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# **Characteristics of Benthic Sediments From Areas Open and Closed to Bottom Trawling in the Gulf of Alaska**

by  
R. P. Stone and M. M. Masuda

**U.S. DEPARTMENT OF COMMERCE**  
National Oceanic and Atmospheric Administration  
National Marine Fisheries Service  
Alaska Fisheries Science Center

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## *Appendices*

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## ABSTRACT

This report documents the sedimentary, biogeochemical, and infaunal characteristics of sediments from areas that were open or closed to bottom trawling in the central Gulf of Alaska. Sediment samples were collected from three sites during two cruises in 1998 and 1999. Bottom trawling had been prohibited in the closed areas for 11-12 years. Trawling intensity in the open areas was estimated at 11%-29% of the seafloor per year for the 5 years preceding this study. We found evidence that the sedimentary and biogeochemical characteristics of the seafloor have been altered to some degree by ambient levels of bottom trawling. Total organic carbon was higher in open areas at Site 1-1998 and at Site 2. Median grain size differed between open and closed areas at Sites 2 and 3, as did sediment sorting at Site 3. Grain size analysis at Site 3 provided evidence of a natural habitat gradient that may have been present prior to the closure in 1987. No significant differences in infauna measures of community structure were found between open and closed areas, other than a higher Simpson's index of dominance in the open area at Site 2. Differences in sediment characteristics were subtle and minor, and no clear, repeated pattern of effects occurred among the three sites. Our results indicate that the effect of mobile fishing gears (i.e., otter trawls and scallop dredges) on sediment properties and infaunal communities at the three sites examined and at present levels of fishing is minor and not cause for serious concern at the present time. These results, used in conjunction with those on the effects of trawling on the epifaunal component of these communities, will provide resource managers with some insight into how current trawling activities in the Gulf of Alaska are affecting this important habitat. Infauna data appendices are included.



CONTENTS

ABSTRACT ..... iii

INTRODUCTION ..... 1

STUDYAREAS ..... 2

METHODS ..... 4

    Estimation of Trawl Intensity ..... 4

    Experimental Design ..... 5

    Statistical Methods ..... 7

RESULTS ..... 10

    Sediment Samples ..... 10

    Sediment Characteristics ..... 11

    Differences in Sediment Composition ..... 11

    Infaunal Community Structure ..... 13

    Multivariate Analyses ..... 14

DISCUSSION ..... 15

ACKNOWLEDGMENTS ..... 20

CITATIONS ..... 21

TABLES ..... 26

FIGURES ..... 31



## INTRODUCTION

The Magnuson-Stevens Fishery Conservation and Management Act, as amended by the Sustainable Fisheries Act of 1996, requires the regional Fishery Management Councils and the National Marine Fisheries Service (NMFS) to minimize, to the extent practicable, adverse effects from fishing on essential fish habitat (U.S. Department of Commerce 1996). In 1998 and 1999, the Alaska Fisheries Science Center's Auke Bay Laboratory initiated a study to determine the effects of bottom trawling on soft-bottom, low-relief marine habitat on the inner continental shelf of the central Gulf of Alaska (GOA).

Previous studies worldwide have determined that bottom trawling alters seafloor habitat and has direct and indirect effects on benthic communities (Jones 1992, Auster et al. 1996). In addition to removing target species, bottom trawling incidentally removes, displaces, or damages non-target species (Ball et al. 2000) and physically alters the sedimentary, biogeochemical, and biological features of the seafloor (Churchill 1989). The chronic effects of these disturbances are unclear, due to a lack of potential reference sites where bottom trawling has been prohibited for any significant period. The degree of alteration likely depends on many factors, some of which may be area-specific; therefore, generalizing the effects of trawling over wide geographical areas is not prudent. Potential factors include 1) gear type, 2) spatial and temporal intensity of trawling, 3) substrate characteristics, and 4) oceanographic features near the seafloor (Jones 1992).

In April 1987 the North Pacific Fishery Management Council closed two areas near Kodiak Island, Alaska, to bottom trawling (Type 1 Areas). Scallop dredges are also prohibited in Type 1 Areas. These areas were designated as important rearing habitat and migratory corridors for

juvenile and molting crabs. The closures are intended to assist in rebuilding severely depressed Tanner crab (*Chionoecetes bairdi*) and red king crab (*Paralithodes camtschaticus*) stocks. In addition to crab resources, the closed areas and areas immediately adjacent to them support rich stocks of groundfish including flathead sole (*Hippoglossoides elassodon*), butter sole (*Pleuronectes isolepis*), Dover sole (*Microstomus pacificus*), rex sole (*Glyptocephalus zachirus*), Pacific halibut (*Hippoglossus stenolepis*), arrowtooth flounder (*Atheresthes stomias*), Pacific cod (*Gadus macrocephalus*), walleye pollock (*Theragra chalcogramma*), and several species of rockfish (*Sebastes* spp.) (Martin and Clausen 1995). Consequently, bottom trawling occurs immediately adjacent to the closed areas year-round. These closures provided a rare opportunity to study the effects of an active bottom trawl fishery on a productive, deepwater (> 100 m), soft-bottom marine ecosystem. Direct comparisons were possible between areas that were consistently trawled each year and areas where bottom trawling had been prohibited for 11 to 12 years. The proximity of the closed and open sites allowed for comparison of fine-scale infauna and epifauna diversity and abundance, and microhabitat and community structure. This report documents the sedimentary, biogeochemical, and infaunal characteristics of sediments from areas open and closed to bottom trawling at three locations in the central GOA.

## STUDY AREAS

Three study sites were established within and adjacent to Type 1 Area closures (Fig. 1). Study sites were chosen using two criteria: 1) the seafloor consisted of a soft-bottom substrate (i.e., sand, silt, and clay) and was relatively uniform in depth, and 2) trawling had occurred immediately adjacent to the closed area during the preceding 5 years. The first criterion was

considered necessary to reduce variation in habitat and community structure associated with change in depth.

Site 1 was located in an area known as the Chiniak Gully near the northeast side of Kodiak Island (Fig. 1). We investigated this site during June 1998 and August 1999 and established 10 seafloor transects for each year. Maximum trawl intensity at Site 1 was estimated to be 29.4% of the seafloor per year. This site is characterized by strong, bi-directional bottom currents that flow predominately from the northwest and southeast. Depth within the transect area ranged from 105 to 151 m, and the maximum depth differential along any transect was 18 m.

Site 2 was located in an area known as the Two-headed Gully near the southeast corner of Kodiak Island (Fig. 1). Ten seafloor transects were established at this site in June 1998. Maximum trawl intensity at Site 2 was estimated to be 19.4% of the seafloor per year. This site is characterized by moderate to light bottom currents. Depth within the transect area ranged from 125 to 157 m, and the maximum depth differential along any transect was 15 m.

Site 3 was located approximately 22 km south of the Trinity Islands (Fig. 1). Eleven seafloor transects were established at this site in August 1999, and maximum trawl intensity was estimated to be 11.4% of the seafloor per year. This site is characterized by light bottom currents. Depth within the transect area ranged from 124 to 137 m, and the maximum depth differential along any transect was 11 m.

## METHODS

### Estimation of Trawl Intensity

Using retrospective analysis of past trawling activity by the domestic commercial fishing fleet, we identified three areas where moderate bottom trawling had occurred immediately adjacent to Type 1 Area closures (Fig. 1). Trawl frequency was documented at each site for the 5-year period prior to our study through the NMFS North Pacific Groundfish Observer Program (NORPAC database). All observed hauls that originated within approximately 3 km of any point in the transect area were recorded (Fig. 2). Actual distances may have deviated slightly because the latitude and longitude of the starting position for each haul are rounded to the nearest nautical mile (nmi). Number of hauls by the fishing fleet (vessels between 18.3 m and 38 m in length) within each study site was estimated by dividing the observed number of hauls by 30% (percentage of fleet with observers). The number of hauls made by fishing vessels greater than 38 m (125 feet) in length were estimated based on 100% observer coverage. All hauls are accounted for in the NORPAC database. Vessels smaller than 18.3 m (60 feet) in length are not required to participate in the observer program and therefore our estimates do not account for trawling by these vessels.

We calculated the area of the seafloor swept by the trawl footrope (wing spread) based on a width of 17 m. Our calculations do not take into account any portion of the seafloor contacted by the trawl doors (otter boards), sweeps, or bridles. The length of each observed haul was calculated by multiplying the haul duration by an average vessel speed of 7.4 km/h (4 nmi/h). The area of each observed haul was calculated as the product of trawl length and trawl width.

The total area of seafloor swept by footropes within each study area was calculated as the product of the estimated number of hauls and the mean area trawled per haul. Mean area trawled per haul was calculated independently for vessels between 18.3 m and 38 m in length and for those greater than 38 m in length. Values for total area trawled per site were calculated with the assumption that all hauls were nonoverlapping and were made entirely within the study area.

### **Experimental Design**

At each site, we established parallel transects 3,000 m long and approximately 500 m apart. Each transect was bisected by the boundary closure line into equal 1,500 m sections in both the open and closed areas (Fig. 2). At Site 1, transects were 500 m apart during each year, but 250 m apart when all transects (both years) were combined (Fig. 2).

Bottom sediment to a depth of 10 cm was collected with a 0.04 m<sup>2</sup> Shipek sediment sampler (volume 0.003 m<sup>3</sup>) along transects. The volume of each sediment sample was estimated from the measured height of sediment in the sampler. The design for sediment sampling differed during the 2 years of this study for Site 1 as illustrated in Figure 2. In 1998, three samples were collected at 250 m, 1,500 m, and 2,750 m along each transect (Fig. 2). In 1999, sediment was collected at six stations per transect following a systematic design. Stations were 500 m equidistant from a randomly generated starting point within the first 500 m (open end) of each transect, yielding three samples from each side of the trawl closure boundary (Fig. 2). Starting points were independently generated for each transect.

Approximately 100 g was collected from the top 3 cm of each sediment sample to determine grain size, and 1 g from the top 1 cm for total organic carbon content (TOC) analysis. Infauna

were macroscopically removed from those two subsamples. The remaining sediment was gently washed through a 500- $\mu$ m sieve, and retained material was composited with the subsamples and preserved in 4% seawater-buffered formaldehyde containing 0.2 g/L Rose Bengal. In the laboratory, samples were transferred to a 70% ethanol solution, and organisms were enumerated and identified to the lowest possible taxonomic level. Whole animals and identifiable fragments were assigned an abundance value of 1. Annelids were further classified as sedentary or errant since these two forms may differ in their response to disturbance by fishing activities (Brylinsky et al. 1994). Organisms captured in the grab that are considered primarily epibenthic were not included in infauna analyses. These included the dwarf wrymouth (*Cryptacanthodes aleutensis*), juvenile arrowtooth flounders (*Atheresthes stomias*), an amphipod (*Maera danae*), three species of lysianassid amphipods (*Anonyx lilljeborgi*, *Lepidepecreum guarjanovae*, and *Wecomedon* sp.), a crangonid shrimp species, Tanner crabs (*Chionoecetes bairdi*), Pacific lyre crabs (*Hyas lyratus*), hermit crabs (*Pagurus ochotensis* and *Pagurus tanneri*), a brachiopod (*Terebratulina unguilica*), an urchin (*Strongylocentrotus* sp.), sea stars (*Luidia foliolata* and *Ctenodiscus crispatus*), the pale moon snail (*Euspira pallidus*), and sea whips (*Protoptilum* sp.).

Sediments were analyzed for grain size composition by wet sieving and were graded using the Wentworth classification scale (Buchanan 1984). Sorting was calculated with the Inclusive Graphic Standard Deviation method (Buchanan 1984), with higher values indicating greater grain-size variability. The TOC was analyzed with a Dohrmann Carbon Analyzer using a two-point calibration curve. Twenty percent of the carbon samples were analyzed in triplicate to estimate analytical precision. The coefficient of variation ranged between 0.21% and 5.40% for these samples.

## Statistical Methods

Open areas were compared with closed areas using both univariate and multivariate methods. Samples from the three sites were analyzed separately, as sites were selected in part due to site contrasts. First- and second-year samples from Site 1 were also analyzed separately because fewer samples were collected during the first year. Differences in TOC, median grain size, and sediment sorting were tested with analysis of variance (ANOVA) models. We assessed community structure by analyzing the two components of species diversity: species richness and relative abundance of species (Magurran 1988). We used Margalef's index, a function of total numbers of species and individuals, to measure species richness and Simpson's index of dominance to measure the relative abundance of species (Clarke and Warwick 1994). Magurran (1988) notes that species richness and dominance indices are informative in environmental studies and cites several studies that demonstrated reduced species richness and increased dominance in stressed communities. Differences between open and closed areas in terms of species diversity and animal abundance, including total number of sedentary annelids and total number of errant annelids, were also tested with individual ANOVA models. The two-factor models included fixed factor *status* (variable indicating open or closed area) and fixed factor *transect* (blocking variable). In 1998, factor *status* had three levels (open, closed, and boundary) because a sample was collected on the boundary of the open and closed areas. Transects were

assumed independent, and the two-factor ANOVA model used for the data was

$$y_{ij} = \mu_{..} + \alpha_i + \beta_j + \varepsilon_{ij}, \quad (1)$$

where  $\mu_{..}$  is the general mean,  $\alpha_i$  is the effect at the  $i$ -th level of *status*,  $\beta_j$  is the effect of the  $j$ -th *transect*, and  $\varepsilon_{ij}$  are independent  $N(0, \sigma^2)$ .

In 1998, one sample was collected for each level of *status* crossed with *transect*; that is, no replicate samples were collected at both sites. In 1999, three samples were systematically collected on either side of the boundary at fixed distances along a transect at both sites. Because samples may be autocorrelated along a transect, observations for these pseudo-replicate samples were averaged for testing area closure differences. In this case,  $y_{ij}$  in the model (Eq. 1) represented means and the model was fit with weighted least squares, with weights equaling the number of samples averaged. Prior to computation of indices with the software PRIMER (Clarke and Warwick 1994), numbers of individuals per species were standardized to the volume of one full grab (0.003 m<sup>3</sup>). Dependent variables were Box-Cox transformed (Box and Cox 1964; Venables and Ripley 1999), if necessary, with a different power parameter  $\lambda$  estimated in the range [-2, 2] for each variable. One-tailed  $t$ -tests were used to test for reduced species richness (Margalef's index), increased dominance (Simpson's index), and decreased numbers of sedentary annelids in the open area. Concurring with the arguments of McConnaughey et al. (2000), we chose an  $\alpha$ -level of 0.10 over the traditional  $\alpha$ -level of 0.05 to protect against a Type II error.

Sediment grabs less than 50% full were excluded from infauna analyses (see RESULTS - Sediment Samples), resulting in missing data for 1998 (Sites 1 and 2) when grab samples were not replicated. We imputed missing data multiple times (Schafer 1997; Schimert et al. 2001) in



the analyses of species diversity (variables richness and dominance) and grouped taxa (all individuals, and sedentary and errant annelids). We assumed a Gaussian model for the square-root of the data. For the Site-2 data, we used a noninformative prior (Schafer 1997; Schimert et al. 2001) for parameters of the Gaussian model and a ridge prior for Site-1 data. A data augmentation algorithm was used to generate three imputations from three parallel chains started from bootstrapped initial values (Schafer 1997; Schimert et al. 2001). We used Rubin's rule (Rubin 1987; Schafer 1997) to combine parameter estimates of the ANOVA models (Schafer 1997) for statistical inference.

Standardized multispecies counts were analyzed with two multivariate methods: nonmetric multidimensional scaling (MDS) -- a graphical technique -- and multivariate analysis of variance (MANOVA). First, MDS was used to map the  $k$ -variate samples into two dimensions, based on pairwise similarity coefficients computed between samples. Bray-Curtis similarities (Clarke 1993), computed on double-root (or 4<sup>th</sup> root) transformed species counts, were used as measures of distance between samples. Multidimensional scaling fits were assessed by "stress" (Clarke and Warwick 1994), a measure of how well between-sample relationships are preserved in lower dimensions. Second, differences in multispecies and aggregated multispecies counts were tested with MANOVA. Rare species, defined as those that never account for greater than or equal to  $p\%$  (where  $p$  is some small arbitrary value, see Clarke and Warwick 1994) of the abundance in any sample, were excluded from the MANOVA (Field et al. 1982). Species were also aggregated at the higher taxonomic level of phylum. These data-reduction techniques ensured sufficient degrees of freedom to determine significance of tests, and also eliminated many zeroes in the data, improving distributional properties. Because many samples less than 50% full at Site

1 - 1998 and at Site 3 were excluded from analyses, multivariate tests for differences in *status* were not performed (see RESULTS - Sediment Samples).

The dependent variables, arrays of counts, were transformed if necessary, and a battery of normality tests (Aitchison 1986) was performed to verify the model assumption of multivariate normality. Independent variables in the MANOVA models were *status* and *transect*. For each MANOVA, we computed the Wilks' lambda or the likelihood ratio test statistic (Johnson and Wichern 1998). The  $\alpha$ -level was 0.10.

## RESULTS

### Sediment Samples

Sediment samples were collected from 181 of 186 stations during this study. For unknown reasons, we were unable to collect samples from five stations at Site 1 during 1999. The sediment samples collected were not consistently full grab samples; that is, the volume taken by the sampler was at times less than 0.003 m<sup>3</sup>. All samples, including partial grab samples, yielded valid TOC and grain-size composition data, but we questioned the validity of comparing infauna data from samples of unequal volumes. Using linear regression, a positive relationship was found between fullness of grab samples (% volume) and both number of species and number of individuals; that is, fuller grab samples appeared to have more species and individuals (e.g., Fig. 3). To ensure that numbers of species and individuals were comparable among all grab samples, we standardized counts (individuals and species) to a unit volume of one full grab (0.003 m<sup>3</sup>). After standardizing species and individual counts, regression analysis showed a negative

relationship between grab fullness and counts (e.g., Fig. 4), indicating that individuals and species were not uniformly distributed to the depth sampled by a full grab. Partial grabs probably sample only the uppermost few centimeters of the sediment where the majority of the meiofauna and microfauna live (Gray 1981). In general, for grabs greater than or equal to 50% full, standardized numbers of species and individuals were not related to grab fullness. Grabs less than 50% full were therefore excluded from analyses (Table 1). All infauna samples collected at Site 1 in 1999 were greater than or equal to 50% full (Table 1).

### **Sediment Characteristics**

The TOC, median grain size, and sediment sorting varied between the three sites. Mean TOC was highest at Site 2 (7,276 ppm) and lowest at Site 3 (2,718 ppm) (Table 2). Mean TOC was similar at Site 1 in 1998 and 1999 and ranged from 2,537 to 5,116 ppm and from 2,941 to 5,819 ppm, respectively (Table 2). Median grain size ranged from 229  $\mu\text{m}$  (fine sand) at Site 3 to 86  $\mu\text{m}$  (very fine sand) at Site 2 (Table 3). Sediment grain size was relatively uniform at Sites 1 and 2, but spanned a wider range of sizes at Site 3 (Table 3). This variability in grain size is reflected in high sorting coefficients for Site 3 sediments (Table 4). Site 2 had the best-sorted sediments (sorting class = moderately sorted, Gray 1981), whereas Site 3 had the worst-sorted sediments (sorting class = poorly sorted, Gray 1981) (Table 4).

### **Differences in Sediment Composition**

The TOC was significantly higher in the open area than in the closed area at Site 1 in 1998 (Fig. 5A) but not in 1999 (Fig. 5B; Table 5). At Site 2, the open area had significantly higher

TOC than the closed area (Fig. 6A; Table 5). Significant differences in TOC were not detected at Site 3 (Fig. 6B; Table 5).

Significant differences in median grain size and sediment sorting were not detected at Site 1 during either year (Table 5). At Site 2, the closed area had significantly larger median grain size than the open area (Fig. 7A; Table 5). No significant difference in sediment sorting was detected at Site 2 (Table 5). At Site 3, similar to Site 2, the closed area had significantly larger median grain size than the open area (Fig. 7B; Table 5). Sediments in the closed area were also significantly more poorly sorted, as indicated by higher sorting values, than those from the open area (Fig. 8; Table 5).

A prominent demarcation in sediment type was observed from the research submersible *Delta* near the boundary between the open and closed areas at Site 3. This observation was consistent with the differences in sediment grain size measured there. A closer examination of these data revealed an ordering in grain size from the south end (A) to the north end (F) of the transects (Fig. 9). An ordering of samples of *ABC*, in 6 of 11 transects, and also an ordering of *DEF*, in 6 of 11 transects, indicate the existence of a gradient (Fig. 9). If the transects were independent and the ordering of samples were random on either side, then we would expect an ordering of *ABC* or *DEF* in 1 of 6 transects. A randomization test with 10,000 permutations (Edgington 1987) indicated that the probability of observing 6 of 11 transects at random with the ordering *ABC* or *DEF* was very low ( $P = 0.0048$ ), therefore providing strong evidence for the existence of a gradient. If the differences in median grain size were due to a natural habitat gradient, then the grain size values would be expected to gradually change along the transect from the open end

(sample A) to the closed end (sample F) as observed. Conversely, if the differences were due to the trawling closure then one would expect no ordering of the samples on the open side.

### **Infaunal Community Structure**

One hundred and sixty-four unique taxonomic groups of infauna, representing 11 phyla and 102 families, were identified from the sediment samples collected during this study (see Appendices volume). We identified 57% of the taxa to the species level and 88% to the genus level (see Appendices volume). Collectively, the annelids, both errant and sedentary forms, were the most numerous and diverse phylum at all sites. Amphipods and cumaceans were the most common arthropods, while the Amphiuridae were the dominant family of echinoderms at all sites. Several species of bivalves, most notably *Axinopsida serricata* and several species of *Macoma*, were common and abundant at all sites.

Significant differences in infauna abundance and species diversity between open and closed areas were not detected at Site 1 in either year. Site 2 exhibited a significantly higher index of dominance in the open area than in the closed area and no significant difference in species richness or animal abundance. Site 3 was not examined for differences in infauna between closed and open areas because several grab samples less than 50% full were excluded from infauna analyses (see RESULTS - Sediment Samples). There were no significant differences in numbers of sedentary annelids between open and closed areas at Site 1 in either year or at Site 2 (Table 5). There were also no significant differences in total number of errant annelids between open and closed areas at Site 1 in either year or at Site 2 (Table 5).

### Multivariate Analyses

The nonmetric MDS plots indicated no discernible groupings of individual infauna samples by *status* at any of the three sites. Infauna samples that were averaged for the open or closed area by transect, however, appeared to group by transect number (left to right) (e.g., Fig. 10). Stress was high in all cases (0.18 at Site 1-1998, 0.21 at Site 2, 0.14 at Site 1-1999, and 0.18 at Site 3), indicating that the preservation of between-sample relationships in two dimensions was generally poor.

At Site 1-1999, the multivariate tests showed no significant differences between open and closed areas (9-species MANOVA, Wilks' lambda = 0.11, approximate  $F = 0.88 \sim F_{9,1}$ ,  $P = 0.69$ ; 7-phyla MANOVA, Wilks' lambda = 0.11, approximate  $F = 0.88 \sim F_{9,1}$ ,  $P = 0.69$ ). The 88 species at Site 1-1999 were reduced to 9 (*Mediomastus californiensis*, *Lumbrineris luti*, *Leitoscoloplos pugettensis*, *Chaetozone* sp., *Nephtys caeca*, *Diastylopsis dawsoni*, *Amphiodia* sp., *Axinopsida serricata*, and *Nutricola lordi*) by retaining only those species that accounted for greater than or equal to 9% of the abundance in any one sample. Abundances for the 88 species were pooled into 7 phyla: Annelida, Arthropoda, Chordata, Echinodermata, Echiura, Mollusca, and Nemertea.

At Site 2, the multivariate tests showed no significant differences between open and closed areas (11-species MANOVA, Wilks' lambda = 0.11, approximate  $F = 0.56 \sim F_{22,6}$ ,  $P = 0.85$ ; 4-phyla MANOVA, Wilks' lambda = 0.68, approximate  $F = 0.53 \sim F_{8,20}$ ,  $P = 0.82$ ). The 49 species at Site 2 were reduced to 12 (*Magelona berkeleyi*, *Leitoscoloplos pugettensis*, *Chaetozone* sp., *Levinsenia gracilis*, *Hemipodus borealis*, *Nephtys caeca*, *Prionospio steenstrupi*, *Terebellides*

*stroemi*, *Byblis veleronis*, *Nuculana minuta*, *Macoma eliminata*, and *Axinopsida serricata*) by retaining only those species that accounted for greater than or equal to 16% of the abundance in any one sample. *Byblis veleronis* was excluded from the analysis because this species was observed in only one infauna sample. Abundances for the 49 species were pooled into 6 phyla: Annelida, Arthropoda, Echinodermata, Echiura, Mollusca, and Nemertea. Phyla Echinodermata and Echiura were excluded from the analysis because only two animals in each phyla were observed in all of the infauna samples.

## DISCUSSION

We investigated the chronic effects of ambient levels of year-round bottom trawling (otter trawls and to a lesser extent scallop dredges at the open area at Site 1) on the benthos at three deepwater (> 100 m depth) locations in the central GOA. The sites investigated were separated by approximately 200 km, and although universally categorized as soft-bottom habitat, differ with respect to the levels of ambient trawling intensity (11% to 29%), sediment grain-size characteristics, total organic carbon content, depth range, and current regime. So our findings apply to a range of soft-bottom habitats in the central GOA.

We found evidence that the biogeochemical and sedimentary characteristics of the seafloor in areas open to bottom trawling and scallop dredging have been altered to some degree. Total organic carbon was higher in areas open to benthic trawling at Site 1-1998 and at Site 2. We also detected differences in median grain size at Site 2 and differences in grain size and sorting at Site 3. Differences at Site 3 may be associated with a natural habitat gradient that may have been present when trawling was prohibited 12 years earlier. In general, however, differences in

sediment characteristics were subtle and minor, and no clear, repeated pattern of effects occurred among the three sites. Because sediments at Sites 1 and 2 were well sorted, we did not expect to find broad-scale changes in grain-size characteristics. These findings support the concept that surficial sediments are physically mixed by gear in contact with the seafloor. This is particularly evident from our analyses of TOC, where carbon within the sediment is likely transported to the surface during mixing.

Infauna serve many important ecological functions in marine systems, including sediment redistribution (Hall 1994), and are also an important food item for some species of flatfish in our study areas (R. Stone, unpublished data). We found little evidence that changes have occurred to the diversity and abundance of infauna at the three sites investigated. We found no differences in measures of infauna community structure between open and closed areas, except for significantly higher Simpson's index of dominance in the open area at Site 2. These findings were unexpected given the number of studies showing that trawling in soft-sediment communities affects the biomass and community structure of infauna (reviewed in Johnson 2002). Our results may indicate that resident infauna are indeed unaffected by ambient levels of trawling or, alternatively, that our sample sizes were not adequate to detect changes that have occurred. Drabsch et al. (2001) suggest that high spatial variability in infaunal assemblages can exceed changes induced by trawling, even with the most rigorous sampling designs. Infaunal assemblages at our study sites were highly variable even across small (< 500 m) spatial scales. We did not have any measure of natural variability a priori, and were consequently unable to conduct power analyses prior to collecting samples. Our sampling regime was constrained by ship time and the high cost of sample collection but was quite rigorous compared to other



studies. We suspect that these are common limitations of most infauna studies, especially those in deepwater habitats.

Future studies designed to show stress-induced change to infaunal communities should focus on the analysis of indicator species such as polychaetes (Pearson et al. 1983). Polychaetes differ in their response to disturbance such as bottom trawling depending on their life mode; errant species are typically less sensitive to disturbance than sedentary species (Frid et al. 1999). Errant species with small, robust bodies and short life spans adapt well to disturbance (Ball et al. 2000), while tubicolous species are typically sensitive to physical disturbance. Despite the fact that both forms were common at our study sites (see Appendices volume), we detected no difference in their abundance between areas open and closed to bottom trawling.

Although our study sites are some of the more heavily trawled areas in the central GOA (Rose and Jorgensen, in press), trawling intensity is modest compared to other areas worldwide. We estimated trawling intensity at our sites at between 11% and 29% of the seafloor per year for the 5 years preceding this study. The mobile gear fisheries in our three study areas include otter trawls that harvest finfish and scallop dredges that harvest weathervane scallops (*Patinopecten caurinus*; Site 1 only, discussed in Masuda and Stone in prep.); together only a fraction of our study areas were disturbed by this gear annually. Estimates of bottom trawling intensity on soft-bottom marine habitat have been similarly estimated at 1,290% per year in the North Sea (Frid et al. 1999), 300-400% per year on Nantucket Shoals (Churchill 1989), and 150-300% per year on the upper continental margin of northern California (Friedlander et al. 1999).

Although otter trawls may generally be the most environmentally benign type of benthic mobile fishing gear currently used (Hall 1994), many studies have shown that otter trawling on

soft-bottom habitat causes significant changes to the seafloor (reviewed in Johnson 2002). No studies have been conducted on the effects of otter trawling on soft-bottom marine habitat in the GOA, and few studies have been conducted worldwide in similar habitat (sand-silt bottom) and at similar depths (105-157 m); thus, little research exists with which to compare our findings.

Examination of the few studies comparable to ours provided evidence that both corroborated and contradicted our findings. Some evidence exists that areas open to trawling in deepwater areas of the Mediterranean Sea had increased TOC (Smith et al. 2000), while other studies have noted that experimental trawling reduces the abundance of flocculated organic matter on the seafloor (Schwinghamer et al. 1998). Engel and Kvitek (1998) similarly found that lightly trawled areas off the California Coast had a higher percent coverage of flocculated material than heavily trawled areas. These findings indicate that bottom trawls may affect potential carbon sources through two mechanisms: 1) the direct removal or resuspension of accumulated surficial organic material and debris from the seafloor, and 2) vertical redistribution of carbon within the sediment.

We found differences in grain-size characteristics at two study sites where bottom currents were weak. Changes in grain-size characteristics are important because grain-size is an important correlate for total carbon and nitrogen (Mayer et al. 1988). Engel and Kvitek (1998) found no differences in sediment grain-size characteristics between lightly trawled and heavily trawled areas. Likewise, a study of the effects of experimental otter trawling on deep water soft-sediment habitat of the Grand Banks found no effects on grain-size characteristics but did, however, note changes to the physical structure of the sediment (Schwinghamer et al. 1998).

One shortcoming in studying ambient levels of trawling intensity is that estimates of intensity and also of the spatial resolution of areas trawled are generally poor. In this study, for example, we estimated trawl intensity but were unable to precisely map the location of each trawl path because only the start position of each haul is recorded by the fisheries observer. Due to record-keeping limitations of the fisheries observer program, precise locations of hauls within the open areas are unknown (i.e., designated “open” samples may have been collected in areas that were not actually trawled). Additionally, two important assumptions of our study were that the closed and open areas were identical at the time of the fishery closures in 1987 and that natural disturbances have equally affected those areas.

Our results indicate that the effect of mobile fishing gears (i.e., otter trawls and scallop dredges) on sediment properties and infaunal communities at the three sites examined and at present levels of fishing is minor and not cause for serious concern at the present time. These results are specific to these study sites, however, and should be cautiously applied to other areas of the GOA even when detailed habitat inventories become available. In 2001, we initiated a Before-After-Control-Impact (BACI) study at Site 1 using two levels of trawling (1× and 6×) to examine the acute effects of experimental bottom trawling on soft-bottom marine habitat. This design should provide insights into the potential processes (i.e., resuspension and redistribution of sediments) through which mobile fishing gear alters this habitat, and to identify threshold levels of trawling intensity that may cause acute changes in sediment characteristics and infaunal communities. These results used in conjunction with data on the effects of trawling on the epifaunal component of these communities (Stone et al. in press) should provide resource

managers with a comprehensive picture of the effects of current trawling activities on this important habitat in the Gulf of Alaska.

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Table 1. – Numbers of sediment samples that were greater than or equal to 50% full.

“Boundary” samples were not collected at either site sampled in 1999.

Site	Status		
	Open	Boundary	Closed
Site 1-1998	8	9	5
Site 2-1998	9	9	7
Site 1-1999	29	-	26
Site 3-1999	19	-	12

Table 2. – Total organic carbon content (ppm) of sediments collected at three sites near Kodiak Island, Alaska. Boundary samples were not collected in 1999.

Site - Year	Status	<i>n</i>	Mean (SD)	Range
Site 1-1998	All	30	4092 (617)	2537 - 5116
	Open	10	4331 (616)	3404 - 5116
	Closed	10	3827 (684)	2537 - 4586
	Boundary	10	4118 (488)	3402 - 4952
Site 1-1999	All	54	4251 (623)	2941 - 5819
	Open	29	4255 (617)	2998 - 5819
	Closed	25	4264 (642)	2941 - 5256
Site 2-1998	All	30	7276 (1167)	5138 - 9728
	Open	10	8025 (1306)	5987 - 9728
	Closed	10	6693 (911)	5167 - 7563
	Boundary	10	7112 (908)	5138 - 8525
Site 3-1999	All	66	2718 (724)	2110 - 7262
	Open	33	2639 (496)	2127 - 4330
	Closed	33	2796 (898)	2110 - 7262

Table 3.—Median grain size ( $\mu\text{m}$ ) of sediments collected at three sites near Kodiak Island, Alaska.

Boundary samples were not collected in 1999.

Site - Year	Status	<i>n</i>	Mean (SD)	Range
Site 1-1998	All	30	143 (29)	101 - 241
	Open	10	141 (25)	101 - 197
	Closed	10	152 (38)	113 - 241
	Boundary	10	137 (24)	104 - 184
Site 1-1999	All	55	148 (13)	122 - 173
	Open	29	148 (11)	129 - 173
	Closed	26	148 (14)	122 - 171
Site 2-1998	All	30	86 (13)	57 - 120
	Open	10	77 (12)	57 - 96
	Closed	10	97 (9)	87 - 120
	Boundary	10	86 (8)	67 - 93
Site 3-1999	All	66	229 (61)	160 - 493
	Open	33	199 (30)	160 - 306
	Closed	33	260 (69)	187 - 493

Table 4. – Sorting coefficient ( $\phi$ ) of sediments collected at three sites near Kodiak Island, Alaska. Boundary samples were not collected in 1999.

Site - Year	Status	<i>n</i>	Mean (SD)	Range
Site 1-1998	All	30	1.03 (0.13)	0.81 - 1.26
	Open	10	1.00 (0.10)	0.86 - 1.21
	Closed	10	1.05 (0.16)	0.81 - 1.26
	Boundary	10	1.04 (0.08)	0.87 - 1.20
Site 1-1999	All	55	0.97 (0.09)	0.77 - 1.10
	Open	29	0.96 (0.08)	0.78 - 1.07
	Closed	26	0.98 (0.10)	0.77 - 1.10
Site 2-1998	All	30	0.82 (0.07)	0.75 - 1.08
	Open	10	0.81 (0.06)	0.75 - 0.92
	Closed	10	0.84 (0.09)	0.76 - 1.08
	Boundary	10	0.80 (0.05)	0.75 - 0.88
Site 3-1999	All	66	1.23 (0.56)	0.48 - 2.69
	Open	33	0.84 (0.26)	0.48 - 1.76
	Closed	33	1.62 (0.49)	0.82 - 2.69

Table 5. – Summary statistics for testing differences in *status* (variable indicating open or closed area) for sediment characteristics, infauna abundances, and species diversity indices. Statistics include value of the *F* statistic or  $|t|$  statistic (in the case of one-tailed tests), degrees of freedom (df), *P*-values, and multiple  $R^2$  (%). An arrow indicates the direction of the variable in the open area. Significance at  $\alpha = 0.10$  is indicated by an asterisk (\*). Summary statistics for the 1998 boundary samples versus closed and open samples are not reported.

Variable	Site																			
	1					2					3									
	1998		1999			1998		1999			1998		1999							
	<i>F</i> or $ t $	df	<i>P</i>	$R^2$	Open	<i>F</i> or $ t $	df	<i>P</i>	$R^2$	Open	<i>F</i> or $ t $	df	<i>P</i>	$R^2$	Open	<i>F</i> or $ t $	df	<i>P</i>	$R^2$	Open
<b>Sediment</b>																				
TOC	1.73	18	0.10*	31	↑	0.003	1, 9	0.96	36	-	6.18	18	<0.001*	89	↑	1.41	1, 10	0.26	76	-
Median grain size	0.89	18	0.39	42	-	0.09	1, 9	0.77	78	-	4.75	18	<0.001*	66	↓	24.78	1, 10	<0.001*	81	↓
Sorting	1.14	18	0.27	68	-	0.56	1, 9	0.47	80	-	1.22	18	0.24	49	-	70.8	1, 10	<0.001*	89	↓
<b>Species diversity</b>																				
Richness	0.32	18	0.38	42	-	1.01	9	0.83	72	-	0.38	18	0.35	29	-	-	-	-	-	-
Dominance	0.80	18	0.22	63	-	1.69	9	0.94	83	-	1.51	18	0.07*	42	↑	-	-	-	-	-
<b>Grouped taxa</b>																				
All individuals	1.52	18	0.15	81	-	1.45	1, 9	0.26	85	-	1.20	18	0.24	33	-	-	-	-	-	-
Sedentary	0.53	18	0.30	55	-	1.35	9	0.90	85	-	0.62	18	0.73	15	-	-	-	-	-	-
Errant	0.91	18	0.37	35	-	0.52	1, 9	0.49	63	-	1.40	18	0.18	41	-	-	-	-	-	-

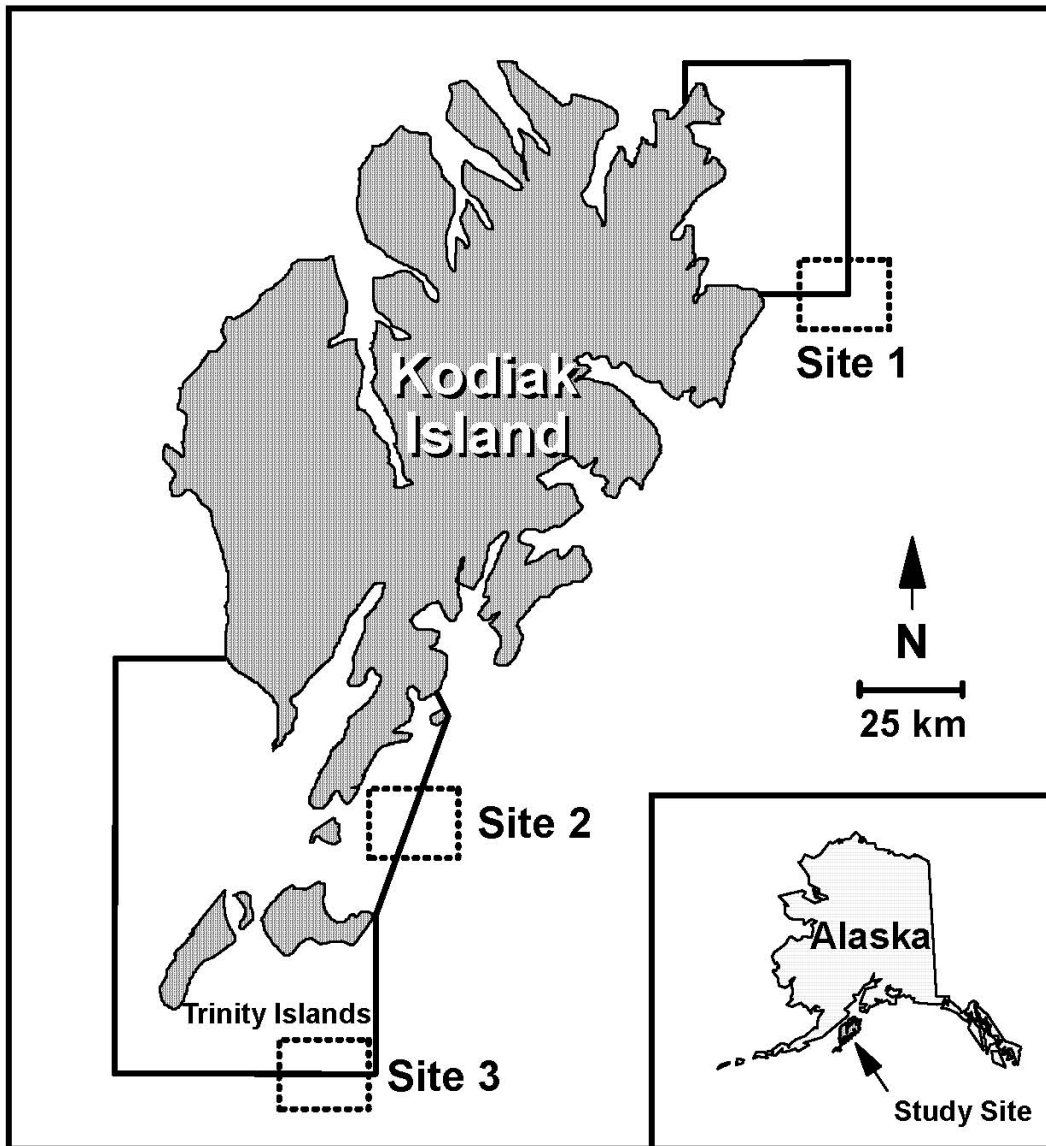


Figure 1.--Map of Kodiak Island, Alaska, showing the three study sites and Type 1 closed areas (solid lines) that prohibit non-pelagic trawling year-round. Study Site 1 is located at the Chiniak Gully. Study Site 2 is located at the Two-headed Gully. Study Site 3 is located south of the Trinity Islands.

