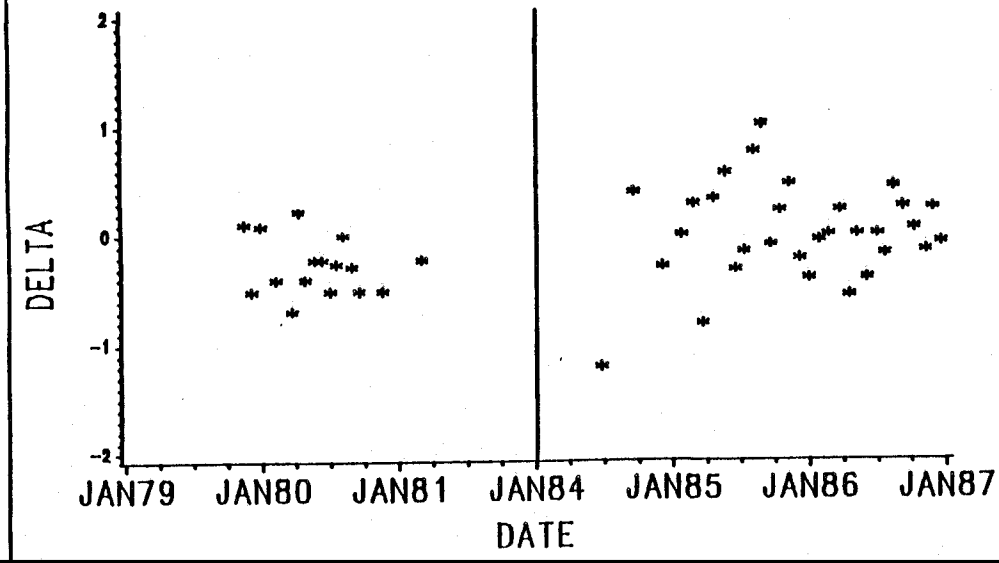
700 METER STATION



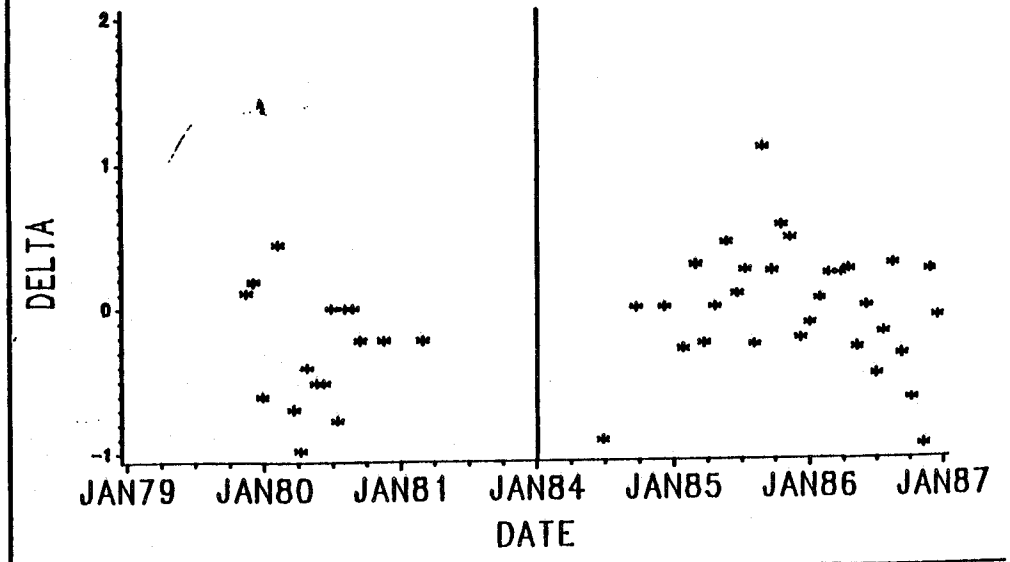
1100 METER STATION



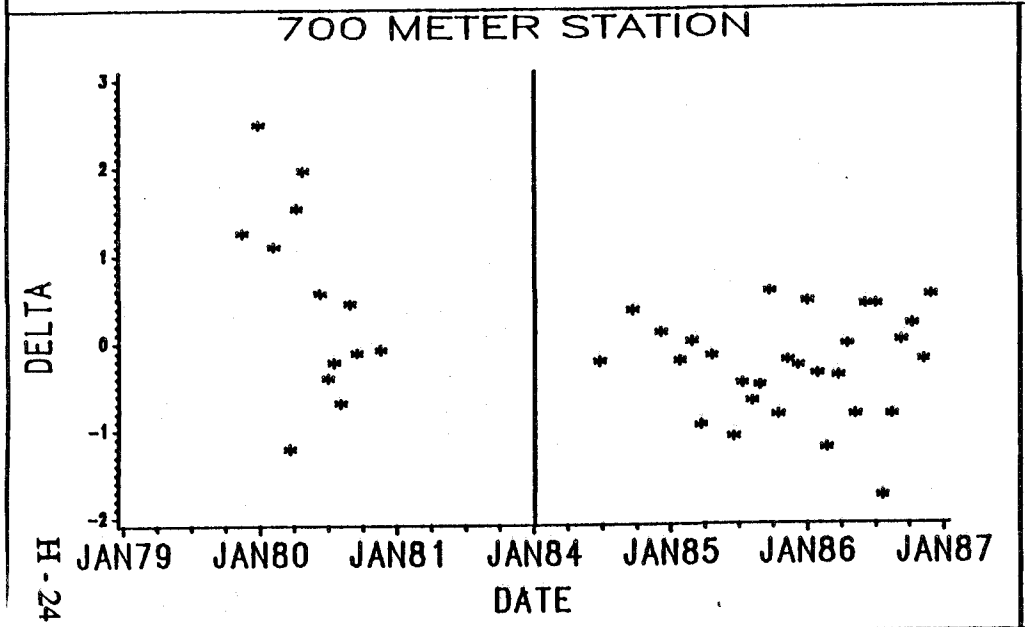
1900 METER STATION

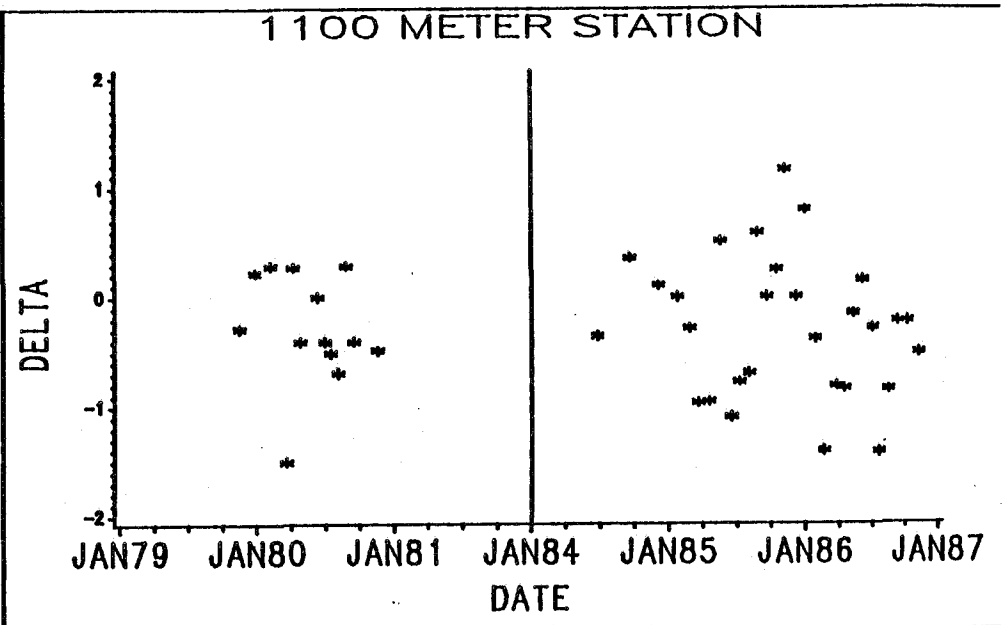


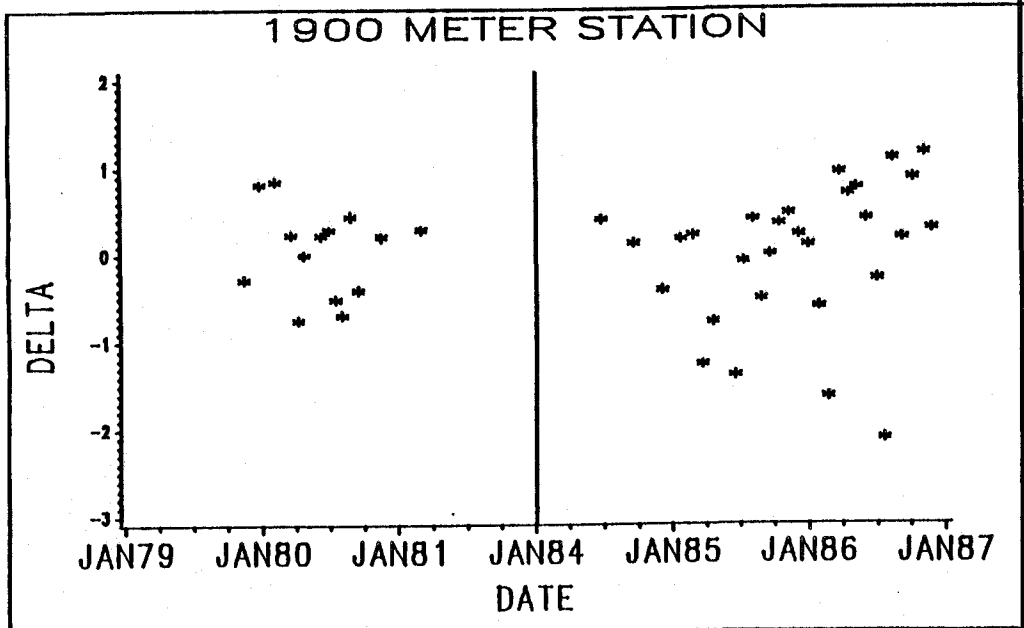
3350 METER STATION

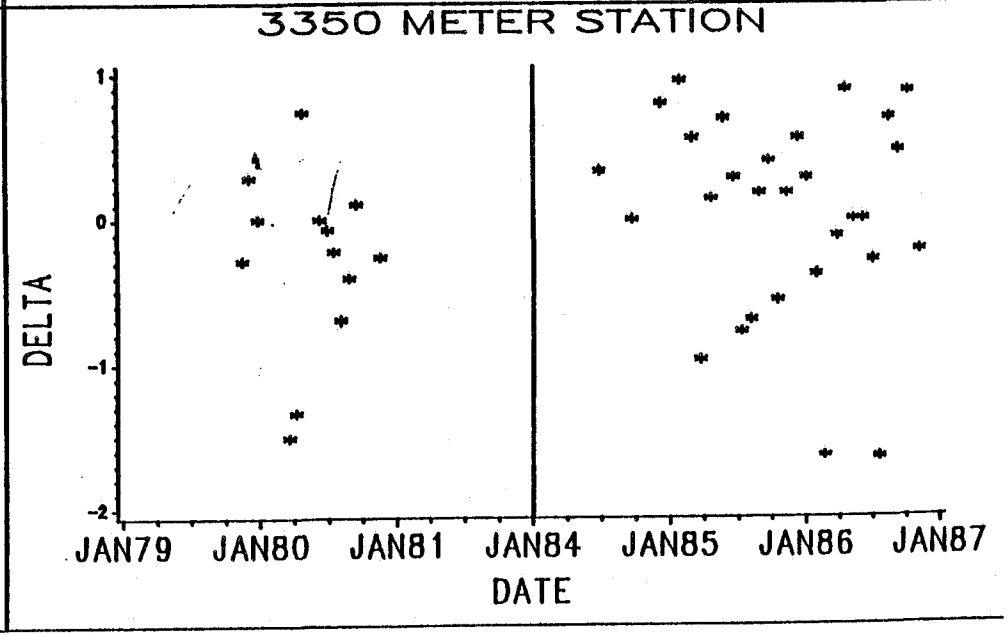


18 METER DEPTH
Jassa falcata



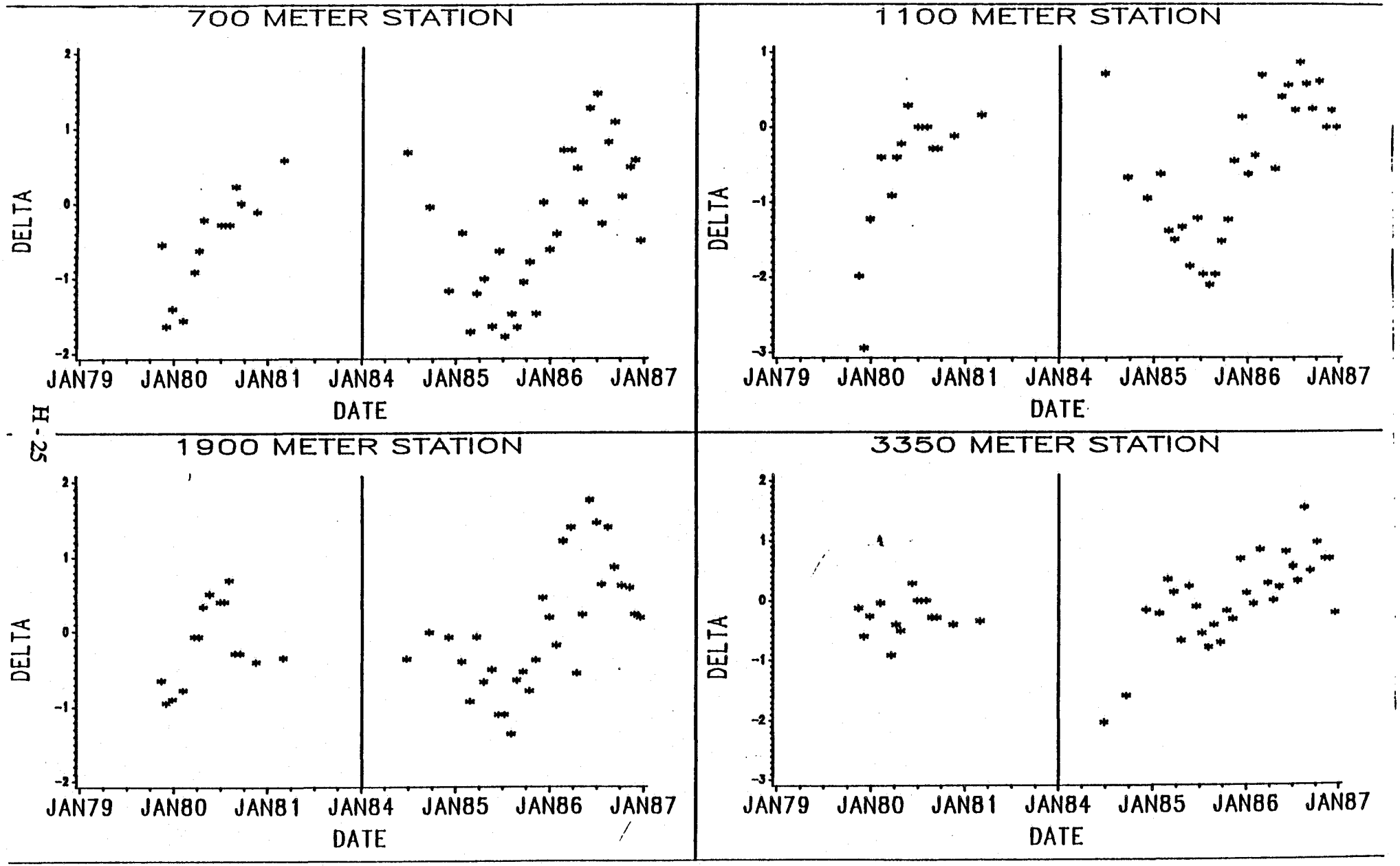






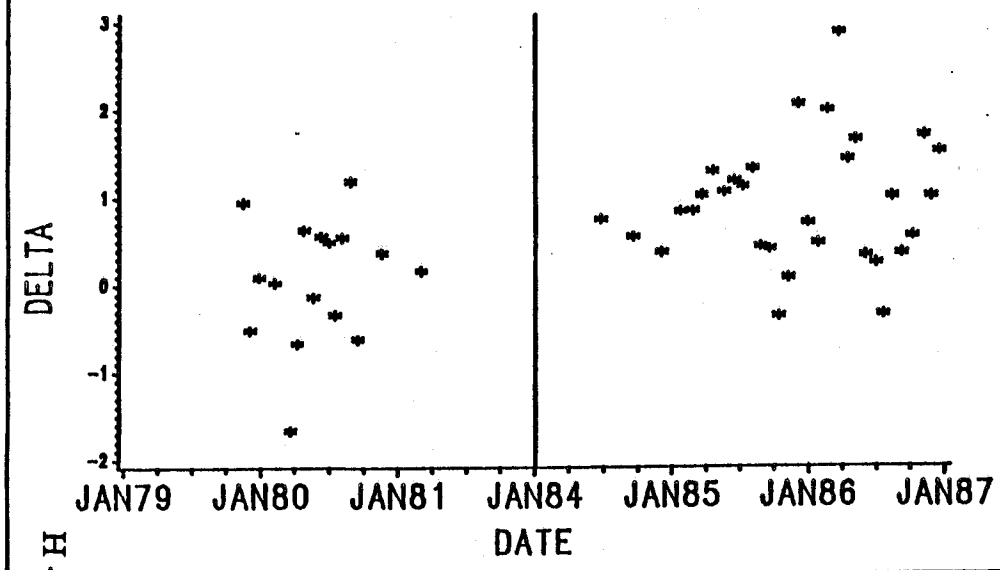
H-24

18 METER DEPTH
Leptochelia dubia

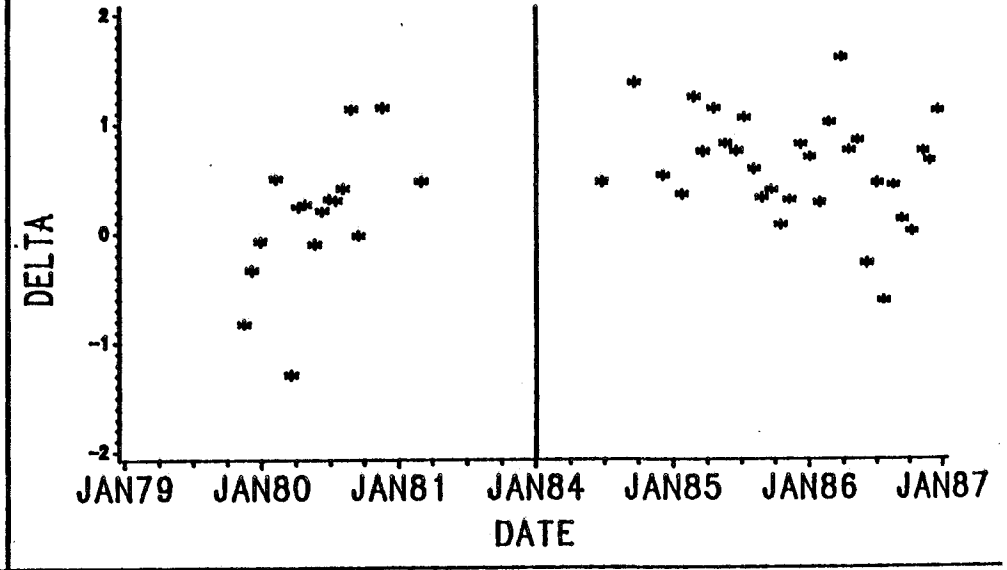


18 METER DEPTH
Mediomastus californiensis/amb

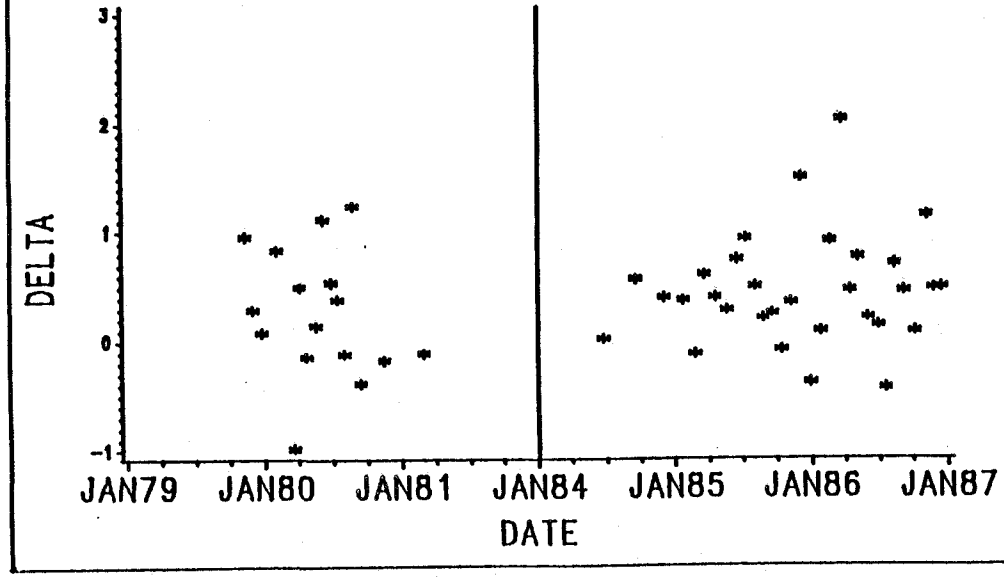
700 METER STATION



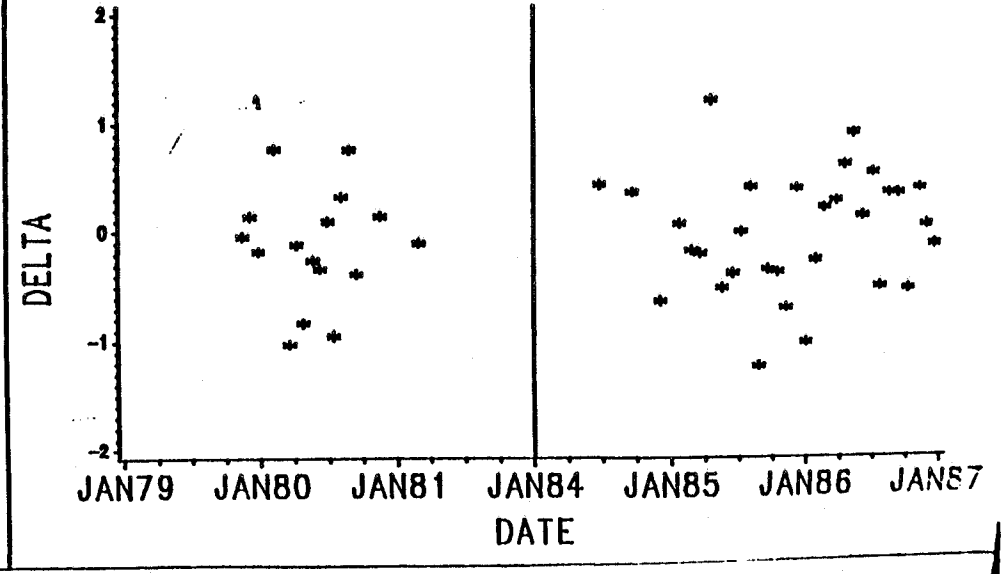
1100 METER STATION



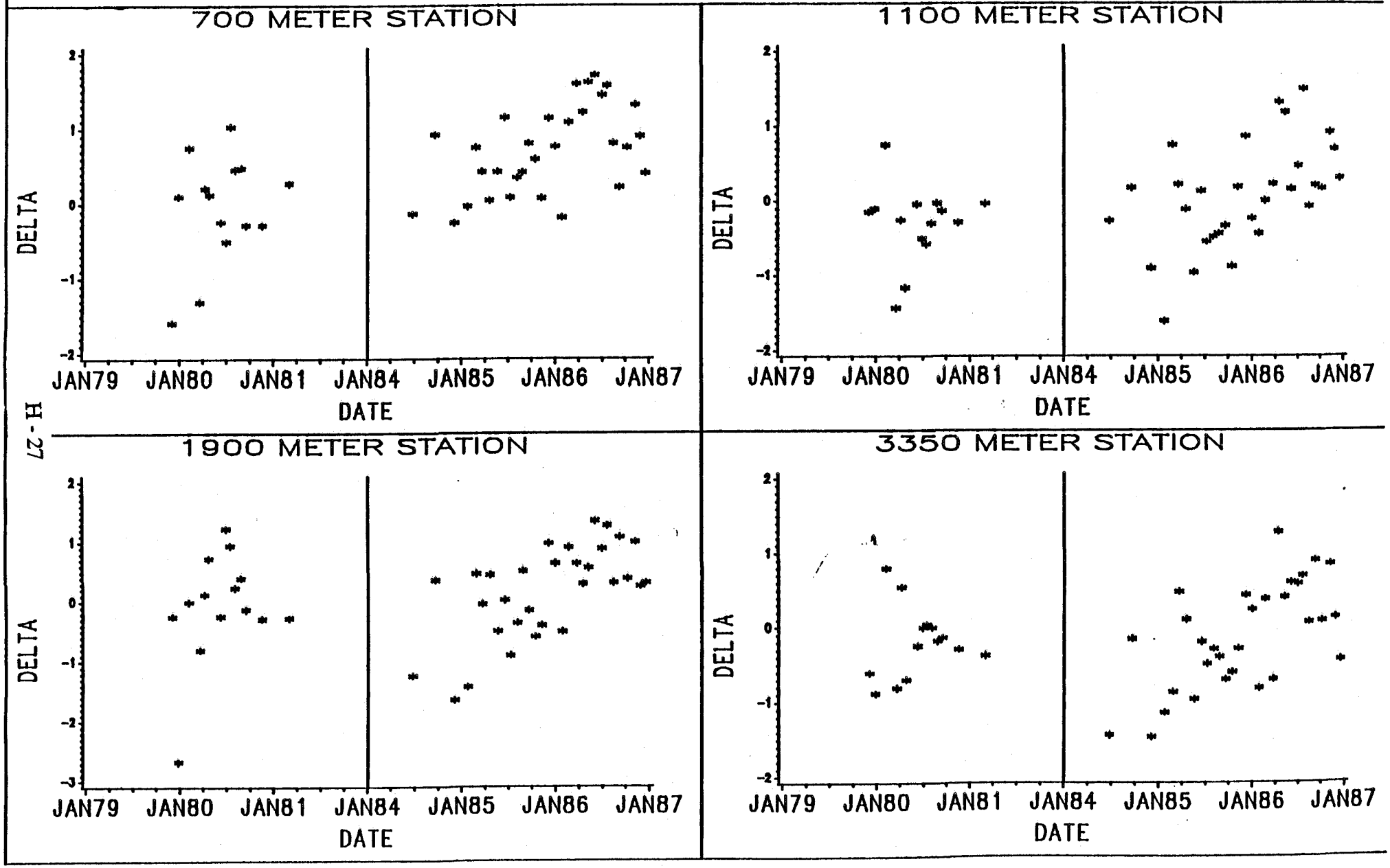
1900 METER STATION



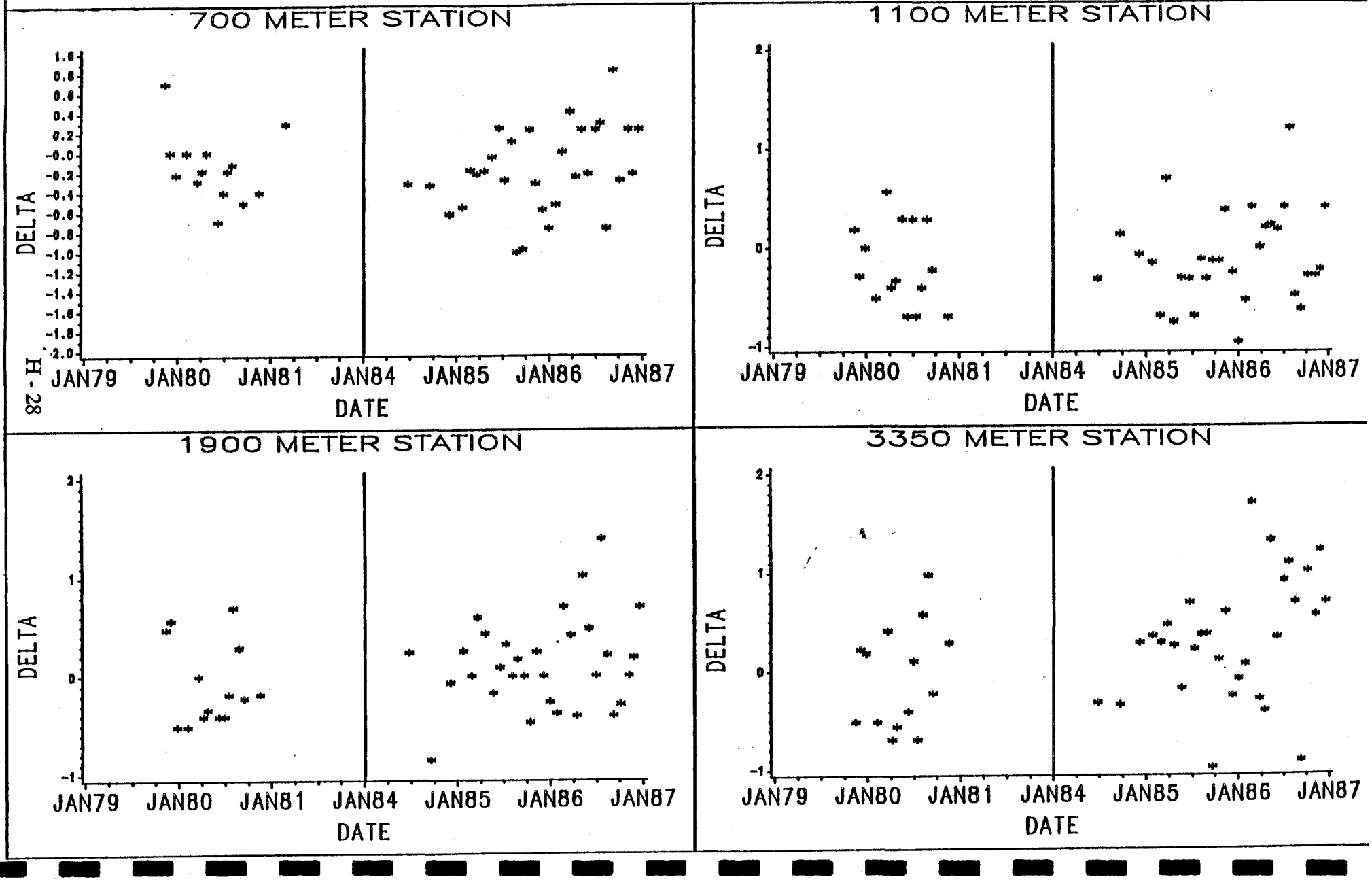
3350 METER STATION



18 METER DEPTH
Nematodes unidentified

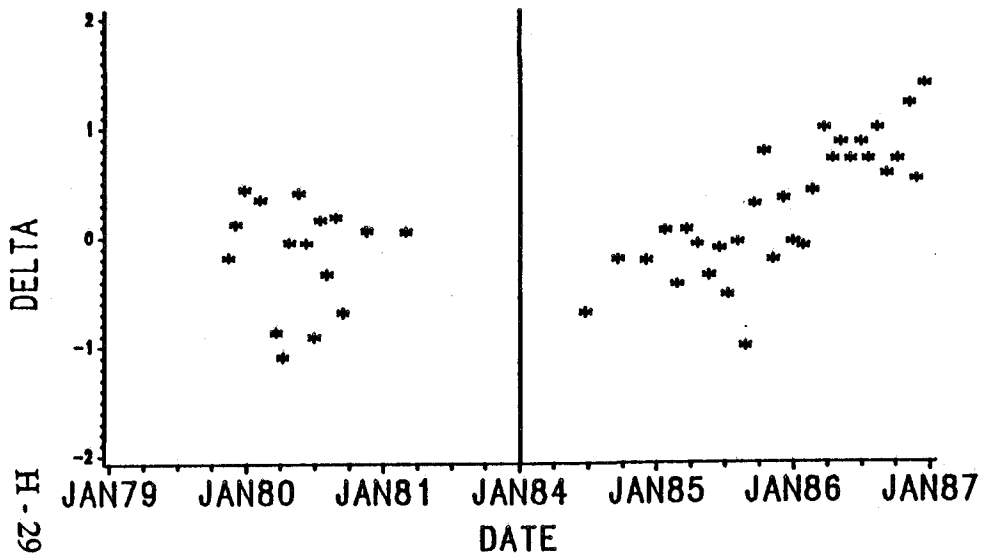


18 METER DEPTH
Rhepoxynius stenodes

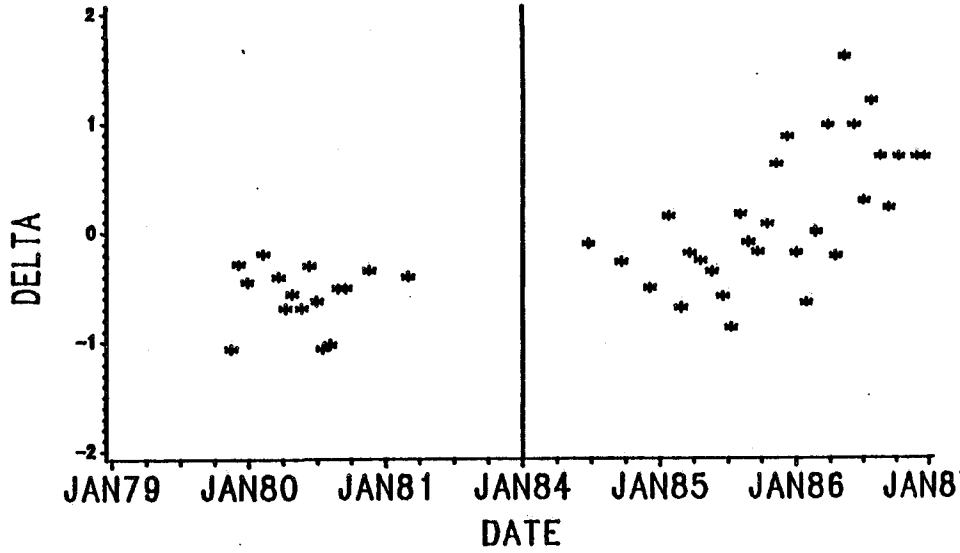


18 METER DEPTH
Rutiderma rostrata

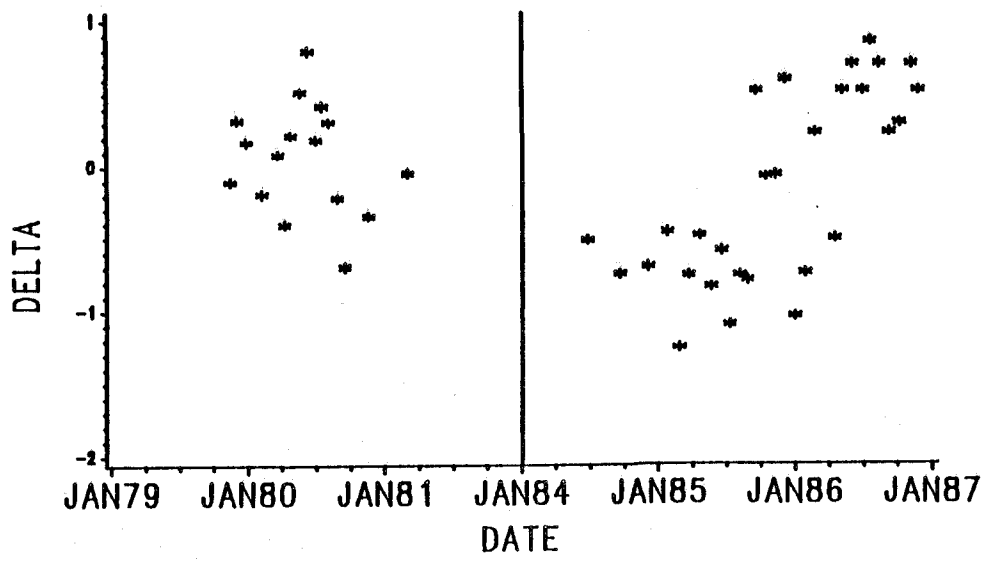
700 METER STATION



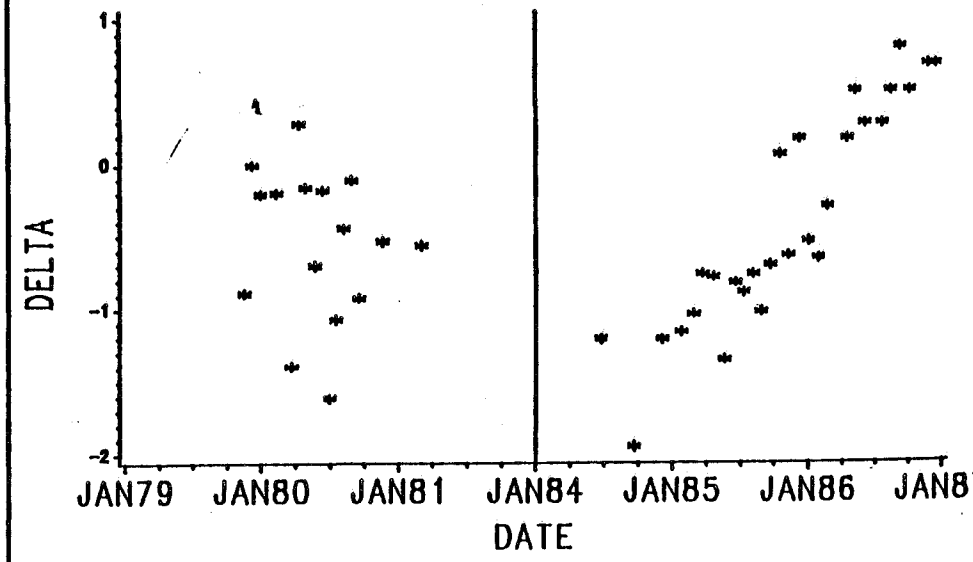
1100 METER STATION



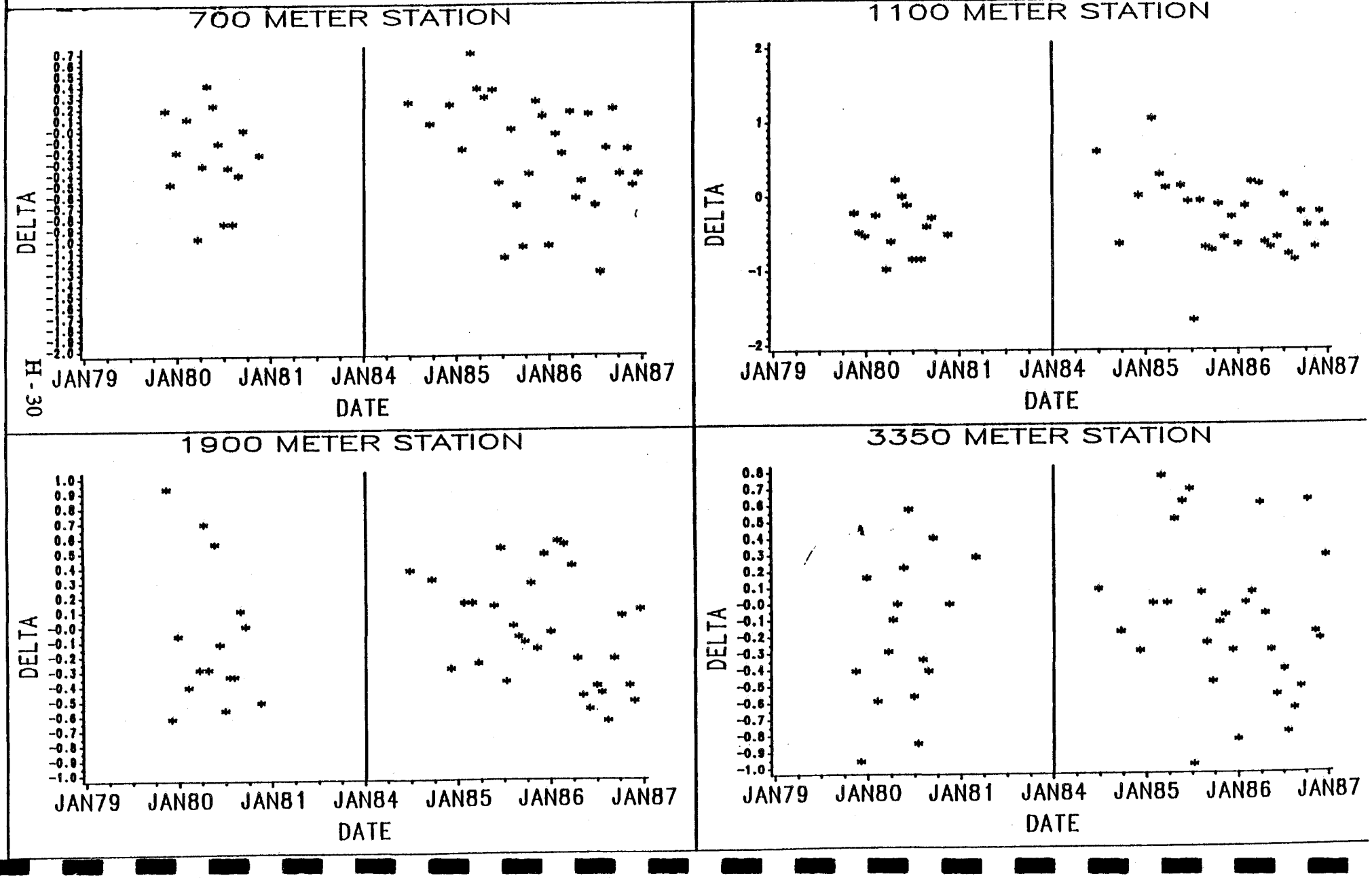
1900 METER STATION



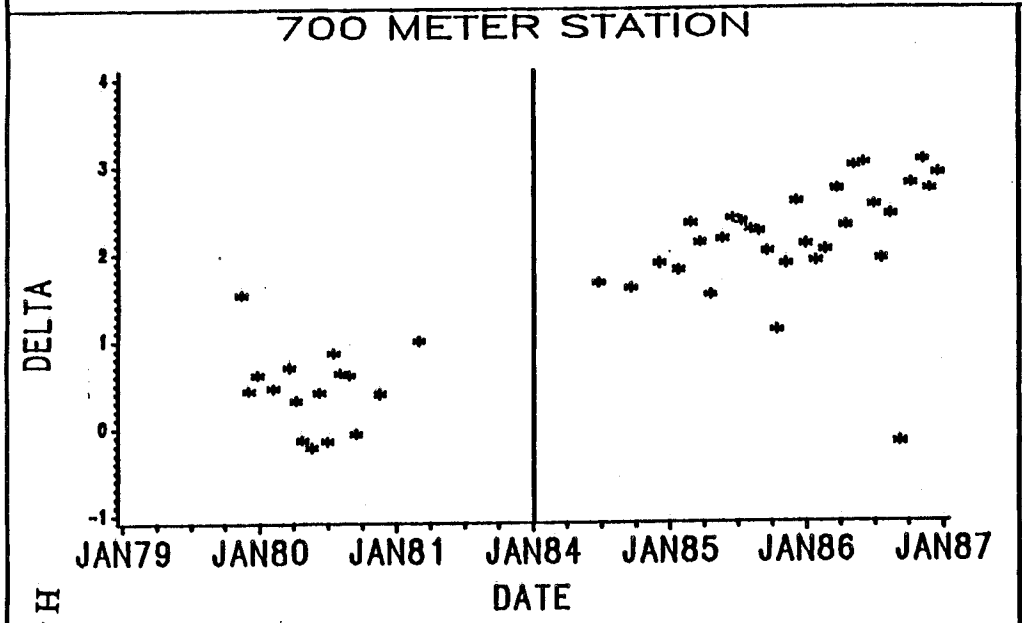
3350 METER STATION

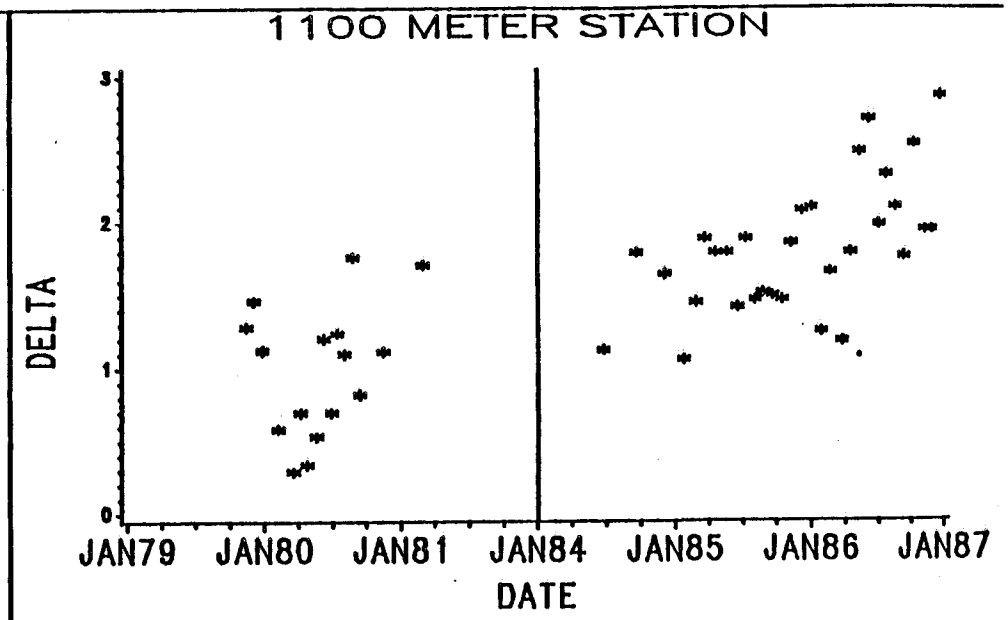


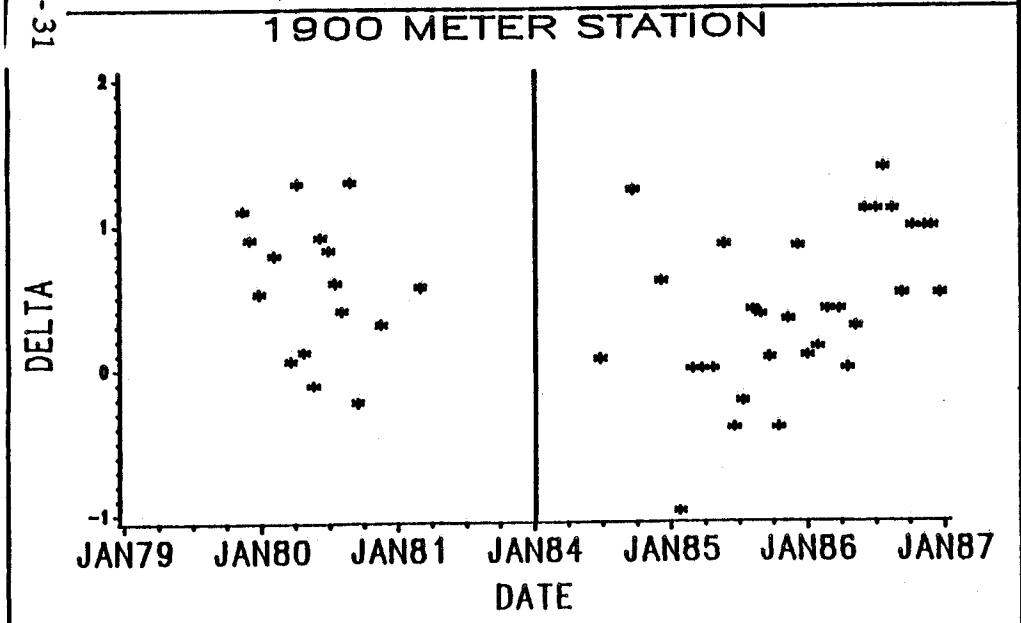
18 METER DEPTH
Synchelidium shoemakeri

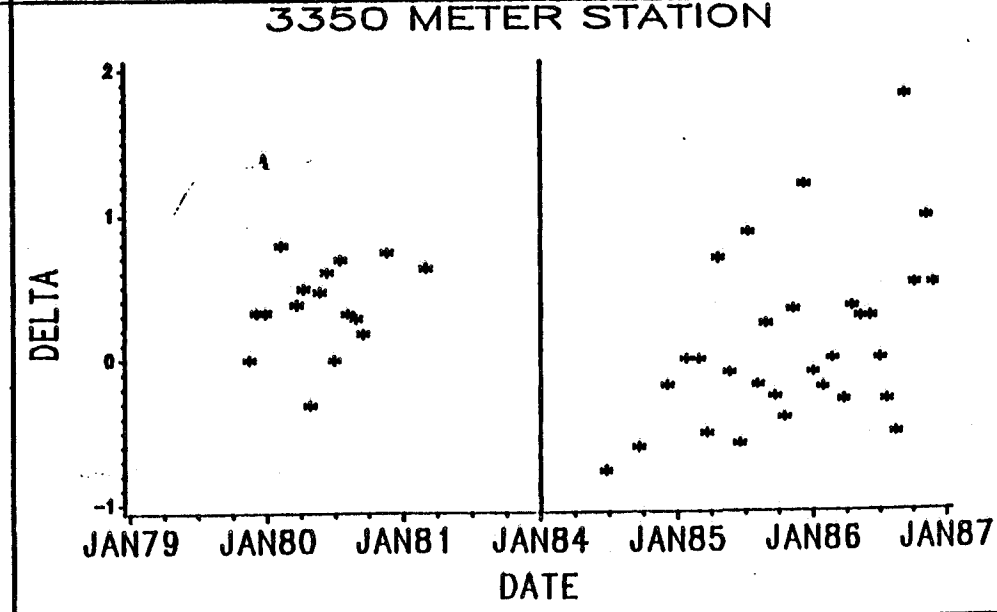


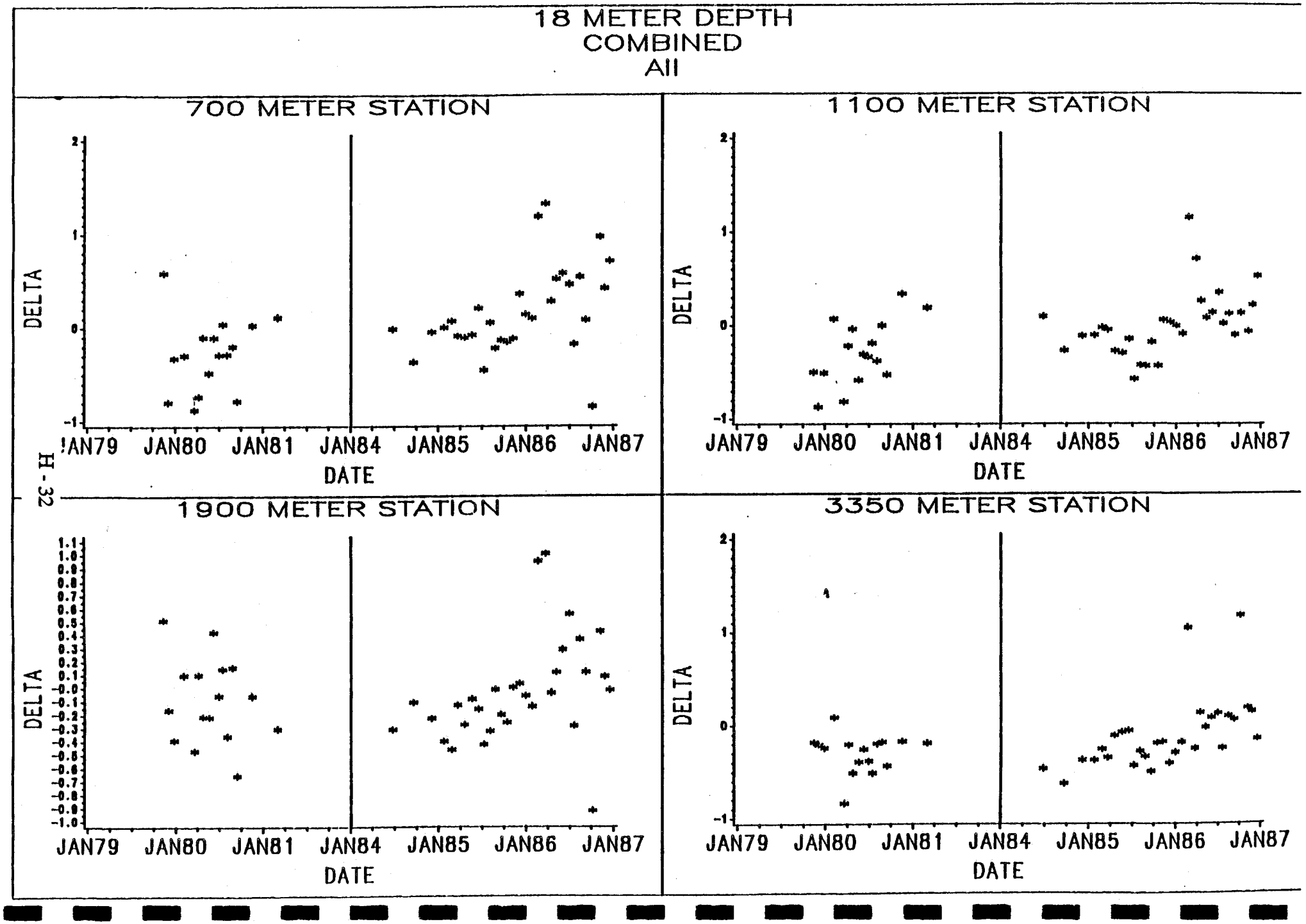
18 METER DEPTH
Tauberia gracilis



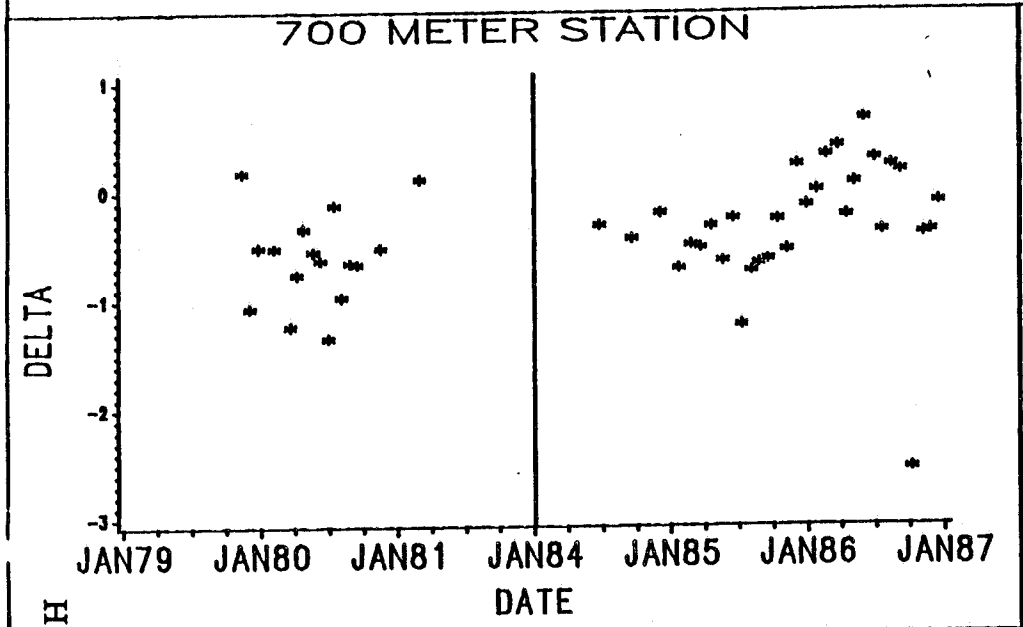


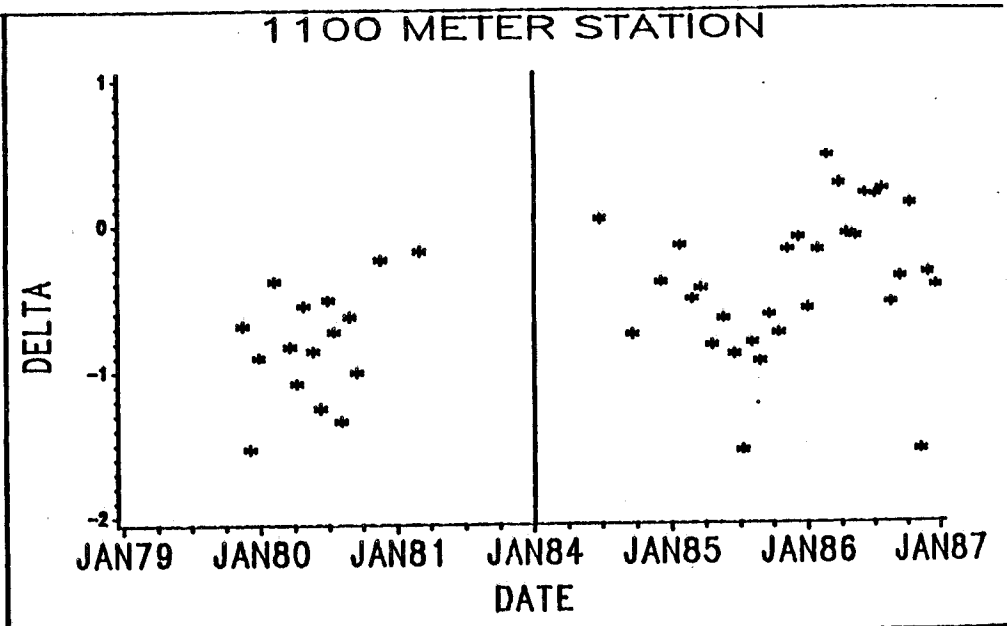


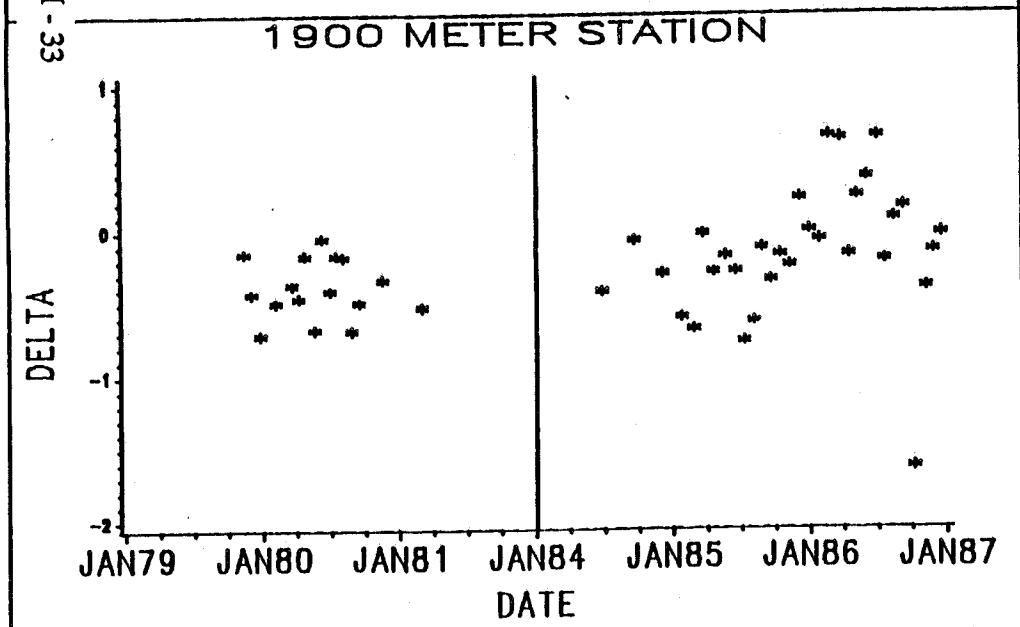


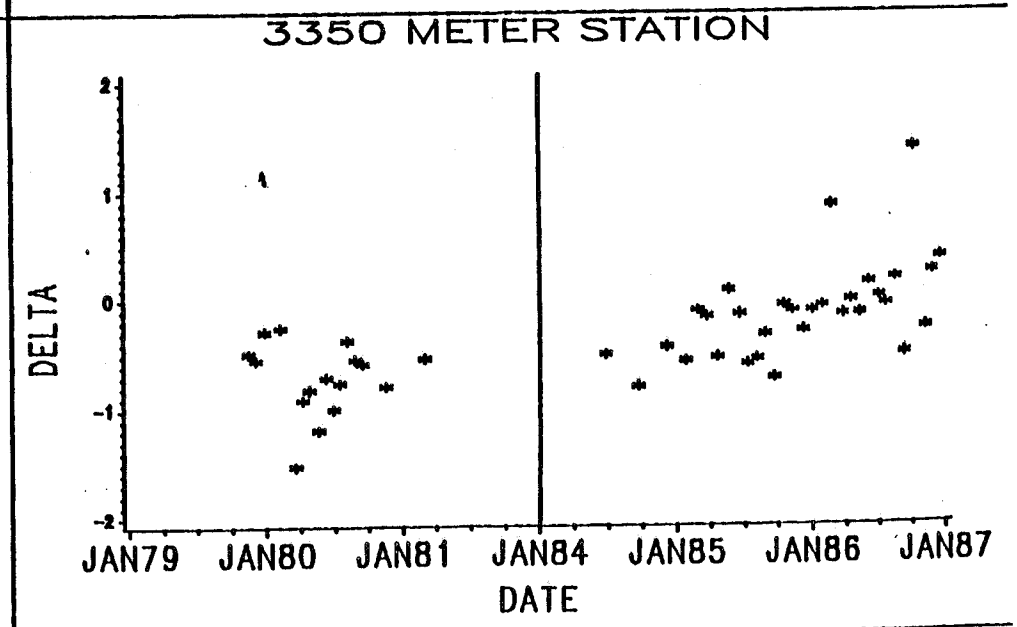

18 METER DEPTH
COMBINED
All
700 METER STATION
1100 METER STATION
1900 METER STATION
3350 METER STATION
DELTA
DATE
JAN79
JAN80
JAN81
JAN84
JAN85
JAN86
JAN87

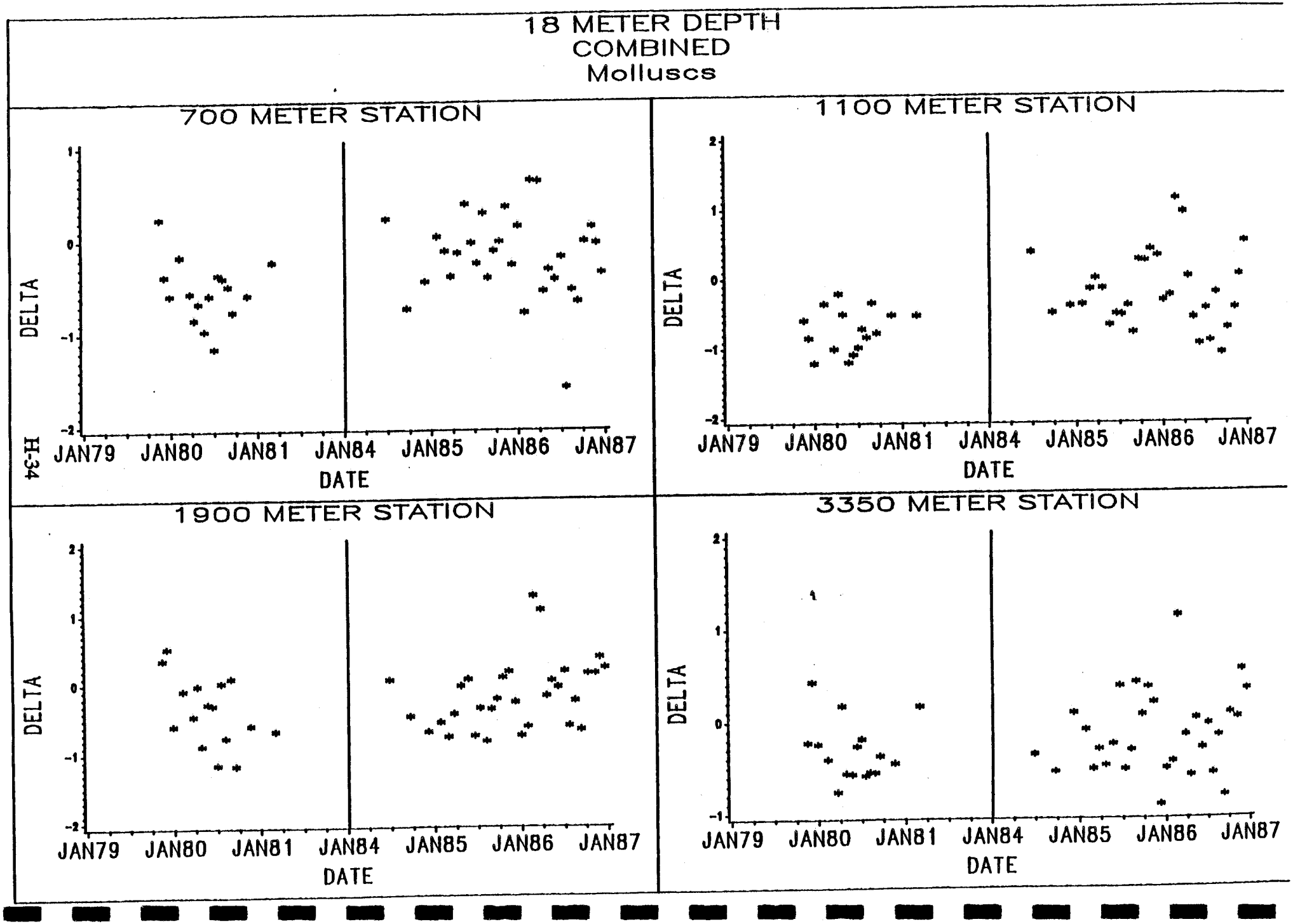
18 METER DEPTH
COMBINED
Crustaceans





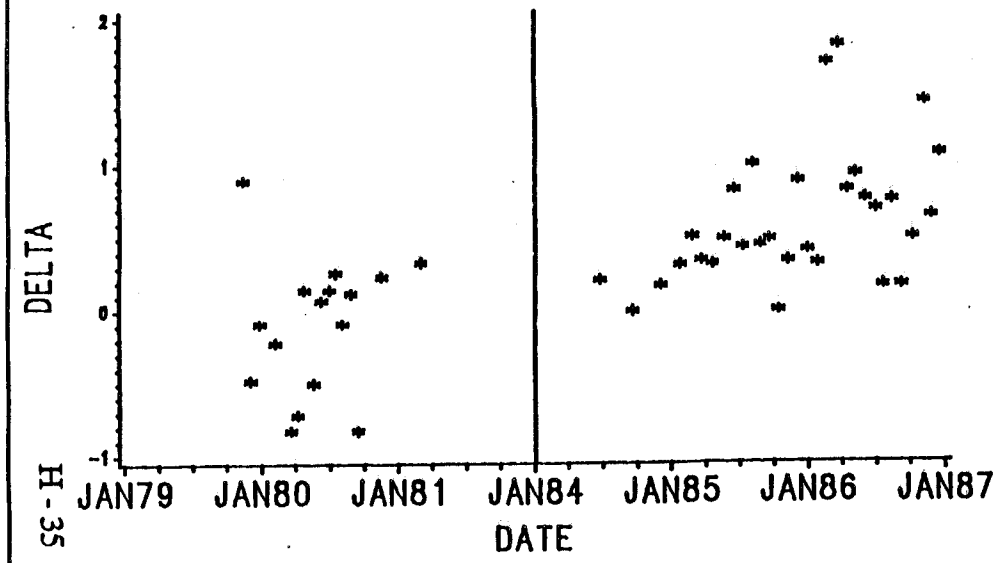




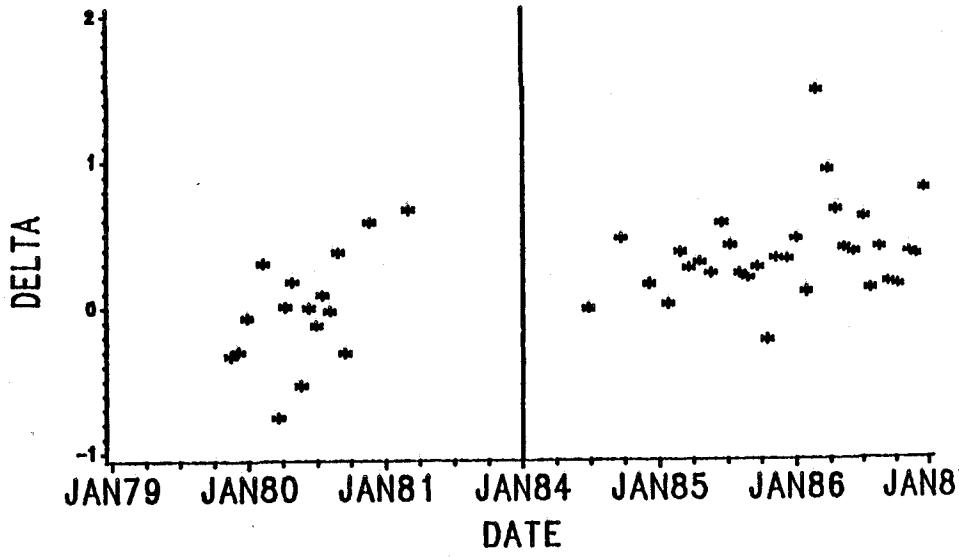

18 METER DEPTH
COMBINED
Molluscs
700 METER STATION
1100 METER STATION
1900 METER STATION
3350 METER STATION
DELTA
DATE
JAN79
JAN80
JAN81
JAN84
JAN85
JAN86
JAN87
H-34

18 METER DEPTH
COMBINED
Polychaetes

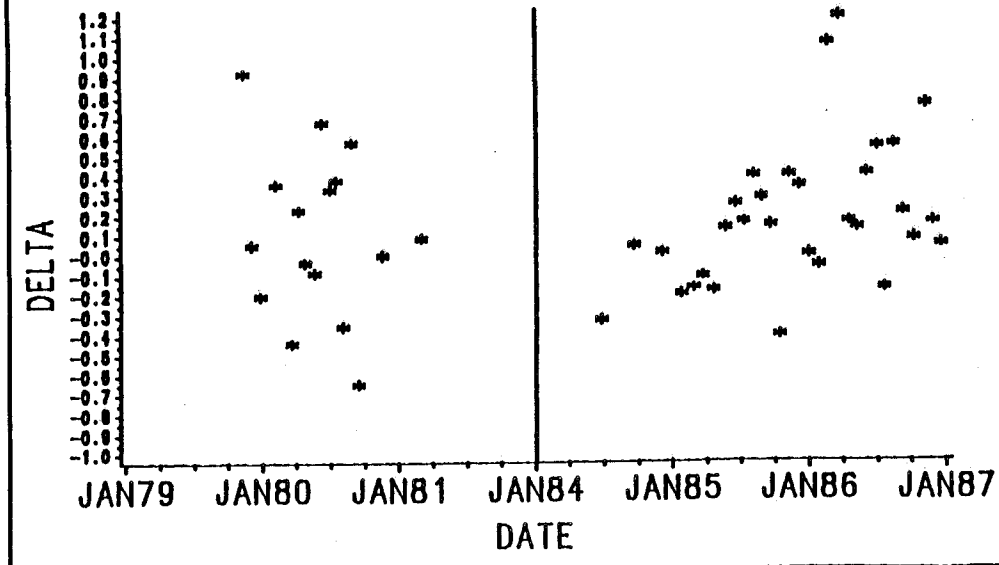
700 METER STATION



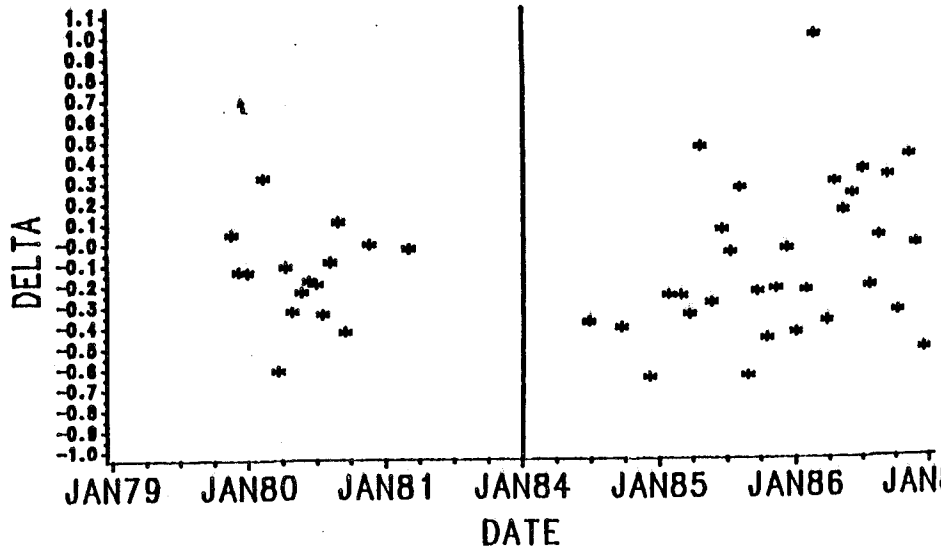
1100 METER STATION

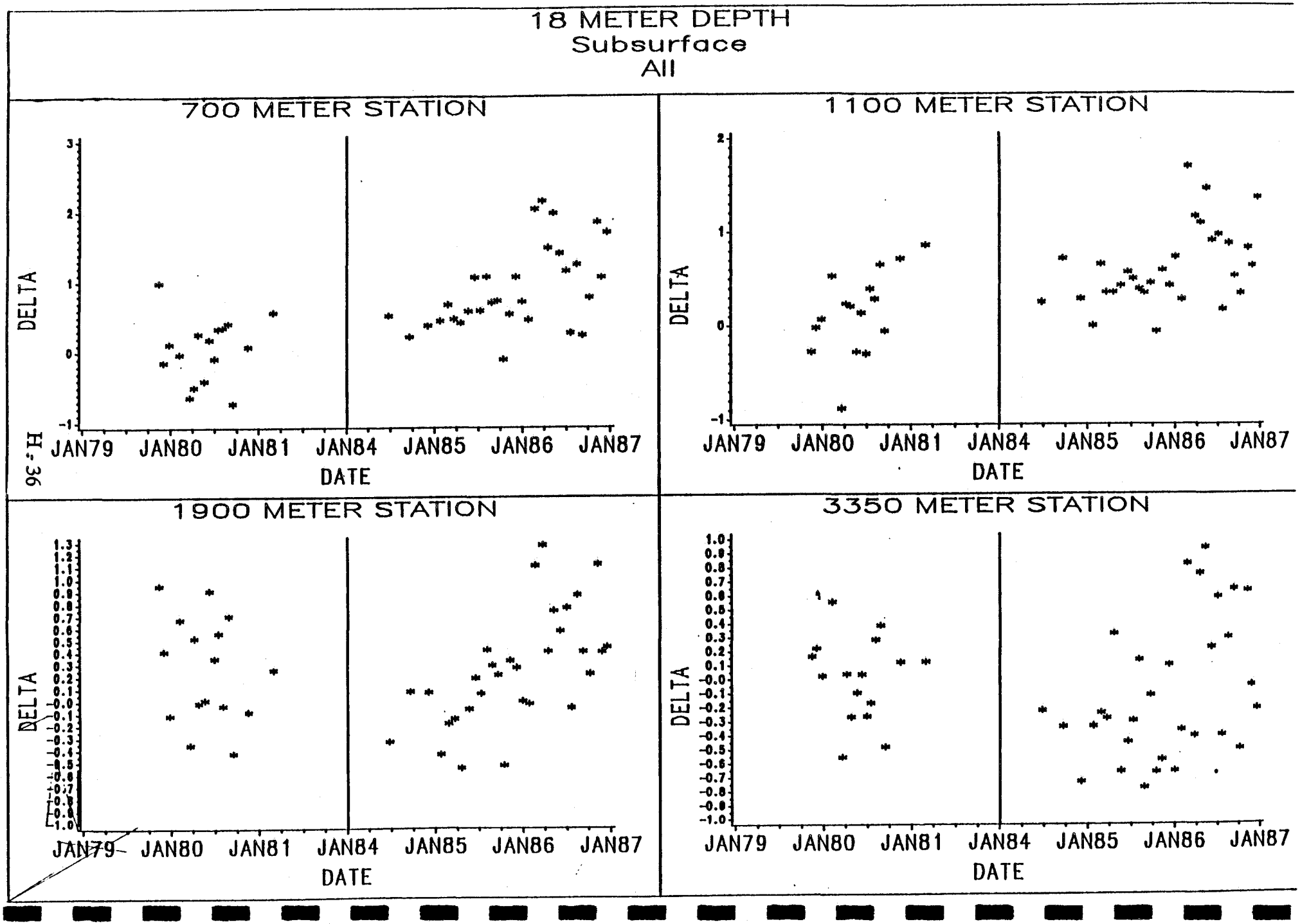


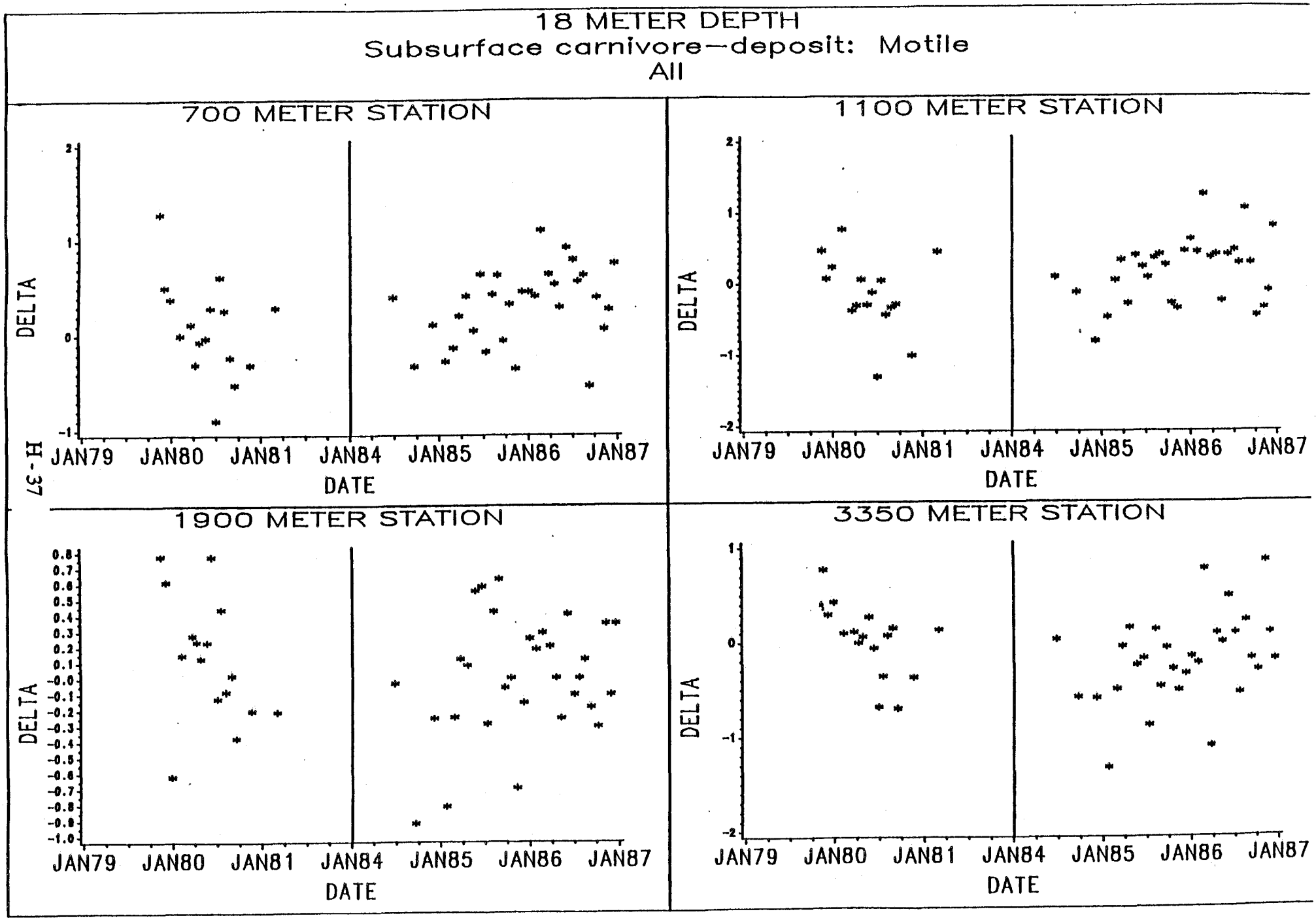
1900 METER STATION



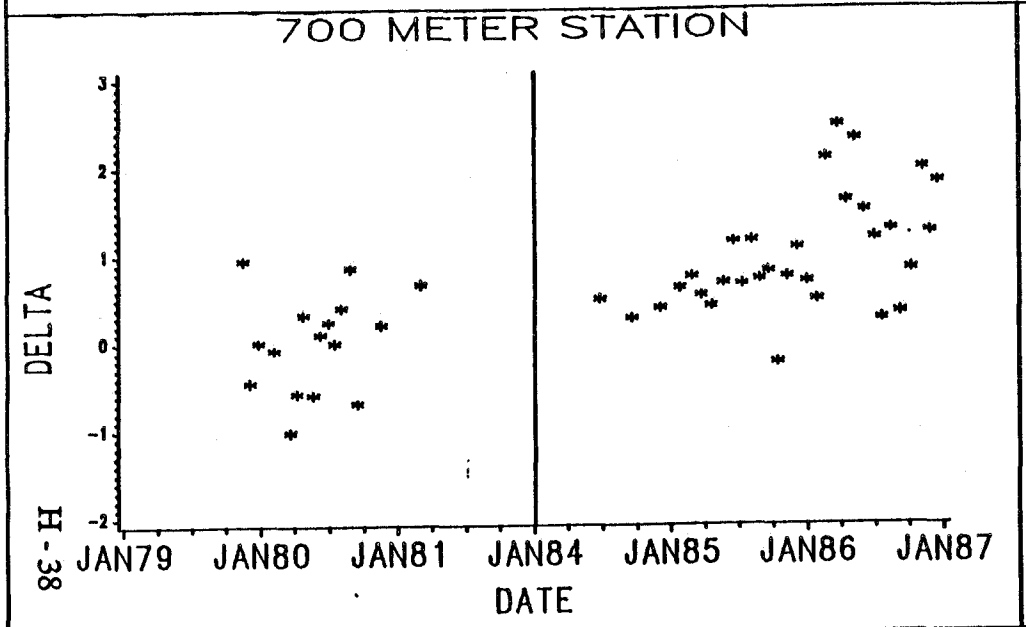
3350 METER STATION

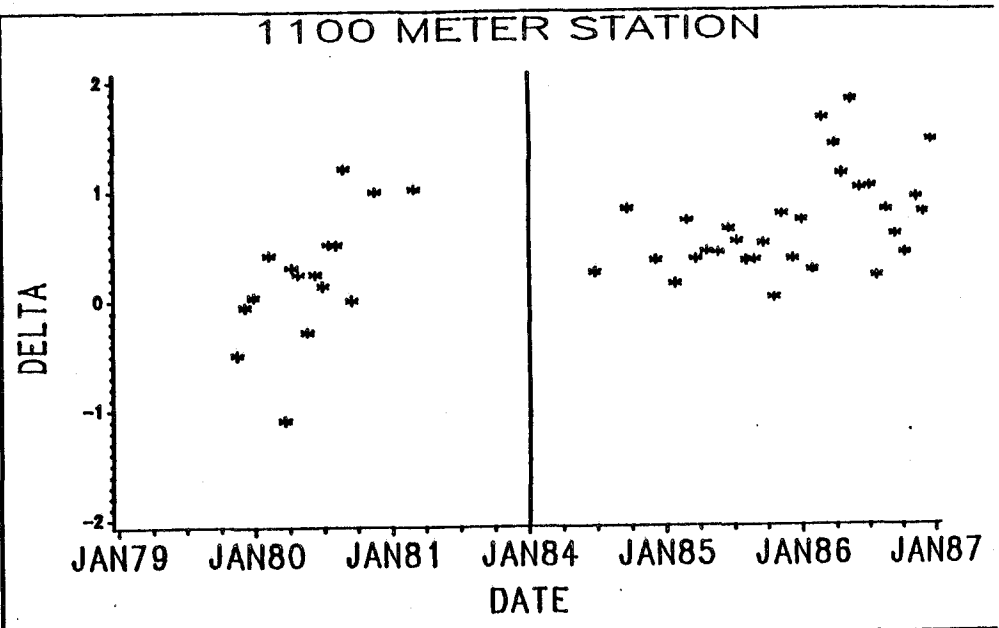


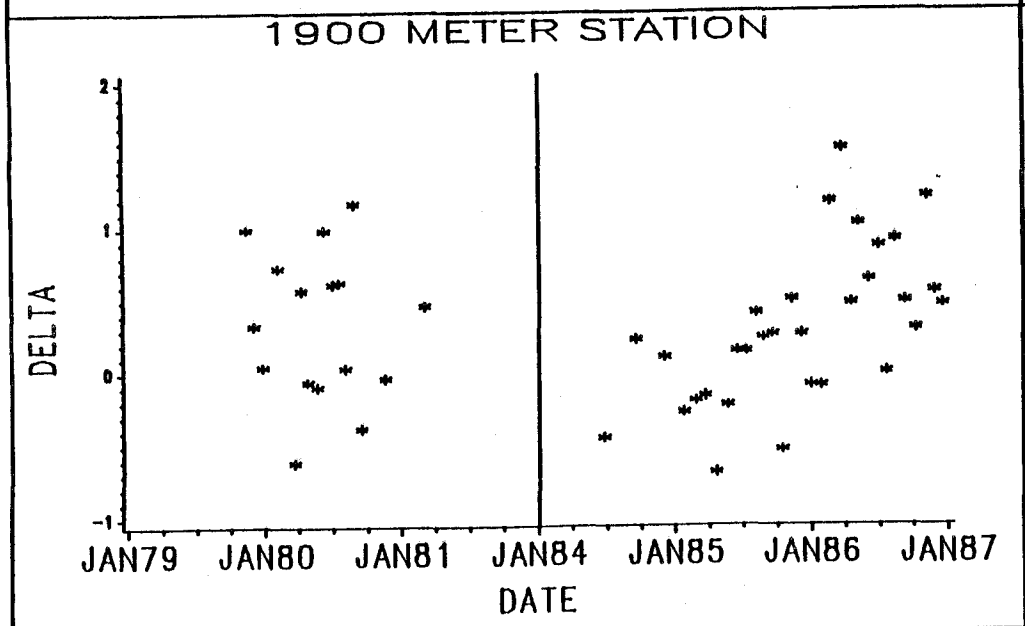

18 METER DEPTH
Subsurface
All
700 METER STATION
1100 METER STATION
1900 METER STATION
3350 METER STATION
DELTA
DATE
JAN79
JAN80
JAN81
JAN84
JAN85
JAN86
JAN87

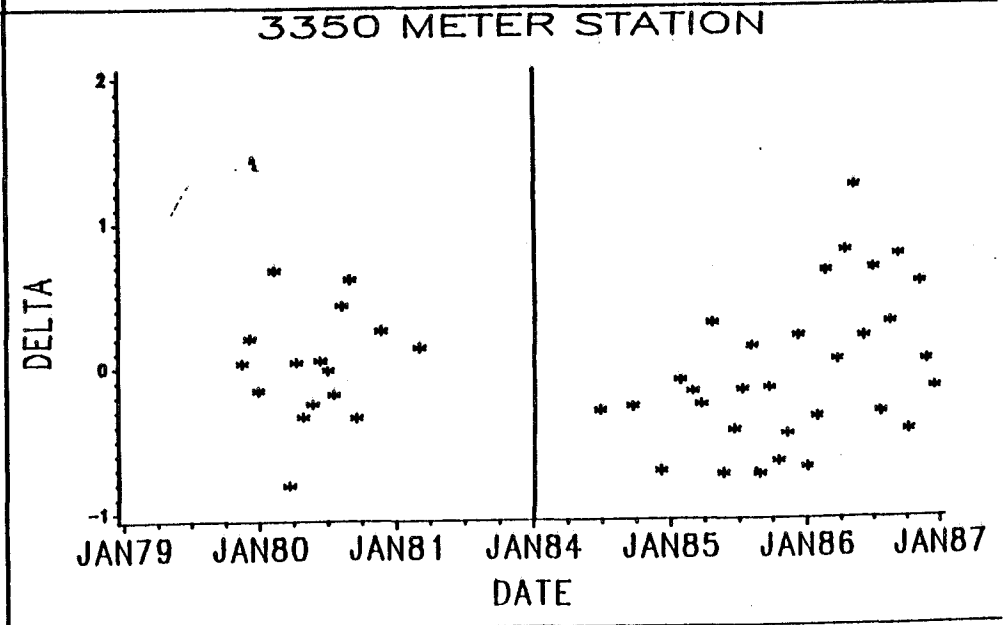

18 METER DEPTH
Subsurface carnivore—deposit: Motile
All
700 METER STATION
1100 METER STATION
1900 METER STATION
3350 METER STATION
DELTA
DATE
JAN79
JAN80
JAN81
JAN84
JAN85
JAN86
JAN87

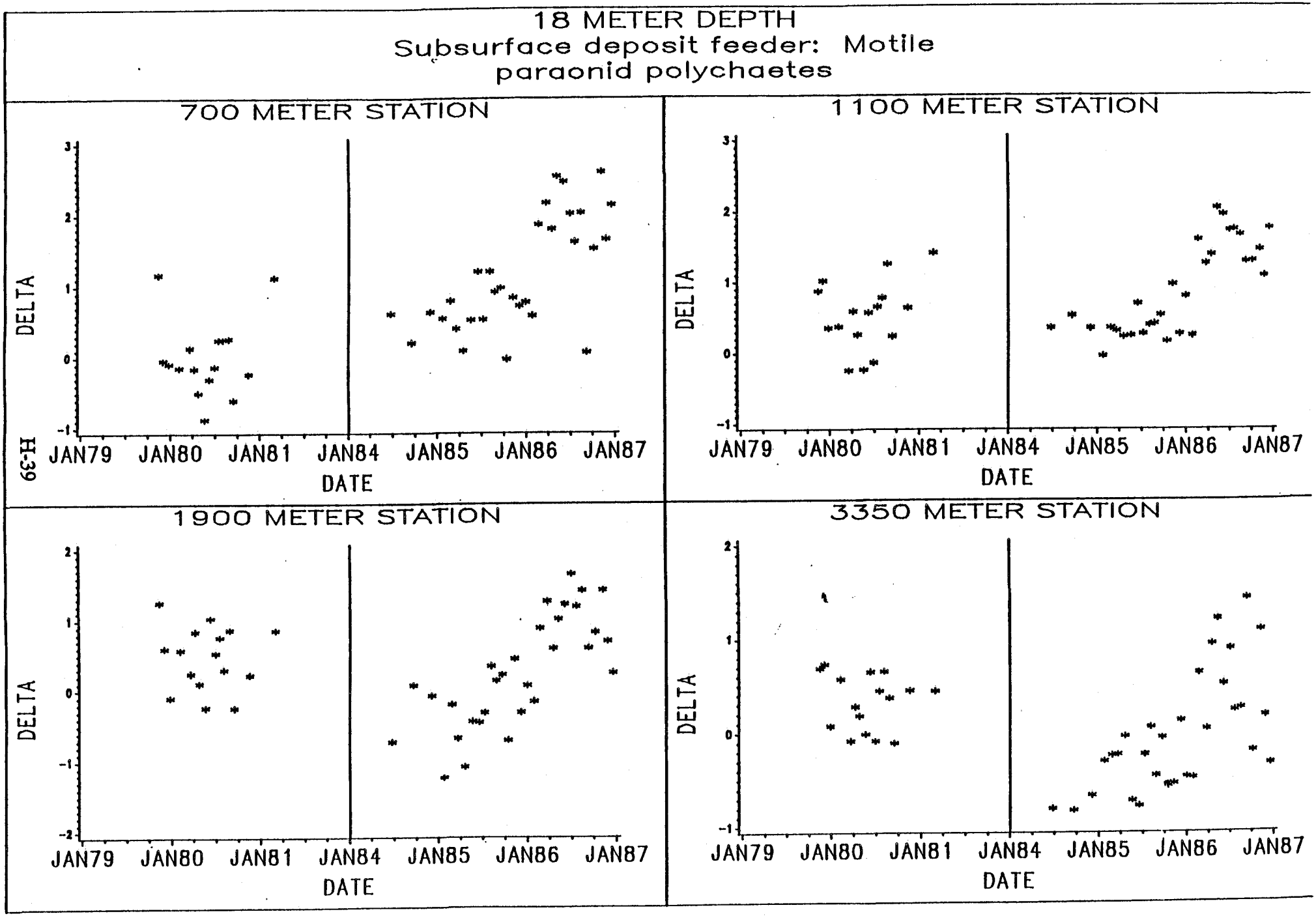
18 METER DEPTH
Subsurface deposit feeder: Motile
All





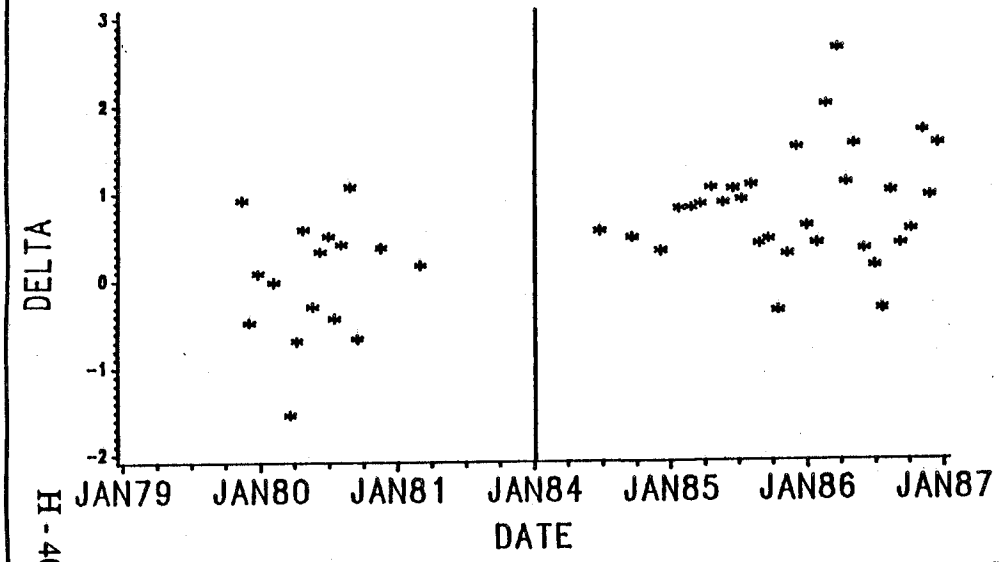




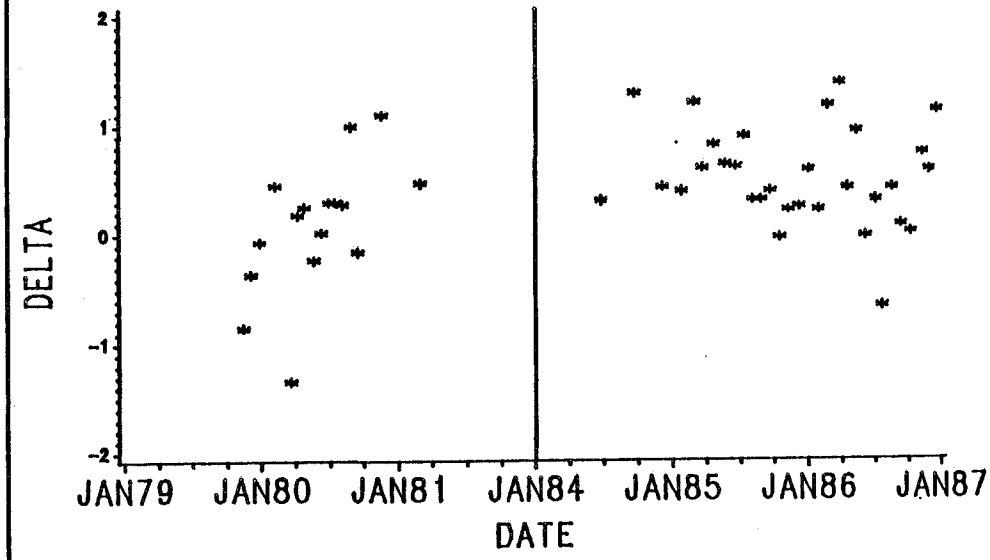

18 METER DEPTH
Subsurface deposit feeder: Motile paraonid polychaetes
700 METER STATION
1100 METER STATION
1900 METER STATION
3350 METER STATION
DELTA
DATE
JAN79
JAN80
JAN81
JAN84
JAN85
JAN86
JAN87
H-39

18 METER DEPTH
Subsurface deposit feeder: Motile
capitellid polychaetes

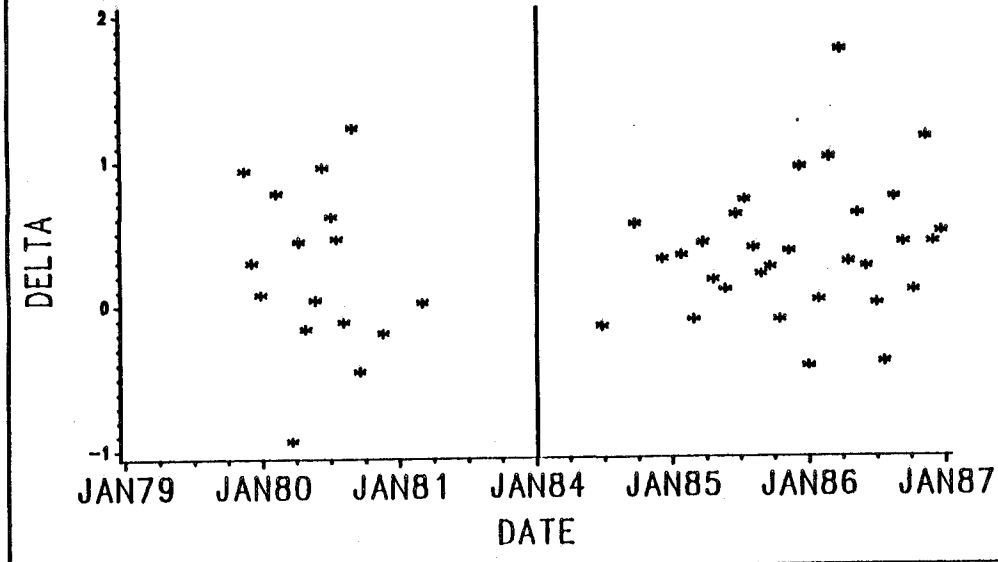
700 METER STATION



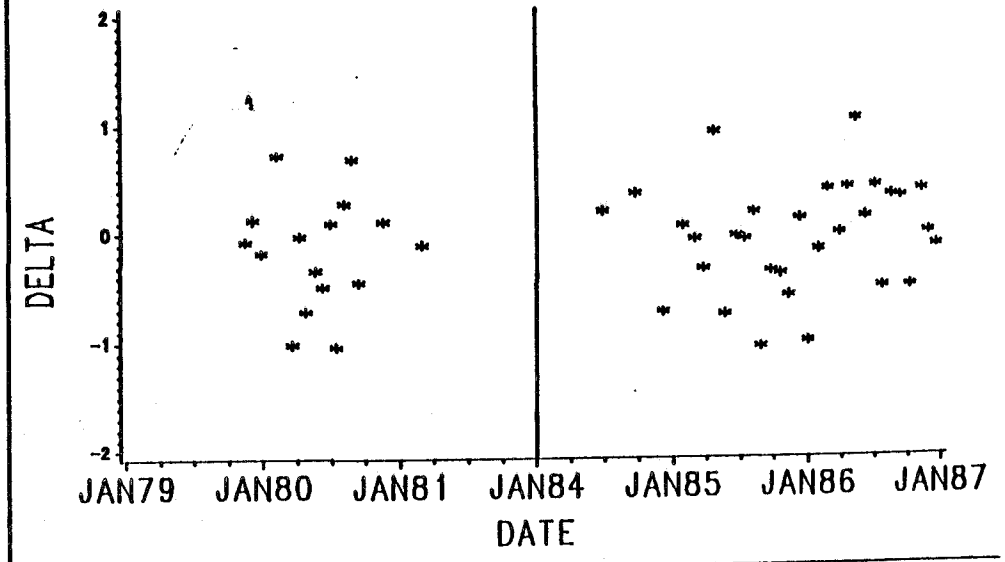
1100 METER STATION

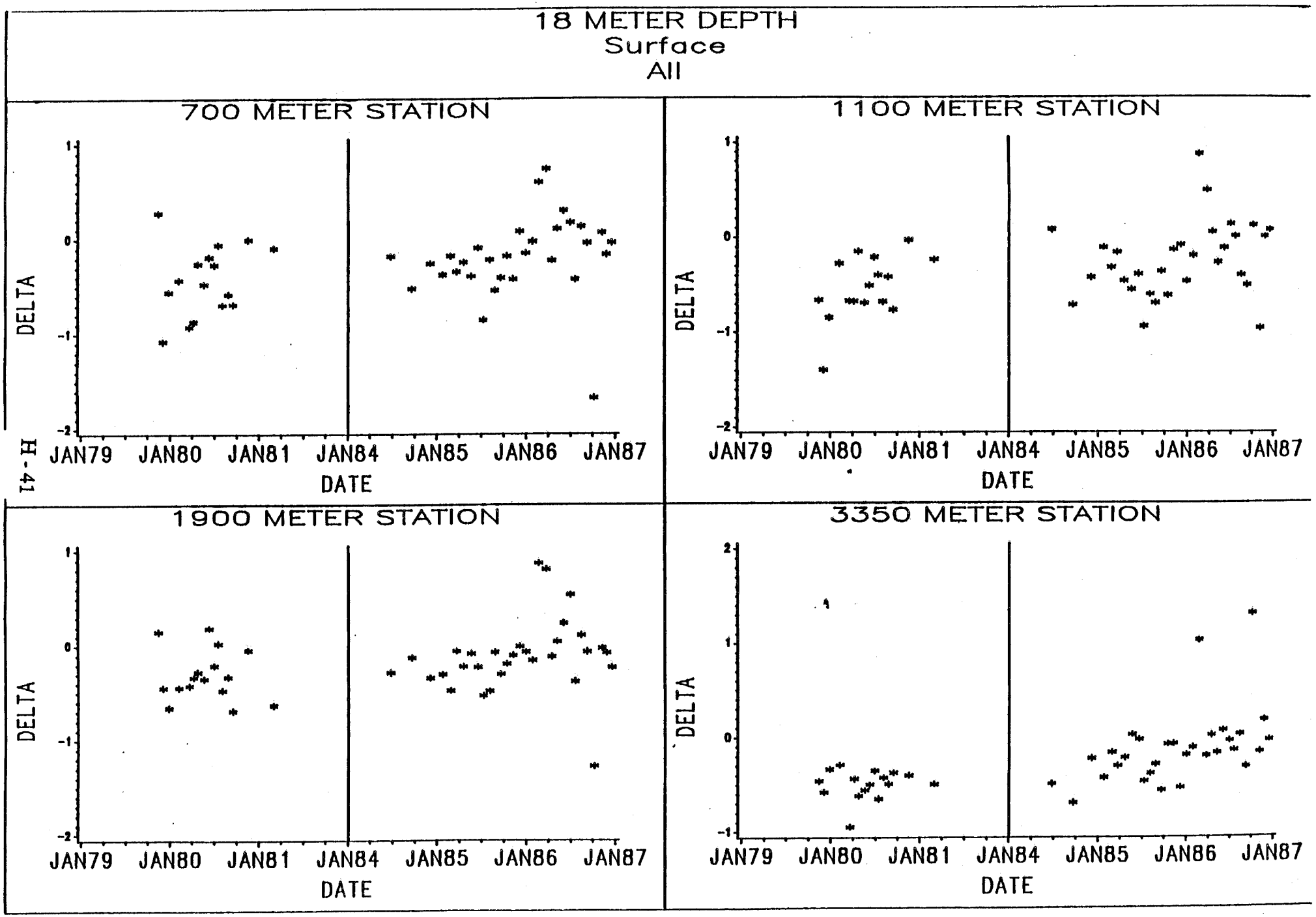


1900 METER STATION

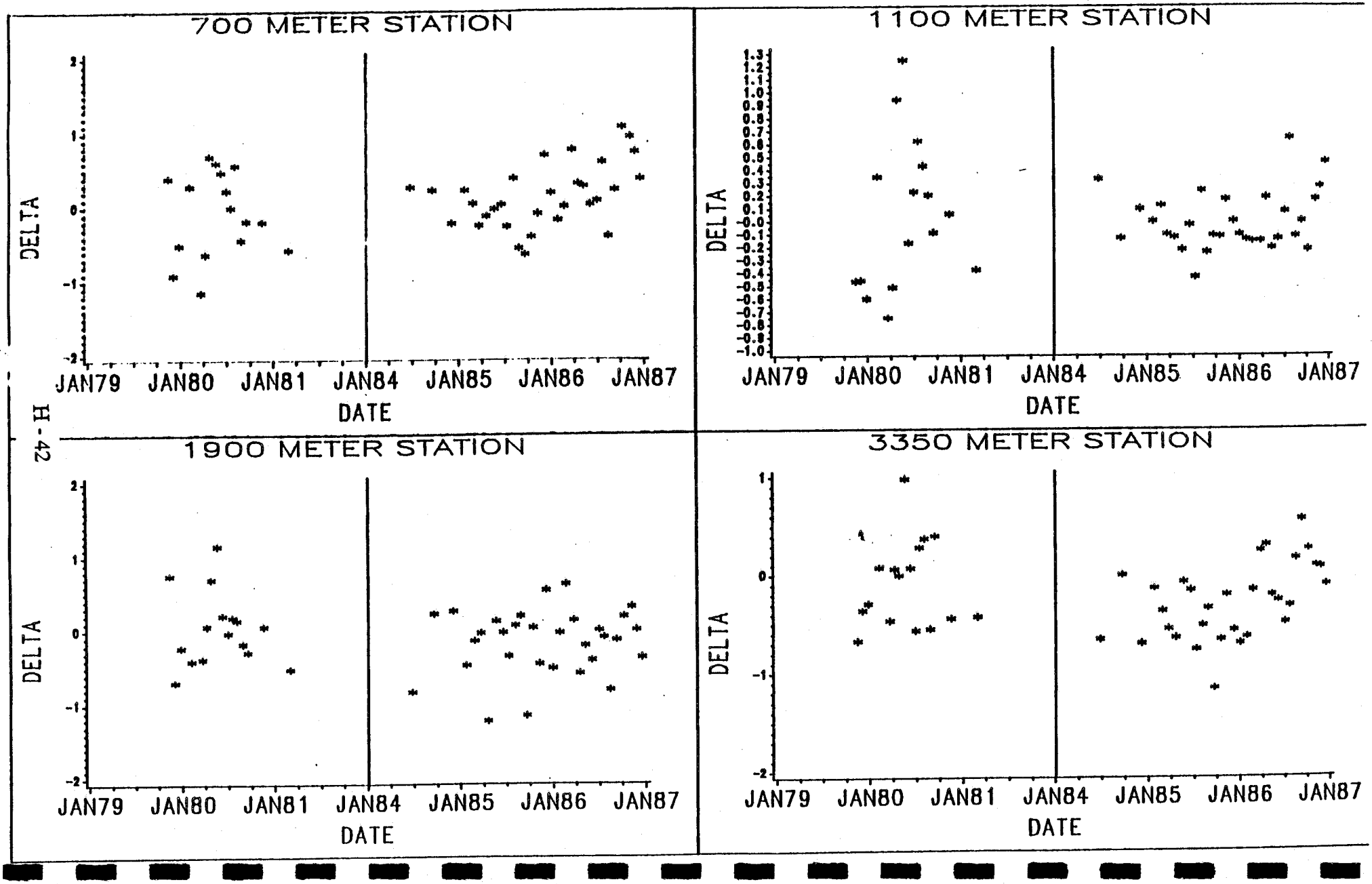


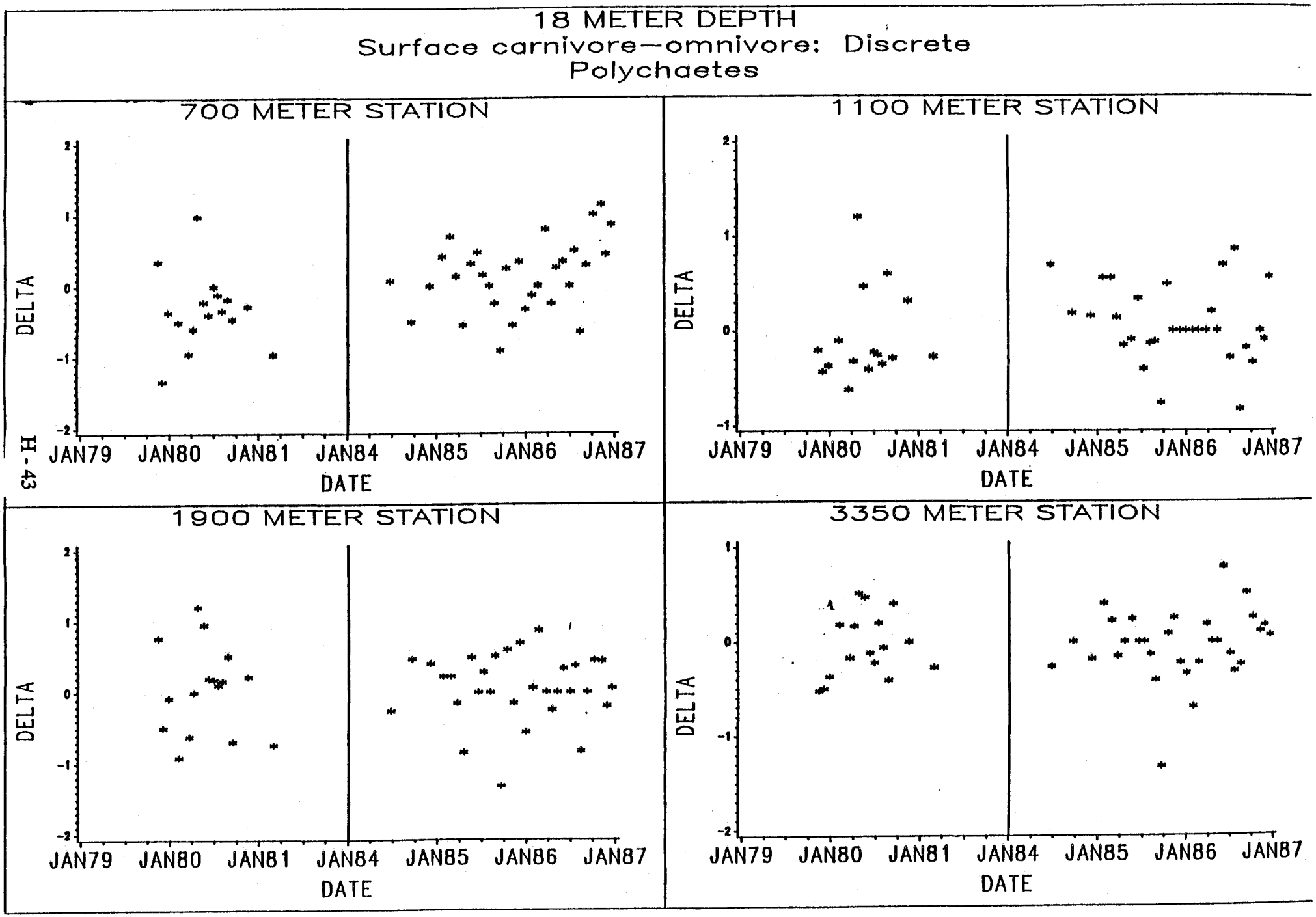
3350 METER STATION



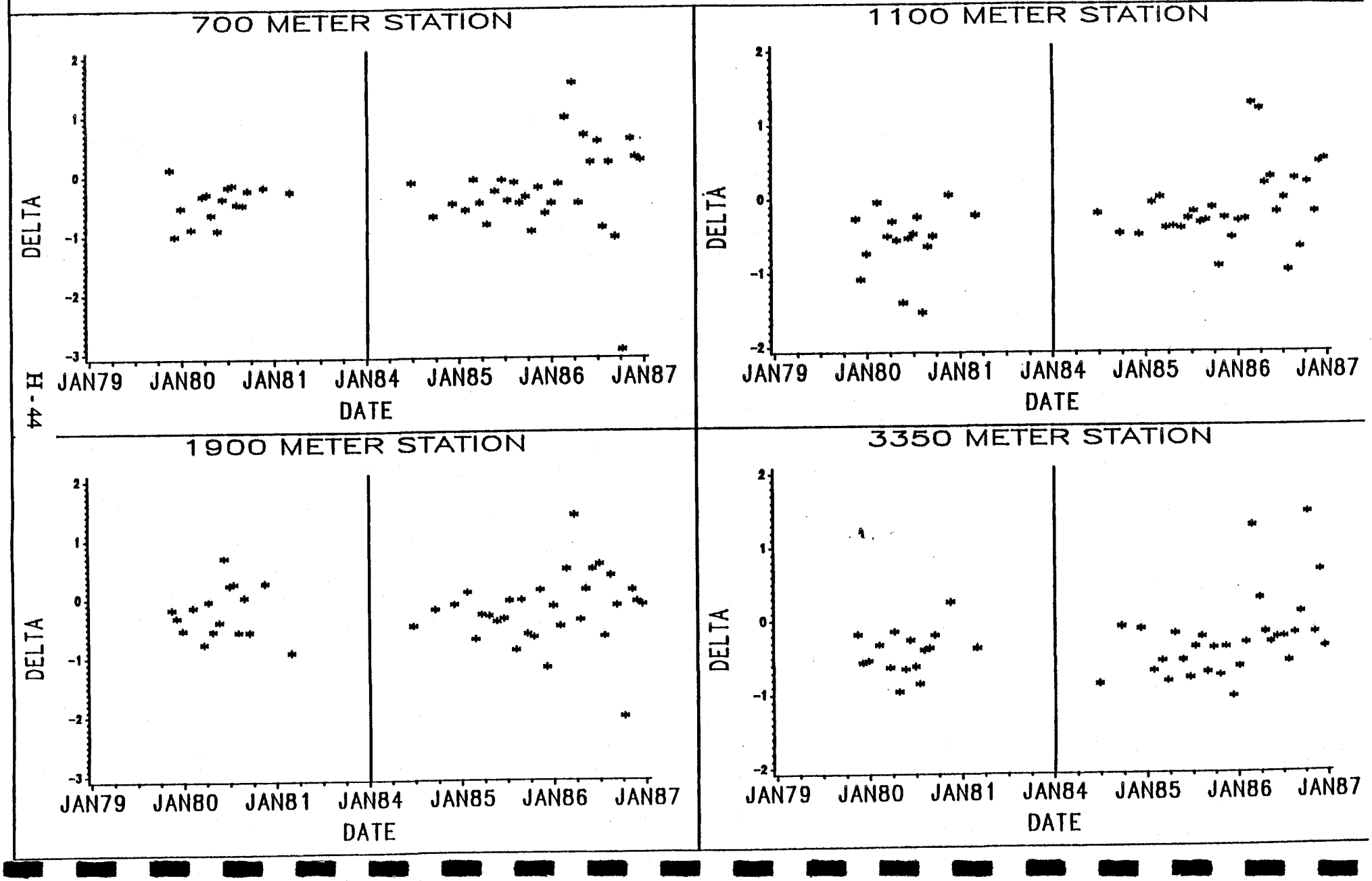

18 METER DEPTH
Surface
All
700 METER STATION
1100 METER STATION
1900 METER STATION
3350 METER STATION
DELTA
DATE
JAN79
JAN80
JAN81
JAN84
JAN85
JAN86
JAN87

18 METER DEPTH
Surface carnivore—omnivore: Discrete
All



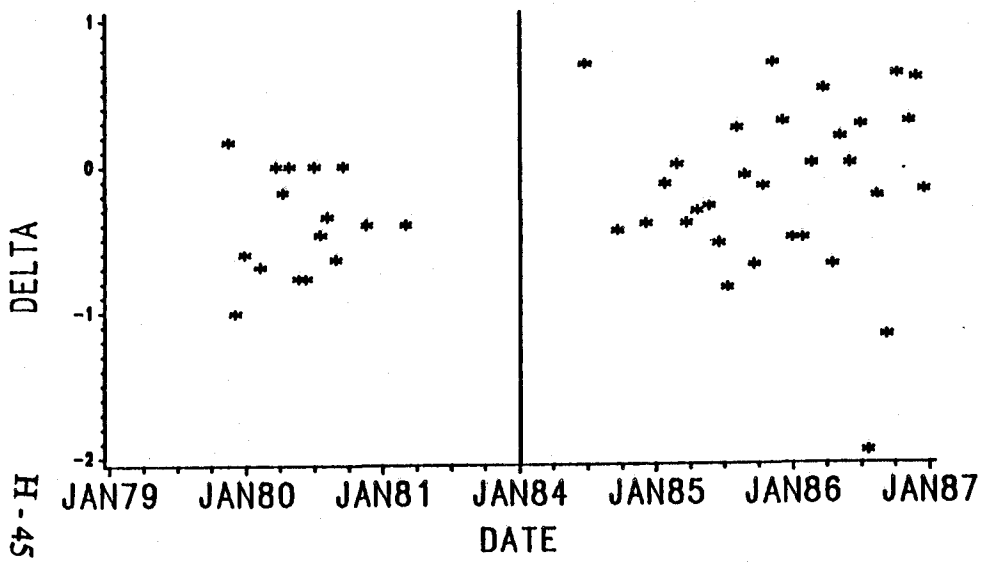

18 METER DEPTH
Surface carnivore—omnivore: Discrete
Polychaetes
700 METER STATION
1100 METER STATION
1900 METER STATION
3350 METER STATION
DELTA
DATE
JAN79
JAN80
JAN81
JAN84
JAN85
JAN86
JAN87

18 METER DEPTH
Surface carnivore—omnivore: Motile
All

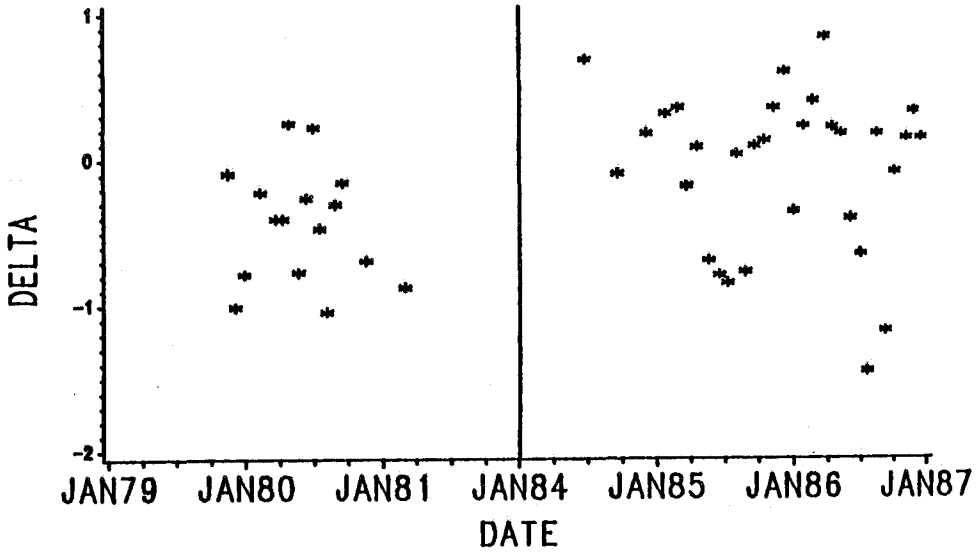


18 METER DEPTH
Surface carnivore—omnivore: Motile
Molluscs

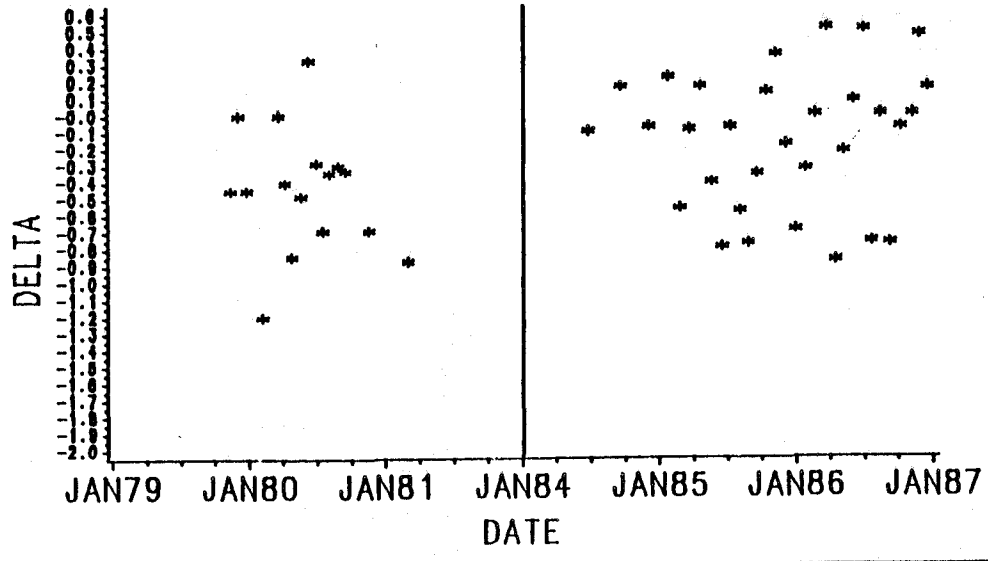
700 METER STATION



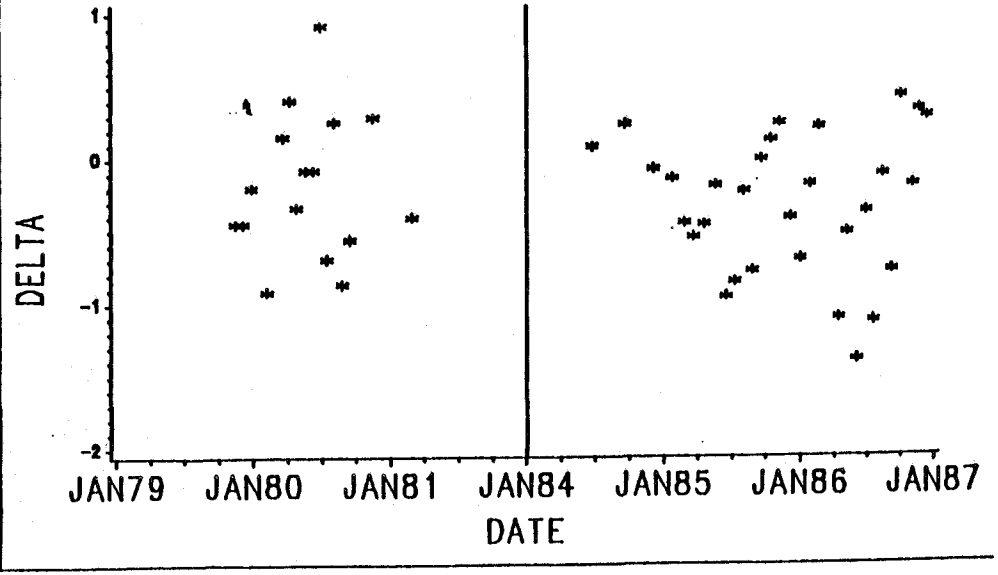
1100 METER STATION



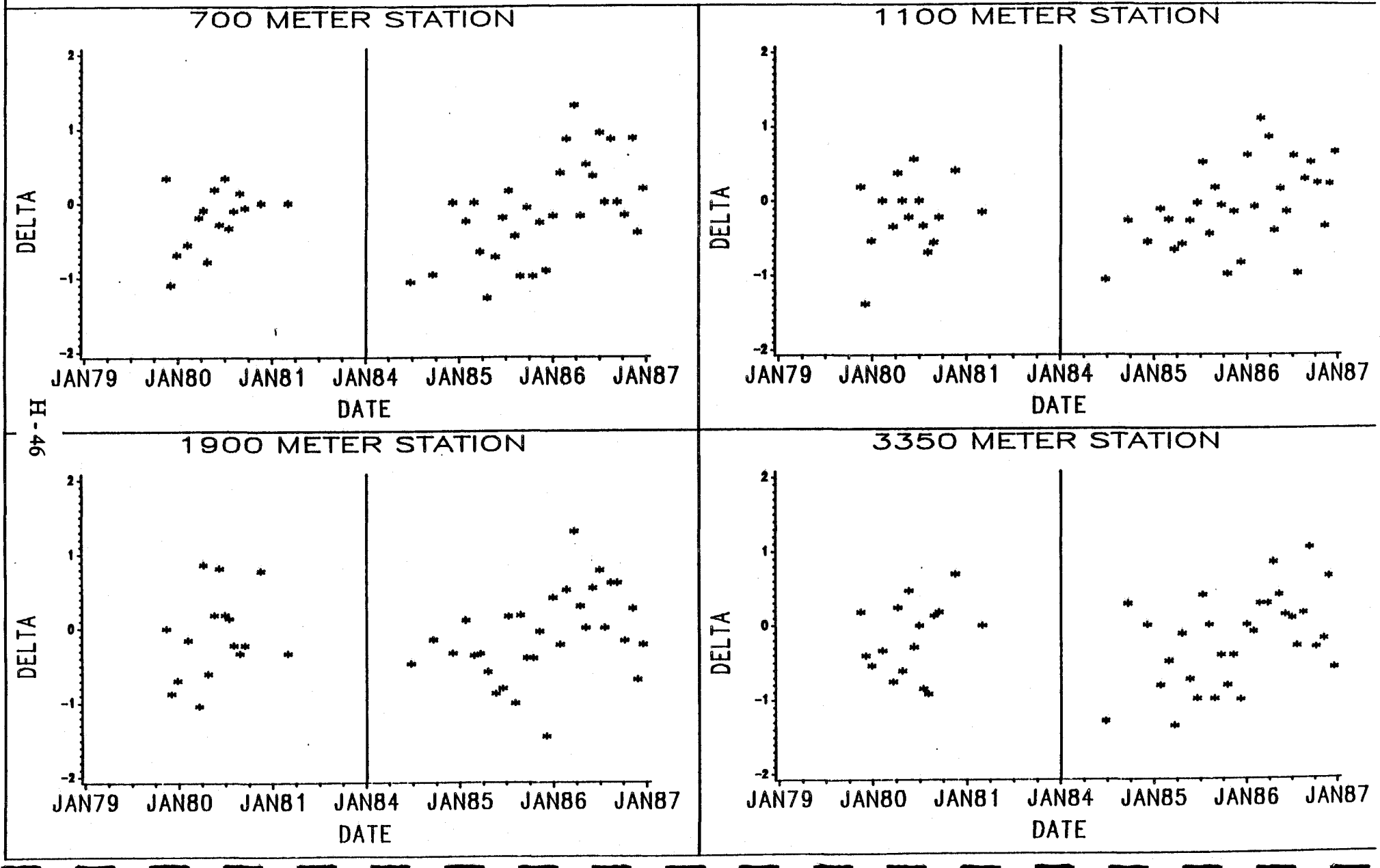
1900 METER STATION

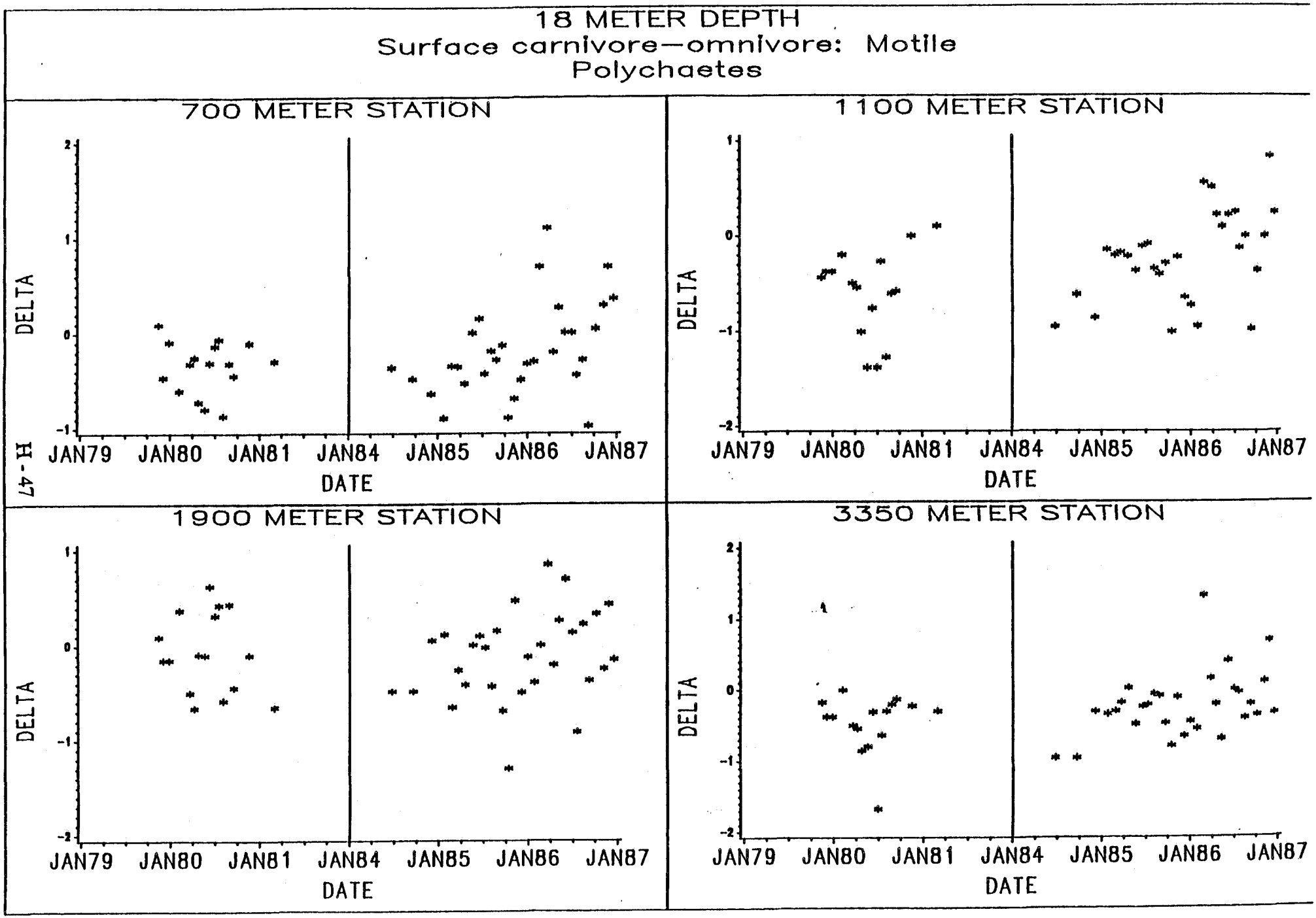


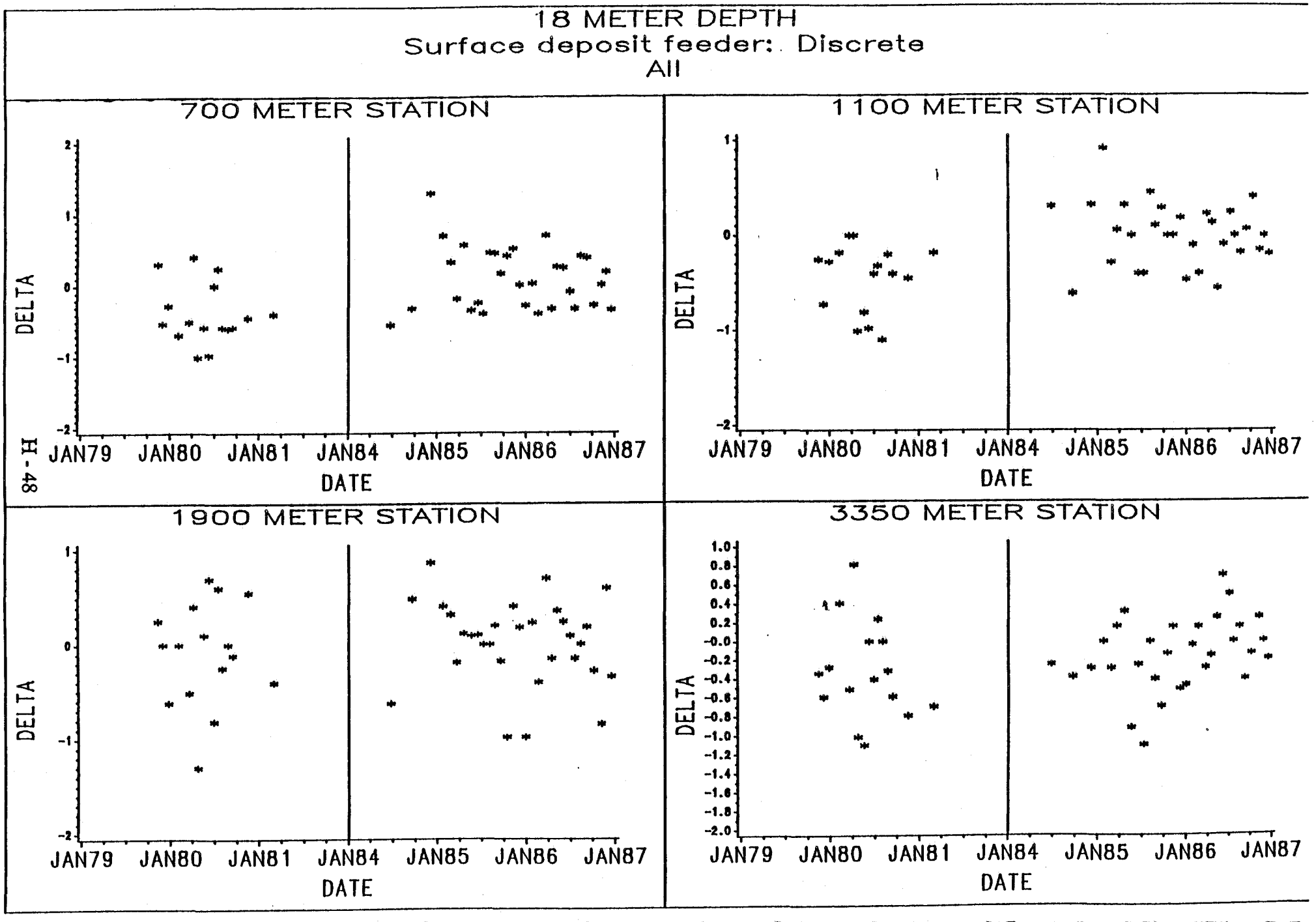
3350 METER STATION



18 METER DEPTH
Surface carnivore—omnivore: Motile
Others

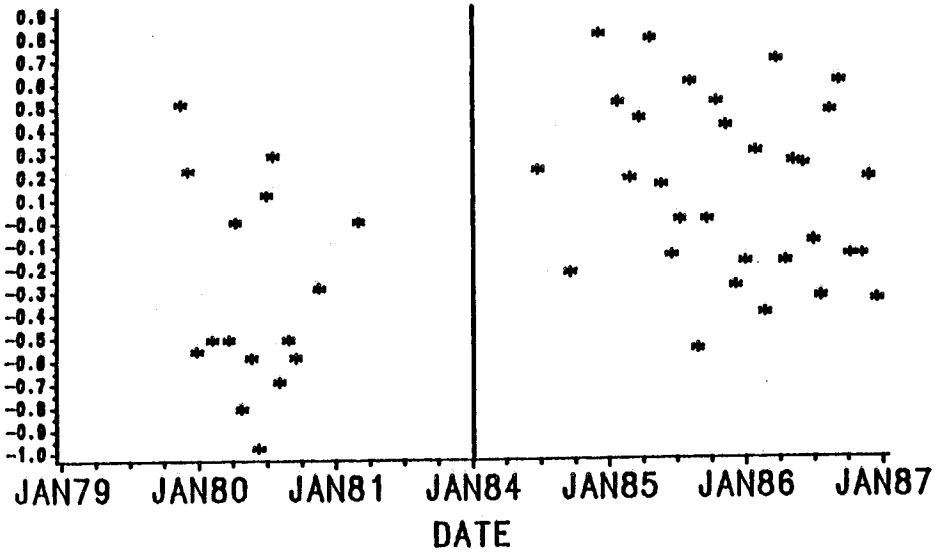



18 METER DEPTH
Surface carnivore—omnivore: Motile
Polychaetes
700 METER STATION
1100 METER STATION
1900 METER STATION
3350 METER STATION
DELTA
DATE
JAN79
JAN80
JAN81
JAN84
JAN85
JAN86
JAN87
H-47

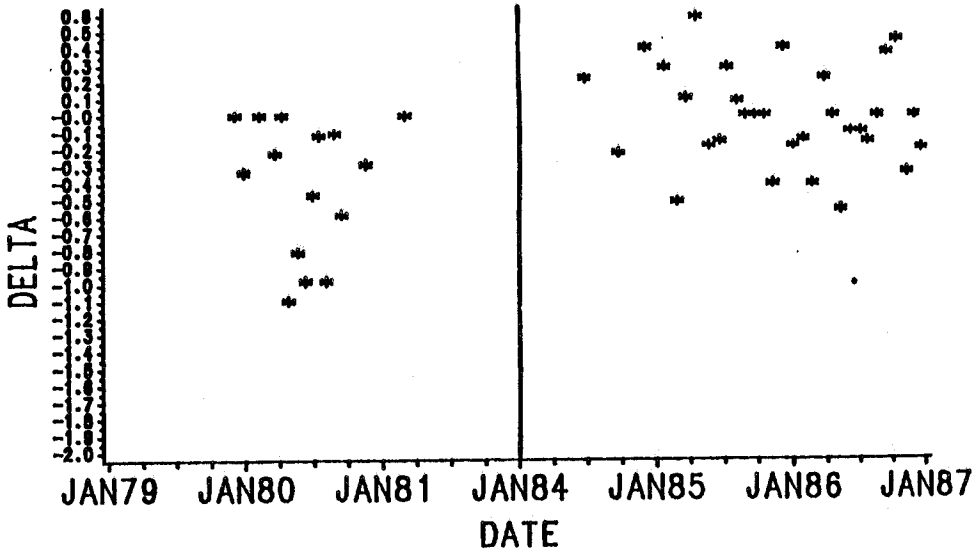

18 METER DEPTH
Surface deposit feeder: Discrete
All
700 METER STATION
1100 METER STATION
1900 METER STATION
3350 METER STATION
DELTA
DATE
JAN79
JAN80
JAN81
JAN84
JAN85
JAN86
JAN87

18 METER DEPTH
Surface deposit feeder: Discrete
Polychaetes

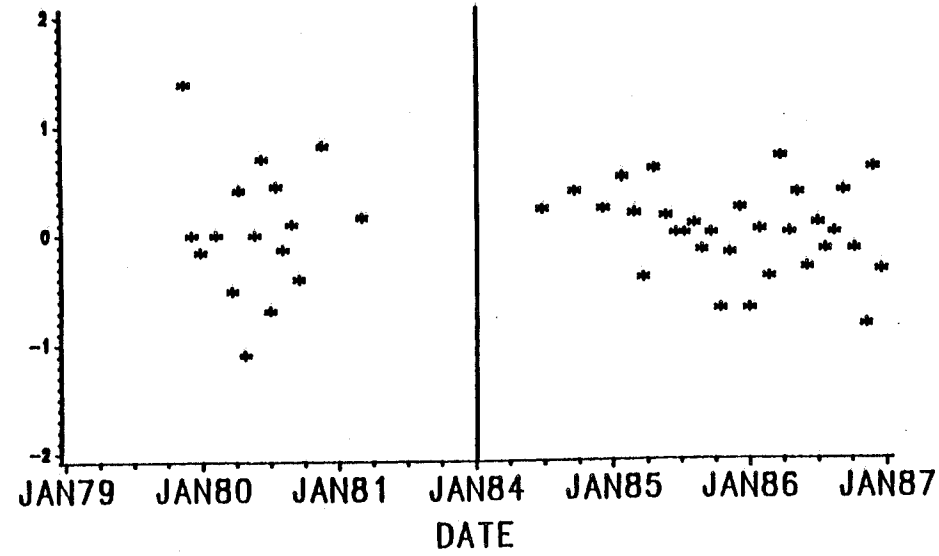
700 METER STATION



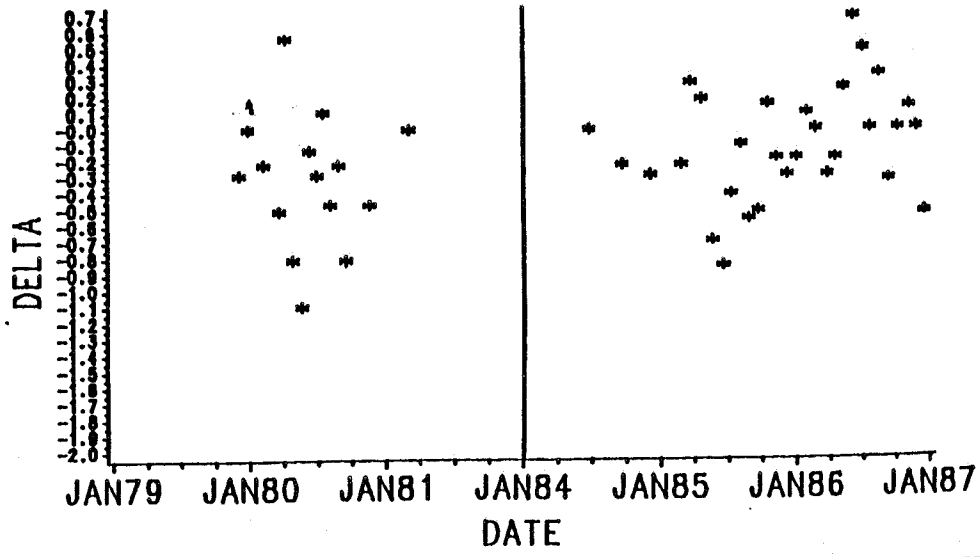
1100 METER STATION



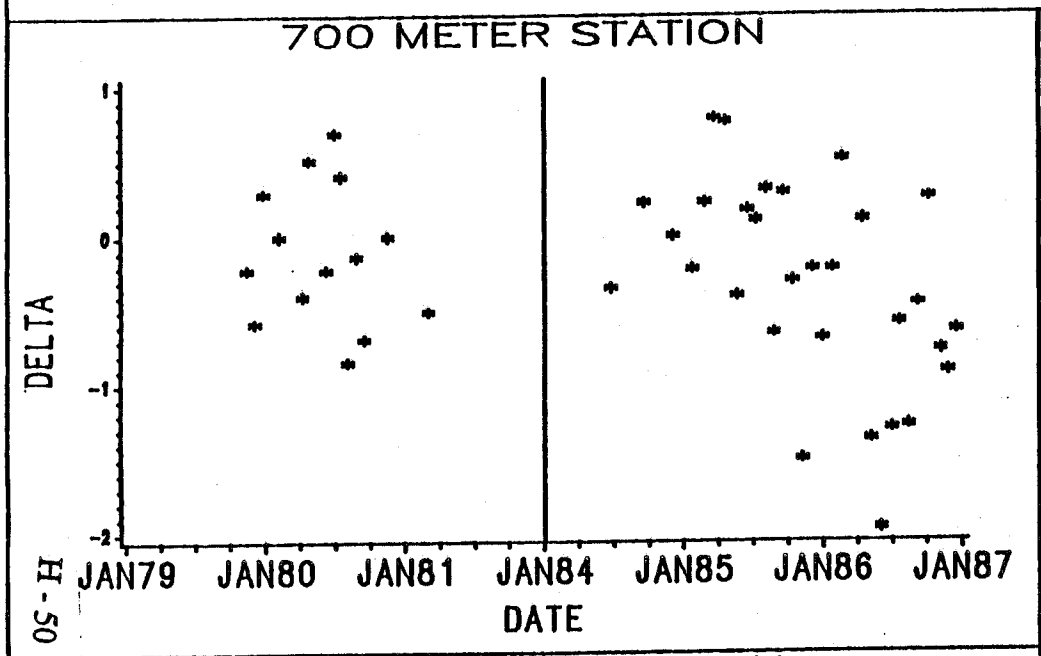
1900 METER STATION

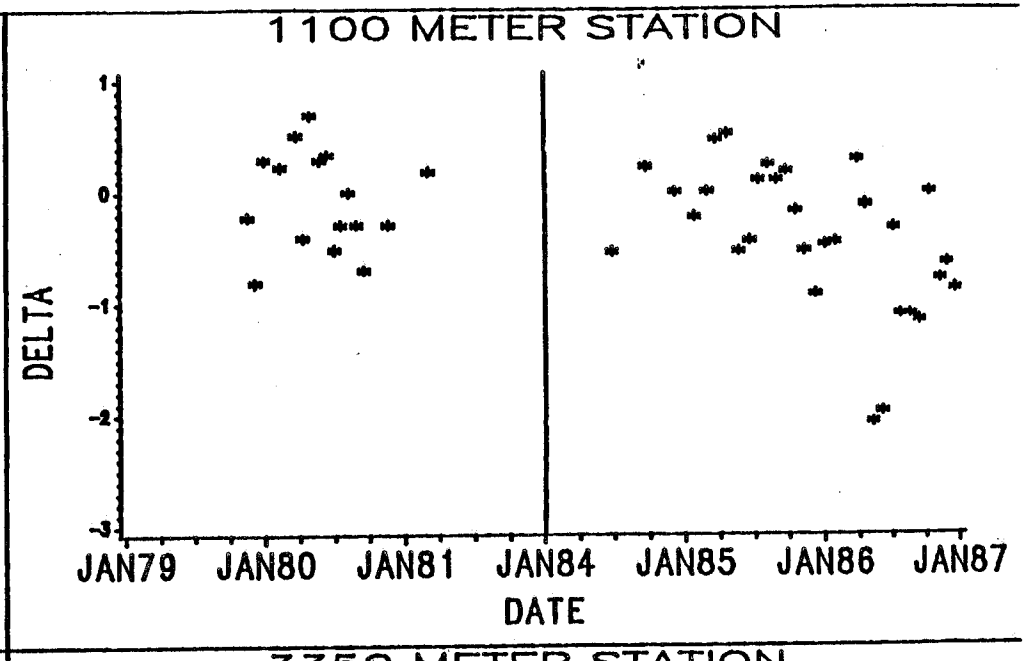


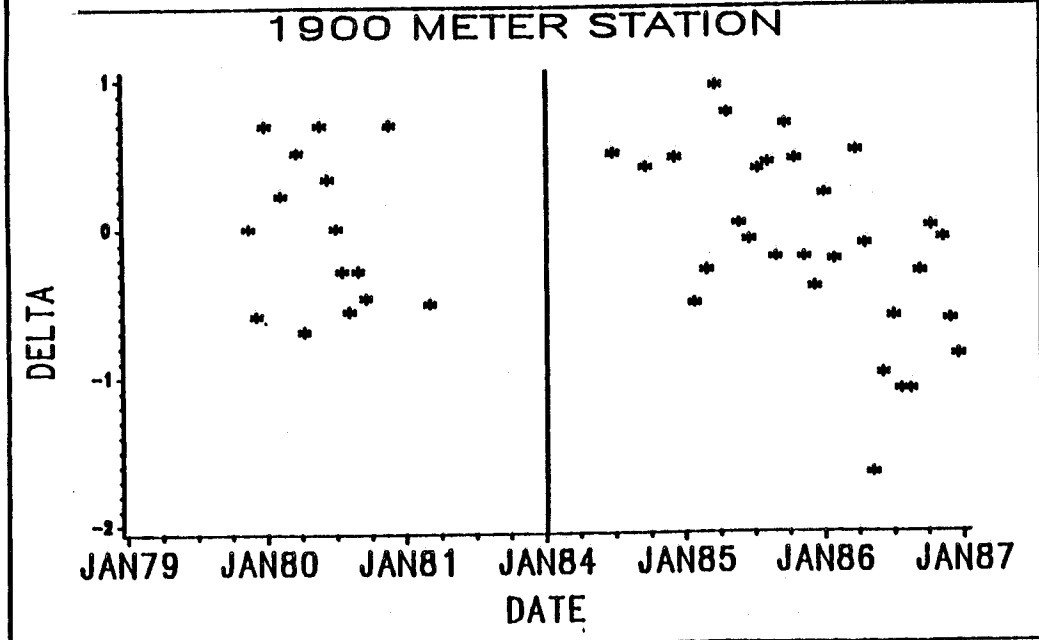
3350 METER STATION

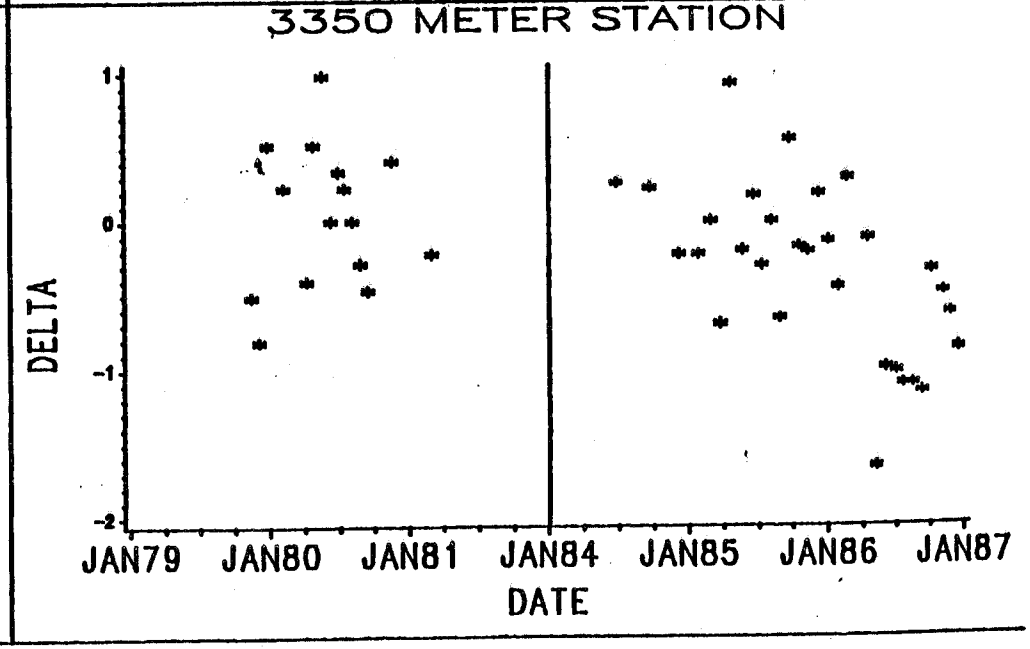


18 METER DEPTH
Surface deposit feeder: Sessile
All



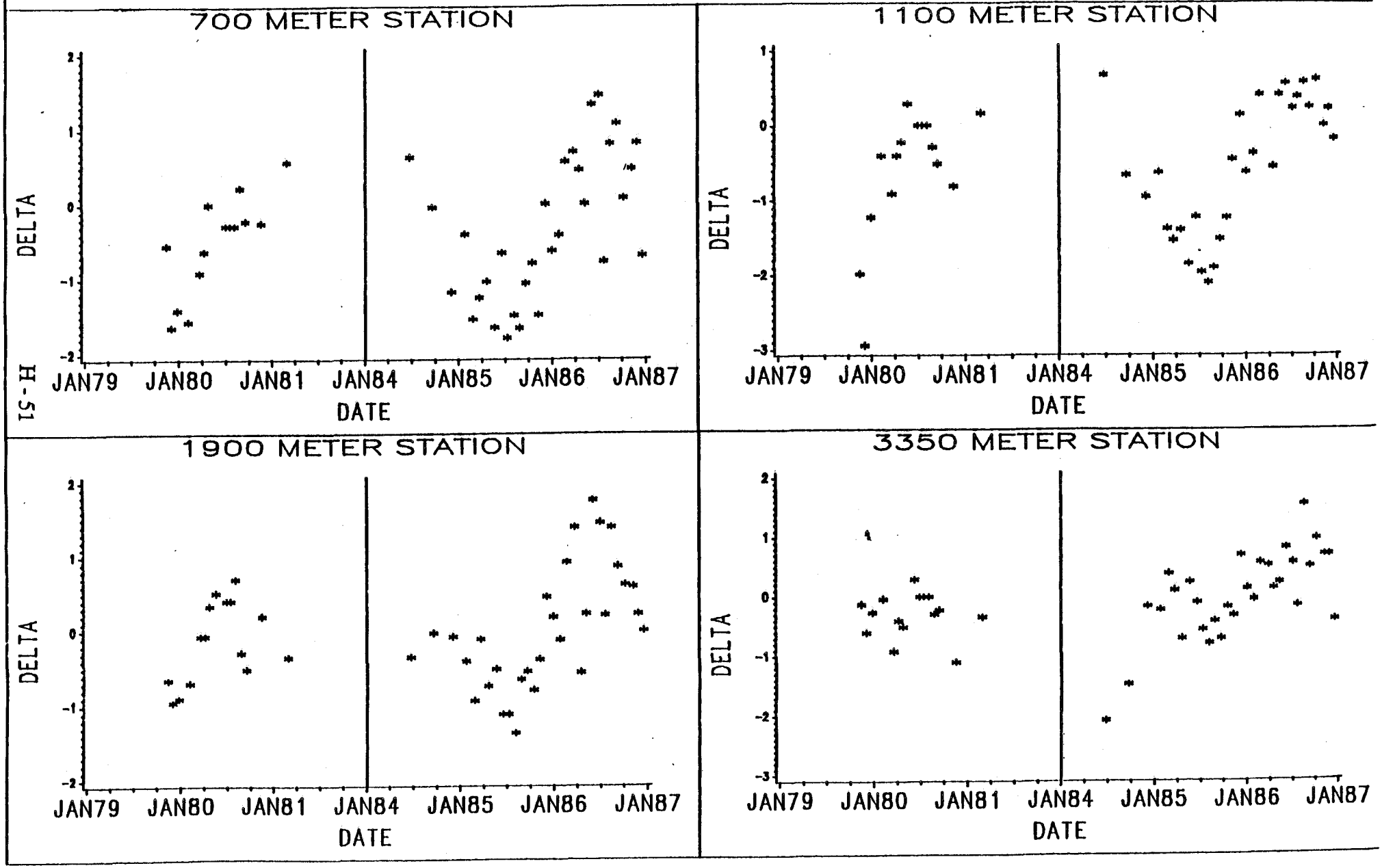






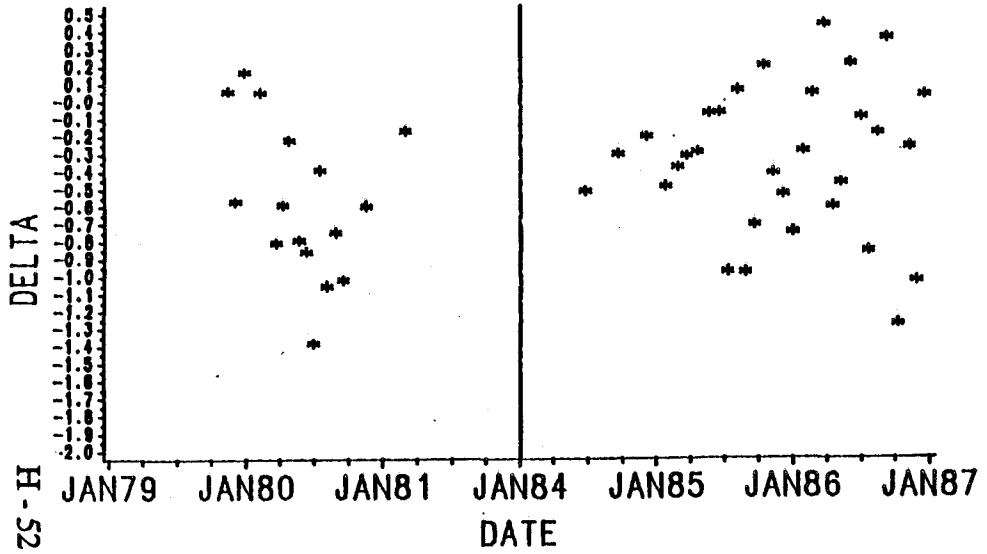
H-50

18 METER DEPTH
Surface omnivore—deposit: Discrete
All

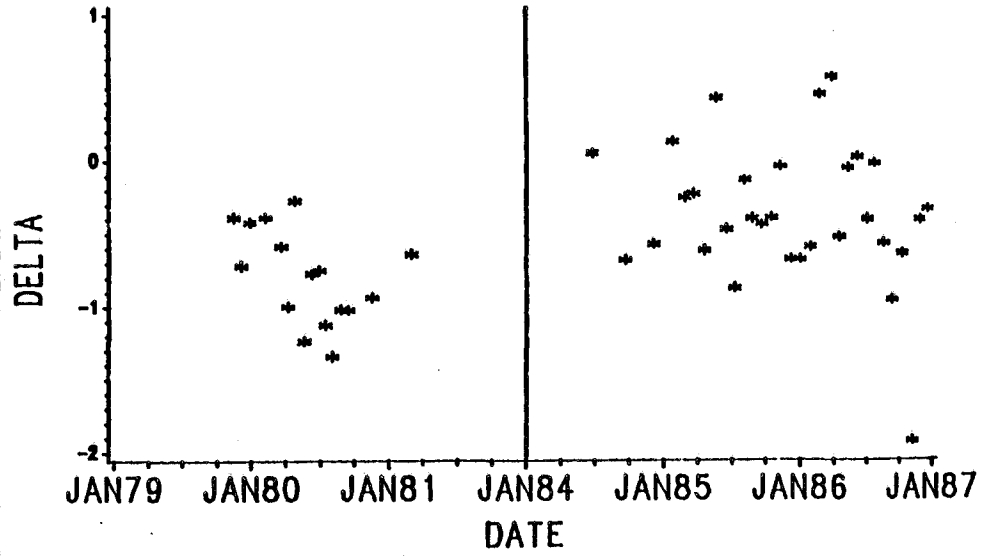


18 METER DEPTH
Surface omnivore—deposit: Motile
All

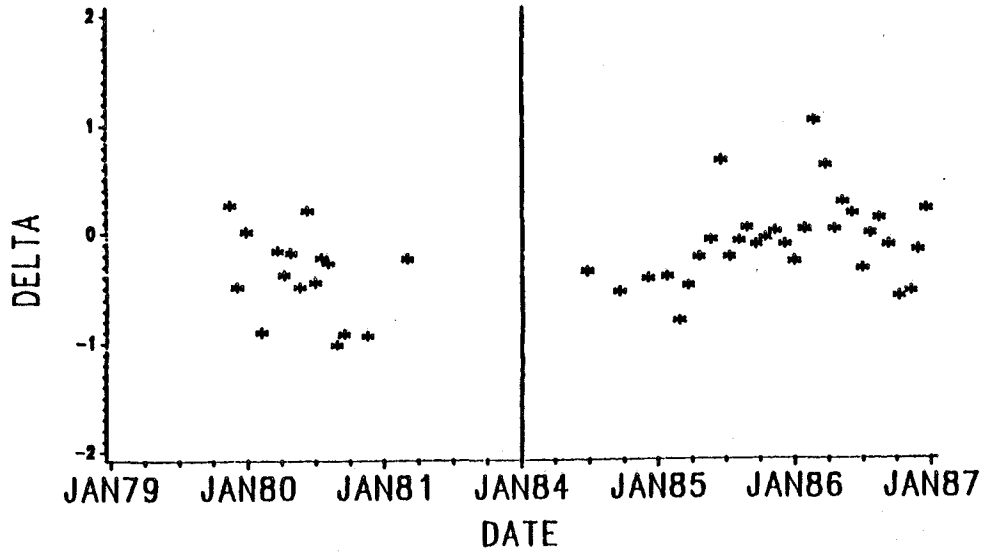
700 METER STATION



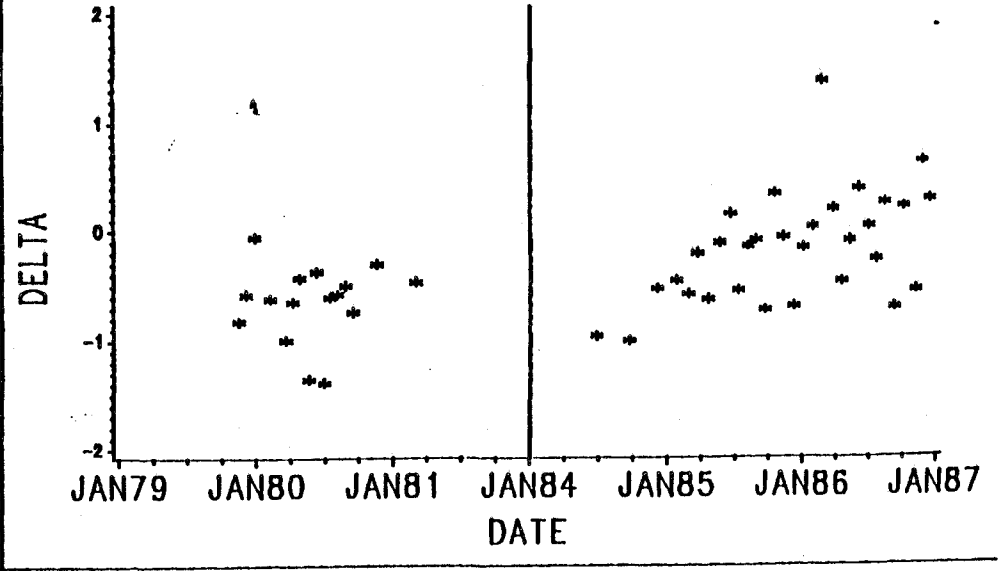
1100 METER STATION



1900 METER STATION



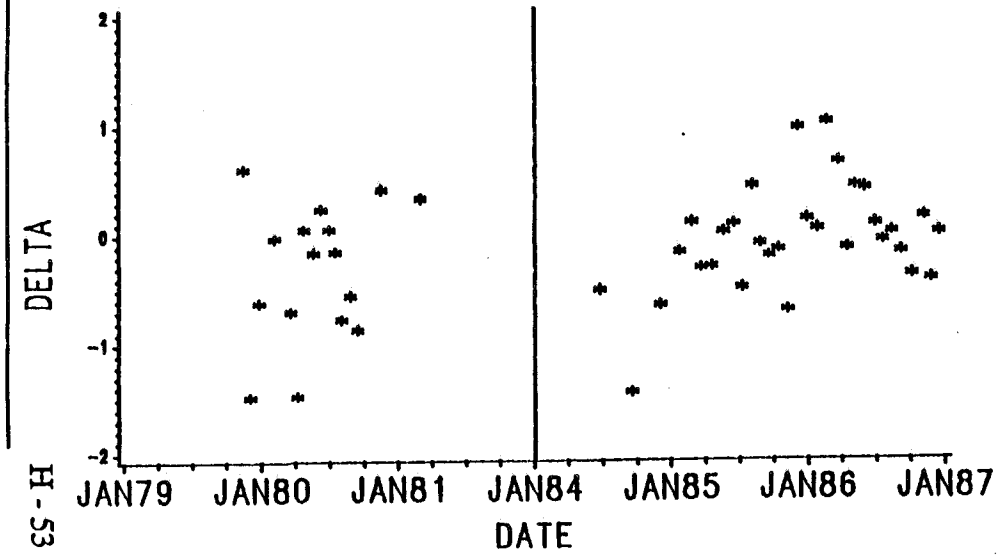
3350 METER STATION



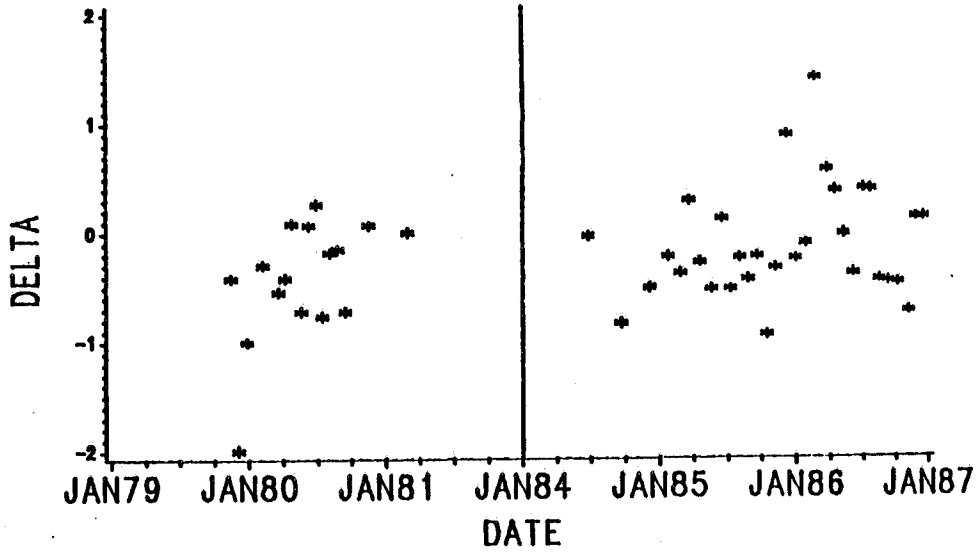
H-52

18 METER DEPTH
Surface suspension—deposit: Discrete
All

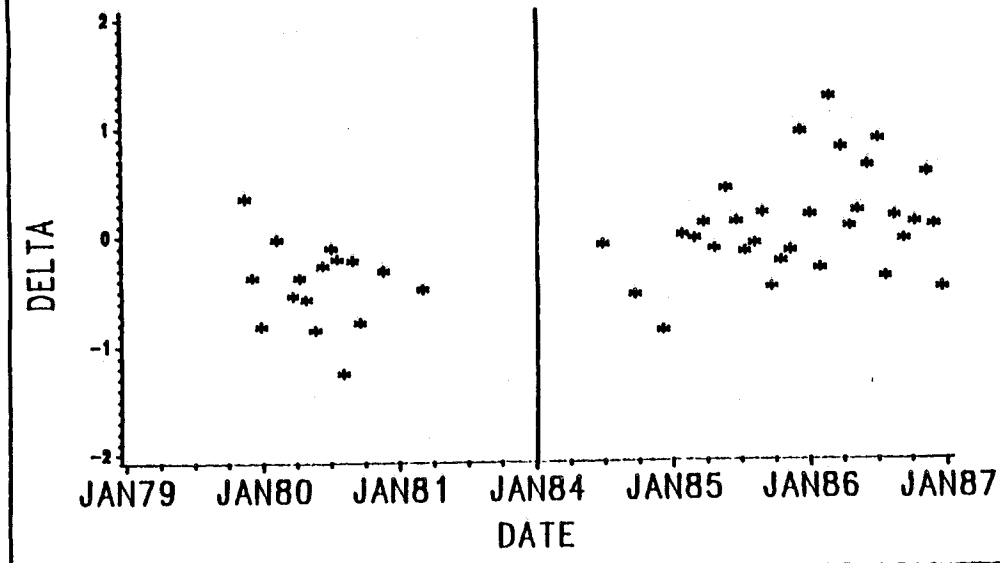
700 METER STATION



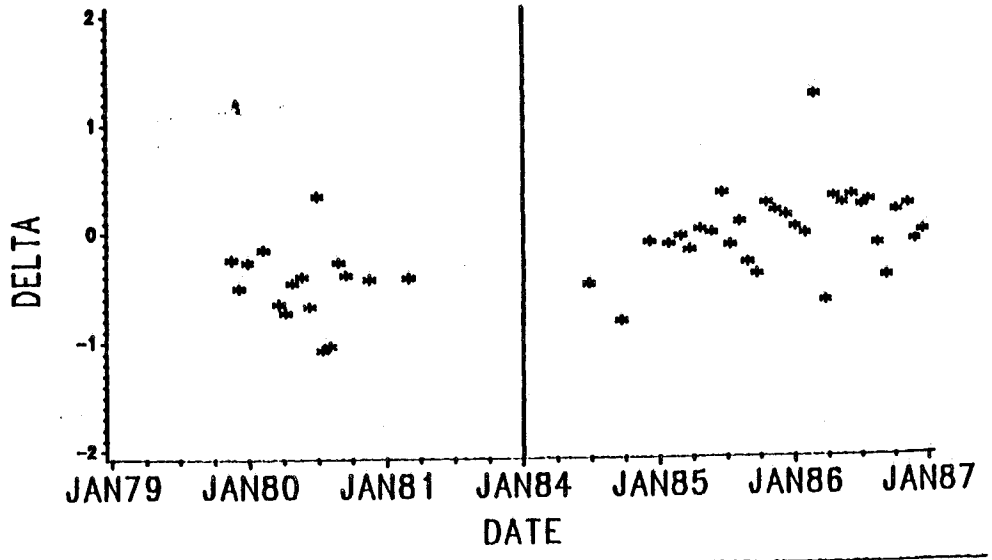
1100 METER STATION

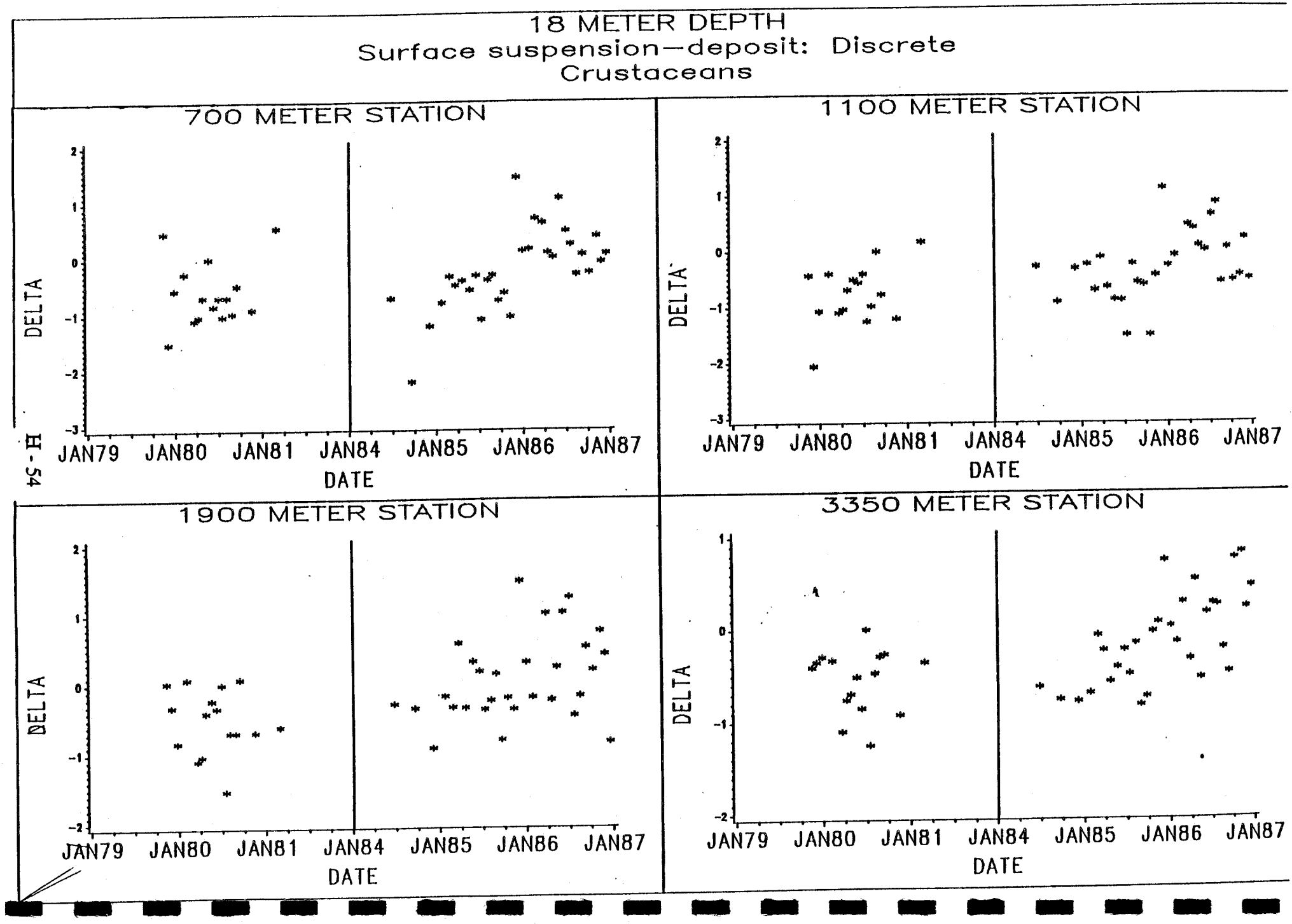


1900 METER STATION



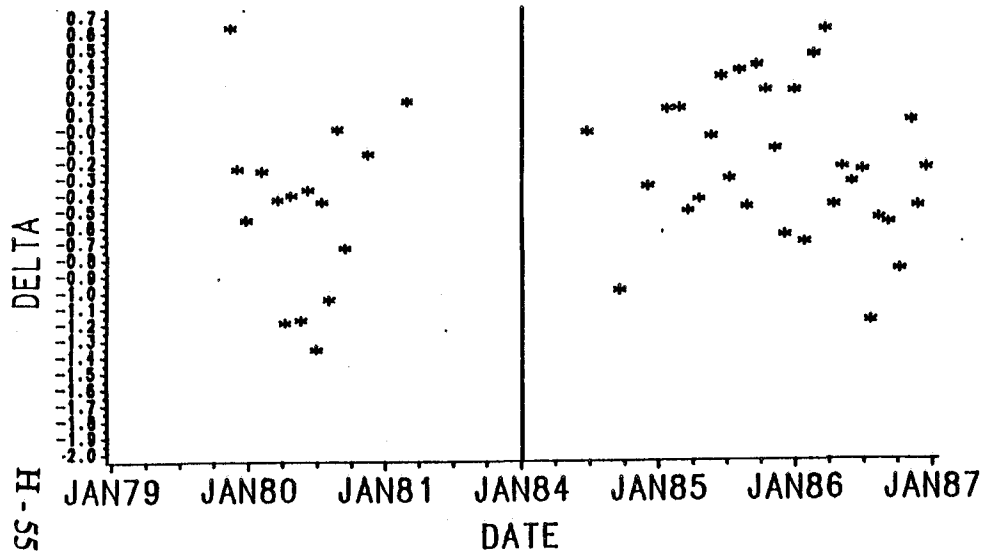
3350 METER STATION



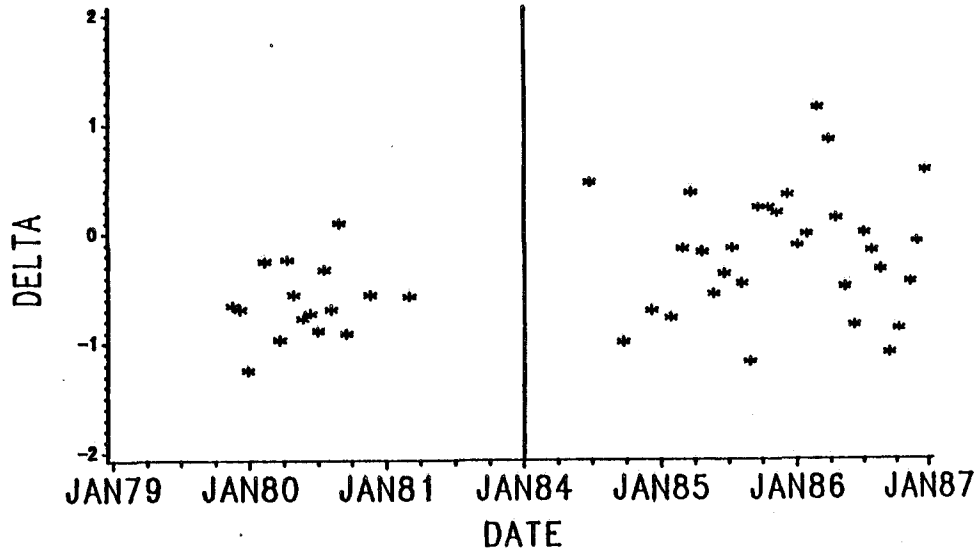

18 METER DEPTH
Surface suspension—deposit: Discrete
Crustaceans
700 METER STATION
1100 METER STATION
1900 METER STATION
3350 METER STATION
DELTA
DATE
JAN79
JAN80
JAN81
JAN84
JAN85
JAN86
JAN87