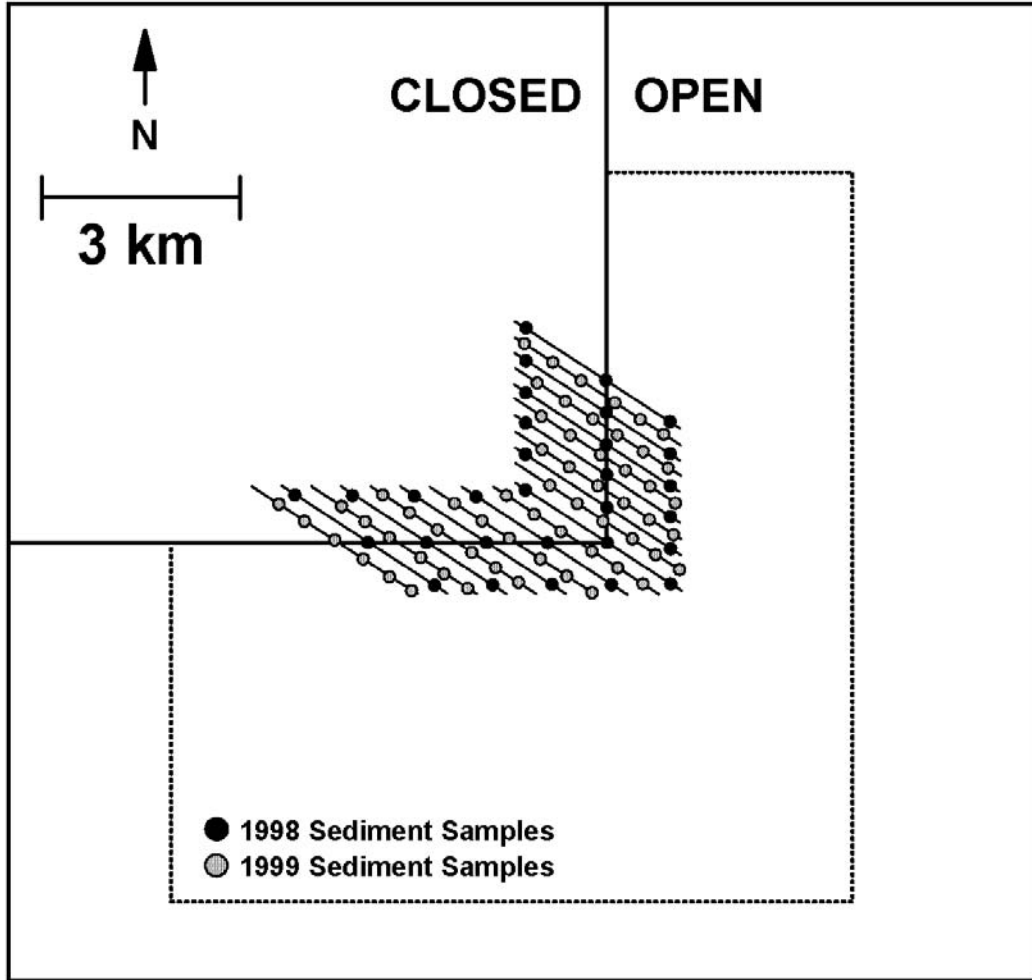


Figure 2.--Sampling designs in 1998 and 1999 for Study Site 1 at the Chiniak Gully, near Kodiak Island, Alaska. Twenty transects bisected the boundary between the open and closed areas for non-pelagic trawling (solid line). Trawl intensity at this site was estimated within an approximate 3-km area of the transects (dashed line).



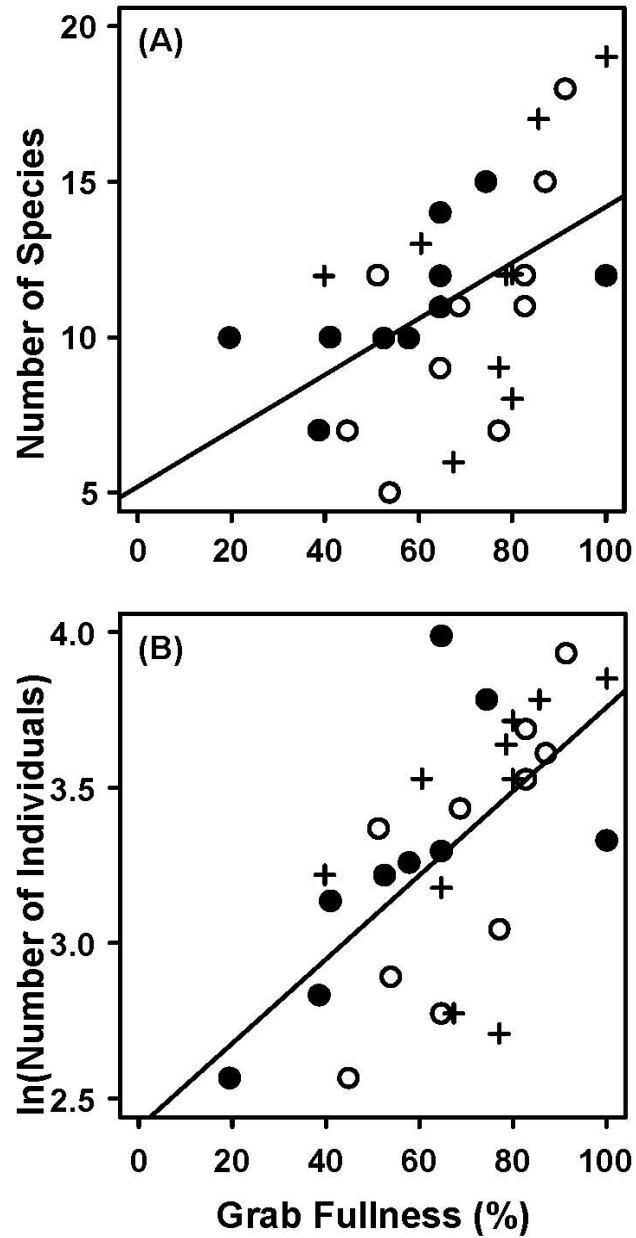


Figure 3.--Relationship between grab fullness (% volume) and (A) number of species and (B) number of individuals for infauna samples collected at Site 2 in 1998. Both relationships were significant. Samples were collected in areas open to trawling (O), closed to trawling (●), and near the boundary (+).

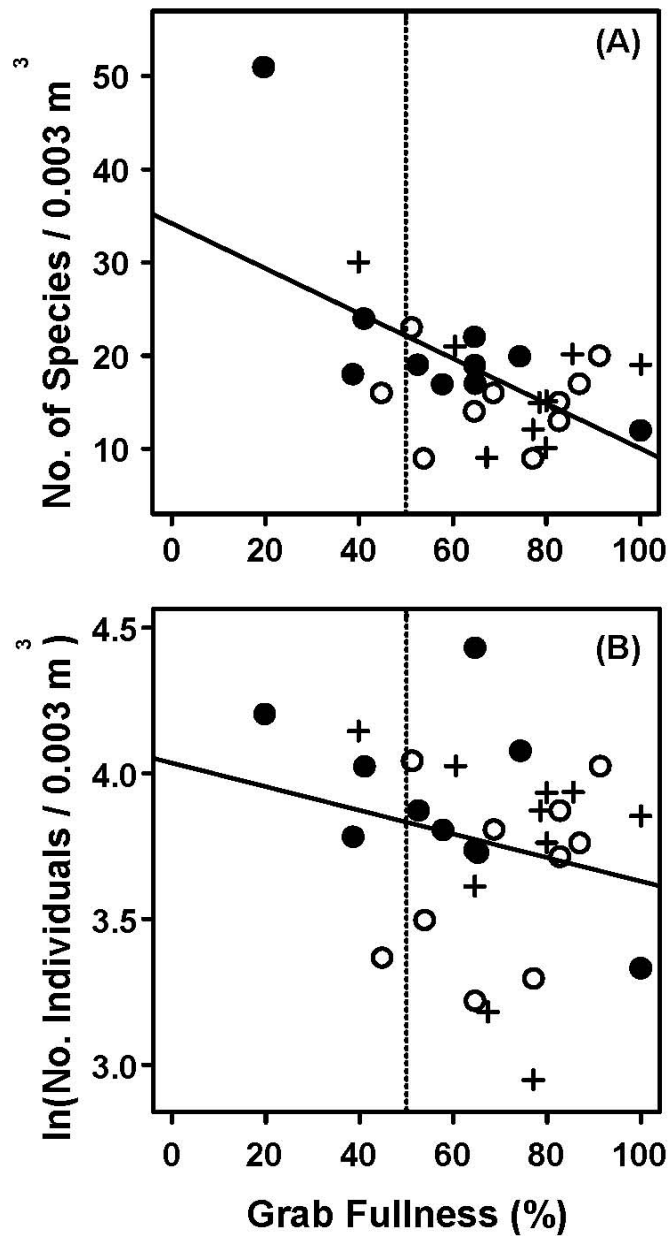


Figure 4.--Relationship between grab fullness (% volume) and (A) number of species and (B) number of individuals for infauna samples collected at Site 2 in 1998. Samples were standardized to the volume of one full grab. Both relationships were insignificant when grab samples less than 50% full (left of dotted line) were excluded. Samples were collected in areas open to trawling (O), closed to trawling (●), and near the boundary (+).

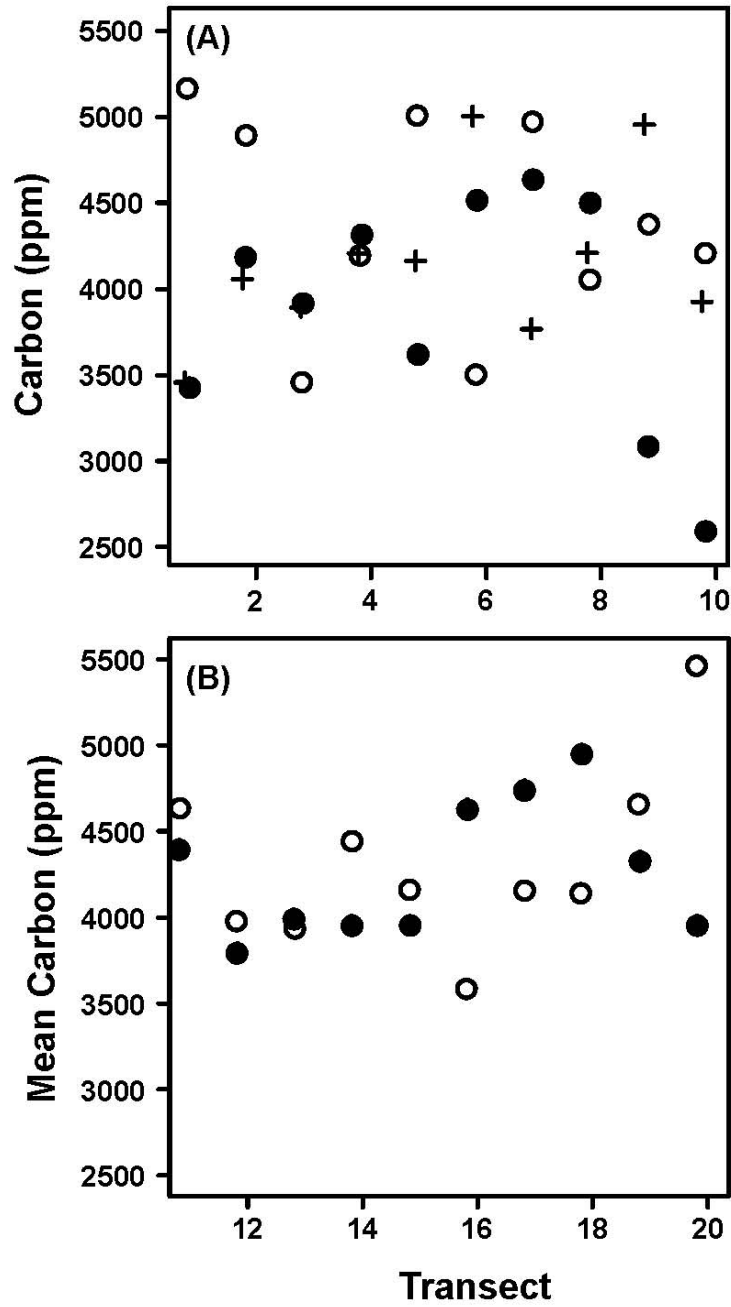


Figure 5.--Total organic carbon (TOC, ppm) was significantly higher in sediments from the open area (O) compared to the closed area (●) at Site 1 in (A) 1998 ( $P = 0.10$ ) but not in (B) 1999 ( $P = 0.96$ ). Samples were also collected near the boundary during 1998 (+).

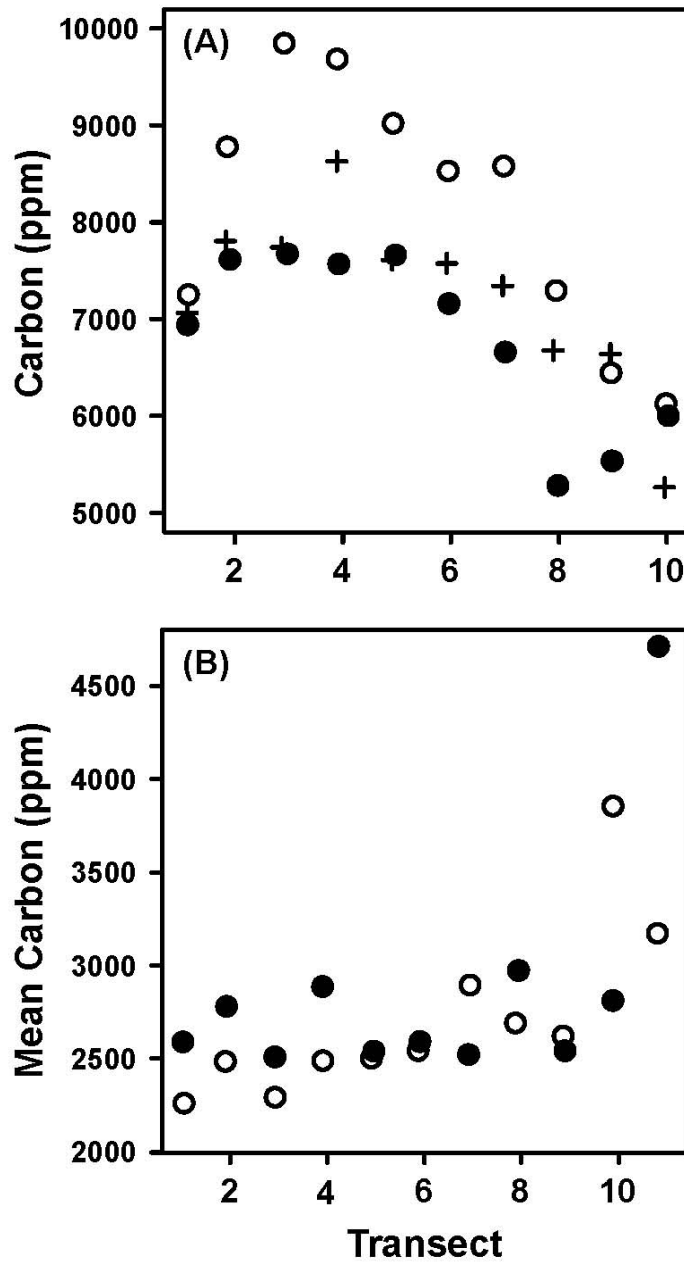


Figure 6.--(A) Total organic carbon (TOC, ppm) was significantly higher ( $P = 0.001$ ) in sediments from the open area (O) compared to the closed area (●) at Site 2 during 1998, but not (B) at Site 3 in 1999 ( $P = 0.26$ ). Samples from open areas are denoted by O, samples from closed areas are denoted by ●, and samples from near the boundary line during 1998, by +.

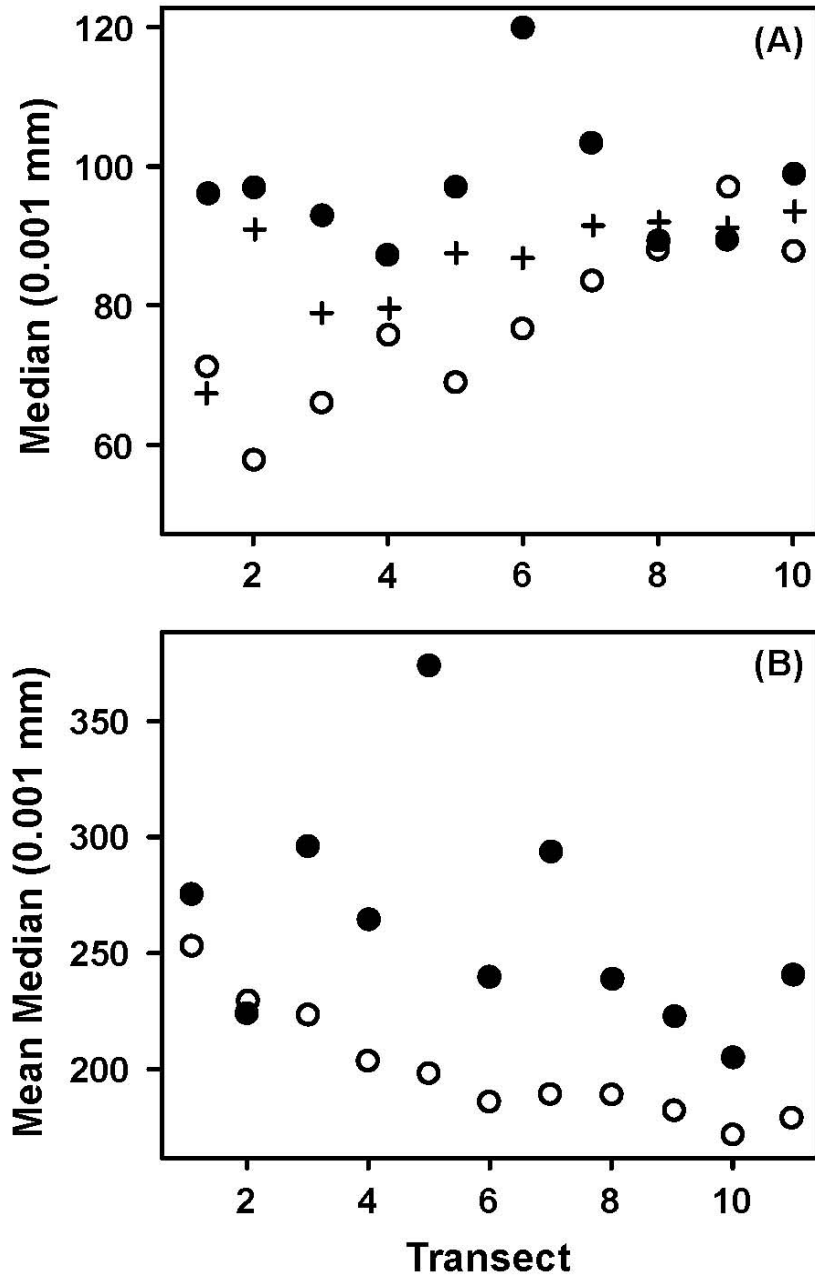


Figure 7.--Median sediment grain size in the closed area was significantly larger compared to the open area at (A) Site 2 in 1998 ( $P < 0.001$ ), and (B) Site 3 in 1999 ( $P < 0.001$ ). Samples from open areas are denoted by O, samples from closed areas by ●, and samples from near the boundary line during 1998, by +.

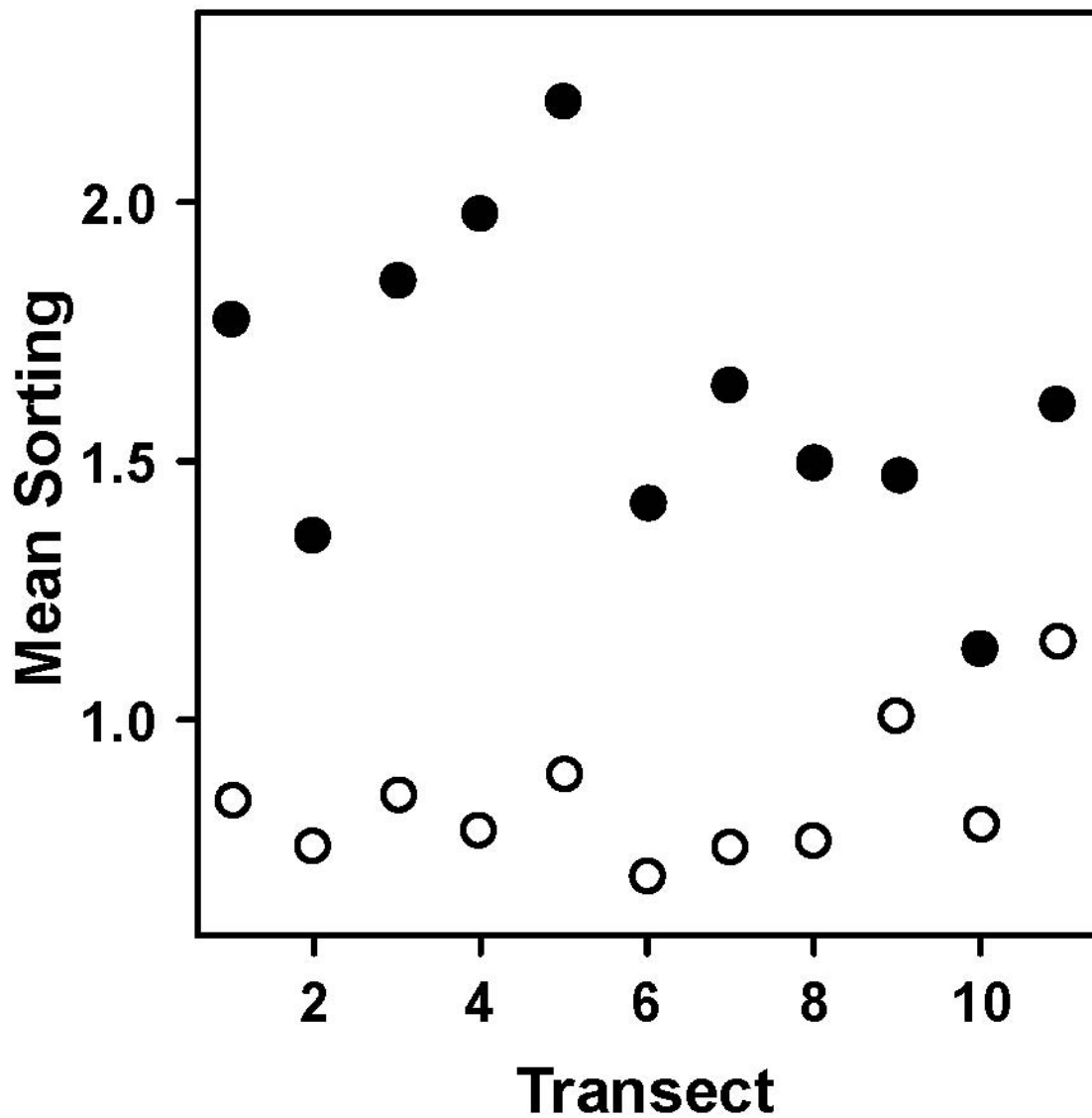


Figure 8.--Sediments from the closed area (●) were significantly more poorly sorted ( $P < 0.001$ ) than from the open area (○) at Site 3 in 1999.

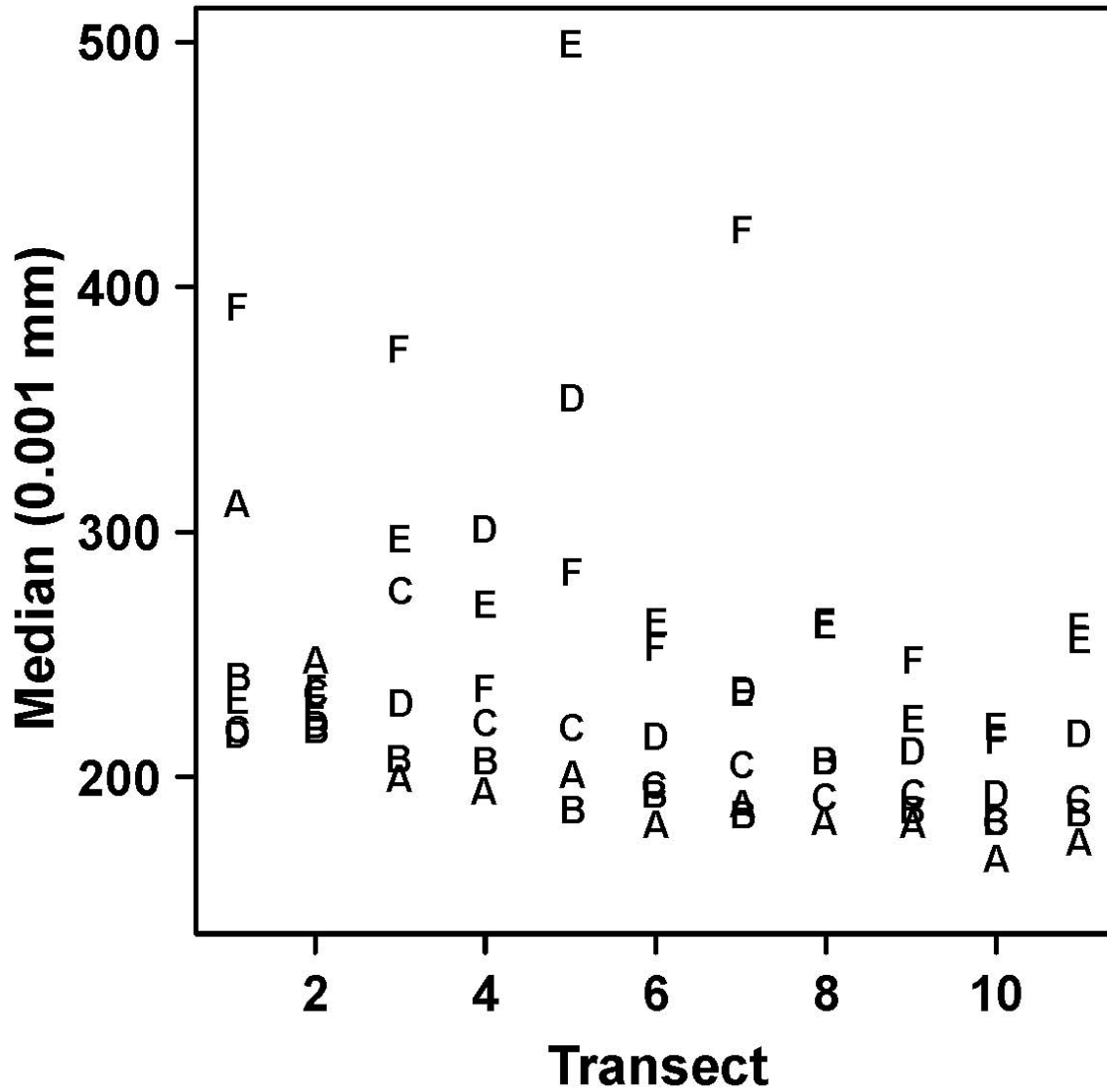


Figure 9.--Median grain size of sediments collected at 6 equidistant (500 m apart) stations along each of 11 transects at Site 3 in 1999. Station A was closest to the south end (farthest into the open area) and station F was closest to the north end (farthest into the closed area) of each transect.

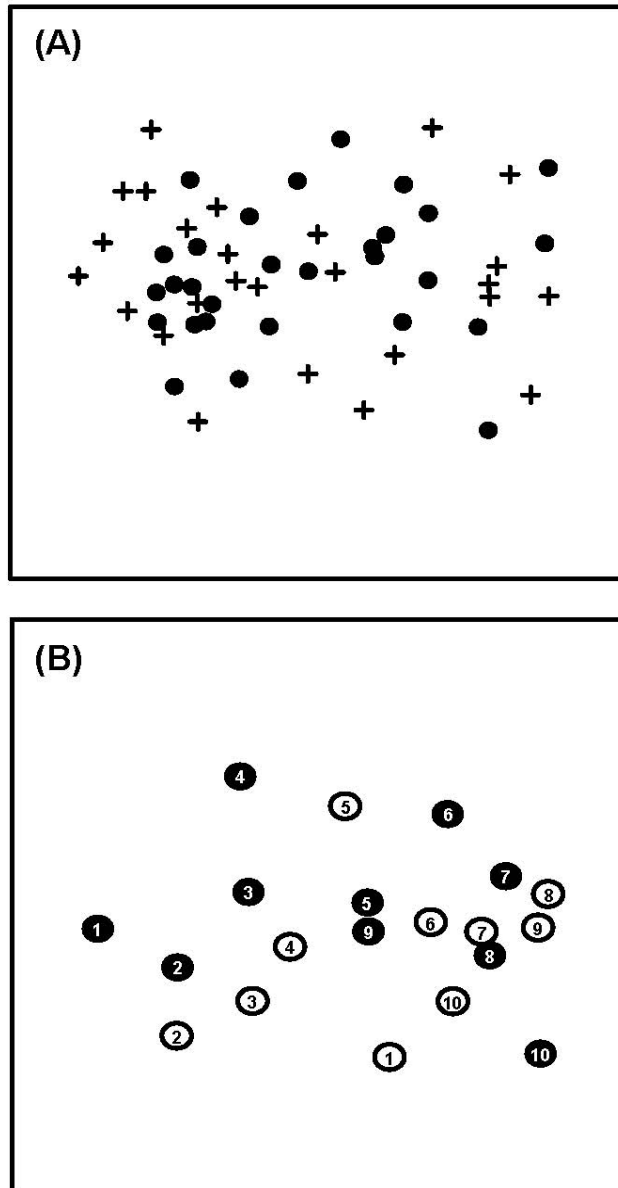


Figure 10.--Bivariate MDS plot produced after calculation of the Bray-Curtis similarity matrix on (A) individual benthic infauna samples (stress = 20%) and (B) transect-averaged benthic infauna samples (stress = 14%) from Site 1 during 1999. Samples from each transect were averaged by *status* (i.e., open or closed). Samples from open areas are denoted by ○, samples from closed areas are denoted by ●, and numbers indicate transect number.





**APPENDICES TO CHARACTERISTICS OF BENTHIC SEDIMENTS FROM AREAS  
OPEN AND CLOSED TO BOTTOM TRAWLING IN THE GULF OF ALASKA**

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CONTENTS

INTRODUCTION .....	1
TABLES .....	2
REFERENCES .....	103

## INTRODUCTION

The information appended in this volume is provided for those interested in the detailed composition of infauna collected in sediment grab samples from three areas near Kodiak Island, Alaska. Samples were collected to examine potential chronic effects of bottom trawling (otter trawls, and to a lesser extent, scallop dredges) on the sedimentary, biogeochemical, and biological features of the seafloor in soft-bottom, low-relief marine habitat of the inner continental shelf in the central Gulf of Alaska.

Numerous studies have been published worldwide that summarize analyses of infauna data, but few provide raw data sets from which comparative analyses can be performed (Pearson et al. 1983). Infauna collections have been made at a number of locations in the Gulf of Alaska and Bering Sea, but no common database exists of species present in those areas. Consequently, the zoogeography of many species is poorly known and taxonomic efforts presently underway may be largely duplicated. These appendices are provided to assist in future taxonomic revisions of North Pacific species and for comparative analyses. Also included is a list of references used in the taxonomic identifications of infauna.

Appendix Table 1.--Total numbers of errant annelids collected in sediment grab samples at Site 1 and Site 2.

Order	Family	Species	Site 1-1998	Site 1-1999	Site 2
Cossurida	Cossuridae	<i>Cossura soyeri</i>	1	3	17
Eunicida	Lumbrineridae	<i>Lumbrineris</i> sp.		7	
Eunicida	Lumbrineridae	<i>Lumbrineris bicirrata</i>	4	6	1
Eunicida	Lumbrineridae	<i>Lumbrineris inflata</i>	1	1	
Eunicida	Lumbrineridae	<i>Lumbrineris luti</i>	142	410	14
Magelonida	Magelonidae	<i>Magelona berkeleyi</i>	15	43	43
Opheliida	Opheliida	<i>Ophelia assimilis</i>		1	
Opheliida	Opheliida	<i>Travisia forbesii</i>	5	6	1
Opheliida	Scalibregmidae	<i>Scalibregma inflatum</i>	1	1	
Orbiniida	Orbiinidae	<i>Leitoscoloplos pugettensis</i>	90	199	36
Orbiniida	Paraonidae	<i>Aricidea lopezi</i>	1	49	8
Orbiniida	Paraonidae	<i>Chaetozone</i> sp.	34	52	76
Orbiniida	Paraonidae	<i>Levinsenia gracilis</i>	1	6	34
Phyllodocida	Glyceridae	<i>Glycera</i> sp.		3	
Phyllodocida	Glyceridae	<i>Hemipodus borealis</i>	40	42	15
Phyllodocida	Goniadidae	<i>Goniada brunnea</i>	29	42	4
Phyllodocida	Nephtyidae	<i>Nephtys caeca</i>	110	183	88
Phyllodocida	Nephtyidae	<i>Nephtys cornuta</i>	22	68	23
Phyllodocida	Pholodidae	<i>Pholoe glabra</i>	22	26	9
Phyllodocida	Phyllodocidae	<i>Eteone longa</i>	2	4	
Phyllodocida	Phyllodocidae	<i>Phyllodocida</i> sp.		1	
Phyllodocida	Polynoidae	<i>Hesperonoe</i> sp.		2	
Phyllodocida	Sphaerodoropsidae	<i>Sphaerodoropsis</i> sp.		2	
Phyllodocida	Syllidae	<i>Syllis</i> sp.	15	29	

Appendix Table 2.--Total numbers of sedentary annelids collected in sediment grab samples at Site 1 and Site 2.

Order	Family	Species	Site 1-1998	Site 1-1999	Site 2
Capitellida	Capitellidae	<i>Mediomastus californiensis</i>	104	285	28
Capitellida	Capitellidae	<i>Notomastus giganteus</i>	7	17	2
Capitellida	Maldanidae	undetermined	11	14	
Capitellida	Maldanidae	<i>Axiothella rubrocincta</i>	13	1	
Capitellida	Maldanidae	<i>Clymenella</i> sp.		6	
Capitellida	Maldanidae	<i>Euclymene zonalis</i>	9	114	
Capitellida	Maldanidae	<i>Praxillella gracilis</i>	3	1	1
Chaetopterida	Chaetopteridae	<i>Spiochaetopterus costarum</i>		5	1
Eunicida	Onuphidae	<i>Onuphis iridescens</i>	11	24	4
Oweniida	Oweniidae	<i>Owenia</i> cf. <i>fusiformis</i>	16	28	
Sabellida	Sabellidae	undetermined	3	6	2
Sabellida	Sabellidae	<i>Chone</i> sp.	1	3	
Spionida	Spionidae	<i>Dipolydora socialis</i>	3	6	
Spionida	Spionidae	<i>Prionospio lighti</i>		3	4
Spionida	Spionidae	<i>Prionospio steenstrupi</i>	45	90	111
Spionida	Spionidae	<i>Pygospio elegans</i>	1	1	3
Spionida	Spionidae	<i>Spio cirrifera</i>	1	7	2
Terebellida	Amphaeretidae	<i>Amphicteis scaphobranchiata</i>	11	78	3
Terebellida	Pectinoridae	<i>Pectinaria moorei</i>		3	
Terebellida	Terebellidae	<i>Amphitrite cirrata</i>		3	
Terebellida	Terebellidae	<i>Scionella</i> sp.		3	
Terebellida	Terebellidae	<i>Artacama conifera</i>			5
Terebellida	Terebellidae	<i>Terebellides stroemi</i>	5	1	17

Appendix Table 3.--Number of individuals of each infauna taxon collected per grab sample at Transects 1 and 2 at Chiniak Gully during June 1998.