18 METER DEPTH
Surface suspension—deposit: Discrete
Molluscs

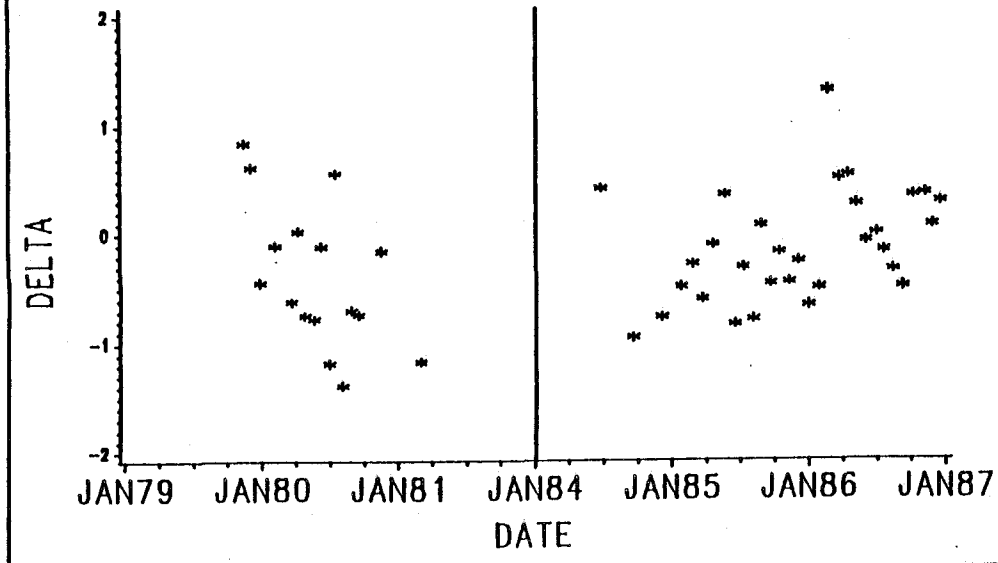
700 METER STATION



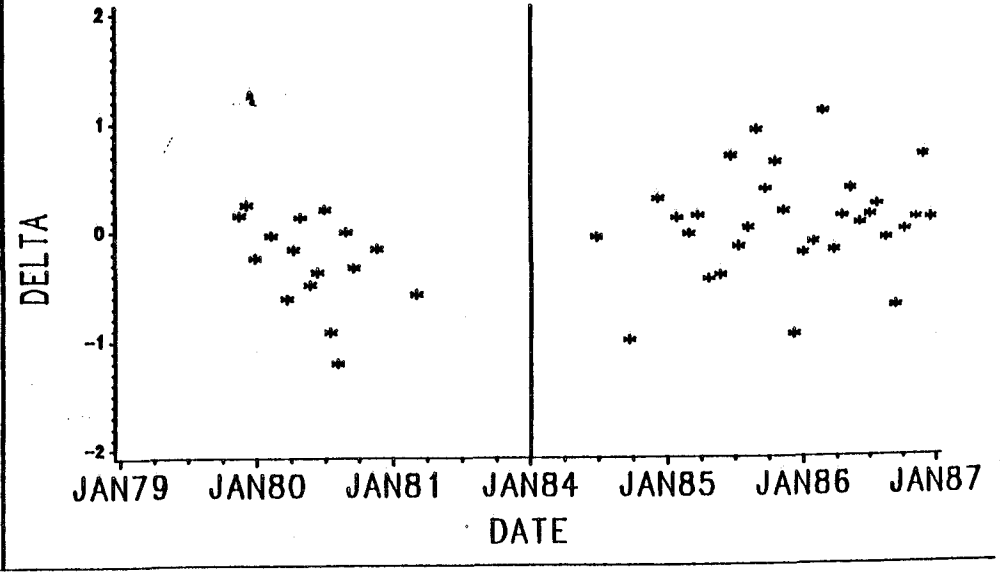
1100 METER STATION

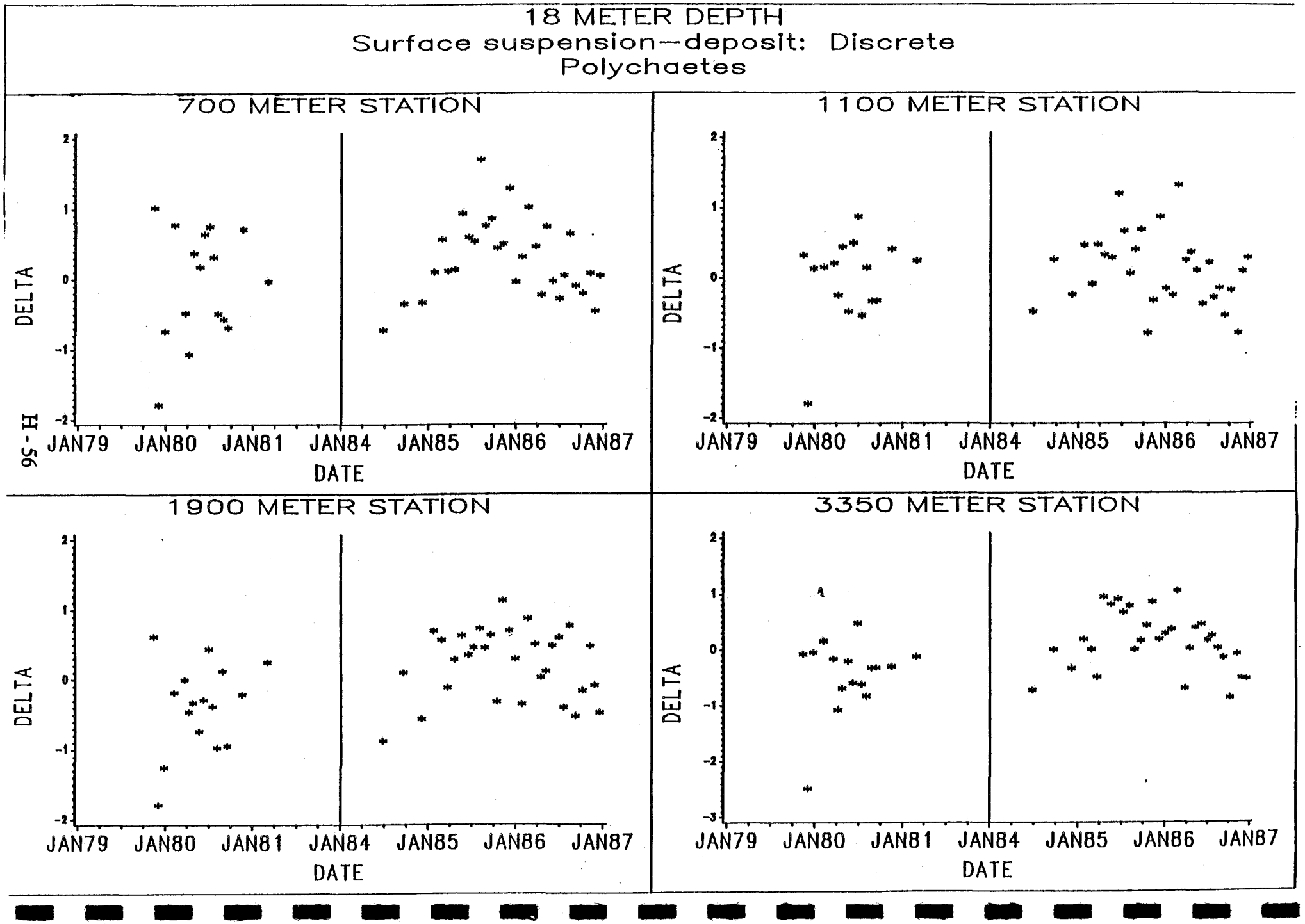


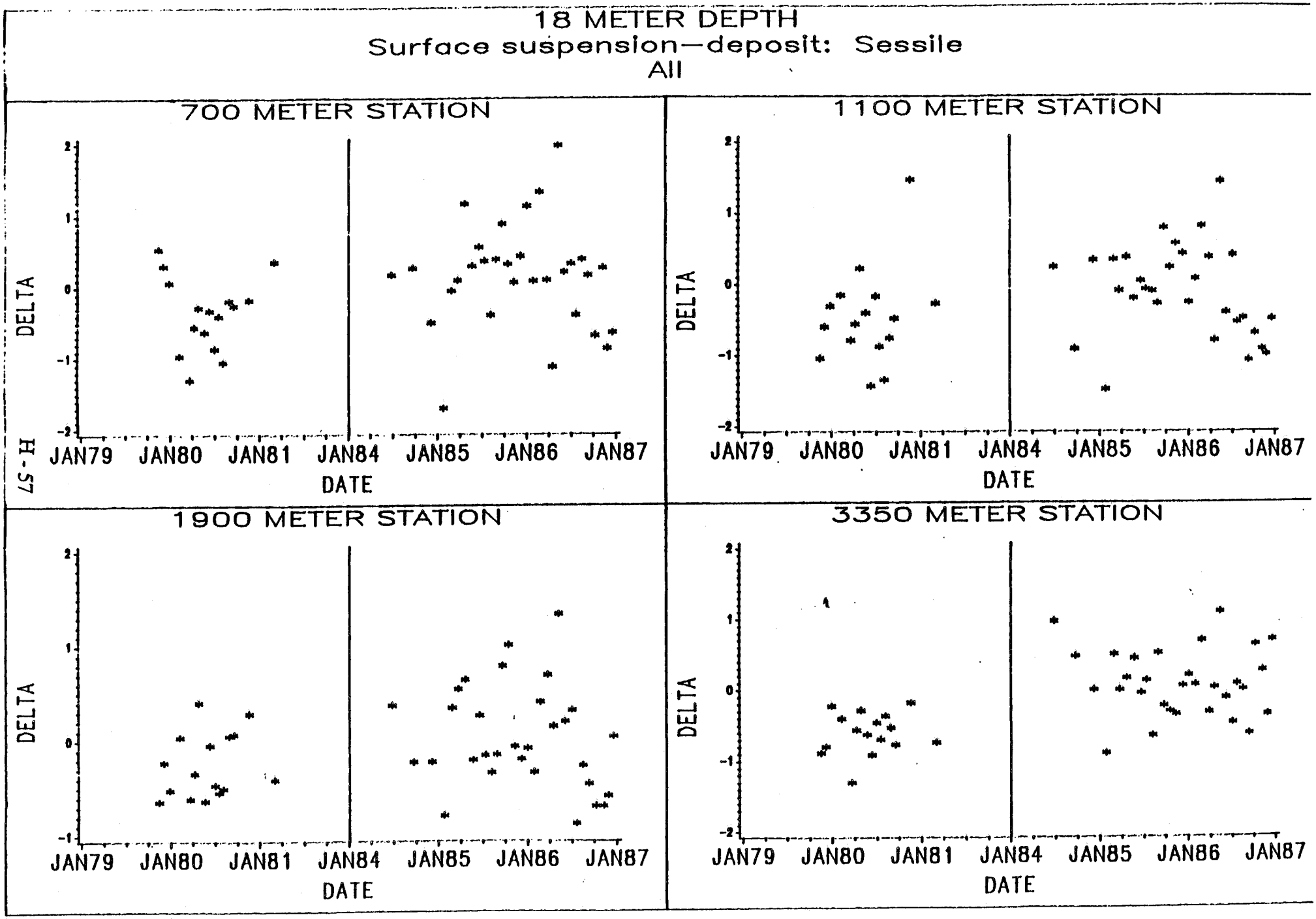
1900 METER STATION

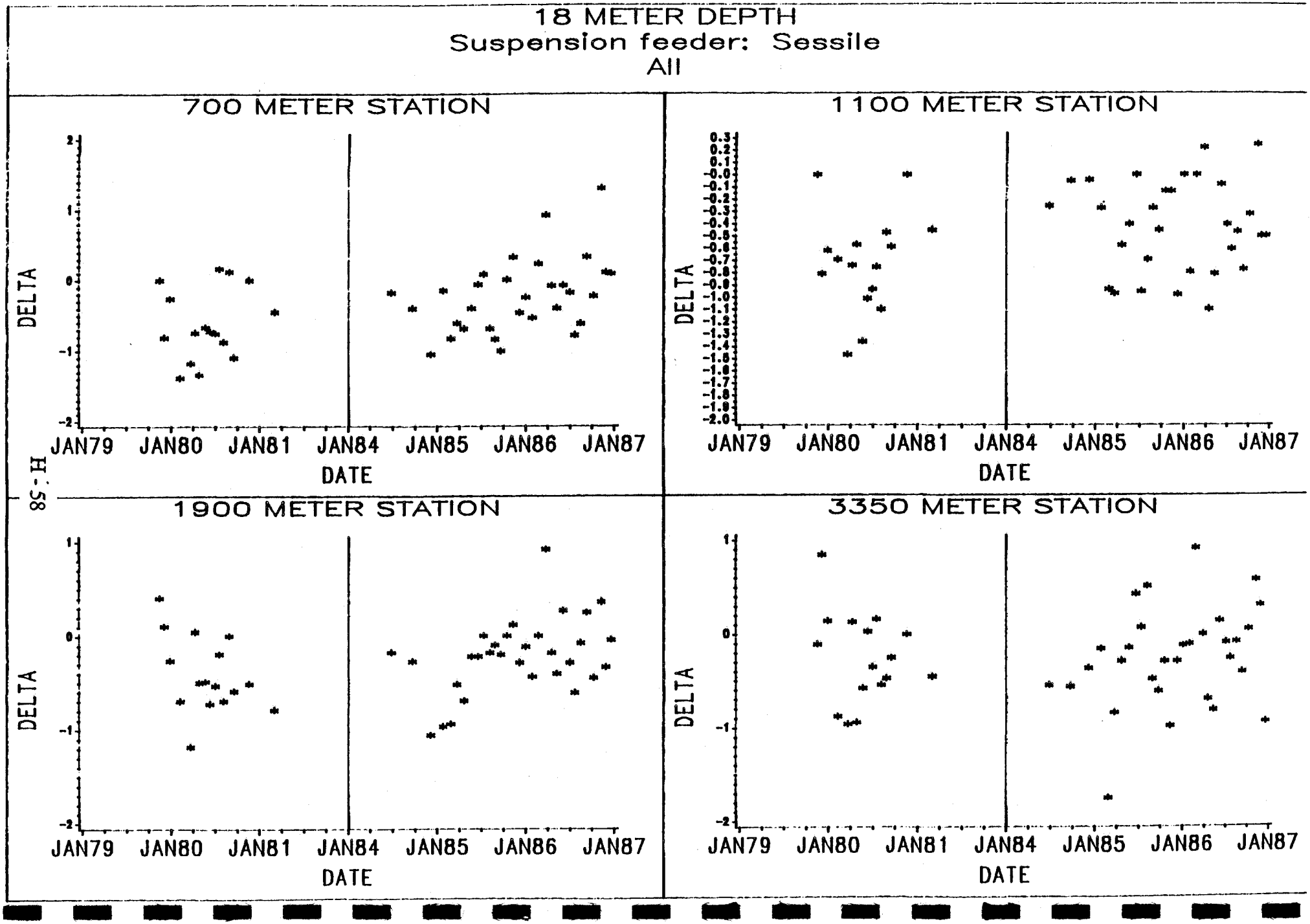


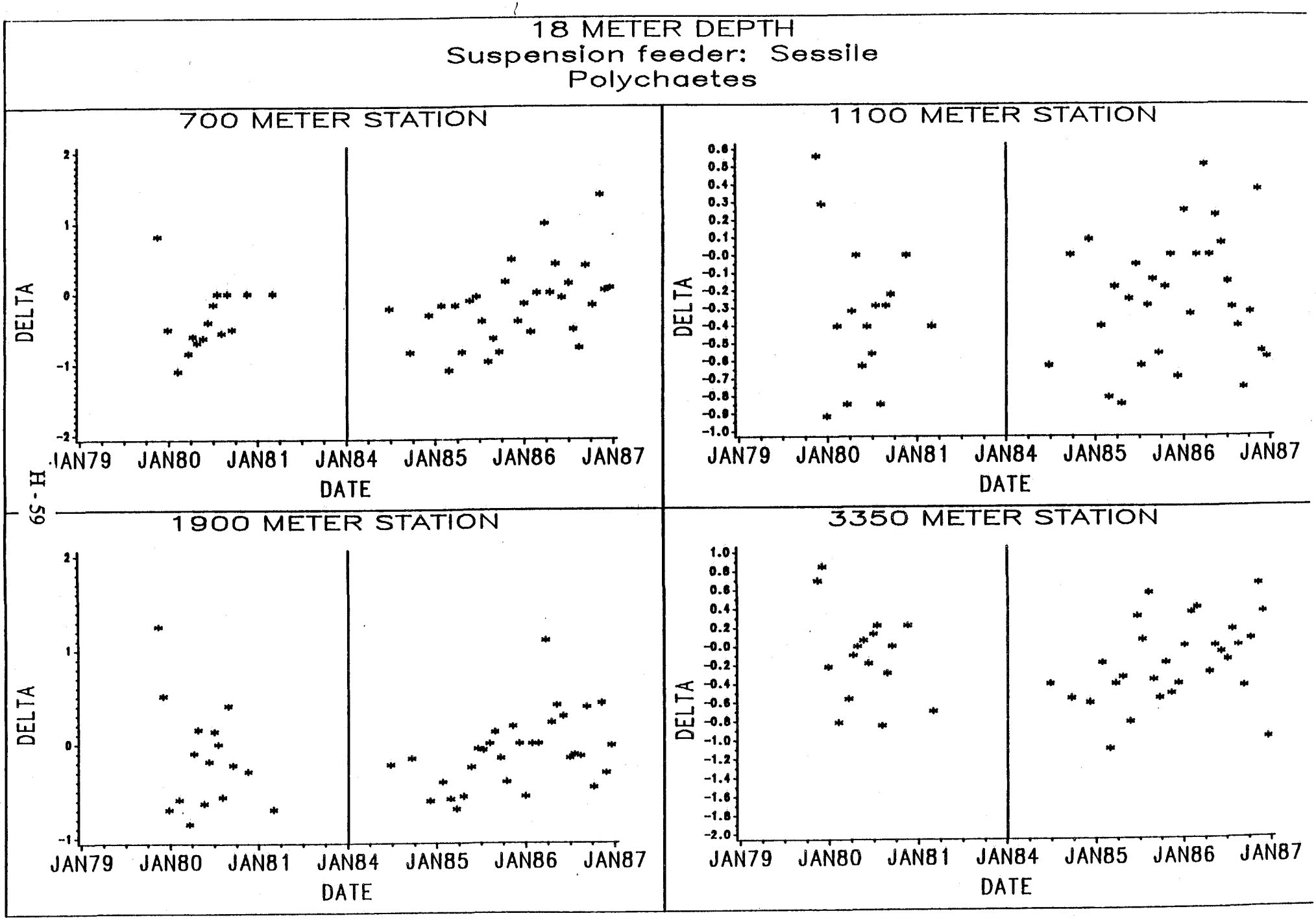
3350 METER STATION



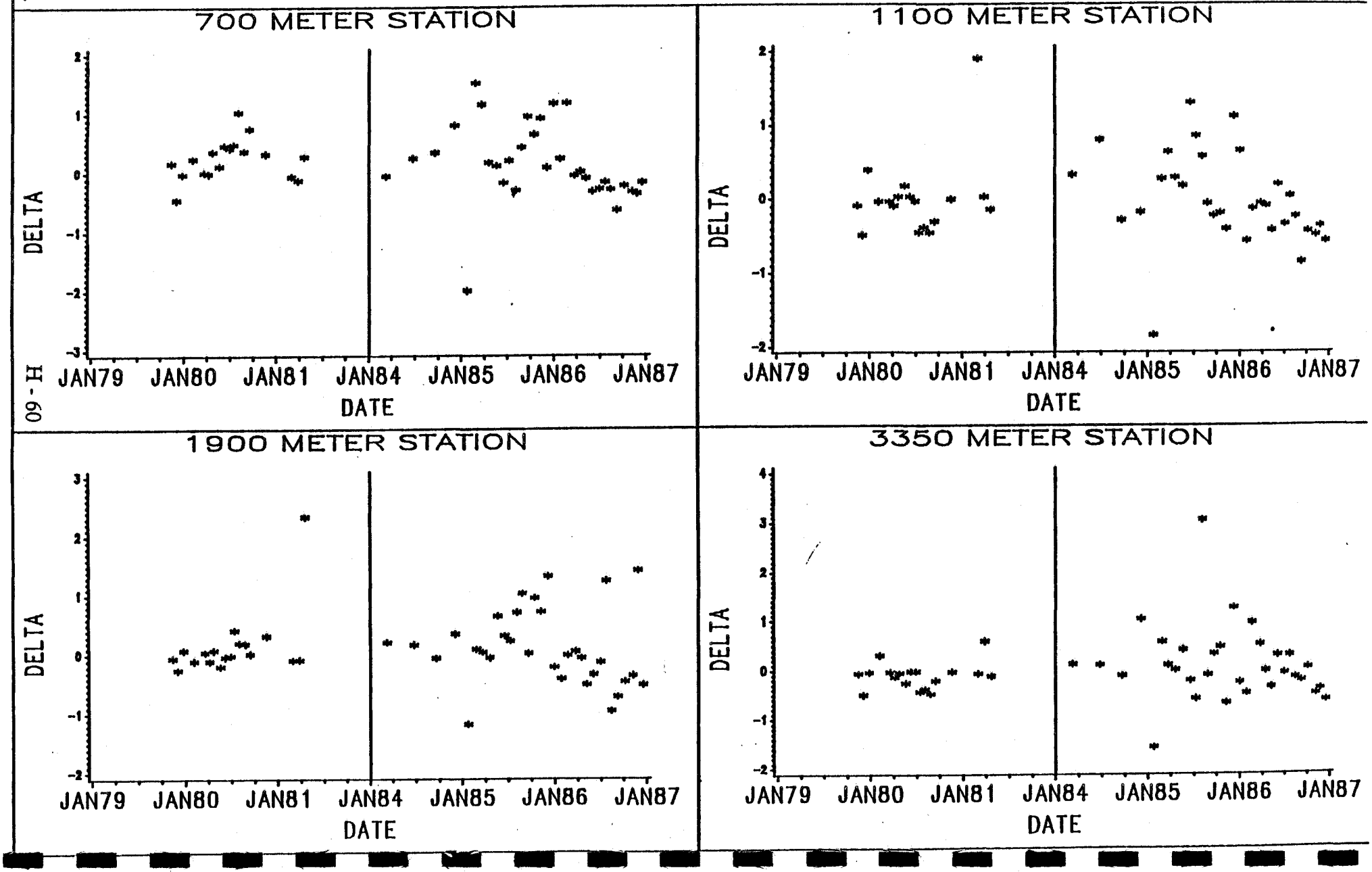

18 METER DEPTH
Surface suspension—deposit: Discrete
Polychaetes
700 METER STATION
1100 METER STATION
1900 METER STATION
3350 METER STATION
DELTA
DATE
JAN79
JAN80
JAN81
JAN84
JAN85
JAN86
JAN87
H-56


18 METER DEPTH
Surface suspension—deposit: Sessile
All
700 METER STATION
1100 METER STATION
1900 METER STATION
3350 METER STATION
DELTA
DATE
JAN79
JAN80
JAN81
JAN84
JAN85
JAN86
JAN87
H-57


18 METER DEPTH
Suspension feeder: Sessile
All
700 METER STATION
1100 METER STATION
1900 METER STATION
3350 METER STATION
DELTA
DATE
JAN79
JAN80
JAN81
JAN84
JAN85
JAN86
JAN87

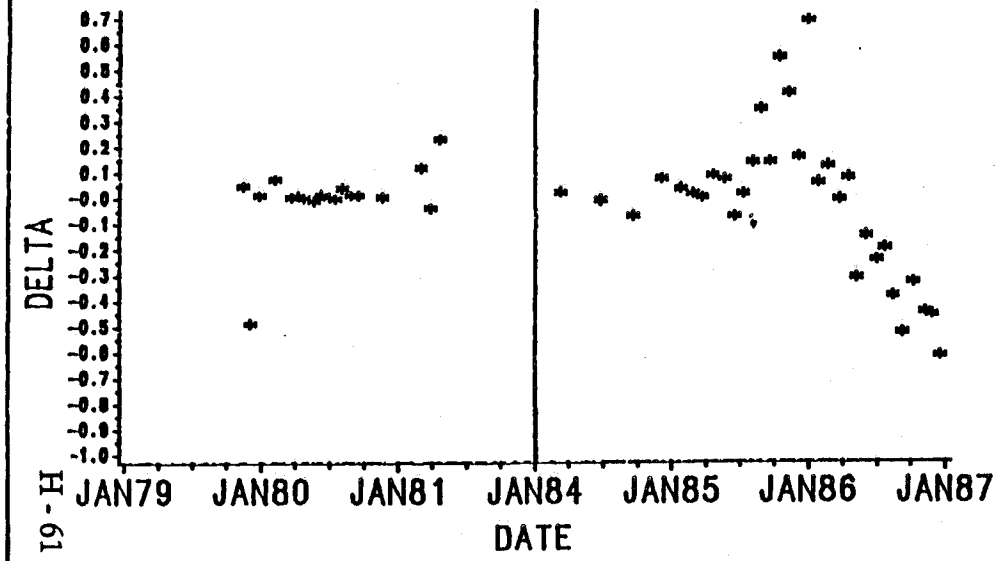

18 METER DEPTH
Suspension feeder: Sessile
Polychaetes
700 METER STATION
1100 METER STATION
1900 METER STATION
3350 METER STATION
DELTA
DATE
JAN79
JAN80
JAN81
JAN84
JAN85
JAN86
JAN87

8 METER DEPTH
TOTAL BIOMASS (GM WET WEIGHT)

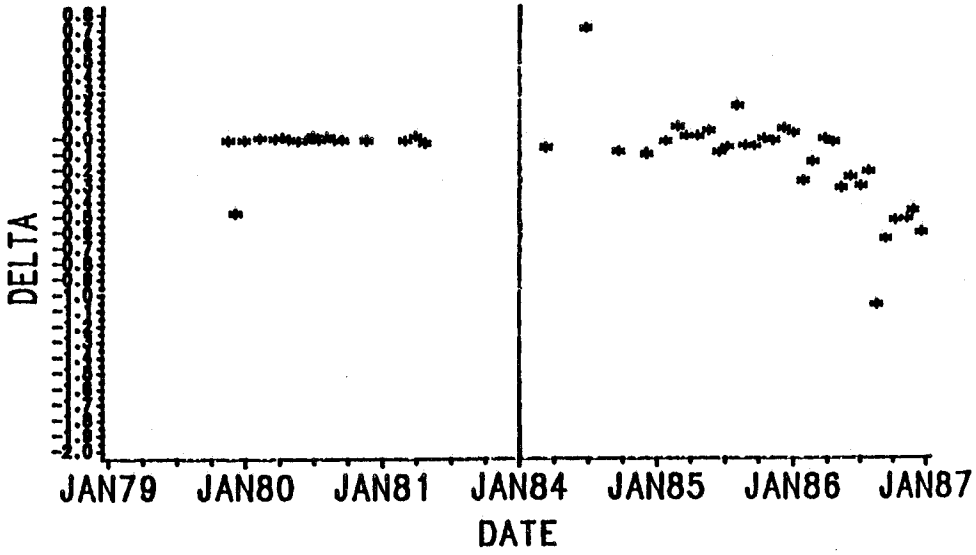


8 METER DEPTH
MOLLUSC BIOMASS (GM WET WEIGHT)

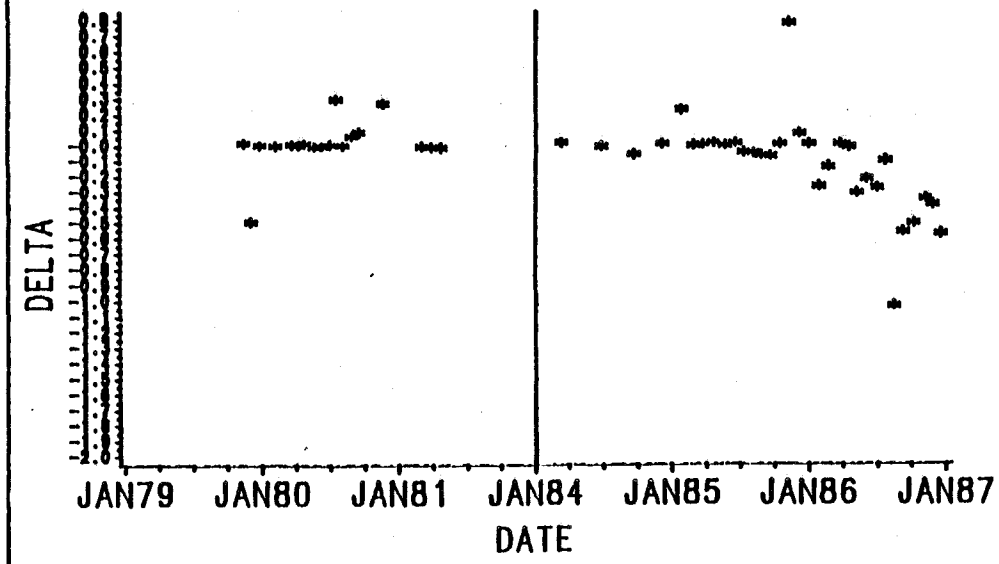
700 METER STATION



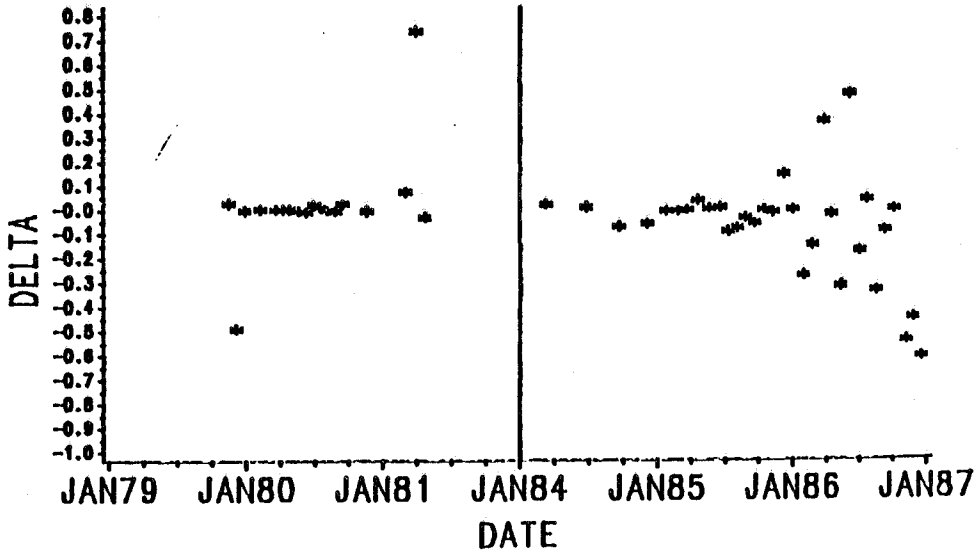
1100 METER STATION



1900 METER STATION

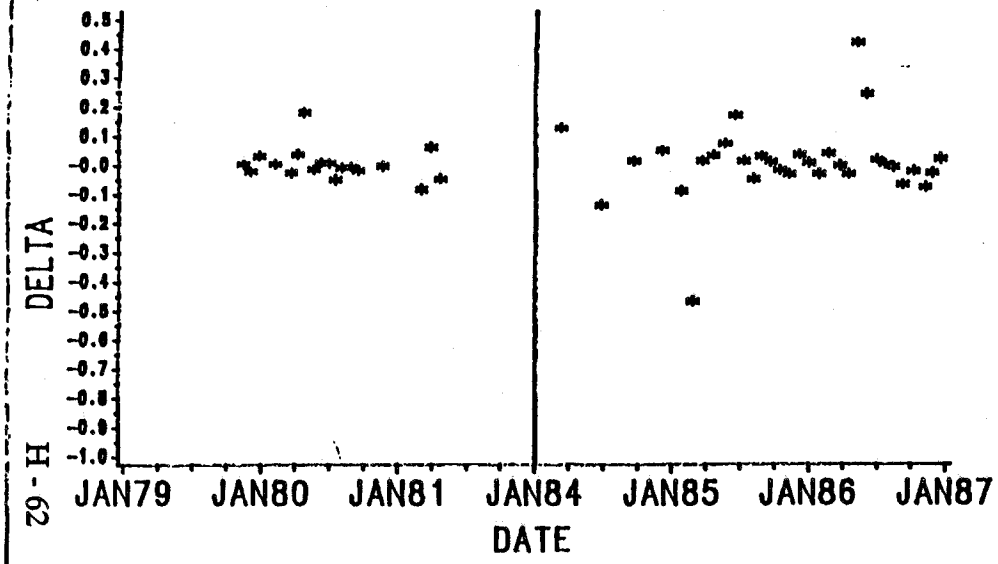


3350 METER STATION

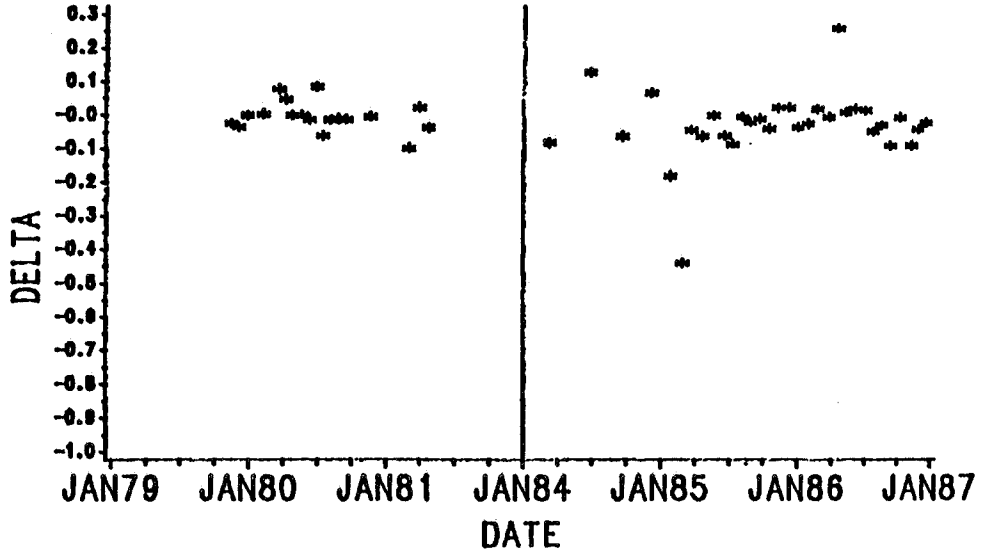


18 METER DEPTH
CRUSTACEAN BIOMASS (GM WET WEIGHT)

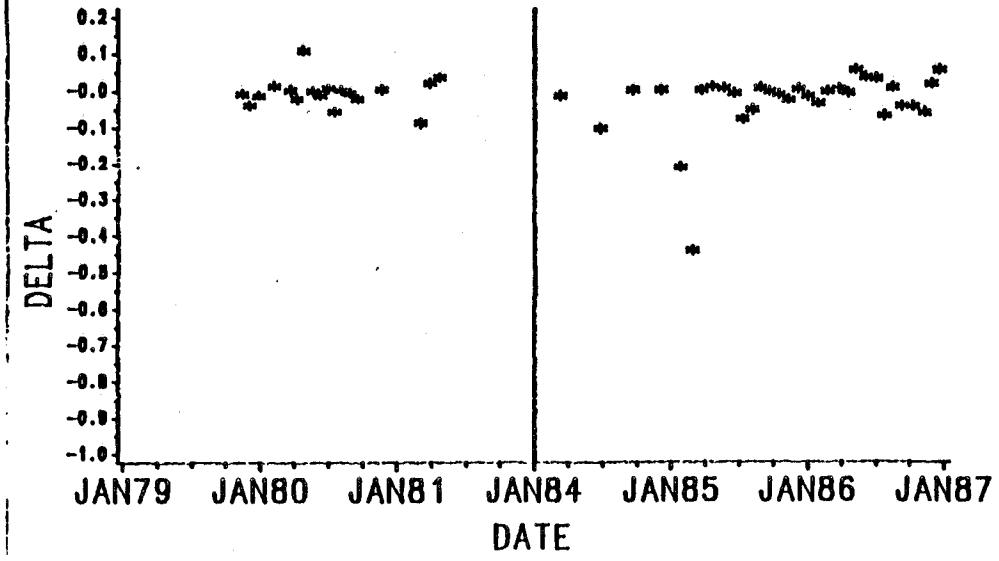
700 METER STATION



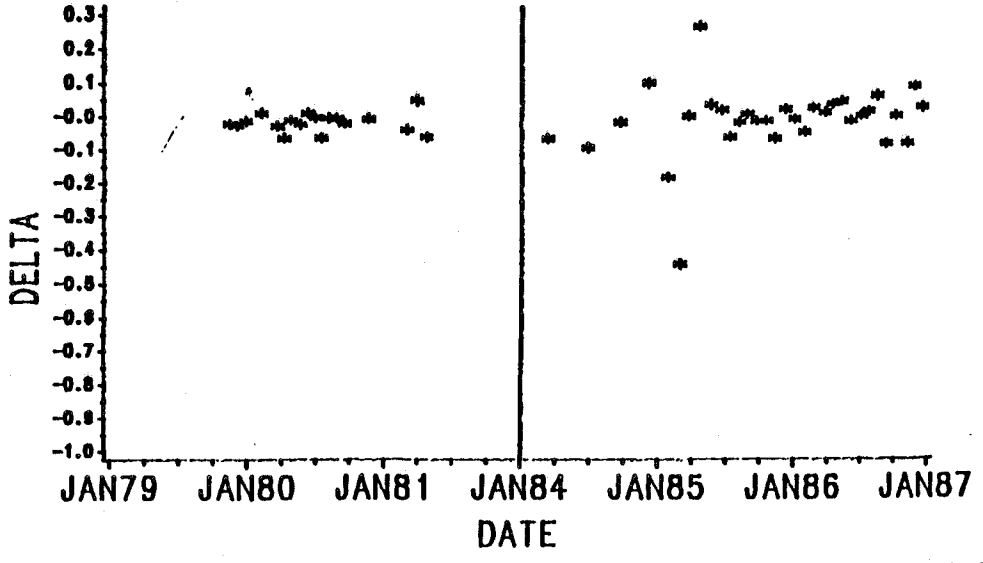
1100 METER STATION



1900 METER STATION

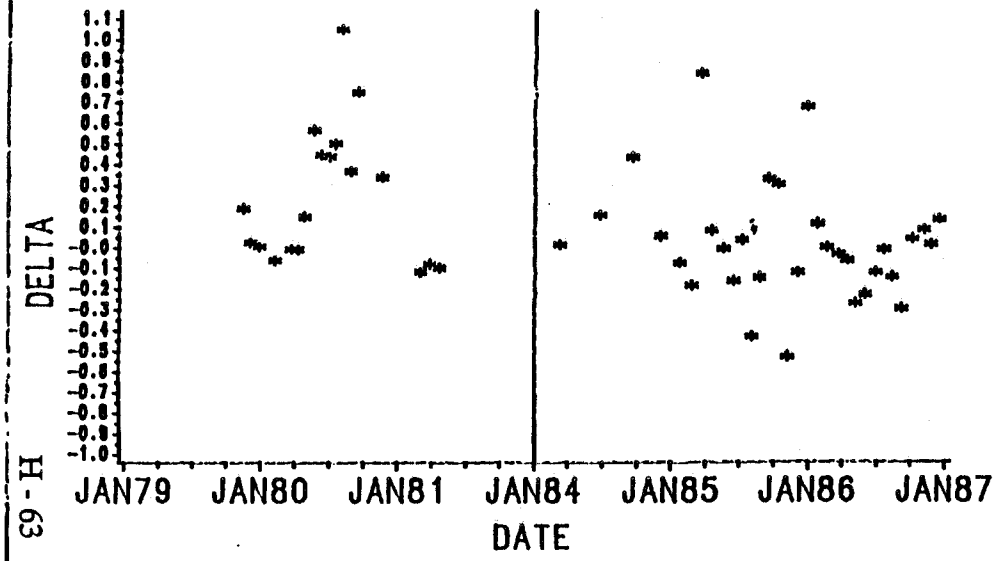


3350 METER STATION

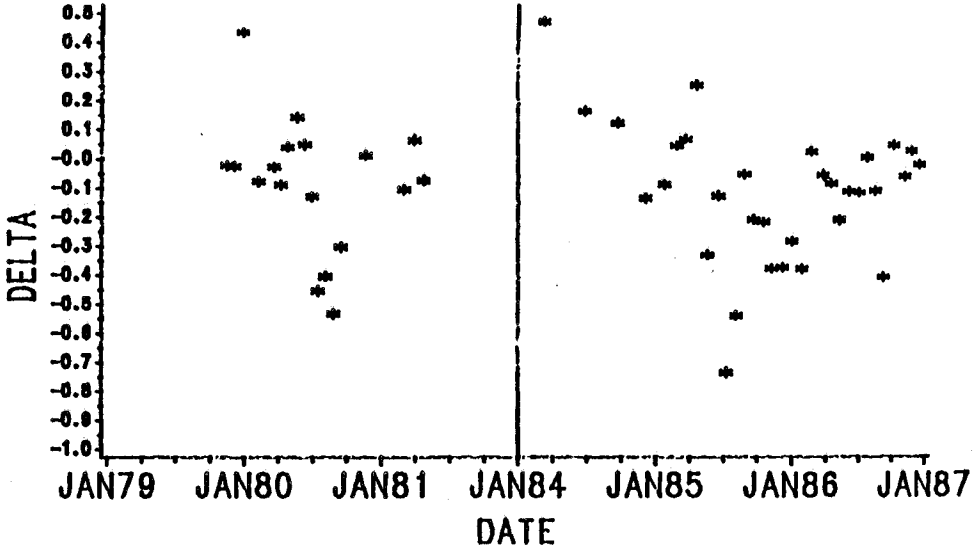


8 METER DEPTH
POLYCHAETE BIOMASS (GM WET WEIGHT)

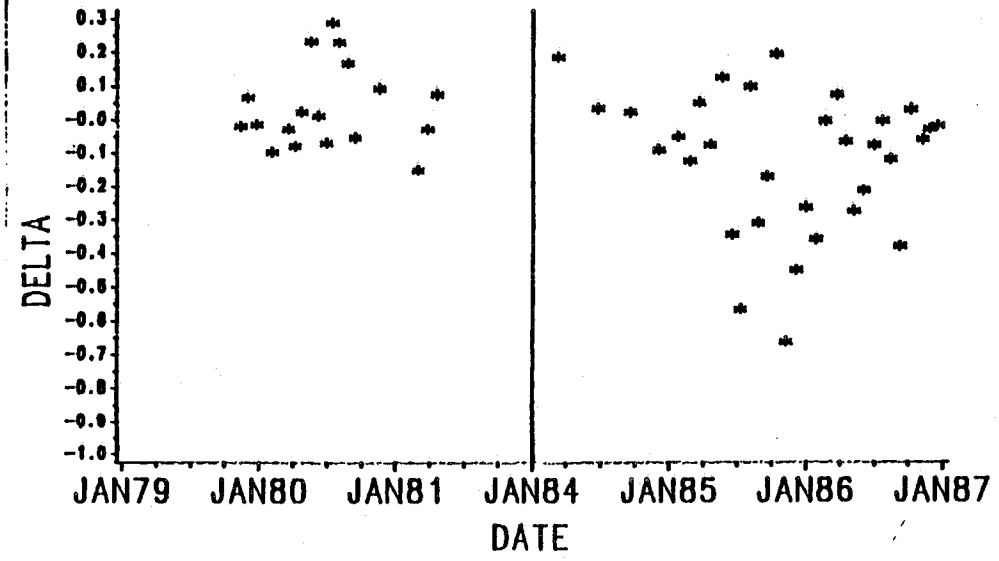
700 METER STATION



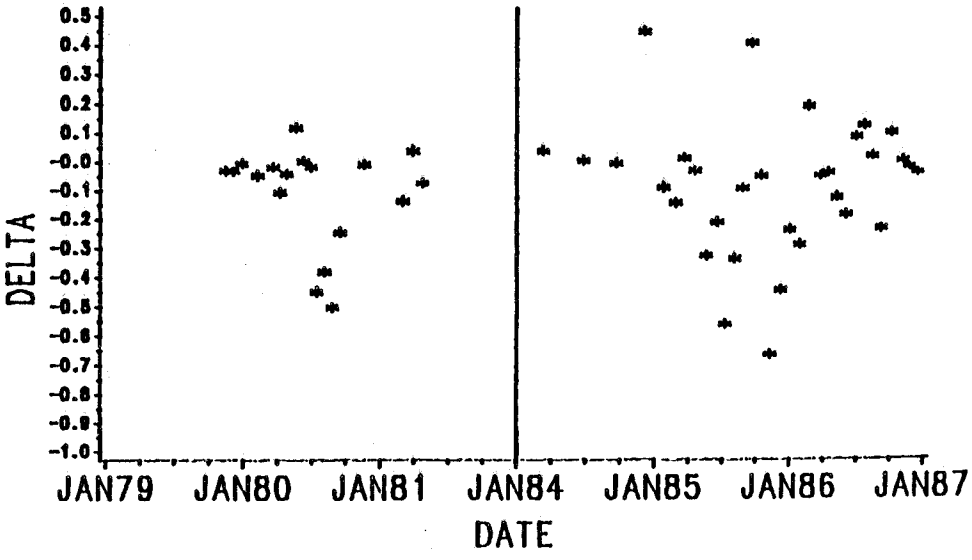
1100 METER STATION



1900 METER STATION



3350 METER STATION



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APPENDIX I. THE MEAN (AND STANDARD ERROR) DENSITIES (PER SAMPLE) AND FREQUENCY OF ZERO ABUNDANCE VALUES OF ALL TROPHIC MOTILITY GROUPS AT ALL SAMPLING LOCATIONS IN BOTH SAMPLING PERIODS.

Number of surveys in the Before period is 16, number in the After is 31.

SOFT BENTHOS AVERAGE ABUNDANCE

DEPTH IS 8 METERS

SPECIES GROUP	PERIOD	700 METERS MEAN	700 METERS SE	1100 METERS MEAN	1100 METERS SE	1900 METERS MEAN	1900 METERS SE	3350 METERS MEAN	3350 METERS SE	6700 METERS MEAN	6700 METERS SE	9400 METERS MEAN	9400 METERS SE
COMBINED													
All	PRE-OP	78.54	8.42	62.52	7.45	64.08	11.57	56.52	7.01	36.44	3.61	60.62	8.61
	OP	36.34	3.44	30.79	3.07	42.19	3.91	38.93	4.68	32.59	3.22	33.83	3.60
Surface													
All	PRE-OP	63.87	9.79	49.79	5.83	52.37	11.61	40.52	4.15	24.69	2.44	44.25	8.57
	OP	27.80	2.81	24.13	2.52	31.78	3.18	30.18	3.56	23.84	2.28	22.91	2.16
Subsurface													
All	PRE-OP	13.65	4.20	12.19	3.62	10.94	2.22	13.90	5.27	10.92	3.16	13.83	4.15
	OP	5.95	0.76	5.76	0.71	8.56	0.87	5.29	0.49	5.86	0.55	5.45	0.67
COMBINED													
Crustaceans	PRE-OP	17.27	2.62	15.73	2.35	14.35	2.16	15.85	2.91	12.10	2.09	15.69	2.30
	OP	15.44	2.16	14.14	2.06	19.35	2.74	19.04	2.93	12.09	1.61	10.87	1.66
COMBINED													
Polychaetes	PRE-OP	55.41	6.90	43.08	8.14	44.56	10.22	32.37	7.41	18.69	3.67	36.33	7.55
	OP	15.04	1.53	13.35	1.11	17.31	1.86	13.66	1.18	14.58	1.39	13.61	1.40
COMBINED													
Molluscs	PRE-OP	4.06	0.59	2.54	0.41	3.85	0.49	6.33	1.55	3.17	0.48	6.48	1.34
	OP	3.76	0.87	1.71	0.29	3.57	0.67	4.27	1.61	3.91	1.00	7.17	2.02
Subsurface deposit feeder: Motile													
All	PRE-OP	12.77	4.14	11.44	3.59	9.77	2.13	12.50	5.31	9.79	3.19	12.81	4.09
	OP	5.10	0.76	5.26	0.69	7.74	0.85	4.43	0.42	5.02	0.51	4.82	0.63
Polychaetes	PRE-OP	12.71	4.15	11.42	3.59	9.75	2.12	12.50	5.31	9.77	3.19	12.81	4.09
	OP	5.08	0.76	5.23	0.68	7.73	0.85	4.43	0.42	5.01	0.51	4.81	0.63
capitellid polychaetes	PRE-OP	10.75	4.17	10.08	3.52	8.33	2.07	10.96	5.28	7.21	3.00	10.85	4.02
	OP	1.82	0.36	2.84	0.59	4.49	0.67	1.25	0.22	1.81	0.28	1.33	0.27
paraonid polychaetes	PRE-OP	1.25	0.27	0.79	0.17	0.79	0.17	0.56	0.10	1.83	0.25	1.04	0.21
	OP	1.77	0.47	0.88	0.12	2.02	0.25	1.72	0.23	2.33	0.32	2.01	0.33
Subsurface carnivore-deposit: Motile													
All	PRE-OP	0.85	0.17	0.75	0.15	1.17	0.19	1.31	0.22	1.12	0.20	1.00	0.26
	OP	0.75	0.13	0.51	0.08	0.74	0.12	0.80	0.10	0.80	0.10	0.57	0.10
Polychaetes	PRE-OP	0.85	0.17	0.75	0.15	1.17	0.19	1.31	0.22	1.12	0.20	1.00	0.26
	OP	0.75	0.13	0.51	0.08	0.74	0.12	0.80	0.10	0.80	0.10	0.57	0.10
Surface deposit feeder: Discrete													
All	PRE-OP	0.52	0.14	0.69	0.15	1.25	0.23	0.98	0.25	0.69	0.13	0.52	0.13
	OP	1.54	0.35	1.12	0.30	1.59	0.33	1.17	0.24	1.77	0.50	1.13	0.21
Polychaetes	PRE-OP	0.21	0.06	0.35	0.10	0.46	0.12	0.27	0.11	0.29	0.08	0.37	0.13
	OP	0.65	0.16	0.49	0.13	0.72	0.14	0.80	0.12	1.70	0.50	0.98	0.19
Surface deposit feeder: Motile													
All	PRE-OP	9.62	2.23	8.06	1.80	7.02	1.82	8.06	2.10	7.48	1.77	9.56	1.85
	OP	8.20	1.83	6.51	1.49	9.39	2.24	6.69	1.54	5.88	1.30	5.21	0.90
Crustaceans	PRE-OP	9.62	2.23	8.06	1.80	7.02	1.82	8.06	2.10	7.46	1.76	9.52	1.85
	OP	8.06	1.85	6.49	1.49	9.37	2.24	6.66	1.54	5.78	1.30	4.96	0.90

SOFT BENTHOS AVERAGE ABUNDANCE

DEPTH IS 8 METERS

SPECIES GROUP	PERIOD	700 METERS MEAN	700 METERS SE	1100 METERS MEAN	1100 METERS SE	1900 METERS MEAN	1900 METERS SE	3350 METERS MEAN	3350 METERS SE	6700 METERS MEAN	6700 METERS SE	9400 METERS MEAN	9400 METERS SE
Surface omnivore-deposit: Motile													
All	PRE-OP	3.44	0.48	5.15	0.85	3.98	0.35	4.54	0.91	2.19	0.27	2.37	0.29
	OP	3.08	0.42	4.00	0.51	5.03	0.55	5.87	0.53	3.40	0.35	3.29	0.57
Crustaceans	PRE-OP	3.40	0.48	5.15	0.85	3.98	0.35	4.52	0.91	2.15	0.25	2.37	0.29
	OP	3.03	0.41	4.00	0.51	5.02	0.55	5.87	0.53	3.40	0.35	3.28	0.57
Surface suspension-deposit: Discrete													
All	PRE-OP	41.85	8.31	30.60	6.53	34.69	10.11	20.65	3.91	8.29	1.40	22.81	7.31
	OP	8.79	0.98	7.34	0.79	8.21	1.15	6.95	0.93	5.18	0.57	5.47	0.57
Crustaceans	PRE-OP	0.46	0.16	0.56	0.21	0.46	0.18	0.98	0.39	0.73	0.14	0.58	0.15
	OP	0.97	0.24	0.81	0.22	0.45	0.09	0.60	0.12	1.31	0.27	0.53	0.10
Molluscs	PRE-OP	1.79	0.31	1.19	0.26	1.96	0.33	3.15	0.67	1.60	0.25	2.79	0.57
	OP	0.58	0.16	0.30	0.09	0.97	0.19	0.39	0.07	0.38	0.08	0.71	0.16
Polychaetes	PRE-OP	39.60	8.28.	28.85	6.49	32.27	10.17	16.52	3.91	5.96	1.43	19.44	7.26
	OP	7.24	0.92	6.24	0.73	6.80	1.16	5.96	0.91	3.49	0.50	4.23	0.57
Surface suspension-deposit: Motile													
All	PRE-OP	0.65	0.16	0.48	0.13	0.83	0.36	0.25	0.09	0.50	0.18	1.19	0.63
	OP	0.53	0.09	0.57	0.10	0.37	0.10	1.43	0.23	0.24	0.07	0.45	0.06
Crustaceans	PRE-OP	0.65	0.16	0.46	0.12	0.83	0.36	0.25	0.09	0.50	0.18	1.19	0.63
	OP	0.52	0.09	0.57	0.10	0.37	0.10	1.43	0.23	0.18	0.06	0.45	0.06
Suspension feeder: Discrete													
All	PRE-OP	0.08	0.04	0.04	0.03	0.27	0.11	0.10	0.06	0.17	0.07	0.73	0.33
	OP	1.76	0.66	0.22	0.06	1.15	0.66	2.45	1.57	2.11	0.94	4.43	1.74
Molluscs	PRE-OP	0.08	0.04	0.04	0.03	0.27	0.11	0.10	0.06	0.17	0.07	0.73	0.33
	OP	1.66	0.67	0.22	0.06	1.15	0.66	2.45	1.57	2.09	0.94	4.43	1.74
Suspension feeder: Sessile													
All	PRE-OP	0.87	0.15	0.50	0.13	0.46	0.15	1.92	1.11	0.56	0.12	1.69	0.99
	OP	0.68	0.14	0.56	0.15	0.59	0.15	0.84	0.29	0.60	0.09	0.91	0.21
Molluscs	PRE-OP	0.73	0.15	0.46	0.13	0.37	0.12	1.69	1.05	0.48	0.12	1.62	0.99
	OP	0.44	0.13	0.39	0.13	0.30	0.10	0.61	0.28	0.33	0.07	0.69	0.20
Surface carnivore-omnivore: Discrete													
All	PRE-OP	3.52	0.71	1.85	0.41	1.98	0.46	2.69	0.46	2.06	0.27	3.56	0.55
	OP	1.02	0.12	0.86	0.12	1.14	0.15	1.08	0.16	1.19	0.14	1.45	0.20
Crustaceans	PRE-OP	2.21	0.63	1.06	0.36	1.33	0.40	1.71	0.44	1.06	0.23	1.71	0.46
	OP	0.30	0.08	0.28	0.08	0.29	0.09	0.48	0.09	0.29	0.05	0.37	0.08
Polychaetes	PRE-OP	1.08	0.13	0.54	0.07	0.42	0.12	0.81	0.14	0.77	0.10	1.54	0.21
	OP	0.35	0.06	0.33	0.06	0.45	0.06	0.35	0.09	0.70	0.11	0.60	0.08
Surface carnivore-omnivore: Motile													
All	PRE-OP	3.46	0.33	2.67	0.42	2.31	0.39	3.02	0.49	3.27	0.38	4.10	0.51
	OP	2.25	0.24	1.99	0.35	2.75	0.50	2.69	0.74	2.82	0.43	3.53	0.79
Molluscs	PRE-OP	1.25	0.31	0.65	0.23	1.02	0.32	0.67	0.22	0.56	0.18	1.17	0.31
	OP	0.65	0.14	0.46	0.11	0.66	0.15	0.51	0.09	0.89	0.13	0.92	0.16
Others	PRE-OP	1.21	0.19	0.81	0.21	0.73	0.11	1.50	0.28	1.98	0.27	1.56	0.27
	OP	0.67	0.10	0.70	0.12	0.75	0.13	0.57	0.10	0.86	0.12	0.77	0.10
Polychaetes	PRE-OP	0.87	0.15	1.15	0.23	0.44	0.09	0.69	0.17	0.69	0.12	1.08	0.13
	OP	0.65	0.08	0.42	0.08	0.67	0.09	0.71	0.08	0.51	0.08	0.85	0.13

SOFT BENTHOS AVERAGE ABUNDANCE

DEPTH IS 18 METERS

SPECIES GROUP	PERIOD	700 METERS MEAN	700 METERS SE	1100 METERS MEAN	1100 METERS SE	1900 METERS MEAN	1900 METERS SE	3350 METERS MEAN	3350 METERS SE	6700 METERS MEAN	6700 METERS SE	9400 METERS MEAN	9400 METERS SE
COMBINED													
All	PRE-OP	67.57	10.65	61.73	4.76	79.83	10.15	63.71	7.45	69.89	8.60	68.77	7.23
	OP	106.87	5.99	93.42	8.02	88.07	4.61	103.19	26.60	79.59	7.49	89.49	10.19
Surface													
All	PRE-OP	35.46	4.86	29.46	1.93	39.29	4.68	32.67	4.04	42.37	6.70	43.89	5.39
	OP	55.12	3.26	56.17	7.35	59.70	3.68	81.75	26.16	60.17	6.49	67.79	9.24
Subsurface													
All	PRE-OP	29.32	5.63	29.73	2.97	35.98	5.59	26.23	3.02	23.12	1.98	21.21	2.21
	OP	46.46	3.83	33.72	1.88	24.16	2.03	17.07	1.53	15.20	1.24	17.47	1.55
COMBINED													
Crustaceans	PRE-OP	16.73	3.66	12.00	1.71	18.75	3.28	15.60	3.69	24.19	5.88	24.40	4.71
	OP	30.54	2.26	33.45	7.16	36.60	2.99	60.40	26.19	40.14	6.06	48.70	8.86
COMBINED													
Polychaetes	PRE-OP	40.26	6.55	40.42	3.40	48.94	6.65	35.73	2.98	35.00	2.31	32.29	2.37
	OP	64.23	5.51	48.18	2.77	41.04	3.02	31.78	2.54	27.91	1.80	29.42	2.30
COMBINED													
Molluscs	PRE-OP	5.48	0.66	4.17	0.34	6.85	0.93	7.21	0.86	6.79	0.75	7.85	0.71
	OP	7.37	0.83	7.31	0.88	6.94	0.58	7.63	0.74	8.18	0.99	6.73	0.68
Subsurface deposit feeder: Discrete													
All	PRE-OP	0.98	0.13	0.83	0.08	0.83	0.18	0.67	0.11	0.54	0.13	0.65	0.07
	OP	0.16	0.04	0.19	0.05	0.06	0.02	0.18	0.06	0.14	0.04	0.44	0.09
Others	PRE-OP	0.79	0.10	0.65	0.08	0.52	0.12	0.56	0.10	0.44	0.14	0.62	0.07
	OP	0.13	0.03	0.19	0.05	0.06	0.02	0.15	0.06	0.12	0.04	0.42	0.09
Subsurface deposit feeder: Motile													
All	PRE-OP	20.77	4.68	23.06	2.65	27.81	4.99	19.02	2.54	17.92	2.04	15.62	2.11
	OP	41.75	3.82	29.68	1.78	20.90	2.01	14.64	1.40	12.89	1.08	15.28	1.42
Polychaetes	PRE-OP	20.77	4.68	23.04	2.65	27.81	4.99	19.02	2.54	17.92	2.04	15.62	2.11
	OP	41.75	3.82	29.68	1.78	20.89	2.01	14.64	1.40	12.89	1.08	15.27	1.42
capitellid polychaetes	PRE-OP	15.48	4.36	13.73	2.00	19.02	4.58	12.08	2.32	12.73	2.02	12.42	2.17
	OP	17.79	2.62	12.49	1.41	11.18	1.67	7.26	1.06	6.37	0.82	8.06	1.35
paraonid polychaetes	PRE-OP	4.92	0.72	8.85	0.98	8.23	0.80	6.79	0.50	4.79	0.51	2.98	0.37
	OP	22.64	1.66	16.00	0.71	8.54	0.63	6.56	0.69	5.84	0.75	6.66	0.78
Subsurface carnivore-deposit: Motile													
All	PRE-OP	7.32	1.17	5.54	0.83	7.21	0.83	6.42	0.76	4.62	0.43	4.79	0.53
	OP	3.71	0.27	3.24	0.27	2.49	0.21	1.97	0.22	1.97	0.23	1.49	0.15
Polychaetes	PRE-OP	7.32	1.17	5.54	0.83	7.21	0.83	6.42	0.76	4.62	0.43	4.79	0.53
	OP	3.71	0.27	3.24	0.27	2.49	0.21	1.97	0.22	1.97	0.23	1.49	0.15
Surface deposit feeder: Discrete													
All	PRE-OP	1.56	0.44	1.29	0.31	2.54	0.59	1.56	0.31	1.75	0.58	2.08	0.51
	OP	2.32	0.44	2.05	0.42	2.55	0.91	1.69	0.39	1.59	0.52	1.73	0.65
Polychaetes	PRE-OP	0.62	0.13	0.52	0.13	1.58	0.37	0.67	0.14	0.54	0.14	0.85	0.15

SOFT BENTHOS AVERAGE ABUNDANCE

DEPTH IS 18 METERS

SPECIES GROUP	PERIOD	700 METERS MEAN	700 METERS SE	1100 METERS MEAN	1100 METERS SE	1900 METERS MEAN	1900 METERS SE	3350 METERS MEAN	3350 METERS SE	6700 METERS MEAN	6700 METERS SE	9400 METERS MEAN	9400 METERS SE
	OP	1.23	0.12	0.91	0.10	0.98	0.12	0.80	0.12	0.70	0.09	0.55	0.07
Surface deposit feeder: Motile													
All	PRE-OP	2.79	0.55	2.40	0.34	3.04	0.51	2.54	0.38	2.79	0.43	3.62	0.48
	OP	6.06	0.69	4.59	0.45	5.04	0.58	4.34	0.46	4.78	0.55	5.08	0.67
Crustaceans	PRE-OP	2.17	0.50	1.85	0.33	2.02	0.38	1.79	0.35	1.81	0.25	2.42	0.37
	OP	4.84	0.69	3.47	0.44	4.08	0.56	3.83	0.47	4.22	0.55	4.49	0.69
Polychaetes	PRE-OP	0.62	0.33	0.54	0.18	0.77	0.39	0.62	0.25	0.92	0.32	1.21	0.38
	OP	0.97	0.10	0.87	0.12	0.86	0.09	0.46	0.08	0.44	0.08	0.51	0.11
Surface deposit feeder: Sessile													
All	PRE-OP	0.52	0.15	0.56	0.11	0.65	0.12	0.71	0.12	0.31	0.08	0.42	0.12
	OP	1.58	0.35	1.34	0.27	2.20	0.39	1.54	0.34	2.79	0.60	1.40	0.22
Polychaetes	PRE-OP	0.50	0.15	0.52	0.10	0.60	0.13	0.60	0.12	0.29	0.07	0.35	0.08
	OP	1.55	0.35	1.30	0.27	2.19	0.39	1.53	0.34	2.77	0.60	1.38	0.21
Surface omnivore-deposit: Discrete													
All	PRE-OP	1.29	0.46	0.94	0.39	2.12	0.57	2.73	1.16	3.85	1.61	4.15	1.77
	OP	4.67	1.02	3.29	0.66	6.60	1.17	8.80	2.22	9.52	2.51	13.68	4.11
Crustaceans	PRE-OP	1.29	0.46	0.94	0.39	2.12	0.57	2.73	1.16	3.85	1.61	4.15	1.77
	OP	4.67	1.02	3.29	0.66	6.60	1.17	8.80	2.22	9.52	2.51	13.68	4.11
Surface omnivore-deposit: Motile													
All	PRE-OP	5.52	0.74	3.94	0.38	6.75	0.82	4.79	0.51	7.33	0.58	8.60	0.84
	OP	6.91	0.51	7.05	0.60	9.10	0.60	8.64	0.64	8.53	0.66	8.55	0.65
Crustaceans	PRE-OP	5.52	0.74	3.94	0.38	6.75	0.82	4.77	0.51	7.33	0.58	8.60	0.84
	OP	6.91	0.51	7.03	0.60	9.09	0.60	8.64	0.64	8.51	0.66	8.54	0.65
Surface suspension-deposit: Discrete													
All	PRE-OP	12.08	2.20	9.50	0.97	10.69	2.21	10.23	2.01	14.94	3.58	13.73	1.97
	OP	17.93	1.45	16.69	1.15	20.55	1.48	19.30	1.36	17.64	1.53	18.88	1.69
Crustaceans	PRE-OP	3.83	1.72	2.08	0.79	4.04	1.81	4.04	1.86	6.73	3.23	5.29	1.95
	OP	7.56	0.87	7.10	0.83	10.65	1.25	8.53	0.90	8.73	1.24	10.87	1.59
Molluscs	PRE-OP	2.54	0.53	1.75	0.19	3.23	0.76	3.15	0.46	3.15	0.47	4.46	0.59
	OP	3.24	0.39	3.55	0.48	3.53	0.41	4.69	0.56	4.81	0.77	3.49	0.41
Polychaetes	PRE-OP	5.71	1.22	5.67	1.06	3.42	0.55	3.04	0.51	5.06	0.76	3.98	0.74
	OP	7.13	0.90	6.04	0.82	6.37	0.66	6.07	0.72	4.10	0.40	4.52	0.57
Surface suspension-deposit: Motile													
All	PRE-OP	0.48	0.19	0.40	0.13	0.58	0.17	0.27	0.08	0.54	0.14	0.29	0.10
	OP	1.09	0.19	1.23	0.44	0.74	0.11	0.61	0.10	0.48	0.08	0.68	0.28
Crustaceans	PRE-OP	0.48	0.19	0.40	0.13	0.58	0.17	0.27	0.08	0.54	0.14	0.29	0.10
	OP	1.09	0.19	1.23	0.44	0.73	0.10	0.61	0.10	0.48	0.08	0.68	0.28
Surface suspension-deposit: Sessile													
All	PRE-OP	2.06	0.69	1.44	0.47	1.69	0.25	0.92	0.20	2.00	0.39	2.12	0.36
	OP	3.84	0.49	2.59	0.28	3.09	0.32	3.46	0.42	2.85	0.32	2.16	0.25
Crustaceans	PRE-OP	2.06	0.69	1.40	0.47	1.69	0.25	0.90	0.20	1.98	0.40	2.10	0.34
	OP	3.76	0.49	2.51	0.27	2.99	0.32	3.39	0.42	2.80	0.31	2.06	0.25
Suspension feeder: Discrete													
All	PRE-OP	0.54	0.23	0.48	0.10	0.87	0.42	0.77	0.40	0.69	0.20	0.56	0.17

SOFT BENTHOS AVERAGE ABUNDANCE

DEPTH IS 18 METERS

SPECIES GROUP	PERIOD	700 METERS MEAN	700 METERS SE	1100 METERS MEAN	1100 METERS SE	1900 METERS MEAN	1900 METERS SE	3350 METERS MEAN	3350 METERS SE	6700 METERS MEAN	6700 METERS SE	9400 METERS MEAN	9400 METERS SE
	OP	0.62	0.24	0.37	0.14	0.59	0.11	0.49	0.13	0.46	0.10	0.37	0.09
Molluscs	PRE-OP	0.54	0.23	0.48	0.10	0.87	0.42	0.77	0.40	0.69	0.20	0.56	0.17
	OP	0.62	0.24	0.37	0.14	0.55	0.11	0.45	0.13	0.45	0.10	0.35	0.09
Suspension feeder: Sessile													
All	PRE-OP	1.31	0.24	1.06	0.22	1.90	0.32	2.40	0.43	2.37	0.41	2.04	0.35
	OP	3.90	1.02	2.58	0.43	3.33	0.47	3.63	0.69	3.47	0.67	3.57	0.47
Molluscs	PRE-OP	0.69	0.15	0.42	0.09	0.83	0.17	1.29	0.32	1.35	0.34	0.94	0.20
	OP	0.57	0.11	0.44	0.09	0.57	0.12	0.69	0.14	0.66	0.10	0.72	0.12
Polychaetes	PRE-OP	0.44	0.14	0.40	0.10	0.77	0.23	0.81	0.16	0.75	0.18	0.83	0.16
	OP	2.80	1.03	1.77	0.43	2.32	0.49	2.49	0.70	2.34	0.68	2.17	0.46
Surface carnivore-omnivore: Discrete													
All	PRE-OP	3.96	0.48	4.54	0.47	4.48	0.53	3.81	0.38	3.02	0.53	2.75	0.42
	OP	3.98	0.36	3.28	0.26	2.67	0.23	2.28	0.22	2.13	0.21	2.05	0.21
Others	PRE-OP	2.12	0.41	2.10	0.47	1.33	0.17	1.40	0.26	0.98	0.37	1.15	0.31
	OP	1.31	0.21	1.14	0.13	0.74	0.15	0.77	0.13	0.95	0.20	1.01	0.16
Polychaetes	PRE-OP	1.35	0.30	1.92	0.20	2.58	0.48	2.06	0.23	1.71	0.35	1.23	0.21
	OP	1.90	0.32	1.52	0.16	1.54	0.17	1.26	0.14	0.84	0.09	0.77	0.15
Surface carnivore-omnivore: Motile													
All	PRE-OP	5.15	0.44	4.44	0.38	6.75	0.70	5.10	0.32	5.81	0.40	6.10	0.59
	OP	6.73	0.50	14.05	7.26	7.16	0.71	31.10	25.58	9.85	4.87	13.55	6.67
Crustaceans	PRE-OP	0.58	0.15	0.65	0.16	0.56	0.15	0.31	0.09	0.75	0.31	0.46	0.10
	OP	0.67	0.10	7.75	7.26	0.96	0.53	25.77	25.57	5.03	4.80	7.24	6.74
Molluscs	PRE-OP	0.90	0.20	0.79	0.18	0.81	0.19	1.27	0.19	1.08	0.22	1.35	0.18
	OP	1.84	0.26	2.07	0.25	1.76	0.20	1.39	0.16	1.76	0.21	1.81	0.27
Others	PRE-OP	1.00	0.13	1.06	0.17	1.29	0.23	1.12	0.20	0.83	0.13	1.04	0.22
	OP	1.92	0.22	2.05	0.25	1.88	0.16	1.75	0.27	1.45	0.19	2.11	0.30
Polychaetes	PRE-OP	2.67	0.27	1.94	0.26	4.06	0.52	2.33	0.24	3.12	0.19	3.25	0.31
	OP	2.27	0.23	2.17	0.23	2.55	0.26	2.17	0.21	1.60	0.15	2.38	0.28

SOFT BENTHOS NUMBER OF ZERO OBSERVATIONS

DEPTH IS 8 METERS

SPECIES GROUP	PERIOD	700 METERS ZEROS	700 METERS %	1100 METERS ZEROS	1100 METERS %	1900 METERS ZEROS	1900 METERS %	3350 METERS ZEROS	3350 METERS %	6700 METERS ZEROS	6700 METERS %	9400 METERS ZEROS	9400 METERS %
COMBINED													
All	PRE-OP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
	OP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Surface													
All	PRE-OP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
	OP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Subsurface													
All	PRE-OP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
	OP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
COMBINED													
Crustaceans	PRE-OP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
	OP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	3.2
COMBINED													
Polychaetes	PRE-OP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
	OP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
COMBINED													
Molluscs	PRE-OP	0	0.0	1	6.3	1	6.3	0	0.0	0	0.0	0	0.0
	OP	1	3.2	3	9.7	0	0.0	1	3.2	0	0.0	1	3.2
Subsurface deposit feeder: Motile													
All	PRE-OP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
	OP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Polychaetes	PRE-OP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
	OP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
capitellid polychaetes	PRE-OP	1	6.3	3	18.8	2	12.5	2	12.5	4	25.0	2	12.5
	OP	7	22.6	1	3.2	1	3.2	6	19.4	3	9.7	7	22.6
paraonid polychaetes	PRE-OP	4	25.0	3	18.8	4	25.0	2	12.5	0	0.0	3	18.8
	OP	1	3.2	5	16.1	0	0.0	2	6.5	1	3.2	4	12.9
Subsurface carnivore-deposit: Motile													
All	PRE-OP	1	6.3	3	18.8	1	6.3	0	0.0	0	0.0	3	18.8
	OP	6	19.4	9	29.0	3	9.7	4	12.9	4	12.9	8	25.8
Polychaetes	PRE-OP	1	6.3	3	18.8	1	6.3	0	0.0	0	0.0	3	18.8
	OP	6	19.4	9	29.0	3	9.7	4	12.9	4	12.9	8	25.8
Surface deposit feeder: Discrete													
All	PRE-OP	5	31.3	4	25.0	2	12.5	5	31.3	3	18.8	4	25.0
	OP	7	22.6	8	25.8	6	19.4	8	25.8	6	19.4	7	22.6
Polychaetes	PRE-OP	8	50.0	6	37.5	6	37.5	11	68.8	7	43.8	8	50.0
	OP	12	38.7	12	38.7	12	38.7	8	25.8	7	22.6	9	29.0
Surface deposit feeder: Motile													
All	PRE-OP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
	OP	0	0.0	1	3.2	1	3.2	0	0.0	1	3.2	1	3.2
Crustaceans	PRE-OP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
	OP	0	0.0	1	3.2	1	3.2	0	0.0	1	3.2	1	3.2