Phylum	Order	Family	Species	1A	1B	1C	2A	2B	2C
Annelida	Capitallida	Capitellidae	<i>Mediomastus californiensis</i>	1			5	3	
Annelida	Capitallida	Capitellidae	<i>Notomastus giganteus</i>						
Annelida	Capitallida	Maldanidae							
Annelida	Capitallida	Maldanidae	<i>Asychis similis</i>						
Annelida	Capitallida	Maldanidae	<i>Axiothella rubrocincta</i>						
Annelida	Capitallida	Maldanidae	<i>Euclymene zonalis</i>						
Annelida	Capitallida	Maldanidae	<i>Praxillella gracilis</i>						
Annelida	Cossurida	Cossuridae	<i>Cossura soyeri</i>						
Annelida	Eunicida	Lumbrineridae	<i>Lumbrineris bicirrata</i>	1	1				
Annelida	Eunicida	Lumbrineridae	<i>Lumbrineris inflata</i>						
Annelida	Eunicida	Lumbrineridae	<i>Lumbrineris luti</i>	1			3	11	
Annelida	Eunicida	Onuphidae							
Annelida	Magelonida	Magelonidae	<i>Magelona berkeleyi</i>					2	
Annelida	Opheliida	Opheliidae	<i>Ophelina</i> sp.						
Annelida	Opheliida	Opheliidae	<i>Travisia forbesii</i>						
Annelida	Opheliida	Scalibregmidae	<i>Hyboscolex pacificus</i>						
Annelida	Opheliida	Scalibregmidae	<i>Scalibregma inflatum</i>						
Annelida	Orbiniida	Orbiniidae	<i>Leitoscoloplos pugettensis</i>	5	4	2	2	6	2
Annelida	Orbiniida	Paraonidae	<i>Aricidea lopezi</i>						
Annelida	Orbiniida	Paraonidae	<i>Chaetozone</i> sp.				2		
Annelida	Orbiniida	Paraonidae	<i>Levinsenia gracilis</i>						
Annelida	Oweniida	Oweniidae	<i>Owenia</i> cf. <i>fusiformis</i>						
Annelida	Phyllodocida	Glyceridae	<i>Hemipodus borealis</i>		2		1	1	1
Annelida	Phyllodocida	Goniadidae	<i>Goniada brunnea</i>	4	1			1	1
Annelida	Phyllodocida	Hesionidae	<i>Micropodarke</i> cf. <i>dubiens</i>						
Annelida	Phyllodocida	Nephtidae	<i>Nephtys caeca</i>	6	9		1	9	3
Annelida	Phyllodocida	Nephtidae	<i>Nephtys cornuta</i>				5		
Annelida	Phyllodocida	Pholodidae	<i>Pholoe glabra</i>		1			5	1
Annelida	Phyllodocida	Phyllodocidae	<i>Eteone longa</i>				1		

Annelida	Phyllodocida	Syllidae	<i>Syllis</i> sp.		1			1	
Annelida	Sabellida	Sabellidae							
Annelida	Sabellida	Sabellidae	<i>Chone</i> sp.						
Annelida	Spionida	Spionidae	<i>Dipolydora socialis</i>						
Annelida	Spionida	Spionidae	<i>Laonice</i> sp.						
Annelida	Spionida	Spionidae	<i>Prionospio</i> sp.						
Annelida	Spionida	Spionidae	<i>Prionospio steenstrupi</i>				2	1	
Annelida	Spionida	Spionidae	<i>Pygospio elegans</i>						
Annelida	Spionida	Spionidae	<i>Spio cirrifera</i>						
Annelida	Terebellida	Amphaeretidae	<i>Amphicteis scaphobranchiata</i>					4	1
Annelida	Terebellida	Trichobranchidae	<i>Terebellides stroemi</i>						
Arthropoda	Amphipoda	Ampeliscidae	<i>Ampelisca</i> cf. <i>unsocalae</i>	1				2	
Arthropoda	Amphipoda	Ampeliscidae	<i>Byblis veleronis</i>						
Arthropoda	Amphipoda	Corophiidae	<i>Corophium</i> cf. <i>insidiosum</i>						
Arthropoda	Amphipoda	Phoxocephalidae	<i>Heterophoxus</i> sp.				3		
Arthropoda	Cumacea							1	
Arthropoda	Decapoda	Pinnixidae	<i>Pinnixa</i> sp.		1	5	2		
Arthropoda	Decapoda	Xanthidae	<i>Lophopanopeus bellus</i>			1			
Arthropoda	Ostracoda		Species I						
Echinodermata	Dendrochiridotida							1	1
Echinodermata	Dendrochiridotida	Phylloporidae	<i>Pentamera</i> sp.						
Echinodermata	Ophiurida	Amphiuridae	<i>Amphipholus</i> sp.	3	8	6	24	21	38
Mollusca								2	
Mollusca	Dentaliida	Dentaliidae	<i>Rhabdus rectius</i>		1		2		
Mollusca	Mesogastropoda	Eulimidae	<i>Eulima</i> sp.						
Mollusca	Mesogastropoda	Naticidae	<i>Cryptonatica</i> sp.						
Mollusca	Mytiloidea	Mytilidae	<i>Musculus</i> sp.				1		
Mollusca	Neogastropoda	Turridae	<i>Oenopota rosea</i>			1		1	1
Mollusca	Nuculoidea	Nuculanidae	<i>Nuculana pernula</i>						
Mollusca	Nuculoidea	Nuculidae	<i>Ennucula tenuis</i>	3	5		3	5	
Mollusca	Nuculoidea	Yoldiidae	<i>Yoldia scissurata</i>		2		3	1	
Mollusca	Pholadomyoidea	Pandoridae	<i>Pandora bilirata</i>						
Mollusca	Pyramidellacea	Pyramidellidae	<i>Turbonilla</i> sp.						



Mollusca	Veneroida	Cultellidae	<i>Siliqua patula</i>	1	10		2		6
Mollusca	Veneroida	Tellinidae	<i>Macoma eliminata</i>	1	1		3	2	
Mollusca	Veneroida	Tellinidae	<i>Macoma moesta</i>				7		
Mollusca	Veneroida	Thyasiridae	<i>Axinospida serricata</i>	14	23	6	20	32	25
Mollusca	Veneroida	Veneridae	<i>Nutricula lordi</i>						
Nemertea	Heteronemertea	Lineidae	<i>Linea</i> sp.				1		
			Total No. of Species	12	14	5	22	22	11
			Total No. of Individuals	41	69	16	97	114	80

Appendix Table 3.--Number of individuals of each infauna taxon collected per grab sample at Transects 3 and 4 at Chiniak Gully during June 1998.

Phylum	Order	Family	Species	3A	3B	3C	4A	4B	4C
Annelida	Capitallida	Capitellidae	<i>Mediomastus californiensis</i>	1			8		9
Annelida	Capitallida	Capitellidae	<i>Notomastus giganteus</i>						
Annelida	Capitallida	Maldanidae							
Annelida	Capitallida	Maldanidae	<i>Asychis similis</i>						
Annelida	Capitallida	Maldanidae	<i>Axiothella rubrocincta</i>				5		
Annelida	Capitallida	Maldanidae	<i>Euclymene zonalis</i>						
Annelida	Capitallida	Maldanidae	<i>Praxillella gracilis</i>						3
Annelida	Cossurida	Cossuridae	<i>Cossura soyeri</i>						
Annelida	Eunicida	Lumbrineridae	<i>Lumbrineris bicirrata</i>				2		
Annelida	Eunicida	Lumbrineridae	<i>Lumbrineris inflata</i>				1		
Annelida	Eunicida	Lumbrineridae	<i>Lumbrineris luti</i>	2	5		9		21
Annelida	Eunicida	Onuphidae		1	1				
Annelida	Magelonida	Magelonidae	<i>Magelona berkeleyi</i>						
Annelida	Opheliida	Opheliidae	<i>Ophelina</i> sp.						
Annelida	Opheliida	Opheliidae	<i>Travisia forbesii</i>						
Annelida	Opheliida	Scalibregmidae	<i>Hyboscoplex pacificus</i>						
Annelida	Opheliida	Scalibregmidae	<i>Scalibregma inflatum</i>						
Annelida	Orbiniida	Orbiniidae	<i>Leitoscoloplos pugettensis</i>	5	11	1	1	1	
Annelida	Orbiniida	Paraonidae	<i>Aricidea lopezi</i>						
Annelida	Orbiniida	Paraonidae	<i>Chaetozone</i> sp.						
Annelida	Orbiniida	Paraonidae	<i>Levinsenia gracilis</i>						
Annelida	Oweniida	Oweniidae	<i>Owenia</i> cf. <i>fusiformis</i>					3	
Annelida	Phyllodocida	Glyceridae	<i>Hemipodus borealis</i>			1		2	5
Annelida	Phyllodocida	Goniadidae	<i>Goniada brunnea</i>	1	1	1	4		
Annelida	Phyllodocida	Hesionidae	<i>Micropodarke</i> cf. <i>dubiens</i>						
Annelida	Phyllodocida	Nephtidae	<i>Nephtys caeca</i>	5		1	4	2	3
Annelida	Phyllodocida	Nephtidae	<i>Nephtys cornuta</i>		2				
Annelida	Phyllodocida	Pholodidae	<i>Pholoe glabra</i>	2	4	2	4		1
Annelida	Phyllodocida	Phyllodocidae	<i>Eteone longa</i>						

Annelida	Phyllodocida	Syllidae	<i>Syllis</i> sp.	1			2		1
Annelida	Sabellida	Sabellidae					1		
Annelida	Sabellida	Sabellidae	<i>Chone</i> sp.						
Annelida	Spionida	Spionidae	<i>Dipolydora socialis</i>				2		
Annelida	Spionida	Spionidae	<i>Laonice</i> sp.						
Annelida	Spionida	Spionidae	<i>Prionospio</i> sp.						
Annelida	Spionida	Spionidae	<i>Prionospio steenstrupi</i>		1				1
Annelida	Spionida	Spionidae	<i>Pygospio elegans</i>						
Annelida	Spionida	Spionidae	<i>Spio cirrifera</i>						
Annelida	Terebellida	Amphaeretidae	<i>Amphicteis scaphobranchiata</i>						
Annelida	Terebellida	Trichobranchidae	<i>Terebellides stroemi</i>						
Arthropoda	Amphipoda	Ampeliscidae	<i>Ampelisca</i> cf. <i>unsocalae</i>	2			1	2	
Arthropoda	Amphipoda	Ampeliscidae	<i>Byblis veleronis</i>						
Arthropoda	Amphipoda	Corophiidae	<i>Corophium</i> cf. <i>insidiosum</i>	1					
Arthropoda	Amphipoda	Phoxocephalidae	<i>Heterophoxus</i> sp.				1		2
Arthropoda	Cumacea								
Arthropoda	Decapoda	Pinnixidae	<i>Pinnixa</i> sp.						4
Arthropoda	Decapoda	Xanthidae	<i>Lophopanopeus bellus</i>						
Arthropoda	Ostracoda		Species I						
Echinodermata	Dendrochiridotida								1
Echinodermata	Dendrochiridotida	Phyllophoridae	<i>Pentamera</i> sp.						
Echinodermata	Ophiurida	Amphiuridae	<i>Amphipholus</i> sp.	18	28	14	64	10	37
Mollusca									
Mollusca	Dentaliida	Dentaliidae	<i>Rhabdus rectius</i>						
Mollusca	Mesogastropoda	Eulimidae	<i>Eulima</i> sp.						
Mollusca	Mesogastropoda	Naticidae	<i>Cryptonatica</i> sp.				1		
Mollusca	Mytiloidea	Mytilidae	<i>Musculus</i> sp.						
Mollusca	Neogastropoda	Turridae	<i>Oenopota rosea</i>				1	2	1
Mollusca	Nuculoidea	Nuculanidae	<i>Nuculana pernula</i>						
Mollusca	Nuculoidea	Nuculidae	<i>Ennucula tenuis</i>						5
Mollusca	Nuculoidea	Yoldiidae	<i>Yoldia scissurata</i>						4
Mollusca	Pholadomyoidea	Pandoridae	<i>Pandora bilirata</i>				1		
Mollusca	Pyramidellacea	Pyramidellidae	<i>Turbonilla</i> sp.						

Mollusca	Veneroidea	Cultellidae	<i>Siliqua patula</i>	2	3	2	6	1	
Mollusca	Veneroidea	Tellinidae	<i>Macoma eliminata</i>	2			3		3
Mollusca	Veneroidea	Tellinidae	<i>Macoma moesta</i>	1					2
Mollusca	Veneroidea	Thyasiridae	<i>Axinospida serricata</i>	11	11	22	27		36
Mollusca	Veneroidea	Veneridae	<i>Nutricula lordi</i>						1
Nemertea	Heteronemertea	Lineidae	<i>Linea</i> sp.						
			Total No. of Species	15	10	8	21	8	19
			Total No. of Individuals	55	67	44	148	23	140

Appendix Table 3.--Number of individuals of each infauna taxon collected per grab sample at Transects 5 and 6 at Chiniak Gully during June 1998.

Phylum	Order	Family	Species	5A	5B	5C	6A	6B	6C
Annelida	Capitallida	Capitellidae	<i>Mediomastus californiensis</i>	7	3	8		2	4
Annelida	Capitallida	Capitellidae	<i>Notomastus giganteus</i>						
Annelida	Capitallida	Maldanidae		4	6				
Annelida	Capitallida	Maldanidae	<i>Asychis similis</i>						
Annelida	Capitallida	Maldanidae	<i>Axiothella rubrocincta</i>			3			5
Annelida	Capitallida	Maldanidae	<i>Euclymene zonalis</i>						
Annelida	Capitallida	Maldanidae	<i>Praxillella gracilis</i>						
Annelida	Cossurida	Cossuridae	<i>Cossura soyeri</i>						
Annelida	Eunicida	Lumbrineridae	<i>Lumbrineris bicirrata</i>						
Annelida	Eunicida	Lumbrineridae	<i>Lumbrineris inflata</i>						
Annelida	Eunicida	Lumbrineridae	<i>Lumbrineris luti</i>	7	3	9	2	4	10
Annelida	Eunicida	Onuphidae			1		1		
Annelida	Magelonida	Magelonidae	<i>Magelona berkeleyi</i>				1	2	1
Annelida	Opheliida	Opheliidae	<i>Ophelina</i> sp.						
Annelida	Opheliida	Opheliidae	<i>Travisia forbesii</i>			3			
Annelida	Opheliida	Scalibregmidae	<i>Hyboscolex pacificus</i>			1			
Annelida	Opheliida	Scalibregmidae	<i>Scalibregma inflatum</i>					1	
Annelida	Orbiniida	Orbiniidae	<i>Leitoscoloplos pugettensis</i>		2	3	1		3
Annelida	Orbiniida	Paraonidae	<i>Aricidea lopezi</i>						
Annelida	Orbiniida	Paraonidae	<i>Chaetozone</i> sp.			1			
Annelida	Orbiniida	Paraonidae	<i>Levinsenia gracilis</i>						
Annelida	Oweniida	Oweniidae	<i>Owenia</i> cf. <i>fusiformis</i>			5	1	1	
Annelida	Phyllodocida	Glyceridae	<i>Hemipodus borealis</i>	1		1	1		2
Annelida	Phyllodocida	Goniadidae	<i>Goniada brunnea</i>	2	1	4		2	
Annelida	Phyllodocida	Hesionidae	<i>Micropodarke</i> cf. <i>dubiens</i>						
Annelida	Phyllodocida	Nephtidae	<i>Nephtys caeca</i>	7	5	5	6	5	5
Annelida	Phyllodocida	Nephtidae	<i>Nephtys cornuta</i>						3
Annelida	Phyllodocida	Pholodidae	<i>Pholoe glabra</i>		1				
Annelida	Phyllodocida	Phyllodocidae	<i>Eteone longa</i>						

Annelida	Phyllococida	Syllidae	<i>Syllis</i> sp.	1		3			
Annelida	Sabellida	Sabellidae							
Annelida	Sabellida	Sabellidae	<i>Chone</i> sp.						
Annelida	Spionida	Spionidae	<i>Dipolydora socialis</i>						
Annelida	Spionida	Spionidae	<i>Laonice</i> sp.						
Annelida	Spionida	Spionidae	<i>Prionospio</i> sp.						
Annelida	Spionida	Spionidae	<i>Prionospio steenstrupi</i>	1	1	1	1	2	1
Annelida	Spionida	Spionidae	<i>Pygospio elegans</i>						
Annelida	Spionida	Spionidae	<i>Spio cirrifera</i>						
Annelida	Terebellida	Amphaeretidae	<i>Amphicteis scaphobranchiata</i>					2	1
Annelida	Terebellida	Trichobranchidae	<i>Terebellides stroemi</i>			2			
Arthropoda	Amphipoda	Ampeliscidae	<i>Ampelisca</i> cf. <i>unsocalae</i>	1		3	1		
Arthropoda	Amphipoda	Ampeliscidae	<i>Byblis veleronis</i>	1	3	1			2
Arthropoda	Amphipoda	Corophiidae	<i>Corophium</i> cf. <i>insidiosum</i>	2					
Arthropoda	Amphipoda	Phoxocephalidae	<i>Heterophoxus</i> sp.	2	4	7	3	2	3
Arthropoda	Cumacea								
Arthropoda	Decapoda	Pinnixidae	<i>Pinnixa</i> sp.		5	9	3		
Arthropoda	Decapoda	Xanthidae	<i>Lophopanopeus bellus</i>						
Arthropoda	Ostracoda		Species I						
Echinodermata	Dendrochiridotida			3	1				1
Echinodermata	Dendrochiridotida	Phyllophoridae	<i>Pentamera</i> sp.						
Echinodermata	Ophiurida	Amphiuridae	<i>Amphipholus</i> sp.	5	8	2	1		
Mollusca									
Mollusca	Dentaliida	Dentaliidae	<i>Rhabdus rectius</i>						
Mollusca	Mesogastropoda	Eulimidae	<i>Eulima</i> sp.			1			
Mollusca	Mesogastropoda	Naticidae	<i>Cryptonatica</i> sp.						
Mollusca	Mytiloidea	Mytilidae	<i>Musculus</i> sp.						
Mollusca	Neogastropoda	Turridae	<i>Oenopota rosea</i>	1					
Mollusca	Nuculoidea	Nuculanidae	<i>Nuculana pernula</i>						
Mollusca	Nuculoidea	Nuculidae	<i>Ennucula tenuis</i>						
Mollusca	Nuculoidea	Yoldiidae	<i>Yoldia scissurata</i>			3		2	
Mollusca	Pholadomyoidea	Pandoridae	<i>Pandora bilirata</i>				1		
Mollusca	Pyramidellia	Pyramidellidae	<i>Turbonilla</i> sp.			1			

Mollusca	Veneroidea	Cultellidae	<i>Siliqua patula</i>	1		1	1		
Mollusca	Veneroidea	Tellinidae	<i>Macoma eliminata</i>	3	1	1	3	1	
Mollusca	Veneroidea	Tellinidae	<i>Macoma moesta</i>	2		2	1		1
Mollusca	Veneroidea	Thyasiridae	<i>Axinospida serricata</i>	22	4	12	2	2	2
Mollusca	Veneroidea	Veneridae	<i>Nutricula lordi</i>						
Nemertea	Heteronemertea	Lineidae	<i>Linea</i> sp.	2		2	1	1	
			Total No. of Species	20	16	27	18	14	15
			Total No. of Individuals	75	49	94	31	29	44

Appendix Table 3.--Number of individuals of each infauna taxon collected per grab sample at Transects 7 and 8 at Chiniak Gully during June 1998.

Phylum	Order	Family	Species	7A	7B	7C	8A	8B	8C
Annelida	Capitallida	Capitellidae	<i>Mediomastus californiensis</i>	9	2	2		6	16
Annelida	Capitallida	Capitellidae	<i>Notomastus giganteus</i>				6		
Annelida	Capitallida	Maldanidae						1	
Annelida	Capitallida	Maldanidae	<i>Asychis similis</i>	1					
Annelida	Capitallida	Maldanidae	<i>Axiiothella rubrocincta</i>						
Annelida	Capitallida	Maldanidae	<i>Euclymene zonalis</i>						9
Annelida	Capitallida	Maldanidae	<i>Praxillella gracilis</i>						
Annelida	Cossurida	Cossuridae	<i>Cossura soyeri</i>						
Annelida	Eunicida	Lumbrineridae	<i>Lumbrineris bicirrata</i>						
Annelida	Eunicida	Lumbrineridae	<i>Lumbrineris inflata</i>						
Annelida	Eunicida	Lumbrineridae	<i>Lumbrineris luti</i>	4	5	2	3	5	3
Annelida	Eunicida	Onuphidae		1	1		1		1
Annelida	Magelonida	Magelonidae	<i>Magelona berkeleyi</i>				3	2	1
Annelida	Opheliida	Opheliidae	<i>Ophelina</i> sp.						
Annelida	Opheliida	Opheliidae	<i>Travisia forbesii</i>						
Annelida	Opheliida	Scalibregmidae	<i>Hyboscolex pacificus</i>						
Annelida	Opheliida	Scalibregmidae	<i>Scalibregma inflatum</i>						
Annelida	Orbiniida	Orbiniidae	<i>Leitoscoloplos pugettensis</i>	4		3	3	4	8
Annelida	Orbiniida	Paraonidae	<i>Aricidea lopezi</i>			1			
Annelida	Orbiniida	Paraonidae	<i>Chaetozone</i> sp.	1			2	2	1
Annelida	Orbiniida	Paraonidae	<i>Levinsenia gracilis</i>						
Annelida	Oweniida	Oweniidae	<i>Owenia</i> cf. <i>fusiformis</i>	3					
Annelida	Phyllodocida	Glyceridae	<i>Hemipodus borealis</i>	2	1			5	4
Annelida	Phyllodocida	Goniadidae	<i>Goniada brunnea</i>		1	1		2	
Annelida	Phyllodocida	Hesionidae	<i>Micropodarke</i> cf. <i>dubiens</i>						1
Annelida	Phyllodocida	Nephtidae	<i>Nephtys caeca</i>	5	3		3	3	6
Annelida	Phyllodocida	Nephtidae	<i>Nephtys cornuta</i>	1		1			
Annelida	Phyllodocida	Pholodidae	<i>Pholoe glabra</i>						
Annelida	Phyllodocida	Phyllodocidae	<i>Eteone longa</i>						1



Annelida	Phyllococida	Syllidae	<i>Syllis</i> sp.	2	2		1		
Annelida	Sabellida	Sabellidae							
Annelida	Sabellida	Sabellidae	<i>Chone</i> sp.						
Annelida	Spionida	Spionidae	<i>Dipolydora socialis</i>						
Annelida	Spionida	Spionidae	<i>Laonice</i> sp.						
Annelida	Spionida	Spionidae	<i>Prionospio</i> sp.						
Annelida	Spionida	Spionidae	<i>Prionospio steenstrupi</i>	4	2			4	4
Annelida	Spionida	Spionidae	<i>Pygospio elegans</i>						1
Annelida	Spionida	Spionidae	<i>Spio cirrifera</i>					1	
Annelida	Terebellida	Amphaeretidae	<i>Amphicteis scaphobranchiata</i>						
Annelida	Terebellida	Trichobranchidae	<i>Terebellides stroemi</i>		1				
Arthropoda	Amphipoda	Ampeliscidae	<i>Ampelisca</i> cf. <i>unsocalae</i>					1	
Arthropoda	Amphipoda	Ampeliscidae	<i>Byblis veleronis</i>	1	1		6		2
Arthropoda	Amphipoda	Corophiidae	<i>Corophium</i> cf. <i>insidiosum</i>						
Arthropoda	Amphipoda	Phoxocephalidae	<i>Heterophoxus</i> sp.		2	2	2	2	5
Arthropoda	Cumacea							1	
Arthropoda	Decapoda	Pinnixidae	<i>Pinnixa</i> sp.						
Arthropoda	Decapoda	Xanthidae	<i>Lophopanopeus bellus</i>						
Arthropoda	Ostracoda		Species I						1
Echinodermata	Dendrochiridotida								
Echinodermata	Dendrochiridotida	Phylloporidae	<i>Pentamera</i> sp.					1	
Echinodermata	Ophiurida	Amphiuridae	<i>Amphipholus</i> sp.						
Mollusca									
Mollusca	Dentaliida	Dentaliidae	<i>Rhabdus rectius</i>			1			
Mollusca	Mesogastropoda	Eulimidae	<i>Eulima</i> sp.				1	2	
Mollusca	Mesogastropoda	Naticidae	<i>Cryptonatica</i> sp.						
Mollusca	Mytiloidea	Mytilidae	<i>Musculus</i> sp.						
Mollusca	Neogastropoda	Turridae	<i>Oenopota rosea</i>	1				1	1
Mollusca	Nuculoidea	Nuculanidae	<i>Nuculana pernula</i>						
Mollusca	Nuculoidea	Nuculidae	<i>Ennucula tenuis</i>						
Mollusca	Nuculoidea	Yoldiidae	<i>Yoldia scissurata</i>						
Mollusca	Pholadomyoidea	Pandoridae	<i>Pandora bilirata</i>						1
Mollusca	Pyramidellia	Pyramidellidae	<i>Turbonilla</i> sp.				1	1	2

Mollusca	Veneroidea	Cultellidae	<i>Siliqua patula</i>						
Mollusca	Veneroidea	Tellinidae	<i>Macoma eliminata</i>		1				
Mollusca	Veneroidea	Tellinidae	<i>Macoma moesta</i>	4	2		2	1	3
Mollusca	Veneroidea	Thyasiridae	<i>Axinospida serricata</i>		5	2	2	3	14
Mollusca	Veneroidea	Veneridae	<i>Nutricula lordi</i>				1		1
Nemertea	Heteronemertea	Lineidae	<i>Linea</i> sp.						
			Total No. of Species	15	14	9	15	20	22
			Total No. of Individuals	43	29	15	37	48	86

Appendix Table 3.--Number of individuals of each infauna taxon collected per grab sample at Transects 9 and 10 at Chiniak Gully during June 1998.

Phylum	Order	Family	Species	9A	9B	9C	10A	10B	10C
Annelida	Capitallida	Capitellidae	<i>Mediomastus californiensis</i>	5				5	8
Annelida	Capitallida	Capitellidae	<i>Notomastus giganteus</i>						1
Annelida	Capitallida	Maldanidae							
Annelida	Capitallida	Maldanidae	<i>Asychis similis</i>						
Annelida	Capitallida	Maldanidae	<i>Axiothella rubrocincta</i>						
Annelida	Capitallida	Maldanidae	<i>Euclymene zonalis</i>						
Annelida	Capitallida	Maldanidae	<i>Praxillella gracilis</i>						
Annelida	Cossurida	Cossuridae	<i>Cossura soyeri</i>						1
Annelida	Eunicida	Lumbrineridae	<i>Lumbrineris bicirrata</i>						
Annelida	Eunicida	Lumbrineridae	<i>Lumbrineris inflata</i>						
Annelida	Eunicida	Lumbrineridae	<i>Lumbrineris luti</i>	7	9	7		8	2
Annelida	Eunicida	Onuphidae			1			2	
Annelida	Magelonida	Magelonidae	<i>Magelona berkeleyi</i>			1	2		
Annelida	Opheliida	Opheliidae	<i>Ophelina</i> sp.	1					
Annelida	Opheliida	Opheliidae	<i>Travisia forbesii</i>			1		1	
Annelida	Opheliida	Scalibregmidae	<i>Hybosclex pacificus</i>						
Annelida	Opheliida	Scalibregmidae	<i>Scalibregma inflatum</i>						
Annelida	Orbiniida	Orbiniidae	<i>Leitoscoloplos pugettensis</i>	2	7	1	5	2	2
Annelida	Orbiniida	Paraonidae	<i>Aricidea lopezi</i>						
Annelida	Orbiniida	Paraonidae	<i>Chaetozone</i> sp.	10	5	3	4	1	2
Annelida	Orbiniida	Paraonidae	<i>Levinsenia gracilis</i>			1			
Annelida	Oweniida	Oweniidae	<i>Owenia</i> cf. <i>fusiformis</i>			2			1
Annelida	Phyllodocida	Glyceridae	<i>Hemipodus borealis</i>	2	3	3	1		1
Annelida	Phyllodocida	Goniadidae	<i>Goniada brunnea</i>						2
Annelida	Phyllodocida	Hesionidae	<i>Micropodarke</i> cf. <i>dubiens</i>						
Annelida	Phyllodocida	Nephtidae	<i>Nephtys caeca</i>	4	2	3	4	1	
Annelida	Phyllodocida	Nephtidae	<i>Nephtys cornuta</i>	5	5				
Annelida	Phyllodocida	Pholodidae	<i>Pholoe glabra</i>						1
Annelida	Phyllodocida	Phyllodocidae	<i>Eteone longa</i>						

Annelida	Phyllodocida	Syllidae	<i>Syllis</i> sp.						
Annelida	Sabellida	Sabellidae						2	
Annelida	Sabellida	Sabellidae	<i>Chone</i> sp.	1					
Annelida	Spionida	Spionidae	<i>Dipolydora socialis</i>		1				
Annelida	Spionida	Spionidae	<i>Laonice</i> sp.			1			
Annelida	Spionida	Spionidae	<i>Prionospio</i> sp.	1					
Annelida	Spionida	Spionidae	<i>Prionospio steenstrupi</i>	6	3	2	2	3	3
Annelida	Spionida	Spionidae	<i>Pygospio elegans</i>						
Annelida	Spionida	Spionidae	<i>Spio cirrifera</i>						
Annelida	Terebellida	Amphaeretidae	<i>Amphicteis scaphobranchiata</i>			2		1	
Annelida	Terebellida	Trichobranchidae	<i>Terebellides stroemi</i>	1			1		
Arthropoda	Amphipoda	Ampeliscidae	<i>Ampelisca</i> cf. <i>unsocalae</i>			2		3	
Arthropoda	Amphipoda	Ampeliscidae	<i>Byblis veleronis</i>	1	4		1		3
Arthropoda	Amphipoda	Corophiidae	<i>Corophium</i> cf. <i>insidiosum</i>						
Arthropoda	Amphipoda	Phoxocephalidae	<i>Heterophoxus</i> sp.	4	3	1		1	
Arthropoda	Cumacea				1			1	
Arthropoda	Decapoda	Pinnixidae	<i>Pinnixa</i> sp.	1		1			
Arthropoda	Decapoda	Xanthidae	<i>Lophopanopeus bellus</i>						
Arthropoda	Ostracoda		Species I						
Echinodermata	Dendrochiridotida			1					
Echinodermata	Dendrochiridotida	Phylloporidae	<i>Pentamera</i> sp.						
Echinodermata	Ophiurida	Amphiuridae	<i>Amphipholus</i> sp.						2
Mollusca									
Mollusca	Dentaliida	Dentaliidae	<i>Rhabdus rectius</i>				2		
Mollusca	Mesogastropoda	Eulimidae	<i>Eulima</i> sp.						
Mollusca	Mesogastropoda	Naticidae	<i>Cryptonatica</i> sp.						
Mollusca	Mytiloidea	Mytilidae	<i>Musculus</i> sp.						
Mollusca	Neogastropoda	Turridae	<i>Oenopota rosea</i>						
Mollusca	Nuculoidea	Nuculanidae	<i>Nuculana pernula</i>					3	
Mollusca	Nuculoidea	Nuculidae	<i>Ennucula tenuis</i>				1		
Mollusca	Nuculoidea	Yoldiidae	<i>Yoldia scissurata</i>		1				
Mollusca	Pholadomyoidea	Pandoridae	<i>Pandora bilirata</i>						
Mollusca	Pyramidellacea	Pyramidellidae	<i>Turbonilla</i> sp.						

Mollusca	Veneroida	Cultellidae	<i>Siliqua patula</i>						
Mollusca	Veneroida	Tellinidae	<i>Macoma eliminata</i>		2	4	1	2	
Mollusca	Veneroida	Tellinidae	<i>Macoma moesta</i>	2					1
Mollusca	Veneroida	Thyasiridae	<i>Axinospida serricata</i>	2	1	3	14	5	4
Mollusca	Veneroida	Veneridae	<i>Nutricula lordi</i>	1					6
Nemertea	Heteronemertea	Lineidae	<i>Linea</i> sp.						
			Total No. of Species	19	15	17	12	16	16
			Total No. of Individuals	57	48	38	38	41	40

Appendix Table 4.--Number of individuals of each infauna taxon collected per grab sample at Transects 1 and 2 at Two-headed Gully during June 1998.

Phylum	Order	Family	Species	1A	1B	1C	2A	2B	2C
Annelida	Capitallida	Capitellidae	<i>Mediomastus californiensis</i>				2		3
Annelida	Capitallida	Capitellidae	<i>Notomastus giganteus</i>						
Annelida	Capitallida	Maldanidae	<i>Praxillella gracilis</i>						
Annelida	Chaetoptera	Chaetopteridae	<i>Spiochaetopterus costarum</i>						
Annelida	Cossurida	Cossuridae	<i>Cossura soyeri</i>			3	1		
Annelida	Eunicida	Lumbrineridae	<i>Lumbrineris bicirrata</i>						
Annelida	Eunicida	Lumbrineridae	<i>Lumbrineris luti</i>	1	1				
Annelida	Eunicida	Onuphidae							
Annelida	Magelonida	Magelonidae	<i>Magelona berkeleyi</i>			2			5
Annelida	Opheliida	Opheliidae	<i>Travisia forbesii</i>						
Annelida	Opheliida	Scalibregmidae	<i>Hyboscolex pacificus</i>						
Annelida	Orbiniida	Orbiniidae	<i>Leitoscoloplos pugettensis</i>	1		4	2		
Annelida	Orbiniida	Paraonidae	<i>Aricidea lopezi</i>			1	1		
Annelida	Orbiniida	Paraonidae	<i>Chaetozone</i> sp.	2	9	3	5		1
Annelida	Orbiniida	Paraonidae	<i>Levinsenia gracilis</i>				7		2
Annelida	Phyllodocida	Glyceridae	<i>Hemipodus borealis</i>		1				
Annelida	Phyllodocida	Goniadidae	<i>Goniada brunnea</i>		1				
Annelida	Phyllodocida	Hesionidae							
Annelida	Phyllodocida	Nephtidae	<i>Nephtys caeca</i>		9	4	5	3	
Annelida	Phyllodocida	Nephtidae	<i>Nephtys cornuta</i>	1					1
Annelida	Phyllodocida	Nereididae	<i>Cyclonereis clyclurus</i>						
Annelida	Phyllodocida	Pholodidae	<i>Pholoe glabra</i>				2		
Annelida	Sabellida	Sabellidae							
Annelida	Spionida	Spionidae	<i>Prionospio lighti</i>						
Annelida	Spionida	Spionidae	<i>Prionospio steenstrupi</i>	3	7	8	3	1	2
Annelida	Spionida	Spionidae	<i>Pygospio elegans</i>						
Annelida	Spionida	Spionidae	<i>Spio cirrifera</i>						
Annelida	Sternapsida	Sternapsidae	<i>Sternapsis scutata</i>						1
Annelida	Terebellida	Amphaeretidae	<i>Amphicteis scaphobranchiata</i>						

Annelida	Terebellida	Terebellidae	<i>Artacama conifera</i>						
Annelida	Terebellida	Trichobranchidae	<i>Terebellides stroemi</i>	2			2		
Arthropoda	Amphipoda	Ampeliscidae	<i>Ampelisca</i> cf. <i>unsocalae</i>		5				
Arthropoda	Amphipoda	Ampeliscidae	<i>Byblis veleronis</i>			8			
Arthropoda	Amphipoda	Phoxocephalidae	<i>Heterophoxus</i> sp.						
Arthropoda	Calanoida								
Arthropoda	Cumacea			1					1
Arthropoda	Ostracoda		Species I						
Echinodermata	Dendrochiridotida	Phylloporidae	<i>Pentamera</i> sp.						
Echiura	Echiuroinea	Echiuridae	<i>Echiurus echiurus alaskensis</i>						
Mollusca	Cephalaspidea	Atyidae	<i>Haminoea virescens</i>						2
Mollusca	Dentaliida	Dentaliidae	<i>Rhabdus rectius</i>				2		
Mollusca	Mesogastropoda	Naticidae	<i>Euspira pallida</i>						
Mollusca	Neogastropoda	Neptuneidae	<i>Colus halli</i>						
Mollusca	Nuculoida	Nuculanidae	<i>Nuculana fossa</i>					1	
Mollusca	Nuculoida	Nuculanidae	<i>Nucula minuta</i>					1	1
Mollusca	Nuculoida	Nuculidae	<i>Ennucula tenuis</i>			1		1	2
Mollusca	Nuculoida	Yoldiidae	<i>Yoldia scissurata</i>					2	
Mollusca	Pholadomyoidea	Pandoridae	<i>Pandora bilirata</i>						
Mollusca	Pyramidellacea	Pyramidellidae	<i>Turbonilla</i> sp.		1				2
Mollusca	Veneroidea	Tellinidae	<i>Macoma eliminata</i>	1		1			1
Mollusca	Veneroidea	Thyasiridae	<i>Axinospida serricata</i>	4		10	4	2	3
Nematoda									
Nemertea	Heteronemertea	Lineidae	<i>Cerebratulus</i> sp.						
Nemertea	Heteronemertea	Lineidae	<i>Linea</i> sp.					2	
			Total No. of Species	9	8	11	11	9	14
			Total No. of Individuals	16	34	45	34	15	27

Appendix Table 4.--Number of individuals of each infauna taxon collected per grab sample at Transects 3 and 4 at Two-headed Gully during June 1998.

Phylum	Order	Family	Species	3A	3B	3C	4A	4B	4C
Annelida	Capitallida	Capitellidae	<i>Mediomastus californiensis</i>				3	4	2
Annelida	Capitallida	Capitellidae	<i>Notomastus giganteus</i>						
Annelida	Capitallida	Maldanidae	<i>Praxillella gracilis</i>						
Annelida	Chaetoptera	Chaetopteridae	<i>Spiochaetopterus costarum</i>				1		
Annelida	Cossurida	Cossuridae	<i>Cossura soyeri</i>	4		3	2		
Annelida	Eunicida	Lumbrineridae	<i>Lumbrineris bicirrata</i>					1	
Annelida	Eunicida	Lumbrineridae	<i>Lumbrineris luti</i>					1	
Annelida	Eunicida	Onuphidae							
Annelida	Magelonida	Magelonidae	<i>Magelona berkeleyi</i>		1	1			4
Annelida	Opheliida	Opheliidae	<i>Travisia forbesii</i>				1		
Annelida	Opheliida	Scalibregmidae	<i>Hyboscolex pacificus</i>						
Annelida	Orbiniida	Orbiniidae	<i>Leitoscoloplos pugettensis</i>	3	3	3			2
Annelida	Orbiniida	Paraonidae	<i>Aricidea lopezi</i>		2				
Annelida	Orbiniida	Paraonidae	<i>Chaetozone</i> sp.	6	1	2		5	2
Annelida	Orbiniida	Paraonidae	<i>Levinsenia gracilis</i>	5		2	2	1	
Annelida	Phyllodocida	Glyceridae	<i>Hemipodus borealis</i>	1	1	5		1	1
Annelida	Phyllodocida	Goniadidae	<i>Goniada brunnea</i>						
Annelida	Phyllodocida	Hesionidae							
Annelida	Phyllodocida	Nephtidae	<i>Nephtys caeca</i>		1			4	5
Annelida	Phyllodocida	Nephtidae	<i>Nephtys cornuta</i>	3			2	6	2
Annelida	Phyllodocida	Nereididae	<i>Cyclonereis clyclurus</i>						
Annelida	Phyllodocida	Pholodidae	<i>Pholoe glabra</i>	1				2	
Annelida	Sabellida	Sabellidae						1	
Annelida	Spionida	Spionidae	<i>Prionospio lighti</i>			3			
Annelida	Spionida	Spionidae	<i>Prionospio steenstrupi</i>	6		4	1	6	
Annelida	Spionida	Spionidae	<i>Pygospio elegans</i>						
Annelida	Spionida	Spionidae	<i>Spio cirrifera</i>						
Annelida	Sternapsida	Sternapsidae	<i>Sternapsis scutata</i>						
Annelida	Terebellida	Amphaeretidae	<i>Amphicteis scaphobranchiata</i>					1	



Annelida	Terebellida	Terebellidae	<i>Artacama conifera</i>	1					
Annelida	Terebellida	Trichobranchidae	<i>Terebellides stroemi</i>	2	2	1	5		
Arthropoda	Amphipoda	Ampeliscidae	<i>Ampelisca</i> cf. <i>unsocalae</i>						
Arthropoda	Amphipoda	Ampeliscidae	<i>Byblis veleronis</i>						
Arthropoda	Amphipoda	Phoxocephalidae	<i>Heterophoxus</i> sp.						
Arthropoda	Calanoida								
Arthropoda	Cumacea								
Arthropoda	Ostracoda		Species I					1	
Echiura	Dendrochiridotida	Phylloporidae	<i>Pentamera</i> sp.				1		
Echinodermata	Echiuroinea	Echiuridae	<i>Echiurus echiurus alaskensis</i>					1	
Mollusca	Cephalaspidea	Atyidae	<i>Haminoea virescens</i>					1	1
Mollusca	Dentaliida	Dentaliidae	<i>Rhabdus rectius</i>		1	1			
Mollusca	Mesogastropoda	Naticidae	<i>Euspira pallida</i>						
Mollusca	Neogastropoda	Neptuneidae	<i>Colus halli</i>						
Mollusca	Nuculoida	Nuculanidae	<i>Nuculana fossa</i>						
Mollusca	Nuculoida	Nuculanidae	<i>Nuculana minuta</i>		1		8		
Mollusca	Nuculoida	Nuculidae	<i>Ennucula tenuis</i>		1			1	
Mollusca	Nuculoida	Yoldiidae	<i>Yoldia scissurata</i>			1			
Mollusca	Pholadomyoidea	Pandoridae	<i>Pandora bilirata</i>						
Mollusca	Pyramidellacea	Pyramidellidae	<i>Turbonilla</i> sp.						
Mollusca	Veneroidea	Tellinidae	<i>Macoma eliminata</i>	1	7			4	2
Mollusca	Veneroidea	Thyasiridae	<i>Axinospida serricata</i>	7	20	2	5	6	6
Nematoda									
Nemertea	Heteronemertea	Lineidae	<i>Cerebratulus</i> sp.						
Nemertea	Heteronemertea	Lineidae	<i>Linea</i> sp.						
			Total No. of Species	12	12	12	11	18	10
			Total No. of Individuals	40	41	28	31	47	27

Appendix Table 4.--Number of individuals of each infauna taxon collected per grab sample at Transects 5 and 6 at Two-headed Gully during June 1998.