SOFT BENTHOS NUMBER OF ZERO OBSERVATIONS

DEPTH IS 8 METERS

SPECIES GROUP	PERIOD	700 METERS ZEROS	%	1100 METERS ZEROS	%	1900 METERS ZEROS	%	3350 METERS ZEROS	%	6700 METERS ZEROS	%	9400 METERS ZEROS	%
Surface omnivore-deposit: Motile													
All	PRE-OP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
	OP	0	0.0	2	6.5	0	0.0	0	0.0	0	0.0	1	3.2
Crustaceans	PRE-OP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
	OP	0	0.0	2	6.5	0	0.0	0	0.0	0	0.0	1	3.2
Surface suspension-deposit: Discrete													
All	PRE-OP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
	OP	0	0.0	0	0.0	0	0.0	0	0.0	1	3.2	0	0.0
Crustaceans	PRE-OP	6	37.5	9	56.3	8	50.0	7	43.8	4	25.0	6	37.5
	OP	11	35.5	14	45.2	12	38.7	11	35.5	11	35.5	12	38.7
Molluscs	PRE-OP	2	12.5	2	12.5	1	6.3	0	0.0	0	0.0	0	0.0
	OP	13	41.9	19	61.3	7	22.6	11	35.5	14	45.2	7	22.6
Polychaetes	PRE-OP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
	OP	0	0.0	0	0.0	0	0.0	0	0.0	1	3.2	0	0.0
Surface suspension-deposit: Motile													
All	PRE-OP	5	31.3	6	37.5	4	25.0	9	56.3	4	25.0	3	18.8
	OP	9	29.0	6	19.4	14	45.2	4	12.9	20	64.5	8	25.8
Crustaceans	PRE-OP	5	31.3	6	37.5	4	25.0	9	56.3	4	25.0	3	18.8
	OP	9	29.0	6	19.4	14	45.2	4	12.9	22	71.0	8	25.8
Suspension feeder: Discrete													
All	PRE-OP	12	75.0	14	87.5	9	56.3	13	81.3	11	68.8	7	43.8
	OP	7	22.6	19	61.3	16	51.6	17	54.8	10	32.3	8	25.8
Molluscs	PRE-OP	12	75.0	14	87.5	9	56.3	13	81.3	11	68.8	7	43.8
	OP	8	25.8	19	61.3	16	51.6	17	54.8	10	32.3	8	25.8
Suspension feeder: Sessile													
All	PRE-OP	2	12.5	5	31.3	7	43.8	3	18.8	4	25.0	3	18.8
	OP	12	38.7	13	41.9	15	48.4	11	35.5	8	25.8	8	25.8
Molluscs	PRE-OP	3	18.8	6	37.5	8	50.0	3	18.8	5	31.3	4	25.0
	OP	19	61.3	15	48.4	20	64.5	17	54.8	13	41.9	13	41.9
Surface carnivore-omnivore: Discrete													
All	PRE-OP	0	0.0	1	6.3	2	12.5	0	0.0	0	0.0	0	0.0
	OP	1	3.2	4	12.9	4	12.9	2	6.5	2	6.5	2	6.5
Crustaceans	PRE-OP	3	18.8	2	12.5	3	18.8	1	6.3	2	12.5	1	6.3
	OP	17	54.8	19	61.3	18	58.1	12	38.7	14	45.2	14	45.2
Polychaetes	PRE-OP	0	0.0	2	12.5	8	50.0	2	12.5	2	12.5	1	6.3
	OP	11	35.5	10	32.3	6	19.4	9	29.0	6	19.4	5	16.1
Surface carnivore-omnivore: Motile													
All	PRE-OP	0	0.0	0	0.0	1	6.3	0	0.0	0	0.0	0	0.0
	OP	2	6.5	2	6.5	0	0.0	0	0.0	1	3.2	1	3.2
Molluscs	PRE-OP	3	18.8	4	25.0	7	43.8	4	25.0	8	50.0	3	18.8
	OP	10	32.3	12	38.7	13	41.9	8	25.8	3	9.7	6	19.4
Others	PRE-OP	1	6.3	3	18.8	2	12.5	0	0.0	0	0.0	0	0.0
	OP	6	19.4	4	12.9	5	16.1	10	32.3	5	16.1	5	16.1
Polychaetes	PRE-OP	1	6.3	2	12.5	5	31.3	2	12.5	4	25.0	0	0.0
	OP	4	12.9	13	41.9	4	12.9	4	12.9	7	22.6	4	12.9

SOFT BENTHOS NUMBER OF ZERO OBSERVATIONS

DEPTH IS 18 METERS

SPECIES GROUP	PERIOD	700 METERS ZEROS	700 METERS %	1100 METERS ZEROS	1100 METERS %	1900 METERS ZEROS	1900 METERS %	3350 METERS ZEROS	3350 METERS %	6700 METERS ZEROS	6700 METERS %	9400 METERS ZEROS	9400 METERS %
COMBINED													
All	PRE-OP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
	OP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Surface													
All	PRE-OP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
	OP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Subsurface													
All	PRE-OP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
	OP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
COMBINED													
Crustaceans	PRE-OP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
	OP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
COMBINED													
Polychaetes	PRE-OP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
	OP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
COMBINED													
Molluscs	PRE-OP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
	OP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Subsurface deposit feeder: Discrete													
All	PRE-OP	1	6.3	0	0.0	3	18.8	3	18.8	3	18.8	0	0.0
	OP	18	58.1	17	54.8	25	80.6	19	61.3	21	67.7	11	35.5
Others	PRE-OP	1	6.3	1	6.3	5	31.3	3	18.8	5	31.3	0	0.0
	OP	20	64.5	17	54.8	25	80.6	22	71.0	23	74.2	12	38.7
Subsurface deposit feeder: Motile													
All	PRE-OP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
	OP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Polychaetes	PRE-OP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
	OP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
capitellid polychaetes	PRE-OP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
	OP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	2	6.5
paraonid polychaetes	PRE-OP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
	OP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Subsurface carnivore-deposit: Motile													
All	PRE-OP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
	OP	0	0.0	0	0.0	0	0.0	1	3.2	0	0.0	2	6.5
Polychaetes	PRE-OP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
	OP	0	0.0	0	0.0	0	0.0	1	3.2	0	0.0	2	6.5
Surface deposit feeder: Discrete													
All	PRE-OP	3	18.8	2	12.5	2	12.5	2	12.5	3	18.8	0	0.0
	OP	0	0.0	0	0.0	3	9.7	3	9.7	3	9.7	3	9.7
Polychaetes	PRE-OP	3	18.8	4	25.0	2	12.5	4	25.0	5	31.3	2	12.5

SOFT BENTHOS NUMBER OF ZERO OBSERVATIONS

DEPTH IS 18 METERS

SPECIES GROUP	PERIOD	700 METERS ZEROS	%	1100 METERS ZEROS	%	1900 METERS ZEROS	%	3350 METERS ZEROS	%	6700 METERS ZEROS	%	9400 METERS ZEROS	%
	OP	1	3.2	1	3.2	4	12.9	7	22.6	4	12.9	7	22.6
Surface deposit feeder: Motile													
All	PRE-OP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
	OP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Crustaceans	PRE-OP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
	OP	0	0.0	0	0.0	1	3.2	0	0.0	0	0.0	0	0.0
Polychaetes	PRE-OP	9	56.3	8	50.0	7	43.8	8	50.0	5	31.3	5	31.3
	OP	1	3.2	2	6.5	2	6.5	9	29.0	10	32.3	12	38.7
Surface deposit feeder: Sessile													
All	PRE-OP	4	25.0	3	18.8	4	25.0	2	12.5	6	37.5	6	37.5
	OP	6	19.4	6	19.4	4	12.9	3	9.7	2	6.5	5	16.1
Polychaetes	PRE-OP	4	25.0	3	18.8	4	25.0	3	18.8	6	37.5	6	37.5
	OP	6	19.4	7	22.6	4	12.9	4	12.9	2	6.5	5	16.1
Surface omnivore-deposit: Discrete													
All	PRE-OP	6	37.5	5	31.3	3	18.8	5	31.3	2	12.5	6	37.5
	OP	1	3.2	1	3.2	0	0.0	1	3.2	3	9.7	5	16.1
Crustaceans	PRE-OP	6	37.5	5	31.3	3	18.8	5	31.3	2	12.5	6	37.5
	OP	1	3.2	1	3.2	0	0.0	1	3.2	3	9.7	5	16.1
Surface omnivore-deposit: Motile													
All	PRE-OP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
	OP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Crustaceans	PRE-OP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
	OP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Surface suspension-deposit: Discrete													
All	PRE-OP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
	OP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Crustaceans	PRE-OP	6	37.5	7	43.8	3	18.8	4	25.0	1	6.3	1	6.3
	OP	0	0.0	1	3.2	1	3.2	0	0.0	1	3.2	1	3.2
Molluscs	PRE-OP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
	OP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	3.2
Polychaetes	PRE-OP	0	0.0	0	0.0	1	6.3	1	6.3	0	0.0	1	6.3
	OP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	3.2
Surface suspension-deposit: Motile													
All	PRE-OP	5	31.3	7	43.8	4	25.0	7	43.8	4	25.0	8	50.0
	OP	3	9.7	2	6.5	5	16.1	6	19.4	8	25.8	13	41.9
Crustaceans	PRE-OP	5	31.3	7	43.8	4	25.0	7	43.8	4	25.0	8	50.0
	OP	3	9.7	2	6.5	5	16.1	6	19.4	8	25.8	13	41.9
Surface suspension-deposit: Sessile													
All	PRE-OP	2	12.5	2	12.5	0	0.0	3	18.8	0	0.0	0	0.0
	OP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	3.2
Crustaceans	PRE-OP	2	12.5	2	12.5	0	0.0	3	18.8	0	0.0	0	0.0
	OP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	3.2
Suspension feeder: Discrete													
All	PRE-OP	7	43.8	4	25.0	6	37.5	6	37.5	5	31.3	5	31.3

SOFT BENTHOS NUMBER OF ZERO OBSERVATIONS

DEPTH IS 18 METERS

SPECIES GROUP	PERIOD	700 METERS ZEROS	700 METERS %	1100 METERS ZEROS	1100 METERS %	1900 METERS ZEROS	1900 METERS %	3350 METERS ZEROS	3350 METERS %	6700 METERS ZEROS	6700 METERS %	9400 METERS ZEROS	9400 METERS %
	OP	14	45.2	20	64.5	10	32.3	13	41.9	13	41.9	14	45.2
Molluscs	PRE-OP	7	43.8	4	25.0	6	37.5	6	37.5	5	31.3	5	31.3
	OP	14	45.2	20	64.5	10	32.3	16	51.6	13	41.9	15	48.4
Suspension feeder: Sessile													
All	PRE-OP	2	12.5	1	6.3	1	6.3	0	0.0	0	0.0	1	6.3
	OP	0	0.0	1	3.2	0	0.0	1	3.2	1	3.2	0	0.0
Molluscs	PRE-OP	3	18.8	5	31.3	3	18.8	2	12.5	0	0.0	1	6.3
	OP	9	29.0	13	41.9	12	38.7	9	29.0	7	22.6	6	19.4
Polychaetes	PRE-OP	6	37.5	4	25.0	3	18.8	3	18.8	4	25.0	3	18.8
	OP	5	16.1	2	6.5	2	6.5	5	16.1	4	12.9	4	12.9
Surface carnivore-omnivore: Discrete													
All	PRE-OP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
	OP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Others	PRE-OP	0	0.0	3	18.8	0	0.0	1	6.3	3	18.8	2	12.5
	OP	4	12.9	2	6.5	8	25.8	7	22.6	8	25.8	4	12.9
Polychaetes	PRE-OP	0	0.0	0	0.0	0	0.0	0	0.0	2	12.5	1	6.3
	OP	1	3.2	0	0.0	1	3.2	0	0.0	2	6.5	5	16.1
Surface carnivore-omnivore: Motile													
All	PRE-OP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
	OP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	3.2
Crustaceans	PRE-OP	4	25.0	4	25.0	7	43.8	8	50.0	5	31.3	5	31.3
	OP	6	19.4	9	29.0	10	32.3	16	51.6	17	54.8	9	29.0
Molluscs	PRE-OP	2	12.5	3	18.8	4	25.0	0	0.0	1	6.3	0	0.0
	OP	1	3.2	0	0.0	0	0.0	3	9.7	2	6.5	2	6.5
Others	PRE-OP	1	6.3	1	6.3	1	6.3	2	12.5	1	6.3	2	12.5
	OP	0	0.0	1	3.2	0	0.0	0	0.0	4	12.9	3	9.7
Polychaetes	PRE-OP	0	0.0	0	0.0	0	0.0	1	6.3	0	0.0	0	0.0
	OP	0	0.0	0	0.0	1	3.2	0	0.0	0	0.0	2	6.5

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APPENDIX J. THE MEAN (AND STANDARD ERROR) DENSITIES (PER SAMPLE) AND FREQUENCY OF ZERO ABUNDANCE OF ALL TAXA AT ALL SAMPLING LOCATIONS IN BOTH SAMPLING PERIODS.

Number of surveys in the Before period is 16, number in the After is 31.

SOFT BENTHOS AVERAGE ABUNDANCE

DEPTH IS 8 METERS

SPECIES NAME	PERIOD	700 METERS MEAN	700 METERS SE	1100 METERS MEAN	1100 METERS SE	1900 METERS MEAN	1900 METERS SE	3350 METERS MEAN	3350 METERS SE	6700 METERS MEAN	6700 METERS SE	9400 METERS MEAN	9400 METERS SE
cf. Ianiropsis sp.	OP	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Acanthodoris rhodoceras	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00
Acanthomysis macropsis	OP	0.00	0.00	0.01	0.01	0.00	0.00	0.02	0.02	0.00	0.00	0.01	0.01
Acanthomysis sp. juvenile	OP	0.02	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.01	0.01
Acesta catherinae	PRE-OP	1.00	0.24	0.50	0.13	0.62	0.16	0.46	0.08	1.77	0.25	0.94	0.22
	OP	0.80	0.14	0.37	0.08	1.35	0.22	1.51	0.22	2.17	0.31	1.91	0.33
Acesta horikoshii	OP	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00
Acesta sp. B	PRE-OP	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	OP	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Acteocina harpa	PRE-OP	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.02	0.04	0.03	0.00	0.00
	OP	0.10	0.04	0.04	0.02	0.12	0.05	0.03	0.02	0.26	0.06	0.19	0.06
Acteocina inculta	PRE-OP	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	OP	0.00	0.00	0.00	0.00	0.02	0.01	0.00	0.00	0.05	0.02	0.03	0.02
Acuminodeutopus heteruropus	PRE-OP	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	OP	0.05	0.02	0.00	0.00	0.02	0.01	0.02	0.01	0.05	0.02	0.03	0.02
Aedicira pacifica	PRE-OP	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	OP	0.02	0.01	0.02	0.01	0.05	0.03	0.01	0.01	0.00	0.00	0.00	0.00
Aedicira sp.	PRE-OP	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	OP	0.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Alia carinata	PRE-OP	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	OP	0.05	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.00
Aligena sp.	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.02	0.00
Amaeana occidentalis	PRE-OP	0.02	0.02	0.00	0.00	0.02	0.02	0.00	0.00	0.04	0.02	0.08	0.04
	OP	0.00	0.00	0.00	0.00	0.01	0.01	0.03	0.02	0.05	0.03	0.01	0.01
Amastigos acutus	PRE-OP	10.37	4.11	9.83	3.54	8.08	2.05	10.62	5.24	6.79	2.95	10.31	4.00
	OP	0.83	0.17	2.34	0.52	3.54	0.60	1.02	0.18	1.47	0.26	1.04	0.24
Amiantis callosa	PRE-OP	0.00	0.00	0.02	0.02	0.00	0.00	0.00	0.00	0.02	0.02	0.00	0.00
	OP	0.01	0.01	0.00	0.00	0.01	0.01	0.05	0.02	0.02	0.01	0.06	0.03
Ampelisca agassizi	PRE-OP	0.40	0.26	0.10	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	OP	1.19	0.44	1.02	0.35	2.44	0.54	2.74	0.93	0.44	0.20	0.18	0.14
Ampelisca brevisimulata	OP	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ampelisca cristata	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00

SOFT BENTHOS AVERAGE ABUNDANCE

DEPTH IS 8 METERS

SPECIES NAME	PERIOD	700 METERS MEAN	700 METERS SE	1100 METERS MEAN	1100 METERS SE	1900 METERS MEAN	1900 METERS SE	3350 METERS MEAN	3350 METERS SE	6700 METERS MEAN	6700 METERS SE	9400 METERS MEAN	9400 METERS SE
Ampelisca cristata microdentata	OP	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ampelisca juvenile	PRE-OP	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ampharete labrops	PRE-OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00
	OP	0.03	0.02	0.02	0.01	0.01	0.01	0.03	0.02	0.05	0.02	0.01	0.01
Ampharetidae (not counted as sp)	PRE-OP	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ampharetidae juvenile	OP	0.00	0.00	0.02	0.02	0.00	0.00	0.00	0.00	0.05	0.02	0.02	0.01
Ampharetidae unidentified	OP	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Amphicteis scaphobranchiata	PRE-OP	0.04	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.02
Amphideutopus oculatus	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00
Amphilocus neopolitanus	OP	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Amphiodia digitata	PRE-OP	0.00	0.00	0.00	0.00	0.02	0.02	0.00	0.00	0.04	0.00	0.00	0.00
	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00
Amphiodia occidentalis	PRE-OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00
	OP	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01
Amphiodia spp. juvenile	PRE-OP	0.04	0.02	0.00	0.00	0.00	0.00	0.02	0.02	0.02	0.02	0.06	0.04
Amphiodia urtica	OP	0.02	0.01	0.02	0.01	0.01	0.01	0.02	0.02	0.02	0.01	0.00	0.00
Amphiporus spp.	PRE-OP	0.00	0.00	0.02	0.02	0.00	0.00	0.02	0.02	0.00	0.00	0.00	0.00
Ampithoe humeralis	OP	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Anchicolurus occidentalis	PRE-OP	0.02	0.02	0.04	0.03	0.02	0.02	0.08	0.05	0.04	0.04	0.04	0.03
	OP	0.02	0.01	0.01	0.01	0.00	0.00	0.03	0.02	0.15	0.03	0.12	0.03
Ancinus granulatus	PRE-OP	0.54	0.18	0.50	0.20	0.48	0.14	0.46	0.12	0.46	0.12	0.35	0.13
	OP	0.08	0.04	0.05	0.03	0.04	0.02	0.13	0.04	0.05	0.02	0.13	0.04
Ancistrosyllis hamata	PRE-OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00
	OP	0.01	0.01	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Anoplodactylus cf. oculospinus	OP	0.02	0.02	0.03	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01
Anoplodactylus sp.	OP	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Anotomastus gordiodes	PRE-OP	0.04	0.04	0.04	0.04	0.02	0.02	0.02	0.02	0.00	0.00	0.00	0.00
	OP	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Aoroides inermis	PRE-OP	0.17	0.12	0.00	0.00	0.06	0.04	0.35	0.33	0.00	0.00	0.12	0.10
	OP	0.24	0.09	0.29	0.12	0.05	0.04	0.10	0.05	0.48	0.16	0.17	0.06

SOFT BENTHOS AVERAGE ABUNDANCE

DEPTH IS 8 METERS

SPECIES NAME	PERIOD	700 METERS MEAN	700 METERS SE	1100 METERS MEAN	1100 METERS SE	1900 METERS MEAN	1900 METERS SE	3350 METERS MEAN	3350 METERS SE	6700 METERS MEAN	6700 METERS SE	9400 METERS MEAN	9400 METERS SE
Arabella tricolor	OP	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Arabellidae	OP	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01
Argissa hamatipes	PRE-OP	0.04	0.04	0.02	0.02	0.04	0.04	0.02	0.02	0.00	0.00	0.02	0.02
	OP	0.03	0.02	0.03	0.02	0.00	0.00	0.03	0.02	0.11	0.05	0.06	0.03
Aricidea sp. A	PRE-OP	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	OP	0.03	0.02	0.01	0.01	0.03	0.02	0.01	0.01	0.01	0.01	0.00	0.00
Aricidea sp. B	PRE-OP	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00
	OP	0.00	0.00	0.01	0.01	0.01	0.01	0.00	0.00	0.01	0.01	0.00	0.00
Aricidea wassi	PRE-OP	0.00	0.00	0.10	0.04	0.02	0.02	0.04	0.02	0.06	0.04	0.06	0.04
	OP	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.03	0.02	0.00	0.00
Armandia bioculata	PRE-OP	0.06	0.04	0.00	0.00	0.04	0.04	0.08	0.04	0.06	0.03	0.08	0.03
	OP	0.04	0.02	0.00	0.00	0.02	0.01	0.01	0.01	0.05	0.02	0.04	0.03
Asteropella slatteryi	PRE-OP	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.02	0.00	0.00	0.02	0.02
	OP	0.00	0.00	0.01	0.01	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00
Asthenothaerus villosior	PRE-OP	0.37	0.09	0.35	0.12	0.29	0.10	0.44	0.12	0.37	0.11	0.25	0.06
	OP	0.04	0.02	0.06	0.03	0.08	0.04	0.06	0.03	0.08	0.03	0.18	0.06
Asychis disparidentata	PRE-OP	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00
	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00
Atylus tridens	PRE-OP	0.19	0.10	0.21	0.10	0.58	0.23	0.12	0.05	0.15	0.09	0.00	0.00
	OP	0.75	0.23	0.53	0.18	0.63	0.26	0.32	0.16	0.03	0.03	0.06	0.04
Autolytus sp.	OP	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Balanus sp. juvenile	PRE-OP	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	OP	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Balcis micans	PRE-OP	0.02	0.02	0.08	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.02
	OP	0.11	0.03	0.10	0.03	0.05	0.02	0.08	0.03	0.00	0.00	0.17	0.07
Balcis rutila	OP	0.01	0.01	0.02	0.01	0.10	0.04	0.02	0.01	0.01	0.01	0.03	0.03
Balcis spp.	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00
Batea lobata	OP	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Branchiostoma californiense	PRE-OP	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	OP	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.02	0.00	0.00
Cadulus cf. fusiformis	PRE-OP	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00
	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00

SOFT BENTHOS AVERAGE ABUNDANCE

DEPTH IS 8 METERS

SPECIES NAME	PERIOD	700 METERS MEAN	700 METERS SE	1100 METERS MEAN	1100 METERS SE	1900 METERS MEAN	1900 METERS SE	3350 METERS MEAN	3350 METERS SE	6700 METERS MEAN	6700 METERS SE	9400 METERS MEAN	9400 METERS SE
Caecum californicum	PRE-OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00
Calanoid	PRE-OP	0.02	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.06	0.00	0.00	0.00
	OP	0.14	0.05	0.31	0.18	0.09	0.03	0.22	0.09	0.20	0.08	0.34	0.16
Callianassa californiensis	OP	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Callianassa sp. juvenile	PRE-OP	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.03	0.19	0.06	0.02	0.02
	OP	0.02	0.01	0.04	0.02	0.04	0.02	0.04	0.02	0.01	0.01	0.01	0.01
Calliostoma sp.	OP	0.01	0.01	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.00	0.00
Campylaspis rubromaculata	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00
Campylaspis sp. C SCAMIT	PRE-OP	0.25	0.06	0.12	0.07	0.12	0.06	0.23	0.10	0.08	0.05	0.21	0.08
	OP	0.13	0.03	0.23	0.06	0.18	0.04	0.05	0.03	0.17	0.04	0.13	0.04
Cancer gracilis	PRE-OP	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00
	OP	0.00	0.00	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Cancer spp. juvenile	PRE-OP	0.02	0.02	0.02	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	OP	0.04	0.02	0.02	0.01	0.03	0.02	0.01	0.01	0.01	0.01	0.02	0.01
Capitella capitata	OP	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Capitellidae unidentified	OP	0.00	0.00	0.01	0.01	0.02	0.01	0.00	0.00	0.01	0.01	0.00	0.00
Caprella angusta	OP	0.22	0.10	0.19	0.05	0.69	0.42	0.22	0.08	0.27	0.08	0.31	0.07
Caprella californica	PRE-OP	0.02	0.02	0.02	0.02	0.04	0.03	0.00	0.00	0.00	0.00	0.00	0.00
Caprella equilibra	PRE-OP	0.10	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	OP	0.01	0.01	0.05	0.04	0.00	0.00	0.02	0.02	0.00	0.00	0.01	0.01
Caprella juvenile(not counted as sp)	PRE-OP	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Caprella spp. juvenile	PRE-OP	0.04	0.02	0.00	0.00	0.02	0.02	0.00	0.00	0.02	0.02	0.00	0.00
	OP	0.06	0.03	0.01	0.01	0.00	0.00	0.02	0.01	0.05	0.02	0.03	0.02
Caprella verrucosa	PRE-OP	0.02	0.02	0.04	0.02	0.04	0.04	0.00	0.00	0.00	0.00	0.02	0.02
	OP	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01
Carinoma mutabilis	PRE-OP	0.08	0.07	0.06	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.06	0.06
	OP	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00
Cerapus tubularis	PRE-OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.00
	OP	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.02	0.01	0.00	0.00
Cerebratulus or Micrura spp.	PRE-OP	0.02	0.02	0.06	0.03	0.06	0.04	0.06	0.04	0.10	0.06	0.04	0.03
	OP	0.00	0.00	0.01	0.01	0.01	0.01	0.04	0.03	0.00	0.00	0.02	0.01
Cerianthidae sp. A	PRE-OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00

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DEPTH IS 8 METERS

SPECIES NAME	PERIOD	700 METERS MEAN	700 METERS SE	1100 METERS MEAN	1100 METERS SE	1900 METERS MEAN	1900 METERS SE	3350 METERS MEAN	3350 METERS SE	6700 METERS MEAN	6700 METERS SE	9400 METERS MEAN	9400 METERS SE
Chaetopteridae unidentified	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00
Chaetozone corona	OP	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Chaetozone setosa	PRE-OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.02	0.04	0.02
	OP	0.05	0.02	0.00	0.00	0.02	0.01	0.02	0.01	0.03	0.02	0.08	0.03
Chione californiensis	OP	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Chione sp.	PRE-OP	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Chone albocincta	PRE-OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.02	0.02	0.02
	OP	0.01	0.01	0.00	0.00	0.04	0.02	0.00	0.00	0.02	0.01	0.05	0.02
Chone sp.	PRE-OP	0.02	0.02	0.00	0.00	0.00	0.00	0.02	0.02	0.02	0.02	0.00	0.00
	OP	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.01
Chone sp. (not counted as sp)	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00
Chone veleronis	OP	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.00
Cingula sp.	OP	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cirratulidae (not counted as sp)	PRE-OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00
Cirratulidae unidentified	OP	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01
Cirriformia spirabrancha	OP	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cirrophorus furcatus	OP	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.01	0.01	0.00	0.00
Clavodorum clavatum	PRE-OP	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coelentrate unidentified	PRE-OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00
	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.01	0.02	0.01
Compsomyax subdiaphana	PRE-OP	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00
Conualevia alba	PRE-OP	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cooperella subdiaphana	PRE-OP	0.02	0.02	0.00	0.00	0.00	0.00	0.02	0.02	0.02	0.02	0.06	0.02
	OP	0.04	0.03	0.03	0.02	0.01	0.01	0.00	0.00	0.03	0.02	0.05	0.02
Corophium baconi	PRE-OP	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00
Corophium californianum	OP	0.00	0.00	0.00	0.00	0.02	0.01	0.00	0.00	0.02	0.02	0.00	0.00
Cossura cf. candida	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00
Crab zoea	PRE-OP	0.00	0.00	0.02	0.02	0.00	0.00	0.04	0.03	0.00	0.00	0.00	0.00

SOFT BENTHOS AVERAGE ABUNDANCE

DEPTH IS 8 METERS

SPECIES NAME	PERIOD	700 METERS MEAN	700 METERS SE	1100 METERS MEAN	1100 METERS SE	1900 METERS MEAN	1900 METERS SE	3350 METERS MEAN	3350 METERS SE	6700 METERS MEAN	6700 METERS SE	9400 METERS MEAN	9400 METERS SE
	OP	0.10	0.07	0.31	0.26	0.43	0.34	0.73	0.59	0.37	0.30	0.74	0.62
Crangon alaskensis elongata	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00
Crepidula coei	PRE-OP	0.17	0.10	0.00	0.00	0.00	0.00	0.25	0.21	0.00	0.00	0.04	0.04
	OP	0.26	0.11	0.22	0.13	0.10	0.09	0.40	0.27	0.13	0.04	0.23	0.11
Crepidula spp.	OP	0.02	0.01	0.02	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.08	0.06
Cumella sp. A SCAMIT	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.02	0.01
Cyclaspis nubila	PRE-OP	0.02	0.02	0.00	0.00	0.00	0.00	0.02	0.02	0.00	0.00	0.02	0.02
	OP	0.03	0.02	0.03	0.02	0.03	0.02	0.01	0.01	0.04	0.03	0.04	0.02
Cyclaspis sp.B SCAMIT	OP	0.00	0.00	0.01	0.01	0.00	0.00	0.02	0.01	0.00	0.00	0.00	0.00
Cyclaspis sp.C SCAMIT	PRE-OP	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cyclopoids	PRE-OP	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	OP	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cyclostremella californica	PRE-OP	0.85	0.24	0.04	0.03	0.21	0.16	0.04	0.04	0.00	0.00	0.54	0.21
CAMPO160	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.00
CDEC0017	OP	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CIS00002	OP	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CIS00999	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00
CST00001	OP	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Decamastus gracilus	PRE-OP	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00
Dendraster excentricus	PRE-OP	0.10	0.06	0.12	0.07	0.21	0.06	0.23	0.07	0.15	0.04	0.06	0.04
	OP	0.77	0.12	0.54	0.10	0.63	0.18	0.95	0.32	0.57	0.12	0.71	0.20
Dentalium neonexagonum	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00
Diastylopsis tenuis	PRE-OP	8.04	2.26	5.96	1.75	6.04	1.81	6.58	2.11	6.21	1.64	7.60	1.74
	OP	6.42	1.65	4.54	1.34	7.50	2.10	5.38	1.48	4.14	1.24	3.45	0.77
Diopatra sp.	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01
Diopatra splendidissima	PRE-OP	0.06	0.02	0.04	0.02	0.00	0.00	0.04	0.04	0.00	0.00	0.00	0.00
	OP	0.02	0.01	0.03	0.03	0.00	0.00	0.09	0.06	0.06	0.02	0.09	0.04
Diopatra tridentata	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00
Diospio uncinata	PRE-OP	0.00	0.00	0.00	0.00	0.02	0.02	0.00	0.00	0.04	0.04	0.02	0.02
	OP	0.00	0.00	0.09	0.04	0.02	0.01	0.02	0.01	0.01	0.01	0.03	0.02

SOFT BENTHOS AVERAGE ABUNDANCE

DEPTH IS 8 METERS

SPECIES NAME	PERIOD	700 METERS MEAN	700 METERS SE	1100 METERS MEAN	1100 METERS SE	1900 METERS MEAN	1900 METERS SE	3350 METERS MEAN	3350 METERS SE	6700 METERS MEAN	6700 METERS SE	9400 METERS MEAN	9400 METERS SE
Doto sp.	PRE-OP	0.02	0.02	0.02	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	OP	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Drilonereis falcata	PRE-OP	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Drilonereis filum	PRE-OP	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Duplicate code -- use CDEC0047	OP	0.01	0.01	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00
Duplicate code -- use MGAS0103	PRE-OP	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.06	0.00
Echinoid juvenile	OP	0.03	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.04	0.03	0.16	0.01
Edotea sublittoralis	PRE-OP	1.65	0.45	0.56	0.30	0.85	0.31	1.25	0.36	0.60	0.14	1.35	0.45
	OP	0.16	0.05	0.20	0.08	0.25	0.09	0.31	0.07	0.23	0.05	0.23	0.06
Edwardsia sp. A (orange w/ white base)	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00
Edwardsia sp. B (white w/white base)	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00
Elasmopus antennatus	OP	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Emerita analoga	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00
Entodesma saxicolum	PRE-OP	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Eohaustorius washingtonianus	PRE-OP	0.21	0.11	0.23	0.10	0.54	0.36	0.06	0.04	0.23	0.18	0.67	0.63
	OP	0.17	0.05	0.32	0.09	0.09	0.04	1.05	0.19	0.00	0.00	0.15	0.04
Epitonium bellastriatum	PRE-OP	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Epitonium sp.	OP	0.02	0.01	0.02	0.01	0.02	0.01	0.01	0.01	0.03	0.01	0.02	0.02
Erichthonius brasiliensis	OP	0.11	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.02	0.00	0.00
Eteone dilatae	PRE-OP	0.02	0.02	0.04	0.02	0.02	0.02	0.02	0.02	0.00	0.00	0.04	0.02
	OP	0.02	0.01	0.06	0.02	0.06	0.03	0.02	0.01	0.01	0.01	0.03	0.02
Eteone sp.	PRE-OP	0.04	0.02	0.06	0.06	0.04	0.02	0.04	0.04	0.00	0.00	0.04	0.02
	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00
Euchone hancocki	OP	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Eulima almo	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00
Eumida sanguinea	OP	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Euphilomedes carcharodonta	PRE-OP	0.02	0.02	0.00	0.00	0.04	0.03	0.06	0.06	0.06	0.04	0.21	0.06
	OP	0.01	0.01	0.02	0.01	0.09	0.03	0.03	0.02	0.00	0.00	0.04	0.02
Euphilomedes juvenile (not counted as sp	PRE-OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00

SOFT BENTHOS AVERAGE ABUNDANCE

DEPTH IS 8 METERS

SPECIES NAME	PERIOD	700 METERS MEAN	700 METERS SE	1100 METERS MEAN	1100 METERS SE	1900 METERS MEAN	1900 METERS SE	3350 METERS MEAN	3350 METERS SE	6700 METERS MEAN	6700 METERS SE	9400 METERS MEAN	9400 METERS SE
Euphilomedes longiseta	PRE-OP	1.31	0.37	3.08	0.79	2.04	0.28	2.33	0.65	0.46	0.15	0.85	0.20
	OP	0.53	0.16	1.12	0.26	1.72	0.31	1.56	0.19	0.13	0.04	0.27	0.07
Euphilomedes spp. (juvenile)	PRE-OP	0.02	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.02
Eurydice caudata	OP	0.01	0.01	0.00	0.00	0.00	0.00	0.04	0.04	0.00	0.00	0.01	0.01
F. pectinariidae	OP	0.23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
F. sigalionidae	PRE-OP	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fartulum occidentale	PRE-OP	0.04	0.02	0.00	0.00	0.00	0.00	0.02	0.02	0.02	0.02	0.00	0.00
	OP	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Felaniella cornea	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.00
Flatworm 1	PRE-OP	0.02	0.02	0.00	0.00	0.06	0.04	0.00	0.00	0.02	0.02	0.06	0.04
	OP	0.03	0.02	0.00	0.00	0.02	0.01	0.02	0.01	0.02	0.01	0.01	0.01
Flatworm 3	PRE-OP	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.02	0.02	0.02	0.00	0.00
	OP	0.01	0.01	0.02	0.02	0.02	0.01	0.01	0.01	0.00	0.00	0.00	0.00
Flatworm 4	OP	0.01	0.01	0.00	0.00	0.01	0.01	0.01	0.01	0.03	0.02	0.02	0.01
Flatworm 8	PRE-OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00
Flosmaris grandis	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00
Foxiphalus golfensis/obtusidens	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00
Gammaropsis thompsoni	OP	0.02	0.00	0.01	0.01	0.00	0.00	0.02	0.02	0.00	0.00	0.00	0.00
Gari sp.	PRE-OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00
Gastropoda	PRE-OP	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Gastropoda unidentified	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.01	0.01
Gibberosus myersi	PRE-OP	0.37	0.11	0.10	0.04	0.08	0.05	0.04	0.03	0.27	0.09	0.29	0.12
	OP	0.10	0.03	0.05	0.03	0.08	0.04	0.10	0.04	0.29	0.07	0.14	0.04
Glottidia albida	PRE-OP	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	OP	0.04	0.02	0.04	0.02	0.06	0.03	0.05	0.02	0.03	0.02	0.00	0.00
Glycera americana	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00
Glycera convoluta	PRE-OP	0.08	0.04	0.02	0.02	0.02	0.02	0.04	0.04	0.02	0.02	0.06	0.03
	OP	0.08	0.03	0.04	0.02	0.08	0.02	0.01	0.01	0.02	0.02	0.08	0.02
Glycera siphonostoma	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00

SOFT BENTHOS AVERAGE ABUNDANCE

DEPTH IS 8 METERS

SPECIES NAME	PERIOD	700 METERS MEAN	700 METERS SE	1100 METERS MEAN	1100 METERS SE	1900 METERS MEAN	1900 METERS SE	3350 METERS MEAN	3350 METERS SE	6700 METERS MEAN	6700 METERS SE	9400 METERS MEAN	9400 METERS SE
Glycera sp.	PRE-OP	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	OP	0.01	0.01	0.04	0.02	0.03	0.02	0.01	0.01	0.02	0.01	0.03	0.02
Glyceridae unidentified	PRE-OP	0.00	0.00	0.02	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.02
Glycinde armigera	PRE-OP	0.06	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.02
	OP	0.02	0.01	0.01	0.01	0.03	0.02	0.02	0.01	0.02	0.01	0.02	0.01
Golfingia catharinae	OP	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Golfingia misakiana	PRE-OP	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00
	OP	0.02	0.01	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.03	0.02
Gontada littorea	PRE-OP	0.85	0.12	0.40	0.08	0.40	0.12	0.67	0.11	0.73	0.11	1.35	0.19
	OP	0.11	0.03	0.14	0.03	0.27	0.05	0.12	0.03	0.24	0.06	0.27	0.05
Gontada maculata	PRE-OP	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00
Gontada sp.	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00
Gontada sp. (not counted as sp)	OP	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Gontadidae unidentified	PRE-OP	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00
	OP	0.02	0.01	0.00	0.00	0.02	0.02	0.03	0.02	0.01	0.01	0.03	0.02
Harmothoe cf. lunulata	PRE-OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.00
	OP	0.00	0.00	0.00	0.00	0.03	0.02	0.00	0.00	0.02	0.02	0.04	0.02
Harmothoe priops	PRE-OP	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	OP	0.04	0.01	0.01	0.01	0.01	0.01	0.04	0.02	0.01	0.01	0.02	0.02
Harpacticoids	PRE-OP	0.04	0.02	0.12	0.04	0.02	0.02	0.04	0.02	0.06	0.04	0.00	0.00
	OP	0.06	0.03	0.11	0.04	0.08	0.03	0.06	0.03	0.08	0.03	0.08	0.03
Hemichordate unidentified	PRE-OP	0.02	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.02
	OP	0.10	0.02	0.00	0.00	0.06	0.02	0.03	0.02	0.03	0.02	0.03	0.02
Hemilamprops californica	PRE-OP	0.02	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.03
	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00
Hirudinea leech	PRE-OP	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Holmesimysis costata	PRE-OP	0.00	0.00	0.04	0.03	0.02	0.02	0.02	0.02	0.00	0.00	0.00	0.00
	OP	0.02	0.01	0.00	0.00	0.00	0.00	0.04	0.02	0.00	0.00	0.02	0.02
Holothuroidea unidentified	PRE-OP	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	OP	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hydroid unidentified	PRE-OP	0.00	0.00	0.02	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00
Idotea fewkesi	PRE-OP	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

SOFT BENTHOS AVERAGE ABUNDANCE

DEPTH IS 8 METERS

SPECIES NAME	PERIOD	700 METERS MEAN	700 METERS SE	1100 METERS MEAN	1100 METERS SE	1900 METERS MEAN	1900 METERS SE	3350 METERS MEAN	3350 METERS SE	6700 METERS MEAN	6700 METERS SE	9400 METERS MEAN	9400 METERS SE
Idoteid	OP	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ischyrocerus sp.	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.01
Ischyrocerus sp. B	OP	0.02	0.02	0.00	0.00	0.02	0.01	0.00	0.00	0.00	0.00	0.04	0.03
Isocheles pilosus	PRE-OP	0.00	0.00	0.00	0.00	0.02	0.00	0.02	0.00	0.00	0.00	0.00	0.00
	OP	0.00	0.00	0.00	0.00	0.02	0.02	0.03	0.02	0.01	0.01	0.00	0.00
Jaeropsis dubia	OP	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jassa falcata	PRE-OP	1.08	0.57	0.48	0.25	0.40	0.13	0.35	0.09	0.54	0.26	0.92	0.31
	OP	1.04	0.24	0.57	0.11	1.30	0.46	0.96	0.23	1.55	0.56	1.40	0.55
Kellia sp.	PRE-OP	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00
Kinorhynchus sp.	OP	0.01	0.01	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00
Kurtziella beta	PRE-OP	0.00	0.00	0.00	0.00	0.02	0.02	0.06	0.02	0.02	0.02	0.04	0.02
	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00
Kurtziella plumbea	PRE-OP	0.00	0.00	0.04	0.02	0.02	0.02	0.02	0.02	0.00	0.00	0.12	0.05
	OP	0.03	0.01	0.02	0.01	0.01	0.01	0.03	0.01	0.03	0.01	0.02	0.02
Lacuna unifasciata	OP	0.02	0.02	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.01	0.01
Lampropidae juvenile	PRE-OP	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Lamprops carinata	PRE-OP	0.06	0.03	0.00	0.00	0.02	0.02	0.02	0.02	0.06	0.03	0.02	0.02
	OP	0.13	0.04	0.04	0.03	0.05	0.03	0.11	0.04	0.10	0.04	0.10	0.04
Lamprops quadriplicata	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00
Laonice cirrata	PRE-OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00
	OP	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Leitoscoloplos elongatus	PRE-OP	0.02	0.02	0.10	0.05	0.10	0.08	0.00	0.00	0.02	0.02	0.15	0.07
	OP	0.09	0.03	0.08	0.03	0.08	0.03	0.04	0.02	0.04	0.02	0.02	0.01
Leitoscoloplos sp.	PRE-OP	0.02	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.02	0.00	0.10	0.00
	OP	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Lepidopa californica	PRE-OP	0.00	0.00	0.02	0.02	0.00	0.00	0.00	0.00	0.02	0.02	0.00	0.00
	OP	0.00	0.00	0.01	0.01	0.00	0.00	0.02	0.02	0.01	0.01	0.02	0.01
Leptochelia dubia	PRE-OP	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.02	0.00	0.00	0.02	0.02
	OP	0.09	0.04	0.03	0.02	0.03	0.02	0.02	0.01	0.02	0.01	0.04	0.02
Leptocuma forsmani	PRE-OP	0.40	0.24	0.52	0.24	0.23	0.11	0.25	0.12	0.21	0.07	0.33	0.16
	OP	0.88	0.22	1.22	0.19	0.66	0.09	0.60	0.10	0.16	0.05	0.59	0.15
Lepton sp.	PRE-OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.96	0.00

SOFT BENTHOS AVERAGE ABUNDANCE

DEPTH IS 8 METERS

SPECIES NAME	PERIOD	700 METERS MEAN	700 METERS SE	1100 METERS MEAN	1100 METERS SE	1900 METERS MEAN	1900 METERS SE	3350 METERS MEAN	3350 METERS SE	6700 METERS MEAN	6700 METERS SE	9400 METERS MEAN	9400 METERS SE
Leptopecten latiauratus	PRE-OP	0.00	0.00	0.00	0.00	0.04	0.02	0.06	0.05	0.00	0.00	0.02	0.02
	OP	0.01	0.01	0.04	0.02	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.01
Leptosynapta sp	PRE-OP	0.06	0.02	0.02	0.02	0.02	0.02	0.00	0.00	0.02	0.02	0.00	0.00
	OP	0.02	0.02	0.03	0.01	0.01	0.01	0.00	0.00	0.01	0.01	0.01	0.01
Leuroleberis sharpei	PRE-OP	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	OP	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.01	0.00	0.00	0.02	0.01
Listriella diffusa	PRE-OP	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Listriella melanica	OP	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Listriella sp. juvenile	OP	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Lovenia cordiformis	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01
Loxorhynchus crispatus	OP	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Lumbrineris californiensis	PRE-OP	0.15	0.05	0.06	0.03	0.06	0.04	0.19	0.08	0.19	0.07	0.08	0.05
	OP	0.01	0.01	0.00	0.00	0.00	0.00	0.03	0.02	0.03	0.01	0.00	0.00
Lumbrineris cruzensis	OP	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.01	0.01	0.00	0.00
Lumbrineris sp.	PRE-OP	0.10	0.04	0.02	0.02	0.17	0.07	0.08	0.04	0.06	0.03	0.08	0.06
	OP	0.02	0.01	0.00	0.00	0.04	0.02	0.02	0.01	0.03	0.02	0.05	0.02
Lumbrineris sp. (not counted as sp)	OP	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.01	0.01	0.00	0.00
Lumbrineris sp. D	PRE-OP	0.15	0.05	0.12	0.06	0.15	0.07	0.04	0.04	0.02	0.02	0.10	0.04
	OP	0.01	0.01	0.02	0.01	0.13	0.04	0.02	0.01	0.12	0.03	0.04	0.03
Lysianassidae juvenile	OP	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Macoma acolasta	PRE-OP	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.00	0.00	0.00	0.00	0.00
	OP	0.01	0.01	0.00	0.00	0.02	0.01	0.00	0.00	0.01	0.01	0.00	0.00
Macoma cf. balthica	PRE-OP	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Macoma indentata	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00
Macoma nr. secta	OP	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Macoma sp.	PRE-OP	0.04	0.03	0.10	0.06	0.06	0.03	0.10	0.04	0.02	0.02	0.02	0.02
	OP	0.08	0.03	0.08	0.03	0.06	0.03	0.03	0.02	0.04	0.02	0.06	0.04
Macoma yoldiformis	PRE-OP	0.10	0.06	0.04	0.03	0.21	0.10	0.29	0.11	0.04	0.03	0.00	0.00
Mactra californica	OP	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mactra sp.	OP	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.01	0.01	0.02	0.01

SOFT BENTHOS AVERAGE ABUNDANCE

DEPTH IS 8 METERS

SPECIES NAME	PERIOD	700 METERS MEAN	700 METERS SE	1100 METERS MEAN	1100 METERS SE	1900 METERS MEAN	1900 METERS SE	3350 METERS MEAN	3350 METERS SE	6700 METERS MEAN	6700 METERS SE	9400 METERS MEAN	9400 METERS SE
Mactra sp. A	PRE-OP	0.02	0.02	0.00	0.00	0.04	0.02	0.00	0.00	0.00	0.00	0.08	0.06
	OP	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Magelona pitelkai	PRE-OP	0.02	0.02	0.08	0.03	0.06	0.03	0.00	0.00	0.02	0.02	0.13	0.12
	OP	0.19	0.05	0.15	0.04	0.08	0.03	0.04	0.02	0.12	0.05	0.10	0.03
Magelona sacculata	PRE-OP	0.12	0.04	0.17	0.10	0.21	0.08	0.12	0.07	0.17	0.06	0.12	0.06
	OP	0.43	0.11	0.32	0.09	0.59	0.12	0.70	0.11	1.04	0.30	0.73	0.15
Magelona sp.	PRE-OP	0.04	0.02	0.10	0.06	0.17	0.08	0.15	0.09	0.06	0.06	0.04	0.04
	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00
Magelona sp. (not counted as sp)	OP	0.00	0.00	0.00	0.00	0.03	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Majidae sp. A	PRE-OP	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	OP	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maladanidae unidentified	PRE-OP	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00
	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.02	0.01
Mandibulophoxus gilesi	OP	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mayerella banksia	OP	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mediomastus acutus	PRE-OP	0.06	0.00	0.00	0.00	0,02	0.00	0.00	0.00	0.00	0.00	0.02	0.00
	OP	0.16	0.05	0.12	0.04	0.20	0.04	0.15	0.07	0.09	0.03	0.11	0.04
Mediomastus californiensis/ambiseta	PRE-OP	0.27	0.11	0.21	0.14	0.21	0.07	0.29	0.10	0.40	0.16	0.52	0.13
	OP	0.78	0.24	0.33	0.14	0.69	0.14	0.08	0.04	0.24	0.05	0.18	0.06
Megalops juvenile	OP	0.02	0.01	0.00	0.00	0.01	0.01	0.00	0.00	0.02	0.01	0.01	0.01
Meliphisana bola	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00
Metamysidopsis elongata	PRE-OP	0.00	0.00	0.02	0.02	0.00	0.00	0.02	0.02	0.00	0.00	0.00	0.00
	OP	0.02	0.01	0.03	0.03	0.01	0.01	0.06	0.05	0.00	0.00	0.06	0.02
Metaphoxus frequens	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00
Modiolus neglectus	PRE-OP	0.00	0.00	0.00	0.00	0.04	0.04	0.08	0.07	0.00	0.00	0.04	0.02
	OP	0.01	0.01	0.00	0.00	0.05	0.02	0.02	0.01	0.03	0.02	0.01	0.01
Modiolus rectus	PRE-OP	0.04	0.03	0.00	0.00	0.00	0.00	0.83	0.61	0.00	0.00	0.00	0.00
	OP	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Modiolus sp. (not counted as sp)	PRE-OP	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00
Modiolus sp. A	PRE-OP	0.00	0.00	0.00	0.00	0.02	0.02	0.00	0.00	0.00	0.00	0.04	0.00
	OP	0.02	0.01	0.01	0.01	0.01	0.01	0.04	0.03	0.00	0.00	0.00	0.00
Modiolus spp.	PRE-OP	0.08	0.04	0.04	0.03	0.00	0.00	0.02	0.02	0.06	0.03	0.10	0.07

SOFT BENTHOS AVERAGE ABUNDANCE

DEPTH IS 8 METERS

SPECIES NAME	PERIOD	700 METERS MEAN	700 METERS SE	1100 METERS MEAN	1100 METERS SE	1900 METERS MEAN	1900 METERS SE	3350 METERS MEAN	3350 METERS SE	6700 METERS MEAN	6700 METERS SE	9400 METERS MEAN	9400 METERS SE
	OP	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.03	0.02
Monoculodes hartmanae	PRE-OP	0.25	0.11	0.06	0.03	0.02	0.02	0.19	0.07	0.27	0.11	0.40	0.09
	OP	0.19	0.06	0.11	0.03	0.19	0.05	0.26	0.05	0.39	0.07	0.22	0.06
Montacutidae spp.	OP	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Munna ubiquita	PRE-OP	0.06	0.04	0.00	0.00	0.04	0.03	0.04	0.03	0.02	0.02	0.27	0.11
	OP	0.12	0.04	0.03	0.02	0.13	0.04	0.08	0.03	0.14	0.10	0.15	0.06
Munnogonium tillerae	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00
Mya cf. arenaria	PRE-OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00
Myriochele sp. M	OP	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mysella cf. aleutica	OP	0.03	0.01	0.03	0.01	0.00	0.00	0.00	0.00	0.03	0.01	0.04	0.03
Mysella compressa	OP	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.01	0.01	0.01	0.01
Mysella golischi	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.04	0.00	0.00	0.02	0.02
Mysella grippi	PRE-OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00
	OP	0.01	0.01	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.00
Mysella sp.	PRE-OP	0.00	0.00	0.02	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.02
	OP	0.01	0.01	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Mysella tumida	PRE-OP	0.02	0.02	0.00	0.00	0.06	0.06	0.02	0.02	0.02	0.02	0.02	0.02
	OP	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mysella unidentified	PRE-OP	0.00	0.00	0.00	0.00	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mysidacea unidentified	PRE-OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00
	OP	0.03	0.02	0.01	0.01	0.05	0.03	0.02	0.01	0.04	0.03	0.05	0.03
	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00
Mysidopsis californica	PRE-OP	0.00	0.00	0.00	0.00	0.06	0.02	0.02	0.02	0.00	0.00	0.00	0.00
	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00
Mysidopsis intii	PRE-OP	0.02	0.02	0.00	0.00	0.02	0.02	0.02	0.02	0.00	0.00	0.00	0.00
	OP	0.00	0.00	0.01	0.01	0.03	0.02	0.02	0.02	0.01	0.01	0.00	0.00
Mytilus edulis	OP	0.01	0.01	0.01	0.01	0.02	0.01	0.01	0.01	0.00	0.00	0.00	0.00
MGAS0158	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.01	0.00
MGAS0223	OP	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MPEL0139	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00
MPEL0140	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00

SOFT BENTHOS AVERAGE ABUNDANCE

DEPTH IS 8 METERS

SPECIES NAME	PERIOD	700 METERS MEAN	700 METERS SE	1100 METERS MEAN	1100 METERS SE	1900 METERS MEAN	1900 METERS SE	3350 METERS MEAN	3350 METERS SE	6700 METERS MEAN	6700 METERS SE	9400 METERS MEAN	9400 METERS SE
MPELO143	OP	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Nainerls uncinata	OP	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Nassarius perpinquis	PRE-OP	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.04	0.03	0.00	0.00
	OP	0.08	0.03	0.10	0.03	0.08	0.03	0.02	0.01	0.01	0.01	0.03	0.02
Nassarius sp.	OP	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Nebalia pugettensis	OP	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.03	0.01	0.00	0.00
Nematodes unidentified	PRE-OP	0.85	0.21	0.83	0.28	0.87	0.32	0.69	0.24	0.40	0.11	0.98	0.27
	OP	0.75	0.17	0.45	0.09	1.63	0.27	0.55	0.11	1.02	0.19	1.06	0.24
Nemertina unidantified	PRE-OP	0.06	0.03	0.00	0.00	0.04	0.04	0.04	0.04	0.00	0.00	0.00	0.00
	PRE-OP	0.06	0.04	0.08	0.04	0.12	0.05	0.25	0.08	0.12	0.05	0.08	0.04
	OP	0.27	0.05	0.45	0.11	0.32	0.06	0.33	0.06	0.45	0.08	0.39	0.07
	OP	0.09	0.04	0.03	0.02	0.04	0.02	0.01	0.01	0.06	0.03	0.09	0.04
Nemocardium centrifilosum	PRE-OP	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.02	0.00
Neomysis rayii	PRE-OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00
Nephtyidae unidentified	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00
Nephtys caecoides	PRE-OP	0.04	0.03	0.00	0.00	0.15	0.08	0.06	0.04	0.06	0.03	0.00	0.00
	OP	0.11	0.03	0.08	0.02	0.08	0.03	0.11	0.06	0.03	0.02	0.10	0.03
Nephtys californiensis	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00
Nephtys cornuta franciscana	OP	0.01	0.01	0.03	0.02	0.08	0.02	0.02	0.01	0.04	0.03	0.01	0.01
Nephtys sp.	PRE-OP	0.40	0.16	0.54	0.14	0.62	0.13	0.94	0.25	0.79	0.20	0.73	0.23
	OP	0.59	0.14	0.35	0.08	0.41	0.10	0.59	0.10	0.51	0.07	0.34	0.08
Nephtys sp. (not counted as sp)	PRE-OP	0.17	0.13	0.00	0.00	0.00	0.00	0.17	0.13	0.04	0.04	0.06	0.06
	OP	0.06	0.04	0.03	0.02	0.10	0.06	0.01	0.01	0.00	0.00	0.04	0.03
Nereidae unidentified	OP	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Nereis latescens	PRE-OP	0.02	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.02
	OP	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01
Nereis procera	OP	0.02	0.02	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Nereis sp.	PRE-OP	0.00	0.00	0.02	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.05
	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00
Neverita reclusiana	PRE-OP	0.04	0.02	0.00	0.00	0.00	0.00	0.02	0.02	0.02	0.02	0.00	0.00
	OP	0.03	0.02	0.03	0.02	0.02	0.01	0.14	0.06	0.13	0.06	0.22	0.06

SOFT BENTHOS AVERAGE ABUNDANCE

DEPTH IS 8 METERS

SPECIES NAME	PERIOD	700 METERS MEAN	700 METERS SE	1100 METERS MEAN	1100 METERS SE	1900 METERS MEAN	1900 METERS SE	3350 METERS MEAN	3350 METERS SE	6700 METERS MEAN	6700 METERS SE	9400 METERS MEAN	9400 METERS SE
Notomastus (C.) tenuis	PRE-OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00
	OP	0.03	0.03	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Notomastus sp.	OP	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Nuculana hindsii	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00
Nuculana sp.	PRE-OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.05	0.02	0.02
	OP	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Nuculana taphira	PRE-OP	0.00	0.00	0.00	0.00	0.02	0.02	0.02	0.02	0.00	0.00	0.02	0.02
Nymphon cf. heterodenticulatum	PRE-OP	5.85	2.55	0.69	0.30	0.65	0.24	0.40	0.15	0.25	0.12	0.46	0.17
	OP	1.01	0.37	0.62	0.26	0.34	0.09	0.25	0.06	0.09	0.05	0.13	0.05
O. amphipoda unidentified	OP	0.02	0.01	0.00	0.00	0.00	0.00	0.05	0.04	0.00	0.00	0.02	0.01
O. decapoda unidentified	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00
Odontosyllis phosphorea	PRE-OP	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Odontosyllis sp.	OP	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Odostomia (Evalea) sp.	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00
Odostomia (Evalea) sp. B	PRE-OP	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00
	PRE-OP	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.03	0.02
Odostomia (Evalea) sp. H	PRE-OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.00
Odostomia (Evalea) sp.C	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00
Odostomia (Ivara) turricula	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00
Ogyrides sp.	PRE-OP	0.02	0.02	0.02	0.02	0.00	0.00	0.00	0.00	0.02	0.02	0.04	0.02
	OP	0.00	0.00	0.01	0.01	0.02	0.01	0.02	0.01	0.01	0.01	0.00	0.00
Olivella baetica	PRE-OP	0.29	0.11	0.52	0.21	0.67	0.22	0.48	0.22	0.35	0.15	0.40	0.11
	OP	0.20	0.05	0.16	0.04	0.29	0.09	0.24	0.06	0.32	0.08	0.29	0.07
Onuphidae (not counted as sp)	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.05	0.02	0.00	0.00
Onuphidae unidentified	OP	0.01	0.01	0.01	0.01	0.02	0.01	0.01	0.01	0.08	0.03	0.02	0.01
Onuphis eremita	PRE-OP	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	OP	0.02	0.02	0.03	0.02	0.00	0.00	0.04	0.02	0.10	0.02	0.04	0.02
Onuphis iridescens	PRE-OP	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00
	OP	0.01	0.01	0.00	0.00	0.00	0.00	0.01	0.01	0.06	0.04	0.00	0.00
Onuphis sp.	PRE-OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00

SOFT BENTHOS AVERAGE ABUNDANCE

DEPTH IS 8 METERS

SPECIES NAME	PERIOD	700 METERS MEAN	700 METERS SE	1100 METERS MEAN	1100 METERS SE	1900 METERS MEAN	1900 METERS SE	3350 METERS MEAN	3350 METERS SE	6700 METERS MEAN	6700 METERS SE	9400 METERS MEAN	9400 METERS SE
	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00
Ophiodermella halcyonis	PRE-OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00
	OP	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ophiodermella inermis	OP	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ophiuroconis bispinosa	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00
Ophiuroidea juvenile	PRE-OP	0.04	0.02	0.00	0.00	0.02	0.02	0.00	0.00	0.06	0.03	0.04	0.02
	OP	0.03	0.02	0.02	0.01	0.04	0.02	0.06	0.03	0.04	0.02	0.08	0.03
Opistobranch sp. X	PRE-OP	0.02	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.02	0.00	0.00
Orbinidae (not counted as sp)	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00
Orbinidae unidentified	OP	0.00	0.00	0.00	0.00	0.01	0.01	0.02	0.01	0.01	0.01	0.01	0.01
Orchomene anaquela	PRE-OP	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Orchomene magdalenensis	PRE-OP	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Owenia collaris	PRE-OP	34.94	8.52	12.17	6.05	26.71	10.07	7.77	4.18	2.44	1.56	17.69	7.20
	OP	0.09	0.03	0.09	0.03	0.00	0.00	0.06	0.03	0.02	0.01	0.06	0.02
Oxyurostylis pacifica	OP	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.06	0.02	0.00	0.00
OCOE0019	OP	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OEOP0003	OP	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OPH00999	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00
Pachynus barnardi	OP	0.03	0.02	0.01	0.01	0.05	0.03	0.01	0.01	0.14	0.04	0.02	0.01
Pagurus sp.	PRE-OP	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	OP	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paleanotus bellis	PRE-OP	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	OP	0.01	0.01	0.02	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Parandalia fauveli	PRE-OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00
Paranemertes sp. A	PRE-OP	0.21	0.07	0.31	0.08	0.29	0.07	0.29	0.09	0.19	0.06	0.46	0.12
	OP	0.27	0.07	0.15	0.05	0.30	0.07	0.14	0.04	0.29	0.08	0.27	0.06
Paranemertes sp. B	OP	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paraonella platybranchiata	PRE-OP	0.12	0.05	0.12	0.05	0.10	0.06	0.02	0.02	0.00	0.00	0.02	0.02
	OP	0.46	0.07	0.47	0.08	0.54	0.08	0.14	0.03	0.10	0.03	0.10	0.04
Paraonella sp.	PRE-OP	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

SOFT BENTHOS AVERAGE ABUNDANCE

DEPTH IS 8 METERS

SPECIES NAME	PERIOD	700 METERS MEAN	700 METERS SE	1100 METERS MEAN	1100 METERS SE	1900 METERS MEAN	1900 METERS SE	3350 METERS MEAN	3350 METERS SE	6700 METERS MEAN	6700 METERS SE	9400 METERS MEAN	9400 METERS SE
Paraonidae (not counted as sp)	PRE-OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00
	OP	0.02	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00
Paraonidae unidentified	PRE-OP	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00
Parapleustes pugettensis	PRE-OP	0.04	0.00	0.00	0.00	0.00	0.00	0.02	0.02	0.02	0.02	0.00	0.00
	OP	0.03	0.02	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Paraprionospio pinnata	PRE-OP	0.04	0.03	0.12	0.05	0.02	0.02	0.08	0.05	0.06	0.03	0.08	0.03
	OP	0.10	0.03	0.11	0.04	0.20	0.05	0.15	0.05	0.34	0.05	0.09	0.03
Parasitic copepod	PRE-OP	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Parasterope hulingsi	PRE-OP	0.40	0.13	0.17	0.07	0.19	0.05	0.08	0.04	0.27	0.07	0.46	0.17
	OP	0.24	0.05	0.15	0.04	0.16	0.06	0.17	0.04	0.13	0.04	0.11	0.03
Pareulepis fimbriata	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.02	0.01	0.01	0.01	0.01
Parvilucina tenuisculpta	PRE-OP	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.00	0.00
Pectinaria californiensis	PRE-OP	0.29	0.07	0.15	0.08	0.19	0.08	0.10	0.07	0.23	0.18	0.12	0.05
	OP	0.80	0.19	0.63	0.17	0.49	0.10	0.66	0.18	0.42	0.10	0.40	0.11
Pelecypoda	OP	0.00	0.00	0.00	0.00	0.03	0.01	0.08	0.02	0.02	0.01	0.02	0.01
Pelecypoda unidentified	PRE-OP	0.00	0.00	0.06	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.02
	OP	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	OP	0.12	0.06	0.09	0.05	0.00	0.00	0.06	0.05	0.03	0.02	0.03	0.02
Periploma planulsculum	OP	0.04	0.02	0.08	0.03	0.05	0.03	0.09	0.03	0.11	0.04	0.01	0.01
Petricola tellimyalis	PRE-OP	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00
Philine sp. A	OP	0.03	0.02	0.01	0.01	0.00	0.00	0.02	0.01	0.00	0.00	0.03	0.02
Phoronis spp.	PRE-OP	0.04	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.02	0.02	0.02
	OP	0.15	0.05	0.13	0.04	0.17	0.05	0.14	0.05	0.19	0.04	0.14	0.04
Photis bifurcata	OP	0.06	0.05	0.00	0.00	0.02	0.02	0.10	0.02	0.00	0.00	0.02	0.02
Photis brevipes	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.04	0.03	0.03
Photis californica	PRE-OP	0.19	0.07	0.42	0.20	0.31	0.13	0.44	0.13	0.48	0.12	0.40	0.14
	OP	0.44	0.15	0.26	0.07	0.22	0.07	0.06	0.03	0.31	0.12	0.15	0.04
Photis lacia	PRE-OP	0.04	0.04	0.10	0.06	0.04	0.04	0.13	0.07	0.06	0.06	0.00	0.00
	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.04	0.03	0.00	0.00
Photis macrotica	PRE-OP	0.06	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	OP	0.13	0.10	0.19	0.07	0.08	0.04	0.27	0.07	0.30	0.10	0.08	0.05

SOFT BENTHOS AVERAGE ABUNDANCE

DEPTH IS 8 METERS

SPECIES NAME	PERIOD	700 METERS MEAN	700 METERS SE	1100 METERS MEAN	1100 METERS SE	1900 METERS MEAN	1900 METERS SE	3350 METERS MEAN	3350 METERS SE	6700 METERS MEAN	6700 METERS SE	9400 METERS MEAN	9400 METERS SE
Phyllodoce (Anaitides) papillosa	OP	0.00	0.00	0.00	0.00	0.02	0.02	0.00	0.00	0.02	0.00	0.01	0.01
Phyllodoce (Aponaitides) hartmanae	PRE-OP	0.04	0.02	0.00	0.00	0.00	0.00	0.04	0.02	0.04	0.04	0.00	0.00
	OP	0.06	0.02	0.04	0.02	0.02	0.02	0.09	0.03	0.05	0.03	0.10	0.03
Phyllodoce sp.	PRE-OP	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.02	0.02	0.02	0.00	0.00
	OP	0.01	0.01	0.00	0.00	0.00	0.00	0.02	0.01	0.02	0.01	0.02	0.01
Phyllodoce sp. (not counted as sp)	OP	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.01	0.01	0.03	0.03
Phyllodocidae unidentified	PRE-OP	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.02	0.00	0.00	0.02	0.02
Pinnixa hiatus	OP	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pinnixa longipes	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00
Pinnixa sp. juvenile	PRE-OP	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00
	OP	0.00	0.00	0.01	0.01	0.00	0.00	0.02	0.01	0.00	0.00	0.00	0.00
Pinnixa tubicola/tomentosa	OP	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pisione remota	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00
Pista disjuncta	OP	0.02	0.01	0.02	0.02	0.06	0.03	0.46	0.15	2.16	0.45	1.31	0.29
Pista sp.	PRE-OP	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Platynereis bicanaliculata	OP	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Podakeopsis brevipalpa	PRE-OP	0.02	0.02	0.00	0.00	0.08	0.02	0.02	0.02	0.02	0.02	0.02	0.02
	OP	0.16	0.04	0.03	0.02	0.15	0.04	0.00	0.00	0.00	0.00	0.04	0.02
Podocerus cristata	OP	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Podocopid B	PRE-OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00
	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00
Podocopid C	OP	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Podocopid D	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.02	0.00
Podocopid E	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00
Podocopid F	OP	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Podocopid G	OP	0.00	0.00	0.01	0.01	0.02	0.01	0.00	0.00	0.01	0.01	0.06	0.05
Podocopid H	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00
Poecilochaetous sp.	OP	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00

SOFT BENTHOS AVERAGE ABUNDANCE

DEPTH IS 8 METERS

SPECIES NAME	PERIOD	700 METERS MEAN	700 METERS SE	1100 METERS MEAN	1100 METERS SE	1900 METERS MEAN	1900 METERS SE	3350 METERS MEAN	3350 METERS SE	6700 METERS MEAN	6700 METERS SE	9400 METERS MEAN	9400 METERS SE
Polychaete unidentified	OP	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Polycirrus californicus	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00
Polycirrus sp.	OP	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.02	0.02	0.11	0.02
Polydora bioccipitalis	OP	0.01	0.01	0.00	0.00	0.02	0.01	0.01	0.01	0.04	0.02	0.02	0.01
Polydora nuchalis	OP	0.09	0.07	0.01	0.01	0.00	0.00	0.00	0.00	0.04	0.04	0.06	0.04
Polydora sp.	PRE-OP	0.00	0.00	0.00	0.00	0.02	0.02	0.06	0.05	0.00	0.00	0.00	0.00
	OP	0.00	0.00	0.01	0.01	0.00	0.00	0.12	0.10	0.00	0.00	0.14	0.09
Polynoidae unidentified	PRE-OP	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	OP	0.00	0.00	0.00	0.00	0.02	0.01	0.02	0.01	0.01	0.01	0.01	0.01
Pontogeneia rostrata	OP	0.08	0.05	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00
Porcellidium sp.	PRE-OP	0.02	0.02	0.02	0.02	0.06	0.03	0.00	0.00	0.02	0.02	0.00	0.00
	OP	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.04
Prionospio cirrifera	OP	1.82	0.41	0.44	0.18	2.16	0.82	0.52	0.14	0.31	0.11	0.66	0.26
Prionospio pygmaea	PRE-OP	4.48	1.71	16.08	5.19	4.90	1.30	7.81	2.26	2.96	0.73	1.50	0.41
	OP	3.95	0.80	4.53	0.67	3.72	0.81	3.53	0.80	2.10	0.37	2.28	0.43
Prionospio sp.	PRE-OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.00	0.00	0.00
	OP	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Prionospio sp. (not counted as sp)	OP	0.12	0.09	0.01	0.01	0.01	0.01	0.01	0.01	0.12	0.08	0.05	0.03
Psephidia sp.	OP	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pyromaia tuberculata	PRE-OP	0.02	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.02	0.00
PGON9090	PRE-OP	0.02	0.02	0.00	0.00	0.02	0.02	0.00	0.00	0.00	0.00	0.00	0.00
	OP	0.01	0.01	0.02	0.01	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00
PHES0003	OP	0.00	0.00	0.03	0.02	0.03	0.01	0.00	0.00	0.01	0.01	0.00	0.00
PPAR0029	OP	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PSAB0400	OP	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Randallia ornata	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00
Renilla kolleri	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00
Rhepoxynius abronius	PRE-OP	0.10	0.05	0.10	0.05	0.15	0.08	0.10	0.04	0.06	0.03	0.12	0.05
	OP	0.42	0.10	0.39	0.12	0.46	0.08	1.40	0.24	0.97	0.15	0.60	0.11
Rhepoxynius daboius	PRE-OP	0.06	0.04	0.02	0.02	0.00	0.00	0.02	0.02	0.04	0.02	0.00	0.00

SOFT BENTHOS AVERAGE ABUNDANCE

DEPTH IS 8 METERS

SPECIES NAME	PERIOD	700 METERS MEAN	700 METERS SE	1100 METERS MEAN	1100 METERS SE	1900 METERS MEAN	1900 METERS SE	3350 METERS MEAN	3350 METERS SE	6700 METERS MEAN	6700 METERS SE	9400 METERS MEAN	9400 METERS SE
	OP	0.09	0.03	0.17	0.07	0.14	0.06	0.23	0.07	0.28	0.07	0.32	0.09
Rhepoxynius heterocuspidatus	OP	0.00	0.00	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Rhepoxynius lucubrans	OP	0.01	0.01	0.01	0.01	0.00	0.00	0.03	0.03	0.00	0.00	0.02	0.02
Rhepoxynius menziese	PRE-OP	0.56	0.13	0.37	0.11	0.75	0.22	0.69	0.15	0.40	0.14	0.31	0.08
	OP	0.40	0.07	0.44	0.11	0.62	0.12	0.83	0.11	0.60	0.10	0.90	0.48
Rhepoxynius sp. juvenile	PRE-OP	0.00	0.00	0.17	0.08	0.04	0.03	0.06	0.04	0.02	0.02	0.08	0.03
	PRE-OP	0.65	0.14	0.81	0.25	0.27	0.12	0.56	0.14	0.37	0.07	0.56	0.14
	OP	0.01	0.01	0.13	0.05	0.12	0.05	0.02	0.01	0.10	0.06	0.03	0.02
	OP	0.28	0.07	0.38	0.09	0.39	0.09	0.63	0.10	0.41	0.09	0.53	0.11
Rhepoxynius sp. A	PRE-OP	0.37	0.13	0.67	0.21	0.37	0.16	0.56	0.17	0.33	0.09	0.08	0.05
	OP	0.72	0.10	0.87	0.14	0.80	0.14	1.20	0.18	0.87	0.16	0.78	0.16
Rhepoxynius stenodes	OP	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01
Rhepoxynius variatus	PRE-OP	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00
Rictaxis punctocoelatus	PRE-OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.00
	OP	0.01	0.01	0.03	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rissoina sp.	OP	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rutiderma judayi	PRE-OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00
Rutiderma rostrata	PRE-OP	0.02	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.02	0.00	0.00
	OP	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.01	0.01
Sabellaria cementarium	PRE-OP	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sabellaria nanella	PRE-OP	0.00	0.00	0.00	0.00	0.00	0.00	0.17	0.09	0.00	0.00	0.00	0.00
	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00
Sabellaria sp.	PRE-OP	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00
Sabellidae unidentified	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01
Saxidomus nuttalli	PRE-OP	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00
Scolelepis sp.	OP	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Scolelepis squamata	OP	0.01	0.01	0.00	0.00	0.00	0.00	0.02	0.01	0.00	0.00	0.02	0.02
Scoloplos acmeceps	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00
Scoloplos armiger	PRE-OP	0.10	0.06	0.06	0.04	0.10	0.07	0.50	0.22	0.25	0.10	0.15	0.12
	OP	0.54	0.11	0.80	0.15	0.59	0.11	0.72	0.14	0.29	0.10	0.89	0.22

SOFT BENTHOS AVERAGE ABUNDANCE

DEPTH IS 8 METERS

SPECIES NAME	PERIOD	700 METERS MEAN	700 METERS SE	1100 METERS MEAN	1100 METERS SE	1900 METERS MEAN	1900 METERS SE	3350 METERS MEAN	3350 METERS SE	6700 METERS MEAN	6700 METERS SE	9400 METERS MEAN	9400 METERS SE
Scoloplos sp.	PRE-OP	0.21	0.12	0.21	0.14	0.19	0.09	0.27	0.15	0.15	0.07	0.31	0.09
	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00
Scolopos sp. (not counted as sp)	PRE-OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00
	OP	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.02	0.01	0.00	0.00
Shrimp juvenile	OP	0.01	0.01	0.00	0.00	0.00	0.00	0.01	0.01	0.02	0.01	0.06	0.03
Shrimp-larvae	OP	0.00	0.00	0.02	0.01	0.00	0.00	0.03	0.02	0.03	0.01	0.03	0.02
Sigalionidae (not counted as sp)	PRE-OP	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sigalionidae unidentified	PRE-OP	0.00	0.00	0.00	0.00	0.02	0.02	0.00	0.00	0.00	0.00	0.02	0.02
	OP	0.00	0.00	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Sigambra tentaculata	PRE-OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00
Siliqua lucida	PRE-OP	0.02	0.02	0.00	0.00	0.08	0.08	0.00	0.00	0.04	0.02	0.48	0.28
	OP	0.39	0.26	0.05	0.03	0.06	0.04	0.11	0.04	0.33	0.15	1.23	1.01
Siphonosoma ingens	PRE-OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00
Sipuncula unidentified	PRE-OP	0.02	0.02	0.00	0.00	0.02	0.02	0.02	0.02	0.00	0.00	0.00	0.00
	OP	0.02	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.02
Solen rosaceus	PRE-OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00
	OP	0.90	0.38	0.06	0.03	1.03	0.62	2.27	1.53	1.59	0.94	2.10	1.13
Solen sicarius	PRE-OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.05	0.08	0.05
	OP	0.24	0.06	0.00	0.00	0.01	0.01	0.00	0.00	0.05	0.01	0.97	0.63
Solen sp.	PRE-OP	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.00	0.00	0.00	0.00
	OP	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01
Solen sp. (not counted as sp)	PRE-OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.17	0.00	0.00	0.00
Sphaerodoropsis biserialis	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00
Spiochaetopterus costarum	PRE-OP	0.00	0.00	0.00	0.00	0.06	0.02	0.00	0.00	0.00	0.00	0.00	0.00
	OP	0.12	0.05	0.06	0.03	0.04	0.02	0.06	0.03	0.01	0.01	0.03	0.02
Spionidae (not counted as sp)	PRE-OP	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00
	OP	0.00	0.00	0.02	0.02	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01
Spionidae unidentified	PRE-OP	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.02	0.00	0.00	0.00	0.00
	OP	0.00	0.00	0.00	0.00	0.03	0.02	0.00	0.00	0.01	0.01	0.00	0.00
Spiophanes bombyx	PRE-OP	0.12	0.05	0.40	0.10	0.58	0.23	0.62	0.16	0.27	0.08	0.10	0.05
	OP	0.99	0.16	0.76	0.11	0.51	0.07	1.23	0.17	0.45	0.07	0.69	0.18
Spiophanes missionensis	PRE-OP	0.00	0.00	0.02	0.02	0.02	0.02	0.06	0.02	0.00	0.00	0.00	0.00
	OP	0.15	0.06	0.19	0.05	0.12	0.05	0.29	0.06	0.16	0.07	0.16	0.08

SOFT BENTHOS AVERAGE ABUNDANCE

DEPTH IS 8 METERS

SPECIES NAME	PERIOD	700 METERS MEAN	700 METERS SE	1100 METERS MEAN	1100 METERS SE	1900 METERS MEAN	1900 METERS SE	3350 METERS MEAN	3350 METERS SE	6700 METERS MEAN	6700 METERS SE	9400 METERS MEAN	9400 METERS SE
Splophanes sp.	PRE-OP	0.02	0.02	0.06	0.04	0.00	0.00	0.04	0.02	0.08	0.04	0.02	0.02
	OP	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.01	0.01
Splophanes sp. (not counted as sp)	PRE-OP	0.00	0.00	0.04	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00
	OP	0.03	0.02	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00
Stenothoe estacola	PRE-OP	0.19	0.12	0.04	0.04	0.02	0.02	0.02	0.02	0.02	0.02	0.00	0.00
	OP	0.09	0.02	0.01	0.01	0.05	0.02	0.01	0.01	0.03	0.02	0.01	0.01
Sthenelais sp.	OP	0.00	0.00	0.04	0.02	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.01
Sthenelais tertiaglabra	OP	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.03	0.01
Sthenelais verruculosa	PRE-OP	0.00	0.00	0.02	0.02	0.04	0.03	0.00	0.00	0.00	0.00	0.00	0.00
	OP	0.00	0.00	0.03	0.01	0.00	0.00	0.02	0.01	0.00	0.00	0.02	0.01
Sthenelanella uniformis	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00
Sulcoretusa xystrum	PRE-OP	0.00	0.00	0.00	0.00	0.04	0.02	0.02	0.02	0.00	0.00	0.04	0.02
	OP	0.00	0.00	0.05	0.02	0.03	0.02	0.00	0.00	0.04	0.02	0.05	0.02
Syllidia sp. C	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00
Synchelidium rectipalmum	OP	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Synchelidium shoemakeri	PRE-OP	0.75	0.18	0.71	0.12	0.58	0.14	0.67	0.19	0.71	0.15	0.67	0.14
	OP	0.59	0.10	0.78	0.17	0.99	0.19	0.53	0.11	0.24	0.06	0.26	0.06
Synidotea hartfordi	OP	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Synidotea magnifica	OP	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tauberia gracilis	PRE-OP	0.04	0.04	0.06	0.04	0.02	0.02	0.00	0.00	0.00	0.00	0.02	0.02
	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00
Tellina carpenteri	PRE-OP	0.00	0.00	0.00	0.00	0.02	0.02	0.00	0.00	0.00	0.00	0.02	0.02
	OP	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tellina modesta	PRE-OP	1.65	0.29	1.04	0.23	1.62	0.28	2.65	0.57	1.54	0.25	2.75	0.57
	OP	0.47	0.15	0.22	0.07	0.88	0.17	0.35	0.07	0.32	0.07	0.63	0.14
Terebellidae juvenile	OP	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00
Tetrastemma spp.	OP	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Thalenessa spinosa	PRE-OP	0.35	0.10	0.27	0.15	0.15	0.05	0.23	0.09	0.27	0.09	0.29	0.09
	OP	0.30	0.06	0.13	0.04	0.18	0.03	0.37	0.06	0.23	0.05	0.32	0.06
Tharyx sp.	OP	0.02	0.01	0.02	0.01	0.02	0.01	0.01	0.01	0.45	0.42	0.03	0.03
Thecondonta oblongus	PRE-OP	0.02	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.00

SOFT BENTHOS AVERAGE ABUNDANCE

DEPTH IS 8 METERS.

SPECIES NAME	PERIOD	700 METERS MEAN	700 METERS SE	1100 METERS MEAN	1100 METERS SE	1900 METERS MEAN	1900 METERS SE	3350 METERS MEAN	3350 METERS SE	6700 METERS MEAN	6700 METERS SE	9400 METERS MEAN	9400 METERS SE
	OP	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.03	0.01	0.00	0.00
Tiron biocellata	OP	0.11	0.05	0.22	0.06	0.66	0.31	0.04	0.02	0.12	0.07	0.08	0.05
Tiron tropakis	PRE-OP	0.12	0.07	1.21	0.57	0.44	0.17	0.62	0.18	0.31	0.11	0.54	0.18
Travisia gigas	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00
Travisia sp.	OP	0.02	0.01	0.00	0.00	0.00	0.00	0.01	0.01	0.02	0.01	0.05	0.02
Tricolia pulloides	PRE-OP	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	OP	0.04	0.02	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.02	0.01
Tricolia rubrilineata	OP	0.09	0.05	0.00	0.00	0.01	0.01	0.01	0.01	0.02	0.01	0.02	0.01
Tricolia sp.	OP	0.01	0.01	0.00	0.00	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Tubulanidae sp. B	PRE-OP	0.15	0.09	0.15	0.06	0.15	0.08	0.10	0.05	0.10	0.06	0.27	0.07
	OP	0.17	0.04	0.06	0.02	0.17	0.05	0.09	0.03	0.12	0.05	0.12	0.05
Tubulanus nothus (black)	PRE-OP	0.04	0.02	0.02	0.02	0.06	0.04	0.04	0.02	0.06	0.04	0.00	0.00
	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00
Tubulanus pellucidus (red)	PRE-OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00
	OP	0.00	0.00	0.02	0.01	0.03	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Tubulanus sp. P	OP	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Turbonilla (Chemnitzia) sp.	OP	0.02	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.01	0.01	0.01	0.01
Turbonilla (Chemnitzia) sp. A	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00
Turbonilla (Chemnitzia) sp. B	PRE-OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00
Turbonilla (Chemnitzia) sp. C	OP	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Turbonilla (Pyrgiscus) sp. F	OP	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00
Typosyllis hyalina	PRE-OP	0.29	0.07	0.71	0.18	0.08	0.05	0.29	0.10	0.31	0.06	0.52	0.10
	OP	0.00	0.00	0.01	0.01	0.10	0.04	0.08	0.03	0.08	0.02	0.15	0.03
Volvuella cylindrica	OP	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Yoldia cooperi	PRE-OP	0.12	0.05	0.12	0.06	0.19	0.09	0.56	0.20	0.19	0.07	0.10	0.05
	OP	0.13	0.03	0.10	0.05	0.24	0.08	0.05	0.02	0.04	0.02	0.08	0.03
Zaolutus actius	PRE-OP	0.08	0.04	0.00	0.00	0.06	0.04	0.00	0.00	0.00	0.00	0.02	0.02
	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00
Zygeupolia sp.	PRE-OP	0.81	0.17	0.35	0.14	0.25	0.09	1.04	0.24	1.60	0.24	0.94	0.20
	OP	0.05	0.02	0.08	0.03	0.05	0.02	0.01	0.01	0.05	0.03	0.06	0.03

SOFT BENTHOS AVERAGE ABUNDANCE

DEPTH IS 18 METERS

SPECIES NAME	PERIOD	700 METERS MEAN	700 METERS SE	1100 METERS MEAN	1100 METERS SE	1900 METERS MEAN	1900 METERS SE	3350 METERS MEAN	3350 METERS SE	6700 METERS MEAN	6700 METERS SE	9400 METERS MEAN	9400 METERS SE
? Halosydna sp.	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00
cf. Cactosoma arenaria	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00
Acesta catherinae	PRE-OP	0.94	0.33	1.25	0.21	1.75	0.46	1.15	0.24	1.04	0.21	0.73	0.13
	OP	6.24	0.73	4.71	0.33	3.94	0.34	2.93	0.32	2.98	0.45	3.54	0.35
Acesta horikoshii	PRE-OP	0.02	0.02	0.04	0.04	0.04	0.02	0.02	0.02	0.02	0.02	0.04	0.02
	OP	0.08	0.02	0.11	0.02	0.09	0.03	0.03	0.02	0.04	0.02	0.05	0.02
Acesta sp. B	PRE-OP	0.00	0.00	0.02	0.02	0.00	0.00	0.02	0.02	0.00	0.00	0.00	0.00
Acteocina culcitella	OP	0.02	0.02	0.00	0.00	0.01	0.01	0.01	0.01	0.00	0.00	0.01	0.01
Acteocina harpa	PRE-OP	0.02	0.02	0.00	0.00	0.00	0.00	0.02	0.02	0.00	0.00	0.00	0.00
	OP	0.02	0.02	0.02	0.01	0.01	0.01	0.02	0.02	0.04	0.02	0.03	0.02
Acteocina inculta	OP	0.00	0.00	0.00	0.00	0.01	0.01	0.02	0.02	0.01	0.01	0.03	0.03
Acteocina sp.	OP	0.00	0.00	0.00	0.00	0.04	0.03	0.00	0.00	0.01	0.01	0.01	0.01
Acuminodeutopus heteruropus	PRE-OP	1.83	0.82	0.94	0.39	2.29	1.07	2.37	1.07	2.69	1.20	3.37	1.11
	OP	6.09	0.81	5.21	0.70	7.84	1.05	5.95	0.70	6.59	0.97	8.33	1.30
Adontorhina sp.	PRE-OP	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00
Aedicira pacifica	PRE-OP	0.02	0.02	0.00	0.00	0.04	0.03	0.04	0.03	0.02	0.02	0.02	0.02
	OP	0.02	0.01	0.02	0.01	0.02	0.02	0.14	0.03	0.08	0.02	0.02	0.01
Aglaja ocelligera	PRE-OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00
	OP	0.04	0.02	0.00	0.00	0.00	0.00	0.03	0.02	0.00	0.00	0.01	0.01
Alia carinata	PRE-OP	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	OP	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Alia antennata	OP	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Alpheus clamator	PRE-OP	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Amaeana occidentalis	PRE-OP	0.06	0.03	0.04	0.03	0.08	0.04	0.04	0.03	0.00	0.00	0.17	0.06
	OP	0.01	0.01	0.04	0.01	0.00	0.00	0.02	0.01	0.00	0.00	0.00	0.00
Amastigos acutus	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.01	0.01
Ampelisca agassizi	PRE-OP	0.27	0.12	0.69	0.44	0.21	0.05	0.06	0.03	0.52	0.16	0.69	0.18
	OP	1.32	0.43	0.63	0.11	0.78	0.24	0.80	0.28	0.54	0.21	0.28	0.09
Ampelisca brevisimulata	PRE-OP	1.21	0.53	0.31	0.13	0.73	0.23	0.33	0.07	0.42	0.12	0.60	0.16
	OP	1.08	0.15	1.02	0.16	1.12	0.14	1.35	0.20	1.14	0.12	1.16	0.18

SOFT BENTHOS AVERAGE ABUNDANCE

DEPTH IS 18 METERS

SPECIES NAME	PERIOD	700 METERS MEAN	700 METERS SE	1100 METERS MEAN	1100 METERS SE	1900 METERS MEAN	1900 METERS SE	3350 METERS MEAN	3350 METERS SE	6700 METERS MEAN	6700 METERS SE	9400 METERS MEAN	9400 METERS SE
Ampelisca careyi	OP	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ampelisca cristata	PRE-OP	0.50	0.19	0.40	0.09	0.69	0.11	0.50	0.15	0.98	0.27	0.81	0.17
	OP	0.20	0.05	0.14	0.05	0.30	0.10	0.37	0.08	0.43	0.09	0.22	0.06
Ampelisca cristata microdentata	OP	1.15	0.24	0.72	0.14	0.78	0.12	0.88	0.14	0.69	0.15	0.41	0.07
Ampelisca juvenile	PRE-OP	0.08	0.05	0.00	0.00	0.06	0.06	0.00	0.00	0.04	0.04	0.00	0.00
Ampelisca juvenile(not counted as sp)	PRE-OP	0.02	0.02	0.00	0.00	0.00	0.00	0.04	0.04	0.00	0.00	0.19	0.11
Ampelisca pugetica	PRE-OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.02	0.00	0.00
Ampharete labrops	PRE-OP	0.02	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.02	0.00	0.00
	OP	0.01	0.01	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.04	0.03
Ampharete sp.	PRE-OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	OP	0.01	0.01	0.00	0.00	0.00	0.00	0.01	0.01	0.02	0.01	0.00	0.00
Ampharetidae (not counted as sp)	PRE-OP	0.08	0.05	0.00	0.00	0.02	0.02	0.00	0.00	0.04	0.02	0.04	0.04
	OP	0.06	0.03	0.08	0.04	0.05	0.04	0.09	0.05	0.05	0.04	0.06	0.05
Ampharetidae juvenile	PRE-OP	0.04	0.03	0.06	0.03	0.08	0.04	0.00	0.00	0.04	0.03	0.00	0.00
	OP	0.12	0.04	0.05	0.02	0.16	0.05	0.13	0.06	0.09	0.03	0.05	0.02
Amphictels scaphobranchiata	PRE-OP	0.08	0.04	0.02	0.02	0.04	0.04	0.08	0.05	0.04	0.02	0.04	0.04
	OP	0.29	0.07	0.20	0.06	0.15	0.04	0.11	0.04	0.11	0.02	0.11	0.04
Amphictels sp.	PRE-OP	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	OP	0.00	0.00	0.00	0.00	0.02	0.01	0.00	0.00	0.00	0.00	0.01	0.01
Amphideutopus oculatus	PRE-OP	1.54	0.80	0.69	0.28	1.58	0.74	1.46	0.73	3.77	2.06	1.62	0.85
	OP	0.77	0.15	1.03	0.21	1.62	0.23	1.41	0.27	1.38	0.27	1.65	0.30
Amphilocus litoralis	OP	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Amphilocus neopolitanus	OP	0.01	0.01	0.00	0.00	0.01	0.01	0.01	0.01	0.00	0.00	0.01	0.01
Amphiodia occidentalis	PRE-OP	0.04	0.04	0.00	0.00	0.02	0.02	0.12	0.09	0.00	0.00	0.02	0.02
Amphiodia spp. juvenile	PRE-OP	0.69	0.31	0.79	0.29	1.48	0.70	1.29	0.77	1.12	0.52	0.81	0.31
	OP	0.01	0.01	0.00	0.00	0.01	0.01	0.02	0.01	0.00	0.00	0.00	0.00
Amphiodia urtica	PRE-OP	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Amphioplus hexacanthus	PRE-OP	0.00	0.00	0.02	0.02	0.02	0.02	0.00	0.00	0.00	0.00	0.00	0.00
	OP	0.03	0.02	0.03	0.02	0.01	0.01	0.01	0.01	0.00	0.00	0.01	0.01
Amphipoda unidentified (not counted as s	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00
Amphiporus spp.	PRE-OP	0.02	0.02	0.06	0.04	0.06	0.04	0.04	0.04	0.02	0.02	0.12	0.09
	OP	0.11	0.05	0.09	0.03	0.02	0.02	0.10	0.05	0.00	0.00	0.02	0.02

SOFT BENTHOS AVERAGE ABUNDANCE

DEPTH IS 18 METERS

SPECIES NAME	PERIOD	700 METERS MEAN	700 METERS SE	1100 METERS MEAN	1100 METERS SE	1900 METERS MEAN	1900 METERS SE	3350 METERS MEAN	3350 METERS SE	6700 METERS MEAN	6700 METERS SE	9400 METERS MEAN	9400 METERS SE
Anchicolurus occidentalis	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00
Ancinus granulatus	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00
Ancistrosyllis hamata	PRE-OP	0.12	0.05	0.02	0.02	0.06	0.04	0.06	0.03	0.15	0.05	0.04	0.03
	OP	0.09	0.03	0.01	0.01	0.03	0.02	0.02	0.01	0.03	0.02	0.02	0.01
Ancistrosyllis sp.	PRE-OP	0.00	0.00	0.02	0.02	0.00	0.00	0.02	0.02	0.00	0.00	0.00	0.00
Anoplodactylus sp.	OP	0.01	0.01	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Anotomastus gordiodes	PRE-OP	0.40	0.10	0.25	0.08	0.83	0.13	0.60	0.14	0.44	0.11	0.90	0.17
	OP	0.28	0.07	0.26	0.06	0.13	0.04	0.12	0.03	0.24	0.05	0.20	0.05
Anotomastus sp.	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00
Aoroides inermis	OP	0.01	0.01	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00
Aphrodita sp.	PRE-OP	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00
Arabella iricolor	PRE-OP	0.02	0.02	0.02	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	OP	0.02	0.01	0.02	0.01	0.05	0.02	0.01	0.01	0.01	0.01	0.01	0.01
Arabellidae	PRE-OP	0.04	0.04	0.00	0.00	0.02	0.02	0.04	0.03	0.06	0.04	0.04	0.03
	OP	0.04	0.02	0.04	0.02	0.13	0.03	0.08	0.02	0.04	0.02	0.05	0.02
Arabellidae (not counted as sp)	PRE-OP	0.04	0.02	0.00	0.00	0.02	0.02	0.00	0.00	0.00	0.00	0.00	0.00
	OP	0.01	0.01	0.00	0.00	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Argissa hamatipes	PRE-OP	0.21	0.07	0.17	0.06	0.17	0.08	0.21	0.08	0.23	0.06	0.17	0.08
	OP	1.77	0.47	0.96	0.25	0.89	0.26	0.86	0.21	0.95	0.25	1.03	0.26
Aricidea sp. A	PRE-OP	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	OP	0.02	0.01	0.02	0.01	0.06	0.02	0.06	0.02	0.08	0.03	0.01	0.01
Aricidea sp. B	PRE-OP	0.00	0.00	0.08	0.03	0.06	0.04	0.02	0.02	0.04	0.03	0.04	0.03
	OP	0.08	0.04	0.01	0.01	0.08	0.03	0.12	0.04	0.04	0.02	0.00	0.00
Aricidea wassi	PRE-OP	0.54	0.14	0.71	0.17	1.94	0.31	2.02	0.33	1.19	0.15	1.10	0.23
	OP	1.51	0.25	1.59	0.16	2.11	0.24	1.64	0.18	1.78	0.28	1.96	0.38
Armandia bioculata	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00
Asteroid juvenile	OP	0.01	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00
Asteropella slatteryi	OP	0.00	0.00	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Asthenothaerus villosior	PRE-OP	0.00	0.00	0.02	0.02	0.00	0.00	0.04	0.04	0.02	0.02	0.00	0.00
	OP	0.02	0.01	0.04	0.02	0.00	0.00	0.02	0.01	0.03	0.01	0.00	0.00
Astropecten spp. juvenile	PRE-OP	0.00	0.00	0.00	0.00	0.02	0.02	0.02	0.02	0.02	0.02	0.00	0.00

SOFT BENTHOS AVERAGE ABUNDANCE

DEPTH IS 18 METERS

SPECIES NAME	PERIOD	700 METERS MEAN	700 METERS SE	1100 METERS MEAN	1100 METERS SE	1900 METERS MEAN	1900 METERS SE	3350 METERS MEAN	3350 METERS SE	6700 METERS MEAN	6700 METERS SE	9400 METERS MEAN	9400 METERS SE
	OP	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.01	0.02	0.01
Astropecten spp.(arms)	OP	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.01	0.01
Astropecten verrilli	PRE-OP	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00
	OP	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asychis disparidentata	PRE-OP	0.17	0.06	0.21	0.05	0.02	0.02	0.00	0.00	0.00	0.00	0.00	0.00
	OP	0.16	0.06	0.25	0.07	0.11	0.04	0.14	0.06	0.04	0.02	0.04	0.02
Atylus tridens	PRE-OP	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.00
	OP	0.02	0.02	0.00	0.00	0.01	0.01	0.00	0.00	0.03	0.01	0.01	0.01
Autolytus sp.	OP	0.00	0.00	0.01	0.01	0.00	0.00	0.01	0.01	0.01	0.01	0.00	0.00
Axiothella rubrocincta	PRE-OP	0.04	0.03	0.08	0.04	0.04	0.03	0.08	0.04	0.02	0.02	0.10	0.05
Balcis micans	PRE-OP	0.10	0.05	0.04	0.03	0.08	0.05	0.06	0.04	0.02	0.02	0.02	0.02
	OP	0.10	0.03	0.12	0.05	0.08	0.03	0.06	0.03	0.03	0.02	0.01	0.01
Balcis rutila	PRE-OP	0.04	0.02	0.00	0.00	0.04	0.02	0.06	0.03	0.00	0.00	0.00	0.00
	OP	0.03	0.02	0.05	0.02	0.03	0.02	0.03	0.02	0.01	0.01	0.00	0.00
Balcis spp.	PRE-OP	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	OP	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01
Brada villosa	PRE-OP	0.02	0.02	0.00	0.00	0.08	0.04	0.00	0.00	0.02	0.02	0.02	0.02
	OP	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Branchiostoma californiense	PRE-OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	OP	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Bulla gouldiana	PRE-OP	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cadulus cf. fusiformis	PRE-OP	0.15	0.06	0.19	0.08	0.31	0.14	0.08	0.05	0.10	0.06	0.02	0.02
	OP	0.03	0.02	0.00	0.00	0.00	0.00	0.03	0.01	0.02	0.01	0.01	0.01
Cadulus sp.	PRE-OP	0.02	0.02	0.00	0.00	0.00	0.00	0.02	0.02	0.00	0.00	0.00	0.00
Caecianiropsis psammophila	OP	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Calanoid	PRE-OP	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.02	0.00	0.02	0.00
	OP	0.28	0.09	0.20	0.05	0.10	0.04	0.18	0.08	0.32	0.17	0.25	0.22
Callianassa sp. juvenile	PRE-OP	0.08	0.02	0.02	0.02	0.02	0.02	0.06	0.04	0.10	0.04	0.02	0.02
	OP	0.00	0.00	0.00	0.00	0.02	0.01	0.02	0.01	0.00	0.00	0.02	0.01
Calliostoma sp.	OP	0.08	0.04	0.03	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01
Campylaspis canaliculata	OP	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Campylaspis rubromaculata	PRE-OP	0.25	0.08	0.12	0.05	0.12	0.04	0.15	0.05	0.06	0.04	0.04	0.03

SOFT BENTHOS AVERAGE ABUNDANCE

DEPTH IS 18 METERS

SPECIES NAME	PERIOD	700 METERS MEAN	700 METERS SE	1100 METERS MEAN	1100 METERS SE	1900 METERS MEAN	1900 METERS SE	3350 METERS MEAN	3350 METERS SE	6700 METERS MEAN	6700 METERS SE	9400 METERS MEAN	9400 METERS SE
	OP	0.20	0.06	0.25	0.05	0.16	0.06	0.10	0.03	0.24	0.05	0.10	0.03
Campylaspis sp. C SCAMIT	PRE-OP	0.00	0.00	0.02	0.02	0.00	0.00	0.02	0.02	0.04	0.03	0.00	0.00
	OP	0.06	0.02	0.04	0.03	0.00	0.00	0.01	0.01	0.04	0.02	0.06	0.03
Cancer spp. juvenile	PRE-OP	0.04	0.02	0.02	0.02	0.00	0.00	0.02	0.02	0.00	0.00	0.00	0.00
	OP	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.01	0.01	0.03	0.01
Capitellidae (not counted as sp)	OP	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Capitellidae unidentified	OP	0.01	0.01	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00
Caprella angusta	OP	0.46	0.15	0.68	0.25	0.44	0.16	0.86	0.20	0.75	0.17	2.35	1.37
Caprella californica	PRE-OP	0.04	0.04	0.02	0.02	0.06	0.05	0.00	0.00	0.00	0.00	0.00	0.00
	OP	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.02
Caprella equilibra	OP	0.00	0.00	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Caprella spp. juvenile	PRE-OP	0.06	0.04	0.08	0.05	0.02	0.02	0.00	0.00	0.00	0.00	0.00	0.00
	OP	0.00	0.00	0.00	0.00	0.04	0.00	0.03	0.02	0.00	0.00	0.00	0.00
Caprella verrucosa	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00
Carinaria japonica	PRE-OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00
Carinoma mutabilis	PRE-OP	0.00	0.00	0.06	0.04	0.02	0.02	0.00	0.00	0.00	0.00	0.15	0.07
	OP	0.02	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.00	0.00
Caudina arenicola	OP	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cerapus tubularis	PRE-OP	0.00	0.00	0.00	0.00	0.02	0.02	0.02	0.02	0.00	0.00	0.02	0.02
	OP	0.04	0.02	0.01	0.01	0.01	0.01	0.05	0.02	0.08	0.03	0.03	0.02
Cerebratulus or Micrura spp.	PRE-OP	0.10	0.04	0.25	0.12	0.06	0.03	0.10	0.06	0.15	0.07	0.06	0.03
	OP	0.05	0.02	0.02	0.02	0.04	0.02	0.01	0.01	0.01	0.01	0.04	0.02
Cerianthidae sp. A	PRE-OP	0.00	0.00	0.02	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	OP	0.01	0.01	0.01	0.01	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00
Cerianthidae sp. B	PRE-OP	0.02	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.02	0.02	0.02
Chaetopteridae (not counted as sp)	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00
Chaetopteridae unidentified	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00
Chaetozone corona	PRE-OP	0.00	0.00	0.02	0.02	0.04	0.02	0.02	0.02	0.00	0.00	0.00	0.00
	OP	0.20	0.04	0.10	0.03	0.12	0.03	0.04	0.02	0.05	0.03	0.03	0.02
Chaetozone setosa	PRE-OP	0.60	0.32	0.37	0.17	0.56	0.38	0.17	0.06	0.40	0.11	0.60	0.38
	OP	0.72	0.10	0.72	0.11	0.71	0.09	0.42	0.08	0.39	0.07	0.47	0.11

SOFT BENTHOS AVERAGE ABUNDANCE

DEPTH IS 18 METERS

SPECIES NAME	PERIOD	700 METERS MEAN	700 METERS SE	1100 METERS MEAN	1100 METERS SE	1900 METERS MEAN	1900 METERS SE	3350 METERS MEAN	3350 METERS SE	6700 METERS MEAN	6700 METERS SE	9400 METERS MEAN	9400 METERS SE
Chaetozone sp.	OP	0.04	0.03	0.05	0.03	0.03	0.03	0.00	0.00	0.00	0.00	0.00	0.00
Chaetozone sp(not counted as sp)	OP	0.01	0.01	0.00	0.00	0.03	0.02	0.02	0.02	0.00	0.00	0.01	0.01
Chione californiensis	PRE-OP	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00
Chione sp.	PRE-OP	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.04	0.10	0.04	0.06	0.04
	OP	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.01
Chone albocincta	PRE-OP	0.06	0.03	0.00	0.00	0.08	0.04	0.10	0.06	0.04	0.03	0.00	0.00
	OP	0.02	0.01	0.03	0.02	0.10	0.03	0.11	0.03	0.03	0.02	0.03	0.02
Chone ecaudata	OP	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Chone sp.	PRE-OP	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00
	OP	0.01	0.01	0.04	0.03	0.04	0.03	0.00	0.00	0.02	0.02	0.05	0.04
Chone sp. (not counted as sp)	PRE-OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.02	0.02	0.02
	OP	0.05	0.03	0.03	0.02	0.09	0.06	0.08	0.03	0.05	0.03	0.02	0.01
Chone veleronis	PRE-OP	0.12	0.05	0.02	0.02	0.15	0.05	0.19	0.07	0.10	0.07	0.15	0.04
	OP	0.49	0.09	0.53	0.12	0.65	0.15	0.57	0.11	0.66	0.19	0.63	0.12
Cingula sp.	OP	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cirratulidae (not counted as sp)	PRE-OP	0.00	0.00	0.02	0.02	0.25	0.09	0.10	0.06	0.00	0.00	0.13	0.11
Cirratulidae unidentified	PRE-OP	0.02	0.02	0.15	0.10	0.17	0.11	0.44	0.22	0.52	0.31	0.60	0.15
Cirrophorus furcatus	PRE-OP	0.00	0.00	0.06	0.03	0.19	0.10	0.23	0.07	0.12	0.05	0.12	0.05
	OP	0.55	0.08	0.28	0.06	0.57	0.08	0.51	0.09	0.38	0.06	0.45	0.08
Cirrophorus lyra	PRE-OP	0.00	0.00	0.17	0.10	0.08	0.03	0.17	0.06	0.08	0.05	0.06	0.03
Cirrophorus sp.	PRE-OP	0.04	0.03	0.04	0.04	0.00	0.00	0.10	0.03	0.10	0.05	0.00	0.00
	OP	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cirrophorus sp. (not counted as sp)	OP	0.01	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coelentrate unidentified	PRE-OP	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00
	OP	0.00	0.00	0.02	0.01	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00
Compsomyax subdiaphana	PRE-OP	0.00	0.00	0.08	0.03	0.04	0.03	0.02	0.02	0.04	0.03	0.00	0.00
	OP	0.00	0.00	0.00	0.00	0.06	0.03	0.01	0.01	0.02	0.01	0.02	0.01
Conualevia alba	PRE-OP	0.00	0.00	0.00	0.00	0.02	0.02	0.06	0.03	0.00	0.00	0.00	0.00
	OP	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cooperella subdiaphana	PRE-OP	0.44	0.12	0.21	0.06	0.33	0.08	0.50	0.13	0.60	0.26	0.40	0.12
	OP	0.16	0.04	0.10	0.04	0.16	0.04	0.17	0.05	0.15	0.04	0.25	0.05
Corambe pacifica	PRE-OP	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00

SOFT BENTHOS AVERAGE ABUNDANCE

DEPTH IS 18 METERS

SPECIES NAME	PERIOD	700 METERS MEAN	700 METERS SE	1100 METERS MEAN	1100 METERS SE	1900 METERS MEAN	1900 METERS SE	3350 METERS MEAN	3350 METERS SE	6700 METERS MEAN	6700 METERS SE	9400 METERS MEAN	9400 METERS SE
Corophium californianum	OP	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cossura cf. candida	PRE-OP	0.10	0.06	0.17	0.07	0.08	0.03	0.02	0.02	0.06	0.03	0.00	0.00
	OP	0.91	0.15	0.98	0.12	0.79	0.11	0.60	0.10	0.28	0.05	0.24	0.06
Cossura sp.	PRE-OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00
Crab zoea	OP	0.00	0.00	7.28	0.00	0.53	0.00	25.58	0.00	4.80	0.00	6.74	0.00
Crangon alaskensis elongata	OP	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Crangon sp. juvenile	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00
Crassinella pacifica	PRE-OP	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00
Crepidula coei	OP	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.00
Crepidula nummaria	OP	0.00	0.00	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Crepidula spp.	OP	0.00	0.00	0.01	0.01	0.00	0.00	0.02	0.02	0.02	0.02	0.00	0.00
Cumella sp. A SCAMIT	PRE-OP	0.06	0.03	0.12	0.05	0.21	0.07	0.15	0.06	0.21	0.06	0.35	0.09
	OP	0.27	0.07	0.19	0.05	0.15	0.05	0.16	0.04	0.23	0.06	0.37	0.07
Cyathodonta dubiosa	OP	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.00
Cyathodonta sp. A	PRE-OP	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00
Cyclaspis nubila	PRE-OP	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	OP	0.02	0.01	0.04	0.03	0.01	0.01	0.01	0.01	0.01	0.01	0.03	0.01
Cyclaspis sp.C SCAMIT	PRE-OP	0.02	0.02	0.00	0.00	0.04	0.03	0.02	0.02	0.00	0.00	0.04	0.03
	OP	0.33	0.09	0.14	0.03	0.26	0.06	0.19	0.05	0.14	0.04	0.17	0.04
Cyclopoids	PRE-OP	0.02	0.02	0.02	0.02	0.00	0.00	0.02	0.02	0.00	0.00	0.02	0.02
	OP	0.01	0.01	0.00	0.00	0.01	0.01	0.00	0.00	0.05	0.04	0.00	0.00
Cyclostremella californica	PRE-OP	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cylichna attonsa	PRE-OP	0.04	0.03	0.12	0.05	0.08	0.05	0.02	0.02	0.08	0.03	0.08	0.05
	OP	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cylichna diegensis	PRE-OP	0.02	0.02	0.00	0.00	0.02	0.02	0.00	0.00	0.00	0.00	0.02	0.02
	OP	0.00	0.00	0.00	0.00	0.02	0.02	0.03	0.01	0.02	0.01	0.01	0.01
Cylichna sp.	PRE-OP	0.00	0.00	0.02	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CIS00999	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00
Decapoda juvenile unidentified	PRE-OP	0.02	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.02

SOFT BENTHOS AVERAGE ABUNDANCE

DEPTH IS 18 METERS

SPECIES NAME	PERIOD	700 METERS MEAN	700 METERS SE	1100 METERS MEAN	1100 METERS SE	1900 METERS MEAN	1900 METERS SE	3350 METERS MEAN	3350 METERS SE	6700 METERS MEAN	6700 METERS SE	9400 METERS MEAN	9400 METERS SE
Dentalium sp.	PRE-OP	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Deutella californica	OP	0.00	0.00	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.01	0.01
Diaphana californica	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00
Diastylopsis tenuis	PRE-OP	0.33	0.29	0.19	0.07	0.46	0.29	0.29	0.15	0.19	0.07	0.46	0.14
	OP	0.31	0.10	0.35	0.11	0.73	0.22	0.90	0.26	0.88	0.33	0.65	0.14
Diopatra sp.	PRE-OP	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00
Diopatra splendidissima	OP	0.00	0.00	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Diopatra tridentata	PRE-OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	OP	0.00	0.00	0.03	0.02	0.01	0.01	0.02	0.01	0.01	0.01	0.01	0.01
Diplodonta sp.	PRE-OP	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	OP	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dorvilleidae juvenile	OP	0.00	0.00	0.01	0.01	0.00	0.00	0.02	0.01	0.00	0.00	0.02	0.01
Dorvilleidae sp.	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00
Doto sp.	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00
Drilonereis falcata	PRE-OP	0.06	0.03	0.08	0.04	0.19	0.04	0.12	0.07	0.10	0.05	0.10	0.06
	OP	0.11	0.03	0.08	0.03	0.06	0.02	0.06	0.03	0.05	0.02	0.03	0.02
Drilonereis filum	OP	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Drilonereis longa	PRE-OP	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Drilonereis sp. juvenile	OP	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Duplicate code -- use CAMP0099	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00
Duplicate code -- use CDEC0047	OP	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Duplicate code -- use OCOE0009	OP	0.00	0.00	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Echiuroid A	PRE-OP	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00
Edotea sublittoralis	PRE-OP	0.00	0.00	0.06	0.03	0.08	0.05	0.00	0.00	0.02	0.02	0.04	0.04
	OP	0.06	0.01	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Edwardsia sp. A (orange w/ white base)	PRE-OP	1.06	0.25	1.04	0.33	0.50	0.13	0.56	0.16	0.67	0.35	0.56	0.23
	OP	0.49	0.13	0.43	0.09	0.38	0.12	0.25	0.07	0.60	0.16	0.66	0.18
Edwardsia sp. B (white w/white base)	PRE-OP	0.19	0.08	0.33	0.11	0.15	0.07	0.21	0.13	0.12	0.05	0.10	0.05
	OP	0.10	0.04	0.12	0.03	0.09	0.03	0.11	0.03	0.11	0.04	0.12	0.04
Ensis myrae	OP	0.06	0.03	0.01	0.01	0.04	0.02	0.03	0.02	0.05	0.05	0.01	0.01

DEPTH IS 18 METERS

SOFT BENTHOS AVERAGE ABUNDANCE

SPECIES NAME	PERIOD	700 METERS MEAN	700 METERS SE	1100 METERS MEAN	1100 METERS SE	1900 METERS MEAN	1900 METERS SE	3350 METERS MEAN	3350 METERS SE	6700 METERS MEAN	6700 METERS SE	9400 METERS MEAN	9400 METERS SE
Eplactis prolifera	PRE-OP	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Epitonium bellastriatum	PRE-OP	0.00	0.00	0.04	0.02	0.00	0.00	0.02	0.02	0.00	0.00	0.00	0.00
	OP	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Epitonium sp.	PRE-OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00
	OP	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01
Eteone dilatae	PRE-OP	0.17	0.10	0.02	0.02	0.23	0.07	0.06	0.04	0.12	0.08	0.00	0.00
	OP	0.02	0.02	0.00	0.00	0.04	0.02	0.01	0.01	0.00	0.00	0.00	0.00
Eteone sp.	PRE-OP	0.06	0.05	0.10	0.05	0.23	0.09	0.08	0.05	0.08	0.04	0.12	0.05
	OP	0.15	0.05	0.08	0.02	0.10	0.03	0.11	0.04	0.08	0.02	0.03	0.02
Eteone sp. (not counted as sp)	PRE-OP	0.02	0.02	0.00	0.00	0.02	0.02	0.00	0.00	0.00	0.00	0.00	0.00
Euchone hancocki	PRE-OP	0.23	0.14	0.35	0.10	0.52	0.19	0.46	0.11	0.58	0.17	0.65	0.13
	OP	2.26	0.99	1.15	0.35	1.51	0.38	1.82	0.60	1.61	0.51	1.42	0.37
Euchone sp.	PRE-OP	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	OP	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Euclymeninae sp. A	OP	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Eudorella pacifica	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00
Eulima almo	OP	0.11	0.03	0.02	0.01	0.05	0.02	0.02	0.01	0.02	0.01	0.02	0.01
Eumida sanguinea	OP	0.03	0.03	0.01	0.01	0.02	0.02	0.00	0.00	0.01	0.01	0.02	0.01
Eumida sp.	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00
Eupentacta sp.	PRE-OP	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00
	OP	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.03	0.02	0.00	0.00
Euphilomedes carcharodonta	PRE-OP	0.40	0.10	0.58	0.10	0.40	0.15	0.35	0.10	0.69	0.16	0.54	0.13
	OP	0.58	0.09	0.61	0.12	0.99	0.16	0.89	0.12	0.60	0.10	0.97	0.16
Exogone gemmifera	PRE-OP	0.00	0.00	0.00	0.00	0.10	0.05	0.00	0.00	0.06	0.05	0.06	0.05
Falcidens sp. E	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00
Fartulum occidentale	PRE-OP	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00
Felaniella sp.	PRE-OP	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00
Flabelligeridae unidentified	OP	0.02	0.01	0.01	0.01	0.02	0.01	0.00	0.00	0.01	0.01	0.00	0.00
Flatworm juvenile	OP	0.01	0.00	0.01	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00
Flatworm 1	PRE-OP	0.06	0.06	0.15	0.06	0.06	0.03	0.10	0.06	0.04	0.03	0.10	0.07

SOFT BENTHOS AVERAGE ABUNDANCE

DEPTH IS 18 METERS

SPECIES NAME	PERIOD	700 METERS MEAN	700 METERS SE	1100 METERS MEAN	1100 METERS SE	1900 METERS MEAN	1900 METERS SE	3350 METERS MEAN	3350 METERS SE	6700 METERS MEAN	6700 METERS SE	9400 METERS MEAN	9400 METERS SE
	OP	0.06	0.02	0.11	0.05	0.09	0.03	0.05	0.03	0.06	0.02	0.11	0.04
Flatworm 3	PRE-OP	0.02	0.02	0.00	0.00	0.00	0.00	0.02	0.02	0.00	0.00	0.02	0.02
	OP	0.05	0.02	0.11	0.03	0.03	0.02	0.05	0.03	0.05	0.03	0.04	0.03
Flatworm 4	PRE-OP	0.00	0.00	0.00	0.00	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
	OP	0.05	0.04	0.02	0.01	0.08	0.02	0.00	0.00	0.01	0.01	0.05	0.02
Flatworm 7	PRE-OP	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00
	OP	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.01	0.01	0.02	0.02
Flatworm 8	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00
Foxiphalus golfensis/obtusidens	PRE-OP	0.12	0.07	0.08	0.03	0.15	0.06	0.12	0.07	0.12	0.05	0.04	0.03
	OP	0.41	0.07	0.55	0.10	0.60	0.10	0.41	0.08	0.58	0.13	0.56	0.09
Gammaropsis thompsoni	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00
Gastropoda	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00
Gastropoda unidentified	PRE-OP	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00
	OP	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.00
Gastropteron pacificum	OP	0.02	0.01	0.00	0.00	0.01	0.01	0.02	0.01	0.01	0.01	0.05	0.02
Genetyllis castanea	OP	0.00	0.00	0.02	0.02	0.02	0.00	0.01	0.01	0.00	0.00	0.00	0.00
Gibberosus myersi	PRE-OP	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.00
	OP	0.01	0.01	0.02	0.01	0.02	0.02	0.03	0.02	0.09	0.04	0.08	0.02
Gitana calitemplado	PRE-OP	0.02	0.02	0.00	0.00	0.02	0.02	0.02	0.02	0.12	0.03	0.04	0.03
	OP	0.04	0.02	0.03	0.02	0.05	0.03	0.04	0.03	0.03	0.02	0.04	0.02
Glottidia albida	PRE-OP	0.15	0.06	0.21	0.09	0.19	0.06	0.15	0.07	0.17	0.07	0.15	0.07
	OP	0.38	0.07	0.23	0.06	0.26	0.06	0.20	0.04	0.26	0.07	0.42	0.10
Glycera americana	OP	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01
Glycera capitata	PRE-OP	0.02	0.02	0.00	0.00	0.02	0.02	0.00	0.00	0.00	0.00	0.00	0.00
	OP	0.04	0.02	0.00	0.00	0.03	0.01	0.00	0.00	0.00	0.00	0.02	0.01
Glycera convoluta	PRE-OP	0.06	0.03	0.06	0.03	0.08	0.04	0.15	0.05	0.06	0.03	0.04	0.03
	OP	0.06	0.02	0.03	0.02	0.04	0.02	0.04	0.02	0.04	0.02	0.01	0.01
Glycera siphonostoma	PRE-OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00
Glycera sp.	PRE-OP	0.04	0.03	0.06	0.03	0.06	0.03	0.04	0.03	0.00	0.00	0.02	0.02
	OP	0.01	0.01	0.03	0.02	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00
Glycera sp. (not counted as sp)	PRE-OP	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	OP	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

SOFT BENTHOS AVERAGE ABUNDANCE

DEPTH IS 18 METERS

SPECIES NAME	PERIOD	700 METERS MEAN	700 METERS SE	1100 METERS MEAN	1100 METERS SE	1900 METERS MEAN	1900 METERS SE	3350 METERS MEAN	3350 METERS SE	6700 METERS MEAN	6700 METERS SE	9400 METERS MEAN	9400 METERS SE
Glyceridae unidentified	PRE-OP	0.02	0.02	0.02	0.02	0.02	0.02	0.00	0.00	0.00	0.00	0.02	0.02
	OP	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Glycinde armigera	PRE-OP	0.19	0.06	0.12	0.05	0.19	0.07	0.27	0.07	0.10	0.05	0.12	0.05
	OP	0.41	0.08	0.46	0.09	0.35	0.07	0.45	0.09	0.31	0.06	0.17	0.05
Glycinde sp. (not counted as sp)	PRE-OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00
Glycinde sp. juvenile	PRE-OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00
Gnathia crenulatifrons	PRE-OP	0.02	0.02	0.04	0.02	0.04	0.02	0.04	0.02	0.02	0.02	0.04	0.04
	OP	0.03	0.01	0.04	0.02	0.04	0.02	0.00	0.00	0.02	0.01	0.00	0.00
Golfingia catharinae	PRE-OP	0.00	0.00	0.02	0.02	0.04	0.02	0.04	0.04	0.02	0.02	0.06	0.05
Golfingia misakiana	OP	0.02	0.01	0.02	0.01	0.01	0.01	0.00	0.00	0.01	0.01	0.01	0.01
Goniada littorea	PRE-OP	0.25	0.08	0.42	0.08	0.19	0.06	0.17	0.06	0.19	0.08	0.23	0.06
	OP	0.17	0.04	0.28	0.05	0.25	0.04	0.13	0.04	0.12	0.03	0.06	0.02
Goniada maculata	PRE-OP	0.06	0.03	0.08	0.06	0.06	0.03	0.00	0.00	0.12	0.04	0.00	0.00
	OP	0.06	0.02	0.05	0.03	0.04	0.02	0.04	0.02	0.05	0.03	0.04	0.02
Goniada sp.	PRE-OP	0.02	0.02	0.00	0.00	0.06	0.06	0.08	0.05	0.02	0.02	0.02	0.02
	OP	0.06	0.04	0.02	0.01	0.01	0.01	0.02	0.01	0.00	0.00	0.02	0.01
Goniada sp. (not counted as sp)	PRE-OP	0.02	0.02	0.08	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	OP	0.02	0.01	0.02	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00
Goniadidae unidentified	PRE-OP	0.02	0.02	0.00	0.00	0.04	0.04	0.04	0.03	0.10	0.04	0.00	0.00
	OP	0.03	0.02	0.00	0.00	0.00	0.00	0.05	0.02	0.04	0.03	0.01	0.01
Halosydna brevisetosa	OP	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Halosydna johnsoni	PRE-OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Haminoea sp.	PRE-OP	0.00	0.00	0.00	0.00	0.02	0.02	0.02	0.02	0.00	0.00	0.00	0.00
	OP	0.14	0.12	0.12	0.10	0.03	0.03	0.02	0.02	0.06	0.04	0.02	0.02
Haminoea virescens	PRE-OP	0.00	0.00	0.00	0.00	0.23	0.11	0.10	0.05	0.06	0.05	0.00	0.00
	OP	0.01	0.01	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Harbansus bradmyersi	PRE-OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00
Harmothoe cf. lunulata	PRE-OP	0.08	0.03	0.23	0.10	0.06	0.03	0.08	0.06	0.06	0.06	0.10	0.05
	OP	0.16	0.04	0.14	0.05	0.18	0.05	0.13	0.04	0.16	0.05	0.18	0.05
Harmothoe priops	PRE-OP	0.29	0.05	0.17	0.05	0.21	0.10	0.21	0.07	0.29	0.09	0.42	0.09
	OP	0.18	0.04	0.26	0.07	0.13	0.04	0.22	0.05	0.13	0.04	0.25	0.07
Harpacticoids	PRE-OP	0.40	0.22	0.08	0.05	0.37	0.11	0.25	0.17	0.42	0.11	0.29	0.06
	OP	1.92	0.85	1.29	0.31	1.88	1.08	1.14	0.36	1.02	0.27	1.62	0.93

SOFT BENTHOS AVERAGE ABUNDANCE

DEPTH IS 18 METERS

SPECIES NAME	PERIOD	700 METERS MEAN	700 METERS SE	1100 METERS MEAN	1100 METERS SE	1900 METERS MEAN	1900 METERS SE	3350 METERS MEAN	3350 METERS SE	6700 METERS MEAN	6700 METERS SE	9400 METERS MEAN	9400 METERS SE
Hemichordate unidentified	PRE-OP	0.79	0.10	0.65	0.08	0.52	0.12	0.56	0.10	0.44	0.14	0.62	0.07
	OP	0.13	0.03	0.19	0.05	0.06	0.02	0.15	0.06	0.12	0.04	0.42	0.09
Hemilamprops californica	PRE-OP	0.87	0.25	0.96	0.29	0.50	0.16	0.44	0.13	0.73	0.17	0.96	0.21
	OP	0.28	0.11	0.30	0.10	0.35	0.09	0.44	0.09	0.41	0.08	0.70	0.17
Heptacarpus sp.	OP	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hesionidae (not counted as sp)	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00
Hesionidae unidentified	PRE-OP	0.00	0.00	0.00	0.00	0.02	0.02	0.00	0.00	0.02	0.02	0.00	0.00
	OP	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Heterocrypta occidentalis	PRE-OP	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00
	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00
Heterophoxus oculatus	OP	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Heterospio catalinensis	OP	0.00	0.00	0.00	0.00	0.04	0.02	0.04	0.01	0.01	0.01	0.01	0.01
Hippomedom zetesimus	PRE-OP	0.00	0.00	0.00	0.00	0.08	0.06	0.02	0.02	0.04	0.03	0.06	0.03
	OP	0.04	0.02	0.01	0.01	0.03	0.02	0.01	0.01	0.03	0.02	0.05	0.02
Hirudinea leech	PRE-OP	0.02	0.02	0.00	0.00	0.00	0.00	0.02	0.02	0.02	0.02	0.02	0.02
Holothuroidea unidentified	PRE-OP	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00
Hydroid unidentified	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00
Idotea rufescens	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00
Ischyrocerus sp.	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00
Ischyrocerus sp. B	PRE-OP	0.02	0.02	0.00	0.00	0.02	0.02	0.00	0.00	0.00	0.00	0.02	0.02
	OP	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.02
Jassa falcata	PRE-OP	5.10	2.37	0.77	0.45	1.21	0.33	0.75	0.45	1.40	0.70	0.71	0.19
	OP	0.78	0.14	0.84	0.18	1.69	0.36	1.65	0.32	1.34	0.35	1.70	0.77
Kinorhynchus sp.	PRE-OP	0.04	0.03	0.02	0.02	0.44	0.14	0.12	0.07	0.12	0.05	0.08	0.05
	OP	0.14	0.06	0.14	0.06	0.14	0.04	0.12	0.04	0.14	0.04	0.14	0.05
Kurtzia arteaga	PRE-OP	0.02	0.02	0.00	0.00	0.00	0.00	0.02	0.02	0.00	0.00	0.00	0.00
Kurtziella beta	PRE-OP	0.00	0.00	0.00	0.00	0.02	0.02	0.02	0.02	0.00	0.00	0.00	0.00
	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01
Kurtziella plumbea	OP	0.01	0.01	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01
Lacuna unifasciata	OP	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

SOFT BENTHOS AVERAGE ABUNDANCE

DEPTH IS 18 METERS

SPECIES NAME	PERIOD	700 METERS MEAN	700 METERS SE	1100 METERS MEAN	1100 METERS SE	1900 METERS MEAN	1900 METERS SE	3350 METERS MEAN	3350 METERS SE	6700 METERS MEAN	6700 METERS SE	9400 METERS MEAN	9400 METERS SE
Lampropidae juvenile	OP	0.00	0.00	0.01	0.01	0.01	0.01	0.00	0.00	0.04	0.04	0.01	0.01
Lamprops carinata	PRE-OP	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	OP	0.02	0.01	0.04	0.02	0.00	0.00	0.02	0.02	0.02	0.01	0.03	0.02
Laonice cirrata	PRE-OP	0.06	0.02	0.04	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	OP	0.05	0.02	0.05	0.03	0.04	0.02	0.05	0.02	0.00	0.00	0.01	0.01
Leitoscoloplos elongatus	PRE-OP	0.08	0.05	0.08	0.06	0.21	0.08	0.08	0.04	0.23	0.07	0.04	0.03
	OP	0.28	0.07	0.12	0.03	0.18	0.03	0.10	0.03	0.08	0.03	0.09	0.05
Lepidasthenia longicirrata	OP	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Lepidepecreum sp. A SCAMIT	OP	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Lepidopa californica	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00
Leptochelia dubia	PRE-OP	1.21	0.47	0.94	0.39	1.94	0.58	2.71	1.16	3.79	1.62	4.00	1.78
	OP	4.59	1.02	3.27	0.65	6.57	1.17	8.73	2.22	9.47	2.51	13.56	4.12
Leptocuma forsmani	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00
Leptopecten latiauratus	PRE-OP	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00
Leptostylis B SCAMIT	OP	0.01	0.01	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Leptosynapta sp	PRE-OP	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00
Leuroleberis sharpei	PRE-OP	0.02	0.02	0.00	0.00	0.04	0.02	0.00	0.00	0.00	0.00	0.00	0.00
	OP	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01
Lineus bilineatus	PRE-OP	0.02	0.02	0.02	0.02	0.02	0.02	0.00	0.00	0.00	0.00	0.00	0.00
	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.01	0.01
Listriella diffusa	PRE-OP	0.04	0.04	0.17	0.06	0.06	0.04	0.04	0.03	0.04	0.03	0.10	0.06
	OP	0.00	0.00	0.02	0.02	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01
Listriella goleta	PRE-OP	0.21	0.11	0.17	0.13	0.02	0.02	0.02	0.02	0.02	0.02	0.00	0.00
	OP	0.01	0.01	0.02	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.02	0.01
Listriella melanica	PRE-OP	0.00	0.00	0.00	0.00	0.02	0.02	0.00	0.00	0.06	0.00	0.00	0.00
	OP	0.10	0.03	0.03	0.02	0.08	0.02	0.09	0.03	0.04	0.03	0.06	0.03
Listriella sp. juvenile	PRE-OP	0.00	0.00	0.02	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.02
	OP	0.01	0.01	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Listriolobus pelodes	PRE-OP	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Loimia medusa	PRE-OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00

SOFT BENTHOS AVERAGE ABUNDANCE

DEPTH IS 18 METERS

SPECIES NAME	PERIOD	700 METERS MEAN	700 METERS SE	1100 METERS MEAN	1100 METERS SE	1900 METERS MEAN	1900 METERS SE	3350 METERS MEAN	3350 METERS SE	6700 METERS MEAN	6700 METERS SE	9400 METERS MEAN	9400 METERS SE
	OP	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Lovenia cordiformis	OP	0.03	0.03	0.10	0.02	0.05	0.02	0.02	0.01	0.04	0.03	0.05	0.03
Lumbrineridae (not counted as sp)	OP	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Lumbrineridae unidentified	PRE-OP	0.00	0.00	0.00	0.00	0.13	0.11	0.00	0.00	0.00	0.00	0.08	0.05
Lumbrineris californiensis	PRE-OP	0.04	0.03	0.21	0.05	0.19	0.12	0.02	0.02	0.00	0.00	0.00	0.00
	OP	0.01	0.01	0.00	0.00	0.08	0.03	0.03	0.02	0.00	0.00	0.02	0.01
Lumbrineris cruzensis	OP	0.02	0.01	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.00	0.00
Lumbrineris index	OP	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01
Lumbrineris sp.	PRE-OP	0.33	0.15	0.33	0.16	1.19	0.33	1.21	0.30	0.58	0.26	0.17	0.06
	OP	0.38	0.08	0.26	0.07	0.20	0.06	0.20	0.06	0.27	0.07	0.22	0.05
Lumbrineris sp. (not counted as sp)	PRE-OP	0.23	0.16	0.12	0.07	0.40	0.17	0.10	0.10	0.04	0.03	0.00	0.00
	OP	0.06	0.04	0.25	0.06	0.06	0.04	0.06	0.03	0.11	0.05	0.08	0.03
Lumbrineris sp. D	PRE-OP	1.06	0.26	1.02	0.39	0.75	0.32	1.06	0.23	1.04	0.22	0.56	0.14
	OP	0.59	0.09	0.41	0.06	0.27	0.06	0.18	0.04	0.33	0.07	0.18	0.04
Lumbrineris tetraura	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00
Lyonsia californica	OP	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.00
Lysianassa oculata	OP	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00
Lysianassidae juvenile	PRE-OP	0.00	0.00	0.02	0.02	0.02	0.02	0.02	0.02	0.00	0.00	0.02	0.02
	OP	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Lytechinus anamesus	OP	0.00	0.00	0.01	0.01	0.01	0.01	0.00	0.00	0.02	0.02	0.01	0.01
Macoma acolasta	PRE-OP	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	OP	0.15	0.10	0.03	0.02	0.00	0.00	0.04	0.02	0.10	0.03	0.02	0.01
Macoma sp.	PRE-OP	0.10	0.08	0.06	0.03	0.17	0.07	0.15	0.07	0.27	0.16	0.37	0.13
	OP	0.14	0.04	0.22	0.07	0.19	0.06	0.22	0.05	0.19	0.06	0.28	0.05
Macoma sp. (not counted as sp)	PRE-OP	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Macoma yoldiformis	PRE-OP	0.25	0.10	0.25	0.09	0.27	0.12	0.46	0.15	0.50	0.14	0.60	0.24
	OP	0.03	0.01	0.01	0.01	0.03	0.02	0.05	0.02	0.04	0.03	0.05	0.04
Magelona pitelkai	PRE-OP	0.02	0.02	0.00	0.00	0.00	0.00	0.02	0.02	0.02	0.02	0.04	0.04
	OP	0.00	0.00	0.04	0.02	0.06	0.04	0.04	0.02	0.09	0.03	0.08	0.03
Magelona sacculata	PRE-OP	0.06	0.03	0.10	0.08	0.12	0.05	0.06	0.03	0.10	0.05	0.37	0.08
	OP	0.08	0.05	0.02	0.02	0.12	0.08	0.30	0.09	0.28	0.07	0.19	0.05

SOFT BENTHOS AVERAGE ABUNDANCE

DEPTH IS 18 METERS

SPECIES NAME	PERIOD	700 METERS MEAN	700 METERS SE	1100 METERS MEAN	1100 METERS SE	1900 METERS MEAN	1900 METERS SE	3350 METERS MEAN	3350 METERS SE	6700 METERS MEAN	6700 METERS SE	9400 METERS MEAN	9400 METERS SE
Magelona sp.	PRE-OP	0.00	0.00	0.04	0.02	0.00	0.00	0.08	0.02	0.04	0.02	0.00	0.00
Magelona sp. (not counted as sp)	PRE-OP	0.00	0.00	0.00	0.00	0.02	0.02	0.00	0.00	0.02	0.02	0.02	0.02
	OP	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.02	0.00	0.00
Magelonidae unidentified	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00
Majidae sp. A	OP	0.02	0.01	0.00	0.00	0.02	0.01	0.00	0.00	0.01	0.01	0.04	0.02
Maladanidae (not counted as sp)	OP	0.16	0.05	0.05	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maladanidae unidentified	PRE-OP	0.04	0.03	0.00	0.00	0.06	0.03	0.04	0.03	0.02	0.02	0.02	0.02
	OP	0.49	0.09	0.34	0.07	0.55	0.08	0.14	0.04	0.16	0.06	0.17	0.04
Mayerella banksia	PRE-OP	0.06	0.04	0.02	0.02	0.23	0.08	0.10	0.06	0.00	0.00	0.00	0.00
	OP	0.17	0.05	0.15	0.05	0.24	0.07	0.13	0.05	0.16	0.06	0.20	0.09
Mediomastus acutus	PRE-OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00
	OP	0.11	0.05	0.11	0.05	0.25	0.07	0.36	0.08	0.27	0.06	0.29	0.07
Mediomastus californiensis/ambiseta	PRE-OP	15.08	4.31	13.44	1.99	18.19	4.57	11.48	2.30	12.27	1.99	11.52	2.15
	OP	17.39	2.63	12.12	1.42	10.80	1.65	6.75	1.08	5.86	0.83	7.55	1.35
Megalomma pigmentum	PRE-OP	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Megalomma sp. (not counted as sp)	PRE-OP	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Megalomna sp.	PRE-OP	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.02	0.02	0.02	0.02	0.02
	OP	0.00	0.00	0.02	0.02	0.01	0.01	0.00	0.00	0.00	0.00	0.01	0.01
Megalops juvenile	OP	0.01	0.01	0.02	0.01	0.00	0.00	0.02	0.01	0.03	0.02	0.00	0.00
Melanochlamys diomeda	PRE-OP	0.00	0.00	0.06	0.04	0.10	0.05	0.08	0.03	0.12	0.06	0.06	0.04
	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.05	0.02
Melinna oculata	PRE-OP	0.12	0.05	0.08	0.04	0.10	0.05	0.06	0.03	0.02	0.02	0.08	0.03
	OP	0.17	0.04	0.11	0.04	0.09	0.03	0.09	0.03	0.01	0.01	0.05	0.02
Meliphisana bola	PRE-OP	0.10	0.05	0.15	0.06	0.17	0.06	0.23	0.08	0.21	0.07	0.17	0.07
	OP	0.26	0.06	0.14	0.04	0.23	0.07	0.11	0.03	0.11	0.04	0.16	0.03
Metacaprella kennerlyi	PRE-OP	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00
Metamysidopsis elongata	PRE-OP	0.00	0.00	0.02	0.02	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	OP	0.03	0.01	0.03	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00
Metedwardsia sp. A	PRE-OP	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00
Metopella aporpis	OP	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Microspio pigmentata	OP	0.02	0.01	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

SOFT BENTHOS AVERAGE ABUNDANCE

DEPTH IS 18 METERS

SPECIES NAME	PERIOD	700 METERS MEAN	700 METERS SE	1100 METERS MEAN	1100 METERS SE	1900 METERS MEAN	1900 METERS SE	3350 METERS MEAN	3350 METERS SE	6700 METERS MEAN	6700 METERS SE	9400 METERS MEAN	9400 METERS SE
Microspio sp.	OP	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Modiolus neglectus	PRE-OP	0.06	0.03	0.06	0.04	0.15	0.08	0.25	0.09	0.21	0.07	0.25	0.09
	OP	0.18	0.05	0.14	0.04	0.15	0.07	0.20	0.08	0.12	0.05	0.24	0.06
Modiolus rectus	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00
Modiolus sp. (not counted as sp)	OP	0.00	0.00	0.01	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Modiolus sp. A	PRE-OP	0.00	0.00	0.00	0.00	0.12	0.06	0.02	0.02	0.04	0.02	0.04	0.04
	OP	0.01	0.01	0.02	0.01	0.00	0.00	0.04	0.01	0.00	0.00	0.03	0.01
Modiolus spp.	PRE-OP	0.00	0.00	0.02	0.02	0.04	0.02	0.00	0.00	0.02	0.02	0.02	0.02
	OP	0.03	0.03	0.00	0.00	0.01	0.01	0.02	0.02	0.05	0.03	0.02	0.01
Monoculodes hartmanae	PRE-OP	0.02	0.02	0.02	0.02	0.06	0.04	0.06	0.04	0.06	0.03	0.17	0.08
	OP	0.71	0.18	0.49	0.08	0.68	0.13	0.55	0.11	0.54	0.11	0.75	0.22
Montacuta sp. A	PRE-OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.15	0.00
Mooreonuphis nebulosa	PRE-OP	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.02	0.00	0.00	0.00	0.00
	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00
Munna ubiquita	PRE-OP	0.02	0.02	0.02	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.02
	OP	0.04	0.02	0.08	0.03	0.02	0.01	0.03	0.02	0.03	0.02	0.05	0.02
Munnogonium erratum	PRE-OP	0.06	0.04	0.04	0.03	0.17	0.08	0.04	0.03	0.12	0.06	0.06	0.04
	OP	0.02	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.00
Munnogonium tillerae	PRE-OP	0.02	0.02	0.12	0.06	0.25	0.09	0.06	0.04	0.08	0.05	0.00	0.00
	OP	0.34	0.06	0.18	0.05	0.30	0.07	0.08	0.02	0.11	0.05	0.16	0.05
Mya cf. arenaria	PRE-OP	0.08	0.08	0.00	0.00	0.04	0.02	0.25	0.21	0.10	0.05	0.00	0.00
Mysella cf. aleutica	OP	0.08	0.03	0.04	0.02	0.03	0.02	0.04	0.02	0.05	0.02	0.11	0.05
Mysella compressa	PRE-OP	0.02	0.02	0.00	0.00	0.00	0.00	0.02	0.02	0.04	0.04	0.06	0.05
	OP	0.05	0.03	0.03	0.02	0.12	0.03	0.13	0.05	0.12	0.04	0.08	0.02
Mysella gollschi	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00
Mysella grippi	PRE-OP	0.19	0.15	0.06	0.02	0.44	0.31	0.40	0.32	0.02	0.02	0.04	0.02
	OP	0.34	0.22	0.10	0.07	0.19	0.08	0.12	0.09	0.02	0.02	0.01	0.01
Mysella sp.	PRE-OP	0.06	0.04	0.08	0.04	0.17	0.09	0.02	0.02	0.00	0.00	0.08	0.04
	OP	0.00	0.00	0.00	0.00	0.01	0.01	0.02	0.02	0.00	0.00	0.00	0.00
Mysella sp. A	PRE-OP	0.00	0.00	0.00	0.00	0.08	0.03	0.00	0.00	0.00	0.00	0.00	0.00
	OP	0.00	0.00	0.08	0.05	0.00	0.00	0.02	0.02	0.01	0.01	0.00	0.00
Mysella tumida	PRE-OP	0.27	0.10	0.23	0.08	0.12	0.06	0.19	0.07	0.46	0.16	0.25	0.15
	OP	0.00	0.00	0.02	0.01	0.02	0.01	0.00	0.00	0.08	0.04	0.01	0.01

SOFT BENTHOS AVERAGE ABUNDANCE

DEPTH IS 18 METERS

SPECIES NAME	PERIOD	700 METERS MEAN	700 METERS SE	1100 METERS MEAN	1100 METERS SE	1900 METERS MEAN	1900 METERS SE	3350 METERS MEAN	3350 METERS SE	6700 METERS MEAN	6700 METERS SE	9400 METERS MEAN	9400 METERS SE
Mysella unidentified	PRE-OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.00
Mysidacea unidentified	OP	0.01	0.01	0.01	0.01	0.02	0.01	0.00	0.00	0.02	0.01	0.00	0.00
Mysidopsis californica	OP	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mysidopsis intii	PRE-OP	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	OP	0.03	0.01	0.00	0.00	0.01	0.01	0.01	0.01	0.00	0.00	0.01	0.01
Mytilidae unidentified	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00
Mytilus edulis	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00
MGASO157	OP	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MGASO401	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00
MPELO139	OP	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.01	0.01
MPELO140	OP	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MPELO142	OP	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Nassarius perpinquis	PRE-OP	0.02	0.02	0.04	0.03	0.04	0.03	0.00	0.00	0.04	0.03	0.00	0.00
	OP	0.28	0.08	0.28	0.06	0.37	0.16	0.22	0.07	0.48	0.11	0.55	0.19
Nassarius sp.	OP	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Neastacilla californica	PRE-OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00
Nebalia pugettensis	PRE-OP	0.19	0.05	0.23	0.08	0.17	0.06	0.17	0.07	0.15	0.05	0.35	0.09
	OP	0.51	0.08	0.70	0.12	1.20	0.17	0.66	0.10	0.60	0.13	0.41	0.07
Nematodes unidentified	PRE-OP	5.02	1.09	3.94	1.16	4.79	1.03	3.77	0.80	4.90	1.26	4.08	1.14
	OP	13.32	2.91	6.88	1.83	7.54	1.96	5.75	1.70	4.58	0.71	7.56	1.64
Nemertina unidentified	PRE-OP	0.02	0.02	0.00	0.00	0.02	0.02	0.02	0.02	0.04	0.02	0.06	0.03
	PRE-OP	0.27	0.07	0.44	0.12	0.40	0.09	0.35	0.10	0.15	0.07	0.33	0.12
	OP	0.81	0.17	1.06	0.17	1.05	0.13	1.11	0.21	0.94	0.15	1.20	0.19
	OP	0.89	0.15	0.52	0.15	0.24	0.08	0.33	0.09	0.20	0.09	0.25	0.14
Neomysis rayii	PRE-OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.00
Nephtys caecoides	PRE-OP	0.06	0.03	0.06	0.03	0.04	0.03	0.08	0.06	0.04	0.03	0.00	0.00
	OP	0.19	0.05	0.13	0.04	0.10	0.03	0.13	0.03	0.17	0.06	0.13	0.04
Nephtys cornuta franciscana	OP	2.13	0.25	2.11	0.25	1.43	0.18	1.09	0.18	0.85	0.18	0.76	0.11
Nephtys sp.	PRE-OP	5.70	1.19	3.79	0.76	4.71	0.91	3.87	0.73	2.79	0.42	3.79	0.51
	OP	0.16	0.07	0.14	0.06	0.12	0.06	0.16	0.06	0.17	0.06	0.06	0.02

SOFT BENTHOS AVERAGE ABUNDANCE

DEPTH IS 18 METERS

SPECIES NAME	PERIOD	700 METERS MEAN	700 METERS SE	1100 METERS MEAN	1100 METERS SE	1900 METERS MEAN	1900 METERS SE	3350 METERS MEAN	3350 METERS SE	6700 METERS MEAN	6700 METERS SE	9400 METERS MEAN	9400 METERS SE
Nephtys sp. (not counted as sp)	PRE-OP	0.44	0.40	0.52	0.30	0.65	0.60	0.00	0.00	0.31	0.29	0.00	0.00
	OP	0.03	0.01	0.04	0.03	0.03	0.01	0.09	0.04	0.03	0.01	0.01	0.01
Nereidae (not counted as sp)	PRE-OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00
	OP	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Nereis grubei	PRE-OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Nereis latescens	PRE-OP	0.00	0.00	0.00	0.00	0.19	0.14	0.19	0.14	0.02	0.02	0.06	0.05
Nereis procera	PRE-OP	0.54	0.30	0.75	0.18	1.46	0.48	0.92	0.17	0.87	0.25	0.42	0.19
	OP	0.89	0.25	0.43	0.09	0.66	0.13	0.31	0.08	0.16	0.05	0.27	0.08
Nereis sp.	PRE-OP	0.00	0.00	0.04	0.03	0.00	0.00	0.00	0.00	0.02	0.02	0.02	0.02
Nereis sp. (not counted as sp)	PRE-OP	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Neverita reclusiana	PRE-OP	0.06	0.03	0.02	0.02	0.02	0.02	0.04	0.03	0.02	0.02	0.08	0.06
	OP	0.05	0.03	0.10	0.03	0.08	0.03	0.13	0.04	0.04	0.02	0.00	0.00
Nothria sp. juvenile	PRE-OP	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.02	0.04	0.02	0.00	0.00
Notocirrus californiensus	PRE-OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.00
	OP	0.01	0.01	0.04	0.02	0.05	0.02	0.00	0.00	0.04	0.02	0.01	0.01
Notomastus (C.) tenuis	PRE-OP	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00
Notomastus sp.	PRE-OP	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Nuculana sp.	PRE-OP	0.00	0.00	0.02	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.02
	OP	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00
Nuculana taphira	PRE-OP	0.17	0.06	0.10	0.06	0.08	0.05	0.15	0.06	0.15	0.06	0.17	0.07
	OP	0.18	0.04	0.14	0.04	0.14	0.06	0.10	0.03	0.06	0.03	0.04	0.02
Nymphon cf. heterodenticulatum	PRE-OP	0.00	0.00	0.02	0.02	0.00	0.00	0.00	0.00	0.04	0.02	0.02	0.02
	OP	0.15	0.03	0.05	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
O. amphipoda unidentified	OP	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.00	0.00	0.01	0.01
O. decapoda unidentified	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00
Odontosyllis phosphorea	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00
Odostomia (Evalea) sp.	PRE-OP	0.00	0.00	0.02	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.02
	OP	0.02	0.01	0.02	0.01	0.00	0.00	0.00	0.00	0.01	0.01	0.02	0.01
Odostomia (Evalea) sp. A	PRE-OP	0.00	0.00	0.00	0.00	0.08	0.05	0.00	0.00	0.06	0.04	0.00	0.00
	OP	0.02	0.02	0.03	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Odostomia (Evalea) sp. B	PRE-OP	0.08	0.06	0.10	0.04	0.06	0.04	0.06	0.03	0.00	0.00	0.04	0.03

SOFT BENTHOS AVERAGE ABUNDANCE

DEPTH IS 18 METERS

SPECIES NAME	PERIOD	700 METERS MEAN	700 METERS SE	1100 METERS MEAN	1100 METERS SE	1900 METERS MEAN	1900 METERS SE	3350 METERS MEAN	3350 METERS SE	6700 METERS MEAN	6700 METERS SE	9400 METERS MEAN	9400 METERS SE
	OP	0.14	0.04	0.11	0.04	0.06	0.03	0.06	0.03	0.05	0.02	0.03	0.02
	OP	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00
Odostomia (Evalea) sp. D	PRE-OP	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.00	0.00	0.00	0.00
	OP	0.03	0.02	0.02	0.01	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Odostomia (Evalea) sp. F	PRE-OP	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00
Odostomia (Evalea) sp. H	OP	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Odostomia (Evalea) sp.C	PRE-OP	0.17	0.13	0.00	0.00	0.04	0.02	0.02	0.02	0.02	0.02	0.00	0.00
	OP	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.01	0.01	0.00	0.00
Odostomia spp.	PRE-OP	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00
	OP	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ogyrides sp.	PRE-OP	0.00	0.00	0.02	0.02	0.02	0.02	0.02	0.02	0.00	0.00	0.00	0.00
	OP	0.02	0.01	0.00	0.00	0.01	0.01	0.03	0.02	0.01	0.01	0.00	0.00
Olivella baetica	PRE-OP	0.15	0.07	0.25	0.10	0.15	0.07	0.29	0.09	0.42	0.10	0.69	0.16
	OP	0.39	0.08	0.59	0.13	0.40	0.10	0.27	0.06	0.34	0.13	0.24	0.06
Onuphidae (not counted as sp)	OP	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.00
Onuphidae unidentified	PRE-OP	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.02	0.00	0.00	0.02	0.02
	OP	0.04	0.02	0.02	0.02	0.02	0.01	0.03	0.02	0.03	0.02	0.00	0.00
Onuphis eremita	OP	0.00	0.00	0.01	0.01	0.01	0.01	0.03	0.01	0.00	0.00	0.00	0.00
Onuphis iridescens	PRE-OP	0.12	0.04	0.35	0.06	0.21	0.09	0.10	0.07	0.15	0.05	0.21	0.07
	OP	0.09	0.03	0.05	0.02	0.08	0.03	0.10	0.03	0.05	0.03	0.09	0.03
Onuphis sp.	OP	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ophelildae unidentified	PRE-OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ophiodermella halcyonis	PRE-OP	0.02	0.02	0.00	0.00	0.00	0.00	0.02	0.02	0.00	0.00	0.00	0.00
	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00
Ophiuroconis bispinosa	OP	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ophiuroidea juvenile	PRE-OP	0.27	0.11	0.17	0.11	0.29	0.18	0.21	0.10	0.21	0.07	0.23	0.11
	OP	0.70	0.15	0.51	0.11	0.25	0.08	0.17	0.06	0.24	0.05	0.27	0.09
Opistobranchia unidentified	OP	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Orbinildae (not counted as sp)	OP	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01
Orbinildae unidentified	PRE-OP	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	OP	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.01
Orchomene anaquela	PRE-OP	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.02	0.00	0.00	0.00	0.00

SOFT BENTHOS AVERAGE ABUNDANCE

DEPTH IS 18 METERS

SPECIES NAME	PERIOD	700 METERS MEAN	700 METERS SE	1100 METERS MEAN	1100 METERS SE	1900 METERS MEAN	1900 METERS SE	3350 METERS MEAN	3350 METERS SE	6700 METERS MEAN	6700 METERS SE	9400 METERS MEAN	9400 METERS SE
	OP	0.05	0.04	0.23	0.20	0.26	0.23	0.04	0.02	0.00	0.00	0.01	0.01
Orchomene spp. juvenile	OP	0.03	0.02	0.01	0.01	0.06	0.03	0.02	0.02	0.02	0.01	0.01	0.01
Owenia collaris	PRE-OP	0.06	0.03	0.08	0.05	0.23	0.08	0.12	0.04	0.19	0.08	0.23	0.07
	OP	0.01	0.01	0.00	0.00	0.01	0.01	0.02	0.01	0.02	0.01	0.02	0.01
Owenidae	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00
Oxyurostylis pacifica	PRE-OP	0.12	0.05	0.06	0.03	0.17	0.06	0.10	0.06	0.06	0.03	0.02	0.02
	OP	0.47	0.09	0.38	0.10	0.46	0.08	0.33	0.08	0.39	0.09	0.26	0.08
OPH00999	OP	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pachynus barnardi	PRE-OP	0.08	0.03	0.02	0.02	0.12	0.06	0.06	0.03	0.02	0.02	0.08	0.04
	OP	0.23	0.05	0.26	0.06	0.27	0.06	0.23	0.04	0.25	0.05	0.18	0.05
Paleanotus bellis	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00
Paranaitis polynoides	PRE-OP	0.00	0.00	0.02	0.02	0.02	0.02	0.00	0.00	0.04	0.02	0.00	0.00
	OP	0.02	0.01	0.00	0.00	0.05	0.01	0.02	0.01	0.02	0.01	0.00	0.00
Paranemertes sp. A	PRE-OP	0.58	0.12	0.33	0.09	0.58	0.17	0.29	0.09	0.44	0.13	0.29	0.11
	OP	0.71	0.11	0.57	0.11	0.55	0.10	0.37	0.09	0.34	0.07	0.31	0.08
Paranemertes sp. B	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00
Paraonidae (not counted as sp)	OP	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.01	0.01	0.01	0.01
Paraonidae unidentified	OP	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Parapleustes pugettensis	PRE-OP	0.08	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00
Paraprionospio pinnata	PRE-OP	0.56	0.07	0.54	0.12	0.67	0.11	0.65	0.15	0.60	0.10	0.42	0.09
	OP	1.02	0.12	0.78	0.10	1.02	0.14	0.62	0.09	0.70	0.09	0.58	0.08
Parasterope hulingsi	PRE-OP	0.44	0.19	0.37	0.12	0.50	0.16	0.27	0.08	0.50	0.15	0.29	0.10
	OP	1.02	0.20	1.16	0.44	0.68	0.10	0.59	0.10	0.46	0.08	0.66	0.28
Pareulepis fimbriata	OP	0.01	0.01	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.02	0.01
Parvilucina tenuisculpta	PRE-OP	0.08	0.04	0.02	0.02	0.06	0.04	0.06	0.03	0.23	0.07	0.06	0.03
	OP	0.15	0.05	0.08	0.03	0.16	0.05	0.17	0.04	0.24	0.06	0.14	0.05
Pectinaria californiensis	PRE-OP	0.02	0.02	0.02	0.02	0.02	0.02	0.00	0.00	0.00	0.00	0.00	0.00
	OP	0.00	0.00	0.02	0.01	0.00	0.00	0.00	0.00	0.02	0.01	0.01	0.01
Pelecypoda	PRE-OP	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	OP	0.00	0.00	0.00	0.00	0.02	0.02	0.03	0.03	0.04	0.04	0.08	0.03
Pelecypoda unidentified	PRE-OP	0.04	0.04	0.08	0.04	0.02	0.02	0.15	0.10	0.00	0.00	0.02	0.02

SOFT BENTHOS AVERAGE ABUNDANCE

DEPTH IS 18 METERS

SPECIES NAME	PERIOD	700 METERS MEAN	700 METERS SE	1100 METERS MEAN	1100 METERS SE	1900 METERS MEAN	1900 METERS SE	3350 METERS MEAN	3350 METERS SE	6700 METERS MEAN	6700 METERS SE	9400 METERS MEAN	9400 METERS SE
	OP	0.02	0.01	0.05	0.05	0.01	0.01	0.01	0.01	0.02	0.02	0.02	0.01
Periploma planulsculum	OP	0.00	0.00	0.01	0.01	0.01	0.01	0.02	0.01	0.01	0.01	0.00	0.00
Petaloproctus sp.	OP	0.14	0.03	0.01	0.01	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Pherusa neopapillata	OP	0.06	0.02	0.01	0.01	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01
Philine sp.	OP	0.06	0.03	0.08	0.06	0.02	0.02	0.01	0.01	0.00	0.00	0.03	0.03
Philine sp. A	OP	0.11	0.03	0.10	0.03	0.03	0.01	0.05	0.03	0.02	0.02	0.11	0.03
Phoronis spp.	PRE-OP	0.04	0.03	0.04	0.03	0.10	0.05	0.15	0.05	0.10	0.04	0.08	0.06
	OP	0.15	0.04	0.14	0.04	0.17	0.04	0.25	0.07	0.22	0.06	0.26	0.06
Photis bifurcata	PRE-OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.00
	OP	0.20	0.07	0.28	0.10	0.37	0.12	0.65	0.26	0.32	0.11	0.27	0.10
Photis brevipes	OP	0.02	0.01	0.00	0.00	0.02	0.02	0.02	0.01	0.02	0.02	0.08	0.04
Photis californica	PRE-OP	0.12	0.06	0.08	0.03	0.02	0.02	0.06	0.03	0.04	0.03	0.08	0.05
	OP	0.23	0.06	0.29	0.11	0.51	0.14	0.25	0.08	0.17	0.07	0.35	0.12
Photis lacia	OP	0.00	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Photis macrotica	OP	0.08	0.07	0.17	0.11	0.16	0.07	0.09	0.05	0.12	0.07	0.03	0.03
Phyllodoce (Anaitides) papillosa	PRE-OP	0.00	0.00	0.00	0.00	0.12	0.04	0.06	0.03	0.06	0.04	0.10	0.06
	OP	0.10	0.03	0.20	0.04	0.40	0.09	0.22	0.07	0.16	0.05	0.26	0.08
Phyllodoce (Aponaitides) hartmanae	PRE-OP	0.33	0.14	0.15	0.06	0.21	0.07	0.15	0.05	0.37	0.08	0.29	0.12
	OP	0.35	0.10	0.41	0.09	0.30	0.08	0.31	0.06	0.15	0.04	0.39	0.09
Phyllodoce sp.	PRE-OP	0.08	0.06	0.00	0.00	0.10	0.05	0.02	0.02	0.00	0.00	0.00	0.00
	OP	0.12	0.05	0.01	0.01	0.00	0.00	0.00	0.00	0.01	0.01	0.03	0.03
Phyllodoce sp. (not counted as sp)	PRE-OP	0.00	0.00	0.02	0.02	0.00	0.00	0.02	0.02	0.02	0.02	0.00	0.00
	OP	0.08	0.05	0.05	0.04	0.10	0.06	0.14	0.07	0.06	0.05	0.14	0.07
Phyllodocidae (not counted as sp)	PRE-OP	0.02	0.02	0.06	0.04	0.02	0.02	0.00	0.00	0.00	0.00	0.00	0.00
	OP	0.02	0.02	0.02	0.01	0.01	0.01	0.03	0.03	0.01	0.01	0.01	0.01
Phyllodocidae unidentified	PRE-OP	0.02	0.02	0.00	0.00	0.00	0.00	0.02	0.02	0.00	0.00	0.00	0.00
	OP	0.04	0.02	0.02	0.01	0.01	0.01	0.02	0.02	0.01	0.01	0.01	0.01
Phylo felix	OP	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pilargiidae unidentified	PRE-OP	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pilargis berkeleyi	PRE-OP	0.02	0.02	0.00	0.00	0.02	0.02	0.02	0.02	0.00	0.00	0.00	0.00
	OP	0.01	0.01	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.00	0.00

SOFT BENTHOS AVERAGE ABUNDANCE

DEPTH IS 18 METERS

SPECIES NAME	PERIOD	700 METERS MEAN	700 METERS SE	1100 METERS MEAN	1100 METERS SE	1900 METERS MEAN	1900 METERS SE	3350 METERS MEAN	3350 METERS SE	6700 METERS MEAN	6700 METERS SE	9400 METERS MEAN	9400 METERS SE
Pilargis sp.	PRE-OP	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00
Pinnixa faba	PRE-OP	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pinnixa hiatus	PRE-OP	0.17	0.07	0.29	0.07	0.02	0.02	0.04	0.03	0.04	0.03	0.15	0.06
	OP	0.13	0.06	0.10	0.04	0.02	0.01	0.03	0.02	0.02	0.01	0.10	0.02
Pinnixa longipes	PRE-OP	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	OP	0.01	0.01	0.04	0.02	0.01	0.01	0.00	0.00	0.00	0.00	0.02	0.01
Pinnixa sp. juvenile	PRE-OP	0.21	0.12	0.06	0.04	0.04	0.03	0.08	0.04	0.44	0.30	0.10	0.04
	OP	0.03	0.01	0.03	0.02	0.03	0.02	0.01	0.01	0.00	0.00	0.02	0.01
Pinnixa sp. juvenile (not counted as sp)	PRE-OP	0.10	0.07	0.21	0.10	0.02	0.02	0.00	0.00	0.00	0.00	0.04	0.03
	OP	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pinnixa tubicola/tomentosa	PRE-OP	0.02	0.02	0.04	0.04	0.08	0.05	0.04	0.04	0.06	0.03	0.10	0.05
	OP	0.03	0.02	0.00	0.00	0.01	0.01	0.01	0.01	0.00	0.00	0.02	0.02
Pista disjuncta	PRE-OP	0.23	0.11	0.27	0.07	0.19	0.06	0.29	0.11	0.02	0.02	0.21	0.07
	OP	0.66	0.21	0.72	0.19	1.51	0.31	1.14	0.27	2.44	0.58	1.07	0.17
Pista sp.	PRE-OP	0.00	0.00	0.04	0.02	0.08	0.06	0.06	0.03	0.08	0.04	0.00	0.00
	OP	0.18	0.13	0.15	0.11	0.23	0.19	0.01	0.01	0.05	0.04	0.00	0.00
Pista sp. (not counted as sp)	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.09	0.00	0.00	0.00	0.14	0.00
Platynereis bicanaliculata	OP	0.00	0.00	0.05	0.04	0.01	0.01	0.00	0.00	0.01	0.01	0.05	0.04
Pleustes platypa	PRE-OP	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pleusymtes subglaber	OP	0.00	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.00	0.00
Podakeopsis brevipalpa	PRE-OP	0.04	0.03	0.02	0.02	0.10	0.05	0.06	0.03	0.15	0.05	0.02	0.02
	OP	0.35	0.06	0.24	0.05	0.27	0.06	0.31	0.07	0.22	0.05	0.12	0.04
Podocopid A	PRE-OP	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.01	0.00	0.00
Podocopid B	PRE-OP	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	OP	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Podocopid D	OP	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.01	0.00	0.00
Podocopid E	OP	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Podocopid F	OP	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00
Poecilochaetous johnsoni	PRE-OP	0.08	0.03	0.00	0.00	0.08	0.05	0.02	0.02	0.02	0.02	0.08	0.03
	OP	0.29	0.07	0.08	0.03	0.13	0.03	0.09	0.04	0.04	0.02	0.13	0.04
Poecilochaetous sp.	OP	0.02	0.00	0.00	0.00	0.01	0.00	0.02	0.00	0.02	0.00	0.01	0.00

SOFT BENTHOS AVERAGE ABUNDANCE

DEPTH IS 18 METERS

SPECIES NAME	PERIOD	700 METERS MEAN	700 METERS SE	1100 METERS MEAN	1100 METERS SE	1900 METERS MEAN	1900 METERS SE	3350 METERS MEAN	3350 METERS SE	6700 METERS MEAN	6700 METERS SE	9400 METERS MEAN	9400 METERS SE
Polycirrus californicus	OP	0.01	0.01	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.00	0.00
Polycirrus sp.	OP	0.01	0.01	0.01	0.01	0.00	0.00	0.01	0.01	0.00	0.00	0.01	0.01
Polydora bioccipitalis	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00
Polydora neocardalia	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00
Polydora sp.	PRE-OP	0.02	0.02	0.00	0.00	0.02	0.02	0.00	0.00	0.00	0.00	0.00	0.00
	OP	0.01	0.01	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Polynoidae (not counted as sp)	PRE-OP	0.02	0.02	0.02	0.02	0.02	0.02	0.00	0.00	0.06	0.06	0.00	0.00
	OP	0.01	0.01	0.04	0.02	0.02	0.01	0.01	0.01	0.02	0.01	0.04	0.04
Polynoidae unidentified	PRE-OP	0.06	0.03	0.04	0.03	0.06	0.04	0.04	0.03	0.00	0.00	0.06	0.04
	OP	0.04	0.02	0.06	0.02	0.11	0.03	0.11	0.04	0.11	0.04	0.09	0.02
Polyophthalmus pictus	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00
Pontogeneia rostrata	OP	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Porcellidium sp.	PRE-OP	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	OP	0.04	0.03	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Portunus xantusii	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01
Praxillella affinis pacifica	PRE-OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00
	OP	0.03	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.05	0.04
Prionospio cf. steenstrupi	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00
Prionospio cirrifera	PRE-OP	0.23	0.11	0.33	0.10	0.00	0.00	0.00	0.00	0.12	0.07	0.19	0.16
	OP	1.94	0.64	1.28	0.46	0.90	0.30	0.29	0.09	0.14	0.04	0.24	0.08
Prionospio pygmaea	PRE-OP	4.62	1.17	4.56	0.99	2.40	0.45	2.15	0.44	3.46	0.66	3.04	0.67
	OP	3.57	0.45	3.28	0.38	3.15	0.35	3.54	0.48	2.40	0.31	2.60	0.44
Prionospio sp. (not counted as sp)	OP	0.02	0.01	0.00	0.00	0.01	0.01	0.01	0.01	0.00	0.00	0.05	0.03
Procephalothrix	OP	0.04	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.25	0.21
Pyromaia tuberculata	PRE-OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00
PCHA0021	OP	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PGON9090	PRE-OP	0.00	0.00	0.02	0.02	0.06	0.04	0.02	0.02	0.00	0.00	0.00	0.00
	OP	0.03	0.02	0.04	0.02	0.09	0.02	0.01	0.01	0.00	0.00	0.01	0.01
PPAR9029	OP	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