Phylum	Order	Family	Species	5A	5B	5C	6A	6B	6C
Annelida	Capitallida	Capitellidae	<i>Mediomastus californiensis</i>	1	5			1	3
Annelida	Capitallida	Capitellidae	<i>Notomastus giganteus</i>	1					
Annelida	Capitallida	Maldanidae	<i>Praxillella gracilis</i>	1					
Annelida	Chaetoptera	Chaetopteridae	<i>Spiochaetopterus costarum</i>						
Annelida	Cossurida	Cossuridae	<i>Cossura soyeri</i>	2	1				
Annelida	Eunicida	Lumbrineridae	<i>Lumbrineris bicirrata</i>						
Annelida	Eunicida	Lumbrineridae	<i>Lumbrineris luti</i>	1					
Annelida	Eunicida	Onuphidae							
Annelida	Magelonida	Magelonidae	<i>Magelona berkeleyi</i>		4	4	1	7	1
Annelida	Opheliida	Opheliidae	<i>Travisia forbesii</i>						
Annelida	Opheliida	Scalibregmidae	<i>Hyboscolex pacificus</i>						
Annelida	Orbiniida	Orbiniidae	<i>Leitoscoloplos pugettensis</i>	3	3			3	2
Annelida	Orbiniida	Paraonidae	<i>Aricidea lopezi</i>	1				1	1
Annelida	Orbiniida	Paraonidae	<i>Chaetozone</i> sp.		2	1		3	9
Annelida	Orbiniida	Paraonidae	<i>Levinsenia gracilis</i>	5	5				1
Annelida	Phyllodocida	Glyceridae	<i>Hemipodus borealis</i>		2				2
Annelida	Phyllodocida	Goniadidae	<i>Goniada brunnea</i>				1	2	
Annelida	Phyllodocida	Hesionidae							
Annelida	Phyllodocida	Nephtidae	<i>Nephtys caeca</i>	1	6	1	6	5	6
Annelida	Phyllodocida	Nephtidae	<i>Nephtys cornuta</i>	2					
Annelida	Phyllodocida	Nereididae	<i>Cyclonereis clyclurus</i>						
Annelida	Phyllodocida	Pholodidae	<i>Pholoe glabra</i>		1				2
Annelida	Sabellida	Sabellidae							
Annelida	Spionida	Spionidae	<i>Prionospio lighti</i>						
Annelida	Spionida	Spionidae	<i>Prionospio steenstrupi</i>	4	5	3	1	2	9
Annelida	Spionida	Spionidae	<i>Pygospio elegans</i>				1		
Annelida	Spionida	Spionidae	<i>Spio cirrifera</i>		1				
Annelida	Sternapsida	Sternapsidae	<i>Sternapsis scutata</i>						
Annelida	Terebellida	Amphaeretidae	<i>Amphicteis scaphobranchiata</i>						

Annelida	Terebellida	Terebellidae	<i>Artacama conifera</i>						
Annelida	Terebellida	Trichobranchidae	<i>Terebellides stroemi</i>	3					
Arthropoda	Amphipoda	Ampeliscidae	<i>Ampelisca</i> cf. <i>unsocalae</i>	1		2			
Arthropoda	Amphipoda	Ampeliscidae	<i>Byblis veleronis</i>						
Arthropoda	Amphipoda	Phoxocephalidae	<i>Heterophoxus</i> sp.	1					
Arthropoda	Calanoida								1
Arthropoda	Cumacea			1					
Arthropoda	Ostracoda		Species I						
Echinodermata	Dendrochiridotida	Phylloporidae	<i>Pentamera</i> sp.			1			
Echiura	Echiuroinea	Echiuridae	<i>Echiurus echiurus alaskensis</i>						
Mollusca	Cephalaspidea	Atyidae	<i>Haminoea virescens</i>						
Mollusca	Dentaliida	Dentaliidae	<i>Rhabdus rectius</i>		1				
Mollusca	Mesogastropoda	Naticidae	<i>Euspira pallida</i>						
Mollusca	Neogastropoda	Neptuneidae	<i>Colus halli</i>		1				
Mollusca	Nuculoida	Nuculanidae	<i>Nuculana fossa</i>						
Mollusca	Nuculoida	Nuculanidae	<i>Nuculana minuta</i>	1					
Mollusca	Nuculoida	Nuculidae	<i>Ennucula tenuis</i>		1				
Mollusca	Nuculoida	Yoldiidae	<i>Yoldia scissurata</i>					1	
Mollusca	Pholadomyoidea	Pandoridae	<i>Pandora bilirata</i>			1			
Mollusca	Pyramidellia	Pyramidellidae	<i>Turbonilla</i> sp.			1		2	1
Mollusca	Veneroidea	Tellinidae	<i>Macoma eliminata</i>	3	3		1	1	2
Mollusca	Veneroidea	Thyasiridae	<i>Axinospida serricata</i>	19	3	8	10	10	4
Nematoda									
Nemertea	Heteronemertea	Lineidae	<i>Cerebratulus</i> sp.						
Nemertea	Heteronemertea	Lineidae	<i>Linea</i> sp.			1			
			Total No. of Species	18	16	10	7	12	14
			Total No. of Individuals	51	44	23	21	38	44

Appendix Table 4.--Number of individuals of each infauna taxon collected per grab sample at Transects 7 and 8 at Two-headed Gully during June 1998.

Phylum	Order	Family	Species	7A	7B	7C	8A	8B	8C
Annelida	Capitallida	Capitellidae	<i>Mediomastus californiensis</i>			2	1		
Annelida	Capitallida	Capitellidae	<i>Notomastus giganteus</i>						
Annelida	Capitallida	Maldanidae	<i>Praxillella gracilis</i>						
Annelida	Chaetoptera	Chaetopteridae	<i>Spiochaetopterus costarum</i>						
Annelida	Cossurida	Cossuridae	<i>Cossura soyeri</i>					1	
Annelida	Eunicida	Lumbrineridae	<i>Lumbrineris bicirrata</i>						
Annelida	Eunicida	Lumbrineridae	<i>Lumbrineris luti</i>					1	2
Annelida	Eunicida	Onuphidae					1	1	1
Annelida	Magelonida	Magelonidae	<i>Magelona berkeleyi</i>	2	1	4	1	3	
Annelida	Opheliida	Opheliidae	<i>Travisia forbesii</i>						
Annelida	Opheliida	Scalibregmidae	<i>Hyboscolex pacificus</i>						
Annelida	Orbiniida	Orbiniidae	<i>Leitoscoloplos pugettensis</i>	1			5		
Annelida	Orbiniida	Paraonidae	<i>Aricidea lopezi</i>					1	
Annelida	Orbiniida	Paraonidae	<i>Chaetozone</i> sp.	2	2		2	3	6
Annelida	Orbiniida	Paraonidae	<i>Levinsenia gracilis</i>	1			1		
Annelida	Phyllodocida	Glyceridae	<i>Hemipodus borealis</i>						
Annelida	Phyllodocida	Goniadidae	<i>Goniada brunnea</i>						
Annelida	Phyllodocida	Hesionidae							
Annelida	Phyllodocida	Nephtidae	<i>Nephtys caeca</i>	2		2	1	5	6
Annelida	Phyllodocida	Nephtidae	<i>Nephtys cornuta</i>	3			2		
Annelida	Phyllodocida	Nereididae	<i>Cyclonereis clyclurus</i>						
Annelida	Phyllodocida	Pholodidae	<i>Pholoe glabra</i>						1
Annelida	Sabellida	Sabellidae						1	
Annelida	Spionida	Spionidae	<i>Prionospio lighti</i>						
Annelida	Spionida	Spionidae	<i>Prionospio steenstrupi</i>	6	8		1	3	5
Annelida	Spionida	Spionidae	<i>Pygospio elegans</i>			1			
Annelida	Spionida	Spionidae	<i>Spio cirrifera</i>	1					
Annelida	Sternapsida	Sternapsidae	<i>Sternapsis scutata</i>						
Annelida	Terebellida	Amphaeretidae	<i>Amphicteis scaphobranchiata</i>						1

Annelida	Terebellida	Terebellidae	<i>Artacama conifera</i>		2				1
Annelida	Terebellida	Trichobranchidae	<i>Terebellides stroemi</i>						
Arthropoda	Amphipoda	Ampeliscidae	<i>Ampelisca</i> cf. <i>unsocalae</i>		1				
Arthropoda	Amphipoda	Ampeliscidae	<i>Byblis veleronis</i>						
Arthropoda	Amphipoda	Phoxocephalidae	<i>Heterophoxus</i> sp.			1			
Arthropoda	Calanoida								
Arthropoda	Cumacea							1	
Arthropoda	Ostracoda		Species I						
Echinodermata	Dendrochiridotida	Phylloporidae	<i>Pentamera</i> sp.						
Echiura	Echiuroinea	Echiuridae	<i>Echiurus echiurus alaskensis</i>						
Mollusca	Cephalaspidea	Atyidae	<i>Haminoea virescens</i>						
Mollusca	Dentaliida	Dentaliidae	<i>Rhabdus rectius</i>						
Mollusca	Mesogastropoda	Naticidae	<i>Euspira pallida</i>			1			
Mollusca	Neogastropoda	Neptuneidae	<i>Colus halli</i>						
Mollusca	Nuculoida	Nuculanidae	<i>Nuculana fossa</i>						
Mollusca	Nuculoida	Nuculanidae	<i>Nuculana minuta</i>	1					
Mollusca	Nuculoida	Nuculidae	<i>Ennucula tenuis</i>	1					1
Mollusca	Nuculoida	Yoldiidae	<i>Yoldia scissurata</i>						
Mollusca	Pholadomyoidea	Pandoridae	<i>Pandora bilirata</i>						
Mollusca	Pyramidellacea	Pyramidellidae	<i>Turbonilla</i> sp.	2		1			
Mollusca	Veneroidea	Tellinidae	<i>Macoma eliminata</i>	3		3	3	2	
Mollusca	Veneroidea	Thyasiridae	<i>Axinospida serricata</i>	8	2	10	10	10	1
Nematoda									
Nemertea	Heteronemertea	Lineidae	<i>Cerebratulus</i> sp.						
Nemertea	Heteronemertea	Lineidae	<i>Linea</i> sp.	3		1	1	2	
			Total No. of Species	14	6	10	12	13	10
			Total No. of Individuals	36	16	26	29	34	25

Appendix Table 4.--Number of individuals of each infauna taxa collected per grab sample at Transects 9 and 10 at Two-headed Gully during June 1998.

Phylum	Order	Family	Species	9A	9B	9C	10A	10B	10C
Annelida	Capitallida	Capitellidae	<i>Mediomastus californiensis</i>	1					
Annelida	Capitallida	Capitellidae	<i>Notomastus giganteus</i>				1		
Annelida	Capitallida	Maldanidae	<i>Praxillella gracilis</i>						
Annelida	Chaetoptera	Chaetopteridae	<i>Spiochaetopterus costarum</i>						
Annelida	Cossurida	Cossuridae	<i>Cossura soyeri</i>						
Annelida	Eunicida	Lumbrineridae	<i>Lumbrineris bicirrata</i>						
Annelida	Eunicida	Lumbrineridae	<i>Lumbrineris luti</i>		2			5	
Annelida	Eunicida	Onuphidae			1				
Annelida	Magelonida	Magelonidae	<i>Magelona berkeleyi</i>		1			1	
Annelida	Opheliida	Opheliidae	<i>Travisia forbesii</i>						
Annelida	Opheliida	Scalibregmidae	<i>Hyboscolex pacificus</i>					1	
Annelida	Orbiniida	Orbiniidae	<i>Leitoscoloplos pugettensis</i>						1
Annelida	Orbiniida	Paraonidae	<i>Aricidea lopezi</i>						
Annelida	Orbiniida	Paraonidae	<i>Chaetozone</i> sp.			5		5	
Annelida	Orbiniida	Paraonidae	<i>Levinsenia gracilis</i>						2
Annelida	Phyllodocida	Glyceridae	<i>Hemipodus borealis</i>						1
Annelida	Phyllodocida	Goniadidae	<i>Goniada brunnea</i>						
Annelida	Phyllodocida	Hesionidae						1	
Annelida	Phyllodocida	Nephtidae	<i>Nephtys caeca</i>		1	4	3	6	2
Annelida	Phyllodocida	Nephtidae	<i>Nephtys cornuta</i>	1					
Annelida	Phyllodocida	Nereididae	<i>Cyclonereis clyclurus</i>		1				
Annelida	Phyllodocida	Pholodidae	<i>Pholoe glabra</i>						
Annelida	Sabellida	Sabellidae							
Annelida	Spionida	Spionidae	<i>Prionospio lighti</i>					1	
Annelida	Spionida	Spionidae	<i>Prionospio steenstrupi</i>	3	9	3	7	1	
Annelida	Spionida	Spionidae	<i>Pygospio elegans</i>	1					
Annelida	Spionida	Spionidae	<i>Spio cirrifera</i>						
Annelida	Sternapsida	Sternapsidae	<i>Sternapsis scutata</i>						
Annelida	Terebellida	Amphaeretidae	<i>Amphicteis scaphobranchiata</i>		1				

Annelida	Terebellida	Terebellidae	<i>Artacama conifera</i>					1	
Annelida	Terebellida	Trichobranchidae	<i>Terebellides stroemi</i>						
Arthropoda	Amphipoda	Ampeliscidae	<i>Ampelisca</i> cf. <i>unsocalae</i>					1	2
Arthropoda	Amphipoda	Ampeliscidae	<i>Byblis veleronis</i>		1				1
Arthropoda	Amphipoda	Phoxocephalidae	<i>Heterophoxus</i> sp.						
Arthropoda	Calanoida								
Arthropoda	Cumacea			3			1	1	1
Arthropoda	Ostracoda		Species I						
Echinodermata	Dendrochiridotida	Phylloporidae	<i>Pentamera</i> sp.						
Echiura	Echiuroinea	Echiuridae	<i>Echiurus echiurus alaskensis</i>						1
Mollusca	Cephalaspidea	Atyidae	<i>Haminoea virescens</i>						
Mollusca	Dentaliida	Dentaliidae	<i>Rhabdus rectius</i>						1
Mollusca	Mesogastropoda	Naticidae	<i>Euspira pallida</i>						
Mollusca	Neogastropoda	Neptuneidae	<i>Colus halli</i>						
Mollusca	Nuculoida	Nuculanidae	<i>Nuculana fossa</i>						
Mollusca	Nuculoida	Nuculanidae	<i>Nuculana minuta</i>						
Mollusca	Nuculoida	Nuculidae	<i>Ennucula tenuis</i>		1				
Mollusca	Nuculoida	Yoldiidae	<i>Yoldia scissurata</i>						
Mollusca	Pholadomyoidea	Pandoridae	<i>Pandora bilirata</i>			1			
Mollusca	Pyramidellia	Pyramidellidae	<i>Turbonilla</i> sp.						
Mollusca	Veneroidea	Tellinidae	<i>Macoma eliminata</i>	1					1
Mollusca	Veneroidea	Thyasiridae	<i>Axinospida serricata</i>	3	5	2	6	1	
Nematoda						1			
Nemertea	Heteronemertea	Lineidae	<i>Cerebratulus</i> sp.			1			
Nemertea	Heteronemertea	Lineidae	<i>Linea</i> sp.						
			Total No. of Species	7	10	7	5	12	10
			Total No. of Individuals	13	23	17	18	25	13

Appendix Table 5.--Number of individuals of each infauna taxon collected per grab sample at Transect 1 in Chiniak Gully during August 1999.

Phylum	Order	Family	Species	1A	1B	1C	1D	1E
Annelida	Capitallida	Capitellidae	<i>Mediomastus californiensis</i>		2	12		
Annelida	Capitallida	Capitellidae	<i>Notomastus giganteus</i>					
Annelida	Capitallida	Maldanidae						
Annelida	Capitallida	Maldanidae	<i>Axiothella rubrocincta</i>					
Annelida	Capitallida	Maldanidae	<i>Clymenella</i> sp.					
Annelida	Capitallida	Maldanidae	<i>Euclymene zonalis</i>			3		
Annelida	Capitallida	Maldanidae	<i>Praxillella gracilis</i>					
Annelida	Chaetoptera	Chaetopteridae	<i>Spiochaetopterus costarum</i>					
Annelida	Cossurida	Cossuridae	<i>Cossura soyeri</i>					
Annelida	Eunicida	Lumbrineridae	<i>Lumbrineris</i> sp.				3	
Annelida	Eunicida	Lumbrineridae	<i>Lumbrineris bicirrata</i>					
Annelida	Eunicida	Lumbrineridae	<i>Lumbrineris inflata</i>					
Annelida	Eunicida	Lumbrineridae	<i>Lumbrineris luti</i>	3	2	12	16	
Annelida	Eunicida	Onuphidae	<i>Onuphis iridescens</i>		1	1		
Annelida	Magelonida	Magelonidae	<i>Magelona berkeleyi</i>					
Annelida	Opheliida	Opheliidae	<i>Ophelina</i> sp.					
Annelida	Opheliida	Opheliidae	<i>Travisia forbesii</i>					
Annelida	Opheliida	Scalibregmidae	<i>Scalibregma inflatum</i>			1		
Annelida	Orbiniida	Orbiniidae	<i>Leitoscoloplos pugettensis</i>		1	2	4	5
Annelida	Orbiniida	Paraonidae	<i>Aricidea lopezi</i>			2		
Annelida	Orbiniida	Paraonidae	<i>Chaetozone</i> sp.			2		
Annelida	Orbiniida	Paraonidae	<i>Levinsenia gracilis</i>					
Annelida	Oweniida	Oweniidae	<i>Owenia</i> cf. <i>fusiformis</i>					
Annelida	Phyllodocida	Glyceridae	<i>Glycera</i> sp.		1			
Annelida	Phyllodocida	Glyceridae	<i>Hemipodus borealis</i>	1	1	1	1	
Annelida	Phyllodocida	Goniadidae	<i>Goniada brunnea</i>			3		2
Annelida	Phyllodocida	Nephtidae	<i>Nephtys caeca</i>		1	3	2	2
Annelida	Phyllodocida	Nephtidae	<i>Nephtys cornuta</i>			7		1
Annelida	Phyllodocida	Pholodidae	<i>Pholoe glabra</i>		4		2	2



Annelida	Phyllodocida	Phyllodocidae	<i>Eteone longa</i>					
Annelida	Phyllodocida	Phyllodocidae	<i>Phyllodocida</i> sp.					
Annelida	Phyllodocida	Polynoidea	<i>Hesperonoe</i> sp.					
Annelida	Phyllodocida	Spaerodoropsidae	<i>Spaerodoropsis</i> sp.			1		
Annelida	Phyllodocida	Syllidae	<i>Syllis</i> sp.					
Annelida	Sabellida	Sabellidae				1		
Annelida	Sabellida	Sabellidae	<i>Chone</i> sp.					
Annelida	Spionida	Spionidae	<i>Dipolydora socialis</i>			1		
Annelida	Spionida	Spionidae	<i>Prionospio lighti</i>			1		
Annelida	Spionida	Spionidae	<i>Prionospio steenstrupi</i>			3		
Annelida	Spionida	Spionidae	<i>Pygospio elegans</i>					
Annelida	Spionida	Spionidae	<i>Spio cirrifera</i>			1		
Annelida	Terebellida	Amphaeretidae	<i>Amphicteis scaphobranchiata</i>			3		
Annelida	Terebellida	Pectinariidae	<i>Pectinaria moorei</i>				1	
Annelida	Terebellida	Terebellidae	<i>Amphitrite cirrata</i>					
Annelida	Terebellida	Terebellidae	<i>Scionella</i> sp.					
Annelida	Terebellida	Trichobranchidae	<i>Terebellides stroemi</i>					
Arthropoda	Amphipoda	Ampeliscidae	<i>Ampelisca</i> cf. <i>unsocalae</i>			2		
Arthropoda	Amphipoda	Ampeliscidae	<i>Byblis veleronis</i>			1		
Arthropoda	Amphipoda	Ischyroceridae				1		6
Arthropoda	Amphipoda	Phoxocephalidae	<i>Heterophoxus</i> sp.			5		
Arthropoda	Cumacea	Diastyllopsidae	<i>Diastylopsis dawsoni</i>	16	375		75	296
Arthropoda	Cumacea	Leuconiidae	<i>Leptocuma</i> sp.					
Arthropoda	Cumacea	Leuconiidae	<i>Leucon magnadentata</i>			1		
Arthropoda	Decapoda	Pinnixidae	<i>Pinnixa</i> sp.	4	4		3	
Arthropoda	Pantopoda	Ammonotheidae	<i>Achelia</i> sp.			1		
Arthropoda	Pantopoda	Nymphonidae	<i>Nymphon</i> sp.					
Chordata	Stolidobranchia	Mogulidae						
Echinodermata	Apodida	Chiridotidae						
Echinodermata	Clypeasteroidea	Dendrasteridae	<i>Echinarchinus parma</i>		1			
Echinodermata	Dendrochiridotida	Phylloporidae	<i>Pentamera</i> sp.	1				
Echinodermata	Dendrochiridotida	Sclerodactylidae	<i>Eupentacta</i> sp.					
Echinodermata	Molpadiida	Molpadiidae	<i>Molpadia intermedia</i>					

Echinodermata	Ophiurida	Amphiuridae	<i>Amphiodia</i> sp.	21	27	2	24	24
Echiura	Echiuroinea	Echiuridae	<i>Echiurus echiurus alaskensis</i>				1	
Mollusca	Cephalaspidea	Atyidae	<i>Haminoea virescens</i>					
Mollusca	Cephalaspidea	Cylichnidae	<i>Acteocina harpa</i>					1
Mollusca	Dentaliida	Dentaliidae	<i>Rhabdus rectius</i>			1		
Mollusca	Mesogastropoda	Eulimidae	<i>Eulima</i> sp.					
Mollusca	Mesogastropoda	Naticidae	<i>Euspira pallida</i>					
Mollusca	Myoidea	Hiatellidae	<i>Hiatella arctica</i>					
Mollusca	Neogastropoda	Amphissidae	<i>Alia gausapata</i>					
Mollusca	Neogastropoda	Turridae	<i>Oenopota rosea</i>					2
Mollusca	Nuculoida	Nuculidae	<i>Ennucula tenuis</i>					2
Mollusca	Nuculoida	Yoldiidae	<i>Yoldia hyperborea</i>	1	2	1	4	1
Mollusca	Nuculoida	Yoldiidae	<i>Yoldia seminuda</i>					
Mollusca	Pholadomyoidea	Lyonsiidae	<i>Lyonsia californica</i>					
Mollusca	Pholadomyoidea	Pandoridae	<i>Pandora filosa</i>		1			
Mollusca	Pyramidellacea	Pyramidellidae	<i>Turbonilla</i> sp.					
Mollusca	Veneroidea	Cultellidae	<i>Siliqua alta</i>		2		10	4
Mollusca	Veneroidea	Mactridae	<i>Spisula polynema</i>					
Mollusca	Veneroidea	Tellinidae	<i>Macoma eliminata</i>	1		2	2	1
Mollusca	Veneroidea	Tellinidae	<i>Macoma lipara</i>		32			
Mollusca	Veneroidea	Tellinidae	<i>Macoma moesta</i>	1	1	2	1	
Mollusca	Veneroidea	Thyasiridae	<i>Axinospida serricata</i>	11		8	39	29
Mollusca	Veneroidea	Veneridae	<i>Compsomyx subdiaphana</i>					
Mollusca	Veneroidea	Veneridae	<i>Nutricula lordi</i>			9		
Nemertea	Heteronemertea	Lineidae	<i>Cerebratulus</i> sp.					
Nemertea	Heteronemertea	Lineidae	<i>Linea</i> sp.			2	1	2
			Total No. of Species	10	17	33	17	16
			Total No. of Individuals	60	458	98	189	379

Appendix Table 5.--Number of individuals of each infauna taxon collected per grab sample at Transect 2 in Chiniak Gully during August 1999.

Phylum	Order	Family	Species	2A	2B	2C	2D	2E	2F
Annelida	Capitallida	Capitellidae	<i>Mediomastus californiensis</i>	1					1
Annelida	Capitallida	Capitellidae	<i>Notomastus giganteus</i>						
Annelida	Capitallida	Maldanidae		2					
Annelida	Capitallida	Maldanidae	<i>Axiothella rubrocincta</i>						
Annelida	Capitallida	Maldanidae	<i>Clymenella</i> sp.						
Annelida	Capitallida	Maldanidae	<i>Euclymene zonalis</i>						
Annelida	Capitallida	Maldanidae	<i>Praxillella gracilis</i>						
Annelida	Chaetoptera	Chaetopteridae	<i>Spiochaetopterus costarum</i>						1
Annelida	Cossurida	Cossuridae	<i>Cossura soyeri</i>						
Annelida	Eunicida	Lumbrineridae	<i>Lumbrineris</i> sp.					1	
Annelida	Eunicida	Lumbrineridae	<i>Lumbrineris bicirrata</i>						
Annelida	Eunicida	Lumbrineridae	<i>Lumbrineris inflata</i>						
Annelida	Eunicida	Lumbrineridae	<i>Lumbrineris luti</i>			6	2		11
Annelida	Eunicida	Onuphidae	<i>Onuphis iridescens</i>						
Annelida	Magelonida	Magelonidae	<i>Magelona berkeleyi</i>			1			2
Annelida	Opheliida	Opheliidae	<i>Ophelina</i> sp.						
Annelida	Opheliida	Opheliidae	<i>Travisia forbesii</i>						
Annelida	Opheliida	Scalibregmidae	<i>Scalibregma inflatum</i>						
Annelida	Orbiniida	Orbiniidae	<i>Leitoscoloplos pugettensis</i>	4	2	7	9	5	7
Annelida	Orbiniida	Paraonidae	<i>Aricidea lopezi</i>						
Annelida	Orbiniida	Paraonidae	<i>Chaetozone</i> sp.						
Annelida	Orbiniida	Paraonidae	<i>Levinsenia gracilis</i>						
Annelida	Oweniida	Oweniidae	<i>Owenia</i> cf. <i>fusiformis</i>						
Annelida	Phyllodocida	Glyceridae	<i>Glycera</i> sp.						
Annelida	Phyllodocida	Glyceridae	<i>Hemipodus borealis</i>						
Annelida	Phyllodocida	Goniadidae	<i>Goniada brunnea</i>						
Annelida	Phyllodocida	Nephtidae	<i>Nephtys caeca</i>	2	4	2	1	1	4
Annelida	Phyllodocida	Nephtidae	<i>Nephtys cornuta</i>					3	
Annelida	Phyllodocida	Pholodidae	<i>Pholoe glabra</i>	4		1	1		

Annelida	Phyllococida	Phyllococidae	<i>Eteone longa</i>	1					
Annelida	Phyllococida	Phyllococidae	<i>Phyllococida</i> sp.						
Annelida	Phyllococida	Polynoidea	<i>Hesperonoe</i> sp.		1		1		
Annelida	Phyllococida	Spaerodoropsidae	<i>Spaerodoropsis</i> sp.						
Annelida	Phyllococida	Syllidae	<i>Syllis</i> sp.				1		
Annelida	Sabellida	Sabellidae				1			
Annelida	Sabellida	Sabellidae	<i>Chone</i> sp.						
Annelida	Spionida	Spionidae	<i>Dipolydora socialis</i>						
Annelida	Spionida	Spionidae	<i>Prionospio lighti</i>						
Annelida	Spionida	Spionidae	<i>Prionospio steenstrupi</i>						1
Annelida	Spionida	Spionidae	<i>Pygospio elegans</i>						
Annelida	Spionida	Spionidae	<i>Spio cirrifera</i>						
Annelida	Terebellida	Amphaeretidae	<i>Amphicteis scaphobranchiata</i>			1			1
Annelida	Terebellida	Pectinariidae	<i>Pectinaria moorei</i>						
Annelida	Terebellida	Terebellidae	<i>Amphitrite cirrata</i>						
Annelida	Terebellida	Terebellidae	<i>Scionella</i> sp.						
Annelida	Terebellida	Trichobranchidae	<i>Terebellides stroemi</i>						
Arthropoda	Amphipoda	Ampeliscidae	<i>Ampelisca</i> cf. <i>unsocalae</i>	4		2	2	3	1
Arthropoda	Amphipoda	Ampeliscidae	<i>Byblis veleronis</i>						
Arthropoda	Amphipoda	Ischyroceridae		2	2	1			7
Arthropoda	Amphipoda	Phoxocephalidae	<i>Heterophoxus</i> sp.		1				
Arthropoda	Cumacea	Diastyllopsidae	<i>Diastylopsis dawsoni</i>	1			3	1	30
Arthropoda	Cumacea	Leuconiidae	<i>Leptocuma</i> sp.						
Arthropoda	Cumacea	Leuconiidae	<i>Leucon magnadentata</i>						
Arthropoda	Decapoda	Pinnixidae	<i>Pinnixa</i> sp.	3	9	4	5		3
Arthropoda	Pantopoda	Ammonotheidae	<i>Achelia</i> sp.						
Arthropoda	Pantopoda	Nymphonidae	<i>Nymphon</i> sp.						1
Chordata	Stolidobranchia	Mogulidae				1			
Echinodermata	Apodida	Chiridotidae			1				
Echinodermata	Clypeasteroidea	Dendrasteridae	<i>Echinarchinus parma</i>						
Echinodermata	Dendrochiridotida	Phylloporidae	<i>Pentamera</i> sp.			1			
Echinodermata	Dendrochiridotida	Sclerodactylidae	<i>Eupentacta</i> sp.						
Echinodermata	Molpadiida	Molpadiidae	<i>Molpadia intermedia</i>						

Echinodermata	Ophiurida	Amphiuridae	<i>Amphiodia</i> sp.	44	24	17	17	15	28
Echiura	Echiuroinea	Echiuridae	<i>Echiurus echiurus alaskensis</i>						
Mollusca	Cephalaspidea	Atyidae	<i>Haminoea virescens</i>						
Mollusca	Cephalaspidea	Cylichnidae	<i>Acteocina harpa</i>						
Mollusca	Dentaliida	Dentaliidae	<i>Rhabdus rectius</i>						
Mollusca	Mesogastropoda	Eulimidae	<i>Eulima</i> sp.						
Mollusca	Mesogastropoda	Naticidae	<i>Euspira pallida</i>						
Mollusca	Myoidea	Hiatellidae	<i>Hiatella arctica</i>						
Mollusca	Neogastropoda	Amphissidae	<i>Alia gausapata</i>						
Mollusca	Neogastropoda	Turridae	<i>Oenopota rosea</i>	1			2		1
Mollusca	Nuculoida	Nuculidae	<i>Ennucula tenuis</i>			2			3
Mollusca	Nuculoida	Yoldiidae	<i>Yoldia hyperborea</i>	1		2	1	2	
Mollusca	Nuculoida	Yoldiidae	<i>Yoldia seminuda</i>						1
Mollusca	Pholadomyoidea	Lyonsiidae	<i>Lyonsia californica</i>						
Mollusca	Pholadomyoidea	Pandoridae	<i>Pandora filosa</i>						
Mollusca	Pyramidellacea	Pyramidellidae	<i>Turbonilla</i> sp.						
Mollusca	Veneroidea	Cultellidae	<i>Siliqua alta</i>	5	3	8	4		8
Mollusca	Veneroidea	Mactridae	<i>Spisula polynema</i>			1		1	
Mollusca	Veneroidea	Tellinidae	<i>Macoma eliminata</i>		1	2			3
Mollusca	Veneroidea	Tellinidae	<i>Macoma lipara</i>						1
Mollusca	Veneroidea	Tellinidae	<i>Macoma moesta</i>	2		3	1		
Mollusca	Veneroidea	Thyasiridae	<i>Axinospida serricata</i>	31	24	34	6	6	41
Mollusca	Veneroidea	Veneridae	<i>Compsomyax subdiaphana</i>						
Mollusca	Veneroidea	Veneridae	<i>Nutricula lordi</i>						
Nemertea	Heteronemertea	Lineidae	<i>Cerebratulus</i> sp.						
Nemertea	Heteronemertea	Lineidae	<i>Linea</i> sp.			3			1
			Total No. of Species	16	11	21	15	10	22
			Total No. of Individuals	108	72	100	56	38	157

Appendix Table 5.--Number of individuals of each infauna taxon collected per grab sample at Transect 3 in Chiniak Gully during August 1999.

Phylum	Order	Family	Species	3A	3B	3C	3D	3F
Annelida	Capitallida	Capitellidae	<i>Mediomastus californiensis</i>	3	1	3	2	
Annelida	Capitallida	Capitellidae	<i>Notomastus giganteus</i>					
Annelida	Capitallida	Maldanidae						1
Annelida	Capitallida	Maldanidae	<i>Axiothella rubrocincta</i>					
Annelida	Capitallida	Maldanidae	<i>Clymenella</i> sp.			2		
Annelida	Capitallida	Maldanidae	<i>Euclymene zonalis</i>	2	3	5	3	
Annelida	Capitallida	Maldanidae	<i>Praxillella gracilis</i>					
Annelida	Chaetoptera	Chaetopteridae	<i>Spiochaetopterus costarum</i>					
Annelida	Cossurida	Cossuridae	<i>Cossura soyeri</i>					
Annelida	Eunicida	Lumbrineridae	<i>Lumbrineris</i> sp.					
Annelida	Eunicida	Lumbrineridae	<i>Lumbrineris bicirrata</i>		1			
Annelida	Eunicida	Lumbrineridae	<i>Lumbrineris inflata</i>					
Annelida	Eunicida	Lumbrineridae	<i>Lumbrineris luti</i>	7	7	1	8	1
Annelida	Eunicida	Onuphidae	<i>Onuphis iridescens</i>	2		1		
Annelida	Magelonida	Magelonidae	<i>Magelona berkeleyi</i>					
Annelida	Opheliida	Opheliidae	<i>Ophelina</i> sp.					
Annelida	Opheliida	Opheliidae	<i>Travisia forbesii</i>					
Annelida	Opheliida	Scalibregmidae	<i>Scalibregma inflatum</i>					
Annelida	Orbiniida	Orbiniidae	<i>Leitoscoloplos pugettensis</i>	6	5	6	1	1
Annelida	Orbiniida	Paraonidae	<i>Aricidea lopezi</i>					
Annelida	Orbiniida	Paraonidae	<i>Chaetozone</i> sp.					
Annelida	Orbiniida	Paraonidae	<i>Levinsenia gracilis</i>					
Annelida	Oweniida	Oweniidae	<i>Owenia</i> cf. <i>fusiformis</i>				1	
Annelida	Phyllodocida	Glyceridae	<i>Glycera</i> sp.					
Annelida	Phyllodocida	Glyceridae	<i>Hemipodus borealis</i>					
Annelida	Phyllodocida	Goniadidae	<i>Goniada brunnea</i>	2	2	2	3	2
Annelida	Phyllodocida	Nephtidae	<i>Nephtys caeca</i>		6		4	
Annelida	Phyllodocida	Nephtidae	<i>Nephtys cornuta</i>		2			1
Annelida	Phyllodocida	Pholodidae	<i>Pholoe glabra</i>	1	1	2		

Annelida	Phyllodocida	Phyllodocidae	<i>Eteone longa</i>					
Annelida	Phyllodocida	Phyllodocidae	<i>Phyllodocida</i> sp.					
Annelida	Phyllodocida	Polynoidea	<i>Hesperonoe</i> sp.					
Annelida	Phyllodocida	Spaerodoropsidae	<i>Spaerodoropsis</i> sp.					
Annelida	Phyllodocida	Syllidae	<i>Syllis</i> sp.	1	3			
Annelida	Sabellida	Sabellidae						
Annelida	Sabellida	Sabellidae	<i>Chone</i> sp.					
Annelida	Spionida	Spionidae	<i>Dipolydora socialis</i>					
Annelida	Spionida	Spionidae	<i>Prionospio lighti</i>					
Annelida	Spionida	Spionidae	<i>Prionospio steenstrupi</i>		2			1
Annelida	Spionida	Spionidae	<i>Pygospio elegans</i>					
Annelida	Spionida	Spionidae	<i>Spio cirrifera</i>					
Annelida	Terebellida	Amphaeretidae	<i>Amphicteis scaphobranchiata</i>			2	2	
Annelida	Terebellida	Pectinariidae	<i>Pectinaria moorei</i>					1
Annelida	Terebellida	Terebellidae	<i>Amphitrite cirrata</i>					
Annelida	Terebellida	Terebellidae	<i>Scionella</i> sp.					
Annelida	Terebellida	Trichobranchidae	<i>Terebellides stroemi</i>					
Arthropoda	Amphipoda	Ampeliscidae	<i>Ampelisca</i> cf. <i>unsocalae</i>				2	
Arthropoda	Amphipoda	Ampeliscidae	<i>Byblis veleronis</i>					
Arthropoda	Amphipoda	Ischyroceridae					1	
Arthropoda	Amphipoda	Phoxocephalidae	<i>Heterophoxus</i> sp.				3	
Arthropoda	Cumacea	Diastyllopsidae	<i>Diastylopsis dawsoni</i>	3	1		1	213
Arthropoda	Cumacea	Leuconiidae	<i>Leptocuma</i> sp.					
Arthropoda	Cumacea	Leuconiidae	<i>Leucon magnadentata</i>	1				
Arthropoda	Decapoda	Pinnixidae	<i>Pinnixa</i> sp.	7	3	1	3	
Arthropoda	Pantopoda	Ammonotheidae	<i>Achelia</i> sp.					
Arthropoda	Pantopoda	Nymphonidae	<i>Nymphon</i> sp.					
Chordata	Stolidobranchia	Mogulidae			1	1	1	5
Echinodermata	Apodida	Chiridotidae		1				
Echinodermata	Clypeasteroidea	Dendrasteridae	<i>Echinarchinus parma</i>		1	1		
Echinodermata	Dendrochiridotida	Phylloporidae	<i>Pentamera</i> sp.		1		2	
Echinodermata	Dendrochiridotida	Sclerodactylidae	<i>Eupentacta</i> sp.			1		
Echinodermata	Molpadiida	Molpadiidae	<i>Molpadia intermedia</i>					

Echinodermata	Ophiurida	Amphiuridae	<i>Amphiodia</i> sp.	22	53	19	36	45
Echiura	Echiuroinea	Echiuridae	<i>Echiurus echiurus alaskensis</i>					
Mollusca	Cephalaspidea	Atyidae	<i>Haminoea virescens</i>					
Mollusca	Cephalaspidea	Cylichnidae	<i>Acteocina harpa</i>					
Mollusca	Dentaliida	Dentaliidae	<i>Rhabdus rectius</i>	1				
Mollusca	Mesogastropoda	Eulimidae	<i>Eulima</i> sp.					
Mollusca	Mesogastropoda	Naticidae	<i>Euspira pallida</i>	1				
Mollusca	Myoidea	Hiatellidae	<i>Hiatella arctica</i>					
Mollusca	Neogastropoda	Amphissidae	<i>Alia gausapata</i>					
Mollusca	Neogastropoda	Turridae	<i>Oenopota rosea</i>			2		
Mollusca	Nuculoida	Nuculidae	<i>Ennucula tenuis</i>					
Mollusca	Nuculoida	Yoldiidae	<i>Yoldia hyperborea</i>	1	1	1	4	6
Mollusca	Nuculoida	Yoldiidae	<i>Yoldia seminuda</i>					
Mollusca	Pholadomyoidea	Lyonsiidae	<i>Lyonsia californica</i>					
Mollusca	Pholadomyoidea	Pandoridae	<i>Pandora filosa</i>					1
Mollusca	Pyramidellia	Pyramidellidae	<i>Turbonilla</i> sp.	1				
Mollusca	Veneroidea	Cultellidae	<i>Siliqua alta</i>	4	6	4	12	7
Mollusca	Veneroidea	Mactridae	<i>Spisula polynema</i>					
Mollusca	Veneroidea	Tellinidae	<i>Macoma eliminata</i>		1		2	
Mollusca	Veneroidea	Tellinidae	<i>Macoma lipara</i>					
Mollusca	Veneroidea	Tellinidae	<i>Macoma moesta</i>	1		1	1	1
Mollusca	Veneroidea	Thyasiridae	<i>Axinospida serricata</i>	17	18	6	32	24
Mollusca	Veneroidea	Veneridae	<i>Compsoyax subdiaphana</i>					1
Mollusca	Veneroidea	Veneridae	<i>Nutricula lordi</i>				2	
Nemertea	Heteronemertea	Lineidae	<i>Cerebratulus</i> sp.					
Nemertea	Heteronemertea	Lineidae	<i>Linea</i> sp.	1	1	1	1	
			Total No. of Species	21	22	20	23	16
			Total No. of Individuals	85	120	62	127	311



Appendix Table 5.--Number of individuals of each infauna taxon collected per grab sample at Transect 4 in Chiniak Gully during August 1999.