SOFT BENTHOS AVERAGE ABUNDANCE

DEPTH IS 18 METERS

SPECIES NAME	PERIOD	700 METERS MEAN	700 METERS SE	1100 METERS MEAN	1100 METERS SE	1900 METERS MEAN	1900 METERS SE	3350 METERS MEAN	3350 METERS SE	6700 METERS MEAN	6700 METERS SE	9400 METERS MEAN	9400 METERS SE
PTER0032	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00
Randallia ornata	PRE-OP	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00
Renilla kolleri	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00
Rhepoxinius fatigens	OP	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rhepoxynius abronius	PRE-OP	0.00	0.00	0.02	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.02
	OP	0.06	0.03	0.02	0.01	0.13	0.06	0.47	0.12	0.48	0.11	0.38	0.14
Rhepoxynius daboius	PRE-OP	0.37	0.19	0.29	0.07	0.12	0.05	0.33	0.06	0.25	0.09	1.00	0.19
	OP	0.10	0.05	0.09	0.03	0.22	0.06	0.33	0.08	0.46	0.07	0.44	0.10
Rhepoxynius heterocuspidatus	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00
Rhepoxynius lucubrans	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.02	0.01
Rhepoxynius menziese	PRE-OP	0.25	0.08	0.46	0.12	0.60	0.11	0.62	0.13	1.00	0.21	1.19	0.24
	OP	0.46	0.08	0.43	0.09	0.81	0.12	0.92	0.13	1.11	0.14	0.58	0.08
Rhepoxynius sp. juvenile	PRE-OP	0.04	0.02	0.04	0.02	0.02	0.02	0.04	0.02	0.17	0.13	0.00	0.00
	PRE-OP	0.62	0.19	1.00	0.23	1.79	0.64	1.17	0.25	1.65	0.46	2.40	0.30
	OP	0.06	0.03	0.06	0.05	0.03	0.02	0.13	0.09	0.01	0.01	0.23	0.09
	OP	0.38	0.11	0.37	0.07	0.75	0.10	0.90	0.13	0.99	0.16	0.71	0.13
Rhepoxynius sp. A	PRE-OP	0.02	0.02	0.00	0.00	0.00	0.00	0.02	0.02	0.00	0.00	0.00	0.00
	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00
Rhepoxynius stenodes	PRE-OP	0.46	0.15	0.37	0.11	0.54	0.15	0.58	0.16	0.50	0.13	0.48	0.13
	OP	0.88	0.17	0.99	0.13	1.54	0.16	2.19	0.25	1.44	0.22	0.78	0.13
Rhepoxynius variatus	PRE-OP	0.50	0.13	0.37	0.10	0.19	0.09	0.33	0.17	0.62	0.21	1.31	0.30
	OP	0.14	0.05	0.17	0.06	0.15	0.07	0.14	0.04	0.30	0.10	0.17	0.05
Rictaxis punctocoelatus	PRE-OP	0.04	0.03	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
	OP	0.05	0.02	0.03	0.01	0.03	0.01	0.00	0.00	0.00	0.00	0.01	0.01
Rudilemboides stenopropodus	PRE-OP	0.73	0.35	0.62	0.28	0.85	0.49	0.75	0.26	1.02	0.53	0.96	0.48
	OP	0.88	0.41	1.00	0.39	1.41	0.79	0.78	0.37	0.80	0.49	1.11	0.63
Rutiderma rostrata	PRE-OP	2.27	0.32	1.04	0.10	3.10	0.44	1.29	0.28	2.79	0.31	2.48	0.25
	OP	1.68	0.16	1.52	0.20	0.77	0.11	0.47	0.09	0.36	0.07	1.96	0.35
Sabellidae (not counted as sp)	PRE-OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00
	OP	0.03	0.02	0.03	0.02	0.01	0.01	0.03	0.02	0.03	0.02	0.05	0.02
Sabellidae unidentified	PRE-OP	0.00	0.00	0.02	0.02	0.00	0.00	0.02	0.02	0.00	0.00	0.02	0.02
	OP	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.02	0.02	0.02	0.01
Sarsiella sp. A SCAMIT	PRE-OP	0.02	0.02	0.02	0.02	0.15	0.04	0.00	0.00	0.02	0.02	0.00	0.00

SOFT BENTHOS AVERAGE ABUNDANCE

DEPTH IS 18 METERS

SPECIES NAME	PERIOD	700 METERS MEAN	700 METERS SE	1100 METERS MEAN	1100 METERS SE	1900 METERS MEAN	1900 METERS SE	3350 METERS MEAN	3350 METERS SE	6700 METERS MEAN	6700 METERS SE	9400 METERS MEAN	9400 METERS SE
	OP	0.17	0.04	0.09	0.04	0.08	0.03	0.02	0.01	0.03	0.02	0.03	0.02
Sarsiella sp. B	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.01	0.00
Scolanthus sp. A SCAMIT	OP	0.02	0.01	0.03	0.02	0.02	0.02	0.00	0.00	0.01	0.01	0.04	0.02
Scoloplos armiger	OP	0.03	0.02	0.02	0.02	0.08	0.02	0.02	0.01	0.16	0.07	0.05	0.02
Scoloplos sp.	PRE-OP	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.02	0.04	0.02	0.04	0.02
	OP	0.00	0.00	0.00	0.00	0.01	0.00	0.02	0.00	0.00	0.00	0.00	0.00
Scolopos sp. (not counted as sp)	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00
Shrimp juvenile	OP	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Shrimp-larvae	OP	0.01	0.01	0.06	0.03	0.10	0.05	0.02	0.01	0.03	0.01	0.03	0.03
Sigalionidae (not counted as sp)	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01
Sigalionidae unidentified	PRE-OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	OP	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.01	0.01	0.00	0.00
Sigambra sp.	PRE-OP	0.02	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sigambra tentaculata	OP	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.00
Siliqua lucida	PRE-OP	0.00	0.00	0.04	0.03	0.02	0.02	0.00	0.00	0.02	0.02	0.02	0.02
	OP	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Silophasma geminatum	PRE-OP	0.02	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.02	0.04	0.04
	OP	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sinum scopulosum	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00
Sipunculida unidentified	PRE-OP	0.02	0.02	0.00	0.00	0.00	0.00	0.02	0.02	0.00	0.00	0.00	0.00
	OP	0.01	0.01	0.02	0.01	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.01
Solen rosaceus	PRE-OP	0.00	0.00	0.00	0.00	0.02	0.00	0.02	0.00	0.00	0.00	0.00	0.00
	OP	0.02	0.01	0.00	0.00	0.01	0.01	0.02	0.01	0.01	0.01	0.01	0.01
Solen sicarius	PRE-OP	0.00	0.00	0.06	0.02	0.00	0.00	0.00	0.00	0.04	0.02	0.04	0.02
	OP	0.06	0.03	0.06	0.04	0.09	0.04	0.05	0.03	0.08	0.04	0.09	0.03
Solen sp.	PRE-OP	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00
	OP	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sphaerodoropsis biserialis	PRE-OP	0.02	0.02	0.00	0.00	0.02	0.02	0.00	0.00	0.00	0.00	0.04	0.02
	OP	0.04	0.02	0.02	0.01	0.01	0.01	0.05	0.02	0.08	0.03	0.12	0.04
Sphaerodoropsis minuta	PRE-OP	0.12	0.05	0.17	0.07	0.23	0.05	0.00	0.00	0.04	0.03	0.10	0.05
	OP	0.05	0.02	0.01	0.01	0.09	0.04	0.03	0.02	0.03	0.02	0.01	0.01

SOFT BENTHOS AVERAGE ABUNDANCE

DEPTH IS 18 METERS

SPECIES NAME	PERIOD	700 METERS MEAN	700 METERS SE	1100 METERS MEAN	1100 METERS SE	1900 METERS MEAN	1900 METERS SE	3350 METERS MEAN	3350 METERS SE	6700 METERS MEAN	6700 METERS SE	9400 METERS MEAN	9400 METERS SE
Sphaerosyllis californiensis	OP	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Spio sp.	OP	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Spiochaetopterus costarum	PRE-OP	0.00	0.00	0.04	0.02	0.00	0.00	0.02	0.02	0.02	0.02	0.02	0.02
	OP	0.09	0.04	0.08	0.03	0.10	0.04	0.06	0.03	0.05	0.02	0.08	0.02
Spionidae (not counted as sp)	PRE-OP	0.00	0.00	0.00	0.00	0.02	0.02	0.02	0.02	0.00	0.00	0.00	0.00
	OP	0.08	0.03	0.02	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.01	0.01
Spionidae unidentified	PRE-OP	0.02	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.50	0.37	0.00	0.00
	OP	0.04	0.03	0.05	0.02	0.00	0.00	0.03	0.01	0.01	0.01	0.00	0.00
Spiophanes berkeleyorum	PRE-OP	0.00	0.00	0.02	0.02	0.00	0.00	0.04	0.02	0.06	0.04	0.00	0.00
	OP	0.00	0.00	0.01	0.01	0.00	0.00	0.01	0.01	0.00	0.00	0.04	0.02
Spiophanes bombyx	PRE-OP	0.04	0.02	0.00	0.00	0.02	0.02	0.00	0.00	0.04	0.02	0.00	0.00
	OP	0.14	0.05	0.18	0.06	0.68	0.19	0.92	0.23	0.30	0.06	0.40	0.08
Spiophanes missionensis	PRE-OP	0.06	0.03	0.06	0.04	0.02	0.02	0.02	0.02	0.06	0.03	0.08	0.04
	OP	0.32	0.08	0.38	0.11	0.51	0.11	0.53	0.13	0.49	0.09	0.57	0.10
Spiophanes sp.	PRE-OP	0.02	0.02	0.02	0.02	0.06	0.04	0.06	0.04	0.02	0.02	0.02	0.02
	OP	0.00	0.00	0.00	0.00	0.03	0.02	0.02	0.01	0.01	0.01	0.02	0.01
Spiophanes sp. (not counted as sp)	PRE-OP	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00
	OP	0.01	0.01	0.01	0.01	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.01
Stenothoe estacola	PRE-OP	0.08	0.06	0.00	0.00	0.19	0.15	0.02	0.02	0.06	0.04	0.15	0.13
	OP	0.08	0.03	0.02	0.01	0.03	0.02	0.08	0.03	0.05	0.02	0.11	0.06
Stenotholdes bicoma	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00
Sternaspis fossor	PRE-OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	OP	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sthenelais sp.	OP	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01
Sthenelais verruculosa	PRE-OP	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00
Sthenelanella uniformis	PRE-OP	0.06	0.03	0.00	0.00	0.04	0.03	0.02	0.02	0.00	0.00	0.04	0.03
	OP	0.04	0.02	0.04	0.02	0.04	0.02	0.03	0.02	0.01	0.01	0.03	0.02
Streblosoma crassibranchia	PRE-OP	0.00	0.00	0.02	0.02	0.06	0.04	0.06	0.04	0.04	0.04	0.02	0.02
	OP	0.03	0.02	0.02	0.01	0.02	0.02	0.02	0.01	0.00	0.00	0.01	0.01
Stylatula elongata	OP	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sulcoretusa xystrum	PRE-OP	0.48	0.14	0.19	0.07	0.21	0.07	0.50	0.17	0.27	0.10	0.31	0.08
	OP	0.67	0.15	0.81	0.15	0.68	0.11	0.49	0.11	0.65	0.12	0.55	0.11

SOFT BENTHOS AVERAGE ABUNDANCE

DEPTH IS 18 METERS

SPECIES NAME	PERIOD	700 METERS MEAN	700 METERS SE	1100 METERS MEAN	1100 METERS SE	1900 METERS MEAN	1900 METERS SE	3350 METERS MEAN	3350 METERS SE	6700 METERS MEAN	6700 METERS SE	9400 METERS MEAN	9400 METERS SE
Syllidia sp. A	OP	0.01	0.01	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Synchelidium rectipalmum	OP	0.08	0.00	0.05	0.00	0.04	0.00	0.00	0.00	0.14	0.00	0.14	0.00
Synchelidium shoemakeri	PRE-OP	0.69	0.19	0.37	0.14	1.08	0.33	0.73	0.15	0.96	0.31	1.00	0.21
	OP	1.37	0.22	1.21	0.19	1.87	0.25	1.65	0.21	2.02	0.26	1.58	0.19
Synidotea hartfordi	OP	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tauberia gracilis	PRE-OP	3.35	0.41	6.46	0.74	4.12	0.66	3.02	0.39	2.17	0.26	0.85	0.17
	OP	14.14	1.04	9.24	0.55	1.65	0.23	1.13	0.37	0.46	0.12	0.62	0.11
Tellina idae	PRE-OP	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.02	0.00	0.00	0.02	0.02
	OP	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.04	0.02	0.01	0.01
Tellina modesta	PRE-OP	2.15	0.56	1.44	0.18	2.79	0.73	2.52	0.45	2.37	0.43	3.46	0.59
	OP	2.90	0.36	3.28	0.46	3.31	0.42	4.38	0.55	4.43	0.74	3.12	0.39
Terebellidae (not counted as sp)	PRE-OP	0.00	0.00	0.02	0.02	0.02	0.02	0.02	0.02	0.00	0.00	0.00	0.00
	OP	0.03	0.01	0.06	0.04	0.05	0.03	0.03	0.02	0.01	0.01	0.04	0.03
Terebellidae juvenile	PRE-OP	0.00	0.00	0.00	0.00	0.02	0.02	0.04	0.02	0.00	0.00	0.00	0.00
	OP	0.08	0.06	0.01	0.01	0.01	0.01	0.01	0.01	0.04	0.01	0.03	0.02
Terebellides stroemii	PRE-OP	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Terebra danai	OP	0.00	0.00	0.00	0.00	0.01	0.01	0.03	0.02	0.00	0.00	0.00	0.00
Terebra sp.	OP	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01
Tetrastemma spp.	PRE-OP	0.04	0.03	0.00	0.00	0.00	0.00	0.04	0.03	0.00	0.00	0.02	0.02
Thalenessa spinosa	PRE-OP	0.21	0.05	0.10	0.04	0.35	0.16	0.10	0.05	0.27	0.07	0.35	0.12
	OP	0.19	0.04	0.26	0.05	0.26	0.05	0.33	0.06	0.30	0.06	0.45	0.08
Tharyx sp.	PRE-OP	0.27	0.09	0.21	0.07	1.06	0.33	0.31	0.11	0.29	0.11	0.12	0.05
	OP	0.70	0.09	0.66	0.09	0.63	0.10	0.28	0.05	0.23	0.04	0.12	0.04
Tharyx sp. (not counted as sp)	PRE-OP	0.00	0.00	0.04	0.04	0.23	0.20	0.00	0.00	0.04	0.04	0.02	0.02
	OP	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tharyx tesselata	PRE-OP	0.10	0.05	0.12	0.06	0.15	0.06	0.12	0.07	0.04	0.03	0.04	0.03
	OP	0.02	0.01	0.01	0.01	0.01	0.01	0.02	0.01	0.00	0.00	0.00	0.00
Thecondonta oblongus	PRE-OP	0.00	0.00	0.00	0.00	0.02	0.02	0.02	0.02	0.00	0.00	0.02	0.02
Thyasira flexuosa	PRE-OP	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00
Tiron biocellata	PRE-OP	0.02	0.02	0.00	0.00	0.00	0.00	0.02	0.02	0.00	0.00	0.02	0.02
	OP	0.04	0.02	0.01	0.01	0.06	0.03	0.03	0.02	0.08	0.03	0.05	0.02
Tiron tropakis	PRE-OP	0.02	0.02	0.00	0.00	0.04	0.02	0.00	0.00	0.02	0.02	0.02	0.02

SOFT BENTHOS AVERAGE ABUNDANCE

DEPTH IS 18 METERS

SPECIES NAME	PERIOD	700 METERS MEAN	700 METERS SE	1100 METERS MEAN	1100 METERS SE	1900 METERS MEAN	1900 METERS SE	3350 METERS MEAN	3350 METERS SE	6700 METERS MEAN	6700 METERS SE	9400 METERS MEAN	9400 METERS SE
Trachycardium quadragenarium	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00
Travisia gigas	PRE-OP	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00
Tubulanidae sp. B	PRE-OP	0.23	0.08	0.27	0.09	0.40	0.09	0.08	0.05	0.04	0.03	0.27	0.07
	OP	0.38	0.08	0.32	0.08	0.19	0.07	0.31	0.07	0.14	0.05	0.18	0.05
Tubulanus nothus (black)	PRE-OP	0.58	0.16	0.42	0.12	0.29	0.09	0.50	0.13	0.15	0.06	0.19	0.07
	OP	0.14	0.04	0.11	0.04	0.00	0.00	0.01	0.01	0.00	0.00	0.01	0.01
Tubulanus pellucidus (red)	PRE-OP	0.06	0.04	0.04	0.02	0.00	0.00	0.02	0.02	0.00	0.00	0.02	0.02
	OP	0.18	0.06	0.13	0.04	0.06	0.03	0.10	0.04	0.05	0.03	0.00	0.00
Tubulanus sp. P	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.00
Turbonilla (Chemnitzia) sp.	PRE-OP	0.00	0.00	0.00	0.00	0.04	0.02	0.00	0.00	0.00	0.00	0.02	0.02
	OP	0.03	0.02	0.04	0.02	0.03	0.02	0.02	0.02	0.05	0.02	0.06	0.03
Turbonilla (Chemnitzia) sp. A	PRE-OP	0.00	0.00	0.02	0.02	0.04	0.02	0.00	0.00	0.00	0.00	0.02	0.02
	OP	0.02	0.01	0.06	0.03	0.02	0.02	0.00	0.00	0.03	0.02	0.02	0.01
Turbonilla (Chemnitzia) sp. B	PRE-OP	0.00	0.00	0.04	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.04
	OP	0.02	0.02	0.00	0.00	0.01	0.01	0.01	0.01	0.00	0.00	0.01	0.01
Turbonilla (Chemnitzia) sp. C	OP	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.04	0.04	0.02	0.01
Turbonilla (Chemnitzia) sp. D	PRE-OP	0.00	0.00	0.10	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	OP	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01
Turbonilla (Chemnitzia) sp. F	PRE-OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.00
	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00
Turbonilla (Pyrgiscus) sp.	PRE-OP	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.04	0.00	0.00	0.00
	OP	0.02	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00
Turbonilla (Pyrgiscus) sp. F	PRE-OP	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.02	0.04	0.04	0.00	0.00
	OP	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Turbonilla (Pyrgiscus) sp. G	PRE-OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	OP	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01
Typosyllis hyalina	PRE-OP	1.06	0.16	1.00	0.19	2.21	0.36	1.25	0.16	1.48	0.20	1.67	0.21
	OP	0.30	0.06	0.35	0.06	0.55	0.07	0.26	0.07	0.15	0.04	0.41	0.10
Veneridae unidentified	PRE-OP	0.00	0.00	0.00	0.00	0.02	0.02	0.04	0.04	0.08	0.05	0.00	0.00
	OP	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Volvuella cylindrica	PRE-OP	0.02	0.02	0.02	0.02	0.02	0.02	0.12	0.05	0.06	0.03	0.06	0.03
	OP	0.01	0.01	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.02	0.01

SOFT BENTHOS AVERAGE ABUNDANCE

DEPTH IS 18 METERS

SPECIES NAME	PERIOD	700 METERS MEAN	700 METERS SE	1100 METERS MEAN	1100 METERS SE	1900 METERS MEAN	1900 METERS SE	3350 METERS MEAN	3350 METERS SE	6700 METERS MEAN	6700 METERS SE	9400 METERS MEAN	9400 METERS SE
Volvulella panamica	OP	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00
Westwoodilla caecula	PRE-OP	0.10	0.04	0.04	0.03	0.06	0.03	0.04	0.03	0.00	0.00	0.00	0.00
	OP	0.06	0.02	0.09	0.02	0.04	0.02	0.08	0.03	0.04	0.02	0.02	0.01
Woodbridgea polystrigma	PRE-OP	0.00	0.00	0.04	0.02	0.02	0.02	0.04	0.04	0.00	0.00	0.02	0.02
	OP	0.03	0.02	0.00	0.00	0.00	0.00	0.03	0.02	0.00	0.00	0.00	0.00
Woodbridgea sp.	OP	0.01	0.01	0.01	0.01	0.03	0.03	0.00	0.00	0.05	0.02	0.03	0.01
Yoldia cooperi	PRE-OP	0.02	0.00	0.02	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.06	0.00
	OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00
Zaolutus actius	PRE-OP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.00
Zygeupolia sp.	PRE-OP	0.12	0.06	0.19	0.07	0.44	0.17	0.46	0.10	0.12	0.06	0.19	0.08
	OP	0.00	0.00	0.05	0.03	0.01	0.01	0.03	0.01	0.00	0.00	0.02	0.01

SOFT BENTHOS NUMBER OF ZERO OBSERVATIONS

DEPTH IS 8 METERS

SPECIES NAME	PERIOD	700 METERS ZEROS	700 METERS %	1100 METERS ZEROS	1100 METERS %	1900 METERS ZEROS	1900 METERS %	3350 METERS ZEROS	3350 METERS %	6700 METERS ZEROS	6700 METERS %	9400 METERS ZEROS	9400 METERS %
cf. Ianiropsis sp.	OP	30	96.8	31	100.0	31	100.0	31	100.0	31	100.0	31	100.0
Acanthodoris rhodoceras	OP	31	100.0	31	100.0	31	100.0	31	100.0	30	96.8	31	100.0
Acanthomysis macropsis	OP	31	100.0	30	96.8	31	100.0	30	96.8	31	100.0	30	96.8
Acanthomysis sp. juvenile	OP	29	93.5	30	96.8	30	96.8	31	100.0	31	100.0	30	96.8
Acesta catherinae	PRE-OP	5	31.3	6	37.5	5	31.3	2	12.5	0	0.0	5	31.3
	OP	6	19.4	15	48.4	4	12.9	4	12.9	2	6.5	4	12.9
Acesta horikoshii	OP	31	100.0	31	100.0	30	96.8	30	96.8	31	100.0	31	100.0
Acesta sp. B	PRE-OP	15	93.8	16	100.0	16	100.0	16	100.0	16	100.0	16	100.0
	OP	30	96.8	31	100.0	31	100.0	31	100.0	31	100.0	31	100.0
Acteocina harpa	PRE-OP	16	100.0	16	100.0	16	100.0	15	93.8	15	93.8	16	100.0
	OP	26	83.9	28	90.3	25	80.6	29	93.5	18	58.1	22	71.0
Acteocina inculta	PRE-OP	16	100.0	16	100.0	15	93.8	16	100.0	16	100.0	16	100.0
	OP	31	100.0	31	100.0	29	93.5	31	100.0	27	87.1	29	93.5
Acuminodeutopus heteruropus	PRE-OP	16	100.0	16	100.0	15	93.8	16	100.0	16	100.0	16	100.0
	OP	27	87.1	31	100.0	29	93.5	29	93.5	26	83.9	29	93.5
Aedicira pacifica	PRE-OP	15	93.8	16	100.0	16	100.0	16	100.0	16	100.0	16	100.0
	OP	29	93.5	29	93.5	28	90.3	30	96.8	31	100.0	31	100.0
Aedicira sp.	PRE-OP	15	93.8	16	100.0	16	100.0	16	100.0	16	100.0	16	100.0
	OP	30	96.8	31	100.0	31	100.0	31	100.0	31	100.0	31	100.0
Alia carinata	PRE-OP	16	100.0	16	100.0	15	93.8	16	100.0	16	100.0	16	100.0
	OP	27	87.1	31	100.0	31	100.0	31	100.0	30	96.8	31	100.0
Aligena sp.	OP	31	100.0	31	100.0	31	100.0	31	100.0	30	96.8	30	96.8
Amaeana occidentalis	PRE-OP	15	93.8	16	100.0	15	93.8	16	100.0	14	87.5	13	81.3
	OP	31	100.0	31	100.0	30	96.8	29	93.5	28	90.3	30	96.8
Amastigos acutus	PRE-OP	1	6.3	4	25.0	3	18.8	2	12.5	5	31.3	5	31.3
	OP	12	38.7	7	22.6	5	16.1	7	22.6	9	29.0	11	35.5
Amiantis callosa	PRE-OP	16	100.0	15	93.8	16	100.0	16	100.0	15	93.8	16	100.0
	OP	30	96.8	31	100.0	30	96.8	26	83.9	29	93.5	27	87.1
Ampelisca agassizi	PRE-OP	12	75.0	13	81.3	16	100.0	16	100.0	16	100.0	16	100.0
	OP	16	51.6	11	35.5	8	25.8	15	48.4	23	74.2	26	83.9
Ampelisca brevisimulata	OP	31	100.0	31	100.0	30	96.8	31	100.0	31	100.0	31	100.0
Ampelisca cristata	OP	31	100.0	31	100.0	31	100.0	31	100.0	30	96.8	31	100.0

SOFT BENTHOS NUMBER OF ZERO OBSERVATIONS

DEPTH IS 8 METERS

SPECIES NAME	PERIOD	700 METERS ZEROS	700 METERS %	1100 METERS ZEROS	1100 METERS %	1900 METERS ZEROS	1900 METERS %	3350 METERS ZEROS	3350 METERS %	6700 METERS ZEROS	6700 METERS %	9400 METERS ZEROS	9400 METERS %
Ampelisca cristata microdentata	OP	30	96.8	31	100.0	31	100.0	31	100.0	31	100.0	31	100.0
Ampelisca juvenile	PRE-OP	14	87.5	16	100.0	16	100.0	16	100.0	16	100.0	16	100.0
Ampharete labrops	PRE-OP	16	100.0	16	100.0	16	100.0	16	100.0	15	93.8	16	100.0
	OP	28	90.3	29	93.5	30	96.8	29	93.5	27	87.1	30	96.8
Ampharetidae (not counted as sp)	PRE-OP	15	93.8	16	100.0	16	100.0	16	100.0	16	100.0	16	100.0
Ampharetidae juven'le	OP	31	100.0	30	96.8	31	100.0	31	100.0	27	87.1	29	93.5
Ampharetidae unidentified	OP	30	96.8	31	100.0	31	100.0	31	100.0	31	100.0	31	100.0
Amphicteis scaphobranchiata	PRE-OP	14	87.5	16	100.0	16	100.0	16	100.0	16	100.0	15	93.8
Amphideutopus oculatus	OP	31	100.0	31	100.0	31	100.0	31	100.0	31	100.0	30	96.8
Amphilocus neopolitanus	OP	30	96.8	31	100.0	31	100.0	31	100.0	31	100.0	31	100.0
Amphiodia digitata	PRE-OP	16	100.0	16	100.0	15	93.8	16	100.0	14	87.5	16	100.0
	OP	31	100.0	31	100.0	31	100.0	31	100.0	31	100.0	30	96.8
Amphiodia occidentalis	PRE-OP	16	100.0	16	100.0	16	100.0	16	100.0	16	100.0	15	93.8
	OP	30	96.8	31	100.0	31	100.0	31	100.0	31	100.0	30	96.8
Amphiodia spp. juvenile	PRE-OP	14	87.5	16	100.0	16	100.0	15	93.8	15	93.8	14	87.5
Amphiodia urtica	OP	29	93.5	29	93.5	30	96.8	30	96.8	29	93.5	31	100.0
Amphiporus spp.	PRE-OP	16	100.0	15	93.8	16	100.0	15	93.8	16	100.0	16	100.0
Ampithoe humeralis	OP	30	96.8	31	100.0	31	100.0	31	100.0	31	100.0	31	100.0
Anchicolurus occidentalis	PRE-OP	15	93.8	14	87.5	15	93.8	14	87.5	15	93.8	14	87.5
	OP	29	93.5	30	96.8	31	100.0	28	90.3	19	61.3	21	67.7
Ancinus granulatus	PRE-OP	6	37.5	8	50.0	6	37.5	5	31.3	6	37.5	8	50.0
	OP	26	83.9	27	87.1	28	90.3	21	67.7	26	83.9	24	77.4
Ancistrosyllis hamata	PRE-OP	16	100.0	16	100.0	16	100.0	16	100.0	16	100.0	15	93.8
	OP	30	96.8	31	100.0	30	96.8	31	100.0	31	100.0	31	100.0
Anoplodactylus cf. oculospinus	OP	30	96.8	30	96.8	31	100.0	31	100.0	31	100.0	30	96.8
Anoplodactylus sp.	OP	31	100.0	30	96.8	31	100.0	31	100.0	31	100.0	31	100.0
Anotomastus gordiodes	PRE-OP	15	93.8	15	93.8	15	93.8	15	93.8	16	100.0	16	100.0
	OP	30	96.8	30	96.8	30	96.8	31	100.0	31	100.0	31	100.0
Aoroides inermis	PRE-OP	14	87.5	16	100.0	14	87.5	15	93.8	16	100.0	14	87.5
	OP	23	74.2	21	67.7	29	93.5	26	83.9	22	71.0	23	74.2

SOFT BENTHOS NUMBER OF ZERO OBSERVATIONS

DEPTH IS 8 METERS

SPECIES NAME	PERIOD	700 METERS ZEROS	700 METERS %	1100 METERS ZEROS	1100 METERS %	1900 METERS ZEROS	1900 METERS %	3350 METERS ZEROS	3350 METERS %	6700 METERS ZEROS	6700 METERS %	9400 METERS ZEROS	9400 METERS %
Arabella tricolor	OP	31	100.0	30	96.8	31	100.0	31	100.0	31	100.0	31	100.0
Arabellidae	OP	31	100.0	30	96.8	31	100.0	31	100.0	30	96.8	30	96.8
Argissa hamatipes	PRE-OP	15	93.8	15	93.8	15	93.8	15	93.8	16	100.0	15	93.8
	OP	28	90.3	28	90.3	31	100.0	28	90.3	26	83.9	27	87.1
Aricidea sp. A	PRE-OP	16	100.0	16	100.0	15	93.8	16	100.0	16	100.0	16	100.0
	OP	28	90.3	30	96.8	28	90.3	30	96.8	30	96.8	31	100.0
Aricidea sp. B	PRE-OP	16	100.0	16	100.0	16	100.0	15	93.8	16	100.0	16	100.0
	OP	31	100.0	30	96.8	30	96.8	31	100.0	30	96.8	31	100.0
Aricidea wassi	PRE-OP	16	100.0	13	81.3	15	93.8	14	87.5	14	87.5	14	87.5
	OP	31	100.0	31	100.0	30	96.8	30	96.8	29	93.5	31	100.0
Armandia bioculata	PRE-OP	14	87.5	16	100.0	15	93.8	13	81.3	13	81.3	12	75.0
	OP	28	90.3	31	100.0	29	93.5	30	96.8	27	87.1	29	93.5
Asteropella slatteryi	PRE-OP	16	100.0	16	100.0	16	100.0	15	93.8	16	100.0	15	93.8
	OP	31	100.0	30	96.8	31	100.0	30	96.8	31	100.0	31	100.0
Asthenothaerus villosior	PRE-OP	6	37.5	8	50.0	9	56.3	5	31.3	7	43.8	7	43.8
	OP	28	90.3	27	87.1	27	87.1	27	87.1	26	83.9	22	71.0
Asychis disparidentata	PRE-OP	16	100.0	16	100.0	16	100.0	15	93.8	16	100.0	16	100.0
	OP	31	100.0	31	100.0	31	100.0	31	100.0	30	96.8	31	100.0
Atylus tridens	PRE-OP	12	75.0	11	68.8	11	68.8	11	68.8	13	81.3	16	100.0
	OP	19	61.3	14	45.2	22	71.0	26	83.9	30	96.8	28	90.3
Autolytus sp.	OP	31	100.0	31	100.0	30	96.8	31	100.0	31	100.0	31	100.0
Balanus sp. juvenile	PRE-OP	16	100.0	15	93.8	16	100.0	16	100.0	16	100.0	16	100.0
	OP	31	100.0	31	100.0	30	96.8	31	100.0	31	100.0	31	100.0
Balcis micans	PRE-OP	15	93.8	12	75.0	16	100.0	16	100.0	16	100.0	15	93.8
	OP	23	74.2	23	74.2	26	83.9	25	80.6	31	100.0	25	80.6
Balcis rutila	OP	30	96.8	29	93.5	25	80.6	29	93.5	30	96.8	30	96.8
Balcis spp.	OP	31	100.0	31	100.0	31	100.0	31	100.0	31	100.0	30	96.8
Batea lobata	OP	30	96.8	31	100.0	31	100.0	31	100.0	31	100.0	31	100.0
Branchiostoma californiense	PRE-OP	16	100.0	15	93.8	16	100.0	16	100.0	16	100.0	16	100.0
	OP	30	96.8	31	100.0	31	100.0	31	100.0	28	90.3	31	100.0
Cadulus cf. fusiformis	PRE-OP	16	100.0	16	100.0	16	100.0	14	87.5	16	100.0	16	100.0
	OP	31	100.0	31	100.0	31	100.0	30	96.8	31	100.0	31	100.0

SOFT BENTHOS NUMBER OF ZERO OBSERVATIONS

DEPTH IS 8 METERS

SPECIES NAME	PERIOD	700 METERS ZEROS	%	1100 METERS ZEROS	%	1900 METERS ZEROS	%	3350 METERS ZEROS	%	6700 METERS ZEROS	%	9400 METERS ZEROS	%
Caecum californicum	PRE-OP	16	100.0	16	100.0	16	100.0	16	100.0	15	93.8	16	100.0
Calanoid	PRE-OP	15	93.8	16	100.0	15	93.8	16	100.0	15	93.8	16	100.0
	OP	23	74.2	22	71.0	25	80.6	22	71.0	22	71.0	20	64.5
Callianassa californiensis	OP	31	100.0	30	96.8	31	100.0	31	100.0	31	100.0	31	100.0
Callianassa sp. juvenile	PRE-OP	16	100.0	16	100.0	16	100.0	13	81.3	10	62.5	15	93.8
	OP	29	93.5	28	90.3	27	87.1	28	90.3	30	96.8	30	96.8
Calliostoma sp.	OP	30	96.8	31	100.0	31	100.0	30	96.8	30	96.8	31	100.0
Campylaspis rubromaculata	OP	31	100.0	31	100.0	31	100.0	31	100.0	31	100.0	30	96.8
Campylaspis sp. C SCAMIT	PRE-OP	7	43.8	12	75.0	12	75.0	10	62.5	13	81.3	10	62.5
	OP	19	61.3	18	58.1	19	61.3	27	87.1	19	61.3	22	71.0
Cancer gracilis	PRE-OP	16	100.0	16	100.0	16	100.0	15	93.8	16	100.0	16	100.0
	OP	31	100.0	30	96.8	30	96.8	31	100.0	31	100.0	31	100.0
Cancer spp. juvenile	PRE-OP	15	93.8	15	93.8	16	100.0	16	100.0	16	100.0	16	100.0
	OP	27	87.1	29	93.5	28	90.3	30	96.8	30	96.8	29	93.5
Capitella capitata	OP	31	100.0	30	96.8	31	100.0	31	100.0	31	100.0	31	100.0
Capitellidae unidentified	OP	31	100.0	30	96.8	29	93.5	31	100.0	30	96.8	31	100.0
Caprella angusta	OP	24	77.4	20	64.5	20	64.5	19	61.3	20	64.5	16	51.6
Caprella californica	PRE-OP	15	93.8	15	93.8	15	93.8	16	100.0	16	100.0	16	100.0
Caprella equilibra	PRE-OP	14	87.5	16	100.0	16	100.0	16	100.0	16	100.0	16	100.0
	OP	30	96.8	30	96.8	31	100.0	30	96.8	31	100.0	30	96.8
Caprella juvenile(not counted as sp)	PRE-OP	15	93.8	16	100.0	16	100.0	16	100.0	16	100.0	16	100.0
Caprella spp. juvenile	PRE-OP	14	87.5	16	100.0	15	93.8	16	100.0	15	93.8	16	100.0
	OP	27	87.1	30	96.8	31	100.0	29	93.5	27	87.1	29	93.5
Caprella verrucosa	PRE-OP	15	93.8	14	87.5	15	93.8	16	100.0	16	100.0	15	93.8
	OP	31	100.0	30	96.8	31	100.0	31	100.0	30	96.8	30	96.8
Carinoma mutabilis	PRE-OP	15	93.8	13	81.3	15	93.8	15	93.8	15	93.8	15	93.8
	OP	30	96.8	31	100.0	31	100.0	31	100.0	30	96.8	31	100.0
Cerapus tubularis	PRE-OP	16	100.0	16	100.0	16	100.0	16	100.0	16	100.0	15	93.8
	OP	31	100.0	30	96.8	31	100.0	31	100.0	29	93.5	31	100.0
Cerebratulus or Micrura spp.	PRE-OP	15	93.8	13	81.3	14	87.5	14	87.5	13	81.3	14	87.5
	OP	31	100.0	30	96.8	30	96.8	29	93.5	31	100.0	29	93.5
Cerianthidae sp. A	PRE-OP	16	100.0	16	100.0	16	100.0	16	100.0	15	93.8	16	100.0

SOFT BENTHOS NUMBER OF ZERO OBSERVATIONS

DEPTH IS 8 METERS

SPECIES NAME	PERIOD	700 METERS ZEROS	%	1100 METERS ZEROS	%	1900 METERS ZEROS	%	3350 METERS ZEROS	%	6700 METERS ZEROS	%	9400 METERS ZEROS	%
Chaetopteridae unidentified	OP	31	100.0	31	100.0	31	100.0	31	100.0	30	96.8	31	100.0
Chaetozone corona	OP	30	96.8	31	100.0	31	100.0	31	100.0	31	100.0	31	100.0
Chaetozone setosa	PRE-OP	16	100.0	16	100.0	16	100.0	16	100.0	15	93.8	14	87.5
	OP	26	83.9	31	100.0	29	93.5	29	93.5	28	90.3	26	83.9
Chione californiensis	OP	30	96.8	31	100.0	31	100.0	31	100.0	31	100.0	31	100.0
Chione sp.	PRE-OP	16	100.0	16	100.0	15	93.8	16	100.0	16	100.0	16	100.0
Chone albocincta	PRE-OP	16	100.0	16	100.0	16	100.0	16	100.0	15	93.8	15	93.8
	OP	30	96.8	31	100.0	28	90.3	31	100.0	29	93.5	27	87.1
Chone sp.	PRE-OP	15	93.8	16	100.0	16	100.0	15	93.8	15	93.8	16	100.0
	OP	30	96.8	31	100.0	31	100.0	31	100.0	31	100.0	29	93.5
Chone sp. (not counted as sp)	OP	31	100.0	31	100.0	31	100.0	31	100.0	31	100.0	30	96.8
Chone veleronis	OP	30	96.8	31	100.0	31	100.0	31	100.0	30	96.8	31	100.0
Cingula sp.	OP	30	96.8	31	100.0	31	100.0	31	100.0	31	100.0	31	100.0
Cirratulidae (not counted as sp)	PRE-OP	16	100.0	16	100.0	16	100.0	16	100.0	16	100.0	15	93.8
Cirratulidae unidentified	OP	30	96.8	31	100.0	31	100.0	31	100.0	31	100.0	30	96.8
Cirriformia spirabrancha	OP	29	93.5	31	100.0	31	100.0	31	100.0	31	100.0	31	100.0
Cirrophorus furcatus	OP	31	100.0	31	100.0	30	96.8	31	100.0	30	96.8	31	100.0
Clavodorum clavatum	PRE-OP	16	100.0	15	93.8	16	100.0	16	100.0	16	100.0	16	100.0
Coelentrate unidentified	PRE-OP	16	100.0	16	100.0	16	100.0	16	100.0	16	100.0	15	93.8
	OP	31	100.0	31	100.0	31	100.0	31	100.0	29	93.5	29	93.5
Compsomyax subdiaphana	PRE-OP	16	100.0	15	93.8	16	100.0	16	100.0	16	100.0	15	93.8
Conualevia alba	PRE-OP	15	93.8	16	100.0	16	100.0	16	100.0	16	100.0	16	100.0
Cooperella subdiaphana	PRE-OP	15	93.8	16	100.0	16	100.0	15	93.8	15	93.8	13	81.3
	OP	29	93.5	28	90.3	30	96.8	31	100.0	28	90.3	26	83.9
Corophium baconi	PRE-OP	16	100.0	15	93.8	16	100.0	16	100.0	16	100.0	16	100.0
	OP	31	100.0	31	100.0	31	100.0	31	100.0	31	100.0	30	96.8
Corophium californianum	OP	31	100.0	31	100.0	29	93.5	31	100.0	30	96.8	31	100.0
Cossura cf. candida	OP	31	100.0	31	100.0	31	100.0	31	100.0	31	100.0	30	96.8
Crab zoea	PRE-OP	16	100.0	15	93.8	16	100.0	15	93.8	16	100.0	16	100.0

SOFT BENTHOS NUMBER OF ZERO OBSERVATIONS

DEPTH IS 8 METERS

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	OP	29	93.5	30	96.8	29	93.5	29	93.5	30	96.8	30	96.8
Crangon alaskensis elongata	OP	31	100.0	31	100.0	31	100.0	31	100.0	30	96.8	31	100.0
Crepidula coei	PRE-OP	14	87.5	16	100.0	16	100.0	14	87.5	16	100.0	15	93.8
	OP	25	80.6	27	87.1	29	93.5	26	83.9	23	74.2	25	80.6
Crepidula spp.	OP	29	93.5	29	93.5	30	96.8	31	100.0	31	100.0	29	93.5
Cumella sp. A SCAMIT	OP	31	100.0	31	100.0	31	100.0	30	96.8	30	96.8	29	93.5
Cyclaspis nubila	PRE-OP	15	93.8	16	100.0	16	100.0	15	93.8	16	100.0	15	93.8
	OP	28	90.3	28	90.3	29	93.5	30	96.8	29	93.5	27	87.1
Cyclaspis sp.B SCAMIT	OP	31	100.0	30	96.8	31	100.0	29	93.5	31	100.0	31	100.0
Cyclaspis sp.C SCAMIT	PRE-OP	16	100.0	15	93.8	16	100.0	16	100.0	16	100.0	16	100.0
Cyclopoids	PRE-OP	16	100.0	15	93.8	16	100.0	16	100.0	16	100.0	16	100.0
	OP	31	100.0	30	96.8	31	100.0	31	100.0	31	100.0	31	100.0
Cyclostremella californica	PRE-OP	10	62.5	14	87.5	14	87.5	15	93.8	16	100.0	11	68.8
CAMP0160	OP	31	100.0	31	100.0	31	100.0	31	100.0	31	100.0	30	96.8
CDEC0017	OP	30	96.8	31	100.0	31	100.0	31	100.0	31	100.0	31	100.0
CIS00002	OP	31	100.0	30	96.8	31	100.0	31	100.0	31	100.0	31	100.0
CIS00999	OP	31	100.0	31	100.0	31	100.0	31	100.0	31	100.0	30	96.8
CST00001	OP	30	96.8	31	100.0	31	100.0	31	100.0	31	100.0	31	100.0
Decamastus gracilus	PRE-OP	16	100.0	16	100.0	16	100.0	15	93.8	16	100.0	16	100.0
Dendraster excentricus	PRE-OP	13	81.3	12	75.0	9	56.3	9	56.3	9	56.3	14	87.5
	OP	4	12.9	10	32.3	11	35.5	9	29.0	14	45.2	11	35.5
Dentalium neonexagonum	OP	31	100.0	31	100.0	31	100.0	30	96.8	31	100.0	31	100.0
Diastylopsis tenuis	PRE-OP	0	0.0	1	6.3	1	6.3	0	0.0	0	0.0	2	12.5
	OP	2	6.5	2	6.5	1	3.2	2	6.5	4	12.9	5	16.1
Diopatra sp.	OP	31	100.0	31	100.0	31	100.0	31	100.0	30	96.8	30	96.8
Diopatra splendidissima	PRE-OP	13	81.3	14	87.5	16	100.0	15	93.8	16	100.0	16	100.0
	OP	29	93.5	30	96.8	31	100.0	28	90.3	26	83.9	26	83.9
Diopatra tridentata	OP	31	100.0	31	100.0	31	100.0	30	96.8	31	100.0	31	100.0
Diospio uncinata	PRE-OP	16	100.0	16	100.0	15	93.8	16	100.0	15	93.8	15	93.8
	OP	31	100.0	26	83.9	29	93.5	29	93.5	30	96.8	28	90.3

SOFT BENTHOS NUMBER OF ZERO OBSERVATIONS

DEPTH IS 8 METERS

SPECIES NAME	PERIOD	700 METERS ZEROS	700 METERS %	1100 METERS ZEROS	1100 METERS %	1900 METERS ZEROS	1900 METERS %	3350 METERS ZEROS	3350 METERS %	6700 METERS ZEROS	6700 METERS %	9400 METERS ZEROS	9400 METERS %
Doto sp.	PRE-OP	15	93.8	15	93.8	16	100.0	16	100.0	16	100.0	16	100.0
	OP	31	100.0	30	96.8	31	100.0	31	100.0	31	100.0	31	100.0
Drilonereis falcata	PRE-OP	15	93.8	16	100.0	16	100.0	16	100.0	16	100.0	16	100.0
Drilonereis filum	PRE-OP	16	100.0	16	100.0	15	93.8	16	100.0	16	100.0	16	100.0
Duplicate code -- use CDECO047	OP	30	96.8	31	100.0	31	100.0	30	96.8	31	100.0	31	100.0
Duplicate code -- use MGASO103	PRE-OP	16	100.0	16	100.0	15	93.8	16	100.0	16	100.0	15	93.8
Echinoid juvenile	OP	29	93.5	30	96.8	31	100.0	31	100.0	30	96.8	29	93.5
Edotea sublittoralis	PRE-OP	5	31.3	5	31.3	5	31.3	4	25.0	4	25.0	3	18.8
	OP	21	67.7	22	71.0	20	64.5	16	51.6	16	51.6	19	61.3
Edwardsia sp. A (orange w/ white base)	OP	31	100.0	31	100.0	31	100.0	31	100.0	31	100.0	29	93.5
Edwardsia sp. B (white w/white base)	OP	31	100.0	31	100.0	31	100.0	31	100.0	31	100.0	30	96.8
Elasmopus antennatus	OP	30	96.8	31	100.0	31	100.0	31	100.0	31	100.0	31	100.0
Emerita analoga	OP	31	100.0	31	100.0	31	100.0	31	100.0	31	100.0	30	96.8
Entodesma saxicolum	PRE-OP	16	100.0	15	93.8	16	100.0	16	100.0	16	100.0	16	100.0
Eohaustorius washingtonianus	PRE-OP	13	81.3	10	62.5	13	81.3	14	87.5	13	81.3	14	87.5
	OP	20	64.5	15	48.4	26	83.9	7	22.6	31	100.0	20	64.5
Epitonium bellastriatum	PRE-OP	16	100.0	16	100.0	15	93.8	16	100.0	16	100.0	16	100.0
Epitonium sp.	OP	29	93.5	29	93.5	29	93.5	30	96.8	28	90.3	30	96.8
Erichthonius brasiliensis	OP	30	96.8	31	100.0	31	100.0	31	100.0	30	96.8	31	100.0
Eteone dilatae	PRE-OP	15	93.8	14	87.5	15	93.8	15	93.8	16	100.0	14	87.5
	OP	29	93.5	25	80.6	26	83.9	29	93.5	30	96.8	28	90.3
Eteone sp.	PRE-OP	14	87.5	15	93.8	14	87.5	15	93.8	16	100.0	14	87.5
	OP	31	100.0	31	100.0	31	100.0	31	100.0	31	100.0	30	96.8
Euchone hancocki	OP	30	96.8	31	100.0	31	100.0	31	100.0	31	100.0	31	100.0
Eulima almo	OP	31	100.0	31	100.0	31	100.0	31	100.0	31	100.0	30	96.8
Eumida sanguinea	OP	31	100.0	30	96.8	31	100.0	31	100.0	31	100.0	31	100.0
Euphilomedes carcharodonta	PRE-OP	15	93.8	16	100.0	14	87.5	15	93.8	14	87.5	10	62.5
	OP	30	96.8	29	93.5	25	80.6	28	90.3	31	100.0	28	90.3
Euphilomedes juvenile (not counted as sp	PRE-OP	16	100.0	16	100.0	16	100.0	16	100.0	15	93.8	16	100.0

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DEPTH IS 8 METERS

SPECIES NAME	PERIOD	700 METERS ZEROS	700 METERS %	1100 METERS ZEROS	1100 METERS %	1900 METERS ZEROS	1900 METERS %	3350 METERS ZEROS	3350 METERS %	6700 METERS ZEROS	6700 METERS %	9400 METERS ZEROS	9400 METERS %
Euphilomedes longiseta	PRE-OP	3	18.8	0	0.0	0	0.0	0	0.0	6	37.5	4	25.0
	OP	17	54.8	5	16.1	6	19.4	1	3.2	21	67.7	19	61.3
Euphilomedes spp. (juvenile)	PRE-OP	15	93.8	16	100.0	16	100.0	16	100.0	16	100.0	15	93.8
Eurydice caudata	OP	30	96.8	31	100.0	31	100.0	30	96.8	31	100.0	30	96.8
F. pectinaridae	OP	30	96.8	31	100.0	31	100.0	31	100.0	31	100.0	31	100.0
F. sigalionidae	PRE-OP	15	93.8	16	100.0	16	100.0	16	100.0	16	100.0	16	100.0
Fartulum occidentale	PRE-OP	14	87.5	16	100.0	16	100.0	15	93.8	15	93.8	16	100.0
	OP	29	93.5	31	100.0	31	100.0	31	100.0	31	100.0	31	100.0
Felaniella cornea	OP	31	100.0	31	100.0	31	100.0	31	100.0	31	100.0	30	96.8
Flatworm 1	PRE-OP	15	93.8	16	100.0	14	87.5	16	100.0	15	93.8	14	87.5
	OP	29	93.5	31	100.0	29	93.5	29	93.5	29	93.5	30	96.8
Flatworm 3	PRE-OP	16	100.0	16	100.0	16	100.0	15	93.8	15	93.8	16	100.0
	OP	30	96.8	30	96.8	29	93.5	30	96.8	31	100.0	31	100.0
Flatworm 4	OP	30	96.8	31	100.0	30	96.8	30	96.8	29	93.5	29	93.5
Flatworm 8	PRE-OP	16	100.0	16	100.0	16	100.0	16	100.0	15	93.8	16	100.0
Flosmaris grandis	OP	31	100.0	31	100.0	31	100.0	31	100.0	31	100.0	30	96.8
Foxiphalus golfensis/obtusidens	OP	31	100.0	31	100.0	31	100.0	31	100.0	30	96.8	31	100.0
Gammaropsis thompsoni	OP	29	93.5	30	96.8	31	100.0	30	96.8	31	100.0	31	100.0
Gari sp.	PRE-OP	16	100.0	16	100.0	16	100.0	16	100.0	15	93.8	16	100.0
Gastropoda	PRE-OP	16	100.0	15	93.8	16	100.0	16	100.0	16	100.0	16	100.0
Gastropoda unidentified	OP	31	100.0	31	100.0	31	100.0	30	96.8	31	100.0	30	96.8
Gibberosus myersi	PRE-OP	8	50.0	11	68.8	13	81.3	14	87.5	8	50.0	9	56.3
	OP	23	74.2	28	90.3	26	83.9	24	77.4	16	51.6	23	74.2
Glottidia albida	PRE-OP	16	100.0	16	100.0	15	93.8	16	100.0	16	100.0	16	100.0
	OP	28	90.3	28	90.3	27	87.1	27	87.1	28	90.3	31	100.0
Glycera americana	OP	31	100.0	31	100.0	31	100.0	31	100.0	30	96.8	31	100.0
Glycera convoluta	PRE-OP	13	81.3	15	93.8	15	93.8	15	93.8	15	93.8	13	81.3
	OP	26	83.9	27	87.1	24	77.4	30	96.8	30	96.8	24	77.4
Glycera siphonostoma	OP	31	100.0	31	100.0	31	100.0	31	100.0	30	96.8	31	100.0

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DEPTH IS 8 METERS

SPECIES NAME	PERIOD	700 METERS ZEROS	700 METERS %	1100 METERS ZEROS	1100 METERS %	1900 METERS ZEROS	1900 METERS %	3350 METERS ZEROS	3350 METERS %	6700 METERS ZEROS	6700 METERS %	9400 METERS ZEROS	9400 METERS %
Glycera sp.	PRE-OP	16	100.0	15	93.8	16	100.0	16	100.0	16	100.0	16	100.0
	OP	30	96.8	27	87.1	28	90.3	30	96.8	29	93.5	28	90.3
Glyceridae unidentified	PRE-OP	16	100.0	15	93.8	16	100.0	16	100.0	16	100.0	15	93.8
Glycinde armigera	PRE-OP	14	87.5	16	100.0	16	100.0	16	100.0	16	100.0	15	93.8
	OP	29	93.5	30	96.8	28	90.3	29	93.5	29	93.5	29	93.5
Golfingia catharinae	OP	30	96.8	31	100.0	31	100.0	31	100.0	31	100.0	31	100.0
Golfingia misakiana	PRE-OP	16	100.0	16	100.0	16	100.0	15	93.8	16	100.0	16	100.0
	OP	29	93.5	31	100.0	31	100.0	30	96.8	31	100.0	29	93.5
Goniada littorea	PRE-OP	0	0.0	4	25.0	8	50.0	2	12.5	2	12.5	1	6.3
	OP	22	71.0	19	61.3	12	38.7	21	67.7	18	58.1	12	38.7
Goniada maculata	PRE-OP	16	100.0	16	100.0	16	100.0	15	93.8	16	100.0	16	100.0
Goniada sp.	OP	31	100.0	31	100.0	31	100.0	31	100.0	29	93.5	31	100.0
Goniada sp. (not counted as sp)	OP	31	100.0	31	100.0	29	93.5	31	100.0	31	100.0	31	100.0
Goniadidae unidentified	PRE-OP	16	100.0	16	100.0	16	100.0	15	93.8	16	100.0	16	100.0
	OP	29	93.5	31	100.0	30	96.8	28	90.3	30	96.8	28	90.3
Harmothoe cf. lunulata	PRE-OP	16	100.0	16	100.0	16	100.0	16	100.0	16	100.0	14	87.5
	OP	31	100.0	31	100.0	29	93.5	31	100.0	30	96.8	28	90.3
Harmothoe priops	PRE-OP	15	93.8	16	100.0	16	100.0	16	100.0	16	100.0	16	100.0
	OP	27	87.1	30	96.8	30	96.8	28	90.3	30	96.8	30	96.8
Harpacticoids	PRE-OP	14	87.5	12	75.0	15	93.8	14	87.5	14	87.5	16	100.0
	OP	26	83.9	25	80.6	26	83.9	26	83.9	26	83.9	25	80.6
Hemichordate unidentified	PRE-OP	15	93.8	16	100.0	16	100.0	16	100.0	16	100.0	15	93.8
	OP	23	74.2	31	100.0	26	83.9	29	93.5	28	90.3	28	90.3
Hemilamprops californica	PRE-OP	15	93.8	16	100.0	16	100.0	16	100.0	16	100.0	15	93.8
	OP	31	100.0	31	100.0	31	100.0	31	100.0	30	96.8	31	100.0
Hirudinea leech	PRE-OP	16	100.0	15	93.8	16	100.0	16	100.0	16	100.0	16	100.0
Holmesimysis costata	PRE-OP	16	100.0	15	93.8	15	93.8	15	93.8	16	100.0	16	100.0
	OP	29	93.5	31	100.0	31	100.0	28	90.3	31	100.0	30	96.8
Holothuroidea unidentified	PRE-OP	16	100.0	15	93.8	16	100.0	16	100.0	16	100.0	16	100.0
	OP	30	96.8	31	100.0	31	100.0	31	100.0	31	100.0	31	100.0
Hydroid unidentified	PRE-OP	16	100.0	15	93.8	16	100.0	15	93.8	16	100.0	16	100.0
Idotea fewkesi	PRE-OP	15	93.8	16	100.0	16	100.0	16	100.0	16	100.0	16	100.0

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DEPTH IS 8 METERS

SPECIES NAME	PERIOD	700 METERS ZEROS	%	1100 METERS ZEROS	%	1900 METERS ZEROS	%	3350 METERS ZEROS	%	6700 METERS ZEROS	%	9400 METERS ZEROS	%
Idoteid	OP	30	96.8	31	100.0	31	100.0	31	100.0	31	100.0	31	100.0
Ischyrocerus sp.	OP	31	100.0	31	100.0	31	100.0	31	100.0	31	100.0	28	90.3
Ischyrocerus sp. B	OP	30	96.8	31	100.0	29	93.5	31	100.0	31	100.0	29	93.5
Isocheles pilosus	PRE-OP	16	100.0	16	100.0	15	93.8	15	93.8	16	100.0	16	100.0
	OP	31	100.0	31	100.0	30	96.8	29	93.5	30	96.8	31	100.0
Jaeropsis dubia	OP	30	96.8	31	100.0	31	100.0	31	100.0	31	100.0	31	100.0
Jassa falcata	PRE-OP	8	50.0	8	50.0	7	43.8	7	43.8	9	56.3	8	50.0
	OP	10	32.3	11	35.5	11	35.5	10	32.3	5	16.1	10	32.3
Kellia sp.	PRE-OP	16	100.0	16	100.0	16	100.0	15	93.8	16	100.0	16	100.0
Kinorhynchus sp.	OP	30	96.8	31	100.0	31	100.0	30	96.8	31	100.0	31	100.0
Kurtziella beta	PRE-OP	16	100.0	16	100.0	15	93.8	13	81.3	15	93.8	14	87.5
	OP	31	100.0	31	100.0	31	100.0	31	100.0	31	100.0	30	96.8
Kurtziella plumbea	PRE-OP	16	100.0	14	87.5	15	93.8	15	93.8	16	100.0	12	75.0
	OP	28	90.3	29	93.5	30	96.8	28	90.3	28	90.3	30	96.8
Lacuna unifasciata	OP	30	96.8	31	100.0	30	96.8	31	100.0	31	100.0	30	96.8
Lampropidae juvenile	PRE-OP	15	93.8	16	100.0	16	100.0	16	100.0	16	100.0	16	100.0
Lamprops carinata	PRE-OP	13	81.3	16	100.0	15	93.8	15	93.8	13	81.3	15	93.8
	OP	23	74.2	29	93.5	27	87.1	24	77.4	26	83.9	24	77.4
Lamprops quadriplicata	OP	31	100.0	31	100.0	31	100.0	31	100.0	30	96.8	31	100.0
Laonice cirrata	PRE-OP	16	100.0	16	100.0	16	100.0	16	100.0	16	100.0	15	93.8
	OP	30	96.8	31	100.0	31	100.0	31	100.0	31	100.0	31	100.0
Leitoscoloplos elongatus	PRE-OP	15	93.8	13	81.3	14	87.5	16	100.0	15	93.8	12	75.0
	OP	25	80.6	25	80.6	26	83.9	28	90.3	28	90.3	29	93.5
Leitoscoloplos sp.	PRE-OP	15	93.8	16	100.0	16	100.0	15	93.8	15	93.8	15	93.8
	OP	31	100.0	31	100.0	30	96.8	31	100.0	31	100.0	31	100.0
Lepidopa californica	PRE-OP	16	100.0	15	93.8	16	100.0	16	100.0	15	93.8	16	100.0
	OP	31	100.0	30	96.8	31	100.0	30	96.8	30	96.8	29	93.5
Leptochelia dubia	PRE-OP	16	100.0	16	100.0	16	100.0	15	93.8	16	100.0	15	93.8
	OP	27	87.1	28	90.3	29	93.5	29	93.5	29	93.5	28	90.3
Leptocuma forsmani	PRE-OP	9	56.3	6	37.5	11	68.8	11	68.8	9	56.3	10	62.5
	OP	9	29.0	4	12.9	5	16.1	6	19.4	21	67.7	14	45.2
Lepton sp.	PRE-OP	16	100.0	16	100.0	16	100.0	16	100.0	16	100.0	15	93.8

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DEPTH IS 8 METERS

SPECIES NAME	PERIOD	700 METERS ZEROS	700 METERS %	1100 METERS ZEROS	1100 METERS %	1900 METERS ZEROS	1900 METERS %	3350 METERS ZEROS	3350 METERS %	6700 METERS ZEROS	6700 METERS %	9400 METERS ZEROS	9400 METERS %
Leptopecten latiauratus	PRE-OP	16	100.0	16	100.0	14	87.5	15	93.8	16	100.0	15	93.8
	OP	30	96.8	29	93.5	31	100.0	30	96.8	30	96.8	30	96.8
Leptosynapta sp	PRE-OP	13	81.3	15	93.8	15	93.8	16	100.0	15	93.8	16	100.0
	OP	30	96.8	28	90.3	30	96.8	31	100.0	30	96.8	30	96.8
Leuroleberis sharpei	PRE-OP	15	93.8	16	100.0	16	100.0	16	100.0	16	100.0	16	100.0
	OP	30	96.8	30	96.8	30	96.8	29	93.5	31	100.0	29	93.5
Listriella diffusa	PRE-OP	16	100.0	16	100.0	15	93.8	16	100.0	16	100.0	16	100.0
Listriella melanica	OP	30	96.8	31	100.0	31	100.0	31	100.0	31	100.0	31	100.0
Listriella sp. juvenile	OP	30	96.8	31	100.0	31	100.0	31	100.0	31	100.0	31	100.0
Lovenia cordiformis	OP	31	100.0	31	100.0	31	100.0	31	100.0	30	96.8	30	96.8
Loxorhynchus crispatus	OP	30	96.8	31	100.0	31	100.0	31	100.0	31	100.0	31	100.0
Lumbrineris californiensis	PRE-OP	10	62.5	13	81.3	14	87.5	11	68.8	10	62.5	13	81.3
	OP	30	96.8	31	100.0	31	100.0	29	93.5	28	90.3	31	100.0
Lumbrineris cruzensis	OP	31	100.0	31	100.0	30	96.8	31	100.0	30	96.8	31	100.0
Lumbrineris sp.	PRE-OP	11	68.8	15	93.8	12	75.0	12	75.0	13	81.3	14	87.5
	OP	29	93.5	31	100.0	28	90.3	29	93.5	28	90.3	26	83.9
Lumbrineris sp. (not counted as sp)	OP	31	100.0	31	100.0	30	96.8	31	100.0	30	96.8	31	100.0
Lumbrineris sp. D	PRE-OP	10	62.5	12	75.0	12	75.0	15	93.8	15	93.8	11	68.8
	OP	30	96.8	29	93.5	21	67.7	29	93.5	22	71.0	28	90.3
Lysianassidae juvenile	OP	31	100.0	30	96.8	31	100.0	31	100.0	31	100.0	31	100.0
Macoma acolasta	PRE-OP	16	100.0	16	100.0	16	100.0	15	93.8	16	100.0	16	100.0
	OP	30	96.8	31	100.0	29	93.5	31	100.0	30	96.8	31	100.0
Macoma cf. balthica	PRE-OP	16	100.0	16	100.0	15	93.8	16	100.0	16	100.0	16	100.0
Macoma indentata	OP	31	100.0	31	100.0	31	100.0	31	100.0	31	100.0	30	96.8
Macoma nr. secta	OP	30	96.8	31	100.0	31	100.0	31	100.0	31	100.0	31	100.0
Macoma sp.	PRE-OP	14	87.5	13	81.3	13	81.3	12	75.0	15	93.8	15	93.8
	OP	26	83.9	25	80.6	27	87.1	29	93.5	28	90.3	28	90.3
Macoma yoldiformis	PRE-OP	13	81.3	14	87.5	13	81.3	11	68.8	14	87.5	16	100.0
Mactra californica	OP	31	100.0	31	100.0	30	96.8	31	100.0	31	100.0	31	100.0
Mactra sp.	OP	31	100.0	30	96.8	31	100.0	31	100.0	30	96.8	29	93.5

SOFT BENTHOS NUMBER OF ZERO OBSERVATIONS

DEPTH IS 8 METERS

SPECIES NAME	PERIOD	700 METERS ZEROS	%	1100 METERS ZEROS	%	1900 METERS ZEROS	%	3350 METERS ZEROS	%	6700 METERS ZEROS	%	9400 METERS ZEROS	%
Mactra sp. A	PRE-OP	15	93.8	16	100.0	14	87.5	16	100.0	16	100.0	14	87.5
	OP	30	96.8	31	100.0	31	100.0	31	100.0	31	100.0	31	100.0
Magelona pitelkai	PRE-OP	15	93.8	12	75.0	13	81.3	16	100.0	15	93.8	15	93.8
	OP	22	71.0	22	71.0	25	80.6	27	87.1	25	80.6	24	77.4
Magelona sacculata	PRE-OP	10	62.5	13	81.3	11	68.8	13	81.3	10	62.5	12	75.0
	OP	17	54.8	17	54.8	13	41.9	10	32.3	10	32.3	13	41.9
Magelona sp.	PRE-OP	14	87.5	13	81.3	13	81.3	14	87.5	15	93.8	15	93.8
	OP	31	100.0	31	100.0	31	100.0	31	100.0	30	96.8	31	100.0
Magelona sp. (not counted as sp)	OP	31	100.0	31	100.0	28	90.3	30	96.8	30	96.8	30	96.8
Majidae sp. A	PRE-OP	16	100.0	16	100.0	15	93.8	16	100.0	16	100.0	16	100.0
	OP	31	100.0	31	100.0	30	96.8	31	100.0	31	100.0	31	100.0
Maladanidae unidentified	PRE-OP	16	100.0	16	100.0	16	100.0	15	93.8	16	100.0	16	100.0
	OP	31	100.0	31	100.0	31	100.0	30	96.8	31	100.0	29	93.5
Mandibulophoxus gilesi	OP	31	100.0	30	96.8	31	100.0	31	100.0	31	100.0	31	100.0
Mayerella banksia	OP	30	96.8	31	100.0	31	100.0	31	100.0	31	100.0	31	100.0
Mediomastus acutus	PRE-OP	15	93.8	16	100.0	15	93.8	16	100.0	16	100.0	15	93.8
	OP	22	71.0	22	71.0	17	54.8	25	80.6	25	80.6	24	77.4
Mediomastus californiensis/ambiseta	PRE-OP	9	56.3	12	75.0	9	56.3	10	62.5	10	62.5	5	31.3
	OP	18	58.1	22	71.0	11	35.5	26	83.9	17	54.8	22	71.0
Megalops juvenile	OP	29	93.5	31	100.0	30	96.8	31	100.0	29	93.5	30	96.8
Meliphisana bola	OP	31	100.0	31	100.0	31	100.0	31	100.0	30	96.8	31	100.0
Metamysidopsis elongata	PRE-OP	16	100.0	15	93.8	16	100.0	15	93.8	16	100.0	16	100.0
	OP	29	93.5	30	96.8	30	96.8	29	93.5	31	100.0	26	83.9
Metaphoxus frequens	OP	31	100.0	31	100.0	31	100.0	31	100.0	29	93.5	31	100.0
Modiolus neglectus	PRE-OP	16	100.0	16	100.0	15	93.8	15	93.8	16	100.0	14	87.5
	OP	30	96.8	31	100.0	28	90.3	29	93.5	29	93.5	30	96.8
Modiolus rectus	PRE-OP	15	93.8	16	100.0	16	100.0	15	93.8	16	100.0	16	100.0
	OP	31	100.0	30	96.8	31	100.0	31	100.0	31	100.0	31	100.0
Modiolus sp. (not counted as sp)	PRE-OP	16	100.0	16	100.0	16	100.0	15	93.8	16	100.0	16	100.0
Modiolus sp. A	PRE-OP	16	100.0	16	100.0	15	93.8	16	100.0	16	100.0	14	87.5
	OP	29	93.5	30	96.8	30	96.8	29	93.5	31	100.0	31	100.0
Modiolus spp.	PRE-OP	13	81.3	14	87.5	16	100.0	15	93.8	13	81.3	14	87.5

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DEPTH IS 8 METERS

SPECIES NAME	PERIOD	700 METERS ZEROS	700 METERS %	1100 METERS ZEROS	1100 METERS %	1900 METERS ZEROS	1900 METERS %	3350 METERS ZEROS	3350 METERS %	6700 METERS ZEROS	6700 METERS %	9400 METERS ZEROS	9400 METERS %
	OP	29	93.5	30	96.8	30	96.8	30	96.8	31	100.0	29	93.5
Monoculodes hartmanae	PRE-OP	10	62.5	13	81.3	15	93.8	10	62.5	10	62.5	5	31.3
	OP	20	64.5	22	71.0	19	61.3	16	51.6	14	45.2	19	61.3
Montacutidae spp.	OP	30	96.8	30	96.8	31	100.0	31	100.0	31	100.0	31	100.0
Munna ubiquita	PRE-OP	14	87.5	16	100.0	14	87.5	14	87.5	15	93.8	11	68.8
	OP	23	74.2	28	90.3	24	77.4	25	80.6	26	83.9	24	77.4
Munnogonium tillerae	OP	31	100.0	31	100.0	31	100.0	30	96.8	31	100.0	31	100.0
Mya cf. arenaria	PRE-OP	16	100.0	16	100.0	16	100.0	16	100.0	16	100.0	15	93.8
Myriochele sp. M	OP	31	100.0	31	100.0	30	96.8	31	100.0	31	100.0	31	100.0
Mysella cf. aleutica	OP	28	90.3	28	90.3	31	100.0	31	100.0	28	90.3	29	93.5
Mysella compressa	OP	31	100.0	31	100.0	30	96.8	31	100.0	30	96.8	30	96.8
Mysella golischi	OP	31	100.0	31	100.0	31	100.0	30	96.8	31	100.0	30	96.8
Mysella grippi	PRE-OP	16	100.0	16	100.0	16	100.0	16	100.0	16	100.0	15	93.8
	OP	30	96.8	31	100.0	30	96.8	30	96.8	30	96.8	31	100.0
Mysella sp.	PRE-OP	16	100.0	15	93.8	16	100.0	16	100.0	16	100.0	15	93.8
	OP	30	96.8	31	100.0	30	96.8	31	100.0	31	100.0	31	100.0
Mysella tumida	PRE-OP	15	93.8	16	100.0	15	93.8	15	93.8	15	93.8	15	93.8
	OP	30	96.8	30	96.8	31	100.0	31	100.0	31	100.0	31	100.0
Mysella unidentified	PRE-OP	16	100.0	16	100.0	15	93.8	16	100.0	16	100.0	16	100.0
Mysidacea unidentified	PRE-OP	16	100.0	16	100.0	16	100.0	16	100.0	16	100.0	15	93.8
	OP	28	90.3	30	96.8	28	90.3	29	93.5	29	93.5	28	90.3
	OP	31	100.0	31	100.0	31	100.0	31	100.0	31	100.0	30	96.8
Mysidopsis californica	PRE-OP	16	100.0	16	100.0	13	81.3	15	93.8	16	100.0	16	100.0
	OP	31	100.0	31	100.0	31	100.0	31	100.0	31	100.0	30	96.8
Mysidopsis intii	PRE-OP	15	93.8	16	100.0	15	93.8	15	93.8	16	100.0	16	100.0
	OP	31	100.0	30	96.8	29	93.5	30	96.8	30	96.8	31	100.0
Mytilus edulis	OP	30	96.8	30	96.8	29	93.5	30	96.8	31	100.0	31	100.0
MGASO158	OP	31	100.0	31	100.0	31	100.0	31	100.0	30	96.8	30	96.8
MGASO223	OP	31	100.0	30	96.8	31	100.0	31	100.0	31	100.0	31	100.0
MPELO139	OP	31	100.0	31	100.0	31	100.0	30	96.8	31	100.0	31	100.0
MPELO140	OP	31	100.0	31	100.0	31	100.0	31	100.0	31	100.0	30	96.8

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DEPTH IS 8 METERS

SPECIES NAME	PERIOD	700 METERS ZEROS	700 METERS %	1100 METERS ZEROS	1100 METERS %	1900 METERS ZEROS	1900 METERS %	3350 METERS ZEROS	3350 METERS %	6700 METERS ZEROS	6700 METERS %	9400 METERS ZEROS	9400 METERS %
MPELO143	OP	30	96.8	31	100.0	31	100.0	31	100.0	31	100.0	31	100.0
Nainerís uncinata	OP	31	100.0	31	100.0	30	96.8	31	100.0	31	100.0	31	100.0
Nassarius perpinquis	PRE-OP	16	100.0	16	100.0	14	87.5	16	100.0	15	93.8	16	100.0
	OP	25	80.6	23	74.2	25	80.6	29	93.5	30	96.8	29	93.5
Nassarius sp.	OP	31	100.0	31	100.0	30	96.8	31	100.0	31	100.0	31	100.0
Nebalia pugettensis	OP	31	100.0	30	96.8	31	100.0	31	100.0	28	90.3	31	100.0
Nematodes unidentified	PRE-OP	5	31.3	9	56.3	7	43.8	7	43.8	7	43.8	6	37.5
	OP	9	29.0	10	32.3	4	12.9	11	35.5	6	19.4	10	32.3
Nemertina unidentified	PRE-OP	14	87.5	16	100.0	15	93.8	15	93.8	16	100.0	16	100.0
	PRE-OP	14	87.5	12	75.0	11	68.8	9	56.3	11	68.8	12	75.0
	OP	15	48.4	11	35.5	14	45.2	13	41.9	11	35.5	12	38.7
	OP	27	87.1	29	93.5	28	90.3	30	96.8	28	90.3	27	87.1
Nemocardium centrifilosum	PRE-OP	16	100.0	16	100.0	15	93.8	16	100.0	16	100.0	15	93.8
Neomysis rayii	PRE-OP	16	100.0	16	100.0	16	100.0	16	100.0	16	100.0	15	93.8
Nephtyidae unidentified	OP	31	100.0	31	100.0	31	100.0	31	100.0	31	100.0	30	96.8
Nephtys caecoides	PRE-OP	14	87.5	16	100.0	12	75.0	14	87.5	13	81.3	16	100.0
	OP	23	74.2	24	77.4	25	80.6	25	80.6	28	90.3	23	74.2
Nephtys californiensis	OP	31	100.0	31	100.0	31	100.0	31	100.0	30	96.8	31	100.0
Nephtys cornuta franciscana	OP	30	96.8	29	93.5	26	83.9	29	93.5	29	93.5	30	96.8
Nephtys sp.	PRE-OP	9	56.3	4	25.0	3	18.8	5	31.3	3	18.8	6	37.5
	OP	14	45.2	15	48.4	13	41.9	9	29.0	7	22.6	16	51.6
Nephtys sp. (not counted as sp)	PRE-OP	14	87.5	16	100.0	16	100.0	14	87.5	15	93.8	15	93.8
	OP	29	93.5	29	93.5	29	93.5	30	96.8	31	100.0	29	93.5
Nereidae unidentified	OP	31	100.0	30	96.8	31	100.0	31	100.0	31	100.0	31	100.0
Nereis latescens	PRE-OP	15	93.8	16	100.0	16	100.0	16	100.0	16	100.0	15	93.8
	OP	29	93.5	31	100.0	31	100.0	31	100.0	30	96.8	30	96.8
Nereis procera	OP	30	96.8	30	96.8	31	100.0	31	100.0	31	100.0	31	100.0
Nereis sp.	PRE-OP	16	100.0	15	93.8	16	100.0	16	100.0	16	100.0	15	93.8
	OP	31	100.0	31	100.0	31	100.0	31	100.0	30	96.8	31	100.0
Neverita reclusiana	PRE-OP	14	87.5	16	100.0	16	100.0	15	93.8	15	93.8	16	100.0
	OP	28	90.3	28	90.3	29	93.5	22	71.0	24	77.4	19	61.3

SOFT BENTHOS NUMBER OF ZERO OBSERVATIONS

DEPTH IS 8 METERS

SPECIES NAME	PERIOD	700 METERS ZEROS	%	1100 METERS ZEROS	%	1900 METERS ZEROS	%	3350 METERS ZEROS	%	6700 METERS ZEROS	%	9400 METERS ZEROS	%
Notomastus (C.) tenuis	PRE-OP	16	100.0	16	100.0	16	100.0	16	100.0	15	93.8	16	100.0
	OP	30	96.8	30	96.8	30	96.8	31	100.0	31	100.0	31	100.0
Notomastus sp.	OP	31	100.0	31	100.0	30	96.8	31	100.0	31	100.0	31	100.0
Nuculana hindsii	OP	31	100.0	31	100.0	31	100.0	31	100.0	31	100.0	30	96.8
Nuculana sp.	PRE-OP	16	100.0	16	100.0	16	100.0	16	100.0	15	93.8	15	93.8
	OP	30	96.8	31	100.0	31	100.0	31	100.0	31	100.0	31	100.0
Nuculana taphira	PRE-OP	16	100.0	16	100.0	15	93.8	15	93.8	16	100.0	15	93.8
Nymphon cf. heterodenticulatum	PRE-OP	4	25.0	6	37.5	7	43.8	9	56.3	11	68.8	8	50.0
	OP	13	41.9	16	51.6	16	51.6	19	61.3	27	87.1	22	71.0
O. amphipoda unidentified	OP	29	93.5	31	100.0	31	100.0	29	93.5	31	100.0	29	93.5
O. decapoda unidentified	OP	31	100.0	31	100.0	31	100.0	31	100.0	30	96.8	31	100.0
Odontosyllis phosphorea	PRE-OP	15	93.8	16	100.0	16	100.0	16	100.0	16	100.0	16	100.0
Odontosyllis sp.	OP	30	96.8	31	100.0	31	100.0	31	100.0	31	100.0	31	100.0
Odostomia (Evalea) sp.	OP	31	100.0	31	100.0	31	100.0	30	96.8	31	100.0	31	100.0
Odostomia (Evalea) sp. B	PRE-OP	16	100.0	16	100.0	16	100.0	15	93.8	16	100.0	16	100.0
	PRE-OP	15	93.8	16	100.0	16	100.0	16	100.0	16	100.0	16	100.0
	OP	31	100.0	31	100.0	31	100.0	31	100.0	30	96.8	29	93.5
Odostomia (Evalea) sp. H	PRE-OP	16	100.0	16	100.0	16	100.0	16	100.0	15	93.8	16	100.0
Odostomia (Evalea) sp.C	OP	31	100.0	31	100.0	31	100.0	31	100.0	31	100.0	30	96.8
Odostomia (Ivara) turricula	OP	31	100.0	31	100.0	31	100.0	30	96.8	31	100.0	31	100.0
Ogyrides sp.	PRE-OP	15	93.8	15	93.8	16	100.0	16	100.0	15	93.8	14	87.5
	OP	31	100.0	30	96.8	29	93.5	29	93.5	30	96.8	31	100.0
Olivella baetica	PRE-OP	10	62.5	6	37.5	8	50.0	8	50.0	10	62.5	7	43.8
	OP	18	58.1	19	61.3	18	58.1	18	58.1	17	54.8	17	54.8
Onuphidae (not counted as sp)	OP	31	100.0	31	100.0	31	100.0	30	96.8	28	90.3	31	100.0
Onuphidae unidentified	OP	30	96.8	30	96.8	29	93.5	30	96.8	26	83.9	29	93.5
Onuphis eremita	PRE-OP	16	100.0	15	93.8	16	100.0	16	100.0	16	100.0	16	100.0
	OP	30	96.8	28	90.3	31	100.0	28	90.3	22	71.0	28	90.3
Onuphis iridescens	PRE-OP	16	100.0	16	100.0	16	100.0	15	93.8	16	100.0	16	100.0
	OP	30	96.8	31	100.0	31	100.0	30	96.8	29	93.5	31	100.0
Onuphis sp.	PRE-OP	16	100.0	16	100.0	16	100.0	16	100.0	15	93.8	16	100.0

SOFT BENTHOS NUMBER OF ZERO OBSERVATIONS

DEPTH IS 8 METERS

SPECIES NAME	PERIOD	700 METERS ZEROS	%	1100 METERS ZEROS	%	1900 METERS ZEROS	%	3350 METERS ZEROS	%	6700 METERS ZEROS	%	9400 METERS ZEROS	%
	OP	31	100.0	31	100.0	31	100.0	31	100.0	30	96.8	31	100.0
Ophiodermella halcyonis	PRE-OP	16	100.0	16	100.0	16	100.0	16	100.0	16	100.0	15	93.8
	OP	30	96.8	31	100.0	31	100.0	31	100.0	31	100.0	31	100.0
Ophiodermella inermis	OP	31	100.0	31	100.0	30	96.8	31	100.0	31	100.0	31	100.0
Ophiuroconis bispinosa	OP	31	100.0	31	100.0	31	100.0	31	100.0	31	100.0	30	96.8
Ophiuroidea juvenile	PRE-OP	14	87.5	16	100.0	15	93.8	16	100.0	13	81.3	14	87.5
	OP	28	90.3	29	93.5	27	87.1	26	83.9	27	87.1	25	80.6
Opistobranch sp. X	PRE-OP	15	93.8	16	100.0	16	100.0	16	100.0	14	87.5	16	100.0
Orbinidae (not counted as sp)	OP	31	100.0	31	100.0	31	100.0	30	96.8	31	100.0	31	100.0
Orbinidae unidentified	OP	31	100.0	31	100.0	30	96.8	29	93.5	30	96.8	30	96.8
Orchomene anaquela	PRE-OP	16	100.0	15	93.8	16	100.0	16	100.0	16	100.0	16	100.0
Orchomene magdalenensis	PRE-OP	15	93.8	16	100.0	16	100.0	16	100.0	16	100.0	16	100.0
Owenia collaris	PRE-OP	3	18.8	7	43.8	4	25.0	8	50.0	7	43.8	3	18.8
	OP	25	80.6	24	77.4	31	100.0	26	83.9	29	93.5	25	80.6
Oxyurostylis pacifica	OP	29	93.5	30	96.8	30	96.8	30	96.8	27	87.1	31	100.0
OCOE0019	OP	30	96.8	31	100.0	31	100.0	31	100.0	31	100.0	31	100.0
OEOP0003	OP	31	100.0	31	100.0	30	96.8	31	100.0	31	100.0	31	100.0
OPH00999	OP	31	100.0	31	100.0	31	100.0	30	96.8	31	100.0	31	100.0
Pachynus barnardi	OP	29	93.5	30	96.8	27	87.1	30	96.8	21	67.7	29	93.5
Pagurus sp.	PRE-OP	15	93.8	16	100.0	16	100.0	16	100.0	16	100.0	16	100.0
	OP	31	100.0	31	100.0	30	96.8	31	100.0	31	100.0	31	100.0
Paleanotus bellis	PRE-OP	15	93.8	16	100.0	16	100.0	16	100.0	16	100.0	16	100.0
	OP	30	96.8	30	96.8	31	100.0	31	100.0	31	100.0	31	100.0
Parandalla fauveli	PRE-OP	16	100.0	16	100.0	16	100.0	16	100.0	16	100.0	15	93.8
Paranemertes sp. A	PRE-OP	9	56.3	6	37.5	6	37.5	7	43.8	9	56.3	5	31.3
	OP	18	58.1	21	67.7	15	48.4	21	67.7	17	54.8	16	51.6
Paranemertes sp. B	OP	31	100.0	31	100.0	30	96.8	31	100.0	31	100.0	31	100.0
Paraonella platybranchiata	PRE-OP	12	75.0	12	75.0	13	81.3	15	93.8	16	100.0	15	93.8
	OP	8	25.8	8	25.8	7	22.6	19	61.3	23	74.2	25	80.6
Paraonella sp.	PRE-OP	15	93.8	16	100.0	16	100.0	16	100.0	16	100.0	16	100.0