Phylum	Order	Family	Species	4A	4B	4C	4D	4F
Annelida	Capitallida	Capitellidae	<i>Mediomastus californiensis</i>	3	2		3	
Annelida	Capitallida	Capitellidae	<i>Notomastus giganteus</i>					
Annelida	Capitallida	Maldanidae				1		1
Annelida	Capitallida	Maldanidae	<i>Axiothella rubrocincta</i>					
Annelida	Capitallida	Maldanidae	<i>Clymenella</i> sp.					
Annelida	Capitallida	Maldanidae	<i>Euclymene zonalis</i>		1			1
Annelida	Capitallida	Maldanidae	<i>Praxillella gracilis</i>					
Annelida	Chaetoptera	Chaetopteridae	<i>Spiochaetopterus costarum</i>					
Annelida	Cossurida	Cossuridae	<i>Cossura soyeri</i>					
Annelida	Eunicida	Lumbrineridae	<i>Lumbrineris</i> sp.	3				
Annelida	Eunicida	Lumbrineridae	<i>Lumbrineris bicirrata</i>		1			
Annelida	Eunicida	Lumbrineridae	<i>Lumbrineris inflata</i>					
Annelida	Eunicida	Lumbrineridae	<i>Lumbrineris luti</i>	7	18	14	4	5
Annelida	Eunicida	Onuphidae	<i>Onuphis iridescens</i>			1	1	
Annelida	Magelonida	Magelonidae	<i>Magelona berkeleyi</i>					1
Annelida	Opheliida	Opheliidae	<i>Ophelina</i> sp.					
Annelida	Opheliida	Opheliidae	<i>Travisia forbesii</i>					
Annelida	Opheliida	Scalibregmidae	<i>Scalibregma inflatum</i>					
Annelida	Orbiniida	Orbiniidae	<i>Leitoscoloplos pugettensis</i>	4	1	7	11	6
Annelida	Orbiniida	Paraonidae	<i>Aricidea lopezi</i>					
Annelida	Orbiniida	Paraonidae	<i>Chaetozone</i> sp.					
Annelida	Orbiniida	Paraonidae	<i>Levinsenia gracilis</i>					
Annelida	Oweniida	Oweniidae	<i>Owenia</i> cf. <i>fusiformis</i>				1	
Annelida	Phyllodocida	Glyceridae	<i>Glycera</i> sp.					
Annelida	Phyllodocida	Glyceridae	<i>Hemipodus borealis</i>	2		1	1	1
Annelida	Phyllodocida	Goniadidae	<i>Goniada brunnea</i>	1	1	3	3	
Annelida	Phyllodocida	Nephtidae	<i>Nephtys caeca</i>	2	1	7	6	
Annelida	Phyllodocida	Nephtidae	<i>Nephtys cornuta</i>			3	2	
Annelida	Phyllodocida	Pholodidae	<i>Pholoe glabra</i>	1	2	1		

Annelida	Phyllococida	Phyllococidae	<i>Eteone longa</i>					
Annelida	Phyllococida	Phyllococidae	<i>Phyllococida</i> sp.					
Annelida	Phyllococida	Polynoidae	<i>Hesperonoe</i> sp.					
Annelida	Phyllococida	Spaerodoropsidae	<i>Spaerodoropsis</i> sp.					
Annelida	Phyllococida	Syllidae	<i>Syllis</i> sp.		2	1	1	
Annelida	Sabellida	Sabellidae		1				
Annelida	Sabellida	Sabellidae	<i>Chone</i> sp.					
Annelida	Spionida	Spionidae	<i>Dipolydora socialis</i>					
Annelida	Spionida	Spionidae	<i>Prionospio lighti</i>	2				
Annelida	Spionida	Spionidae	<i>Prionospio steenstrupi</i>	3				1
Annelida	Spionida	Spionidae	<i>Pygospio elegans</i>					
Annelida	Spionida	Spionidae	<i>Spio cirrifera</i>					
Annelida	Terebellida	Amphaeretidae	<i>Amphicteis scaphobranchiata</i>		4			1
Annelida	Terebellida	Pectinariidae	<i>Pectinaria moorei</i>					
Annelida	Terebellida	Terebellidae	<i>Amphitrite cirrata</i>					
Annelida	Terebellida	Terebellidae	<i>Scionella</i> sp.					
Annelida	Terebellida	Trichobranchidae	<i>Terebellides stroemi</i>					
Arthropoda	Amphipoda	Ampeliscidae	<i>Ampelisca</i> cf. <i>unsocalae</i>	1		2		
Arthropoda	Amphipoda	Ampeliscidae	<i>Byblis veleronis</i>					
Arthropoda	Amphipoda	Ischyroceridae			2	2		1
Arthropoda	Amphipoda	Phoxocephalidae	<i>Heterophoxus</i> sp.	1		1		
Arthropoda	Cumacea	Diastyllopsidae	<i>Diastylopsis dawsoni</i>	5			148	1
Arthropoda	Cumacea	Leuconiidae	<i>Leptocuma</i> sp.					
Arthropoda	Cumacea	Leuconiidae	<i>Leucon magnadentata</i>	1				
Arthropoda	Decapoda	Pinnixidae	<i>Pinnixa</i> sp.	2	1	4		
Arthropoda	Pantopoda	Ammonotheidae	<i>Achelia</i> sp.					
Arthropoda	Pantopoda	Nymphonidae	<i>Nymphon</i> sp.					
Chordata	Stolidobranchia	Mogulidae			1	5		
Echinodermata	Apodida	Chiridotidae						
Echinodermata	Clypeasteroidea	Dendrasteridae	<i>Echinarchinus parma</i>					
Echinodermata	Dendrochiridotida	Phylloporidae	<i>Pentamera</i> sp.					
Echinodermata	Dendrochiridotida	Sclerodactylidae	<i>Eupentacta</i> sp.					
Echinodermata	Molpadiida	Molpadiidae	<i>Molpadia intermedia</i>					

Echinodermata	Ophiurida	Amphiuridae	<i>Amphiodia</i> sp.	24	33	23	28	14
Echiura	Echiuroinea	Echiuridae	<i>Echiurus echiurus alaskensis</i>					
Mollusca	Cephalaspidea	Atyidae	<i>Haminoea virescens</i>					
Mollusca	Cephalaspidea	Cylichnidae	<i>Acteocina harpa</i>					
Mollusca	Dentaliida	Dentaliidae	<i>Rhabdus rectius</i>					2
Mollusca	Mesogastropoda	Eulimidae	<i>Eulima</i> sp.					1
Mollusca	Mesogastropoda	Naticidae	<i>Euspira pallida</i>		1			
Mollusca	Myoidea	Hiatellidae	<i>Hiatella arctica</i>					
Mollusca	Neogastropoda	Amphissidae	<i>Alia gausapata</i>					
Mollusca	Neogastropoda	Turridae	<i>Oenopota rosea</i>					
Mollusca	Nuculoida	Nuculidae	<i>Ennucula tenuis</i>	1	1			
Mollusca	Nuculoida	Yoldiidae	<i>Yoldia hyperborea</i>	4	3		1	
Mollusca	Nuculoida	Yoldiidae	<i>Yoldia seminuda</i>					
Mollusca	Pholadomyoidea	Lyonsiidae	<i>Lyonsia californica</i>					
Mollusca	Pholadomyoidea	Pandoridae	<i>Pandora filosa</i>					
Mollusca	Pyramidellacea	Pyramidellidae	<i>Turbonilla</i> sp.			1		
Mollusca	Veneroidea	Cultellidae	<i>Siliqua alta</i>	4	3	1		3
Mollusca	Veneroidea	Mactridae	<i>Spisula polynema</i>					
Mollusca	Veneroidea	Tellinidae	<i>Macoma eliminata</i>					
Mollusca	Veneroidea	Tellinidae	<i>Macoma lipara</i>					
Mollusca	Veneroidea	Tellinidae	<i>Macoma moesta</i>		2	1		
Mollusca	Veneroidea	Thyasiridae	<i>Axinospida serricata</i>	6	12	7		15
Mollusca	Veneroidea	Veneridae	<i>Compsomyx subdiaphana</i>					
Mollusca	Veneroidea	Veneridae	<i>Nutricula lordi</i>					
Nemertea	Heteronemertea	Lineidae	<i>Cerebratulus</i> sp.			1		
Nemertea	Heteronemertea	Lineidae	<i>Linea</i> sp.		1	1		
			Total No. of Species	21	21	22	13	15
			Total No. of Individuals	78	93	88	210	54

Appendix Table 5.--Number of individuals of each infauna taxon collected per grab sample at Transect 5 in Chiniak Gully during August 1999.

Phylum	Order	Family	Species	5A	5B	5C	5D	5F
Annelida	Capitallida	Capitellidae	<i>Mediomastus californiensis</i>			1	10	10
Annelida	Capitallida	Capitellidae	<i>Notomastus giganteus</i>	1				1
Annelida	Capitallida	Maldanidae						
Annelida	Capitallida	Maldanidae	<i>Axiothella rubrocincta</i>					
Annelida	Capitallida	Maldanidae	<i>Clymenella</i> sp.					
Annelida	Capitallida	Maldanidae	<i>Euclymene zonalis</i>	5	5	4	2	5
Annelida	Capitallida	Maldanidae	<i>Praxillella gracilis</i>	1				
Annelida	Chaetoptera	Chaetopteridae	<i>Spiochaetopterus costarum</i>					1
Annelida	Cossurida	Cossuridae	<i>Cossura soyeri</i>					
Annelida	Eunicida	Lumbrineridae	<i>Lumbrineris</i> sp.					
Annelida	Eunicida	Lumbrineridae	<i>Lumbrineris bicirrata</i>					
Annelida	Eunicida	Lumbrineridae	<i>Lumbrineris inflata</i>					
Annelida	Eunicida	Lumbrineridae	<i>Lumbrineris luti</i>	1	6	11	13	13
Annelida	Eunicida	Onuphidae	<i>Onuphis iridescens</i>					2
Annelida	Magelonida	Magelonidae	<i>Magelona berkeleyi</i>					2
Annelida	Opheliida	Opheliidae	<i>Ophelina</i> sp.					1
Annelida	Opheliida	Opheliidae	<i>Travisia forbesii</i>				1	1
Annelida	Opheliida	Scalibregmidae	<i>Scalibregma inflatum</i>					
Annelida	Orbiniida	Orbiniidae	<i>Leitoscoloplos pugettensis</i>	2	3		2	6
Annelida	Orbiniida	Paraonidae	<i>Aricidea lopezi</i>					1
Annelida	Orbiniida	Paraonidae	<i>Chaetozone</i> sp.					
Annelida	Orbiniida	Paraonidae	<i>Levinsenia gracilis</i>					
Annelida	Oweniida	Oweniidae	<i>Owenia</i> cf. <i>fusiformis</i>		1			
Annelida	Phyllodocida	Glyceridae	<i>Glycera</i> sp.					
Annelida	Phyllodocida	Glyceridae	<i>Hemipodus borealis</i>	1	1			
Annelida	Phyllodocida	Goniadidae	<i>Goniada brunnea</i>	2	3		2	1
Annelida	Phyllodocida	Nephtidae	<i>Nephtys caeca</i>	4	5	8	7	6
Annelida	Phyllodocida	Nephtidae	<i>Nephtys cornuta</i>	2	1	1	1	
Annelida	Phyllodocida	Pholodidae	<i>Pholoe glabra</i>				1	

Annelida	Phyllococida	Phyllococidae	<i>Eteone longa</i>					
Annelida	Phyllococida	Phyllococidae	<i>Phyllococida</i> sp.					
Annelida	Phyllococida	Polynoidae	<i>Hesperonoe</i> sp.					
Annelida	Phyllococida	Spaerodoropsidae	<i>Spaerodoropsis</i> sp.					
Annelida	Phyllococida	Syllidae	<i>Syllis</i> sp.				2	
Annelida	Sabellida	Sabellidae						
Annelida	Sabellida	Sabellidae	<i>Chone</i> sp.					
Annelida	Spionida	Spionidae	<i>Dipolydora socialis</i>					
Annelida	Spionida	Spionidae	<i>Prionospio lighti</i>					
Annelida	Spionida	Spionidae	<i>Prionospio steenstrupi</i>		1	1		2
Annelida	Spionida	Spionidae	<i>Pygospio elegans</i>					
Annelida	Spionida	Spionidae	<i>Spio cirrifera</i>					
Annelida	Terebellida	Amphaeretidae	<i>Amphicteis scaphobranchiata</i>	1	2	2	1	1
Annelida	Terebellida	Pectinariidae	<i>Pectinaria moorei</i>					
Annelida	Terebellida	Terebellidae	<i>Amphitrite cirrata</i>					
Annelida	Terebellida	Terebellidae	<i>Scionella</i> sp.					
Annelida	Terebellida	Trichobranchidae	<i>Terebellides stroemi</i>					
Arthropoda	Amphipoda	Ampeliscidae	<i>Ampelisca</i> cf. <i>unsocalae</i>				4	1
Arthropoda	Amphipoda	Ampeliscidae	<i>Byblis veleronis</i>			1	1	
Arthropoda	Amphipoda	Ischyroceridae				1		2
Arthropoda	Amphipoda	Phoxocephalidae	<i>Heterophoxus</i> sp.	1	2	2	1	1
Arthropoda	Cumacea	Diastyllopsidae	<i>Diastylopsis dawsoni</i>				1	3
Arthropoda	Cumacea	Leuconiidae	<i>Leptocuma</i> sp.					
Arthropoda	Cumacea	Leuconiidae	<i>Leucon magnadentata</i>		1			
Arthropoda	Decapoda	Pinnixidae	<i>Pinnixa</i> sp.	4		1		1
Arthropoda	Pantopoda	Ammonotheidae	<i>Achelia</i> sp.					
Arthropoda	Pantopoda	Nymphonidae	<i>Nymphon</i> sp.					
Chordata	Stolidobranchia	Mogulidae			4	3	1	1
Echinodermata	Apodida	Chiridotidae						1
Echinodermata	Clypeasteroidea	Dendrasteridae	<i>Echinarchinus parma</i>					
Echinodermata	Dendrochiridotida	Phylloporidae	<i>Pentamera</i> sp.					
Echinodermata	Dendrochiridotida	Sclerodactylidae	<i>Eupentacta</i> sp.					
Echinodermata	Molpadiida	Molpadiidae	<i>Molpadia intermedia</i>					

Echinodermata	Ophiurida	Amphiuridae	<i>Amphiodia</i> sp.	3	16	16	7	
Echiura	Echiuroinea	Echiuridae	<i>Echiurus echiurus alaskensis</i>					
Mollusca	Cephalaspidea	Atyidae	<i>Haminoea virescens</i>					
Mollusca	Cephalaspidea	Cylichnidae	<i>Acteocina harpa</i>					
Mollusca	Dentaliida	Dentaliidae	<i>Rhabdus rectius</i>					
Mollusca	Mesogastropoda	Eulimidae	<i>Eulima</i> sp.					
Mollusca	Mesogastropoda	Naticidae	<i>Euspira pallida</i>		1			
Mollusca	Myoidea	Hiatellidae	<i>Hiatella arctica</i>	1			1	
Mollusca	Neogastropoda	Amphissidae	<i>Alia gausapata</i>					
Mollusca	Neogastropoda	Turridae	<i>Oenopota rosea</i>		1			
Mollusca	Nuculoida	Nuculidae	<i>Ennucula tenuis</i>					
Mollusca	Nuculoida	Yoldiidae	<i>Yoldia hyperborea</i>	1		2	2	1
Mollusca	Nuculoida	Yoldiidae	<i>Yoldia seminuda</i>					
Mollusca	Pholadomyoidea	Lyonsiidae	<i>Lyonsia californica</i>			1		
Mollusca	Pholadomyoidea	Pandoridae	<i>Pandora filosa</i>					
Mollusca	Pyramidellia	Pyramidellidae	<i>Turbonilla</i> sp.		1		1	
Mollusca	Veneroidea	Cultellidae	<i>Siliqua alta</i>	1		1	1	
Mollusca	Veneroidea	Mactridae	<i>Spisula polynema</i>					
Mollusca	Veneroidea	Tellinidae	<i>Macoma eliminata</i>					2
Mollusca	Veneroidea	Tellinidae	<i>Macoma lipara</i>					
Mollusca	Veneroidea	Tellinidae	<i>Macoma moesta</i>	4	4	2	4	2
Mollusca	Veneroidea	Thyasiridae	<i>Axinospida serricata</i>		4	3	4	17
Mollusca	Veneroidea	Veneridae	<i>Compsomyx subdiaphana</i>					
Mollusca	Veneroidea	Veneridae	<i>Nutricula lordi</i>					
Nemertea	Heteronemertea	Lineidae	<i>Cerebratulus</i> sp.					
Nemertea	Heteronemertea	Lineidae	<i>Linea</i> sp.	1	1			3
			Total No. of Species	18	20	18	23	27
			Total No. of Individuals	36	63	61	70	88

Appendix Table 5.--Number of individuals of each infauna taxon collected per grab sample at Transect 6 in Chiniak Gully during August 1999.

Phylum	Order	Family	Species	6A	6B	6C	6D	6E	6F
Annelida	Capitallida	Capitellidae	<i>Mediomastus californiensis</i>	9	6	6		3	8
Annelida	Capitallida	Capitellidae	<i>Notomastus giganteus</i>		2				2
Annelida	Capitallida	Maldanidae		1				1	1
Annelida	Capitallida	Maldanidae	<i>Axiiothella rubrocincta</i>						
Annelida	Capitallida	Maldanidae	<i>Clymenella</i> sp.						
Annelida	Capitallida	Maldanidae	<i>Euclymene zonalis</i>	3	7	2		3	5
Annelida	Capitallida	Maldanidae	<i>Praxillella gracilis</i>						
Annelida	Chaetoptera	Chaetopteridae	<i>Spiochaetopterus costarum</i>			1	1		
Annelida	Cossurida	Cossuridae	<i>Cossura soyeri</i>						
Annelida	Eunicida	Lumbrineridae	<i>Lumbrineris</i> sp.						
Annelida	Eunicida	Lumbrineridae	<i>Lumbrineris bicirrata</i>		1				
Annelida	Eunicida	Lumbrineridae	<i>Lumbrineris inflata</i>						
Annelida	Eunicida	Lumbrineridae	<i>Lumbrineris luti</i>	11	11	12	8	8	12
Annelida	Eunicida	Onuphidae	<i>Onuphis iridescens</i>					1	2
Annelida	Magelonida	Magelonidae	<i>Magelona berkeleyi</i>	2	2	4			
Annelida	Opheliida	Opheliidae	<i>Ophelina</i> sp.						
Annelida	Opheliida	Opheliidae	<i>Travisia forbesii</i>					1	
Annelida	Opheliida	Scalibregmidae	<i>Scalibregma inflatum</i>						
Annelida	Orbiniida	Orbiniidae	<i>Leitoscoloplos pugettensis</i>		4	3	2	4	
Annelida	Orbiniida	Paraonidae	<i>Aricidea lopezi</i>	3		1			
Annelida	Orbiniida	Paraonidae	<i>Chaetozone</i> sp.	1					
Annelida	Orbiniida	Paraonidae	<i>Levinsenia gracilis</i>						
Annelida	Oweniida	Oweniidae	<i>Owenia</i> cf. <i>fusiformis</i>	5					
Annelida	Phyllodocida	Glyceridae	<i>Glycera</i> sp.						
Annelida	Phyllodocida	Glyceridae	<i>Hemipodus borealis</i>	2		1	1	1	1
Annelida	Phyllodocida	Goniadidae	<i>Goniada brunnea</i>	1	2			1	1
Annelida	Phyllodocida	Nephtidae	<i>Nephtys caeca</i>	3	7	6	7	3	6
Annelida	Phyllodocida	Nephtidae	<i>Nephtys cornuta</i>	1	3	2	2	1	3
Annelida	Phyllodocida	Pholodidae	<i>Pholoe glabra</i>	1					

Annelida	Phyllococida	Phyllococidae	<i>Eteone longa</i>						
Annelida	Phyllococida	Phyllococidae	<i>Phyllococida</i> sp.					1	
Annelida	Phyllococida	Polynoidea	<i>Hesperonoe</i> sp.						
Annelida	Phyllococida	Spaerodoropsidae	<i>Spaerodoropsis</i> sp.						
Annelida	Phyllococida	Syllidae	<i>Syllis</i> sp.		1				
Annelida	Sabellida	Sabellidae				1			
Annelida	Sabellida	Sabellidae	<i>Chone</i> sp.						
Annelida	Spionida	Spionidae	<i>Dipolydora socialis</i>					1	
Annelida	Spionida	Spionidae	<i>Prionospio lighti</i>						
Annelida	Spionida	Spionidae	<i>Prionospio steenstrupi</i>	5	7	3	3	2	1
Annelida	Spionida	Spionidae	<i>Pygospio elegans</i>						
Annelida	Spionida	Spionidae	<i>Spio cirrifera</i>						
Annelida	Terebellida	Amphaeretidae	<i>Amphicteis scaphobranchiata</i>		1	2	1	1	4
Annelida	Terebellida	Pectinariidae	<i>Pectinaria moorei</i>						1
Annelida	Terebellida	Terebellidae	<i>Amphitrite cirrata</i>		1				
Annelida	Terebellida	Terebellidae	<i>Scionella</i> sp.				1		
Annelida	Terebellida	Trichobranchidae	<i>Terebellides stroemi</i>						
Arthropoda	Amphipoda	Ampeliscidae	<i>Ampelisca</i> cf. <i>unsocalae</i>	3	3	1		6	
Arthropoda	Amphipoda	Ampeliscidae	<i>Byblis veleronis</i>	2	2	2			1
Arthropoda	Amphipoda	Ischyroceridae			4	6		5	
Arthropoda	Amphipoda	Phoxocephalidae	<i>Heterophoxus</i> sp.	2		2	7		
Arthropoda	Cumacea	Diastyllopsidae	<i>Diastylopsis dawsoni</i>				1		
Arthropoda	Cumacea	Leuconiidae	<i>Leptocuma</i> sp.						
Arthropoda	Cumacea	Leuconiidae	<i>Leucon magnadentata</i>						
Arthropoda	Decapoda	Pinnixidae	<i>Pinnixa</i> sp.	1			2		
Arthropoda	Pantopoda	Ammonotheidae	<i>Achelia</i> sp.						
Arthropoda	Pantopoda	Nymphonidae	<i>Nymphon</i> sp.						
Chordata	Stolidobranchia	Mogulidae							
Echinodermata	Apodida	Chiridotidae							
Echinodermata	Clypeasteroidea	Dendrasteridae	<i>Echinarchinus parma</i>						
Echinodermata	Dendrochiridotida	Phylloporidae	<i>Pentamera</i> sp.						
Echinodermata	Dendrochiridotida	Sclerodactylidae	<i>Eupentacta</i> sp.						
Echinodermata	Molpadiida	Molpadiidae	<i>Molpadia intermedia</i>						



Echinodermata	Ophiurida	Amphiuridae	<i>Amphiodia</i> sp.		2	1	1		
Echiura	Echiuroinea	Echiuridae	<i>Echiurus echiurus alaskensis</i>	1			1		
Mollusca	Cephalaspidea	Atyidae	<i>Haminoea virescens</i>						
Mollusca	Cephalaspidea	Cylichnidae	<i>Acteocina harpa</i>						
Mollusca	Dentaliida	Dentaliidae	<i>Rhabdus rectius</i>					2	
Mollusca	Mesogastropoda	Eulimidae	<i>Eulima</i> sp.						
Mollusca	Mesogastropoda	Naticidae	<i>Euspira pallida</i>						
Mollusca	Myoidea	Hiatellidae	<i>Hiatella arctica</i>				1	1	
Mollusca	Neogastropoda	Amphissidae	<i>Alia gausapata</i>						
Mollusca	Neogastropoda	Turridae	<i>Oenopota rosea</i>	3					
Mollusca	Nuculoida	Nuculidae	<i>Ennucula tenuis</i>						
Mollusca	Nuculoida	Yoldiidae	<i>Yoldia hyperborea</i>	3					
Mollusca	Nuculoida	Yoldiidae	<i>Yoldia seminuda</i>						
Mollusca	Pholadomyoidea	Lyonsiidae	<i>Lyonsia californica</i>						
Mollusca	Pholadomyoidea	Pandoridae	<i>Pandora filosa</i>						
Mollusca	Pyramidellacea	Pyramidellidae	<i>Turbonilla</i> sp.						
Mollusca	Veneroidea	Cultellidae	<i>Siliqua alta</i>	1	1				
Mollusca	Veneroidea	Mactridae	<i>Spisula polynema</i>						
Mollusca	Veneroidea	Tellinidae	<i>Macoma eliminata</i>	6		1	6		1
Mollusca	Veneroidea	Tellinidae	<i>Macoma lipara</i>						
Mollusca	Veneroidea	Tellinidae	<i>Macoma moesta</i>		7	3	2	4	
Mollusca	Veneroidea	Thyasiridae	<i>Axinospida serricata</i>	8	2	3	8	3	3
Mollusca	Veneroidea	Veneridae	<i>Compsomyx subdiaphana</i>						
Mollusca	Veneroidea	Veneridae	<i>Nutricula lordi</i>	1					
Nemertea	Heteronemertea	Lineidae	<i>Cerebratulus</i> sp.				1	1	
Nemertea	Heteronemertea	Lineidae	<i>Linea</i> sp.		1		4	2	
			Total No. of Species	25	22	21	20	23	16
			Total No. of Individuals	79	77	63	60	56	52

Appendix Table 5.--Number of individuals of each infauna taxon collected per grab sample at Transect 7 in Chiniak Gully during August 1999.

Phylum	Order	Family	Species	7A	7B	7C	7D	7E	7F
Annelida	Capitallida	Capitellidae	<i>Mediomastus californiensis</i>	1	3	11	22	2	13
Annelida	Capitallida	Capitellidae	<i>Notomastus giganteus</i>						1
Annelida	Capitallida	Maldanidae							
Annelida	Capitallida	Maldanidae	<i>Axiothella rubrocincta</i>			1			
Annelida	Capitallida	Maldanidae	<i>Clymenella</i> sp.				1		
Annelida	Capitallida	Maldanidae	<i>Euclymene zonalis</i>		3	1	1		2
Annelida	Capitallida	Maldanidae	<i>Praxillella gracilis</i>						
Annelida	Chaetoptera	Chaetopteridae	<i>Spiochaetopterus costarum</i>						
Annelida	Cossurida	Cossuridae	<i>Cossura soyeri</i>				2		
Annelida	Eunicida	Lumbrineridae	<i>Lumbrineris</i> sp.						
Annelida	Eunicida	Lumbrineridae	<i>Lumbrineris bicirrata</i>						
Annelida	Eunicida	Lumbrineridae	<i>Lumbrineris inflata</i>						
Annelida	Eunicida	Lumbrineridae	<i>Lumbrineris luti</i>	3	8	14	18	2	9
Annelida	Eunicida	Onuphidae	<i>Onuphis iridescens</i>			1	1	1	2
Annelida	Magelonida	Magelonidae	<i>Magelona berkeleyi</i>			1	2		
Annelida	Opheliida	Opheliidae	<i>Ophelina</i> sp.						
Annelida	Opheliida	Opheliidae	<i>Travisia forbesii</i>			1		1	
Annelida	Opheliida	Scalibregmidae	<i>Scalibregma inflatum</i>						
Annelida	Orbiniida	Orbiniidae	<i>Leitoscoloplos pugettensis</i>	2	1		3	3	7
Annelida	Orbiniida	Paraonidae	<i>Aricidea lopezi</i>	2		1		4	2
Annelida	Orbiniida	Paraonidae	<i>Chaetozone</i> sp.	3		1			
Annelida	Orbiniida	Paraonidae	<i>Levinsenia gracilis</i>						
Annelida	Oweniida	Oweniidae	<i>Owenia</i> cf. <i>fusiformis</i>		2		3		
Annelida	Phyllodocida	Glyceridae	<i>Glycera</i> sp.						
Annelida	Phyllodocida	Glyceridae	<i>Hemipodus borealis</i>			1			2
Annelida	Phyllodocida	Goniadidae	<i>Goniada brunnea</i>						
Annelida	Phyllodocida	Nephtidae	<i>Nephtys caeca</i>	5	7	2	6		1
Annelida	Phyllodocida	Nephtidae	<i>Nephtys cornuta</i>	2	1	3			2
Annelida	Phyllodocida	Pholodidae	<i>Pholoe glabra</i>						

Annelida	Phyllodocida	Phyllodocidae	<i>Eteone longa</i>						
Annelida	Phyllodocida	Phyllodocidae	<i>Phyllodocida</i> sp.						
Annelida	Phyllodocida	Polynoidea	<i>Hesperonoe</i> sp.						
Annelida	Phyllodocida	Spaerodoropsidae	<i>Spaerodoropsis</i> sp.						
Annelida	Phyllodocida	Syllidae	<i>Syllis</i> sp.	1	3	1			1
Annelida	Sabellida	Sabellidae							
Annelida	Sabellida	Sabellidae	<i>Chone</i> sp.			1			
Annelida	Spionida	Spionidae	<i>Dipolydora socialis</i>						
Annelida	Spionida	Spionidae	<i>Prionospio lighti</i>						
Annelida	Spionida	Spionidae	<i>Prionospio steenstrupi</i>	2	3	3	5	2	
Annelida	Spionida	Spionidae	<i>Pygospio elegans</i>						
Annelida	Spionida	Spionidae	<i>Spio cirrifera</i>	1					
Annelida	Terebellida	Amphaeretidae	<i>Amphicteis scaphobranchiata</i>	2	2	4	1	2	3
Annelida	Terebellida	Pectinariidae	<i>Pectinaria moorei</i>						
Annelida	Terebellida	Terebellidae	<i>Amphitrite cirrata</i>						
Annelida	Terebellida	Terebellidae	<i>Scionella</i> sp.			1			
Annelida	Terebellida	Trichobranchidae	<i>Terebellides stroemi</i>						
Arthropoda	Amphipoda	Ampeliscidae	<i>Ampelisca</i> cf. <i>unsocalae</i>	7		3	2		3
Arthropoda	Amphipoda	Ampeliscidae	<i>Byblis veleronis</i>	1					
Arthropoda	Amphipoda	Ischyroceridae		8		1		2	3
Arthropoda	Amphipoda	Phoxocephalidae	<i>Heterophoxus</i> sp.	1	1	6	1	1	1
Arthropoda	Cumacea	Diastyllopsidae	<i>Diastylopsis dawsoni</i>						
Arthropoda	Cumacea	Leuconiidae	<i>Leptocuma</i> sp.						
Arthropoda	Cumacea	Leuconiidae	<i>Leucon magnadentata</i>					1	
Arthropoda	Decapoda	Pinnixidae	<i>Pinnixa</i> sp.	1					
Arthropoda	Pantopoda	Ammonotheidae	<i>Achelia</i> sp.						
Arthropoda	Pantopoda	Nymphonidae	<i>Nymphon</i> sp.						
Chordata	Stolidobranchia	Mogulidae							
Echinodermata	Apodida	Chiridotidae							
Echinodermata	Clypeasteroidea	Dendrasteridae	<i>Echinarchinus parma</i>						
Echinodermata	Dendrochiridotida	Phylloporidae	<i>Pentamera</i> sp.						
Echinodermata	Dendrochiridotida	Sclerodactylidae	<i>Eupentacta</i> sp.						
Echinodermata	Molpadiida	Molpadiidae	<i>Molpadia intermedia</i>						

Echinodermata	Ophiurida	Amphiuridae	<i>Amphiodia</i> sp.	3					
Echiura	Echiuroinea	Echiuridae	<i>Echiurus echiurus alaskensis</i>						
Mollusca	Cephalaspidea	Atyidae	<i>Haminoea virescens</i>						
Mollusca	Cephalaspidea	Cylichnidae	<i>Acteocina harpa</i>						
Mollusca	Dentaliida	Dentaliidae	<i>Rhabdus rectius</i>						
Mollusca	Mesogastropoda	Eulimidae	<i>Eulima</i> sp.						
Mollusca	Mesogastropoda	Naticidae	<i>Euspira pallida</i>						
Mollusca	Myoidea	Hiatellidae	<i>Hiatella arctica</i>						
Mollusca	Neogastropoda	Amphissidae	<i>Alia gausapata</i>						
Mollusca	Neogastropoda	Turridae	<i>Oenopota rosea</i>						
Mollusca	Nuculoida	Nuculidae	<i>Ennucula tenuis</i>	1		1			
Mollusca	Nuculoida	Yoldiidae	<i>Yoldia hyperborea</i>	3			1	1	1
Mollusca	Nuculoida	Yoldiidae	<i>Yoldia seminuda</i>						
Mollusca	Pholadomyoidea	Lyonsiidae	<i>Lyonsia californica</i>						
Mollusca	Pholadomyoidea	Pandoridae	<i>Pandora filosa</i>						
Mollusca	Pyramidelliacea	Pyramidellidae	<i>Turbonilla</i> sp.						
Mollusca	Veneroidea	Cultellidae	<i>Siliqua alta</i>						
Mollusca	Veneroidea	Mactridae	<i>Spisula polynema</i>						
Mollusca	Veneroidea	Tellinidae	<i>Macoma eliminata</i>	4	2	3	1		
Mollusca	Veneroidea	Tellinidae	<i>Macoma lipara</i>						
Mollusca	Veneroidea	Tellinidae	<i>Macoma moesta</i>	1	6	3	1	1	6
Mollusca	Veneroidea	Thyasiridae	<i>Axinospida serricata</i>	11	6	12	5	7	13
Mollusca	Veneroidea	Veneridae	<i>Compsomyax subdiaphana</i>						
Mollusca	Veneroidea	Veneridae	<i>Nutricula lordi</i>			1			
Nemertea	Heteronemertea	Lineidae	<i>Cerebratulus</i> sp.						
Nemertea	Heteronemertea	Lineidae	<i>Linea</i> sp.			1			1
			Total No. of Species	22	14	26	18	14	19
			Total No. of Individuals	65	48	79	76	30	73

Appendix Table 5.--Number of individuals of each infauna taxon collected per grab sample at Transect 8 in Chiniak Gully during August 1999.

Phylum	Order	Family	Species	8A	8B	8C	8D	8E	8F
Annelida	Capitallida	Capitellidae	<i>Mediomastus californiensis</i>	18	16	1	4	6	20
Annelida	Capitallida	Capitellidae	<i>Notomastus giganteus</i>	1					
Annelida	Capitallida	Maldanidae					1		
Annelida	Capitallida	Maldanidae	<i>Axiothella rubrocincta</i>						
Annelida	Capitallida	Maldanidae	<i>Clymenella</i> sp.		2				
Annelida	Capitallida	Maldanidae	<i>Euclymene zonalis</i>	4	2		1	3	
Annelida	Capitallida	Maldanidae	<i>Praxillella gracilis</i>						
Annelida	Chaetoptera	Chaetopteridae	<i>Spiochaetopterus costarum</i>		1				
Annelida	Cossurida	Cossuridae	<i>Cossura soyeri</i>					1	
Annelida	Eunicida	Lumbrineridae	<i>Lumbrineris</i> sp.						
Annelida	Eunicida	Lumbrineridae	<i>Lumbrineris bicirrata</i>					1	
Annelida	Eunicida	Lumbrineridae	<i>Lumbrineris inflata</i>						
Annelida	Eunicida	Lumbrineridae	<i>Lumbrineris luti</i>	18	12	8	4	8	12
Annelida	Eunicida	Onuphidae	<i>Onuphis iridescens</i>		1				
Annelida	Magelonida	Magelonidae	<i>Magelona berkeleyi</i>	1	3	1	1		5
Annelida	Opheliida	Opheliidae	<i>Ophelina</i> sp.						
Annelida	Opheliida	Opheliidae	<i>Travisia forbesii</i>						
Annelida	Opheliida	Scalibregmidae	<i>Scalibregma inflatum</i>						
Annelida	Orbiniida	Orbiniidae	<i>Leitoscoloplos pugettensis</i>	5	7	7	2	16	
Annelida	Orbiniida	Paraonidae	<i>Aricidea lopezi</i>	2	1		1	2	4
Annelida	Orbiniida	Paraonidae	<i>Chaetozone</i> sp.	3				2	
Annelida	Orbiniida	Paraonidae	<i>Levinsenia gracilis</i>					2	2
Annelida	Oweniida	Oweniidae	<i>Owenia</i> cf. <i>fusiformis</i>	3					1
Annelida	Phyllodocida	Glyceridae	<i>Glycera</i> sp.		1				
Annelida	Phyllodocida	Glyceridae	<i>Hemipodus borealis</i>	1	2		2		2
Annelida	Phyllodocida	Goniadidae	<i>Goniada brunnea</i>	1				1	
Annelida	Phyllodocida	Nephtidae	<i>Nephtys caeca</i>	8	9	1	1	9	1
Annelida	Phyllodocida	Nephtidae	<i>Nephtys cornuta</i>		1	2	1		3
Annelida	Phyllodocida	Pholodidae	<i>Pholoe glabra</i>						

Annelida	Phyllodocida	Phyllodocidae	<i>Eteone longa</i>	1				1	
Annelida	Phyllodocida	Phyllodocidae	<i>Phyllodocida</i> sp.						
Annelida	Phyllodocida	Polynoidea	<i>Hesperonoe</i> sp.						
Annelida	Phyllodocida	Spaerodoropsidae	<i>Spaerodoropsis</i> sp.		1				
Annelida	Phyllodocida	Syllidae	<i>Syllis</i> sp.		1				2
Annelida	Sabellida	Sabellidae							
Annelida	Sabellida	Sabellidae	<i>Chone</i> sp.						
Annelida	Spionida	Spionidae	<i>Dipolydora socialis</i>		2				
Annelida	Spionida	Spionidae	<i>Prionospio lighti</i>						
Annelida	Spionida	Spionidae	<i>Prionospio steenstrupi</i>	1	4			1	2
Annelida	Spionida	Spionidae	<i>Pygospio elegans</i>				1		
Annelida	Spionida	Spionidae	<i>Spio cirrifera</i>		1				
Annelida	Terebellida	Amphaeretidae	<i>Amphicteis scaphobranchiata</i>	3	2	1	3	2	3
Annelida	Terebellida	Pectinariidae	<i>Pectinaria moorei</i>						
Annelida	Terebellida	Terebellidae	<i>Amphitrite cirrata</i>						
Annelida	Terebellida	Terebellidae	<i>Scionella</i> sp.						
Annelida	Terebellida	Trichobranchidae	<i>Terebellides stroemi</i>						
Arthropoda	Amphipoda	Ampeliscidae	<i>Ampelisca</i> cf. <i>unsocalae</i>		4	2		1	6
Arthropoda	Amphipoda	Ampeliscidae	<i>Byblis veleronis</i>					1	
Arthropoda	Amphipoda	Ischyroceridae		3	9	4	3	3	1
Arthropoda	Amphipoda	Phoxocephalidae	<i>Heterophoxus</i> sp.	2	2				2
Arthropoda	Cumacea	Diastyllopsidae	<i>Diastylopsis dawsoni</i>						
Arthropoda	Cumacea	Leuconiidae	<i>Leptocuma</i> sp.						
Arthropoda	Cumacea	Leuconiidae	<i>Leucon magnadentata</i>						
Arthropoda	Decapoda	Pinnixidae	<i>Pinnixa</i> sp.						
Arthropoda	Pantopoda	Ammotheidae	<i>Achelia</i> sp.						
Arthropoda	Pantopoda	Nymphonidae	<i>Nymphon</i> sp.						
Chordata	Stolidobranchia	Mogulidae							
Echinodermata	Apodida	Chiridotidae			1				
Echinodermata	Clypeasteroidea	Dendrasteridae	<i>Echinarchinus parma</i>						
Echinodermata	Dendrochiridotida	Phylloporidae	<i>Pentamera</i> sp.				1		1
Echinodermata	Dendrochiridotida	Sclerodactylidae	<i>Eupentacta</i> sp.						
Echinodermata	Molpadiida	Molpadiidae	<i>Molpadia intermedia</i>						

Echinodermata	Ophiurida	Amphiuridae	<i>Amphiodia</i> sp.					2	
Echiura	Echiuroinea	Echiuridae	<i>Echiurus echiurus alaskensis</i>						
Mollusca	Cephalaspidea	Atyidae	<i>Haminoea virescens</i>		1			1	
Mollusca	Cephalaspidea	Cylichnidae	<i>Acteocina harpa</i>						
Mollusca	Dentaliida	Dentaliidae	<i>Rhabdus rectius</i>						1
Mollusca	Mesogastropoda	Eulimidae	<i>Eulima</i> sp.						
Mollusca	Mesogastropoda	Naticidae	<i>Euspira pallida</i>						
Mollusca	Myoidea	Hiatellidae	<i>Hiatella arctica</i>						
Mollusca	Neogastropoda	Amphissidae	<i>Alia gausapata</i>						
Mollusca	Neogastropoda	Turridae	<i>Oenopota rosea</i>						
Mollusca	Nuculoida	Nuculidae	<i>Ennucula tenuis</i>						
Mollusca	Nuculoida	Yoldiidae	<i>Yoldia hyperborea</i>		2			2	
Mollusca	Nuculoida	Yoldiidae	<i>Yoldia seminuda</i>						
Mollusca	Pholadomyoidea	Lyonsiidae	<i>Lyonsia californica</i>						
Mollusca	Pholadomyoidea	Pandoridae	<i>Pandora filosa</i>			1		1	
Mollusca	Pyramidellacea	Pyramidellidae	<i>Turbonilla</i> sp.						
Mollusca	Veneroidea	Cultellidae	<i>Siliqua alta</i>						
Mollusca	Veneroidea	Mactridae	<i>Spisula polynema</i>						
Mollusca	Veneroidea	Tellinidae	<i>Macoma eliminata</i>	1		1	2	6	1
Mollusca	Veneroidea	Tellinidae	<i>Macoma lipara</i>						
Mollusca	Veneroidea	Tellinidae	<i>Macoma moesta</i>	2	1	1	2	2	4
Mollusca	Veneroidea	Thyasiridae	<i>Axinospida serricata</i>	9	7	6	7	14	5
Mollusca	Veneroidea	Veneridae	<i>Compsomyx subdiaphana</i>						
Mollusca	Veneroidea	Veneridae	<i>Nutricula lordi</i>				2	7	2
Nemertea	Heteronemertea	Lineidae	<i>Cerebratulus</i> sp.						
Nemertea	Heteronemertea	Lineidae	<i>Linea</i> sp.					1	
			Total No. of Species	20	27	13	18	26	21
			Total No. of Individuals	87	96	36	39	96	80

Appendix Table 5.--Number of individuals of each infauna taxon collected per grab sample at Transect 9 in Chiniak Gully during August 1999.

Phylum	Order	Family	Species	9A	9B	9D	9E	9F
Annelida	Capitallida	Capitellidae	<i>Mediomastus californiensis</i>	2	7		2	8
Annelida	Capitallida	Capitellidae	<i>Notomastus giganteus</i>					2
Annelida	Capitallida	Maldanidae						3
Annelida	Capitallida	Maldanidae	<i>Axiothella rubrocincta</i>					
Annelida	Capitallida	Maldanidae	<i>Clymenella</i> sp.				1	
Annelida	Capitallida	Maldanidae	<i>Euclymene zonalis</i>	4		1	1	3
Annelida	Capitallida	Maldanidae	<i>Praxillella gracilis</i>					
Annelida	Chaetoptera	Chaetopteridae	<i>Spiochaetopterus costarum</i>					
Annelida	Cossurida	Cossuridae	<i>Cossura soyeri</i>					
Annelida	Eunicida	Lumbrineridae	<i>Lumbrineris</i> sp.					
Annelida	Eunicida	Lumbrineridae	<i>Lumbrineris bicirrata</i>					
Annelida	Eunicida	Lumbrineridae	<i>Lumbrineris inflata</i>					
Annelida	Eunicida	Lumbrineridae	<i>Lumbrineris luti</i>	4	13		4	14
Annelida	Eunicida	Onuphidae	<i>Onuphis iridescens</i>	1		3		
Annelida	Magelonida	Magelonidae	<i>Magelona berkeleyi</i>	2			2	6
Annelida	Opheliida	Opheliidae	<i>Ophelina</i> sp.					
Annelida	Opheliida	Opheliidae	<i>Travisia forbesii</i>				1	
Annelida	Opheliida	Scalibregmidae	<i>Scalibregma inflatum</i>					
Annelida	Orbiniida	Orbiniidae	<i>Leitoscoloplos pugettensis</i>	13	2	3	1	
Annelida	Orbiniida	Paraonidae	<i>Aricidea lopezi</i>	2	8			
Annelida	Orbiniida	Paraonidae	<i>Chaetozone</i> sp.	2	1			
Annelida	Orbiniida	Paraonidae	<i>Levinsenia gracilis</i>		1			
Annelida	Oweniida	Oweniidae	<i>Owenia</i> cf. <i>fusiformis</i>				1	2
Annelida	Phyllodocida	Glyceridae	<i>Glycera</i> sp.			1		
Annelida	Phyllodocida	Glyceridae	<i>Hemipodus borealis</i>		1		2	3
Annelida	Phyllodocida	Goniadidae	<i>Goniada brunnea</i>				1	
Annelida	Phyllodocida	Nephtidae	<i>Nephtys caeca</i>	6		2	3	
Annelida	Phyllodocida	Nephtidae	<i>Nephtys cornuta</i>	1			3	1
Annelida	Phyllodocida	Pholodidae	<i>Pholoe glabra</i>			1		



Annelida	Phyllococida	Phyllococidae	<i>Eteone longa</i>					
Annelida	Phyllococida	Phyllococidae	<i>Phyllococida</i> sp.					
Annelida	Phyllococida	Polynoidea	<i>Hesperonoe</i> sp.					
Annelida	Phyllococida	Spaerodoropsidae	<i>Spaerodoropsis</i> sp.					
Annelida	Phyllococida	Syllidae	<i>Syllis</i> sp.	1		1	1	1
Annelida	Sabellida	Sabellidae						
Annelida	Sabellida	Sabellidae	<i>Chone</i> sp.					1
Annelida	Spionida	Spionidae	<i>Dipolydora socialis</i>					
Annelida	Spionida	Spionidae	<i>Prionospio lighti</i>					
Annelida	Spionida	Spionidae	<i>Prionospio steenstrupi</i>		6		1	1
Annelida	Spionida	Spionidae	<i>Pygospio elegans</i>					
Annelida	Spionida	Spionidae	<i>Spio cirrifera</i>					
Annelida	Terebellida	Amphaeretidae	<i>Amphicteis scaphobranchiata</i>	3	1		1	2
Annelida	Terebellida	Pectinariidae	<i>Pectinaria moorei</i>					
Annelida	Terebellida	Terebellidae	<i>Amphitrite cirrata</i>	1				1
Annelida	Terebellida	Terebellidae	<i>Scionella</i> sp.					
Annelida	Terebellida	Trichobranchidae	<i>Terebellides stroemi</i>		1			
Arthropoda	Amphipoda	Ampeliscidae	<i>Ampelisca</i> cf. <i>unsocalae</i>	3		2	1	1
Arthropoda	Amphipoda	Ampeliscidae	<i>Byblis veleronis</i>		1		1	
Arthropoda	Amphipoda	Ischyroceridae		1		1		1
Arthropoda	Amphipoda	Phoxocephalidae	<i>Heterophoxus</i> sp.	3	5		2	
Arthropoda	Cumacea	Diastyllopsidae	<i>Diastylopsis dawsoni</i>			155	1	2
Arthropoda	Cumacea	Leuconiidae	<i>Leptocuma</i> sp.					
Arthropoda	Cumacea	Leuconiidae	<i>Leucon magnadentata</i>					
Arthropoda	Decapoda	Pinnixidae	<i>Pinnixa</i> sp.		5	5		
Arthropoda	Pantopoda	Ammotheidae	<i>Achelia</i> sp.					
Arthropoda	Pantopoda	Nymphonidae	<i>Nymphon</i> sp.					
Chordata	Stolidobranchia	Mogulidae						3
Echinodermata	Apodida	Chiridotidae						
Echinodermata	Clypeasteroidea	Dendrasteridae	<i>Echinarchinus parma</i>					
Echinodermata	Dendrochiridotida	Phylloporidae	<i>Pentamera</i> sp.					
Echinodermata	Dendrochiridotida	Sclerodactylidae	<i>Eupentacta</i> sp.					
Echinodermata	Molpadiida	Molpadiidae	<i>Molpadia intermedia</i>	1				

Echinodermata	Ophiurida	Amphiuridae	<i>Amphiodia</i> sp.			37		
Echiura	Echiuroinea	Echiuridae	<i>Echiurus echiurus alaskensis</i>					
Mollusca	Cephalaspidea	Atyidae	<i>Haminoea virescens</i>					1
Mollusca	Cephalaspidea	Cylichnidae	<i>Acteocina harpa</i>					
Mollusca	Dentaliida	Dentaliidae	<i>Rhabdus rectius</i>					
Mollusca	Mesogastropoda	Eulimidae	<i>Eulima</i> sp.					
Mollusca	Mesogastropoda	Naticidae	<i>Euspira pallida</i>					
Mollusca	Myoidea	Hiatellidae	<i>Hiatella arctica</i>					
Mollusca	Neogastropoda	Amphissidae	<i>Alia gausapata</i>					
Mollusca	Neogastropoda	Turridae	<i>Oenopota rosea</i>			1		
Mollusca	Nuculoida	Nuculidae	<i>Ennucula tenuis</i>			3		
Mollusca	Nuculoida	Yoldiidae	<i>Yoldia hyperborea</i>		3	2		1
Mollusca	Nuculoida	Yoldiidae	<i>Yoldia seminuda</i>					
Mollusca	Pholadomyoidea	Lyonsiidae	<i>Lyonsia californica</i>					
Mollusca	Pholadomyoidea	Pandoridae	<i>Pandora filosa</i>				1	
Mollusca	Pyramidellacea	Pyramidellidae	<i>Turbonilla</i> sp.				1	
Mollusca	Veneroidea	Cultellidae	<i>Siliqua alta</i>					
Mollusca	Veneroidea	Mactridae	<i>Spisula polynema</i>					
Mollusca	Veneroidea	Tellinidae	<i>Macoma eliminata</i>				1	2
Mollusca	Veneroidea	Tellinidae	<i>Macoma lipara</i>					
Mollusca	Veneroidea	Tellinidae	<i>Macoma moesta</i>	1	1	1	8	
Mollusca	Veneroidea	Thyasiridae	<i>Axinospida serricata</i>	7	33	25	7	12
Mollusca	Veneroidea	Veneridae	<i>Compsomyx subdiaphana</i>					
Mollusca	Veneroidea	Veneridae	<i>Nutricula lordi</i>		2		1	2
Nemertea	Heteronemertea	Lineidae	<i>Cerebratulus</i> sp.					
Nemertea	Heteronemertea	Lineidae	<i>Linea</i> sp.			1		1
			Total No. of Species	19	17	18	25	24
			Total No. of Individuals	58	91	245	49	74

Appendix Table 5.--Number of individuals of each infauna taxon collected per grab sample at Transect 10 in Chiniak Gully during August 1999.

Phylum	Order	Family	Species	10A	10B	10C	10D	10E	10F
Annelida	Capitallida	Capitellidae	<i>Mediomastus californiensis</i>	7	16	18	12	3	6
Annelida	Capitallida	Capitellidae	<i>Notomastus giganteus</i>		1	3	2		1
Annelida	Capitallida	Maldanidae					1	1	
Annelida	Capitallida	Maldanidae	<i>Axiothella rubrocincta</i>						
Annelida	Capitallida	Maldanidae	<i>Clymenella</i> sp.						
Annelida	Capitallida	Maldanidae	<i>Euclymene zonalis</i>	2	7	9	4	3	4
Annelida	Capitallida	Maldanidae	<i>Praxillella gracilis</i>						
Annelida	Chaetoptera	Chaetopteridae	<i>Spiochaetopterus costarum</i>						
Annelida	Cossurida	Cossuridae	<i>Cossura soyeri</i>						
Annelida	Eunicida	Lumbrineridae	<i>Lumbrineris</i> sp.						
Annelida	Eunicida	Lumbrineridae	<i>Lumbrineris bicirrata</i>				1	1	
Annelida	Eunicida	Lumbrineridae	<i>Lumbrineris inflata</i>			1			
Annelida	Eunicida	Lumbrineridae	<i>Lumbrineris luti</i>	3	8	6	4	6	2
Annelida	Eunicida	Onuphidae	<i>Onuphis iridescens</i>			1			1
Annelida	Magelonida	Magelonidae	<i>Magelona berkeleyi</i>			1	2	2	
Annelida	Opheliida	Opheliidae	<i>Ophelina</i> sp.						
Annelida	Opheliida	Opheliidae	<i>Travisia forbesii</i>						
Annelida	Opheliida	Scalibregmidae	<i>Scalibregma inflatum</i>						
Annelida	Orbiniida	Orbiniidae	<i>Leitoscoloplos pugettensis</i>	1	3				3
Annelida	Orbiniida	Paraonidae	<i>Aricidea lopezi</i>		7	2		4	
Annelida	Orbiniida	Paraonidae	<i>Chaetozone</i> sp.	1	3	4	2	3	24
Annelida	Orbiniida	Paraonidae	<i>Levinsenia gracilis</i>		1				
Annelida	Oweniida	Oweniidae	<i>Owenia</i> cf. <i>fusiformis</i>				1	7	
Annelida	Phyllodocida	Glyceridae	<i>Glycera</i> sp.						
Annelida	Phyllodocida	Glyceridae	<i>Hemipodus borealis</i>	1		3	1	3	1
Annelida	Phyllodocida	Goniadidae	<i>Goniada brunnea</i>				2		
Annelida	Phyllodocida	Nephtidae	<i>Nephtys caeca</i>	2	3	4		3	
Annelida	Phyllodocida	Nephtidae	<i>Nephtys cornuta</i>	3	2	3	4		
Annelida	Phyllodocida	Pholodidae	<i>Pholoe glabra</i>			1			

Annelida	Phyllococida	Phyllococidae	<i>Eteone longa</i>					1	
Annelida	Phyllococida	Phyllococidae	<i>Phyllococida</i> sp.						
Annelida	Phyllococida	Polynoidea	<i>Hesperonoe</i> sp.						
Annelida	Phyllococida	Spaerodoropsidae	<i>Spaerodoropsis</i> sp.						
Annelida	Phyllococida	Syllidae	<i>Syllis</i> sp.	2		2			
Annelida	Sabellida	Sabellidae			1			1	
Annelida	Sabellida	Sabellidae	<i>Chone</i> sp.					1	
Annelida	Spionida	Spionidae	<i>Dipolydora socialis</i>			1	1		
Annelida	Spionida	Spionidae	<i>Prionospio lighti</i>						
Annelida	Spionida	Spionidae	<i>Prionospio steenstrupi</i>	2	8	7		2	4
Annelida	Spionida	Spionidae	<i>Pygospio elegans</i>						
Annelida	Spionida	Spionidae	<i>Spio cirrifera</i>	2					2
Annelida	Terebellida	Amphaeretidae	<i>Amphicteis scaphobranchiata</i>	1	4	3	1	3	1
Annelida	Terebellida	Pectinariidae	<i>Pectinaria moorei</i>						
Annelida	Terebellida	Terebellidae	<i>Amphitrite cirrata</i>						
Annelida	Terebellida	Terebellidae	<i>Scionella</i> sp.	1					
Annelida	Terebellida	Trichobranchidae	<i>Terebellides stroemi</i>						
Arthropoda	Amphipoda	Ampeliscidae	<i>Ampelisca</i> cf. <i>unsocalae</i>	1		6	1	1	2
Arthropoda	Amphipoda	Ampeliscidae	<i>Byblis veleronis</i>	1		1	2	1	
Arthropoda	Amphipoda	Ischyroceridae			5	2			
Arthropoda	Amphipoda	Phoxocephalidae	<i>Heterophoxus</i> sp.	1	3	2			
Arthropoda	Cumacea	Diastyllopsidae	<i>Diastylopsis dawsoni</i>			1			
Arthropoda	Cumacea	Leuconiidae	<i>Leptocuma</i> sp.					2	
Arthropoda	Cumacea	Leuconiidae	<i>Leucon magnadentata</i>		1			2	
Arthropoda	Decapoda	Pinnixidae	<i>Pinnixa</i> sp.				1		
Arthropoda	Pantopoda	Ammotheidae	<i>Achelia</i> sp.						
Arthropoda	Pantopoda	Nymphonidae	<i>Nymphon</i> sp.						
Chordata	Stolidobranchia	Mogulidae				1			
Echinodermata	Apodida	Chiridotidae							
Echinodermata	Clypeasteroidea	Dendrasteridae	<i>Echinarchinus parma</i>						
Echinodermata	Dendrochiridotida	Phylloporidae	<i>Pentamera</i> sp.		1			1	
Echinodermata	Dendrochiridotida	Sclerodactylidae	<i>Eupentacta</i> sp.						
Echinodermata	Molpadiida	Molpadiidae	<i>Molpadia intermedia</i>						

Echinodermata	Ophiurida	Amphiuridae	<i>Amphiodia</i> sp.	1					
Echiura	Echiuroinea	Echiuridae	<i>Echiurus echiurus alaskensis</i>						
Mollusca	Cephalaspidea	Atyidae	<i>Haminoea virescens</i>						
Mollusca	Cephalaspidea	Cylichnidae	<i>Acteocina harpa</i>						
Mollusca	Dentaliida	Dentaliidae	<i>Rhabdus rectius</i>			1			1
Mollusca	Mesogastropoda	Eulimidae	<i>Eulima</i> sp.						
Mollusca	Mesogastropoda	Naticidae	<i>Euspira pallida</i>		1				1
Mollusca	Myoidea	Hiatellidae	<i>Hiatella arctica</i>						
Mollusca	Neogastropoda	Amphissidae	<i>Alia gausapata</i>		1				
Mollusca	Neogastropoda	Turridae	<i>Oenopota rosea</i>						
Mollusca	Nuculoida	Nuculidae	<i>Ennucula tenuis</i>						
Mollusca	Nuculoida	Yoldiidae	<i>Yoldia hyperborea</i>	3					1
Mollusca	Nuculoida	Yoldiidae	<i>Yoldia seminuda</i>						
Mollusca	Pholadomyoidea	Lyonsiidae	<i>Lyonsia californica</i>						
Mollusca	Pholadomyoidea	Pandoridae	<i>Pandora filosa</i>						1
Mollusca	Pyramidellacea	Pyramidellidae	<i>Turbonilla</i> sp.						2
Mollusca	Veneroidea	Mactridae	<i>Spisula polynema</i>						
Mollusca	Veneroidea	Cultellidae	<i>Siliqua alta</i>	8	1				
Mollusca	Veneroidea	Tellinidae	<i>Macoma eliminata</i>		1	2	1	4	8
Mollusca	Veneroidea	Tellinidae	<i>Macoma lipara</i>						
Mollusca	Veneroidea	Tellinidae	<i>Macoma moesta</i>	3	2	6	1	2	2
Mollusca	Veneroidea	Thyasiridae	<i>Axinospida serricata</i>	25	14	21	12	16	11
Mollusca	Veneroidea	Veneridae	<i>Compsomyx subdiaphana</i>						
Mollusca	Veneroidea	Veneridae	<i>Nutricula lordi</i>		1	7	11	13	22
Nemertea	Heteronemertea	Lineidae	<i>Cerebratulus</i> sp.						
Nemertea	Heteronemertea	Lineidae	<i>Linea</i> sp.			2			
			Total No. of Species	21	24	29	21	25	21
			Total No. of Individuals	71	95	121	67	86	100

Appendix Table 6.--Number of individuals of each infauna taxon collected per grab sample at Transect 1 in Trinity Islands during August 1999.

Phylum	Order	Family	Species	1A	1B	1C	1D	1E	1F
Annelida							1		
Annelida	Capitallida	Capitellidae	<i>Mediomastus californiensis</i>				3		1
Annelida	Capitallida	Maldanidae			1				
Annelida	Capitallida	Maldanidae	<i>Axiothella rubrocincta</i>	1					
Annelida	Capitallida	Maldanidae	<i>Clymenella</i> sp.						
Annelida	Capitallida	Maldanidae	<i>Euclymene zonalis</i>						
Annelida	Capitallida	Maldanidae	<i>Praxillella gracilis</i>						
Annelida	Capitallida	Maldanidae	<i>Praxilura</i> sp.						
Annelida	Chaetopterida	Chaetopteridae	<i>Spiochaetopterus costarum</i>						
Annelida	Eunicida	Lumbrineridae	<i>Lumbrineris bicirrata</i>						
Annelida	Eunicida	Lumbrineridae	<i>Lumbrineris luti</i>				1		
Annelida	Eunicida	Onuphidae	<i>Onuphis iridescens</i>						
Annelida	Magelonida	Magelonidae	<i>Magelona berkeleyi</i>	2	4	3	1	1	
Annelida	Opheliida	Opheliidae	<i>Travisia forbesii</i>						
Annelida	Opheliida	Opheliidae	<i>Travisia japonica</i>						
Annelida	Opheliida	Scalibregmidae	<i>Hyboscolex pacificus</i>						
Annelida	Opheliida	Scalibregmidae	<i>Scalibregma inflatum</i>						
Annelida	Orbiniida	Orbiniidae	<i>Leitoscoloplos pugettensis</i>			1			
Annelida	Orbiniida	Paraonidae	<i>Aricidea antennata</i>						
Annelida	Orbiniida	Paraonidae	<i>Aricidea lopezi</i>	1		3			
Annelida	Orbiniida	Paraonidae	<i>Chaetozone</i> sp.	1	1				2
Annelida	Orbiniida	Paraonidae	<i>Cirratulus</i> sp.						
Annelida	Orbiniida	Paraonidae	<i>Levinsenia gracilis</i>				1		
Annelida	Orbiniida	Paraonidae	<i>Tharyx</i> sp. I	2	1				
Annelida	Orbiniida	Paraonidae	<i>Tharyx</i> sp. II			1		2	
Annelida	Phyllodocida	Aphrodotidae	<i>Aphrodites japonica</i>						
Annelida	Phyllodocida	Glyceridae	<i>Hemipodus borealis</i>	1			1	1	
Annelida	Phyllodocida	Goniadidae	<i>Goniada brunnea</i>						
Annelida	Phyllodocida	Hesionidae			1				

Annelida	Phyllodocida	Nephtidae	<i>Nephtys</i> sp.						
Annelida	Phyllodocida	Nephtidae	<i>Nephtys caeca</i>		1	1	2		
Annelida	Phyllodocida	Nephtidae	<i>Nephtys cornuta</i>		1			1	
Annelida	Phyllodocida	Nereididae	<i>Nereis</i> sp.						
Annelida	Phyllodocida	Pholodidae	<i>Pholoe glabra</i>	1					
Annelida	Phyllodocida	Pholodidae	<i>Sigalona</i> sp.						
Annelida	Phyllodocida	Phyllodocidae	<i>Eteone longa</i>						
Annelida	Phyllodocida	Polynoidae			2			1	
Annelida	Phyllodocida	Polynoidae	<i>Hesperonoe</i> sp.						
Annelida	Phyllodocida	Polynoidae	<i>Hololepida magna</i>						
Annelida	Phyllodocida	Syllidae	<i>Syllis</i> sp.						
Annelida	Sabellida	Sabellidae							
Annelida	Sabellida	Sabellidae	<i>Potamilla</i> sp.						
Annelida	Sabellida	Serpulidae							
Annelida	Spionida	Spionidae	<i>Dipolydora socialis</i>						
Annelida	Spionida	Spionidae	<i>Laonice</i> sp.						
Annelida	Spionida	Spionidae	<i>Prionospio lighti</i>						
Annelida	Spionida	Spionidae	<i>Prionospio steenstrupi</i>		1	1	2		3
Annelida	Spionida	Spionidae	<i>Pygospio elegans</i>						
Annelida	Spionida	Spionidae	<i>Spio cirrifera</i>						
Annelida	Terebellida	Amphaeretidae	<i>Amphicteis scaphobranchiata</i>						
Annelida	Terebellida	Pectinariidae	<i>Pectinaria moorei</i>						
Annelida	Terebellida	Sabellaridae	<i>Sabellaria cementarium</i>						
Annelida	Terebellida	Terebellidae							
Annelida	Terebellida	Terebellidae	<i>Scionella</i> sp.	1					
Annelida	Terebellida	Terebellidae	<i>Thelepas</i> sp.						
Annelida	Terebellida	Trichobranchidae	<i>Terebellides stroemi</i>						
Arthropoda	Amphipoda	Ampeliscidae	<i>Ampelisca</i> cf. <i>unsocalae</i>	2	5	6	6	3	2
Arthropoda	Amphipoda	Ampeliscidae	<i>Byblis veleronis</i>						
Arthropoda	Amphipoda	Dexaminidae				1			
Arthropoda	Amphipoda	Ischyroceridae							
Arthropoda	Amphipoda	Oedicerotidae	<i>Monoculoides</i> sp.						
Arthropoda	Amphipoda	Synopiidae	<i>Tiron biocellata</i>						

Arthropoda	Calanoida								
Arthropoda	Cumacea	Diastylidae	<i>Diastylis</i> sp.						
Arthropoda	Cumacea	Diastylidae	<i>Diastylis dawsoni</i>						
Arthropoda	Cumacea	Leuconiidae	<i>Eudorella</i> sp.		1				
Arthropoda	Cumacea	Leuconiidae	<i>Lamprops fuscata</i>						
Arthropoda	Cumacea	Leuconiidae	<i>Leucon fulvus</i>						
Arthropoda	Cumacea	Leuconiidae	<i>Leucon magnadentata</i>						
Arthropoda	Decapoda	Pinnixidae	<i>Pinnixa</i> sp.				1		
Arthropoda	Isopoda	Gnathidae	<i>Gnathia</i> sp.		1	1			
Arthropoda	Ostracoda		Species I						
Arthropoda	Ostracoda		Species II	1					
Arthropoda	Ostracoda		Species III						
Arthropoda	Tanaidacea	Paratanaidea	<i>Leptognathia</i> sp.						
Echinodermata	Apodida	Chiridotidae							
Echinodermata	Dendrochiridotida								
Echinodermata	Ophiurida	Amphiuridae	<i>Amphiodia</i> sp.	2			1		
Echiura	Echiuroinea	Echiuridae	<i>Echiurus echiurus alaskensis</i>				1		
Mollusca	Archaeogastropoda	Trochidae	<i>Solariella vancouverense</i>						
Mollusca	Cephalaspidea	Atyidae	<i>Haminoea virescens</i>			1			
Mollusca	Dentaliida	Dentaliidae	<i>Antalis pretiosum</i>						
Mollusca	Dentaliida	Dentaliidae	<i>Rhabdus rectius</i>						
Mollusca	Mesogastropoda	Naticidae	<i>Euspira pallida</i>						
Mollusca	Myoida	Hiatellidae	<i>Hiatella arctica</i>						
Mollusca	Mytiloidea	Mytilidae	<i>Crenella</i> sp.		1				
Mollusca	Neogastropoda	Buccinidae	<i>Buccinum</i> sp.						
Mollusca	Neogastropoda	Cancellariidae	<i>Admete</i> sp.						1
Mollusca	Neogastropoda	Turridae	<i>Oenopota rosea</i>						
Mollusca	Neogastropoda	Turridae	<i>Ophiopodermella</i> sp.						
Mollusca	Neoloricata	Ischnochitonidae	<i>Lepidozona</i> sp.						
Mollusca	Nuculoida	Nuculidae	<i>Ennucula tenuis</i>						1
Mollusca	Osteroidea	Propeomussidae	<i>Parvamussium alaskensis</i>						
Mollusca	Pholadomyoidea	Cuspidariidae	<i>Cardiomya pectinata</i>						
Mollusca	Pholadomyoidea	Pandoridae	<i>Pandora filosa</i>						



Mollusca	Pyramidellacea	Pyramidellidae	<i>Odostomia</i> sp.						
Mollusca	Pyramidellacea	Pyramidellidae	<i>Turbonilla</i> sp.	2	1	1			
Mollusca	Veneroidea	Astartiidae	<i>Astarte esquimalti</i>			3			
Mollusca	Veneroidea	Carditidae	<i>Cyclocardia</i> sp.						
Mollusca	Veneroidea	Cultellidae	<i>Siliqua alta</i>						
Mollusca	Veneroidea	Malletiidae	<i>Tindaria brunea</i>						
Mollusca	Veneroidea	Tellinidae	<i>Macoma eliminata</i>	5	4	1	1	1	2
Mollusca	Veneroidea	Tellinidae	<i>Macoma moesta</i>		2	1			
Mollusca	Veneroidea	Thyasiridae	<i>Axinospida serricata</i>		2	1	1	1	
Mollusca	Veneroidea	Thyasiridae	<i>Thyasira flexuosa</i>						
Nemertea	Heteronemertea	Lineidae	<i>Cerebratulus</i> sp.						
Nemertea	Heteronemertea	Lineidae	<i>Linea</i> sp.						
Priapulida	Priapulomorpha	Priapulidae	<i>Priapululus caudata</i>					1	
Sipunucula	Sipunuculida	Golfingiidae							
Aschelminths									
			Total No. of Species	13	17	15	14	9	7
			Total No. of Individuals	22	30	26	23	12	12

Appendix Table 6.--Numbers of individuals of each infauna taxon collected per grab sample at Transect 2 in Trinity Islands during August 1999.

Phylum	Order	Family	Species	2A	2B	2C	2D	2E	2F
Annelida						1			
Annelida	Capitallida	Capitellidae	<i>Mediomastus californiensis</i>			1	3	1	
Annelida	Capitallida	Maldanidae							
Annelida	Capitallida	Maldanidae	<i>Axiothella rubrocincta</i>		1				1
Annelida	Capitallida	Maldanidae	<i>Clymenella</i> sp.						
Annelida	Capitallida	Maldanidae	<i>Euclymene zonalis</i>						
Annelida	Capitallida	Maldanidae	<i>Praxillella gracilis</i>						
Annelida	Capitallida	Maldanidae	<i>Praxilura</i> sp.						
Annelida	Chaetoptera	Chaetopteridae	<i>Spiochaetopterus costarum</i>						1
Annelida	Eunicida	Lumbrineridae	<i>Lumbrineris bicirrata</i>						
Annelida	Eunicida	Lumbrineridae	<i>Lumbrineris luti</i>						
Annelida	Eunicida	Onuphidae	<i>Onuphis iridescens</i>						
Annelida	Magelonida	Magelonidae	<i>Magelona berkeleyi</i>	1	2	4		3	
Annelida	Opheliida	Opheliidae	<i>Travisia forbesii</i>	1	1				
Annelida	Opheliida	Opheliidae	<i>Travisia japonica</i>						
Annelida	Opheliida	Scalibregmidae	<i>Hyboscolex pacificus</i>						
Annelida	Opheliida	Scalibregmidae	<i>Scalibregma inflatum</i>						
Annelida	Orbiniida	Orbiniidae	<i>Leitoscoloplos pugettensis</i>						
Annelida	Orbiniida	Paraonidae	<i>Aricidea antennata</i>						
Annelida	Orbiniida	Paraonidae	<i>Aricidea lopezi</i>	1		1	1		
Annelida	Orbiniida	Paraonidae	<i>Chaetozone</i> sp.				4	4	1
Annelida	Orbiniida	Paraonidae	<i>Cirratulus</i> sp.						
Annelida	Orbiniida	Paraonidae	<i>Levinsenia gracilis</i>						
Annelida	Orbiniida	Paraonidae	<i>Tharyx</i> sp. I	1		1		1	
Annelida	Orbiniida	Paraonidae	<i>Tharyx</i> sp. II					3	
Annelida	Phyllodocida	Aphrodotidae	<i>Aphrodites japonica</i>						
Annelida	Phyllodocida	Glyceridae	<i>Hemipodus borealis</i>						
Annelida	Phyllodocida	Goniadidae	<i>Goniada brunnea</i>		1			1	
Annelida	Phyllodocida	Hesionidae							

Annelida	Phyllodocida	Nephtidae	<i>Nephtys</i> sp.						
Annelida	Phyllodocida	Nephtidae	<i>Nephtys caeca</i>						
Annelida	Phyllodocida	Nephtidae	<i>Nephtys cornuta</i>						
Annelida	Phyllodocida	Nereididae	<i>Nereis</i> sp.						
Annelida	Phyllodocida	Pholodidae	<i>Pholoe glabra</i>				1	1	
Annelida	Phyllodocida	Pholodidae	<i>Sigalona</i> sp.						3
Annelida	Phyllodocida	Phyllodocidae	<i>Eteone longa</i>						
Annelida	Phyllodocida	Polynoidae		1	1	1			
Annelida	Phyllodocida	Polynoidae	<i>Hesperonoe</i> sp.						
Annelida	Phyllodocida	Polynoidae	<i>Hololepida magna</i>						
Annelida	Phyllodocida	Syllidae	<i>Syllis</i> sp.						
Annelida	Sabellida	Sabellidae						1	
Annelida	Sabellida	Sabellidae	<i>Potamilla</i> sp.						
Annelida	Sabellida	Serpulidae							
Annelida	Spionida	Spionidae	<i>Dipolydora socialis</i>						
Annelida	Spionida	Spionidae	<i>Laonice</i> sp.						
Annelida	Spionida	Spionidae	<i>Prionospio lighti</i>						
Annelida	Spionida	Spionidae	<i>Prionospio steenstrupi</i>			2	1	2	1
Annelida	Spionida	Spionidae	<i>Pygospio elegans</i>						
Annelida	Spionida	Spionidae	<i>Spio cirrifera</i>				1		
Annelida	Terebellida	Amphaeretidae	<i>Amphicteis scaphobranchiata</i>						
Annelida	Terebellida	Pectinariidae	<i>Pectinaria moorei</i>						
Annelida	Terebellida	Sabellaridae	<i>Sabellaria cementarium</i>						
Annelida	Terebellida	Terebellidae		1					
Annelida	Terebellida	Terebellidae	<i>Scionella</i> sp.					1	1
Annelida	Terebellida	Terebellidae	<i>Thelepas</i> sp.						
Annelida	Terebellida	Trichobranchidae	<i>Terebellides stroemi</i>						
Arthropoda	Amphipoda	Ampeliscidae	<i>Ampelisca</i> cf. <i>unsocalae</i>	2	3	8	13	2	2
Arthropoda	Amphipoda	Ampeliscidae	<i>Byblis veleronis</i>			2			
Arthropoda	Amphipoda	Dexaminidae			2				
Arthropoda	Amphipoda	Ischyroceridae		1					
Arthropoda	Amphipoda	Oedicerotidae	<i>Monoculoides</i> sp.						
Arthropoda	Amphipoda	Synopiidae	<i>Tiron biocellata</i>						

Arthropoda	Calanoida								
Arthropoda	Cumacea	Diastylidae	<i>Diastylis</i> sp.			1			
Arthropoda	Cumacea	Diastylidae	<i>Diastylis dawsoni</i>						
Arthropoda	Cumacea	Leuconiidae	<i>Eudorella</i> sp.					1	
Arthropoda	Cumacea	Leuconiidae	<i>Lamprops fuscata</i>						
Arthropoda	Cumacea	Leuconiidae	<i>Leucon fulvus</i>				1		
Arthropoda	Cumacea	Leuconiidae	<i>Leucon magnadentata</i>						
Arthropoda	Decapoda	Pinnixidae	<i>Pinnixa</i> sp.						
Arthropoda	Isopoda	Gnathidae	<i>Gnathia</i> sp.					2	2
Arthropoda	Ostracoda		Species I						
Arthropoda	Ostracoda		Species II						
Arthropoda	Ostracoda		Species III						
Arthropoda	Tanaidacea	Paratanaidea	<i>Leptognathia</i> sp.						
Echinodermata	Apodida	Chiridotidae							
Echinodermata	Dendrochiridotida								
Echinodermata	Ophiurida	Amphiuridae	<i>Amphiodia</i> sp.	1	1				
Echiura	Echiuroinea	Echiuridae	<i>Echiurus echiurus alaskensis</i>						
Mollusca	Archaeogastropoda	Trochidae	<i>Solariella vancouverense</i>						
Mollusca	Cephalaspidea	Atyidae	<i>Haminoea virescens</i>						
Mollusca	Dentaliida	Dentaliidae	<i>Antalis pretiosum</i>						
Mollusca	Dentaliida	Dentaliidae	<i>Rhabdus rectius</i>						
Mollusca	Mesogastropoda	Naticidae	<i>Euspira pallida</i>						
Mollusca	Myoida	Hiatellidae	<i>Hiatella arctica</i>						
Mollusca	Mytiloida	Mytilidae	<i>Crenella</i> sp.						
Mollusca	Neogastropoda	Buccinidae	<i>Buccinum</i> sp.						
Mollusca	Neogastropoda	Cancellariidae	<i>Admete</i> sp.						
Mollusca	Neogastropoda	Turridae	<i>Oenopota rosea</i>						
Mollusca	Neogastropoda	Turridae	<i>Ophiodermella</i> sp.						
Mollusca	Neoloricata	Ischnochitonidae	<i>Lepidozona</i> sp.						
Mollusca	Nuculoida	Nuculidae	<i>Ennucula tenuis</i>						
Mollusca	Osteroida	Propeomussidae	<i>Parvamussium alaskensis</i>						
Mollusca	Pholadomyoida	Cuspidariidae	<i>Cardiomya pectinata</i>	1					
Mollusca	Pholadomyoida	Pandoridae	<i>Pandora filosa</i>						

Mollusca	Pyramidelliacea	Pyramidellidae	<i>Odostomia</i> sp.		1				
Mollusca	Pyramidelliacea	Pyramidellidae	<i>Turbonilla</i> sp.						
Mollusca	Veneroida	Astartiidae	<i>Astarte esquimalti</i>					1	
Mollusca	Veneroida	Carditidae	<i>Cyclocardia</i> sp.	1					
Mollusca	Veneroida	Cultellidae	<i>Siliqua alta</i>						
Mollusca	Veneroida	Malletiidae	<i>Tindaria brunea</i>						
Mollusca	Veneroida	Tellinidae	<i>Macoma eliminata</i>		6	1	3	4	1
Mollusca	Veneroida	Tellinidae	<i>Macoma moesta</i>		3			3	2
Mollusca	Veneroida	Thyasiridae	<i>Axinospida serricata</i>				2		2
Mollusca	Veneroida	Thyasiridae	<i>Thyasira flexuosa</i>						
Nemertea	Heteronemertea	Lineidae	<i>Cerebratulus</i> sp.						
Nemertea	Heteronemertea	Lineidae	<i>Linea</i> sp.			1			
Priapulida	Priapulomorpha	Priapulidae	<i>Priapulus caudata</i>						1
Sipunucula	Sipunuculida	Golfingiidae							
Aschelminths									
			Total No. of Species	11	11	12	10	16	12
			Total No. of Individuals	12	22	24	30	31	18

Appendix Table 6.--Number of individuals of each infauna taxon collected per grab sample at Transect 3 in Trinity Islands during August 1999.