SOFT BENTHOS NUMBER OF ZERO OBSERVATIONS

DEPTH IS 8 METERS

SPECIES NAME	PERIOD	700 METERS ZEROS	700 METERS %	1100 METERS ZEROS	1100 METERS %	1900 METERS ZEROS	1900 METERS %	3350 METERS ZEROS	3350 METERS %	6700 METERS ZEROS	6700 METERS %	9400 METERS ZEROS	9400 METERS %
Paraonidae (not counted as sp)	PRE-OP	16	100.0	16	100.0	16	100.0	16	100.0	15	93.8	16	100.0
	OP	29	93.5	31	100.0	31	100.0	30	96.8	31	100.0	31	100.0
Paraonidae unidentified	PRE-OP	16	100.0	16	100.0	16	100.0	15	93.8	16	100.0	16	100.0
Parapleustes pugettensis	PRE-OP	14	87.5	16	100.0	16	100.0	15	93.8	15	93.8	16	100.0
	OP	30	96.8	31	100.0	30	96.8	31	100.0	31	100.0	31	100.0
Paraprionospio pinnata	PRE-OP	14	87.5	12	75.0	15	93.8	13	81.3	13	81.3	12	75.0
	OP	23	74.2	24	77.4	18	58.1	22	71.0	11	35.5	25	80.6
Parasitic copepod	PRE-OP	15	93.8	16	100.0	16	100.0	16	100.0	16	100.0	16	100.0
Parasterope hulingsi	PRE-OP	7	43.8	11	68.8	8	50.0	12	75.0	6	37.5	6	37.5
	OP	18	58.1	21	67.7	23	74.2	20	64.5	23	74.2	23	74.2
Pareulepis fimbriata	OP	31	100.0	31	100.0	31	100.0	29	93.5	30	96.8	30	96.8
Parvilucina tenuisculpta	PRE-OP	15	93.8	16	100.0	16	100.0	16	100.0	16	100.0	16	100.0
	OP	31	100.0	31	100.0	31	100.0	30	96.8	30	96.8	31	100.0
Pectinaria californiensis	PRE-OP	8	50.0	12	75.0	11	68.8	14	87.5	13	81.3	12	75.0
	OP	7	22.6	16	51.6	11	35.5	11	35.5	13	41.9	17	54.8
Pelecypoda	OP	31	100.0	31	100.0	28	90.3	26	83.9	29	93.5	29	93.5
Pelecypoda unidentified	PRE-OP	16	100.0	13	81.3	16	100.0	16	100.0	16	100.0	13	81.3
	OP	31	100.0	31	100.0	30	96.8	31	100.0	31	100.0	31	100.0
	OP	27	87.1	28	90.3	31	100.0	29	93.5	29	93.5	28	90.3
Periploma planulsculum	OP	28	90.3	25	80.6	27	87.1	25	80.6	26	83.9	30	96.8
Petricola tellimyalis	PRE-OP	16	100.0	16	100.0	16	100.0	15	93.8	16	100.0	16	100.0
Philine sp. A	OP	29	93.5	30	96.8	31	100.0	29	93.5	31	100.0	29	93.5
Phoronis spp.	PRE-OP	14	87.5	16	100.0	16	100.0	16	100.0	14	87.5	15	93.8
	OP	22	71.0	23	74.2	22	71.0	24	77.4	18	58.1	21	67.7
Photis bifurcata	OP	30	96.8	31	100.0	30	96.8	29	93.5	31	100.0	30	96.8
Photis brevipes	OP	31	100.0	31	100.0	31	100.0	31	100.0	29	93.5	30	96.8
Photis californica	PRE-OP	10	62.5	10	62.5	9	56.3	7	43.8	7	43.8	9	56.3
	OP	22	71.0	23	74.2	21	67.7	26	83.9	23	74.2	22	71.0
Photis lacia	PRE-OP	15	93.8	14	87.5	15	93.8	14	87.5	15	93.8	16	100.0
	OP	31	100.0	31	100.0	31	100.0	30	96.8	30	96.8	31	100.0
Photis macrotica	PRE-OP	14	87.5	16	100.0	16	100.0	16	100.0	16	100.0	16	100.0
	OP	28	90.3	24	77.4	28	90.3	22	71.0	22	71.0	28	90.3

SOFT BENTHOS NUMBER OF ZERO OBSERVATIONS

DEPTH IS 8 METERS

SPECIES NAME	PERIOD	700 METERS ZEROS	%	1100 METERS ZEROS	%	1900 METERS ZEROS	%	3350 METERS ZEROS	%	6700 METERS ZEROS	%	9400 METERS ZEROS	%
Phyllodoce (Anaitides) papillosa	OP	31	100.0	31	100.0	30	96.8	31	100.0	29	93.5	30	96.8
Phyllodoce (Aponaitides) hartmanae	PRE-OP	14	87.5	16	100.0	16	100.0	14	87.5	15	93.8	16	100.0
	OP	25	80.6	27	87.1	30	96.8	24	77.4	28	90.3	24	77.4
Phyllodoce sp.	PRE-OP	16	100.0	16	100.0	16	100.0	15	93.8	15	93.8	16	100.0
	OP	30	96.8	31	100.0	31	100.0	29	93.5	29	93.5	29	93.5
Phyllodoce sp. (not counted as sp)	OP	30	96.8	30	96.8	30	96.8	31	100.0	30	96.8	30	96.8
Phyllodocidae unidentified	PRE-OP	16	100.0	16	100.0	16	100.0	15	93.8	16	100.0	15	93.8
Pinnixa hiatus	OP	31	100.0	31	100.0	30	96.8	31	100.0	31	100.0	31	100.0
Pinnixa longipes	OP	31	100.0	31	100.0	31	100.0	31	100.0	31	100.0	29	93.5
Pinnixa sp. juvenile	PRE-OP	16	100.0	16	100.0	16	100.0	15	93.8	16	100.0	16	100.0
	OP	31	100.0	30	96.8	31	100.0	29	93.5	31	100.0	31	100.0
Pinnixa tubicola/tomentosa	OP	31	100.0	31	100.0	30	96.8	31	100.0	31	100.0	31	100.0
Pisione remota	OP	31	100.0	31	100.0	31	100.0	31	100.0	30	96.8	31	100.0
Pista disjuncta	OP	29	93.5	30	96.8	26	83.9	21	67.7	19	61.3	19	61.3
Pista sp.	PRE-OP	15	93.8	16	100.0	16	100.0	16	100.0	16	100.0	16	100.0
Platynereis bicanaliculata	OP	30	96.8	31	100.0	31	100.0	31	100.0	31	100.0	31	100.0
Podakeopsis brevipalpa	PRE-OP	15	93.8	16	100.0	12	75.0	15	93.8	15	93.8	15	93.8
	OP	20	64.5	28	90.3	22	71.0	31	100.0	31	100.0	27	87.1
Podocerus cristata	OP	30	96.8	31	100.0	31	100.0	31	100.0	31	100.0	31	100.0
Podocopid B	PRE-OP	16	100.0	16	100.0	16	100.0	16	100.0	15	93.8	16	100.0
	OP	31	100.0	31	100.0	31	100.0	31	100.0	31	100.0	30	96.8
Podocopid C	OP	31	100.0	31	100.0	30	96.8	31	100.0	31	100.0	31	100.0
Podocopid D	OP	31	100.0	31	100.0	31	100.0	30	96.8	31	100.0	29	93.5
Podocopid E	OP	31	100.0	31	100.0	31	100.0	31	100.0	31	100.0	30	96.8
Podocopid F	OP	31	100.0	31	100.0	30	96.8	31	100.0	31	100.0	31	100.0
Podocopid G	OP	31	100.0	30	96.8	29	93.5	31	100.0	30	96.8	29	93.5
Podocopid H	OP	31	100.0	31	100.0	31	100.0	31	100.0	30	96.8	31	100.0
Poecilochaetous sp.	OP	31	100.0	31	100.0	30	96.8	31	100.0	31	100.0	31	100.0

SOFT BENTHOS NUMBER OF ZERO OBSERVATIONS

DEPTH IS 8 METERS

SPECIES NAME	PERIOD	700 METERS ZEROS	700 METERS %	1100 METERS ZEROS	1100 METERS %	1900 METERS ZEROS	1900 METERS %	3350 METERS ZEROS	3350 METERS %	6700 METERS ZEROS	6700 METERS %	9400 METERS ZEROS	9400 METERS %
Polychaete unidentified	OP	30	96.8	31	100.0	31	100.0	31	100.0	31	100.0	31	100.0
Polycirrus californicus	OP	31	100.0	31	100.0	31	100.0	30	96.8	31	100.0	31	100.0
Polycirrus sp.	OP	31	100.0	31	100.0	30	96.8	31	100.0	30	96.8	27	87.1
Polydora bioccipitalis	OP	30	96.8	31	100.0	29	93.5	30	96.8	28	90.3	29	93.5
Polydora nuchalis	OP	30	96.8	30	96.8	31	100.0	31	100.0	30	96.8	29	93.5
Polydora sp.	PRE-OP	16	100.0	16	100.0	15	93.8	15	93.8	16	100.0	16	100.0
	OP	31	100.0	30	96.8	31	100.0	29	93.5	31	100.0	28	90.3
Polynoidae unidentified	PRE-OP	15	93.8	16	100.0	16	100.0	16	100.0	16	100.0	16	100.0
	OP	31	100.0	31	100.0	29	93.5	29	93.5	30	96.8	30	96.8
Pontogeneia rostrata	OP	30	96.8	31	100.0	31	100.0	30	96.8	31	100.0	31	100.0
Porcellidium sp.	PRE-OP	15	93.8	15	93.8	14	87.5	16	100.0	15	93.8	16	100.0
	OP	29	93.5	31	100.0	31	100.0	31	100.0	31	100.0	30	96.8
Prionospio cirrifera	OP	13	41.9	23	74.2	17	54.8	20	64.5	21	67.7	18	58.1
Prionospio pygmaea	PRE-OP	3	18.8	0	0.0	2	12.5	1	6.3	2	12.5	4	25.0
	OP	1	3.2	0	0.0	0	0.0	3	9.7	3	9.7	5	16.1
Prionospio sp.	PRE-OP	16	100.0	16	100.0	16	100.0	16	100.0	15	93.8	16	100.0
	OP	30	96.8	31	100.0	31	100.0	31	100.0	31	100.0	31	100.0
Prionospio sp. (not counted as sp)	OP	28	90.3	30	96.8	30	96.8	30	96.8	28	90.3	28	90.3
Psephidia sp.	OP	30	96.8	31	100.0	31	100.0	31	100.0	31	100.0	31	100.0
Pyromaia tuberculata	PRE-OP	15	93.8	16	100.0	15	93.8	16	100.0	16	100.0	15	93.8
PGON9090	PRE-OP	15	93.8	16	100.0	15	93.8	16	100.0	16	100.0	16	100.0
	OP	30	96.8	29	93.5	31	100.0	30	96.8	31	100.0	31	100.0
PHES0003	OP	31	100.0	30	96.8	29	93.5	31	100.0	30	96.8	31	100.0
PPAR0029	OP	30	96.8	31	100.0	31	100.0	31	100.0	31	100.0	31	100.0
PSAB0400	OP	30	96.8	31	100.0	31	100.0	31	100.0	31	100.0	31	100.0
Randallia ornata	OP	31	100.0	31	100.0	31	100.0	31	100.0	31	100.0	30	96.8
Renilla kolleri	OP	31	100.0	31	100.0	31	100.0	31	100.0	31	100.0	30	96.8
Rhepoxynius abronius	PRE-OP	12	75.0	12	75.0	12	75.0	11	68.8	13	81.3	11	68.8
	OP	14	45.2	17	54.8	10	32.3	5	16.1	2	6.5	10	32.3
Rhepoxynius daboius	PRE-OP	14	87.5	15	93.8	16	100.0	15	93.8	14	87.5	16	100.0

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DEPTH IS 8 METERS

SPECIES NAME	PERIOD	700 METERS ZEROS	700 METERS %	1100 METERS ZEROS	1100 METERS %	1900 METERS ZEROS	1900 METERS %	3350 METERS ZEROS	3350 METERS %	6700 METERS ZEROS	6700 METERS %	9400 METERS ZEROS	9400 METERS %
	OP	24	77.4	23	74.2	24	77.4	20	64.5	18	58.1	18	58.1
Rhepoxynius heterocuspidatus	OP	31	100.0	30	96.8	30	96.8	31	100.0	31	100.0	31	100.0
Rhepoxynius lucubrans	OP	30	96.8	30	96.8	31	100.0	30	96.8	31	100.0	30	96.8
Rhepoxynius menziese	PRE-OP	3	18.8	6	37.5	4	25.0	3	18.8	8	50.0	6	37.5
	OP	10	32.3	14	45.2	10	32.3	3	9.7	7	22.6	11	35.5
Rhepoxynius sp. juvenile	PRE-OP	16	100.0	12	75.0	14	87.5	14	87.5	15	93.8	12	75.0
	PRE-OP	2	12.5	5	31.3	10	62.5	5	31.3	4	25.0	6	37.5
	OP	30	96.8	24	77.4	25	80.6	29	93.5	28	90.3	29	93.5
	OP	16	51.6	16	51.6	15	48.4	7	22.6	13	41.9	11	35.5
Rhepoxynius sp. A	PRE-OP	8	50.0	7	43.8	8	50.0	7	43.8	7	43.8	13	81.3
	OP	6	19.4	6	19.4	9	29.0	5	16.1	7	22.6	6	19.4
Rhepoxynius stenodes	OP	30	96.8	31	100.0	31	100.0	31	100.0	31	100.0	30	96.8
Rhepoxynius variatus	PRE-OP	15	93.8	16	100.0	16	100.0	16	100.0	16	100.0	16	100.0
	OP	31	100.0	31	100.0	31	100.0	31	100.0	30	96.8	31	100.0
Rictaxis punctocoelatus	PRE-OP	16	100.0	16	100.0	16	100.0	16	100.0	15	93.8	16	100.0
	OP	30	96.8	29	93.5	31	100.0	31	100.0	31	100.0	31	100.0
Rissoina sp.	OP	31	100.0	31	100.0	30	96.8	31	100.0	31	100.0	31	100.0
Rutiderma judayi	PRE-OP	16	100.0	16	100.0	16	100.0	16	100.0	16	100.0	15	93.8
Rutiderma rostrata	PRE-OP	15	93.8	16	100.0	16	100.0	16	100.0	14	87.5	16	100.0
	OP	31	100.0	31	100.0	30	96.8	31	100.0	31	100.0	30	96.8
Sabellaria cementarium	PRE-OP	16	100.0	15	93.8	16	100.0	16	100.0	16	100.0	16	100.0
Sabellaria nanella	PRE-OP	16	100.0	16	100.0	16	100.0	13	81.3	16	100.0	16	100.0
	OP	31	100.0	31	100.0	31	100.0	30	96.8	31	100.0	31	100.0
Sabellaria sp.	PRE-OP	16	100.0	16	100.0	16	100.0	15	93.8	16	100.0	16	100.0
Sabellidae unidentified	OP	31	100.0	31	100.0	31	100.0	31	100.0	30	96.8	30	96.8
Saxidomus nuttalli	PRE-OP	16	100.0	16	100.0	16	100.0	15	93.8	16	100.0	16	100.0
Scolelepis sp.	OP	30	96.8	31	100.0	31	100.0	31	100.0	31	100.0	31	100.0
Scolelepis squamata	OP	30	96.8	31	100.0	31	100.0	29	93.5	31	100.0	30	96.8
Scoloplos acmeceps	OP	31	100.0	31	100.0	31	100.0	31	100.0	30	96.8	31	100.0
Scoloplos armiger	PRE-OP	13	81.3	14	87.5	14	87.5	12	75.0	11	68.8	14	87.5
	OP	10	32.3	6	19.4	11	35.5	11	35.5	20	64.5	8	25.8

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DEPTH IS 8 METERS

SPECIES NAME	PERIOD	700 METERS ZEROS	700 METERS %	1100 METERS ZEROS	1100 METERS %	1900 METERS ZEROS	1900 METERS %	3350 METERS ZEROS	3350 METERS %	6700 METERS ZEROS	6700 METERS %	9400 METERS ZEROS	9400 METERS %
Scoloplos sp.	PRE-OP	13	81.3	12	75.0	12	75.0	12	75.0	12	75.0	9	56.3
	OP	31	100.0	31	100.0	31	100.0	31	100.0	31	100.0	30	96.8
Scolopos sp. (not counted as sp)	PRE-OP	16	100.0	16	100.0	16	100.0	16	100.0	16	100.0	15	93.8
	OP	30	96.8	30	96.8	30	96.8	31	100.0	29	93.5	31	100.0
Shrimp juvenile	OP	30	96.8	31	100.0	31	100.0	30	96.8	29	93.5	28	90.3
Shrimp-larvae	OP	31	100.0	29	93.5	31	100.0	29	93.5	28	90.3	29	93.5
Sigalionidae (not counted as sp)	PRE-OP	16	100.0	16	100.0	15	93.8	16	100.0	16	100.0	16	100.0
Sigalionidae unidentified	PRE-OP	16	100.0	16	100.0	15	93.8	16	100.0	16	100.0	15	93.8
	OP	31	100.0	30	96.8	30	96.8	31	100.0	31	100.0	31	100.0
Sigambra tentaculata	PRE-OP	16	100.0	16	100.0	16	100.0	16	100.0	15	93.8	16	100.0
Siliqua lucida	PRE-OP	15	93.8	16	100.0	15	93.8	16	100.0	14	87.5	11	68.8
	OP	25	80.6	28	90.3	28	90.3	26	83.9	26	83.9	26	83.9
Siphonosoma ingens	PRE-OP	16	100.0	16	100.0	16	100.0	16	100.0	16	100.0	15	93.8
Sipunculida unidentified	PRE-OP	15	93.8	16	100.0	15	93.8	15	93.8	16	100.0	16	100.0
	OP	29	93.5	30	96.8	31	100.0	31	100.0	31	100.0	30	96.8
Solen rosaceus	PRE-OP	16	100.0	16	100.0	16	100.0	16	100.0	15	93.8	16	100.0
	OP	15	48.4	26	83.9	22	71.0	22	71.0	20	64.5	15	48.4
Solen sicarius	PRE-OP	16	100.0	16	100.0	16	100.0	16	100.0	14	87.5	14	87.5
	OP	29	93.5	31	100.0	30	96.8	31	100.0	29	93.5	29	93.5
Solen sp.	PRE-OP	15	93.8	15	93.8	15	93.8	15	93.8	16	100.0	16	100.0
	OP	30	96.8	31	100.0	31	100.0	31	100.0	31	100.0	30	96.8
Solen sp. (not counted as sp)	PRE-OP	16	100.0	16	100.0	16	100.0	16	100.0	15	93.8	16	100.0
Sphaerodoropsis biserialis	OP	31	100.0	31	100.0	31	100.0	31	100.0	29	93.5	31	100.0
Spiochaetopterus costarum	PRE-OP	16	100.0	16	100.0	14	87.5	16	100.0	16	100.0	16	100.0
	OP	26	83.9	26	83.9	27	87.1	26	83.9	30	96.8	28	90.3
Spionidae (not counted as sp)	PRE-OP	16	100.0	16	100.0	16	100.0	15	93.8	16	100.0	16	100.0
	OP	31	100.0	30	96.8	31	100.0	31	100.0	30	96.8	30	96.8
Spionidae unidentified	PRE-OP	16	100.0	16	100.0	16	100.0	14	87.5	16	100.0	16	100.0
	OP	31	100.0	31	100.0	30	96.8	31	100.0	30	96.8	31	100.0
Spiophanes bombyx	PRE-OP	11	68.8	7	43.8	7	43.8	7	43.8	7	43.8	12	75.0
	OP	7	22.6	7	22.6	8	25.8	4	12.9	10	32.3	10	32.3
Spiophanes missionensis	PRE-OP	16	100.0	15	93.8	15	93.8	13	81.3	16	100.0	16	100.0
	OP	23	74.2	19	61.3	24	77.4	16	51.6	23	74.2	26	83.9

SOFT BENTHOS NUMBER OF ZERO OBSERVATIONS

DEPTH IS 8 METERS

SPECIES NAME	PERIOD	700 METERS ZEROS	700 METERS %	1100 METERS ZEROS	1100 METERS %	1900 METERS ZEROS	1900 METERS %	3350 METERS ZEROS	3350 METERS %	6700 METERS ZEROS	6700 METERS %	9400 METERS ZEROS	9400 METERS %
Spiophanes sp.	PRE-OP	15	93.8	14	87.5	16	100.0	14	87.5	13	81.3	15	93.8
	OP	31	100.0	30	96.8	30	96.8	30	96.8	31	100.0	30	96.8
Spiophanes sp. (not counted as sp)	PRE-OP	16	100.0	15	93.8	16	100.0	15	93.8	16	100.0	16	100.0
	OP	30	96.8	31	100.0	31	100.0	30	96.8	31	100.0	31	100.0
Stenothoe estacola	PRE-OP	13	81.3	15	93.8	15	93.8	15	93.8	15	93.8	16	100.0
	OP	24	77.4	30	96.8	27	87.1	30	96.8	28	90.3	30	96.8
Sthenelais sp.	OP	31	100.0	28	90.3	30	96.8	30	96.8	30	96.8	30	96.8
Sthenelais tertiaglabra	OP	30	96.8	30	96.8	30	96.8	30	96.8	30	96.8	28	90.3
Sthenelais verruculosa	PRE-OP	16	100.0	15	93.8	15	93.8	16	100.0	16	100.0	16	100.0
	OP	31	100.0	28	90.3	31	100.0	29	93.5	31	100.0	29	93.5
Sthenelanella uniformis	OP	31	100.0	31	100.0	31	100.0	31	100.0	29	93.5	31	100.0
Sulcoretusa xystrum	PRE-OP	16	100.0	16	100.0	14	87.5	15	93.8	16	100.0	14	87.5
	OP	31	100.0	27	87.1	28	90.3	31	100.0	28	90.3	26	83.9
Syllidia sp. C	OP	31	100.0	31	100.0	31	100.0	31	100.0	31	100.0	30	96.8
Synchelidium rectipalmum	OP	28	90.3	31	100.0	31	100.0	31	100.0	31	100.0	31	100.0
Synchelidium shoemakeri	PRE-OP	4	25.0	2	12.5	5	31.3	3	18.8	3	18.8	3	18.8
	OP	9	29.0	8	25.8	8	25.8	9	29.0	18	58.1	17	54.8
Synidotea hartfordi	OP	31	100.0	30	96.8	31	100.0	31	100.0	31	100.0	31	100.0
Synidotea magnifica	OP	30	96.8	30	96.8	31	100.0	31	100.0	31	100.0	31	100.0
Tauberia gracilis	PRE-OP	15	93.8	14	87.5	15	93.8	16	100.0	16	100.0	15	93.8
	OP	31	100.0	31	100.0	31	100.0	30	96.8	31	100.0	31	100.0
Tellina carpenteri	PRE-OP	16	100.0	16	100.0	15	93.8	16	100.0	16	100.0	15	93.8
	OP	30	96.8	30	96.8	31	100.0	31	100.0	31	100.0	31	100.0
Tellina modesta	PRE-OP	2	12.5	3	18.8	2	12.5	0	0.0	1	6.3	0	0.0
	OP	17	54.8	22	71.0	7	22.6	11	35.5	16	51.6	8	25.8
Terebellidae juvenile	OP	31	100.0	31	100.0	30	96.8	30	96.8	31	100.0	31	100.0
Tetrastemma spp.	OP	30	96.8	31	100.0	31	100.0	31	100.0	31	100.0	31	100.0
Thalenessa spinosa	PRE-OP	8	50.0	11	68.8	10	62.5	9	56.3	8	50.0	8	50.0
	OP	13	41.9	21	67.7	15	48.4	10	32.3	15	48.4	13	41.9
Tharyx sp.	OP	29	93.5	29	93.5	29	93.5	30	96.8	29	93.5	30	96.8
Thecondonta oblongus	PRE-OP	15	93.8	16	100.0	16	100.0	16	100.0	16	100.0	13	81.3

SOFT BENTHOS NUMBER OF ZERO OBSERVATIONS

DEPTH IS 8 METERS

SPECIES NAME	PERIOD	700 METERS ZEROS	700 METERS %	1100 METERS ZEROS	1100 METERS %	1900 METERS ZEROS	1900 METERS %	3350 METERS ZEROS	3350 METERS %	6700 METERS ZEROS	6700 METERS %	9400 METERS ZEROS	9400 METERS %
	OP	31	100.0	30	96.8	31	100.0	31	100.0	29	93.5	31	100.0
Tiron biocellata	OP	25	80.6	19	61.3	19	61.3	27	87.1	26	83.9	28	90.3
Tiron tropakis	PRE-OP	13	81.3	6	37.5	8	50.0	4	25.0	9	56.3	8	50.0
Travisia gigas	OP	31	100.0	31	100.0	31	100.0	31	100.0	31	100.0	30	96.8
Travisia sp.	OP	29	93.5	31	100.0	31	100.0	30	96.8	29	93.5	27	87.1
Tricolia pullolides	PRE-OP	16	100.0	15	93.8	16	100.0	16	100.0	16	100.0	16	100.0
	OP	29	93.5	31	100.0	31	100.0	30	96.8	30	96.8	29	93.5
Tricolia rubrilineata	OP	28	90.3	31	100.0	30	96.8	30	96.8	29	93.5	29	93.5
Tricolia sp.	OP	30	96.8	31	100.0	29	93.5	31	100.0	31	100.0	31	100.0
Tubulanidae sp. B	PRE-OP	13	81.3	11	68.8	12	75.0	12	75.0	13	81.3	8	50.0
	OP	18	58.1	25	80.6	20	64.5	25	80.6	23	74.2	24	77.4
Tubulanus nothus (black)	PRE-OP	14	87.5	15	93.8	14	87.5	14	87.5	14	87.5	16	100.0
	OP	31	100.0	31	100.0	31	100.0	31	100.0	31	100.0	30	96.8
Tubulanus pellucidus (red)	PRE-OP	16	100.0	16	100.0	16	100.0	16	100.0	16	100.0	15	93.8
	OP	31	100.0	29	93.5	28	90.3	30	96.8	30	96.8	30	96.8
Tubulanus sp. P	OP	30	96.8	31	100.0	31	100.0	31	100.0	31	100.0	31	100.0
Turbonilla (Chemnitzia) sp.	OP	29	93.5	30	96.8	30	96.8	31	100.0	30	96.8	30	96.8
Turbonilla (Chemnitzia) sp. A	OP	31	100.0	31	100.0	31	100.0	30	96.8	31	100.0	31	100.0
Turbonilla (Chemnitzia) sp. B	PRE-OP	16	100.0	16	100.0	16	100.0	16	100.0	15	93.8	16	100.0
Turbonilla (Chemnitzia) sp. C	OP	30	96.8	30	96.8	30	96.8	31	100.0	31	100.0	31	100.0
Turbonilla (Pyrgiscus) sp. F	OP	30	96.8	31	100.0	31	100.0	31	100.0	31	100.0	30	96.8
Typosyllis hyalina	PRE-OP	7	43.8	5	31.3	13	81.3	9	56.3	5	31.3	3	18.8
	OP	31	100.0	30	96.8	25	80.6	25	80.6	24	77.4	18	58.1
Volvuella cylindrica	OP	31	100.0	31	100.0	30	96.8	31	100.0	31	100.0	31	100.0
Yoldia cooperi	PRE-OP	11	68.8	12	75.0	11	68.8	9	56.3	10	62.5	12	75.0
	OP	22	71.0	27	87.1	21	67.7	26	83.9	28	90.3	25	80.6
Zaolutus actius	PRE-OP	13	81.3	16	100.0	14	87.5	16	100.0	16	100.0	15	93.8
	OP	31	100.0	31	100.0	31	100.0	30	96.8	31	100.0	31	100.0
Zygeupolia sp.	PRE-OP	3	18.8	7	43.8	9	56.3	2	12.5	0	0.0	3	18.8
	OP	26	83.9	26	83.9	26	83.9	30	96.8	28	90.3	26	83.9

SOFT BENTHOS NUMBER OF ZERO OBSERVATIONS

DEPTH IS 18 METERS

SPECIES NAME	PERIOD	700 METERS ZEROS	700 METERS %	1100 METERS ZEROS	1100 METERS %	1900 METERS ZEROS	1900 METERS %	3350 METERS ZEROS	3350 METERS %	6700 METERS ZEROS	6700 METERS %	9400 METERS ZEROS	9400 METERS %
? Halosydna sp.	OP	31	100.0	31	100.0	31	100.0	31	100.0	30	96.8	31	100.0
cf. Cactosoma arenaria	OP	31	100.0	31	100.0	31	100.0	31	100.0	31	100.0	30	96.8
Acesta catherinae	PRE-OP	4	25.0	1	6.3	1	6.3	2	12.5	0	0.0	2	12.5
	OP	0	0.0	0	0.0	0	0.0	1	3.2	2	6.5	0	0.0
Acesta horikoshii	PRE-OP	15	93.8	15	93.8	14	87.5	15	93.8	15	93.8	14	87.5
	OP	24	77.4	21	67.7	25	80.6	28	90.3	28	90.3	26	83.9
Acesta sp. B	PRE-OP	16	100.0	15	93.8	16	100.0	15	93.8	16	100.0	16	100.0
Acteocina culcitella	OP	30	96.8	31	100.0	30	96.8	30	96.8	31	100.0	30	96.8
Acteocina harpa	PRE-OP	15	93.8	16	100.0	16	100.0	15	93.8	16	100.0	16	100.0
	OP	30	96.8	29	93.5	30	96.8	30	96.8	28	90.3	29	93.5
Acteocina inculta	OP	31	100.0	31	100.0	30	96.8	30	96.8	30	96.8	30	96.8
Acteocina sp.	OP	31	100.0	31	100.0	29	93.5	31	100.0	30	96.8	30	96.8
Acuminodeutopus heteruropus	PRE-OP	10	62.5	10	62.5	4	25.0	6	37.5	5	31.3	1	6.3
	OP	1	3.2	2	6.5	1	3.2	0	0.0	1	3.2	1	3.2
Adontorhina sp.	PRE-OP	16	100.0	16	100.0	16	100.0	15	93.8	16	100.0	16	100.0
Aedicira pacifica	PRE-OP	15	93.8	16	100.0	14	87.5	14	87.5	15	93.8	15	93.8
	OP	29	93.5	29	93.5	30	96.8	21	67.7	24	77.4	29	93.5
Aglaja ocelligera	PRE-OP	16	100.0	16	100.0	16	100.0	16	100.0	15	93.8	16	100.0
	OP	28	90.3	31	100.0	31	100.0	29	93.5	31	100.0	30	96.8
Alia carinata	PRE-OP	15	93.8	16	100.0	16	100.0	16	100.0	16	100.0	16	100.0
	OP	31	100.0	31	100.0	30	96.8	31	100.0	31	100.0	31	100.0
Alia antennata	OP	30	96.8	31	100.0	31	100.0	31	100.0	31	100.0	31	100.0
Alpheus clamator	PRE-OP	16	100.0	15	93.8	16	100.0	16	100.0	16	100.0	16	100.0
Amaeana occidentalis	PRE-OP	13	81.3	14	87.5	12	75.0	14	87.5	16	100.0	10	62.5
	OP	30	96.8	27	87.1	31	100.0	29	93.5	31	100.0	31	100.0
Amastigos acutus	OP	31	100.0	31	100.0	31	100.0	30	96.8	31	100.0	30	96.8
Ampelisca agassizi	PRE-OP	10	62.5	10	62.5	7	43.8	13	81.3	7	43.8	5	31.3
	OP	7	22.6	9	29.0	9	29.0	12	38.7	16	51.6	20	64.5
Ampelisca brevisimulata	PRE-OP	5	31.3	10	62.5	5	31.3	5	31.3	7	43.8	6	37.5
	OP	5	16.1	5	16.1	1	3.2	4	12.9	2	6.5	1	3.2

SOFT BENTHOS NUMBER OF ZERO OBSERVATIONS

DEPTH IS 18 METERS

SPECIES NAME	PERIOD	700 METERS ZEROS	%	1100 METERS ZEROS	%	1900 METERS ZEROS	%	3350 METERS ZEROS	%	6700 METERS ZEROS	%	9400 METERS ZEROS	%
Ampelisca careyi	OP	31	100.0	30	96.8	31	100.0	31	100.0	31	100.0	31	100.0
Ampelisca cristata	PRE-OP	10	62.5	5	31.3	3	18.8	5	31.3	4	25.0	2	12.5
	OP	17	54.8	21	67.7	20	64.5	17	54.8	13	41.9	20	64.5
Ampelisca cristata microdentata	OP	5	16.1	6	19.4	4	12.9	4	12.9	9	29.0	11	35.5
Ampelisca juvenile	PRE-OP	14	87.5	16	100.0	15	93.8	16	100.0	15	93.8	16	100.0
Ampelisca juvenile(not counted as sp)	PRE-OP	15	93.8	16	100.0	16	100.0	15	93.8	16	100.0	14	87.5
Ampelisca pugetica	PRE-OP	16	100.0	16	100.0	16	100.0	16	100.0	15	93.8	16	100.0
Ampharete labrops	PRE-OP	15	93.8	16	100.0	16	100.0	16	100.0	15	93.8	16	100.0
	OP	30	96.8	29	93.5	30	96.8	30	96.8	30	96.8	29	93.5
Ampharete sp.	PRE-OP	16	100.0	16	100.0	16	100.0	16	100.0	16	100.0	16	100.0
	OP	30	96.8	31	100.0	31	100.0	30	96.8	29	93.5	31	100.0
Ampharetidae (not counted as sp)	PRE-OP	14	87.5	16	100.0	15	93.8	16	100.0	14	87.5	15	93.8
	OP	27	87.1	27	87.1	29	93.5	28	90.3	29	93.5	29	93.5
Ampharetidae juvenile	PRE-OP	14	87.5	13	81.3	13	81.3	16	100.0	14	87.5	16	100.0
	OP	24	77.4	26	83.9	23	74.2	25	80.6	25	80.6	26	83.9
Amphicteis scaphobranchiata	PRE-OP	13	81.3	15	93.8	15	93.8	14	87.5	14	87.5	15	93.8
	OP	19	61.3	23	74.2	21	67.7	25	80.6	21	67.7	24	77.4
Amphicteis sp.	PRE-OP	16	100.0	16	100.0	15	93.8	16	100.0	16	100.0	16	100.0
	OP	31	100.0	31	100.0	29	93.5	31	100.0	31	100.0	30	96.8
Amphideutopus oculatus	PRE-OP	10	62.5	9	56.3	10	62.5	8	50.0	5	31.3	11	68.8
	OP	11	35.5	8	25.8	3	9.7	6	19.4	8	25.8	7	22.6
Amphilocus litoralis	OP	31	100.0	30	96.8	31	100.0	31	100.0	31	100.0	31	100.0
Amphilocus neopolitanus	OP	30	96.8	31	100.0	30	96.8	30	96.8	31	100.0	30	96.8
Amphiodia occidentalis	PRE-OP	15	93.8	16	100.0	15	93.8	14	87.5	16	100.0	15	93.8
Amphiodia spp. juvenile	PRE-OP	12	75.0	10	62.5	12	75.0	12	75.0	11	68.8	12	75.0
	OP	30	96.8	31	100.0	30	96.8	29	93.5	31	100.0	31	100.0
Amphiodia urtica	PRE-OP	16	100.0	15	93.8	16	100.0	16	100.0	16	100.0	16	100.0
Amphioplus hexacanthus	PRE-OP	16	100.0	15	93.8	15	93.8	16	100.0	16	100.0	16	100.0
	OP	28	90.3	28	90.3	30	96.8	30	96.8	31	100.0	30	96.8
Amphipoda unidentified (not counted as s	OP	31	100.0	31	100.0	31	100.0	30	96.8	31	100.0	31	100.0
Amphiporus spp.	PRE-OP	15	93.8	14	87.5	14	87.5	15	93.8	15	93.8	14	87.5
	OP	28	90.3	27	87.1	30	96.8	28	90.3	31	100.0	30	96.8

SOFT BENTHOS NUMBER OF ZERO OBSERVATIONS

DEPTH IS 18 METERS

SPECIES NAME	PERIOD	700 METERS ZEROS	%	1100 METERS ZEROS	%	1900 METERS ZEROS	%	3350 METERS ZEROS	%	6700 METERS ZEROS	%	9400 METERS ZEROS	%
Anchicolurus occidentalis	OP	31	100.0	31	100.0	31	100.0	31	100.0	31	100.0	30	96.8
Ancinus granulatus	OP	31	100.0	31	100.0	31	100.0	31	100.0	31	100.0	30	96.8
Ancistrosyllis hamata	PRE-OP	11	68.8	15	93.8	14	87.5	13	81.3	10	62.5	14	87.5
	OP	24	77.4	30	96.8	28	90.3	29	93.5	29	93.5	29	93.5
Ancistrosyllis sp.	PRE-OP	16	100.0	15	93.8	16	100.0	15	93.8	16	100.0	16	100.0
Anoplodactylus sp.	OP	30	96.8	31	100.0	30	96.8	31	100.0	31	100.0	31	100.0
Anotomastus gordiodes	PRE-OP	6	37.5	8	50.0	1	6.3	2	12.5	7	43.8	2	12.5
	OP	13	41.9	16	51.6	22	71.0	21	67.7	15	48.4	18	58.1
Anotomastus sp.	OP	31	100.0	31	100.0	31	100.0	31	100.0	31	100.0	30	96.8
Aoroides inermis	OP	30	96.8	31	100.0	31	100.0	30	96.8	31	100.0	31	100.0
Aphrodita sp.	PRE-OP	16	100.0	16	100.0	16	100.0	15	93.8	16	100.0	16	100.0
Arabella iricolor	PRE-OP	15	93.8	15	93.8	16	100.0	16	100.0	16	100.0	16	100.0
	OP	29	93.5	29	93.5	27	87.1	30	96.8	30	96.8	30	96.8
Arabellidae	PRE-OP	15	93.8	16	100.0	15	93.8	14	87.5	14	87.5	14	87.5
	OP	27	87.1	27	87.1	20	64.5	24	77.4	27	87.1	26	83.9
Arabellidae (not counted as sp)	PRE-OP	14	87.5	16	100.0	15	93.8	16	100.0	16	100.0	16	100.0
	OP	30	96.8	31	100.0	29	93.5	30	96.8	30	96.8	30	96.8
Argissa hamatipes	PRE-OP	9	56.3	10	62.5	12	75.0	9	56.3	8	50.0	12	75.0
	OP	5	16.1	13	41.9	12	38.7	8	25.8	8	25.8	9	29.0
Aricidea sp. A	PRE-OP	16	100.0	15	93.8	16	100.0	16	100.0	16	100.0	16	100.0
	OP	29	93.5	29	93.5	26	83.9	26	83.9	25	80.6	30	96.8
Aricidea sp. B	PRE-OP	16	100.0	12	75.0	14	87.5	15	93.8	14	87.5	14	87.5
	OP	28	90.3	30	96.8	26	83.9	24	77.4	28	90.3	31	100.0
Aricidea wassi	PRE-OP	5	31.3	4	25.0	0	0.0	2	12.5	2	12.5	4	25.0
	OP	2	6.5	0	0.0	1	3.2	2	6.5	7	22.6	9	29.0
Armandia bioculata	OP	31	100.0	31	100.0	31	100.0	31	100.0	31	100.0	30	96.8
Asteroid juvenile	OP	30	96.8	31	100.0	31	100.0	30	96.8	31	100.0	31	100.0
Asteropella slatteryi	OP	31	100.0	30	96.8	30	96.8	31	100.0	31	100.0	31	100.0
Asthenothaerus villosior	PRE-OP	16	100.0	15	93.8	16	100.0	15	93.8	15	93.8	16	100.0
	OP	29	93.5	28	90.3	31	100.0	29	93.5	28	90.3	31	100.0
Astropecten spp. juvenile	PRE-OP	16	100.0	16	100.0	15	93.8	15	93.8	15	93.8	16	100.0

SOFT BENTHOS NUMBER OF ZERO OBSERVATIONS

DEPTH IS 18 METERS

SPECIES NAME	PERIOD	700 METERS ZEROS	700 METERS %	1100 METERS ZEROS	1100 METERS %	1900 METERS ZEROS	1900 METERS %	3350 METERS ZEROS	3350 METERS %	6700 METERS ZEROS	6700 METERS %	9400 METERS ZEROS	9400 METERS %
	OP	30	96.8	31	100.0	31	100.0	31	100.0	29	93.5	29	93.5
Astropecten spp.(arms)	OP	31	100.0	31	100.0	30	96.8	31	100.0	31	100.0	30	96.8
Astropecten verrilli	PRE-OP	16	100.0	16	100.0	16	100.0	14	87.5	16	100.0	16	100.0
	OP	31	100.0	30	96.8	31	100.0	31	100.0	31	100.0	31	100.0
Asychis disparidentata	PRE-OP	11	68.8	9	56.3	15	93.8	16	100.0	16	100.0	16	100.0
	OP	22	71.0	21	67.7	25	80.6	25	80.6	28	90.3	28	90.3
Atylus tridens	PRE-OP	15	93.8	16	100.0	16	100.0	16	100.0	15	93.8	16	100.0
	OP	30	96.8	31	100.0	30	96.8	31	100.0	28	90.3	30	96.8
Autolytus sp.	OP	31	100.0	30	96.8	31	100.0	30	96.8	30	96.8	31	100.0
Axiothella rubrocincta	PRE-OP	14	87.5	12	75.0	14	87.5	12	75.0	15	93.8	12	75.0
Balcis micans	PRE-OP	12	75.0	14	87.5	13	81.3	14	87.5	15	93.8	15	93.8
	OP	24	77.4	25	80.6	25	80.6	26	83.9	28	90.3	30	96.8
Balcis rutila	PRE-OP	14	87.5	16	100.0	14	87.5	13	81.3	16	100.0	16	100.0
	OP	29	93.5	26	83.9	28	90.3	29	93.5	30	96.8	31	100.0
Balcis spp.	PRE-OP	15	93.8	16	100.0	16	100.0	16	100.0	16	100.0	16	100.0
	OP	30	96.8	31	100.0	31	100.0	31	100.0	31	100.0	30	96.8
Brada villosa	PRE-OP	15	93.8	16	100.0	13	81.3	16	100.0	15	93.8	15	93.8
	OP	31	100.0	29	93.5	31	100.0	31	100.0	31	100.0	31	100.0
Branchiostoma californiense	PRE-OP	16	100.0	16	100.0	16	100.0	16	100.0	16	100.0	16	100.0
	OP	31	100.0	31	100.0	30	96.8	31	100.0	31	100.0	31	100.0
Bulla gouldiana	PRE-OP	16	100.0	16	100.0	15	93.8	16	100.0	16	100.0	16	100.0
Cadulus cf. fusiformis	PRE-OP	11	68.8	11	68.8	10	62.5	13	81.3	13	81.3	15	93.8
	OP	29	93.5	31	100.0	31	100.0	28	90.3	29	93.5	30	96.8
Cadulus sp.	PRE-OP	15	93.8	16	100.0	16	100.0	15	93.8	16	100.0	16	100.0
Caecianiropsis psammophila	OP	30	96.8	31	100.0	31	100.0	31	100.0	31	100.0	31	100.0
Calanoid	PRE-OP	16	100.0	16	100.0	15	93.8	16	100.0	15	93.8	15	93.8
	OP	22	71.0	19	61.3	25	80.6	24	77.4	24	77.4	29	93.5
Callianassa sp. juvenile	PRE-OP	12	75.0	15	93.8	15	93.8	14	87.5	12	75.0	15	93.8
	OP	31	100.0	31	100.0	29	93.5	29	93.5	31	100.0	29	93.5
Calliostoma sp.	OP	28	90.3	30	96.8	31	100.0	31	100.0	31	100.0	30	96.8
Campylaspis canaliculata	OP	31	100.0	31	100.0	30	96.8	31	100.0	31	100.0	31	100.0
Campylaspis rubromaculata	PRE-OP	8	50.0	11	68.8	10	62.5	10	62.5	14	87.5	14	87.5

SOFT BENTHOS NUMBER OF ZERO OBSERVATIONS

DEPTH IS 18 METERS

SPECIES NAME	PERIOD	700 METERS ZEROS	700 METERS %	1100 METERS ZEROS	1100 METERS %	1900 METERS ZEROS	1900 METERS %	3350 METERS ZEROS	3350 METERS %	6700 METERS ZEROS	6700 METERS %	9400 METERS ZEROS	9400 METERS %
	OP	20	64.5	17	54.8	22	71.0	23	74.2	17	54.8	23	74.2
Campylaspis sp. C SCAMIT	PRE-OP	16	100.0	15	93.8	16	100.0	15	93.8	15	93.8	16	100.0
	OP	25	80.6	29	93.5	31	100.0	30	96.8	28	90.3	27	87.1
Cancer spp. juvenile	PRE-OP	14	87.5	15	93.8	16	100.0	15	93.8	16	100.0	16	100.0
	OP	30	96.8	30	96.8	30	96.8	31	100.0	30	96.8	28	90.3
Capitellidae (not counted as sp)	OP	30	96.8	31	100.0	31	100.0	31	100.0	31	100.0	31	100.0
Capitellidae unidentified	OP	30	96.8.	31	100.0	31	100.0	30	96.8	31	100.0	31	100.0
Caprella angusta	OP	17	54.8	15	48.4	16	51.6	10	32.3	10	32.3	7	22.6
Caprella californica	PRE-OP	15	93.8	15	93.8	15	93.8	16	100.0	16	100.0	16	100.0
	OP	30	96.8	31	100.0	31	100.0	31	100.0	31	100.0	29	93.5
Caprella equilibra	OP	31	100.0	30	96.8	30	96.8	31	100.0	31	100.0	31	100.0
Caprella spp. juvenile	PRE-OP	14	87.5	14	87.5	15	93.8	16	100.0	16	100.0	16	100.0
	OP	31	100.0	31	100.0	29	93.5	30	96.8	31	100.0	31	100.0
Caprella verrucosa	OP	31	100.0	31	100.0	31	100.0	30	96.8	31	100.0	31	100.0
Carinaria japonica	PRE-OP	16	100.0	16	100.0	16	100.0	16	100.0	15	93.8	16	100.0
Carinoma mutabilis	PRE-OP	16	100.0	14	87.5	15	93.8	16	100.0	16	100.0	13	81.3
	OP	30	96.8	31	100.0	30	96.8	30	96.8	30	96.8	31	100.0
Caudina arenicola	OP	31	100.0	31	100.0	30	96.8	31	100.0	31	100.0	31	100.0
Cerapus tubularis	PRE-OP	16	100.0	16	100.0	15	93.8	15	93.8	16	100.0	15	93.8
	OP	27	87.1	30	96.8	30	96.8	27	87.1	26	83.9	28	90.3
Cerebratulus or Micrura spp.	PRE-OP	11	68.8	9	56.3	13	81.3	13	81.3	11	68.8	13	81.3
	OP	27	87.1	30	96.8	27	87.1	30	96.8	30	96.8	27	87.1
Cerianthidae sp. A	PRE-OP	16	100.0	15	93.8	16	100.0	16	100.0	16	100.0	16	100.0
	OP	30	96.8	30	96.8	31	100.0	30	96.8	31	100.0	31	100.0
Cerianthidae sp. B	PRE-OP	15	93.8	16	100.0	16	100.0	16	100.0	15	93.8	15	93.8
Chaetopteridae (not counted as sp)	OP	31	100.0	31	100.0	31	100.0	31	100.0	30	96.8	31	100.0
Chaetopteridae unidentified	OP	31	100.0	31	100.0	31	100.0	31	100.0	31	100.0	29	93.5
Chaetozone corona	PRE-OP	16	100.0	15	93.8	14	87.5	15	93.8	16	100.0	16	100.0
	OP	16	51.6	24	77.4	20	64.5	27	87.1	27	87.1	28	90.3
Chaetozone setosa	PRE-OP	9	56.3	10	62.5	9	56.3	11	68.8	8	50.0	11	68.8
	OP	7	22.6	5	16.1	5	16.1	11	35.5	10	32.3	15	48.4

SOFT BENTHOS NUMBER OF ZERO OBSERVATIONS

DEPTH IS 18 METERS

SPECIES NAME	PERIOD	700 METERS ZEROS	%	1100 METERS ZEROS	%	1900 METERS ZEROS	%	3350 METERS ZEROS	%	6700 METERS ZEROS	%	9400 METERS ZEROS	%
Chaetozone sp.	OP	29	93.5	29	93.5	30	96.8	31	100.0	31	100.0	31	100.0
Chaetozone sp(not counted as sp)	OP	30	96.8	31	100.0	30	96.8	30	96.8	31	100.0	30	96.8
Chione californiensis	PRE-OP	16	100.0	16	100.0	16	100.0	15	93.8	16	100.0	16	100.0
Chione sp.	PRE-OP	16	100.0	16	100.0	16	100.0	13	81.3	12	75.0	14	87.5
	OP	31	100.0	30	96.8	30	96.8	30	96.8	30	96.8	29	93.5
Chone albocincta	PRE-OP	13	81.3	16	100.0	13	81.3	13	81.3	14	87.5	16	100.0
	OP	29	93.5	28	90.3	24	77.4	24	77.4	28	90.3	29	93.5
Chone ecaudata	OP	30	96.8	31	100.0	31	100.0	31	100.0	31	100.0	31	100.0
Chone sp.	PRE-OP	16	100.0	16	100.0	16	100.0	15	93.8	16	100.0	16	100.0
	OP	30	96.8	29	93.5	29	93.5	31	100.0	30	96.8	29	93.5
Chone sp. (not counted as sp)	PRE-OP	16	100.0	16	100.0	16	100.0	16	100.0	15	93.8	15	93.8
	OP	29	93.5	28	90.3	28	90.3	27	87.1	28	90.3	29	93.5
Chone veleronis	PRE-OP	11	68.8	15	93.8	10	62.5	10	62.5	13	81.3	9	56.3
	OP	12	38.7	9	29.0	10	32.3	11	35.5	13	41.9	9	29.0
Cingula sp.	OP	30	96.8	31	100.0	31	100.0	31	100.0	31	100.0	31	100.0
Cirratulidae (not counted as sp)	PRE-OP	16	100.0	15	93.8	13	81.3	14	87.5	16	100.0	15	93.8
Cirratulidae unidentified	PRE-OP	15	93.8	14	87.5	14	87.5	13	81.3	11	68.8	9	56.3
Cirrophorus furcatus	PRE-OP	16	100.0	13	81.3	12	75.0	10	62.5	12	75.0	11	68.8
	OP	6	19.4	14	45.2	5	16.1	9	29.0	9	29.0	9	29.0
Cirrophorus lyra	PRE-OP	16	100.0	13	81.3	12	75.0	11	68.8	14	87.5	13	81.3
Cirrophorus sp.	PRE-OP	14	87.5	15	93.8	16	100.0	11	68.8	13	81.3	16	100.0
	OP	31	100.0	31	100.0	30	96.8	31	100.0	31	100.0	31	100.0
Cirrophorus sp. (not counted as sp)	OP	30	96.8	31	100.0	30	96.8	31	100.0	31	100.0	31	100.0
Coelentrate unidentified	PRE-OP	16	100.0	16	100.0	16	100.0	15	93.8	16	100.0	16	100.0
	OP	31	100.0	29	93.5	31	100.0	30	96.8	31	100.0	31	100.0
Compsomyax subdiaphana	PRE-OP	16	100.0	12	75.0	14	87.5	15	93.8	14	87.5	16	100.0
	OP	31	100.0	31	100.0	27	87.1	30	96.8	29	93.5	29	93.5
Conualevia alba	PRE-OP	16	100.0	16	100.0	15	93.8	14	87.5	16	100.0	16	100.0
	OP	31	100.0	30	96.8	31	100.0	31	100.0	31	100.0	31	100.0
Cooperella subdiaphana	PRE-OP	8	50.0	9	56.3	8	50.0	7	43.8	8	50.0	7	43.8
	OP	19	61.3	24	77.4	20	64.5	21	67.7	20	64.5	16	51.6
Corambe pacifica	PRE-OP	16	100.0	16	100.0	15	93.8	16	100.0	16	100.0	16	100.0

SOFT BENTHOS NUMBER OF ZERO OBSERVATIONS

DEPTH IS 18 METERS

SPECIES NAME	PERIOD	700 METERS ZEROS	700 METERS %	1100 METERS ZEROS	1100 METERS %	1900 METERS ZEROS	1900 METERS %	3350 METERS ZEROS	3350 METERS %	6700 METERS ZEROS	6700 METERS %	9400 METERS ZEROS	9400 METERS %
Corophium californianum	OP	31	100.0	31	100.0	30	96.8	31	100.0	31	100.0	31	100.0
Cossura cf. candida	PRE-OP	13	81.3	11	68.8	12	75.0	15	93.8	13	81.3	16	100.0
	OP	2	6.5	0	0.0	4	12.9	7	22.6	13	41.9	18	58.1
Cossura sp.	PRE-OP	16	100.0	16	100.0	16	100.0	16	100.0	15	93.8	16	100.0
Crab zoea	OP	31	100.0	30	96.8	30	96.8	30	96.8	30	96.8	30	96.8
Crangon alaskensis elongata	OP	30	96.8	31	100.0	31	100.0	31	100.0	31	100.0	31	100.0
Crangon sp. juvenile	OP	31	100.0	31	100.0	31	100.0	30	96.8	31	100.0	31	100.0
Crassinella pacifica	PRE-OP	16	100.0	16	100.0	16	100.0	15	93.8	16	100.0	16	100.0
Crepidula coei	OP	31	100.0	30	96.8	30	96.8	30	96.8	30	96.8	31	100.0
Crepidula nummaria	OP	31	100.0	29	93.5	31	100.0	31	100.0	31	100.0	31	100.0
Crepidula spp.	OP	31	100.0	30	96.8	31	100.0	30	96.8	30	96.8	31	100.0
Cumella sp. A SCAMIT	PRE-OP	13	81.3	11	68.8	9	56.3	11	68.8	8	50.0	6	37.5
	OP	18	58.1	19	61.3	22	71.0	20	64.5	18	58.1	14	45.2
Cyathodonta dubiosa	OP	30	96.8	31	100.0	31	100.0	31	100.0	30	96.8	31	100.0
Cyathodonta sp. A	PRE-OP	16	100.0	16	100.0	16	100.0	15	93.8	16	100.0	16	100.0
Cyclaspis nubila	PRE-OP	16	100.0	16	100.0	15	93.8	16	100.0	16	100.0	16	100.0
	OP	29	93.5	29	93.5	30	96.8	30	96.8	30	96.8	28	90.3
Cyclaspis sp.C SCAMIT	PRE-OP	15	93.8	16	100.0	14	87.5	15	93.8	16	100.0	14	87.5
	OP	12	38.7	19	61.3	15	48.4	18	58.1	21	67.7	18	58.1
Cyclopoids	PRE-OP	15	93.8	15	93.8	16	100.0	15	93.8	16	100.0	15	93.8
	OP	30	96.8	31	100.0	30	96.8	31	100.0	29	93.5	31	100.0
Cyclostremella californica	PRE-OP	16	100.0	16	100.0	15	93.8	16	100.0	16	100.0	16	100.0
Cylichna attonsa	PRE-OP	14	87.5	11	68.8	13	81.3	15	93.8	12	75.0	13	81.3
	OP	30	96.8	30	96.8	31	100.0	31	100.0	31	100.0	31	100.0
Cylichna diegensis	PRE-OP	15	93.8	16	100.0	15	93.8	16	100.0	16	100.0	15	93.8
	OP	31	100.0	31	100.0	30	96.8	28	90.3	29	93.5	30	96.8
Cylichna sp.	PRE-OP	16	100.0	15	93.8	15	93.8	16	100.0	16	100.0	16	100.0
CIS00999	OP	31	100.0	31	100.0	31	100.0	30	96.8	31	100.0	31	100.0
Decapoda juvenile unidentified	PRE-OP	15	93.8	16	100.0	16	100.0	16	100.0	16	100.0	15	93.8

SOFT BENTHOS NUMBER OF ZERO OBSERVATIONS

DEPTH IS 18 METERS

SPECIES NAME	PERIOD	700 METERS ZEROS	700 METERS %	1100 METERS ZEROS	1100 METERS %	1900 METERS ZEROS	1900 METERS %	3350 METERS ZEROS	3350 METERS %	6700 METERS ZEROS	6700 METERS %	9400 METERS ZEROS	9400 METERS %
Dentalium sp.	PRE-OP	15	93.8	16	100.0	16	100.0	16	100.0	16	100.0	16	100.0
Deutella californica	OP	31	100.0	30	96.8	30	96.8	31	100.0	31	100.0	30	96.8
Diaphana californica	OP	31	100.0	31	100.0	31	100.0	31	100.0	30	96.8	31	100.0
Diastylopsis tenuis	PRE-OP	13	81.3	10	62.5	11	68.8	11	68.8	11	68.8	9	56.3
	OP	17	54.8	17	54.8	16	51.6	15	48.4	12	38.7	14	45.2
Diopatra sp.	PRE-OP	16	100.0	16	100.0	16	100.0	15	93.8	16	100.0	16	100.0
Diopatra splendidissima	OP	31	100.0	30	96.8	30	96.8	31	100.0	31	100.0	31	100.0
Diopatra tridentata	PRE-OP	16	100.0	16	100.0	16	100.0	16	100.0	16	100.0	16	100.0
	OP	31	100.0	29	93.5	30	96.8	29	93.5	30	96.8	30	96.8
Diplodonta sp.	PRE-OP	15	93.8	16	100.0	16	100.0	16	100.0	16	100.0	16	100.0
	OP	31	100.0	31	100.0	30	96.8	31	100.0	31	100.0	31	100.0
Dorvilleidae juvenile	OP	31	100.0	30	96.8	31	100.0	29	93.5	31	100.0	29	93.5
Dorvilleidae sp.	OP	31	100.0	31	100.0	31	100.0	31	100.0	31	100.0	30	96.8
Doto sp.	OP	31	100.0	31	100.0	31	100.0	31	100.0	31	100.0	30	96.8
Drilonereis falcata	PRE-OP	13	81.3	12	75.0	8	50.0	13	81.3	12	75.0	13	81.3
	OP	23	74.2	25	80.6	25	80.6	26	83.9	26	83.9	28	90.3
Drilonereis filum	OP	28	90.3	31	100.0	31	100.0	31	100.0	31	100.0	31	100.0
Drilonereis longa	PRE-OP	16	100.0	15	93.8	16	100.0	16	100.0	16	100.0	16	100.0
Drilonereis sp. juvenile	OP	31	100.0	30	96.8	31	100.0	31	100.0	31	100.0	31	100.0
Duplicate code -- use CAMP0099	OP	31	100.0	31	100.0	31	100.0	31	100.0	31	100.0	30	96.8
Duplicate code -- use CDEC0047	OP	31	100.0	31	100.0	30	96.8	31	100.0	31	100.0	31	100.0
Duplicate code -- use OCOE0009	OP	31	100.0	30	96.8	30	96.8	31	100.0	31	100.0	31	100.0
Echiuroid A	PRE-OP	16	100.0	16	100.0	16	100.0	14	87.5	16	100.0	16	100.0
Edotea sublittoralis	PRE-OP	16	100.0	14	87.5	14	87.5	16	100.0	15	93.8	15	93.8
	OP	27	87.1	31	100.0	30	96.8	31	100.0	31	100.0	31	100.0
Edwardsia sp. A (orange w/ white base)	PRE-OP	4	25.0	5	31.3	5	31.3	5	31.3	7	43.8	6	37.5
	OP	15	48.4	15	48.4	17	54.8	18	58.1	15	48.4	13	41.9
Edwardsia sp. B (white w/white base)	PRE-OP	11	68.8	9	56.3	11	68.8	13	81.3	11	68.8	12	75.0
	OP	26	83.9	22	71.0	24	77.4	23	74.2	25	80.6	23	74.2
Ensis myrae	OP	28	90.3	30	96.8	28	90.3	29	93.5	30	96.8	30	96.8

SOFT BENTHOS NUMBER OF ZERO OBSERVATIONS

DEPTH IS 18 METERS

SPECIES NAME	PERIOD	700 METERS ZEROS	%	1100 METERS ZEROS	%	1900 METERS ZEROS	%	3350 METERS ZEROS	%	6700 METERS ZEROS	%	9400 METERS ZEROS	%
Epiactis prolifera	PRE-OP	15	93.8	16	100.0	16	100.0	16	100.0	16	100.0	16	100.0
Epitonium bellastriatum	PRE-OP	16	100.0	14	87.5	16	100.0	15	93.8	16	100.0	16	100.0
	OP	30	96.8	30	96.8	31	100.0	31	100.0	31	100.0	31	100.0
Epitonium sp.	PRE-OP	16	100.0	16	100.0	16	100.0	16	100.0	15	93.8	16	100.0
	OP	30	96.8	30	96.8	31	100.0	31	100.0	30	96.8	30	96.8
Eteone dilatae	PRE-OP	13	81.3	15	93.8	11	68.8	14	87.5	14	87.5	16	100.0
	OP	30	96.8	31	100.0	29	93.5	30	96.8	31	100.0	31	100.0
Eteone sp.	PRE-OP	14	87.5	12	75.0	10	62.5	13	81.3	12	75.0	11	68.8
	OP	22	71.0	24	77.4	24	77.4	23	74.2	24	77.4	28	90.3
Eteone sp. (not counted as sp)	PRE-OP	15	93.8	16	100.0	15	93.8	16	100.0	16	100.0	16	100.0
Euchone hancocki	PRE-OP	12	75.0	6	37.5	7	43.8	6	37.5	6	37.5	4	25.0
	OP	11	35.5	11	35.5	9	29.0	11	35.5	11	35.5	11	35.5
Euchone sp.	PRE-OP	16	100.0	16	100.0	15	93.8	16	100.0	16	100.0	16	100.0
	OP	31	100.0	31	100.0	30	96.8	31	100.0	31	100.0	31	100.0
Euclymeninae sp. A	OP	30	96.8	31	100.0	31	100.0	31	100.0	31	100.0	31	100.0
Eudorella pacifica	OP	31	100.0	31	100.0	31	100.0	31	100.0	30	96.8	31	100.0
Eulima almo	OP	23	74.2	29	93.5	26	83.9	29	93.5	29	93.5	29	93.5
Eumida sanguinea	OP	30	96.8	30	96.8	30	96.8	31	100.0	30	96.8	29	93.5
Eumida sp.	OP	31	100.0	31	100.0	31	100.0	30	96.8	31	100.0	31	100.0
Eupentacta sp.	PRE-OP	16	100.0	16	100.0	16	100.0	15	93.8	16	100.0	16	100.0
	OP	31	100.0	30	96.8	31	100.0	31	100.0	29	93.5	31	100.0
Euphilomedes carcharodonta	PRE-OP	6	37.5	2	12.5	7	43.8	6	37.5	3	18.8	3	18.8
	OP	6	19.4	9	29.0	3	9.7	2	6.5	7	22.6	4	12.9
Exogone gemmifera	PRE-OP	16	100.0	16	100.0	14	87.5	16	100.0	15	93.8	15	93.8
Falcidens sp. E	OP	31	100.0	31	100.0	31	100.0	31	100.0	30	96.8	31	100.0
Fartulum occidentale	PRE-OP	16	100.0	16	100.0	16	100.0	15	93.8	16	100.0	16	100.0
Felaniella sp.	PRE-OP	16	100.0	16	100.0	16	100.0	15	93.8	16	100.0	16	100.0
Flabelligeridae unidentified	OP	29	93.5	30	96.8	29	93.5	31	100.0	30	96.8	31	100.0
Flatworm juvenile	OP	30	96.8	30	96.8	31	100.0	30	96.8	31	100.0	31	100.0
Flatworm 1	PRE-OP	15	93.8	11	68.8	13	81.3	13	81.3	14	87.5	14	87.5

SOFT BENTHOS NUMBER OF ZERO OBSERVATIONS

DEPTH IS 18 METERS

SPECIES NAME	PERIOD	700 METERS ZEROS	700 METERS %	1100 METERS ZEROS	1100 METERS %	1900 METERS ZEROS	1900 METERS %	3350 METERS ZEROS	3350 METERS %	6700 METERS ZEROS	6700 METERS %	9400 METERS ZEROS	9400 METERS %
	OP	25	80.6	26	83.9	24	77.4	27	87.1	25	80.6	25	80.6
Flatworm 3	PRE-OP	15	93.8	16	100.0	16	100.0	15	93.8	16	100.0	15	93.8
	OP	26	83.9	22	71.0	28	90.3	27	87.1	27	87.1	29	93.5
Flatworm 4	PRE-OP	16	100.0	16	100.0	15	93.8	15	93.8	15	93.8	15	93.8
	OP	29	93.5	29	93.5	25	80.6	31	100.0	30	96.8	26	83.9
Flatworm 7	PRE-OP	16	100.0	16	100.0	16	100.0	15	93.8	16	100.0	16	100.0
	OP	31	100.0	30	96.8	31	100.0	31	100.0	30	96.8	30	96.8
Flatworm 8	OP	31	100.0	31	100.0	31	100.0	31	100.0	31	100.0	30	96.8
Foxiphalus golfensis/obtusidens	PRE-OP	13	81.3	12	75.0	11	68.8	13	81.3	11	68.8	14	87.5
	OP	10	32.3	11	35.5	6	19.4	12	38.7	9	29.0	8	25.8
Gammaropsis thompsoni	OP	31	100.0	31	100.0	31	100.0	31	100.0	31	100.0	30	96.8
Gastropoda	OP	31	100.0	31	100.0	31	100.0	31	100.0	31	100.0	30	96.8
Gastropoda unidentified	PRE-OP	16	100.0	16	100.0	16	100.0	15	93.8	16	100.0	16	100.0
	OP	31	100.0	30	96.8	31	100.0	31	100.0	30	96.8	31	100.0
Gastropteron pacificum	OP	29	93.5	31	100.0	30	96.8	29	93.5	30	96.8	27	87.1
Genetyllis castanea	OP	31	100.0	30	96.8	29	93.5	30	96.8	31	100.0	31	100.0
Gibberosus myersi	PRE-OP	16	100.0	16	100.0	16	100.0	15	93.8	16	100.0	16	100.0
	OP	30	96.8	29	93.5	30	96.8	28	90.3	26	83.9	25	80.6
Gitana calitemplado	PRE-OP	15	93.8	16	100.0	15	93.8	15	93.8	14	87.5	15	93.8
	OP	28	90.3	29	93.5	28	90.3	29	93.5	29	93.5	28	90.3
Glottidia albida	PRE-OP	11	68.8	10	62.5	9	56.3	12	75.0	10	62.5	12	75.0
	OP	13	41.9	18	58.1	17	54.8	16	51.6	19	61.3	15	48.4
Glycera americana	OP	31	100.0	30	96.8	31	100.0	31	100.0	31	100.0	30	96.8
Glycera capitata	PRE-OP	15	93.8	16	100.0	15	93.8	16	100.0	16	100.0	16	100.0
	OP	27	87.1	31	100.0	28	90.3	31	100.0	31	100.0	29	93.5
Glycera convoluta	PRE-OP	13	81.3	13	81.3	12	75.0	10	62.5	13	81.3	14	87.5
	OP	25	80.6	28	90.3	27	87.1	28	90.3	27	87.1	30	96.8
Glycera siphonostoma	PRE-OP	16	100.0	16	100.0	16	100.0	16	100.0	16	100.0	15	93.8
Glycera sp.	PRE-OP	14	87.5	13	81.3	13	81.3	14	87.5	16	100.0	15	93.8
	OP	30	96.8	29	93.5	30	96.8	30	96.8	31	100.0	31	100.0
Glycera sp. (not counted as sp)	PRE-OP	16	100.0	16	100.0	15	93.8	16	100.0	16	100.0	16	100.0
	OP	30	96.8	31	100.0	31	100.0	31	100.0	31	100.0	31	100.0

SOFT BENTHOS NUMBER OF ZERO OBSERVATIONS

DEPTH IS 18 METERS

SPECIES NAME	PERIOD	700 METERS ZEROS	%	1100 METERS ZEROS	%	1900 METERS ZEROS	%	3350 METERS ZEROS	%	6700 METERS ZEROS	%	9400 METERS ZEROS	%
Glyceridae unidentified	PRE-OP	15	93.8	15	93.8	15	93.8	16	100.0	16	100.0	15	93.8
	OP	30	96.8	31	100.0	31	100.0	31	100.0	31	100.0	31	100.0
Glycinde armigera	PRE-OP	9	56.3	11	68.8	10	62.5	7	43.8	12	75.0	11	68.8
	OP	12	38.7	10	32.3	13	41.9	10	32.3	12	38.7	19	61.3
Glycinde sp. (not counted as sp)	PRE-OP	16	100.0	16	100.0	16	100.0	16	100.0	15	93.8	16	100.0
Glycinde sp. juvenile	PRE-OP	16	100.0	16	100.0	16	100.0	16	100.0	16	100.0	15	93.8
Gnathia crenulatifrons	PRE-OP	15	93.8	14	87.5	14	87.5	14	87.5	15	93.8	15	93.8
	OP	28	90.3	27	87.1	28	90.3	31	100.0	29	93.5	31	100.0
Golfingia catharinae	PRE-OP	16	100.0	15	93.8	14	87.5	15	93.8	15	93.8	15	93.8
Golfingia misakiana	OP	29	93.5	29	93.5	30	96.8	31	100.0	30	96.8	30	96.8
Goniada littorea	PRE-OP	8	50.0	3	18.8	9	56.3	10	62.5	11	68.8	7	43.8
	OP	19	61.3	13	41.9	12	38.7	21	67.7	20	64.5	25	80.6
Goniada maculata	PRE-OP	13	81.3	14	87.5	13	81.3	16	100.0	12	75.0	16	100.0
	OP	25	80.6	28	90.3	27	87.1	27	87.1	28	90.3	27	87.1
Goniada sp.	PRE-OP	15	93.8	16	100.0	15	93.8	14	87.5	15	93.8	15	93.8
	OP	28	90.3	29	93.5	30	96.8	29	93.5	31	100.0	29	93.5
Goniada sp. (not counted as sp)	PRE-OP	15	93.8	15	93.8	16	100.0	16	100.0	16	100.0	16	100.0
	OP	29	93.5	29	93.5	30	96.8	30	96.8	31	100.0	31	100.0
Goniadidae unidentified	PRE-OP	15	93.8	16	100.0	15	93.8	14	87.5	12	75.0	16	100.0
	OP	28	90.3	31	100.0	31	100.0	27	87.1	29	93.5	30	96.8
Halosydna brevisetosa	OP	31	100.0	30	96.8	31	100.0	31	100.0	31	100.0	31	100.0
Halosydna johnsoni	PRE-OP	16	100.0	16	100.0	16	100.0	16	100.0	16	100.0	16	100.0
Haminoea sp.	PRE-OP	16	100.0	16	100.0	15	93.8	15	93.8	16	100.0	16	100.0
	OP	30	96.8	30	96.8	30	96.8	30	96.8	29	93.5	30	96.8
Haminoea virescens	PRE-OP	16	100.0	16	100.0	14	87.5	14	87.5	15	93.8	16	100.0
	OP	30	96.8	31	100.0	30	96.8	31	100.0	31	100.0	31	100.0
Harbansus bradmyersi	PRE-OP	16	100.0	16	100.0	16	100.0	16	100.0	16	100.0	15	93.8
Harmothoe cf. lunulata	PRE-OP	12	75.0	11	68.8	13	81.3	14	87.5	15	93.8	12	75.0
	OP	20	64.5	23	74.2	22	71.0	21	67.7	23	74.2	20	64.5
Harmothoe priops	PRE-OP	4	25.0	9	56.3	12	75.0	9	56.3	7	43.8	5	31.3
	OP	18	58.1	17	54.8	21	67.7	19	61.3	22	71.0	20	64.5
Harpacticoids	PRE-OP	10	62.5	13	81.3	7	43.8	12	75.0	7	43.8	6	37.5
	OP	12	38.7	10	32.3	10	32.3	7	22.6	7	22.6	10	32.3

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DEPTH IS 18 METERS

SPECIES NAME	PERIOD	700 METERS ZEROS	700 METERS %	1100 METERS ZEROS	1100 METERS %	1900 METERS ZEROS	1900 METERS %	3350 METERS ZEROS	3350 METERS %	6700 METERS ZEROS	6700 METERS %	9400 METERS ZEROS	9400 METERS %
Lampropidae juvenile	OP	31	100.0	30	96.8	30	96.8	31	100.0	30	96.8	30	96.8
Lamprops carinata	PRE-OP	15	93.8	16	100.0	16	100.0	16	100.0	16	100.0	16	100.0
	OP	29	93.5	27	87.1	31	100.0	30	96.8	29	93.5	28	90.3
Laonice cirrata	PRE-OP	13	81.3	14	87.5	16	100.0	16	100.0	16	100.0	16	100.0
	OP	27	87.1	28	90.3	27	87.1	26	83.9	31	100.0	30	96.8
Leitoscoloplos elongatus	PRE-OP	13	81.3	14	87.5	9	56.3	12	75.0	9	56.3	14	87.5
	OP	17	54.8	21	67.7	16	51.6	24	77.4	26	83.9	27	87.1
Lepidasthenia longicirrata	OP	30	96.8	31	100.0	31	100.0	31	100.0	31	100.0	31	100.0
Lepidepecreum sp. A SCAMIT	OP	31	100.0	31	100.0	30	96.8	31	100.0	31	100.0	31	100.0
Lepidopa californica	OP	31	100.0	31	100.0	31	100.0	31	100.0	31	100.0	30	96.8
Leptochelia dubia	PRE-OP	6	37.5	5	31.3	4	25.0	6	37.5	3	18.8	6	37.5
	OP	1	3.2	1	3.2	0	0.0	1	3.2	5	16.1	6	19.4
Leptocuma forsmani	OP	31	100.0	31	100.0	31	100.0	31	100.0	30	96.8	31	100.0
Leptopecten latiauratus	PRE-OP	16	100.0	16	100.0	15	93.8	16	100.0	16	100.0	16	100.0
	OP	31	100.0	31	100.0	31	100.0	31	100.0	31	100.0	30	96.8
Leptostylis B SCAMIT	OP	30	96.8	31	100.0	30	96.8	31	100.0	31	100.0	31	100.0
Leptosynapta sp	PRE-OP	16	100.0	15	93.8	16	100.0	16	100.0	16	100.0	16	100.0
	OP	31	100.0	31	100.0	31	100.0	31	100.0	31	100.0	30	96.8
Leuroleberis sharpei	PRE-OP	15	93.8	16	100.0	14	87.5	16	100.0	16	100.0	16	100.0
	OP	31	100.0	30	96.8	31	100.0	31	100.0	31	100.0	30	96.8
Lineus bilineatus	PRE-OP	15	93.8	15	93.8	15	93.8	16	100.0	16	100.0	16	100.0
	OP	31	100.0	31	100.0	31	100.0	30	96.8	31	100.0	30	96.8
Listriella diffusa	PRE-OP	15	93.8	11	68.8	14	87.5	14	87.5	14	87.5	13	81.3
	OP	31	100.0	30	96.8	31	100.0	31	100.0	30	96.8	30	96.8
Listriella goleta	PRE-OP	13	81.3	14	87.5	15	93.8	15	93.8	15	93.8	16	100.0
	OP	30	96.8	29	93.5	30	96.8	31	100.0	31	100.0	29	93.5
Listriella melanica	PRE-OP	16	100.0	16	100.0	15	93.8	16	100.0	13	81.3	16	100.0
	OP	23	74.2	28	90.3	24	77.4	25	80.6	29	93.5	26	83.9
Listriella sp. juvenile	PRE-OP	16	100.0	15	93.8	16	100.0	16	100.0	16	100.0	15	93.8
	OP	30	96.8	29	93.5	31	100.0	31	100.0	31	100.0	31	100.0
Listriolobus pelodes	PRE-OP	16	100.0	15	93.8	16	100.0	16	100.0	16	100.0	16	100.0
Loimia medusa	PRE-OP	16	100.0	16	100.0	16	100.0	16	100.0	15	93.8	16	100.0

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DEPTH IS 18 METERS

SPECIES NAME	PERIOD	700 METERS ZEROS	700 METERS %	1100 METERS ZEROS	1100 METERS %	1900 METERS ZEROS	1900 METERS %	3350 METERS ZEROS	3350 METERS %	6700 METERS ZEROS	6700 METERS %	9400 METERS ZEROS	9400 METERS %
	OP	31	100.0	30	96.8	31	100.0	31	100.0	31	100.0	31	100.0
Lovenia cordiformis	OP	30	96.8	23	74.2	26	83.9	29	93.5	29	93.5	28	90.3
Lumbrineridae (not counted as sp)	OP	30	96.8	31	100.0	31	100.0	31	100.0	31	100.0	31	100.0
Lumbrineridae unidentified	PRE-OP	16	100.0	16	100.0	15	93.8	16	100.0	16	100.0	14	87.5
Lumbrineris californiensis	PRE-OP	14	87.5	9	56.3	13	81.3	15	93.8	16	100.0	16	100.0
	OP	30	96.8	31	100.0	26	83.9	28	90.3	31	100.0	29	93.5
Lumbrineris cruzensis	OP	29	93.5	31	100.0	31	100.0	30	96.8	30	96.8	31	100.0
Lumbrineris index	OP	30	96.8	31	100.0	31	100.0	31	100.0	30	96.8	30	96.8
Lumbrineris sp.	PRE-OP	12	75.0	12	75.0	8	50.0	7	43.8	11	68.8	11	68.8
	OP	14	45.2	20	64.5	19	61.3	20	64.5	18	58.1	19	61.3
Lumbrineris sp. (not counted as sp)	PRE-OP	13	81.3	13	81.3	12	75.0	15	93.8	14	87.5	16	100.0
	OP	28	90.3	21	67.7	28	90.3	26	83.9	26	83.9	25	80.6
Lumbrineris sp. D	PRE-OP	6	37.5	7	43.8	9	56.3	5	31.3	5	31.3	8	50.0
	OP	10	32.3	12	38.7	15	48.4	17	54.8	13	41.9	17	54.8
Lumbrineris tetraura	OP	31	100.0	31	100.0	31	100.0	30	96.8	31	100.0	31	100.0
Lyonsia californica	OP	30	96.8	31	100.0	31	100.0	31	100.0	30	96.8	31	100.0
Lysianassa oculata	OP	30	96.8	31	100.0	31	100.0	31	100.0	30	96.8	31	100.0
Lysianassidae juvenile	PRE-OP	16	100.0	15	93.8	15	93.8	15	93.8	16	100.0	15	93.8
	OP	30	96.8	30	96.8	30	96.8	30	96.8	30	96.8	30	96.8
Lytechinus anamesus	OP	31	100.0	30	96.8	30	96.8	31	100.0	30	96.8	30	96.8
Macoma acolasta	PRE-OP	15	93.8	16	100.0	16	100.0	16	100.0	16	100.0	16	100.0
	OP	28	90.3	28	90.3	31	100.0	28	90.3	24	77.4	29	93.5
Macoma sp.	PRE-OP	14	87.5	13	81.3	12	75.0	12	75.0	13	81.3	11	68.8
	OP	22	71.0	23	74.2	21	67.7	20	64.5	21	67.7	17	54.8
Macoma sp. (not counted as sp)	PRE-OP	15	93.8	16	100.0	16	100.0	16	100.0	16	100.0	16	100.0
Macoma yoldiformis	PRE-OP	9	56.3	10	62.5	10	62.5	8	50.0	7	43.8	10	62.5
	OP	28	90.3	30	96.8	29	93.5	28	90.3	29	93.5	29	93.5
Magelona pitelkai	PRE-OP	15	93.8	16	100.0	16	100.0	15	93.8	15	93.8	15	93.8
	OP	31	100.0	28	90.3	28	90.3	28	90.3	25	80.6	25	80.6
Magelona sacculata	PRE-OP	13	81.3	14	87.5	12	75.0	13	81.3	12	75.0	8	50.0
	OP	28	90.3	30	96.8	28	90.3	22	71.0	18	58.1	21	67.7

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DEPTH IS 18 METERS

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Magelona sp.	PRE-OP	16	100.0	14	87.5	16	100.0	12	75.0	14	87.5	16	100.0
Magelona sp. (not counted as sp)	PRE-OP	16	100.0	16	100.0	15	93.8	16	100.0	15	93.8	15	93.8
	OP	29	93.5	31	100.0	31	100.0	31	100.0	28	90.3	31	100.0
Magelonidae unidentified	OP	31	100.0	31	100.0	31	100.0	31	100.0	30	96.8	31	100.0
Majidae sp. A	OP	29	93.5	31	100.0	29	93.5	31	100.0	30	96.8	29	93.5
Maladanidae (not counted as sp)	OP	25	80.6	28	90.3	31	100.0	31	100.0	31	100.0	31	100.0
Maladanidae unidentified	PRE-OP	14	87.5	16	100.0	13	81.3	14	87.5	15	93.8	15	93.8
	OP	11	35.5	12	38.7	7	22.6	20	64.5	22	71.0	17	54.8
Mayerella banksia	PRE-OP	14	87.5	15	93.8	11	68.8	13	81.3	16	100.0	16	100.0
	OP	22	71.0	23	74.2	19	61.3	24	77.4	22	71.0	23	74.2
Mediomastus acutus	PRE-OP	16	100.0	16	100.0	16	100.0	16	100.0	15	93.8	16	100.0
	OP	24	77.4	24	77.4	18	58.1	13	41.9	16	51.6	17	54.8
Mediomastus californiensis/ambiseta	PRE-OP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
	OP	0	0.0	0	0.0	0	0.0	0	0.0	1	3.2	3	9.7
Megalomma pigmentum	PRE-OP	15	93.8	16	100.0	16	100.0	16	100.0	16	100.0	16	100.0
Megalomma sp. (not counted as sp)	PRE-OP	15	93.8	16	100.0	16	100.0	16	100.0	16	100.0	16	100.0
Megalomna sp.	PRE-OP	16	100.0	16	100.0	16	100.0	15	93.8	15	93.8	15	93.8
	OP	31	100.0	30	96.8	30	96.8	31	100.0	31	100.0	30	96.8
Megalops juvenile	OP	30	96.8	29	93.5	31	100.0	29	93.5	29	93.5	31	100.0
Melanochlamys diomeda	PRE-OP	16	100.0	14	87.5	13	81.3	12	75.0	12	75.0	14	87.5
	OP	31	100.0	31	100.0	31	100.0	30	96.8	30	96.8	28	90.3
Melinna oculata	PRE-OP	12	75.0	13	81.3	13	81.3	13	81.3	15	93.8	12	75.0
	OP	21	67.7	25	80.6	25	80.6	25	80.6	30	96.8	26	83.9
Meliphisana bola	PRE-OP	12	75.0	11	68.8	10	62.5	9	56.3	8	50.0	11	68.8
	OP	16	51.6	22	71.0	21	67.7	22	71.0	24	77.4	18	58.1
Metacaprella kennerlyi	PRE-OP	16	100.0	16	100.0	16	100.0	15	93.8	16	100.0	16	100.0
Metamysidopsis elongata	PRE-OP	16	100.0	15	93.8	14	87.5	16	100.0	16	100.0	16	100.0
	OP	28	90.3	28	90.3	30	96.8	30	96.8	31	100.0	31	100.0
Metedwardsia sp. A	PRE-OP	16	100.0	16	100.0	16	100.0	15	93.8	16	100.0	16	100.0
Metopella aporpis	OP	30	96.8	31	100.0	31	100.0	31	100.0	31	100.0	31	100.0
Microspio pigmentata	OP	29	93.5	29	93.5	31	100.0	31	100.0	31	100.0	31	100.0