Phylum	Order	Family	Species	3A	3B	3C	3D	3E	3F
Annelida									
Annelida	Capitallida	Capitellidae	<i>Mediomastus californiensis</i>	7	4	11		1	2
Annelida	Capitallida	Maldanidae							
Annelida	Capitallida	Maldanidae	<i>Axiothella rubrocincta</i>						
Annelida	Capitallida	Maldanidae	<i>Clymenella</i> sp.						
Annelida	Capitallida	Maldanidae	<i>Euclymene zonalis</i>						
Annelida	Capitallida	Maldanidae	<i>Praxillella gracilis</i>						
Annelida	Capitallida	Maldanidae	<i>Praxilura</i> sp.						
Annelida	Chaetopterida	Chaetopteridae	<i>Spiochaetopterus costarum</i>						
Annelida	Eunicida	Lumbrineridae	<i>Lumbrineris bicirrata</i>	1					
Annelida	Eunicida	Lumbrineridae	<i>Lumbrineris luti</i>						
Annelida	Eunicida	Onuphidae	<i>Onuphis iridescens</i>			1			
Annelida	Magelonida	Magelonidae	<i>Magelona berkeleyi</i>	3	3			2	3
Annelida	Opheliida	Opheliidae	<i>Travisia forbesii</i>	1	1				
Annelida	Opheliida	Opheliidae	<i>Travisia japonica</i>						
Annelida	Opheliida	Scalibregmidae	<i>Hyboscolex pacificus</i>						
Annelida	Opheliida	Scalibregmidae	<i>Scalibregma inflatum</i>						
Annelida	Orbiniida	Orbiniidae	<i>Leitoscoloplos pugettensis</i>						
Annelida	Orbiniida	Paraonidae	<i>Aricidea antennata</i>						
Annelida	Orbiniida	Paraonidae	<i>Aricidea lopezi</i>	3	1				
Annelida	Orbiniida	Paraonidae	<i>Chaetozone</i> sp.	1					4
Annelida	Orbiniida	Paraonidae	<i>Cirratulus</i> sp.						
Annelida	Orbiniida	Paraonidae	<i>Levinsenia gracilis</i>						1
Annelida	Orbiniida	Paraonidae	<i>Tharyx</i> sp. I						
Annelida	Orbiniida	Paraonidae	<i>Tharyx</i> sp. II			1	1		
Annelida	Phyllodocida	Aphrodotidae	<i>Aphrodites japonica</i>						
Annelida	Phyllodocida	Glyceridae	<i>Hemipodus borealis</i>			1			1
Annelida	Phyllodocida	Goniadidae	<i>Goniada brunnea</i>						
Annelida	Phyllodocida	Hesionidae							

Annelida	Phyllodocida	Nephtidae	<i>Nephtys</i> sp.						
Annelida	Phyllodocida	Nephtidae	<i>Nephtys caeca</i>						1
Annelida	Phyllodocida	Nephtidae	<i>Nephtys cornuta</i>	1					1
Annelida	Phyllodocida	Nereididae	<i>Nereis</i> sp.						
Annelida	Phyllodocida	Pholodidae	<i>Pholoe glabra</i>						
Annelida	Phyllodocida	Pholodidae	<i>Sigalona</i> sp.						
Annelida	Phyllodocida	Phyllodocidae	<i>Eteone longa</i>						
Annelida	Phyllodocida	Polynoidae		1					1
Annelida	Phyllodocida	Polynoidae	<i>Hesperonoe</i> sp.						1
Annelida	Phyllodocida	Polynoidae	<i>Hololepida magna</i>						
Annelida	Phyllodocida	Syllidae	<i>Syllis</i> sp.						
Annelida	Sabellida	Sabellidae			3	1			1
Annelida	Sabellida	Sabellidae	<i>Potamilla</i> sp.						
Annelida	Sabellida	Serpulidae					1		
Annelida	Spionida	Spionidae	<i>Dipolydora socialis</i>						
Annelida	Spionida	Spionidae	<i>Laonice</i> sp.						
Annelida	Spionida	Spionidae	<i>Prionospio lighti</i>			1			
Annelida	Spionida	Spionidae	<i>Prionospio steenstrupi</i>	1	2	1			1
Annelida	Spionida	Spionidae	<i>Pygospio elegans</i>						
Annelida	Spionida	Spionidae	<i>Spio cirrifera</i>						
Annelida	Terebellida	Amphaeretidae	<i>Amphicteis scaphobranchiata</i>				1		
Annelida	Terebellida	Pectinariidae	<i>Pectinaria moorei</i>						
Annelida	Terebellida	Sabellaridae	<i>Sabellaria cementarium</i>						
Annelida	Terebellida	Terebellidae		1					
Annelida	Terebellida	Terebellidae	<i>Scionella</i> sp.					1	
Annelida	Terebellida	Terebellidae	<i>Thelepas</i> sp.				1		
Annelida	Terebellida	Trichobranchidae	<i>Terebellides stroemi</i>	1					
Arthropoda	Amphipoda	Ampeliscidae	<i>Ampelisca</i> cf. <i>unsocalae</i>	5	4	13			12
Arthropoda	Amphipoda	Ampeliscidae	<i>Byblis veleronis</i>						
Arthropoda	Amphipoda	Dexaminidae						1	1
Arthropoda	Amphipoda	Ischyroceridae							
Arthropoda	Amphipoda	Oedicerotidae	<i>Monoculoides</i> sp.						
Arthropoda	Amphipoda	Synopiidae	<i>Tiron biocellata</i>						

Arthropoda	Calanoida			1					
Arthropoda	Cumacea	Diastylidae	<i>Diastylis</i> sp.						
Arthropoda	Cumacea	Diastylidae	<i>Diastylis dawsoni</i>						
Arthropoda	Cumacea	Leuconiidae	<i>Eudorella</i> sp.						
Arthropoda	Cumacea	Leuconiidae	<i>Lamprops fuscata</i>						
Arthropoda	Cumacea	Leuconiidae	<i>Leucon fulvus</i>						
Arthropoda	Cumacea	Leuconiidae	<i>Leucon magnadentata</i>						
Arthropoda	Decapoda	Pinnixidae	<i>Pinnixa</i> sp.						
Arthropoda	Isopoda	Gnathidae	<i>Gnathia</i> sp.	2					
Arthropoda	Ostracoda		Species I			1			
Arthropoda	Ostracoda		Species II						
Arthropoda	Ostracoda		Species III	1					
Arthropoda	Tanaidacea	Paratanaidea	<i>Leptognathia</i> sp.	1					
Echinodermata	Apodida	Chiridotidae							
Echinodermata	Dendrochiridotida							3	
Echinodermata	Ophiurida	Amphiuridae	<i>Amphiodia</i> sp.	4	1				
Echiura	Echiuroinea	Echiuridae	<i>Echiurus echiurus alaskensis</i>						
Mollusca	Archaeogastropoda	Trochidae	<i>Solariella vancouverense</i>						
Mollusca	Cephalaspidea	Atyidae	<i>Haminoea virescens</i>						
Mollusca	Dentaliida	Dentaliidae	<i>Antalis pretiosum</i>						
Mollusca	Dentaliida	Dentaliidae	<i>Rhabdus rectius</i>						
Mollusca	Mesogastropoda	Naticidae	<i>Euspira pallida</i>						
Mollusca	Myoida	Hiatellidae	<i>Hiatella arctica</i>						1
Mollusca	Mytiloidea	Mytilidae	<i>Crenella</i> sp.						
Mollusca	Neogastropoda	Buccinidae	<i>Buccinum</i> sp.						
Mollusca	Neogastropoda	Cancellariidae	<i>Admete</i> sp.						
Mollusca	Neogastropoda	Turridae	<i>Oenopota rosea</i>						
Mollusca	Neogastropoda	Turridae	<i>Ophiodermella</i> sp.						
Mollusca	Neoloricata	Ischnochitonidae	<i>Lepidozona</i> sp.						1
Mollusca	Nuculoida	Nuculidae	<i>Ennucula tenuis</i>						
Mollusca	Osteroidea	Propeomussidae	<i>Parvamussium alaskensis</i>						1
Mollusca	Pholadomyoidea	Cuspidariidae	<i>Cardiomya pectinata</i>						
Mollusca	Pholadomyoidea	Pandoridae	<i>Pandora filosa</i>						



Mollusca	Pyramidellacea	Pyramidellidae	<i>Odostomia</i> sp.						1
Mollusca	Pyramidellacea	Pyramidellidae	<i>Turbonilla</i> sp.						
Mollusca	Veneroidea	Astartiidae	<i>Astarte esquimalti</i>						
Mollusca	Veneroidea	Carditidae	<i>Cyclocardia</i> sp.						
Mollusca	Veneroidea	Cultellidae	<i>Siliqua alta</i>						
Mollusca	Veneroidea	Malletiidae	<i>Tindaria brunea</i>	1					
Mollusca	Veneroidea	Tellinidae	<i>Macoma eliminata</i>	15		2		3	
Mollusca	Veneroidea	Tellinidae	<i>Macoma moesta</i>	1	1	2			
Mollusca	Veneroidea	Thyasiridae	<i>Axinospida serricata</i>	4	1	1	2		
Mollusca	Veneroidea	Thyasiridae	<i>Thyasira flexuosa</i>						
Nemertea	Heteronemertea	Lineidae	<i>Cerebratulus</i> sp.						
Nemertea	Heteronemertea	Lineidae	<i>Linea</i> sp.		1				
Priapulida	Priapulomorpha	Priapulidae	<i>Priapululus caudata</i>						
Sipuncula	Sipunculida	Golfingiidae							
Aschelminths									
			Total No. of Species	19	12	13	5	6	17
			Total No. of Individuals	51	26	37	6	11	34

Appendix Table 6.--Number of individuals of each infauna taxon collected per grab sample at Transect 4 in Trinity Islands during August 1999.

Phylum	Order	Family	Species	4A	4B	4C	4D	4E	4F
Annelida									
Annelida	Capitallida	Capitellidae	<i>Mediomastus californiensis</i>	3	5	3	1	6	2
Annelida	Capitallida	Maldanidae							
Annelida	Capitallida	Maldanidae	<i>Axiothella rubrocincta</i>						
Annelida	Capitallida	Maldanidae	<i>Clymenella</i> sp.						
Annelida	Capitallida	Maldanidae	<i>Euclymene zonalis</i>						
Annelida	Capitallida	Maldanidae	<i>Praxillella gracilis</i>						
Annelida	Capitallida	Maldanidae	<i>Praxilura</i> sp.						
Annelida	Chaetopterida	Chaetopteridae	<i>Spiochaetopterus costarum</i>						
Annelida	Eunicida	Lumbrineridae	<i>Lumbrineris bicirrata</i>						
Annelida	Eunicida	Lumbrineridae	<i>Lumbrineris luti</i>			1			
Annelida	Eunicida	Onuphidae	<i>Onuphis iridescens</i>					1	
Annelida	Magelonida	Magelonidae	<i>Magelona berkeleyi</i>		3	2	4	1	5
Annelida	Opheliida	Opheliidae	<i>Travisia forbesii</i>						
Annelida	Opheliida	Opheliidae	<i>Travisia japonica</i>						
Annelida	Opheliida	Scalibregmidae	<i>Hyboscolex pacificus</i>						
Annelida	Opheliida	Scalibregmidae	<i>Scalibregma inflatum</i>						
Annelida	Orbiniida	Orbiniidae	<i>Leitoscoloplos pugettensis</i>		2				
Annelida	Orbiniida	Paraonidae	<i>Aricidea antennata</i>						
Annelida	Orbiniida	Paraonidae	<i>Aricidea lopezi</i>	1	1				
Annelida	Orbiniida	Paraonidae	<i>Chaetozone</i> sp.	1	5	2	1	3	3
Annelida	Orbiniida	Paraonidae	<i>Cirratulus</i> sp.						
Annelida	Orbiniida	Paraonidae	<i>Levinsenia gracilis</i>						1
Annelida	Orbiniida	Paraonidae	<i>Tharyx</i> sp. I					1	
Annelida	Orbiniida	Paraonidae	<i>Tharyx</i> sp. II					2	
Annelida	Phyllodocida	Aphrodotidae	<i>Aphrodites japonica</i>						
Annelida	Phyllodocida	Glyceridae	<i>Hemipodus borealis</i>					1	1
Annelida	Phyllodocida	Goniadidae	<i>Goniada brunnea</i>						2
Annelida	Phyllodocida	Hesionidae							

Annelida	Phyllodocida	Nephtidae	<i>Nephtys</i> sp.						
Annelida	Phyllodocida	Nephtidae	<i>Nephtys caeca</i>		1				1
Annelida	Phyllodocida	Nephtidae	<i>Nephtys cornuta</i>				1		4
Annelida	Phyllodocida	Nereididae	<i>Nereis</i> sp.						
Annelida	Phyllodocida	Pholodidae	<i>Pholoe glabra</i>		1				
Annelida	Phyllodocida	Pholodidae	<i>Sigalona</i> sp.						
Annelida	Phyllodocida	Phyllodocidae	<i>Eteone longa</i>						
Annelida	Phyllodocida	Polynoidae						1	
Annelida	Phyllodocida	Polynoidae	<i>Hesperonoe</i> sp.						
Annelida	Phyllodocida	Polynoidae	<i>Hololepida magna</i>	1					
Annelida	Phyllodocida	Syllidae	<i>Syllis</i> sp.						
Annelida	Sabellida	Sabellidae							
Annelida	Sabellida	Sabellidae	<i>Potamilla</i> sp.						
Annelida	Sabellida	Serpulidae							
Annelida	Spionida	Spionidae	<i>Dipolydora socialis</i>						
Annelida	Spionida	Spionidae	<i>Laonice</i> sp.						
Annelida	Spionida	Spionidae	<i>Prionospio lighti</i>						1
Annelida	Spionida	Spionidae	<i>Prionospio steenstrupi</i>	2	3	2		4	3
Annelida	Spionida	Spionidae	<i>Pygospio elegans</i>						
Annelida	Spionida	Spionidae	<i>Spio cirrifera</i>						
Annelida	Terebellida	Amphaeretidae	<i>Amphicteis scaphobranchiata</i>						1
Annelida	Terebellida	Pectinariidae	<i>Pectinaria moorei</i>						
Annelida	Terebellida	Sabellaridae	<i>Sabellaria cementarium</i>					1	
Annelida	Terebellida	Terebellidae						1	
Annelida	Terebellida	Terebellidae	<i>Scionella</i> sp.		1	1			
Annelida	Terebellida	Terebellidae	<i>Thelepas</i> sp.						
Annelida	Terebellida	Trichobranchidae	<i>Terebellides stroemi</i>	1		1			
Arthropoda	Amphipoda	Ampeliscidae	<i>Ampelisca</i> cf. <i>unsocalae</i>	7	4	1		1	1
Arthropoda	Amphipoda	Ampeliscidae	<i>Byblis veleronis</i>						
Arthropoda	Amphipoda	Dexaminidae						1	
Arthropoda	Amphipoda	Ischyroceridae				1	1		
Arthropoda	Amphipoda	Oedicerotidae	<i>Monoculoides</i> sp.						
Arthropoda	Amphipoda	Synopiidae	<i>Tiron biocellata</i>						

Arthropoda	Calanoida								
Arthropoda	Cumacea	Diastylidae	<i>Diastylis</i> sp.						
Arthropoda	Cumacea	Diastylidae	<i>Diastylis dawsoni</i>						
Arthropoda	Cumacea	Leuconiidae	<i>Eudorella</i> sp.						
Arthropoda	Cumacea	Leuconiidae	<i>Lamprops fuscata</i>						1
Arthropoda	Cumacea	Leuconiidae	<i>Leucon fulvus</i>						
Arthropoda	Cumacea	Leuconiidae	<i>Leucon magnadentata</i>					1	
Arthropoda	Decapoda	Pinnixidae	<i>Pinnixa</i> sp.						
Arthropoda	Isopoda	Gnathidae	<i>Gnathia</i> sp.			1			
Arthropoda	Ostracoda		Species I						
Arthropoda	Ostracoda		Species II						
Arthropoda	Ostracoda		Species III						
Arthropoda	Tanaidacea	Paratanaidea	<i>Leptognathia</i> sp.						
Echinodermata	Apodida	Chiridotidae							
Echinodermata	Dendrochiridotida								
Echinodermata	Ophiurida	Amphiuridae	<i>Amphiodia</i> sp.	3	4				1
Echiura	Echiuroinea	Echiuridae	<i>Echiurus echiurus alaskensis</i>						
Mollusca	Archaeogastropoda	Trochidae	<i>Solariella vancouverense</i>				1		
Mollusca	Cephalaspidea	Atyidae	<i>Haminoea virescens</i>						
Mollusca	Dentaliida	Dentaliidae	<i>Antalis pretiosum</i>						
Mollusca	Dentaliida	Dentaliidae	<i>Rhabdus rectius</i>						
Mollusca	Mesogastropoda	Naticidae	<i>Euspira pallida</i>						
Mollusca	Myoida	Hiatellidae	<i>Hiatella arctica</i>						
Mollusca	Mytiloida	Mytilidae	<i>Crenella</i> sp.			1			
Mollusca	Neogastropoda	Buccinidae	<i>Buccinum</i> sp.						
Mollusca	Neogastropoda	Cancellariidae	<i>Admete</i> sp.						
Mollusca	Neogastropoda	Turridae	<i>Oenopota rosea</i>						
Mollusca	Neogastropoda	Turridae	<i>Ophiodermella</i> sp.					1	
Mollusca	Neoloricata	Ischnochitonidae	<i>Lepidozona</i> sp.						
Mollusca	Nuculoida	Nuculidae	<i>Ennucula tenuis</i>						
Mollusca	Osteroida	Propeomussidae	<i>Parvamussium alaskensis</i>						
Mollusca	Pholadomyoida	Cuspidariidae	<i>Cardiomya pectinata</i>						
Mollusca	Pholadomyoida	Pandoridae	<i>Pandora filosa</i>						

Mollusca	Pyramidellacea	Pyramidellidae	<i>Odostomia</i> sp.						
Mollusca	Pyramidellacea	Pyramidellidae	<i>Turbonilla</i> sp.						
Mollusca	Veneroidea	Astartiidae	<i>Astarte esquimalti</i>						1
Mollusca	Veneroidea	Carditidae	<i>Cyclocardia</i> sp.						
Mollusca	Veneroidea	Cultellidae	<i>Siliqua alta</i>		1				
Mollusca	Veneroidea	Malletiidae	<i>Tindaria brunea</i>						
Mollusca	Veneroidea	Tellinidae	<i>Macoma eliminata</i>	3	7	3		8	
Mollusca	Veneroidea	Tellinidae	<i>Macoma moesta</i>	4	2		1		
Mollusca	Veneroidea	Thyasiridae	<i>Axinospida serricata</i>	1	1	1			
Mollusca	Veneroidea	Thyasiridae	<i>Thyasira flexuosa</i>						
Nemertea	Heteronemertea	Lineidae	<i>Cerebratulus</i> sp.						
Nemertea	Heteronemertea	Lineidae	<i>Linea</i> sp.	1			1		1
Priapulida	Priapulomorpha	Priapulidae	<i>Priapulus caudata</i>					1	
Sipunucula	Sipunuculida	Golfingiidae				1			
Aschelminths									
			Total No. of Species	12	15	14	8	17	16
			Total No. of Individuals	28	41	21	11	35	29

Appendix Table 6.--Number of individuals of each infauna taxon collected per grab sample at Transect 5 in Trinity Islands during August 1999.

Phylum	Order	Family	Species	5A	5B	5C	5D	5E	5F
Annelida									
Annelida	Capitallida	Capitellidae	<i>Mediomastus californiensis</i>	1	10	1	10	1	5
Annelida	Capitallida	Maldanidae			1				1
Annelida	Capitallida	Maldanidae	<i>Axiothella rubrocincta</i>						
Annelida	Capitallida	Maldanidae	<i>Clymenella</i> sp.						
Annelida	Capitallida	Maldanidae	<i>Euclymene zonalis</i>						
Annelida	Capitallida	Maldanidae	<i>Praxillella gracilis</i>						
Annelida	Capitallida	Maldanidae	<i>Praxilura</i> sp.						
Annelida	Chaetoptera	Chaetopteridae	<i>Spiochaetopterus costarum</i>	1	1				
Annelida	Eunicida	Lumbrineridae	<i>Lumbrineris bicirrata</i>	2	1				
Annelida	Eunicida	Lumbrineridae	<i>Lumbrineris luti</i>						
Annelida	Eunicida	Onuphidae	<i>Onuphis iridescens</i>				1		
Annelida	Magelonida	Magelonidae	<i>Magelona berkeleyi</i>	2	5	1	5		3
Annelida	Opheliida	Opheliidae	<i>Travisia forbesii</i>	1	1				
Annelida	Opheliida	Opheliidae	<i>Travisia japonica</i>						
Annelida	Opheliida	Scalibregmidae	<i>Hyboscolex pacificus</i>						
Annelida	Opheliida	Scalibregmidae	<i>Scalibregma inflatum</i>						
Annelida	Orbiniida	Orbiniidae	<i>Leitoscoloplos pugettensis</i>	1					
Annelida	Orbiniida	Paraonidae	<i>Aricidea antennata</i>						
Annelida	Orbiniida	Paraonidae	<i>Aricidea lopezi</i>			1		2	
Annelida	Orbiniida	Paraonidae	<i>Chaetozone</i> sp.	1	1	4	8		4
Annelida	Orbiniida	Paraonidae	<i>Cirratulus</i> sp.						1
Annelida	Orbiniida	Paraonidae	<i>Levinsenia gracilis</i>	2					
Annelida	Orbiniida	Paraonidae	<i>Tharyx</i> sp. I	1	1		1		
Annelida	Orbiniida	Paraonidae	<i>Tharyx</i> sp. II		1		1		
Annelida	Phyllodocida	Aphrodotidae	<i>Aphrodites japonica</i>						
Annelida	Phyllodocida	Glyceridae	<i>Hemipodus borealis</i>					1	4
Annelida	Phyllodocida	Goniadidae	<i>Goniada brunnea</i>			1			
Annelida	Phyllodocida	Hesionidae							

Annelida	Phyllodocida	Nephtidae	<i>Nephtys</i> sp.						
Annelida	Phyllodocida	Nephtidae	<i>Nephtys caeca</i>	2			2		
Annelida	Phyllodocida	Nephtidae	<i>Nephtys cornuta</i>				1		
Annelida	Phyllodocida	Nereididae	<i>Nereis</i> sp.						
Annelida	Phyllodocida	Pholodidae	<i>Pholoe glabra</i>					1	
Annelida	Phyllodocida	Pholodidae	<i>Sigalona</i> sp.						
Annelida	Phyllodocida	Phyllodocidae	<i>Eteone longa</i>		1				
Annelida	Phyllodocida	Polynoidae							
Annelida	Phyllodocida	Polynoidae	<i>Hesperonoe</i> sp.						
Annelida	Phyllodocida	Polynoidae	<i>Hololepida magna</i>			1			
Annelida	Phyllodocida	Syllidae	<i>Syllis</i> sp.						1
Annelida	Sabellida	Sabellidae							
Annelida	Sabellida	Sabellidae	<i>Potamilla</i> sp.				1		1
Annelida	Sabellida	Serpulidae							
Annelida	Spionida	Spionidae	<i>Dipolydora socialis</i>						
Annelida	Spionida	Spionidae	<i>Laonice</i> sp.						
Annelida	Spionida	Spionidae	<i>Prionospio lighti</i>						
Annelida	Spionida	Spionidae	<i>Prionospio steenstrupi</i>	1	8	2	6	2	2
Annelida	Spionida	Spionidae	<i>Pygospio elegans</i>						
Annelida	Spionida	Spionidae	<i>Spio cirrifera</i>						
Annelida	Terebellida	Amphaeretidae	<i>Amphicteis scaphobranchiata</i>					1	
Annelida	Terebellida	Pectinariidae	<i>Pectinaria moorei</i>						
Annelida	Terebellida	Sabellaridae	<i>Sabellaria cementarium</i>						
Annelida	Terebellida	Terebellidae					1		
Annelida	Terebellida	Terebellidae	<i>Scionella</i> sp.	1	1				
Annelida	Terebellida	Terebellidae	<i>Thelepa</i> sp.				1		
Annelida	Terebellida	Trichobranchidae	<i>Terebellides stroemi</i>						
Arthropoda	Amphipoda	Ampeliscidae	<i>Ampelisca</i> cf. <i>unsocalae</i>		10	1	8		2
Arthropoda	Amphipoda	Ampeliscidae	<i>Byblis veleronis</i>					1	
Arthropoda	Amphipoda	Dexaminidae					1		
Arthropoda	Amphipoda	Ischyroceridae			1				
Arthropoda	Amphipoda	Oedicerotidae	<i>Monoculoides</i> sp.						
Arthropoda	Amphipoda	Synopiidae	<i>Tiron biocellata</i>						

Arthropoda	Calanoida								
Arthropoda	Cumacea	Diastylidae	<i>Diastylis</i> sp.						
Arthropoda	Cumacea	Diastylidae	<i>Diastylis dawsoni</i>						
Arthropoda	Cumacea	Leuconiidae	<i>Eudorella</i> sp.						
Arthropoda	Cumacea	Leuconiidae	<i>Lamprops fuscata</i>						
Arthropoda	Cumacea	Leuconiidae	<i>Leucon fulvus</i>						
Arthropoda	Cumacea	Leuconiidae	<i>Leucon magnadentata</i>						
Arthropoda	Decapoda	Pinnixidae	<i>Pinnixa</i> sp.						
Arthropoda	Isopoda	Gnathidae	<i>Gnathia</i> sp.						1
Arthropoda	Ostracoda		Species I						
Arthropoda	Ostracoda		Species II						
Arthropoda	Ostracoda		Species III						
Arthropoda	Tanaidacea	Paratanaidea	<i>Leptognathia</i> sp.						
Echinodermata	Apodida	Chiridotidae		1					
Echinodermata	Dendrochiridotida								
Echinodermata	Ophiurida	Amphiuridae	<i>Amphiodia</i> sp.		4				
Echiura	Echiuroinea	Echiuridae	<i>Echiurus echiurus alaskensis</i>			1		1	
Mollusca	Archaeogastropoda	Trochidae	<i>Solariella vancouverense</i>						
Mollusca	Cephalaspidea	Atyidae	<i>Haminoea virescens</i>						
Mollusca	Dentaliida	Dentaliidae	<i>Antalis pretiosum</i>						
Mollusca	Dentaliida	Dentaliidae	<i>Rhabdus rectius</i>						
Mollusca	Mesogastropoda	Naticidae	<i>Euspira pallida</i>						
Mollusca	Myoida	Hiatellidae	<i>Hiatella arctica</i>						
Mollusca	Mytiloida	Mytilidae	<i>Crenella</i> sp.						
Mollusca	Neogastropoda	Buccinidae	<i>Buccinum</i> sp.		1				
Mollusca	Neogastropoda	Cancellariidae	<i>Admete</i> sp.						
Mollusca	Neogastropoda	Turridae	<i>Oenopota rosea</i>		1				
Mollusca	Neogastropoda	Turridae	<i>Ophiodermella</i> sp.						
Mollusca	Neoloricata	Ischnochitonidae	<i>Lepidozona</i> sp.						
Mollusca	Nuculoida	Nuculidae	<i>Ennucula tenuis</i>						
Mollusca	Osteroida	Propeomussidae	<i>Parvamussium alaskensis</i>						
Mollusca	Pholadomyoida	Cuspidariidae	<i>Cardiomya pectinata</i>						
Mollusca	Pholadomyoida	Pandoridae	<i>Pandora filosa</i>						



Mollusca	Pyramidellacea	Pyramidellidae	<i>Odostomia</i> sp.						
Mollusca	Pyramidellacea	Pyramidellidae	<i>Turbonilla</i> sp.						2
Mollusca	Veneroida	Astartiidae	<i>Astarte esquimalti</i>				2		1
Mollusca	Veneroida	Carditidae	<i>Cyclocardia</i> sp.						
Mollusca	Veneroida	Cultellidae	<i>Siliqua alta</i>						
Mollusca	Veneroida	Malletiidae	<i>Tindaria brunea</i>						
Mollusca	Veneroida	Tellinidae	<i>Macoma eliminata</i>	2	6		9	4	1
Mollusca	Veneroida	Tellinidae	<i>Macoma moesta</i>	2		2			
Mollusca	Veneroida	Thyasiridae	<i>Axinospida serricata</i>	2	2	1	5		
Mollusca	Veneroida	Thyasiridae	<i>Thyasira flexuosa</i>						
Nemertea	Heteronemertea	Lineidae	<i>Cerebratulus</i> sp.						
Nemertea	Heteronemertea	Lineidae	<i>Linea</i> sp.	1	1		1		
Priapulida	Priapulomorpha	Priapulidae	<i>Priapulus caudata</i>						
Sipunucula	Sipunuculida	Golfingiidae							2
Aschelminths									
			Total No. of Species	17	20	11	18	9	15
			Total No. of Individuals	24	58	16	64	14	31

Appendix Table 6.--Number of individuals of each infauna taxon collected per grab sample at Transect 6 in Trinity Islands during August 1999.

Phylum	Order	Family	Species	6A	6B	6C	6D	6E	6F
Annelida									
Annelida	Capitallida	Capitellidae	<i>Mediomastus californiensis</i>	8	2	17	4	1	7
Annelida	Capitallida	Maldanidae							
Annelida	Capitallida	Maldanidae	<i>Axiothella rubrocincta</i>			1			
Annelida	Capitallida	Maldanidae	<i>Clymenella</i> sp.	1					
Annelida	Capitallida	Maldanidae	<i>Euclymene zonalis</i>						
Annelida	Capitallida	Maldanidae	<i>Praxillella gracilis</i>						
Annelida	Capitallida	Maldanidae	<i>Praxilura</i> sp.						
Annelida	Chaetopterida	Chaetopteridae	<i>Spiochaetopterus costarum</i>						
Annelida	Eunicida	Lumbrineridae	<i>Lumbrineris bicirrata</i>						
Annelida	Eunicida	Lumbrineridae	<i>Lumbrineris luti</i>					2	1
Annelida	Eunicida	Onuphidae	<i>Onuphis iridescens</i>						
Annelida	Magelonida	Magelonidae	<i>Magelona berkeleyi</i>	6		2	2	3	2
Annelida	Opheliida	Opheliidae	<i>Travisia forbesii</i>				1		
Annelida	Opheliida	Opheliidae	<i>Travisia japonica</i>						
Annelida	Opheliida	Scalibregmidae	<i>Hyboscolex pacificus</i>			1			
Annelida	Opheliida	Scalibregmidae	<i>Scalibregma inflatum</i>	1					
Annelida	Orbiniida	Orbiniidae	<i>Leitoscoloplos pugettensis</i>	2					
Annelida	Orbiniida	Paraonidae	<i>Aricidea antennata</i>						3
Annelida	Orbiniida	Paraonidae	<i>Aricidea lopezi</i>			1		1	3
Annelida	Orbiniida	Paraonidae	<i>Chaetozone</i> sp.	5		1		1	1
Annelida	Orbiniida	Paraonidae	<i>Cirratulus</i> sp.						
Annelida	Orbiniida	Paraonidae	<i>Levinsenia gracilis</i>					1	
Annelida	Orbiniida	Paraonidae	<i>Tharyx</i> sp. I			1			
Annelida	Orbiniida	Paraonidae	<i>Tharyx</i> sp. II						
Annelida	Phyllodocida	Aphrodotidae	<i>Aphrodites japonica</i>						
Annelida	Phyllodocida	Glyceridae	<i>Hemipodus borealis</i>			1	1		
Annelida	Phyllodocida	Goniadidae	<i>Goniada brunnea</i>	1			2	1	1
Annelida	Phyllodocida	Hesionidae							

Annelida	Phyllodocida	Nephtidae	<i>Nephtys</i> sp.						
Annelida	Phyllodocida	Nephtidae	<i>Nephtys caeca</i>		1				2
Annelida	Phyllodocida	Nephtidae	<i>Nephtys cornuta</i>		1				
Annelida	Phyllodocida	Nereididae	<i>Nereis</i> sp.						
Annelida	Phyllodocida	Pholodidae	<i>Pholoe glabra</i>						
Annelida	Phyllodocida	Pholodidae	<i>Sigalona</i> sp.						
Annelida	Phyllodocida	Phyllodocidae	<i>Eteone longa</i>				1	1	1
Annelida	Phyllodocida	Polynoidae		1					
Annelida	Phyllodocida	Polynoidae	<i>Hesperonoe</i> sp.				1		1
Annelida	Phyllodocida	Polynoidae	<i>Hololepida magna</i>				1		
Annelida	Phyllodocida	Syllidae	<i>Syllis</i> sp.						
Annelida	Sabellida	Sabellidae				1			
Annelida	Sabellida	Sabellidae	<i>Potamilla</i> sp.					1	
Annelida	Sabellida	Serpulidae							
Annelida	Spionida	Spionidae	<i>Dipolydora socialis</i>						
Annelida	Spionida	Spionidae	<i>Laonice</i> sp.						
Annelida	Spionida	Spionidae	<i>Prionospio lighti</i>						
Annelida	Spionida	Spionidae	<i>Prionospio steenstrupi</i>	15	1	4	1	1	4
Annelida	Spionida	Spionidae	<i>Pygospio elegans</i>						
Annelida	Spionida	Spionidae	<i>Spio cirrifera</i>						
Annelida	Terebellida	Amphaeretidae	<i>Amphicteis scaphobranchiata</i>						
Annelida	Terebellida	Pectinariidae	<i>Pectinaria moorei</i>	1					
Annelida	Terebellida	Sabellaridae	<i>Sabellaria cementarium</i>						
Annelida	Terebellida	Terebellidae							
Annelida	Terebellida	Terebellidae	<i>Scionella</i> sp.						
Annelida	Terebellida	Terebellidae	<i>Thelepa</i> sp.			1			
Annelida	Terebellida	Trichobranchidae	<i>Terebellides stroemi</i>						
Arthropoda	Amphipoda	Ampeliscidae	<i>Ampelisca</i> cf. <i>unsocalae</i>	8		1	5	6	37
Arthropoda	Amphipoda	Ampeliscidae	<i>Byblis veleronis</i>						1
Arthropoda	Amphipoda	Dexaminidae							
Arthropoda	Amphipoda	Ischyroceridae						1	
Arthropoda	Amphipoda	Oedicerotidae	<i>Monoculoides</i> sp.						
Arthropoda	Amphipoda	Synopiidae	<i>Tiron biocellata</i>						

Arthropoda	Calanoida								
Arthropoda	Cumacea	Diastylidae	<i>Diastylis</i> sp.						
Arthropoda	Cumacea	Diastylidae	<i>Diastylis dawsoni</i>						
Arthropoda	Cumacea	Leuconiidae	<i>Eudorella</i> sp.	1		1			
Arthropoda	Cumacea	Leuconiidae	<i>Lamprops fuscata</i>						
Arthropoda	Cumacea	Leuconiidae	<i>Leucon fulvus</i>						
Arthropoda	Cumacea	Leuconiidae	<i>Leucon magnadentata</i>				1		
Arthropoda	Decapoda	Pinnixidae	<i>Pinnixa</i> sp.						
Arthropoda	Isopoda	Gnathidae	<i>Gnathia</i> sp.					1	
Arthropoda	Ostracoda		Species I						
Arthropoda	Ostracoda		Species II						
Arthropoda	Ostracoda		Species III						
Arthropoda	Tanaidacea	Paratanaidea	<i>Leptognathia</i> sp.						
Echinodermata	Apodida	Chiridotidae							
Echinodermata	Dendrochiridotida								
Echinodermata	Ophiurida	Amphiuridae	<i>Amphiodia</i> sp.	3	2	2		1	1
Echiura	Echiuroinea	Echiuridae	<i>Echiurus echiurus alaskensis</i>						
Mollusca	Archaeogastropoda	Trochidae	<i>Solariella vancouverense</i>						1
Mollusca	Cephalaspidea	Atyidae	<i>Haminoea virescens</i>						1
Mollusca	Dentaliida	Dentaliidae	<i>Antalis pretiosum</i>						
Mollusca	Dentaliida	Dentaliidae	<i>Rhabdus rectius</i>						
Mollusca	Mesogastropoda	Naticidae	<i>Euspira pallida</i>						
Mollusca	Myoida	Hiatellidae	<i>Hiatella arctica</i>						
Mollusca	Mytiloida	Mytilidae	<i>Crenella</i> sp.						
Mollusca	Neogastropoda	Buccinidae	<i>Buccinum</i> sp.						
Mollusca	Neogastropoda	Cancellariidae	<i>Admete</i> sp.						
Mollusca	Neogastropoda	Turridae	<i>Oenopota rosea</i>						
Mollusca	Neogastropoda	Turridae	<i>Ophiidermella</i> sp.						
Mollusca	Neoloricata	Ischnochitonidae	<i>Lepidozona</i> sp.						
Mollusca	Nuculoida	Nuculidae	<i>Ennucula tenuis</i>						
Mollusca	Osteroida	Propeomussidae	<i>Parvamussium alaskensis</i>						
Mollusca	Pholadomyoida	Cuspidariidae	<i>Cardiomya pectinata</i>						
Mollusca	Pholadomyoida	Pandoridae	<i>Pandora filosa</i>						

Mollusca	Pyramidellacea	Pyramidellidae	<i>Odostomia</i> sp.						
Mollusca	Pyramidellacea	Pyramidellidae	<i>Turbonilla</i> sp.		1				
Mollusca	Veneroida	Astartiidae	<i>Astarte esquimalti</i>						
Mollusca	Veneroida	Carditidae	<i>Cyclocardia</i> sp.						
Mollusca	Veneroida	Cultellidae	<i>Siliqua alta</i>						
Mollusca	Veneroida	Malletiidae	<i>Tindaria brunea</i>						
Mollusca	Veneroida	Tellinidae	<i>Macoma eliminata</i>	7	1	3	4	1	24
Mollusca	Veneroida	Tellinidae	<i>Macoma moesta</i>	2		1	1		
Mollusca	Veneroida	Thyasiridae	<i>Axinospida serricata</i>	2	1	1	1	1	13
Mollusca	Veneroida	Thyasiridae	<i>Thyasira flexuosa</i>						
Nemertea	Heteronemertea	Lineidae	<i>Cerebratulus</i> sp.						
Nemertea	Heteronemertea	Lineidae	<i>Linea</i> sp.	2					
Priapulida	Priapulomorpha	Priapulidae	<i>Priapulus caudata</i>					1	
Sipunucula	Sipunuculida	Golfingiidae							
Aschelminths									
			Total No. of Species	17	8	17	14	17	18
			Total No. of Individuals	66	10	40	26	25	104

Appendix Table 6.--Number of individuals of each infauna taxon collected per grab sample at Transect 7 in Trinity Islands during August 1999.