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DEPTH IS 18 METERS

SPECIES NAME	PERIOD	700 METERS ZEROS	700 METERS %	1100 METERS ZEROS	1100 METERS %	1900 METERS ZEROS	1900 METERS %	3350 METERS ZEROS	3350 METERS %	6700 METERS ZEROS	6700 METERS %	9400 METERS ZEROS	9400 METERS %
Microspio sp.	OP	31	100.0	31	100.0	30	96.8	31	100.0	31	100.0	31	100.0
Modiolus neglectus	PRE-OP	13	81.3	14	87.5	13	81.3	10	62.5	10	62.5	10	62.5
	OP	23	74.2	22	71.0	25	80.6	24	77.4	25	80.6	21	67.7
Modiolus rectus	OP	31	100.0	31	100.0	31	100.0	31	100.0	31	100.0	30	96.8
Modiolus sp. (not counted as sp)	OP	31	100.0	30	96.8	30	96.8	31	100.0	31	100.0	31	100.0
Modiolus sp. A	PRE-OP	16	100.0	16	100.0	13	81.3	15	93.8	14	87.5	15	93.8
	OP	30	96.8	29	93.5	31	100.0	27	87.1	31	100.0	28	90.3
Modiolus spp.	PRE-OP	16	100.0	15	93.8	14	87.5	16	100.0	15	93.8	15	93.8
	OP	30	96.8	31	100.0	30	96.8	30	96.8	28	90.3	29	93.5
Monoculodes hartmanae	PRE-OP	15	93.8	15	93.8	14	87.5	14	87.5	13	81.3	11	68.8
	OP	11	35.5	9	29.0	5	16.1	12	38.7	9	29.0	14	45.2
Montacuta sp. A	PRE-OP	16	100.0	16	100.0	16	100.0	16	100.0	16	100.0	15	93.8
Mooreonuphis nebulosa	PRE-OP	16	100.0	16	100.0	16	100.0	15	93.8	16	100.0	16	100.0
	OP	31	100.0	31	100.0	31	100.0	30	96.8	31	100.0	31	100.0
Munna ubiquita	PRE-OP	15	93.8	15	93.8	16	100.0	16	100.0	16	100.0	14	87.5
	OP	28	90.3	26	83.9	29	93.5	28	90.3	29	93.5	27	87.1
Munnogonium erratum	PRE-OP	14	87.5	14	87.5	11	68.8	14	87.5	12	75.0	14	87.5
	OP	29	93.5	30	96.8	31	100.0	31	100.0	30	96.8	31	100.0
Munnogonium tillerae	PRE-OP	15	93.8	12	75.0	9	56.3	14	87.5	13	81.3	16	100.0
	OP	13	41.9	19	61.3	17	54.8	24	77.4	25	80.6	21	67.7
Mya cf. arenaria	PRE-OP	15	93.8	16	100.0	14	87.5	14	87.5	13	81.3	16	100.0
Mysella cf. aleutica	OP	27	87.1	27	87.1	29	93.5	28	90.3	27	87.1	27	87.1
Mysella compressa	PRE-OP	15	93.8	16	100.0	16	100.0	15	93.8	15	93.8	15	93.8
	OP	27	87.1	28	90.3	21	67.7	25	80.6	22	71.0	24	77.4
Mysella gollschi	OP	31	100.0	31	100.0	31	100.0	31	100.0	30	96.8	31	100.0
Mysella grippi	PRE-OP	14	87.5	13	81.3	13	81.3	14	87.5	15	93.8	14	87.5
	OP	22	71.0	28	90.3	24	77.4	28	90.3	30	96.8	30	96.8
Mysella sp.	PRE-OP	14	87.5	13	81.3	13	81.3	15	93.8	16	100.0	13	81.3
	OP	31	100.0	31	100.0	30	96.8	30	96.8	31	100.0	31	100.0
Mysella sp. A	PRE-OP	16	100.0	16	100.0	14	87.5	16	100.0	16	100.0	16	100.0
	OP	31	100.0	30	96.8	31	100.0	30	96.8	30	96.8	31	100.0
Mysella tumida	PRE-OP	10	62.5	9	56.3	12	75.0	9	56.3	6	37.5	12	75.0
	OP	31	100.0	29	93.5	29	93.5	31	100.0	28	90.3	30	96.8

SOFT BENTHOS NUMBER OF ZERO OBSERVATIONS

DEPTH IS 18 METERS

SPECIES NAME	PERIOD	700 METERS ZEROS	700 METERS %	1100 METERS ZEROS	1100 METERS %	1900 METERS ZEROS	1900 METERS %	3350 METERS ZEROS	3350 METERS %	6700 METERS ZEROS	6700 METERS %	9400 METERS ZEROS	9400 METERS %
Mysella unidentified	PRE-OP	16	100.0	16	100.0	16	100.0	16	100.0	16	100.0	15	93.8
Mysidacea unidentified	OP	30	96.8	30	96.8	29	93.5	31	100.0	29	93.5	31	100.0
Mysidopsis californica	OP	31	100.0	30	96.8	31	100.0	31	100.0	31	100.0	31	100.0
Mysidopsis intii	PRE-OP	15	93.8	16	100.0	16	100.0	16	100.0	16	100.0	16	100.0
	OP	28	90.3	31	100.0	30	96.8	30	96.8	31	100.0	30	96.8
Mytilidae unidentified	OP	31	100.0	31	100.0	31	100.0	30	96.8	31	100.0	31	100.0
Mytilus edulis	OP	31	100.0	31	100.0	31	100.0	31	100.0	31	100.0	30	96.8
MGAS0157	OP	31	100.0	31	100.0	30	96.8	31	100.0	31	100.0	31	100.0
MGAS0401	OP	31	100.0	31	100.0	31	100.0	31	100.0	30	96.8	31	100.0
MPEL0139	OP	31	100.0	31	100.0	30	96.8	31	100.0	31	100.0	30	96.8
MPEL0140	OP	30	96.8	31	100.0	31	100.0	31	100.0	31	100.0	31	100.0
MPEL0142	OP	31	100.0	30	96.8	31	100.0	31	100.0	31	100.0	31	100.0
Nassarius perpinquis	PRE-OP	15	93.8	14	87.5	14	87.5	16	100.0	14	87.5	16	100.0
	OP	19	61.3	16	51.6	19	61.3	21	67.7	13	41.9	17	54.8
Nassarius sp.	OP	30	96.8	31	100.0	31	100.0	31	100.0	31	100.0	31	100.0
Neastacilla californica	PRE-OP	16	100.0	16	100.0	16	100.0	16	100.0	15	93.8	16	100.0
Nebalia pugettensis	PRE-OP	8	50.0	9	56.3	10	62.5	10	62.5	10	62.5	5	31.3
	OP	8	25.8	10	32.3	4	12.9	7	22.6	12	38.7	8	25.8
Nematodes unidentified	PRE-OP	4	25.0	4	25.0	4	25.0	3	18.8	3	18.8	5	31.3
	OP	0	0.0	0	0.0	0	0.0	0	0.0	2	6.5	3	9.7
Nemertina unidentified	PRE-OP	15	93.8	16	100.0	15	93.8	15	93.8	14	87.5	13	81.3
	PRE-OP	8	50.0	8	50.0	6	37.5	8	50.0	12	75.0	8	50.0
	OP	15	48.4	8	25.8	4	12.9	10	32.3	8	25.8	7	22.6
	OP	11	35.5	20	64.5	24	77.4	21	67.7	24	77.4	28	90.3
Neomysis rayii	PRE-OP	16	100.0	16	100.0	16	100.0	16	100.0	14	87.5	16	100.0
Nephtys caecoides	PRE-OP	13	81.3	13	81.3	14	87.5	14	87.5	14	87.5	16	100.0
	OP	19	61.3	22	71.0	24	77.4	20	64.5	22	71.0	23	74.2
Nephtys cornuta franciscana	OP	0	0.0	0	0.0	1	3.2	2	6.5	5	16.1	7	22.6
Nephtys sp.	PRE-OP	1	6.3	2	12.5	1	6.3	0	0.0	2	12.5	0	0.0
	OP	23	74.2	24	77.4	26	83.9	23	74.2	20	64.5	25	80.6

SOFT BENTHOS NUMBER OF ZERO OBSERVATIONS

DEPTH IS 18 METERS

SPECIES NAME	PERIOD	700 METERS ZEROS	%	1100 METERS ZEROS	%	1900 METERS ZEROS	%	3350 METERS ZEROS	%	6700 METERS ZEROS	%	9400 METERS ZEROS	%
Nephtys sp. (not counted as sp)	PRE-OP	15	93.8	14	87.5	15	93.8	16	100.0	15	93.8	16	100.0
	OP	28	90.3	29	93.5	28	90.3	27	87.1	28	90.3	30	96.8
Nereidae (not counted as sp)	PRE-OP	16	100.0	16	100.0	16	100.0	16	100.0	16	100.0	15	93.8
	OP	30	96.8	31	100.0	31	100.0	31	100.0	31	100.0	31	100.0
Nereis grubei	PRE-OP	16	100.0	16	100.0	16	100.0	16	100.0	16	100.0	16	100.0
Nereis latescens	PRE-OP	16	100.0	16	100.0	15	93.8	15	93.8	15	93.8	15	93.8
Nereis procera	PRE-OP	7	43.8	4	25.0	2	12.5	2	12.5	4	25.0	9	56.3
	OP	9	29.0	11	35.5	10	32.3	15	48.4	21	67.7	17	54.8
Nereis sp.	PRE-OP	16	100.0	15	93.8	16	100.0	16	100.0	15	93.8	15	93.8
Nereis sp. (not counted as sp)	PRE-OP	16	100.0	16	100.0	14	87.5	16	100.0	16	100.0	16	100.0
Neverita reclusiana	PRE-OP	13	81.3	15	93.8	15	93.8	14	87.5	15	93.8	14	87.5
	OP	28	90.3	24	77.4	25	80.6	23	74.2	27	87.1	31	100.0
Nothria sp. juvenile	PRE-OP	16	100.0	16	100.0	16	100.0	14	87.5	14	87.5	16	100.0
Notocirrus californiensus	PRE-OP	16	100.0	16	100.0	16	100.0	16	100.0	16	100.0	14	87.5
	OP	30	96.8	27	87.1	26	83.9	31	100.0	27	87.1	30	96.8
Notomastus (C.) tenuis	PRE-OP	16	100.0	15	93.8	16	100.0	16	100.0	16	100.0	16	100.0
	OP	31	100.0	31	100.0	31	100.0	30	96.8	31	100.0	31	100.0
Notomastus sp.	PRE-OP	16	100.0	15	93.8	16	100.0	16	100.0	16	100.0	16	100.0
Nuculana sp.	PRE-OP	16	100.0	15	93.8	16	100.0	16	100.0	16	100.0	14	87.5
	OP	31	100.0	31	100.0	30	96.8	30	96.8	31	100.0	31	100.0
Nuculana taphira	PRE-OP	10	62.5	13	81.3	13	81.3	11	68.8	11	68.8	11	68.8
	OP	17	54.8	21	67.7	25	80.6	24	77.4	26	83.9	27	87.1
Nymphon cf. heterodenticulatum	PRE-OP	16	100.0	15	93.8	16	100.0	16	100.0	14	87.5	15	93.8
	OP	20	64.5	27	87.1	30	96.8	30	96.8	30	96.8	30	96.8
O. amphipoda unidentified	OP	31	100.0	31	100.0	30	96.8	30	96.8	31	100.0	30	96.8
O. decapoda unidentified	OP	31	100.0	31	100.0	31	100.0	31	100.0	31	100.0	29	93.5
Odontosyllis phosphorea	OP	31	100.0	31	100.0	31	100.0	30	96.8	31	100.0	31	100.0
Odostomia (Evalea) sp.	PRE-OP	16	100.0	15	93.8	16	100.0	16	100.0	16	100.0	15	93.8
	OP	29	93.5	29	93.5	31	100.0	31	100.0	30	96.8	29	93.5
Odostomia (Evalea) sp. A	PRE-OP	16	100.0	16	100.0	14	87.5	16	100.0	14	87.5	16	100.0
	OP	30	96.8	29	93.5	31	100.0	31	100.0	31	100.0	31	100.0
Odostomia (Evalea) sp. B	PRE-OP	14	87.5	11	68.8	14	87.5	13	81.3	16	100.0	14	87.5

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DEPTH IS 18 METERS

SPECIES NAME	PERIOD	700 METERS ZEROS	700 METERS %	1100 METERS ZEROS	1100 METERS %	1900 METERS ZEROS	1900 METERS %	3350 METERS ZEROS	3350 METERS %	6700 METERS ZEROS	6700 METERS %	9400 METERS ZEROS	9400 METERS %
	OP	22	71.0	24	77.4	27	87.1	27	87.1	26	83.9	28	90.3
	OP	30	96.8	31	100.0	31	100.0	31	100.0	30	96.8	31	100.0
Odostomia (Evalea) sp. D	PRE-OP	15	93.8	15	93.8	15	93.8	15	93.8	16	100.0	16	100.0
	OP	29	93.5	29	93.5	29	93.5	31	100.0	31	100.0	31	100.0
Odostomia (Evalea) sp. F	PRE-OP	16	100.0	16	100.0	16	100.0	15	93.8	16	100.0	16	100.0
Odostomia (Evalea) sp. H	OP	31	100.0	30	96.8	31	100.0	31	100.0	31	100.0	31	100.0
Odostomia (Evalea) sp.C	PRE-OP	14	87.5	16	100.0	14	87.5	15	93.8	15	93.8	16	100.0
	OP	30	96.8	30	96.8	30	96.8	31	100.0	30	96.8	31	100.0
Odostomia spp.	PRE-OP	16	100.0	16	100.0	16	100.0	15	93.8	16	100.0	16	100.0
	OP	30	96.8	30	96.8	31	100.0	31	100.0	31	100.0	31	100.0
Ogyrides sp.	PRE-OP	16	100.0	15	93.8	15	93.8	15	93.8	16	100.0	16	100.0
	OP	29	93.5	31	100.0	30	96.8	29	93.5	30	96.8	31	100.0
Olivella baetica	PRE-OP	12	75.0	10	62.5	11	68.8	9	56.3	4	25.0	5	31.3
	OP	11	35.5	8	25.8	12	38.7	15	48.4	19	61.3	18	58.1
Onuphidae (not counted as sp)	OP	31	100.0	30	96.8	31	100.0	31	100.0	30	96.8	31	100.0
Onuphidae unidentified	PRE-OP	16	100.0	16	100.0	16	100.0	15	93.8	16	100.0	15	93.8
	OP	27	87.1	30	96.8	29	93.5	28	90.3	28	90.3	31	100.0
Onuphis eremita	OP	31	100.0	30	96.8	30	96.8	28	90.3	31	100.0	31	100.0
Onuphis iridescens	PRE-OP	10	62.5	4	25.0	10	62.5	13	81.3	10	62.5	9	56.3
	OP	24	77.4	26	83.9	25	80.6	24	77.4	27	87.1	24	77.4
Onuphis sp.	OP	31	100.0	30	96.8	31	100.0	31	100.0	31	100.0	31	100.0
Ophelidae unidentified	PRE-OP	16	100.0	16	100.0	16	100.0	16	100.0	16	100.0	16	100.0
Ophiodermella halcyonis	PRE-OP	15	93.8	16	100.0	16	100.0	15	93.8	16	100.0	16	100.0
	OP	31	100.0	31	100.0	31	100.0	31	100.0	30	96.8	31	100.0
Ophiuroconis bispinosa	OP	31	100.0	30	96.8	31	100.0	31	100.0	31	100.0	31	100.0
Ophiuroidea juvenile	PRE-OP	9	56.3	13	81.3	11	68.8	12	75.0	9	56.3	11	68.8
	OP	6	19.4	10	32.3	19	61.3	23	74.2	16	51.6	20	64.5
Opistobranchia unidentified	OP	30	96.8	31	100.0	31	100.0	31	100.0	31	100.0	31	100.0
Orbinidae (not counted as sp)	OP	30	96.8	30	96.8	31	100.0	31	100.0	31	100.0	30	96.8
Orbinidae unidentified	PRE-OP	15	93.8	16	100.0	16	100.0	16	100.0	16	100.0	16	100.0
	OP	31	100.0	30	96.8	31	100.0	31	100.0	31	100.0	29	93.5
Orchomene apaguela	PRE-OP	16	100.0	16	100.0	16	100.0	14	87.5	16	100.0	16	100.0

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DEPTH IS 18 METERS

SPECIES NAME	PERIOD	700 METERS ZEROS	700 METERS %	1100 METERS ZEROS	1100 METERS %	1900 METERS ZEROS	1900 METERS %	3350 METERS ZEROS	3350 METERS %	6700 METERS ZEROS	6700 METERS %	9400 METERS ZEROS	9400 METERS %
	OP	29	93.5	29	93.5	29	93.5	28	90.3	31	100.0	30	96.8
Orchomene spp. juvenile	OP	29	93.5	30	96.8	28	90.3	30	96.8	29	93.5	30	96.8
Owenia collaris	PRE-OP	13	81.3	13	81.3	9	56.3	10	62.5	11	68.8	8	50.0
	OP	30	96.8	31	100.0	30	96.8	29	93.5	29	93.5	29	93.5
Owenlidae	OP	31	100.0	31	100.0	31	100.0	31	100.0	30	96.8	31	100.0
Oxyurostylis pacifica	PRE-OP	11	68.8	13	81.3	10	62.5	13	81.3	13	81.3	15	93.8
	OP	12	38.7	16	51.6	11	35.5	15	48.4	14	45.2	19	61.3
OPH00999	OP	31	100.0	30	96.8	31	100.0	31	100.0	31	100.0	31	100.0
Pachynus barnardi	PRE-OP	12	75.0	15	93.8	12	75.0	13	81.3	15	93.8	13	81.3
	OP	16	51.6	17	54.8	15	48.4	15	48.4	16	51.6	19	61.3
Paleanotus bellis	OP	31	100.0	31	100.0	31	100.0	31	100.0	31	100.0	30	96.8
Paranaitis polynoides	PRE-OP	16	100.0	15	93.8	15	93.8	16	100.0	14	87.5	16	100.0
	OP	29	93.5	31	100.0	26	83.9	29	93.5	29	93.5	31	100.0
Paranemertes sp. A	PRE-OP	2	12.5	7	43.8	5	31.3	8	50.0	5	31.3	9	56.3
	OP	4	12.9	6	19.4	10	32.3	12	38.7	14	45.2	16	51.6
Paranemertes sp. B	OP	31	100.0	31	100.0	31	100.0	31	100.0	31	100.0	30	96.8
Paraonidae (not counted as sp)	OP	31	100.0	31	100.0	30	96.8	31	100.0	30	96.8	30	96.8
Paraonidae unidentified	OP	31	100.0	30	96.8	31	100.0	31	100.0	31	100.0	31	100.0
Parapleustes pugettensis	PRE-OP	15	93.8	16	100.0	16	100.0	16	100.0	16	100.0	16	100.0
	OP	31	100.0	31	100.0	31	100.0	31	100.0	30	96.8	31	100.0
Paraprionospio pinnata	PRE-OP	0	0.0	4	25.0	2	12.5	4	25.0	2	12.5	6	37.5
	OP	1	3.2	3	9.7	4	12.9	6	19.4	5	16.1	6	19.4
Parasterope hulingsi	PRE-OP	6	37.5	7	43.8	5	31.3	7	43.8	5	31.3	8	50.0
	OP	6	19.4	2	6.5	5	16.1	7	22.6	9	29.0	13	41.9
Pareulepis fimbriata	OP	30	96.8	31	100.0	30	96.8	31	100.0	31	100.0	29	93.5
Parvilucina tenuisculpta	PRE-OP	12	75.0	15	93.8	14	87.5	13	81.3	8	50.0	13	81.3
	OP	23	74.2	25	80.6	22	71.0	19	61.3	19	61.3	23	74.2
Pectinaria californiensis	PRE-OP	15	93.8	15	93.8	15	93.8	16	100.0	16	100.0	16	100.0
	OP	31	100.0	29	93.5	31	100.0	31	100.0	29	93.5	30	96.8
Pelecypoda	PRE-OP	16	100.0	15	93.8	16	100.0	16	100.0	16	100.0	16	100.0
	OP	31	100.0	31	100.0	30	96.8	30	96.8	30	96.8	27	87.1
Pelecypoda unidentified	PRE-OP	15	93.8	13	81.3	15	93.8	13	81.3	16	100.0	15	93.8

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DEPTH IS 18 METERS

SPECIES NAME	PERIOD	700 METERS ZEROS	700 METERS %	1100 METERS ZEROS	1100 METERS %	1900 METERS ZEROS	1900 METERS %	3350 METERS ZEROS	3350 METERS %	6700 METERS ZEROS	6700 METERS %	9400 METERS ZEROS	9400 METERS %
	OP	29	93.5	30	96.8	30	96.8	30	96.8	30	96.8	29	93.5
Periploma planuisculum	OP	31	100.0	30	96.8	30	96.8	29	93.5	30	96.8	31	100.0
Petaloproctus sp.	OP	21	67.7	30	96.8	29	93.5	31	100.0	31	100.0	31	100.0
Pherusa neopapillata	OP	26	83.9	30	96.8	31	100.0	31	100.0	30	96.8	30	96.8
Philine sp.	OP	28	90.3	30	96.8	30	96.8	30	96.8	31	100.0	30	96.8
Philine sp. A	OP	26	83.9	25	80.6	28	90.3	28	90.3	30	96.8	25	80.6
Phoronis spp.	PRE-OP	14	87.5	14	87.5	12	75.0	10	62.5	11	68.8	14	87.5
	OP	21	67.7	22	71.0	18	58.1	19	61.3	17	54.8	17	54.8
Photis bifurcata	PRE-OP	16	100.0	16	100.0	16	100.0	16	100.0	16	100.0	15	93.8
	OP	23	74.2	22	71.0	21	67.7	20	64.5	21	67.7	22	71.0
Photis brevipes	OP	29	93.5	31	100.0	30	96.8	29	93.5	30	96.8	29	93.5
Photis californica	PRE-OP	12	75.0	12	75.0	15	93.8	13	81.3	14	87.5	13	81.3
	OP	18	58.1	22	71.0	16	51.6	19	61.3	22	71.0	20	64.5
Photis lacia	OP	31	100.0	30	96.8	30	96.8	31	100.0	31	100.0	31	100.0
Photis macrotica	OP	30	96.8	28	90.3	27	87.1	29	93.5	29	93.5	30	96.8
Phyllodoce (Anaitides) papillosa	PRE-OP	16	100.0	16	100.0	11	68.8	13	81.3	14	87.5	13	81.3
	OP	22	71.0	16	51.6	13	41.9	20	64.5	21	67.7	19	61.3
Phyllodoce (Aponaitides) hartmanae	PRE-OP	10	62.5	11	68.8	10	62.5	10	62.5	5	31.3	10	62.5
	OP	19	61.3	15	48.4	18	58.1	16	51.6	21	67.7	15	48.4
Phyllodoce sp.	PRE-OP	14	87.5	16	100.0	13	81.3	15	93.8	16	100.0	16	100.0
	OP	27	87.1	30	96.8	31	100.0	31	100.0	30	96.8	30	96.8
Phyllodoce sp. (not counted as sp)	PRE-OP	16	100.0	15	93.8	16	100.0	15	93.8	15	93.8	16	100.0
	OP	28	90.3	29	93.5	27	87.1	26	83.9	29	93.5	27	87.1
Phyllodocidae (not counted as sp)	PRE-OP	15	93.8	14	87.5	15	93.8	16	100.0	16	100.0	16	100.0
	OP	30	96.8	29	93.5	30	96.8	30	96.8	30	96.8	30	96.8
Phyllodocidae unidentified	PRE-OP	15	93.8	16	100.0	16	100.0	15	93.8	16	100.0	16	100.0
	OP	27	87.1	29	93.5	30	96.8	30	96.8	30	96.8	30	96.8
Phylo felix	OP	31	100.0	31	100.0	30	96.8	31	100.0	31	100.0	31	100.0
Pilargiidae unidentified	PRE-OP	16	100.0	15	93.8	16	100.0	16	100.0	16	100.0	16	100.0
Pilargis berkeleyi	PRE-OP	15	93.8	16	100.0	15	93.8	15	93.8	16	100.0	16	100.0
	OP	30	96.8	31	100.0	31	100.0	30	96.8	30	96.8	31	100.0

SOFT BENTHOS NUMBER OF ZERO OBSERVATIONS

DEPTH IS 18 METERS

SPECIES NAME	PERIOD	700 METERS ZEROS	%	1100 METERS ZEROS	%	1900 METERS ZEROS	%	3350 METERS ZEROS	%	6700 METERS ZEROS	%	9400 METERS ZEROS	%
Pilargis sp.	PRE-OP	16	100.0	16	100.0	16	100.0	15	93.8	16	100.0	16	100.0
Pinnixa faba	PRE-OP	16	100.0	15	93.8	16	100.0	16	100.0	16	100.0	16	100.0
Pinnixa hiatus	PRE-OP	11	68.8	7	43.8	15	93.8	14	87.5	14	87.5	11	68.8
	OP	24	77.4	25	80.6	29	93.5	28	90.3	29	93.5	22	71.0
Pinnixa longipes	PRE-OP	15	93.8	16	100.0	16	100.0	16	100.0	16	100.0	16	100.0
	OP	30	96.8	28	90.3	30	96.8	31	100.0	31	100.0	29	93.5
Pinnixa sp. juvenile	PRE-OP	13	81.3	14	87.5	14	87.5	13	81.3	12	75.0	12	75.0
	OP	28	90.3	29	93.5	29	93.5	30	96.8	31	100.0	29	93.5
Pinnixa sp. juvenile (not counted as sp)	PRE-OP	14	87.5	12	75.0	15	93.8	16	100.0	16	100.0	14	87.5
	OP	30	96.8	31	100.0	31	100.0	31	100.0	31	100.0	31	100.0
Pinnixa tubicola/tomentosa	PRE-OP	15	93.8	15	93.8	13	81.3	15	93.8	13	81.3	12	75.0
	OP	29	93.5	31	100.0	30	96.8	30	96.8	31	100.0	30	96.8
Pista disjuncta	PRE-OP	10	62.5	7	43.8	9	56.3	9	56.3	15	93.8	9	56.3
	OP	14	45.2	18	58.1	8	25.8	10	32.3	8	25.8	7	22.6
Pista sp.	PRE-OP	16	100.0	14	87.5	14	87.5	13	81.3	13	81.3	16	100.0
	OP	29	93.5	29	93.5	30	96.8	30	96.8	30	96.8	31	100.0
Pista sp. (not counted as sp)	OP	31	100.0	31	100.0	31	100.0	30	96.8	31	100.0	30	96.8
Platynereis bicanaliculata	OP	31	100.0	29	93.5	30	96.8	31	100.0	30	96.8	29	93.5
Pleustes platypa	PRE-OP	15	93.8	16	100.0	16	100.0	16	100.0	16	100.0	16	100.0
Pleusymtes subglaber	OP	31	100.0	31	100.0	30	96.8	30	96.8	30	96.8	31	100.0
Podakeopsis brevipalpa	PRE-OP	14	87.5	15	93.8	12	75.0	13	81.3	10	62.5	15	93.8
	OP	11	35.5	14	45.2	15	48.4	15	48.4	17	54.8	22	71.0
Podocopid A	PRE-OP	15	93.8	16	100.0	16	100.0	16	100.0	16	100.0	16	100.0
	OP	31	100.0	31	100.0	31	100.0	31	100.0	29	93.5	31	100.0
Podocopid B	PRE-OP	16	100.0	16	100.0	15	93.8	16	100.0	16	100.0	16	100.0
	OP	30	96.8	31	100.0	31	100.0	31	100.0	31	100.0	31	100.0
Podocopid D	OP	30	96.8	31	100.0	31	100.0	31	100.0	29	93.5	31	100.0
Podocopid E	OP	30	96.8	31	100.0	31	100.0	31	100.0	31	100.0	31	100.0
Podocopid F	OP	31	100.0	30	96.8	31	100.0	31	100.0	31	100.0	30	96.8
Poecilochaetous johnsoni	PRE-OP	12	75.0	16	100.0	13	81.3	15	93.8	15	93.8	12	75.0
	OP	16	51.6	26	83.9	21	67.7	25	80.6	27	87.1	23	74.2
Poecilochaetous sp.	OP	30	96.8	31	100.0	30	96.8	30	96.8	30	96.8	30	96.8

SOFT BENTHOS NUMBER OF ZERO OBSERVATIONS

DEPTH IS 18 METERS

SPECIES NAME	PERIOD	700 METERS ZEROS	700 METERS %	1100 METERS ZEROS	1100 METERS %	1900 METERS ZEROS	1900 METERS %	3350 METERS ZEROS	3350 METERS %	6700 METERS ZEROS	6700 METERS %	9400 METERS ZEROS	9400 METERS %
Polycirrus californicus	OP	30	96.8	31	100.0	31	100.0	30	96.8	30	96.8	31	100.0
Polycirrus sp.	OP	30	96.8	30	96.8	31	100.0	30	96.8	31	100.0	30	96.8
Polydora bioccipitrlis	OP	31	100.0	31	100.0	31	100.0	31	100.0	31	100.0	30	96.8
Polydora neocardalia	OP	31	100.0	31	100.0	31	100.0	31	100.0	31	100.0	30	96.8
Polydora sp.	PRE-OP	15	93.8	16	100.0	15	93.8	16	100.0	16	100.0	16	100.0
	OP	30	96.8	31	100.0	30	96.8	30	96.8	30	96.8	30	96.8
Polynoidae (not counted as sp)	PRE-OP	15	93.8	15	93.8	15	93.8	16	100.0	15	93.8	16	100.0
	OP	30	96.8	28	90.3	29	93.5	30	96.8	29	93.5	30	96.8
Polynoidae unidentified	PRE-OP	13	81.3	14	87.5	14	87.5	14	87.5	16	100.0	14	87.5
	OP	27	87.1	25	80.6	23	74.2	24	77.4	25	80.6	23	74.2
Polyophthalmus pictus	OP	31	100.0	31	100.0	31	100.0	31	100.0	30	96.8	31	100.0
Pontogeneia rostrata	OP	31	100.0	31	100.0	30	96.8	31	100.0	31	100.0	31	100.0
Porcellidium sp.	PRE-OP	16	100.0	15	93.8	16	100.0	16	100.0	16	100.0	16	100.0
	OP	29	93.5	30	96.8	30	96.8	31	100.0	31	100.0	31	100.0
Portunus xantusii	OP	31	100.0	31	100.0	31	100.0	31	100.0	30	96.8	30	96.8
Praxillella affinis pacifica	PRE-OP	16	100.0	16	100.0	16	100.0	16	100.0	16	100.0	15	93.8
	OP	28	90.3	30	96.8	30	96.8	31	100.0	31	100.0	29	93.5
Prionospio cf. steenstrupi	OP	31	100.0	31	100.0	31	100.0	30	96.8	31	100.0	31	100.0
Prionospio cirrifera	PRE-OP	12	75.0	8	50.0	16	100.0	16	100.0	13	81.3	14	87.5
	OP	10	32.3	15	48.4	17	54.8	18	58.1	21	67.7	21	67.7
Prionospio pygmaea	PRE-OP	2	12.5	0	0.0	1	6.3	1	6.3	1	6.3	2	12.5
	OP	2	6.5	2	6.5	1	3.2	1	3.2	0	0.0	3	9.7
Prionospio sp. (not counted as sp)	OP	29	93.5	31	100.0	30	96.8	30	96.8	31	100.0	28	90.3
Procephalothrix	OP	29	93.5	31	100.0	31	100.0	31	100.0	31	100.0	30	96.8
Pyromaia tuberculata	PRE-OP	16	100.0	16	100.0	16	100.0	16	100.0	16	100.0	16	100.0
	OP	31	100.0	31	100.0	31	100.0	31	100.0	31	100.0	30	96.8
PCHA0021	OP	30	96.8	31	100.0	31	100.0	31	100.0	31	100.0	31	100.0
PGON9090	PRE-OP	16	100.0	15	93.8	14	87.5	15	93.8	16	100.0	16	100.0
	OP	28	90.3	28	90.3	23	74.2	30	96.8	31	100.0	30	96.8
PPAR9029	OP	30	96.8	31	100.0	31	100.0	31	100.0	31	100.0	31	100.0

SOFT BENTHOS NUMBER OF ZERO OBSERVATIONS

DEPTH IS 18 METERS

SPECIES NAME	PERIOD	700 METERS ZEROS	%	1100 METERS ZEROS	%	1900 METERS ZEROS	%	3350 METERS ZEROS	%	6700 METERS ZEROS	%	9400 METERS ZEROS	%
PTER0032	OP	31	100.0	31	100.0	31	100.0	30	96.8	31	100.0	31	100.0
Randallia ornata	PRE-OP	16	100.0	15	93.8	16	100.0	16	100.0	16	100.0	16	100.0
	OP	31	100.0	31	100.0	31	100.0	31	100.0	31	100.0	30	96.8
Renilla kolleri	OP	31	100.0	31	100.0	31	100.0	31	100.0	30	96.8	31	100.0
Rhepoxinius fatigens	OP	31	100.0	30	96.8	31	100.0	31	100.0	31	100.0	31	100.0
Rhepoxynius abronius	PRE-OP	16	100.0	15	93.8	16	100.0	16	100.0	16	100.0	15	93.8
	OP	27	87.1	29	93.5	25	80.6	17	54.8	19	61.3	24	77.4
Rhepoxynius daboius	PRE-OP	9	56.3	7	43.8	11	68.8	5	31.3	10	62.5	2	12.5
	OP	27	87.1	23	74.2	20	64.5	15	48.4	9	29.0	14	45.2
Rhepoxynius heterocuspidatus	OP	31	100.0	31	100.0	31	100.0	30	96.8	31	100.0	31	100.0
Rhepoxynius lucubrans	OP	31	100.0	31	100.0	31	100.0	30	96.8	30	96.8	29	93.5
Rhepoxynius menziese	PRE-OP	9	56.3	5	31.3	3	18.8	2	12.5	2	12.5	2	12.5
	OP	7	22.6	12	38.7	7	22.6	5	16.1	3	9.7	5	16.1
Rhepoxynius sp. juvenile	PRE-OP	14	87.5	14	87.5	15	93.8	14	87.5	14	87.5	16	100.0
	PRE-OP	6	37.5	1	6.3	1	6.3	1	6.3	3	18.8	0	0.0
	OP	28	90.3	29	93.5	29	93.5	29	93.5	30	96.8	27	87.1
	OP	15	48.4	13	41.9	6	19.4	4	12.9	7	22.6	10	32.3
Rhepoxynius sp. A	PRE-OP	15	93.8	16	100.0	16	100.0	15	93.8	16	100.0	16	100.0
	OP	31	100.0	31	100.0	31	100.0	31	100.0	30	96.8	31	100.0
Rhepoxynius stenodes	PRE-OP	6	37.5	7	43.8	5	31.3	6	37.5	6	37.5	6	37.5
	OP	3	9.7	3	9.7	2	6.5	3	9.7	4	12.9	8	25.8
Rhepoxynius variatus	PRE-OP	5	31.3	7	43.8	11	68.8	11	68.8	8	50.0	1	6.3
	OP	22	71.0	22	71.0	25	80.6	23	74.2	20	64.5	21	67.7
Rictaxis punctocoelatus	PRE-OP	14	87.5	15	93.8	15	93.8	15	93.8	15	93.8	15	93.8
	OP	27	87.1	28	90.3	28	90.3	31	100.0	31	100.0	30	96.8
Rudilemboides stenopropodus	PRE-OP	12	75.0	11	68.8	10	62.5	10	62.5	11	68.8	11	68.8
	OP	20	64.5	14	45.2	15	48.4	17	54.8	23	74.2	16	51.6
Rutiderma rostrata	PRE-OP	0	0.0	1	6.3	0	0.0	3	18.8	0	0.0	0	0.0
	OP	0	0.0	1	3.2	4	12.9	11	35.5	14	45.2	12	38.7
Sabellidae (not counted as sp)	PRE-OP	16	100.0	16	100.0	16	100.0	16	100.0	15	93.8	16	100.0
	OP	28	90.3	28	90.3	30	96.8	29	93.5	28	90.3	27	87.1
Sabellidae unidentified	PRE-OP	16	100.0	15	93.8	16	100.0	15	93.8	16	100.0	15	93.8
	OP	31	100.0	31	100.0	30	96.8	31	100.0	30	96.8	29	93.5
Sarsiella sp. A SCAMIT	PRE-OP	15	93.8	15	93.8	11	68.8	16	100.0	15	93.8	16	100.0

SOFT BENTHOS NUMBER OF ZERO OBSERVATIONS

DEPTH IS 18 METERS

SPECIES NAME	PERIOD	700 METERS ZEROS	700 METERS %	1100 METERS ZEROS	1100 METERS %	1900 METERS ZEROS	1900 METERS %	3350 METERS ZEROS	3350 METERS %	6700 METERS ZEROS	6700 METERS %	9400 METERS ZEROS	9400 METERS %
	OP	19	61.3	26	83.9	25	80.6	29	93.5	28	90.3	28	90.3
Sarsiella sp. B	OP	31	100.0	31	100.0	31	100.0	30	96.8	31	100.0	30	96.8
Scolanthus sp. A SCAMIT	OP	29	93.5	29	93.5	30	96.8	31	100.0	30	96.8	28	90.3
Scoloplos armiger	OP	28	90.3	30	96.8	24	77.4	29	93.5	25	80.6	26	83.9
Scoloplos sp.	PRE-OP	16	100.0	16	100.0	16	100.0	14	87.5	14	87.5	14	87.5
	OP	31	100.0	31	100.0	30	96.8	30	96.8	31	100.0	31	100.0
Scolopos sp. (not counted as sp)	OP	31	100.0	31	100.0	31	100.0	30	96.8	31	100.0	31	100.0
Shrimp juvenile	OP	31	100.0	30	96.8	31	100.0	31	100.0	31	100.0	31	100.0
Shrimp-larvae	OP	30	96.8	28	90.3	28	90.3	29	93.5	28	90.3	30	96.8
Sigalionidae (not counted as sp)	OP	31	100.0	31	100.0	31	100.0	31	100.0	30	96.8	30	96.8
Sigalionidae unidentified	PRE-OP	16	100.0	16	100.0	16	100.0	16	100.0	16	100.0	16	100.0
	OP	31	100.0	31	100.0	30	96.8	31	100.0	30	96.8	31	100.0
Sigambra sp.	PRE-OP	15	93.8	16	100.0	16	100.0	16	100.0	16	100.0	16	100.0
Sigambra tentaculata	OP	30	96.8	31	100.0	31	100.0	31	100.0	30	96.8	31	100.0
Siliqua lucida	PRE-OP	16	100.0	15	93.8	15	93.8	16	100.0	15	93.8	15	93.8
	OP	31	100.0	30	96.8	31	100.0	31	100.0	31	100.0	31	100.0
Silophasma geminatum	PRE-OP	15	93.8	16	100.0	16	100.0	16	100.0	13	81.3	15	93.8
	OP	30	96.8	30	96.8	31	100.0	31	100.0	31	100.0	31	100.0
Sinum scopulosum	OP	31	100.0	31	100.0	31	100.0	31	100.0	31	100.0	30	96.8
Sipuncula unidentified	PRE-OP	15	93.8	16	100.0	16	100.0	15	93.8	16	100.0	16	100.0
	OP	30	96.8	29	93.5	31	100.0	30	96.8	30	96.8	30	96.8
Solen rosaceus	PRE-OP	16	100.0	16	100.0	15	93.8	15	93.8	16	100.0	16	100.0
	OP	29	93.5	31	100.0	30	96.8	29	93.5	30	96.8	30	96.8
Solen sicarius	PRE-OP	16	100.0	13	81.3	16	100.0	16	100.0	14	87.5	14	87.5
	OP	26	83.9	28	90.3	26	83.9	27	87.1	27	87.1	25	80.6
Solen sp.	PRE-OP	16	100.0	16	100.0	16	100.0	15	93.8	16	100.0	16	100.0
	OP	31	100.0	31	100.0	30	96.8	31	100.0	31	100.0	31	100.0
Sphaerodoropsis biserialis	PRE-OP	15	93.8	16	100.0	15	93.8	16	100.0	16	100.0	14	87.5
	OP	27	87.1	29	93.5	30	96.8	26	83.9	26	83.9	24	77.4
Sphaerodoropsis minuta	PRE-OP	11	68.8	11	68.8	7	43.8	16	100.0	14	87.5	12	75.0
	OP	27	87.1	30	96.8	26	83.9	28	90.3	29	93.5	30	96.8

SOFT BENTHOS NUMBER OF ZERO OBSERVATIONS

DEPTH IS 18 METERS

SPECIES NAME	PERIOD	700 METERS ZEROS	700 METERS %	1100 METERS ZEROS	1100 METERS %	1900 METERS ZEROS	1900 METERS %	3350 METERS ZEROS	3350 METERS %	6700 METERS ZEROS	6700 METERS %	9400 METERS ZEROS	9400 METERS %
Sphaerosyllis californiensis	OP	30	96.8	31	100.0	31	100.0	31	100.0	31	100.0	31	100.0
Spio sp.	OP	30	96.8	31	100.0	31	100.0	31	100.0	31	100.0	31	100.0
Spiochaetopterus costarum	PRE-OP	16	100.0	14	87.5	16	100.0	15	93.8	15	93.8	15	93.8
	OP	25	80.6	26	83.9	24	77.4	26	83.9	26	83.9	24	77.4
Spionidae (not counted as sp)	PRE-OP	16	100.0	16	100.0	15	93.8	15	93.8	16	100.0	16	100.0
	OP	26	83.9	29	93.5	30	96.8	31	100.0	31	100.0	30	96.8
Spionidae unidentified	PRE-OP	15	93.8	16	100.0	16	100.0	16	100.0	15	93.8	16	100.0
	OP	29	93.5	27	87.1	31	100.0	28	90.3	30	96.8	31	100.0
Spiophanes berkeleyorum	PRE-OP	16	100.0	15	93.8	16	100.0	14	87.5	14	87.5	16	100.0
	OP	31	100.0	30	96.8	31	100.0	30	96.8	31	100.0	29	93.5
Spiophanes bombyx	PRE-OP	14	87.5	16	100.0	15	93.8	16	100.0	14	87.5	16	100.0
	OP	23	74.2	22	71.0	16	51.6	8	25.8	13	41.9	11	35.5
Spiophanes missionensis	PRE-OP	13	81.3	14	87.5	15	93.8	15	93.8	13	81.3	13	81.3
	OP	15	48.4	14	45.2	15	48.4	12	38.7	10	32.3	8	25.8
Spiophanes sp.	PRE-OP	15	93.8	15	93.8	14	87.5	14	87.5	15	93.8	15	93.8
	OP	31	100.0	31	100.0	29	93.5	29	93.5	30	96.8	29	93.5
Spiophanes sp. (not counted as sp)	PRE-OP	16	100.0	16	100.0	16	100.0	14	87.5	16	100.0	16	100.0
	OP	30	96.8	30	96.8	31	100.0	30	96.8	30	96.8	30	96.8
Stenothoe estacola	PRE-OP	14	87.5	16	100.0	14	87.5	15	93.8	14	87.5	15	93.8
	OP	26	83.9	29	93.5	28	90.3	25	80.6	26	83.9	28	90.3
Stenothoides bicoma	OP	31	100.0	31	100.0	31	100.0	31	100.0	31	100.0	30	96.8
Sternaspis fossor	PRE-OP	16	100.0	16	100.0	16	100.0	16	100.0	16	100.0	16	100.0
	OP	31	100.0	31	100.0	30	96.8	31	100.0	31	100.0	31	100.0
Sthenelais sp.	OP	30	96.8	31	100.0	31	100.0	31	100.0	31	100.0	30	96.8
Sthenelais verruculosa	PRE-OP	16	100.0	15	93.8	16	100.0	16	100.0	16	100.0	16	100.0
	OP	31	100.0	31	100.0	31	100.0	31	100.0	31	100.0	30	96.8
Sthenelanella uniformis	PRE-OP	13	81.3	16	100.0	14	87.5	15	93.8	16	100.0	14	87.5
	OP	28	90.3	28	90.3	27	87.1	29	93.5	30	96.8	28	90.3
Streblosoma crassibranchia	PRE-OP	16	100.0	15	93.8	14	87.5	14	87.5	15	93.8	15	93.8
	OP	29	93.5	29	93.5	30	96.8	29	93.5	31	100.0	30	96.8
Stylatula elongata	OP	31	100.0	31	100.0	30	96.8	31	100.0	31	100.0	31	100.0
Sulcoretusa xystrum	PRE-OP	7	43.8	10	62.5	9	56.3	6	37.5	9	56.3	7	43.8
	OP	9	29.0	9	29.0	8	25.8	11	35.5	10	32.3	13	41.9

SOFT BENTHOS NUMBER OF ZERO OBSERVATIONS

DEPTH IS 18 METERS

SPECIES NAME	PERIOD	700 METERS ZEROS	700 METERS %	1100 METERS ZEROS	1100 METERS %	1900 METERS ZEROS	1900 METERS %	3350 METERS ZEROS	3350 METERS %	6700 METERS ZEROS	6700 METERS %	9400 METERS ZEROS	9400 METERS %
Syllidia sp. A	OP	30	96.8	31	100.0	30	96.8	31	100.0	31	100.0	31	100.0
Synchelidium rectipalmum	OP	30	96.8	30	96.8	30	96.8	31	100.0	30	96.8	30	96.8
Synchelidium shoemakeri	PRE-OP	5	31.3	9	56.3	3	18.8	2	12.5	4	25.0	4	25.0
	OP	4	12.9	4	12.9	2	6.5	1	3.2	3	9.7	2	6.5
Synidotea hartfordi	OP	31	100.0	31	100.0	30	96.8	31	100.0	31	100.0	31	100.0
Tauberia gracilis	PRE-OP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	3	18.8
	OP	0	0.0	0	0.0	1	3.2	7	22.6	15	48.4	11	35.5
Tellina idae	PRE-OP	16	100.0	16	100.0	16	100.0	15	93.8	16	100.0	15	93.8
	OP	30	96.8	30	96.8	31	100.0	31	100.0	29	93.5	30	96.8
Tellina modesta	PRE-OP	1	6.3	0	0.0	0	0.0	1	6.3	1	6.3	0	0.0
	OP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	3.2
Terebellidae (not counted as sp)	PRE-OP	16	100.0	15	93.8	15	93.8	15	93.8	16	100.0	16	100.0
	OP	28	90.3	29	93.5	28	90.3	29	93.5	30	96.8	29	93.5
Terebellidae juvenile	PRE-OP	16	100.0	16	100.0	15	93.8	14	87.5	16	100.0	16	100.0
	OP	29	93.5	30	96.8	30	96.8	30	96.8	27	87.1	29	93.5
Terebellides stroemii	PRE-OP	16	100.0	15	93.8	16	100.0	16	100.0	16	100.0	16	100.0
Terebra danai	OP	31	100.0	31	100.0	30	96.8	29	93.5	31	100.0	31	100.0
Terebra sp.	OP	31	100.0	30	96.8	31	100.0	31	100.0	31	100.0	30	96.8
Tetrastemma spp.	PRE-OP	15	93.8	16	100.0	16	100.0	15	93.8	16	100.0	15	93.8
Thalenessa spinosa	PRE-OP	7	43.8	11	68.8	10	62.5	12	75.0	6	37.5	7	43.8
	OP	17	54.8	12	38.7	15	48.4	10	32.3	15	48.4	11	35.5
Tharyx sp.	PRE-OP	9	56.3	9	56.3	6	37.5	9	56.3	10	62.5	11	68.8
	OP	4	12.9	4	12.9	8	25.8	13	41.9	15	48.4	22	71.0
Tharyx sp. (not counted as sp)	PRE-OP	16	100.0	15	93.8	15	93.8	16	100.0	15	93.8	15	93.8
	OP	30	96.8	31	100.0	31	100.0	31	100.0	31	100.0	31	100.0
Tharyx tesselata	PRE-OP	12	75.0	12	75.0	11	68.8	13	81.3	14	87.5	14	87.5
	OP	29	93.5	30	96.8	30	96.8	29	93.5	31	100.0	31	100.0
Thecondonta oblongus	PRE-OP	16	100.0	16	100.0	15	93.8	15	93.8	16	100.0	15	93.8
Thyasira flexuosa	PRE-OP	16	100.0	16	100.0	16	100.0	15	93.8	16	100.0	16	100.0
Tiron biocellata	PRE-OP	15	93.8	16	100.0	16	100.0	15	93.8	16	100.0	15	93.8
	OP	27	87.1	30	96.8	27	87.1	28	90.3	25	80.6	27	87.1
Tiron tropakis	PRE-OP	15	93.8	16	100.0	14	87.5	16	100.0	15	93.8	15	93.8

SOFT BENTHOS NUMBER OF ZERO OBSERVATIONS

DEPTH IS 18 METERS

SPECIES NAME	PERIOD	700 METERS ZEROS	700 METERS %	1100 METERS ZEROS	1100 METERS %	1900 METERS ZEROS	1900 METERS %	3350 METERS ZEROS	3350 METERS %	6700 METERS ZEROS	6700 METERS %	9400 METERS ZEROS	9400 METERS %
Trachycardium quadragenarium	OP	31	100.0	31	100.0	31	100.0	31	100.0	31	100.0	30	96.8
Travisia gigas	PRE-OP	16	100.0	15	93.8	16	100.0	16	100.0	16	100.0	16	100.0
	OP	31	100.0	31	100.0	31	100.0	31	100.0	29	93.5	31	100.0
Tubulanidae sp. B	PRE-OP	9	56.3	9	56.3	4	25.0	13	81.3	14	87.5	7	43.8
	OP	13	41.9	15	48.4	23	74.2	15	48.4	21	67.7	18	58.1
Tubulanus nothus (black)	PRE-OP	6	37.5	8	50.0	8	50.0	7	43.8	11	68.8	10	62.5
	OP	23	74.2	25	80.6	31	100.0	30	96.8	31	100.0	30	96.8
Tubulanus pellucidus (red)	PRE-OP	14	87.5	14	87.5	16	100.0	15	93.8	16	100.0	15	93.8
	OP	22	71.0	21	67.7	27	87.1	25	80.6	27	87.1	31	100.0
Tubulanus sp. P	OP	31	100.0	31	100.0	31	100.0	31	100.0	28	90.3	31	100.0
Turbonilla (Chemnitzia) sp.	PRE-OP	16	100.0	16	100.0	14	87.5	16	100.0	16	100.0	15	93.8
	OP	28	90.3	28	90.3	29	93.5	30	96.8	27	87.1	26	83.9
Turbonilla (Chemnitzia) sp. A	PRE-OP	16	100.0	15	93.8	14	87.5	16	100.0	16	100.0	15	93.8
	OP	29	93.5	28	90.3	30	96.8	31	100.0	29	93.5	29	93.5
Turbonilla (Chemnitzia) sp. B	PRE-OP	16	100.0	15	93.8	16	100.0	16	100.0	16	100.0	14	87.5
	OP	30	96.8	31	100.0	30	96.8	30	96.8	31	100.0	30	96.8
Turbonilla (Chemnitzia) sp. C	OP	31	100.0	30	96.8	31	100.0	31	100.0	30	96.8	29	93.5
Turbonilla (Chemnitzia) sp. D	PRE-OP	16	100.0	14	87.5	16	100.0	16	100.0	16	100.0	16	100.0
	OP	31	100.0	29	93.5	31	100.0	31	100.0	30	96.8	30	96.8
Turbonilla (Chemnitzia) sp. F	PRE-OP	16	100.0	16	100.0	16	100.0	16	100.0	16	100.0	15	93.8
	OP	31	100.0	31	100.0	31	100.0	31	100.0	31	100.0	30	96.8
Turbonilla (Pyrgiscus) sp.	PRE-OP	16	100.0	16	100.0	15	93.8	16	100.0	15	93.8	16	100.0
	OP	30	96.8	31	100.0	31	100.0	30	96.8	31	100.0	31	100.0
Turbonilla (Pyrgiscus) sp. F	PRE-OP	16	100.0	16	100.0	16	100.0	15	93.8	15	93.8	16	100.0
	OP	30	96.8	31	100.0	31	100.0	31	100.0	31	100.0	31	100.0
Turbonilla (Pyrgiscus) sp. G	PRE-OP	16	100.0	16	100.0	16	100.0	16	100.0	16	100.0	16	100.0
	OP	30	96.8	31	100.0	31	100.0	31	100.0	30	96.8	30	96.8
Typosyllis hyalina	PRE-OP	0	0.0	2	12.5	0	0.0	1	6.3	1	6.3	0	0.0
	OP	13	41.9	11	35.5	6	19.4	16	51.6	20	64.5	15	48.4
Veneridae unidentified	PRE-OP	16	100.0	16	100.0	15	93.8	15	93.8	14	87.5	16	100.0
	OP	31	100.0	30	96.8	31	100.0	31	100.0	31	100.0	31	100.0
Volvuella cylindrica	PRE-OP	15	93.8	15	93.8	15	93.8	12	75.0	13	81.3	13	81.3
	OP	30	96.8	31	100.0	30	96.8	31	100.0	31	100.0	29	93.5

SOFT BENTHOS NUMBER OF ZERO OBSERVATIONS

DEPTH IS 18 METERS

SPECIES NAME	PERIOD	700 METERS ZEROS	700 METERS %	1100 METERS ZEROS	1100 METERS %	1900 METERS ZEROS	1900 METERS %	3350 METERS ZEROS	3350 METERS %	6700 METERS ZEROS	6700 METERS %	9400 METERS ZEROS	9400 METERS %
Volvulella panamica	OP	31	100.0	30	96.8	31	100.0	31	100.0	30	96.8	31	100.0
Westwoodilla caecula	PRE-OP	12	75.0	14	87.5	13	81.3	14	87.5	16	100.0	16	100.0
	OP	25	80.6	23	74.2	27	87.1	26	83.9	27	87.1	29	93.5
Woodbridgea polystrigma	PRE-OP	16	100.0	14	87.5	15	93.8	15	93.8	16	100.0	15	93.8
	OP	29	93.5	31	100.0	31	100.0	29	93.5	31	100.0	31	100.0
Woodbridgea sp.	OP	30	96.8	30	96.8	30	96.8	31	100.0	28	90.3	28	90.3
Yoldia cooperi	PRE-OP	15	93.8	15	93.8	15	93.8	16	100.0	16	100.0	15	93.8
	OP	31	100.0	31	100.0	31	100.0	31	100.0	31	100.0	30	96.8
Zaolutus actius	PRE-OP	16	100.0	16	100.0	16	100.0	16	100.0	16	100.0	14	87.5
Zygeupolia sp.	PRE-OP	12	75.0	10	62.5	7	43.8	6	37.5	12	75.0	12	75.0
	OP	31	100.0	28	90.3	30	96.8	28	90.3	31	100.0	29	93.5

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APPENDIX K. THE MEAN (AND STANDARD ERROR) NUMBER OF TAXA (PER SAMPLE) AT ALL SAMPLING LOCATIONS IN BOTH SAMPLING PERIODS.

Number of surveys in the Before period is 16, number in the After is 31. A single mean is given for the combined 6700/9400 meter sampling location.

SOFT BENTHOS AVERAGE SPECIES COUNTS

DEPTH IS 8 METERS

	700 METERS		1100 METERS		1900 METERS		3350 METERS		6700/9400 M	
PERIOD	MEAN	SE	MEAN	SE	MEAN	SE	MEAN	SE	MEAN	SE
PRE-OP	8.69	0.30	7.69	0.30	7.44	0.41	8.75	0.31	9.56	0.27
OP	7.23	0.30	6.81	0.31	8.48	0.18	8.19	0.29	9.58	0.21

DEPTH IS 18 METERS

SOFT BENTHOS AVERAGE SPECIES COUNTS

PERIOD	700 METERS MEAN	700 METERS SE	1100 METERS MEAN	1100 METERS SE	1900 METERS MEAN	1900 METERS SE	3350 METERS MEAN	3350 METERS SE	6700/9400 M MEAN	6700/9400 M SE
PRE-OP	20.31	0.83	19.94	0.78	21.88	0.45	21.06	0.59	26.56	0.44
OP	23.26	0.40	23.55	0.43	24.19	0.40	23.71	0.48	26.03	0.57

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APPENDIX L: RANKINGS OF THE TWENTY MOST ABUNDANT TAXA FOUND AT EACH SAMPLING LOCATION AT BOTH 8 AND 18 METER DEPTHS IN BOTH BEFORE (=PREOP) AND AFTER (=OP) PERIODS. MEAN VALUES ONLY ARE PRESENTED (ASSOCIATED STANDARD ERRORS ARE PRESENTED IN APPENDIX X).

SOFT BENTHOS RANKED AVERAGE ABUNDANCE
TOP 20 TAXA W/O CRAB ZOEA

DEPTH=8 PERIOD=PRE-OP LOCATION=LO700

RANK	SPNAME	ABUND
1	Owenia collaris	34.9368
2	Amastigos acutus	10.3746
3	Diastylopsis tenuis	8.0412
4	Nymphon cf. heterodenticulatum	5.8540
5	Prionospio pygmaea	4.4788
6	Tellina modesta	1.6458
7	Edotea sublittoralis	1.6458
8	Euphilomedes longiseta	1.3125
9	Jassa falcata	1.0833
10	Acesta catherinae	1.0000
11	Nematodes unidentified	0.8542
12	Cyclostremella californica	0.8541
13	Goniada littorea	0.8541
14	Zygeupolia sp.	0.8125
15	Synchelidium shoemakeri	0.7500
16	Rhepoxynius sp. juvenile	0.6458
17	Rhepoxynius menziese	0.5625
18	Ancinus granulatus	0.5416
19	Leptocuma forsmani	0.3958
20	Nephtys sp.	0.3958

SOFT BENTHOS RANKED AVERAGE ABUNDANCE
TOP 20 TAXA W/O CRAB ZOEA

DEPTH=8 PERIOD=PRE-OP LOCATION=L1100

RANK	SPNAME	ABUND
1	Prionospio pygmaea	16.0829
2	Owenia collaris	12.1665
3	Amastigos acutus	9.8330
4	Diastylopsis tenuis	5.9581
5	Euphilomedes longiseta	3.0833
6	Tiron tropakis	1.2083
7	Tellina modesta	1.0416
8	Rhepoxynius sp. juvenile	0.9791
9	Nematodes unidentified	0.8333
10	Synchelidium shoemakeri	0.7083
11	Typosyllis hyalina	0.7083
12	Nymphon cf. heterodenticulatum	0.6875
13	Rhepoxynius sp. A	0.6666
14	Edotea sublittoralis	0.5625
15	Nephtys sp.	0.5416
16	Leptocuma forsmani	0.5208
17	Olivella baetica	0.5208
18	Ancinus granulatus	0.5000
19	Acesta catherinae	0.5000
20	Jassa falcata	0.4792

SOFT BENTHOS RANKED AVERAGE ABUNDANCE
TOP 20 TAXA W/O CRAB ZOEA

DEPTH=8 PERIOD=PRE-OP LOCATION=L1900

RANK	SPNAME	ABUND
1	Owenia collaris	26.7078
2	Amastigos acutus	8.0831
3	Diastylopsis tenuis	6.0415
4	Prionospio pygmaea	4.8957
5	Euphilomedes longiseta	2.0416
6	Tellina modesta	1.6249
7	Nematodes unidentified	0.8750
8	Edotea sublittoralis	0.8542
9	Rhepoxynius menziese	0.7500
10	Olivella baetica	0.6666
11	Nymphon cf. heterodenticulatum	0.6458
12	Acesta catherinae	0.6250
13	Nephtys sp.	0.6250
14	Spiophanes bombyx	0.5833
15	Synchelidium shoemakeri	0.5833
16	Atylus tridens	0.5833
17	Eohaustorius washingtonianus	0.5416
18	Ancinus granulatus	0.4791
19	Tiron tropakis	0.4375
20	Goniada littorea	0.3958

SOFT BENTHOS RANKED AVERAGE ABUNDANCE
TOP 20 TAXA W/O CRAB ZOEA

---------- DEPTH=8 PERIOD=PRE-OP LOCATION=L3350 ----------

RANK	SPNAME	ABUND
1	Amastigos acutus	10.6247
2	Prionospio pygmaea	7.8121
3	Owenia collaris	7.7708
4	Diastylopsis tenuis	6.5831
5	Tellina modesta	2.6458
6	Euphilomedes longiseta	2.3333
7	Edotea sublittoralis	1.2500
8	Zygeupolia sp.	1.0416
9	Nephtys sp.	0.9375
10	Modiolus rectus	0.8333
11	Nematodes unidentified	0.6875
12	Rhepoxynius menziese	0.6875
13	Goniada littorea	0.6667
14	Synchelidium shoemakeri	0.6666
15	Spiophanes bombyx	0.6250
16	Rhepoxynius sp. juvenile	0.6250
17	Tiron tropakis	0.6250
18	Yoldia cooperi	0.5625
19	Rhepoxynius sp. A	0.5625
20	Scoloplos armiger	0.5000

SOFT BENTHOS RANKED AVERAGE ABUNDANCE
TOP 20 TAXA W/O CRAB ZOEA

DEPTH=8 PERIOD=PRE-OP LOCATION=L6700

RANK	SPNAME	ABUND
1	Amastigos acutus	6.79165
2	Diastylopsis tenuis	6.20810
3	Prionospio pygmaea	2.95828
4	Owenia collaris	2.43749
5	Acesta catherinae	1.77076
6	Zygeupolia sp.	1.60412
7	Tellina modesta	1.54162
8	Nephtys sp.	0.79164
9	Goniada littorea	0.72915
10	Synchelidium shoemakeri	0.70831
11	Edotea sublittoralis	0.60415
12	Jassa falcata	0.54165
13	Photis californica	0.47915
14	Ancinus granulatus	0.45833
15	Euphilomedes longiseta	0.45832
16	Rhepoxynius sp. juvenile	0.39583
17	Mediomastus californiensis/ambiseta	0.39582
18	Nematodes unidentified	0.39582
19	Rhepoxynius menziese	0.39582
20	Asthenothaerus villosior	0.37499

SOFT BENTHOS RANKED AVERAGE ABUNDANCE
TOP 20 TAXA W/O CRAB ZOEA

DEPTH=8 PERIOD=PRE-OP LOCATION=L9400

RANK	SPNAME	ABUND
1	Owenia collaris	17.6871
2	Amastigos acutus	10.3121
3	Diastylopsis tenuis	7.6041
4	Tellina modesta	2.7499
5	Prionospio pygmaea	1.5000
6	Edotea sublittoralis	1.3541
7	Goniada littorea	1.3541
8	Nematodes unidentified	0.9791
9	Lepton sp.	0.9583
10	Acesta catherinae	0.9375
11	Zygeupolia sp.	0.9375
12	Jassa falcata	0.9166
13	Euphilomedes longiseta	0.8541
14	Nephtys sp.	0.7291
15	Eohaustorius washingtonianus	0.6667
16	Synchelidium shoemakeri	0.6666
17	Rhepoxynius sp. juvenile	0.6458
18	Tiron tropakis	0.5417
19	Cyclostremella californica	0.5416
20	Typosyllis hyalina	0.5208

SOFT BENTHOS RANKED AVERAGE ABUNDANCE
TOP 20 TAXA W/O CRAB ZOEA

DEPTH=8 PERIOD=OP LOCATION=LO7OO

RANK	SPNAME	ABUND
1	Diastylopsis tenuis	6.41902
2	Prionospio pygmaea	3.94610
3	Prionospio cirrifera	1.81717
4	Ampelisca agassizi	1.19353
5	Jassa falcata	1.04300
6	Nymphon cf. heterodenticulatum	1.01073
7	Spiophanes bombyx	0.99459
8	Solen rosaceus	0.90321
9	Leptocuma forsmani	0.88170
10	Amastigos acutus	0.82793
11	Pectinaria californiensis	0.80106
12	Acesta catherinae	0.79567
13	Mediomastus californiensis/ambiseta	0.78493
14	Dendraster excentricus	0.77417
15	Nematodes unidentified	0.75266
16	Atylus tridens	0.75266
17	Rhepoxynius sp. A	0.72040
18	Synchelidium shoemakeri	0.59138
19	Nephtys sp.	0.59138
20	Scoloplos armiger	0.53762

SOFT BENTHOS RANKED AVERAGE ABUNDANCE
TOP 20 TAXA W/O CRAB ZOEA

DEPTH=8 PERIOD=OP LOCATION=L1100

RANK	SPNAME	ABUND
1	Diastylopsis tenuis	4.53746
2	Prionospio pygmaea	4.52678
3	Amastigos acutus	2.34405
4	Leptocuma forsmani	1.21503
5	Euphilomedes longiseta	1.11826
6	Ampelisca agassizi	1.02148
7	Rhepoxynius sp. A	0.87093
8	Scoloplos armiger	0.80105
9	Synchelidium shoemakeri	0.78493
10	Spiophanes bombyx	0.76342
11	Pectinaria californiensis	0.62902
12	Nymphon cf. heterodenticulatum	0.62364
13	Jassa falcata	0.56987
14	Dendraster excentricus	0.53762
15	Atylus tridens	0.52688
16	Rhepoxynius sp. juvenile	0.50536
17	Nemertina unidentified	0.47849
18	Paraonella platybranchiata	0.47310
19	Nematodes unidentified	0.45161
20	Prionospio cirrifera	0.44084

SOFT BENTHOS RANKED AVERAGE ABUNDANCE
TOP 20 TAXA W/O CRAB ZOEA

DEPTH=8 PERIOD=OP LOCATION=L1900

RANK	SPNAME	ABUND
1	Diastylopsis tenuis	7.50500
2	Prionospio pygmaea	3.72028
3	Amastigos acutus	3.53759
4	Ampelisca agassizi	2.44083
5	Prionospio cirrifera	2.16123
6	Euphilomedes longiseta	1.72037
7	Nematodes unidentified	1.63437
8	Acesta catherinae	1.35480
9	Jassa falcata	1.30103
10	Solen rosaceus	1.03225
11	Synchelidium shoemakeri	0.98921
12	Tellina modesta	0.88169
13	Rhepoxynius sp. A	0.79567
14	Caprella angusta	0.68817
15	Mediomastus californiensis/ambiseta	0.68815
16	Tiron biocellata	0.65590
17	Leptocuma forsmani	0.65589
18	Dendraster excentricus	0.63439
19	Atylus tridens	0.63439
20	Rhepoxynius menziesi	0.62363

SOFT BENTHOS RANKED AVERAGE ABUNDANCE
TOP 20 TAXA W/O CRAB ZOEA

DEPTH=8 PERIOD=OP LOCATION=L3350

RANK	SPNAME	ABUND
1	Diastylopsis tenuis	5.37617
2	Prionospio pygmaea	3.52683
3	Ampelisca agassizi	2.74183
4	Solen rosaceus	2.26877
5	Euphilomedes longiseta	1.55910
6	Acesta catherinae	1.50534
7	Rhepoxynius abronius	1.39781
8	Spiophanes bombyx	1.23113
9	Rhepoxynius sp. A	1.20426
10	Eohaustorius washingtonianus	1.05373
11	Amastigos acutus	1.02147
12	Jassa falcata	0.95696
13	Dendraster excentricus	0.95159
14	Rhepoxynius menziese	0.82793
15	Scoloplos armiger	0.72040
16	Magelona sacculata	0.69890
17	Pectinaria californiensis	0.65590
18	Rhepoxynius sp. juvenile	0.65589
19	Leptocuma forsmani	0.60214
20	Nephtys sp.	0.59137

SOFT BENTHOS RANKED AVERAGE ABUNDANCE
TOP 20 TAXA W/O CRAB ZOEA

DEPTH=8 PERIOD=OP LOCATION=L6700

RANK	SPNAME	ABUND
1	Diastylopsis tenuis	4.13966
2	Acesta catherinae	2.17200
3	Pista disjuncta	2.16126
4	Prionospio pygmaea	2.09673
5	Solen rosaceus	1.59139
6	Jassa falcata	1.54827
7	Amastigos acutus	1.47308
8	Magelona sacculata	1.04299
9	Nematodes unidentified	1.02148
10	Rhepoxynius abronius	0.96771
11	Rhepoxynius sp. A	0.87095
12	Rhepoxynius menziese	0.60213
13	Dendraster excentricus	0.56987
14	Nemertina unidentified	0.51611
15	Nephtys sp.	0.50537
16	Rhepoxynius sp. juvenile	0.50535
17	Aoroides inermis	0.48386
18	Tharyx sp.	0.45161
19	Spiophanes bombyx	0.44623
20	Ampelisca agassizi	0.44085

SOFT BENTHOS RANKED AVERAGE ABUNDANCE
TOP 20 TAXA W/O CRAB ZOEA

DEPTH=8 PERIOD=OP LOCATION=L9400

RANK	SPNAME	ABUND
1	Diastylopsis tenuis	3.45156
2	Prionospio pygmaea	2.27952
3	Solen rosaceus	2.09671
4	Acesta catherinae	1.91393
5	Jassa falcata	1.39779
6	Pista disjuncta	1.31180
7	Siliqua lucida	1.22580
8	Nematodes unidentified	1.06449
9	Amastigos acutus	1.04297
10	Solen sicarius	0.96766
11	Rhepoxynius menziese	0.90322
12	Scoloplos armiger	0.89246
13	Rhepoxynius sp. A	0.78492
14	Magelona sacculata	0.73117
15	Dendraster excentricus	0.70965
16	Spiophanes bombyx	0.68815
17	Prionospio cirrifera	0.65589
18	Tellina modesta	0.63439
19	Rhepoxynius abronius	0.60213
20	Leptocuma forsmani	0.59137

SOFT BENTHOS RANKED AVERAGE ABUNDANCE
TOP 20 TAXA W/O CRAB ZOEA

DEPTH=18 PERIOD=PRE-OP LOCATION=LO700

RANK	SPNAME	ABUND
1	Mediomastus californiensis/ambiseta	15.0829
2	Nephtys sp.	5.6977
3	Jassa falcata	5.1040
4	Nematodes unidentified	5.0208
5	Prionospio pygmaea	4.6249
6	Tauberia gracilis	3.3541
7	Rutiderma rostrata	2.2708
8	Tellina modesta	2.1458
9	Acuminodeutopus heteruropus	1.8333
10	Amphideutopus oculatus	1.5417
11	Leptochelia dubia	1.2083
12	Ampelisca brevisimulata	1.2083
13	Typosyllis hyalina	1.0625
14	Lumbrineris sp. D	1.0625
15	Edwardsia sp. A (orange w/ white base)	1.0624
16	Acesta catherinae	0.9375
17	Hemilamprops californica	0.8750
18	Hemichordate unidentified	0.7917
19	Rudilemboides stenopropodus	0.7292
20	Amphiodia spp. juvenile	0.6875

SOFT BENTHOS RANKED AVERAGE ABUNDANCE
TOP 20 TAXA W/O CRAB ZOEA

DEPTH=18 PERIOD=PRE-OP LOCATION=L1100

RANK	SPNAME	ABUND
1	Mediomastus californiensis/ambiseta	13.4372
2	Tauberia gracilis	6.4582
3	Prionospio pygmaea	4.5624
4	Nematodes unidentified	3.9374
5	Nephtys sp.	3.7916
6	Tellina modesta	1.4375
7	Acesta catherinae	1.2499
8	Rhepoxynius sp. juvenile	1.0416
9	Edwardsia sp. A (orange w/ white base)	1.0416
10	Rutiderma rostrata	1.0416
11	Lumbrineris sp. D	1.0208
12	Typosyllis hyalina	0.9999
13	Hemilamprops californica	0.9583
14	Leptochelia dubia	0.9375
15	Acuminodeutopus heteruropus	0.9375
16	Amphiodia spp. juvenile	0.7917
17	Jassa falcata	0.7708
18	Nereis procera	0.7500
19	Aricidea wassi	0.7083
20	Ampelisca agassizi	0.6875

SOFT BENTHOS RANKED AVERAGE ABUNDANCE
TOP 20 TAXA W/O CRAB ZOEA

DEPTH=18 PERIOD=PRE-OP LOCATION=L1900

RANK	SPNAME	ABUND
1	Mediomastus californiensis/ambiseta	18.1869
2	Nematodes unidentified	4.7916
3	Nephtys sp.	4.7083
4	Tauberia gracilis	4.1249
5	Rutiderma rostrata	3.1041
6	Tellina modesta	2.7916
7	Prionospio pygmaea	2.3958
8	Acuminodeutopus heteruropus	2.2915
9	Typosyllis hyalina	2.2083
10	Aricidea wassi	1.9375
11	Leptochelia dubia	1.9374
12	Rhepoxynius sp. juvenile	1.8125
13	Acesta catherinae	1.7500
14	Amphideutopus oculatus	1.5833
15	Amphiodia spp. juvenile	1.4791
16	Nereis procera	1.4583
17	Jassa falcata	1.2083
18	Lumbrineris sp.	1.1875
19	Syncheilidium shoemakeri	1.0833
20	Tharyx sp.	1.0625

SOFT BENTHOS RANKED AVERAGE ABUNDANCE
TOP 20 TAXA W/O CRAB ZOEA

DEPTH=18 PERIOD=PRE-OP LOCATION=L3350

RANK	SPNAME	ABUND
1	Mediomastus californiensis/ambiseta	11.4787
2	Nephtys sp.	3.8749
3	Nematodes unidentified	3.7708
4	Tauberia gracilis	3.0207
5	Leptochelia dubia	2.7083
6	Tellina modesta	2.5208
7	Acuminodeutopus heteruropus	2.3750
8	Prionospio pygmaea	2.1458
9	Aricidea wassi	2.0208
10	Amphideutopus oculatus	1.4583
11	Amphiodia spp. juvenile	1.2916
12	Rutiderma rostrata	1.2916
13	Typosyllis hyalina	1.2500
14	Lumbrineris sp.	1.2083
15	Rhepoxynius sp. juvenile	1.2083
16	Acesta catherinae	1.1458
17	Lumbrineris sp. D	1.0625
18	Nereis procera	0.9166
19	Jassa falcata	0.7500
20	Rudilemboides stenopropodus	0.7500

SOFT BENTHOS RANKED AVERAGE ABUNDANCE
TOP 20 TAXA W/O CRAB ZOEA

DEPTH=18 PERIOD=PRE-OP LOCATION=L6700

RANK	SPNAME	ABUND
1	Mediomastus californiensis/ambiseta	12.2702
2	Nematodes unidentified	4.8957
3	Leptochelia dubia	3.7913
4	Amphideutopus oculatus	3.7707
5	Prionospio pygmaea	3.4583
6	Nephtys sp.	2.7916
7	Rutiderma rostrata	2.7916
8	Acuminodeutopus heteruropus	2.6875
9	Tellina modesta	2.3749
10	Tauberia gracilis	2.1666
11	Rhepoxynius sp. juvenile	1.8125
12	Typosyllis hyalina	1.4791
13	Jassa falcata	1.3958
14	Aricidea wassi	1.1874
15	Amphiodia spp. juvenile	1.1250
16	Lumbrineris sp. D	1.0416
17	Acesta catherinae	1.0416
18	Rudilemboides stenopropodus	1.0208
19	Rhepoxynius menziese	0.9999
20	Ampelisca cristata	0.9791

SOFT BENTHOS RANKED AVERAGE ABUNDANCE
TOP 20 TAXA W/O CRAB ZOEA

DEPTH=18 PERIOD=PRE-OP LOCATION=L9400

RANK	SPNAME	ABUND
1	Mediomastus californiensis/ambiseta	11.5206
2	Nematodes unidentified	4.0833
3	Leptochelia dubia	3.9997
4	Nephtys sp.	3.7916
5	Tellina modesta	3.4583
6	Acuminodeutopus heteruropus	3.3750
7	Prionospio pygmaea	3.0416
8	Rutiderma rostrata	2.4791
9	Rhepoxynius sp. juvenile	2.3958
10	Typosyllis hyalina	1.6666
11	Amphideutopus oculatus	1.6250
12	Rhepoxynius variatus	1.3125
13	Rhepoxynius menziese	1.1875
14	Aricidea wassi	1.1041
15	Rhepoxynius daboius	1.0000
16	Synchelidium shoemakeri	1.0000
17	Rudilemboides stenopropodus	0.9583
18	Hemilamprops californica	0.9583
19	Anotomastus gordiodes	0.8958
20	Tauberia gracilis	0.8541

SOFT BENTHOS RANKED AVERAGE ABUNDANCE
TOP 20 TAXA W/O CRAB ZOEA

DEPTH=18 PERIOD=OP LOCATION=LO700

RANK	SPNAME	ABUND
1	Mediomastus californiensis/ambiseta	17.3920
2	Tauberia gracilis	14.1448
3	Nematodes unidentified	13.3168
4	Acesta catherinae	6.2364
5	Acuminodeutopus heteruropus	6.0859
6	Leptochelia dubia	4.5859
7	Prionospio pygmaea	3.5698
8	Tellina modesta	2.9032
9	Euchone hancocki	2.2580
10	Nephtys cornuta franciscana	2.1290
11	Prionospio cirrifera	1.9354
12	Harpacticoids	1.9247
13	Argissa hamatipes	1.7688
14	Nemertina unidentified	1.6989
15	Rutiderma rostrata	1.6827
16	Aricidea wassi	1.5053
17	Synchelidium shoemakeri	1.3709
18	Ampelisca agassizi	1.3226
19	Ampelisca cristata microdentata	1.1505
20	Ampelisca brevisimulata	1.0806

SOFT BENTHOS RANKED AVERAGE ABUNDANCE
TOP 20 TAXA W/O CRAB ZOEA

DEPTH=18 PERIOD=OP LOCATION=L1100

RANK	SPNAME	ABUND
1	Mediomastus californiensis/ambiseta	12.1232
2	Tauberia gracilis	9.2418
3	Nematodes unidentified	6.8762
4	Acuminodeutopus heteruropus	5.2096
5	Acesta catherinae	4.7150
6	Tellina modesta	3.2795
7	Prionospio pygmaea	3.2795
8	Leptochelia dubia	3.2688
9	Nephtys cornuta franciscana	2.1128
10	Aricidea wassi	1.5860
11	Nemertina unidentified	1.5806
12	Rutiderma rostrata	1.5215
13	Harpacticoids	1.2903
14	Prionospio cirrifera	1.2795
15	Synchelidium shoemakeri	1.2096
16	Parasterope hulingsi	1.1559
17	Euchone hancocki	1.1505
18	Amphideutopus oculatus	1.0322
19	Ampelisca brevisimulata	1.0161
20	Rudilemboides stenopropodus	1.0000

SOFT BENTHOS RANKED AVERAGE ABUNDANCE
TOP 20 TAXA W/O CRAB ZOEA

DEPTH=18 PERIOD=OP LOCATION=L1900

RANK	SPNAME	ABUND
1	Mediomastus californiensis/ambiseta	10.7955
2	Acuminodeutopus heteruropus	7.8386
3	Nematodes unidentified	7.5429
4	Leptochelia dubia	6.5697
5	Acesta catherinae	3.9408
6	Tellina modesta	3.3064
7	Prionospio pygmaea	3.1505
8	Aricidea wassi	2.1075
9	Harpacticoids	1.8817
10	Synchelidium shoemakeri	1.8655
11	Jassa falcata	1.6881
12	Tauberia gracilis	1.6505
13	Amphideutopus oculatus	1.6182
14	Rhepoxynius stenodes	1.5376
15	Pista disjuncta	1.5053
16	Euchone hancocki	1.5053
17	Nephtys cornuta franciscana	1.4300
18	Rudilemboides stenopropodus	1.4085
19	Nemertina unidentified	1.2903
20	Nebalia pugettensis	1.1989

SOFT BENTHOS RANKED AVERAGE ABUNDANCE
TOP 20 TAXA W/O CRAB ZOEA

---------- DEPTH=18 PERIOD=OP LOCATION=L3350 ----------

RANK	SPNAME	ABUND
1	Leptochelia dubia	8.72540
2	Mediomastus californiensis/ambiseta	6.75254
3	Acuminodeutopus heteruropus	5.95144
4	Nematodes unidentified	5.75263
5	Tellina modesta	4.38160
6	Prionospio pygmaea	3.54293
7	Acesta catherinae	2.93002
8	Rhepoxynius stenodes	2.19347
9	Euchone hancocki	1.81719
10	Jassa falcata	1.64511
11	Synchelidium shoemakeri	1.64511
12	Aricidea wassi	1.63975
13	Nemertina unidentified	1.44081
14	Amphideutopus oculatus	1.40855
15	Ampelisca brevisimulata	1.35479
16	Harpacticoids	1.13976
17	Pista disjuncta	1.13975
18	Tauberia gracilis	1.12900
19	Nephtys cornuta franciscana	1.08597
20	Rhepoxynius sp. juvenile	1.02684

SOFT BENTHOS RANKED AVERAGE ABUNDANCE
TOP 20 TAXA W/O CRAB ZOEA

DEPTH=18 PERIOD=OP LOCATION=L6700

RANK	SPNAME	ABUND
1	Leptochelia dubia	9.46748
2	Acuminodeutopus heteruropus	6.59125
3	Mediomastus californiensis/ambiseta	5.86007
4	Nematodes unidentified	4.58057
5	Tellina modesta	4.42993
6	Acesta catherinae	2.97843
7	Pista disjuncta	2.43545
8	Prionospio pygmaea	2.39778
9	Synchelidium shoemakeri	2.02146
10	Aricidea wassi	1.78490
11	Euchone hancocki	1.60750
12	Rhepoxynius stenodes	1.43544
13	Amphideutopus oculatus	1.38169
14	Jassa falcata	1.34404
15	Nemertina unidentified	1.14512
16	Ampelisca brevisimulata	1.13974
17	Rhepoxynius menziese	1.11287
18	Harpacticoids	1.02147
19	Rhepoxynius sp. juvenile	0.99996
20	Argissa hamatipes	0.94621

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APPENDIX M. COMMENTS ON DIFFERENCES BETWEEN CONTRACTOR'S AND MRC'S SOFT BENTHOS REPORTS

This is a discussion of differences in the results presented in the contractor's (MEC) Final Report and the MRC report. However, we stress that the conclusions presented in both report are similar. Both reports conclude there was a general increase in the abundance of the soft benthos in the vicinity of SONGS relative to Control in the After period.

MEC performed a cluster analysis comparing the species composition of samples from all sampling locations and both sampling periods. The MRC did not repeat this analysis but refer to the results presented in MEC's report. This analysis suggests that a change in species composition occurred throughout the study area from the Before to the After period. Furthermore, it suggests that the two locations nearer the diffusers were somewhat different in species composition in the After period when compared to the other sampling locations. This latter pattern is corroborated by results of other analyses performed by both MEC and the MRC.

The analysis of changes in relative abundance among the individual taxa, pooled taxa, and trophic motility groups differed somewhat between the two reports. The MRC, for reasons discussed in the report, chose to analyze the abundance data with a multivariate analysis of variance, comparing the four locations nearer the diffusers to a Control composed of the means abundances from the two far locations. This analysis uses all sampling stations and allows the determination of the areal extent of SONGS effects. MEC, in their principal analysis, used a BACIP design comparing mean abundances at the two nearest locations to the diffusers (700 and 1100 meters), their "Impact" site, to mean abundances at the two farthest locations (6700 and 9400 meters), their "Control" site. Data from the intermediate locations (1900 and 3250 meters) were not used in this analysis.

This difference in the analytical design accounts, in part, for the different number of surveys used in MEC's and MRC's analyses of abundance changes. In addition to those surveys used by the MRC, MEC used data in their BACIP analysis from 10 surveys collected before September, 1980. On these early surveys only one sample was collected within the "Impact" area at variable distances out to 1100 meters from SONGS and another was collected at "Control" at variable distances 6700 meters or more from SONGS. MEC used these surveys because their BACIP analysis, unlike the MRC's, compared values averaged over the "Impact" and "Control" areas. The MRC concluded that these early surveys, collected while dredging and other diffuser construction activities were taking place, were not likely to be representative of the long-term relationship between Impact and Control in the Before period.

Three other surveys, two from the Before and one from the After, used by MEC were excluded from the MRC's analysis. Samples from these surveys were treated with a laboratory protocol different from all others. While MEC acknowledges that the different protocols gave "counts that were not comparable" (the counts were greater) they included the samples to "increase statistical power" after performing separate BACIP analyses on data sets with and without the samples in question and finding no differences in the results. The MRC concluded that, in fact, including these samples was likely to decrease the power of the test by introducing an additional source of variance.

Other differences in the results concerning abundance changes stem from a difference in data manipulations before analysis. When testing for BACIP results, MEC used non-transformed data. However, in some cases, this necessitated removing individual data points (influence points) from the analysis in order to obtain additivity. The MRC feels that the use of log-transformations is more appropriate and our results are based on such transformations.

There were differences between the two reports in the specific individual taxa tested for abundances changes. The list of taxa tested by MEC were those that, based on Before data, were expected to have the greatest chance of detecting an effect in the After period. However, this assumed that the frequency of occurrence would not change radically from Before to After. However, in some cases such changes did occur and those taxa that occurred infrequently in the After period were excluded from the MRC analysis. On the other hand, some taxa were included in the MRC analysis that were not tested by MEC. Furthermore, MRC also tested several pooled taxa and trophic motility groups not tested by MEC.

MRC presents and discusses the trends in the After deltas; MEC did not.