Phylum	Order	Family	Species	7A	7B	7C	7D	7E	7F
Annelida									
Annelida	Capitallida	Capitellidae	<i>Mediomastus californiensis</i>	7	11	5	1	4	1
Annelida	Capitallida	Maldanidae							
Annelida	Capitallida	Maldanidae	<i>Axiothella rubrocincta</i>	2					1
Annelida	Capitallida	Maldanidae	<i>Clymenella</i> sp.						1
Annelida	Capitallida	Maldanidae	<i>Euclymene zonalis</i>						
Annelida	Capitallida	Maldanidae	<i>Praxillella gracilis</i>						1
Annelida	Capitallida	Maldanidae	<i>Praxilura</i> sp.				1		
Annelida	Chaetoptera	Chaetopteridae	<i>Spiochaetopterus costarum</i>			1			
Annelida	Eunicida	Lumbrineridae	<i>Lumbrineris bicirrata</i>		2	1			1
Annelida	Eunicida	Lumbrineridae	<i>Lumbrineris luti</i>		1				
Annelida	Eunicida	Onuphidae	<i>Onuphis iridescens</i>		1	1	1		1
Annelida	Magelonida	Magelonidae	<i>Magelona berkeleyi</i>	3	6	2	3	2	
Annelida	Opheliida	Opheliidae	<i>Travisia forbesii</i>						
Annelida	Opheliida	Opheliidae	<i>Travisia japonica</i>			1			
Annelida	Opheliida	Scalibregmidae	<i>Hyboscolex pacificus</i>						1
Annelida	Opheliida	Scalibregmidae	<i>Scalibregma inflatum</i>						1
Annelida	Orbiniida	Orbiniidae	<i>Leitoscoloplos pugettensis</i>		1				
Annelida	Orbiniida	Paraonidae	<i>Aricidea antennata</i>						
Annelida	Orbiniida	Paraonidae	<i>Aricidea lopezi</i>	5		1	1	1	
Annelida	Orbiniida	Paraonidae	<i>Chaetozone</i> sp.	1	3	2	2	6	4
Annelida	Orbiniida	Paraonidae	<i>Cirratulus</i> sp.						
Annelida	Orbiniida	Paraonidae	<i>Levinsenia gracilis</i>						
Annelida	Orbiniida	Paraonidae	<i>Tharyx</i> sp. I			1		1	1
Annelida	Orbiniida	Paraonidae	<i>Tharyx</i> sp. II			2			1
Annelida	Phyllodocida	Aphrodotidae	<i>Aphrodites japonica</i>						
Annelida	Phyllodocida	Glyceridae	<i>Hemipodus borealis</i>	1					2
Annelida	Phyllodocida	Goniadidae	<i>Goniada brunnea</i>						1
Annelida	Phyllodocida	Hesionidae							1

Annelida	Phyllodocida	Nephtidae	<i>Nephtys</i> sp.			1			
Annelida	Phyllodocida	Nephtidae	<i>Nephtys caeca</i>	2	1	1	2		
Annelida	Phyllodocida	Nephtidae	<i>Nephtys cornuta</i>	1	3		2		
Annelida	Phyllodocida	Nereididae	<i>Nereis</i> sp.						
Annelida	Phyllodocida	Pholodidae	<i>Pholoe glabra</i>			1			1
Annelida	Phyllodocida	Pholodidae	<i>Sigalona</i> sp.						
Annelida	Phyllodocida	Phyllodocidae	<i>Eteone longa</i>				1	1	
Annelida	Phyllodocida	Polynoidae							
Annelida	Phyllodocida	Polynoidae	<i>Hesperonoe</i> sp.						
Annelida	Phyllodocida	Polynoidae	<i>Hololepida magna</i>						
Annelida	Phyllodocida	Syllidae	<i>Syllis</i> sp.						
Annelida	Sabellida	Sabellidae						1	
Annelida	Sabellida	Sabellidae	<i>Potamilla</i> sp.						
Annelida	Sabellida	Serpulidae							
Annelida	Spionida	Spionidae	<i>Dipolydora socialis</i>	1					
Annelida	Spionida	Spionidae	<i>Laonice</i> sp.						
Annelida	Spionida	Spionidae	<i>Prionospio lighti</i>				1		
Annelida	Spionida	Spionidae	<i>Prionospio steenstrupi</i>	7	2	4	3	3	4
Annelida	Spionida	Spionidae	<i>Pygospio elegans</i>						
Annelida	Spionida	Spionidae	<i>Spio cirrifera</i>						
Annelida	Terebellida	Amphaeretidae	<i>Amphicteis scaphobranchiata</i>			1			
Annelida	Terebellida	Pectinariidae	<i>Pectinaria moorei</i>						
Annelida	Terebellida	Sabellaridae	<i>Sabellaria cementarium</i>						
Annelida	Terebellida	Terebellidae							1
Annelida	Terebellida	Terebellidae	<i>Scionella</i> sp.	1	1		2		
Annelida	Terebellida	Terebellidae	<i>Thelepas</i> sp.		1				
Annelida	Terebellida	Trichobranchidae	<i>Terebellides stroemi</i>						
Arthropoda	Amphipoda	Ampeliscidae	<i>Ampelisca</i> cf. <i>unsocalae</i>	2	9	3	2	3	3
Arthropoda	Amphipoda	Ampeliscidae	<i>Byblis veleronis</i>				1		
Arthropoda	Amphipoda	Dexaminidae							
Arthropoda	Amphipoda	Ischyroceridae				1		1	
Arthropoda	Amphipoda	Oedicerotidae	<i>Monoculoides</i> sp.						
Arthropoda	Amphipoda	Synopiidae	<i>Tiron biocellata</i>						

Arthropoda	Calanoida								
Arthropoda	Cumacea	Diastylidae	<i>Diastylis</i> sp.				2		
Arthropoda	Cumacea	Diastylidae	<i>Diastylis dawsoni</i>						
Arthropoda	Cumacea	Leuconiidae	<i>Eudorella</i> sp.						
Arthropoda	Cumacea	Leuconiidae	<i>Lamprops fuscata</i>						
Arthropoda	Cumacea	Leuconiidae	<i>Leucon fulvus</i>						
Arthropoda	Cumacea	Leuconiidae	<i>Leucon magnadentata</i>						
Arthropoda	Decapoda	Pinnixidae	<i>Pinnixa</i> sp.						
Arthropoda	Isopoda	Gnathidae	<i>Gnathia</i> sp.						6
Arthropoda	Ostracoda		Species I						
Arthropoda	Ostracoda		Species II						
Arthropoda	Ostracoda		Species III						
Arthropoda	Tanaidacea	Paratanaidea	<i>Leptognathia</i> sp.						
Echinodermata	Apodida	Chiridotidae							
Echinodermata	Dendrochiridotida								
Echinodermata	Ophiurida	Amphiuridae	<i>Amphiodia</i> sp.	4	2	1			1
Echiura	Echiuroinea	Echiuridae	<i>Echiurus echiurus alaskensis</i>						
Mollusca	Archaeogastropoda	Trochidae	<i>Solariella vancouverense</i>	3					
Mollusca	Cephalaspidea	Atyidae	<i>Haminoea virescens</i>						
Mollusca	Dentaliida	Dentaliidae	<i>Antalis pretiosum</i>					1	
Mollusca	Dentaliida	Dentaliidae	<i>Rhabdus rectius</i>						
Mollusca	Mesogastropoda	Naticidae	<i>Euspira pallida</i>						
Mollusca	Myoida	Hiatellidae	<i>Hiatella arctica</i>						
Mollusca	Mytiloida	Mytilidae	<i>Crenella</i> sp.						
Mollusca	Neogastropoda	Buccinidae	<i>Buccinum</i> sp.						
Mollusca	Neogastropoda	Cancellariidae	<i>Admete</i> sp.						
Mollusca	Neogastropoda	Turridae	<i>Oenopota rosea</i>						
Mollusca	Neogastropoda	Turridae	<i>Ophiodermella</i> sp.						
Mollusca	Neoloricata	Ischnochitonidae	<i>Lepidozona</i> sp.						
Mollusca	Nuculoida	Nuculidae	<i>Ennucula tenuis</i>						
Mollusca	Osteroida	Propeomussidae	<i>Parvamussium alaskensis</i>						
Mollusca	Pholadomyoida	Cuspidariidae	<i>Cardiomya pectinata</i>						
Mollusca	Pholadomyoida	Pandoridae	<i>Pandora filosa</i>						



Mollusca	Pyramidellacea	Pyramidellidae	<i>Odostomia</i> sp.						
Mollusca	Pyramidellacea	Pyramidellidae	<i>Turbonilla</i> sp.	1		1	1		
Mollusca	Veneroidea	Astartiidae	<i>Astarte esquimalti</i>					1	
Mollusca	Veneroidea	Carditidae	<i>Cyclocardia</i> sp.						
Mollusca	Veneroidea	Cultellidae	<i>Siliqua alta</i>						
Mollusca	Veneroidea	Malletiidae	<i>Tindaria brunea</i>						
Mollusca	Veneroidea	Tellinidae	<i>Macoma eliminata</i>	3	7	1	2	5	
Mollusca	Veneroidea	Tellinidae	<i>Macoma moesta</i>	2		3	2	3	
Mollusca	Veneroidea	Thyasiridae	<i>Axinospida serricata</i>	4	4	2		5	1
Mollusca	Veneroidea	Thyasiridae	<i>Thyasira flexuosa</i>						
Nemertea	Heteronemertea	Lineidae	<i>Cerebratulus</i> sp.						
Nemertea	Heteronemertea	Lineidae	<i>Linea</i> sp.						
Priapulida	Priapulomorpha	Priapulidae	<i>Priapululus caudata</i>			1			
Sipunucula	Sipunuculida	Golfingiidae							
Aschelminths									1
			Total No. of Species	18	16	23	18	15	22
			Total No. of Individuals	50	55	38	30	38	36

Appendix Table 6.--Number of individuals of each infauna taxon collected per grab sample at Transect 8 in Trinity Islands during August 1999.

Phylum	Order	Family	Species	8A	8B	8C	8D	8E	8F
Annelida									
Annelida	Capitallida	Capitellidae	<i>Mediomastus californiensis</i>	6	3	6	3	1	2
Annelida	Capitallida	Maldanidae							
Annelida	Capitallida	Maldanidae	<i>Axiothella rubrocincta</i>						
Annelida	Capitallida	Maldanidae	<i>Clymenella</i> sp.			2			1
Annelida	Capitallida	Maldanidae	<i>Euclymene zonalis</i>						
Annelida	Capitallida	Maldanidae	<i>Praxillella gracilis</i>						
Annelida	Capitallida	Maldanidae	<i>Praxilura</i> sp.						
Annelida	Chaetopterida	Chaetopteridae	<i>Spiochaetopterus costarum</i>						
Annelida	Eunicida	Lumbrineridae	<i>Lumbrineris bicirrata</i>						
Annelida	Eunicida	Lumbrineridae	<i>Lumbrineris luti</i>	2	1		1		2
Annelida	Eunicida	Onuphidae	<i>Onuphis iridescens</i>	1	1	1		1	
Annelida	Magelonida	Magelonidae	<i>Magelona berkeleyi</i>	4	2	2	2	1	1
Annelida	Opheliida	Opheliidae	<i>Travisia forbesii</i>						
Annelida	Opheliida	Opheliidae	<i>Travisia japonica</i>						
Annelida	Opheliida	Scalibregmidae	<i>Hyboscolex pacificus</i>					1	
Annelida	Opheliida	Scalibregmidae	<i>Scalibregma inflatum</i>						
Annelida	Orbiniida	Orbiniidae	<i>Leitoscoloplos pugettensis</i>			2			
Annelida	Orbiniida	Paraonidae	<i>Aricidea antennata</i>						
Annelida	Orbiniida	Paraonidae	<i>Aricidea lopezi</i>	1			1	1	2
Annelida	Orbiniida	Paraonidae	<i>Chaetozone</i> sp.	2	3	7	3	3	2
Annelida	Orbiniida	Paraonidae	<i>Cirratulus</i> sp.					1	
Annelida	Orbiniida	Paraonidae	<i>Levinsenia gracilis</i>	1					
Annelida	Orbiniida	Paraonidae	<i>Tharyx</i> sp. I						
Annelida	Orbiniida	Paraonidae	<i>Tharyx</i> sp. II						
Annelida	Phyllodocida	Aphrodotidae	<i>Aphrodites japonica</i>						
Annelida	Phyllodocida	Glyceridae	<i>Hemipodus borealis</i>	1			1	1	1
Annelida	Phyllodocida	Goniadidae	<i>Goniada brunnea</i>						
Annelida	Phyllodocida	Hesionidae							

Annelida	Phyllodocida	Nephtidae	<i>Nephtys</i> sp.						
Annelida	Phyllodocida	Nephtidae	<i>Nephtys caeca</i>	2	5	1	2	1	1
Annelida	Phyllodocida	Nephtidae	<i>Nephtys cornuta</i>						
Annelida	Phyllodocida	Nereididae	<i>Nereis</i> sp.						
Annelida	Phyllodocida	Pholodidae	<i>Pholoe glabra</i>						
Annelida	Phyllodocida	Pholodidae	<i>Sigalona</i> sp.						
Annelida	Phyllodocida	Phyllodocidae	<i>Eteone longa</i>	1				1	
Annelida	Phyllodocida	Polynoidae							
Annelida	Phyllodocida	Polynoidae	<i>Hesperonoe</i> sp.					2	
Annelida	Phyllodocida	Polynoidae	<i>Hololepida magna</i>						
Annelida	Phyllodocida	Syllidae	<i>Syllis</i> sp.						
Annelida	Sabellida	Sabellidae							
Annelida	Sabellida	Sabellidae	<i>Potamilla</i> sp.					1	
Annelida	Sabellida	Serpulidae							
Annelida	Spionida	Spionidae	<i>Dipolydora socialis</i>						
Annelida	Spionida	Spionidae	<i>Laonice</i> sp.						
Annelida	Spionida	Spionidae	<i>Prionospio lighti</i>						
Annelida	Spionida	Spionidae	<i>Prionospio steenstrupi</i>	19	6	6	8	2	3
Annelida	Spionida	Spionidae	<i>Pygospio elegans</i>					1	
Annelida	Spionida	Spionidae	<i>Spio cirrifera</i>		1				
Annelida	Terebellida	Amphaeretidae	<i>Amphicteis scaphobranchiata</i>						
Annelida	Terebellida	Pectinariidae	<i>Pectinaria moorei</i>						
Annelida	Terebellida	Sabellaridae	<i>Sabellaria cementarium</i>						
Annelida	Terebellida	Terebellidae			1				1
Annelida	Terebellida	Terebellidae	<i>Scionella</i> sp.				1		
Annelida	Terebellida	Terebellidae	<i>Thelepas</i> sp.						1
Annelida	Terebellida	Trichobranchidae	<i>Terebellides stroemi</i>						
Arthropoda	Amphipoda	Ampeliscidae	<i>Ampelisca</i> cf. <i>unsocalae</i>	7	11	1	4	1	3
Arthropoda	Amphipoda	Ampeliscidae	<i>Byblis veleronis</i>						
Arthropoda	Amphipoda	Dexaminidae							
Arthropoda	Amphipoda	Ischyroceridae						1	
Arthropoda	Amphipoda	Oedicerotidae	<i>Monoculoides</i> sp.						
Arthropoda	Amphipoda	Synopiidae	<i>Tiron biocellata</i>						

Arthropoda	Calanoida			1		1			
Arthropoda	Cumacea	Diastylidae	<i>Diastylis</i> sp.						
Arthropoda	Cumacea	Diastylidae	<i>Diastylis dawsoni</i>						
Arthropoda	Cumacea	Leuconiidae	<i>Eudorella</i> sp.						
Arthropoda	Cumacea	Leuconiidae	<i>Lamprops fuscata</i>						
Arthropoda	Cumacea	Leuconiidae	<i>Leucon fulvus</i>						
Arthropoda	Cumacea	Leuconiidae	<i>Leucon magnadentata</i>						
Arthropoda	Decapoda	Pinnixidae	<i>Pinnixa</i> sp.						
Arthropoda	Isopoda	Gnathidae	<i>Gnathia</i> sp.						
Arthropoda	Ostracoda		Species I						
Arthropoda	Ostracoda		Species II						
Arthropoda	Ostracoda		Species III						
Arthropoda	Tanaidacea	Paratanaidea	<i>Leptognathia</i> sp.						
Echinodermata	Apodida	Chiridotidae							
Echinodermata	Dendrochiridotida								
Echinodermata	Ophiurida	Amphiuridae	<i>Amphiodia</i> sp.	1		2		1	
Echiura	Echiuroinea	Echiuridae	<i>Echiurus echiurus alaskensis</i>						
Mollusca	Archaeogastropoda	Trochidae	<i>Solariella vancouverense</i>					1	
Mollusca	Cephalaspidea	Atyidae	<i>Haminoea virescens</i>						
Mollusca	Dentaliida	Dentaliidae	<i>Antalis pretiosum</i>						
Mollusca	Dentaliida	Dentaliidae	<i>Rhabdus rectius</i>						
Mollusca	Mesogastropoda	Naticidae	<i>Euspira pallida</i>						
Mollusca	Myoida	Hiatellidae	<i>Hiatella arctica</i>						
Mollusca	Mytiloida	Mytilidae	<i>Crenella</i> sp.						
Mollusca	Neogastropoda	Buccinidae	<i>Buccinum</i> sp.						
Mollusca	Neogastropoda	Cancellariidae	<i>Admete</i> sp.						
Mollusca	Neogastropoda	Turridae	<i>Oenopota rosea</i>						
Mollusca	Neogastropoda	Turridae	<i>Ophiodermella</i> sp.						
Mollusca	Neoloricata	Ischnochitonidae	<i>Lepidozona</i> sp.						
Mollusca	Nuculoida	Nuculidae	<i>Ennucula tenuis</i>						
Mollusca	Osteroida	Propeomussidae	<i>Parvamussium alaskensis</i>						
Mollusca	Pholadomyoida	Cuspidariidae	<i>Cardiomya pectinata</i>						
Mollusca	Pholadomyoida	Pandoridae	<i>Pandora filosa</i>						

Mollusca	Pyramidellacea	Pyramidellidae	<i>Odostomia</i> sp.						
Mollusca	Pyramidellacea	Pyramidellidae	<i>Turbonilla</i> sp.				1		
Mollusca	Veneroida	Astartiidae	<i>Astarte esquimalti</i>						
Mollusca	Veneroida	Carditidae	<i>Cyclocardia</i> sp.						1
Mollusca	Veneroida	Cultellidae	<i>Siliqua alta</i>						
Mollusca	Veneroida	Malletiidae	<i>Tindaria brunea</i>						
Mollusca	Veneroida	Tellinidae	<i>Macoma eliminata</i>	3	6	3	2	3	6
Mollusca	Veneroida	Tellinidae	<i>Macoma moesta</i>	1	1	1		2	
Mollusca	Veneroida	Thyasiridae	<i>Axinospida serricata</i>		1		5	2	1
Mollusca	Veneroida	Thyasiridae	<i>Thyasira flexuosa</i>					1	
Nemertea	Heteronemertea	Lineidae	<i>Cerebratulus</i> sp.					1	
Nemertea	Heteronemertea	Lineidae	<i>Linea</i> sp.						1
Priapulida	Priapulomorpha	Priapulidae	<i>Priapulus caudata</i>						
Sipuncula	Sipunculida	Golfingiidae							
Aschelminths									
			Total No. of Species	16	13	13	13	23	16
			Total No. of Individuals	53	42	35	34	31	29

Appendix Table 6.--Number of individuals of each infauna taxon collected per grab sample at Transect 9 in Trinity Islands during August 1999.

Phylum	Order	Family	Species	9A	9B	9C	9D	9E	9F
Annelida									
Annelida	Capitallida	Capitellidae	<i>Mediomastus californiensis</i>	10	3	1	3	1	
Annelida	Capitallida	Maldanidae							
Annelida	Capitallida	Maldanidae	<i>Axiothella rubrocincta</i>						
Annelida	Capitallida	Maldanidae	<i>Clymenella</i> sp.						
Annelida	Capitallida	Maldanidae	<i>Euclymene zonalis</i>						
Annelida	Capitallida	Maldanidae	<i>Praxillella gracilis</i>						
Annelida	Capitallida	Maldanidae	<i>Praxilura</i> sp.			1			
Annelida	Chaetopterida	Chaetopteridae	<i>Spiochaetopterus costarum</i>				1		
Annelida	Eunicida	Lumbrineridae	<i>Lumbrineris bicirrata</i>						
Annelida	Eunicida	Lumbrineridae	<i>Lumbrineris luti</i>					1	
Annelida	Eunicida	Onuphidae	<i>Onuphis iridescens</i>				1		
Annelida	Magelonida	Magelonidae	<i>Magelona berkeleyi</i>	7	9	10	5	4	3
Annelida	Opheliida	Opheliidae	<i>Travisia forbesii</i>	1					
Annelida	Opheliida	Opheliidae	<i>Travisia japonica</i>						
Annelida	Opheliida	Scalibregmidae	<i>Hyboscolex pacificus</i>						
Annelida	Opheliida	Scalibregmidae	<i>Scalibregma inflatum</i>						
Annelida	Orbiniida	Orbiniidae	<i>Leitoscoloplos pugettensis</i>	1				1	
Annelida	Orbiniida	Paraonidae	<i>Aricidea antennata</i>						
Annelida	Orbiniida	Paraonidae	<i>Aricidea lopezi</i>	1	3	2	1		1
Annelida	Orbiniida	Paraonidae	<i>Chaetozone</i> sp.	5	6		4	2	3
Annelida	Orbiniida	Paraonidae	<i>Cirratulus</i> sp.						
Annelida	Orbiniida	Paraonidae	<i>Levinsenia gracilis</i>			3			
Annelida	Orbiniida	Paraonidae	<i>Tharyx</i> sp. I						
Annelida	Orbiniida	Paraonidae	<i>Tharyx</i> sp. II						
Annelida	Phyllodocida	Aphrodotidae	<i>Aphrodites japonica</i>						
Annelida	Phyllodocida	Glyceridae	<i>Hemipodus borealis</i>					1	
Annelida	Phyllodocida	Goniadidae	<i>Goniada brunnea</i>	2		1		1	2
Annelida	Phyllodocida	Hesionidae							

Annelida	Phyllodocida	Nephtidae	<i>Nephtys</i> sp.						
Annelida	Phyllodocida	Nephtidae	<i>Nephtys caeca</i>	1	2	1	1	2	
Annelida	Phyllodocida	Nephtidae	<i>Nephtys cornuta</i>		1	1	1	1	
Annelida	Phyllodocida	Nereididae	<i>Nereis</i> sp.						1
Annelida	Phyllodocida	Pholodidae	<i>Pholoe glabra</i>						
Annelida	Phyllodocida	Pholodidae	<i>Sigalona</i> sp.						
Annelida	Phyllodocida	Phyllodocidae	<i>Eteone longa</i>						
Annelida	Phyllodocida	Polynoidae					1		
Annelida	Phyllodocida	Polynoidae	<i>Hesperonoe</i> sp.						
Annelida	Phyllodocida	Polynoidae	<i>Hololepida magna</i>						
Annelida	Phyllodocida	Syllidae	<i>Syllis</i> sp.						
Annelida	Sabellida	Sabellidae		3					
Annelida	Sabellida	Sabellidae	<i>Potamilla</i> sp.						
Annelida	Sabellida	Serpulidae							
Annelida	Spionida	Spionidae	<i>Dipolydora socialis</i>		1				
Annelida	Spionida	Spionidae	<i>Laonice</i> sp.						
Annelida	Spionida	Spionidae	<i>Prionospio lighti</i>						
Annelida	Spionida	Spionidae	<i>Prionospio steenstrupi</i>	17	11	4	2	1	1
Annelida	Spionida	Spionidae	<i>Pygospio elegans</i>						
Annelida	Spionida	Spionidae	<i>Spio cirrifera</i>						
Annelida	Terebellida	Amphaeretidae	<i>Amphicteis scaphobranchiata</i>	2					
Annelida	Terebellida	Pectinariidae	<i>Pectinaria moorei</i>						
Annelida	Terebellida	Sabellaridae	<i>Sabellaria cementarium</i>						
Annelida	Terebellida	Terebellidae		1			1		
Annelida	Terebellida	Terebellidae	<i>Scionella</i> sp.				1		1
Annelida	Terebellida	Terebellidae	<i>Thelepa</i> sp.						
Annelida	Terebellida	Trichobranchidae	<i>Terebellides stroemi</i>						
Arthropoda	Amphipoda	Ampeliscidae	<i>Ampelisca</i> cf. <i>unsocalae</i>	4	8	11		3	2
Arthropoda	Amphipoda	Ampeliscidae	<i>Byblis veleronis</i>					1	
Arthropoda	Amphipoda	Dexaminidae				1			
Arthropoda	Amphipoda	Ischyroceridae							
Arthropoda	Amphipoda	Oedicerotidae	<i>Monoculoides</i> sp.						
Arthropoda	Amphipoda	Synopiidae	<i>Tiron biocellata</i>						

Arthropoda	Calanoida								
Arthropoda	Cumacea	Diastylidae	<i>Diastylis</i> sp.						
Arthropoda	Cumacea	Diastylidae	<i>Diastylis dawsoni</i>						
Arthropoda	Cumacea	Leuconiidae	<i>Eudorella</i> sp.	2					
Arthropoda	Cumacea	Leuconiidae	<i>Lamprops fuscata</i>						
Arthropoda	Cumacea	Leuconiidae	<i>Leucon fulvus</i>						
Arthropoda	Cumacea	Leuconiidae	<i>Leucon magnadentata</i>						
Arthropoda	Decapoda	Pinnixidae	<i>Pinnixa</i> sp.						
Arthropoda	Isopoda	Gnathidae	<i>Gnathia</i> sp.	1		2			
Arthropoda	Ostracoda		Species I						
Arthropoda	Ostracoda		Species II						
Arthropoda	Ostracoda		Species III						
Arthropoda	Tanaidacea	Paratanaidea	<i>Leptognathia</i> sp.						
Echinodermata	Apodida	Chiridotidae							
Echinodermata	Dendrochiridotida								
Echinodermata	Ophiurida	Amphiuridae	<i>Amphiodia</i> sp.	6	1				
Echiura	Echiuroinea	Echiuridae	<i>Echiurus echiurus alaskensis</i>						
Mollusca	Archaeogastropoda	Trochidae	<i>Solariella vancouverense</i>						
Mollusca	Cephalaspidea	Atyidae	<i>Haminoea virescens</i>						
Mollusca	Dentaliida	Dentaliidae	<i>Antalis pretiosum</i>						
Mollusca	Dentaliida	Dentaliidae	<i>Rhabdus rectius</i>						
Mollusca	Mesogastropoda	Naticidae	<i>Euspira pallida</i>						
Mollusca	Myoida	Hiatellidae	<i>Hiatella arctica</i>						
Mollusca	Mytiloida	Mytilidae	<i>Crenella</i> sp.						
Mollusca	Neogastropoda	Buccinidae	<i>Buccinum</i> sp.						
Mollusca	Neogastropoda	Cancellariidae	<i>Admete</i> sp.						
Mollusca	Neogastropoda	Turridae	<i>Oenopota rosea</i>						
Mollusca	Neogastropoda	Turridae	<i>Ophiodermella</i> sp.						
Mollusca	Neoloricata	Ischnochitonidae	<i>Lepidozona</i> sp.						
Mollusca	Nuculoida	Nuculidae	<i>Ennucula tenuis</i>						
Mollusca	Osteroida	Propeomussidae	<i>Parvamussium alaskensis</i>						
Mollusca	Pholadomyoida	Cuspidariidae	<i>Cardiomya pectinata</i>						
Mollusca	Pholadomyoida	Pandoridae	<i>Pandora filosa</i>						



Mollusca	Pyramidellacea	Pyramidellidae	<i>Odostomia</i> sp.						
Mollusca	Pyramidellacea	Pyramidellidae	<i>Turbonilla</i> sp.						
Mollusca	Veneroida	Astartiidae	<i>Astarte esquimalti</i>						
Mollusca	Veneroida	Carditidae	<i>Cyclocardia</i> sp.					1	
Mollusca	Veneroida	Cultellidae	<i>Siliqua alta</i>						
Mollusca	Veneroida	Malletiidae	<i>Tindaria brunea</i>						
Mollusca	Veneroida	Tellinidae	<i>Macoma eliminata</i>	3		3		2	3
Mollusca	Veneroida	Tellinidae	<i>Macoma moesta</i>	1			1		
Mollusca	Veneroida	Thyasiridae	<i>Axinospida serricata</i>	6		1	3		2
Mollusca	Veneroida	Thyasiridae	<i>Thyasira flexuosa</i>						
Nemertea	Heteronemertea	Lineidae	<i>Cerebratulus</i> sp.						
Nemertea	Heteronemertea	Lineidae	<i>Linea</i> sp.						
Priapulida	Priapulomorpha	Priapulidae	<i>Priapululus caudata</i>						
Sipunucula	Sipunuculida	Golfingiidae				1			
Aschelminths									
			Total No. of Species	19	10	15	14	14	10
			Total No. of Individuals	74	45	43	26	22	19

Appendix Table 6.--Number of individuals of each infauna taxon collected per grab sample at Transect 10 in Trinity Islands during August 1999.

Phylum	Order	Family	Species	10A	10B	10C	10D	10E	10F
Annelida									
Annelida	Capitallida	Capitellidae	<i>Mediomastus californiensis</i>	5	2	4	2	1	2
Annelida	Capitallida	Maldanidae							
Annelida	Capitallida	Maldanidae	<i>Axiothella rubrocincta</i>						
Annelida	Capitallida	Maldanidae	<i>Clymenella</i> sp.						
Annelida	Capitallida	Maldanidae	<i>Euclymene zonalis</i>						
Annelida	Capitallida	Maldanidae	<i>Praxillella gracilis</i>						
Annelida	Capitallida	Maldanidae	<i>Praxilura</i> sp.						
Annelida	Chaetoptera	Chaetopteridae	<i>Spiochaetopterus costarum</i>		1		2		
Annelida	Eunicida	Lumbrineridae	<i>Lumbrineris bicirrata</i>		1				
Annelida	Eunicida	Lumbrineridae	<i>Lumbrineris luti</i>		1		3		
Annelida	Eunicida	Onuphidae	<i>Onuphis iridescens</i>					1	
Annelida	Magelonida	Magelonidae	<i>Magelona berkeleyi</i>	4	3	1		1	4
Annelida	Opheliida	Opheliidae	<i>Travisia forbesii</i>				1		1
Annelida	Opheliida	Opheliidae	<i>Travisia japonica</i>						
Annelida	Opheliida	Scalibregmidae	<i>Hyboscolex pacificus</i>						
Annelida	Opheliida	Scalibregmidae	<i>Scalibregma inflatum</i>						
Annelida	Orbiniida	Orbiniidae	<i>Leitoscoloplos pugettensis</i>	2		2			
Annelida	Orbiniida	Paraonidae	<i>Aricidea antennata</i>				1		
Annelida	Orbiniida	Paraonidae	<i>Aricidea lopezi</i>	5	5	1		2	
Annelida	Orbiniida	Paraonidae	<i>Chaetozone</i> sp.	16	4	1	4	7	
Annelida	Orbiniida	Paraonidae	<i>Cirratulus</i> sp.						
Annelida	Orbiniida	Paraonidae	<i>Levinsenia gracilis</i>		1		1		
Annelida	Orbiniida	Paraonidae	<i>Tharyx</i> sp. I						
Annelida	Orbiniida	Paraonidae	<i>Tharyx</i> sp. II			1			
Annelida	Phyllodocida	Aphrodotidae	<i>Aphrodites japonica</i>						
Annelida	Phyllodocida	Glyceridae	<i>Hemipodus borealis</i>	2			2	1	
Annelida	Phyllodocida	Goniadidae	<i>Goniada brunnea</i>	1	1	1			
Annelida	Phyllodocida	Hesionidae							

Annelida	Phyllodocida	Nephtidae	<i>Nephtys</i> sp.						
Annelida	Phyllodocida	Nephtidae	<i>Nephtys caeca</i>	2	4	3	2		2
Annelida	Phyllodocida	Nephtidae	<i>Nephtys cornuta</i>	1		1	1	1	
Annelida	Phyllodocida	Nereididae	<i>Nereis</i> sp.						
Annelida	Phyllodocida	Pholodidae	<i>Pholoe glabra</i>						
Annelida	Phyllodocida	Pholodidae	<i>Sigalona</i> sp.						
Annelida	Phyllodocida	Phyllodocidae	<i>Eteone longa</i>						
Annelida	Phyllodocida	Polynoidae							
Annelida	Phyllodocida	Polynoidae	<i>Hesperonoe</i> sp.			1			
Annelida	Phyllodocida	Polynoidae	<i>Hololepida magna</i>						
Annelida	Phyllodocida	Syllidae	<i>Syllis</i> sp.						
Annelida	Sabellida	Sabellidae			1		1		
Annelida	Sabellida	Sabellidae	<i>Potamilla</i> sp.					1	1
Annelida	Sabellida	Serpulidae							
Annelida	Spionida	Spionidae	<i>Dipolydora socialis</i>					1	
Annelida	Spionida	Spionidae	<i>Laonice</i> sp.						
Annelida	Spionida	Spionidae	<i>Prionospio lighti</i>						
Annelida	Spionida	Spionidae	<i>Prionospio steenstrupi</i>	31	37	7	9	8	7
Annelida	Spionida	Spionidae	<i>Pygospio elegans</i>						
Annelida	Spionida	Spionidae	<i>Spio cirrifera</i>			1			
Annelida	Terebellida	Amphaeretidae	<i>Amphicteis scaphobranchiata</i>						
Annelida	Terebellida	Pectinariidae	<i>Pectinaria moorei</i>						
Annelida	Terebellida	Sabellaridae	<i>Sabellaria cementarium</i>						1
Annelida	Terebellida	Terebellidae			1				
Annelida	Terebellida	Terebellidae	<i>Scionella</i> sp.				1		
Annelida	Terebellida	Terebellidae	<i>Thelepa</i> sp.						
Annelida	Terebellida	Trichobranchidae	<i>Terebellides stroemi</i>						
Arthropoda	Amphipoda	Ampeliscidae	<i>Ampelisca</i> cf. <i>unsocalae</i>	25	8	21	5	5	1
Arthropoda	Amphipoda	Ampeliscidae	<i>Byblis veleronis</i>	1					
Arthropoda	Amphipoda	Dexaminidae							
Arthropoda	Amphipoda	Ischyroceridae		1					
Arthropoda	Amphipoda	Oedicerotidae	<i>Monoculoides</i> sp.		1				
Arthropoda	Amphipoda	Synopiidae	<i>Tiron biocellata</i>						1

Arthropoda	Calanoida								
Arthropoda	Cumacea	Diastylidae	<i>Diastylis</i> sp.	1					
Arthropoda	Cumacea	Diastylidae	<i>Diastylis dawsoni</i>						
Arthropoda	Cumacea	Leuconiidae	<i>Eudorella</i> sp.	1					
Arthropoda	Cumacea	Leuconiidae	<i>Lamprops fuscata</i>						
Arthropoda	Cumacea	Leuconiidae	<i>Leucon fulvus</i>						
Arthropoda	Cumacea	Leuconiidae	<i>Leucon magnadentata</i>						
Arthropoda	Decapoda	Pinnixidae	<i>Pinnixa</i> sp.						
Arthropoda	Isopoda	Gnathidae	<i>Gnathia</i> sp.		1			2	
Arthropoda	Ostracoda		Species I						
Arthropoda	Ostracoda		Species II						
Arthropoda	Ostracoda		Species III						
Arthropoda	Tanaidacea	Paratanaidea	<i>Leptognathia</i> sp.						
Echinodermata	Apodida	Chiridotidae							
Echinodermata	Dendrochiridotida								
Echinodermata	Ophiurida	Amphiuridae	<i>Amphiodia</i> sp.		1			1	
Echiura	Echiuroinea	Echiuridae	<i>Echiurus echiurus alaskensis</i>						1
Mollusca	Archaeogastropoda	Trochidae	<i>Solariella vancouverense</i>						
Mollusca	Cephalaspidea	Atyidae	<i>Haminoea virescens</i>			1			
Mollusca	Dentaliida	Dentaliidae	<i>Antalis pretiosum</i>						
Mollusca	Dentaliida	Dentaliidae	<i>Rhabdus rectius</i>						
Mollusca	Mesogastropoda	Naticidae	<i>Euspira pallida</i>		1				
Mollusca	Myoida	Hiatellidae	<i>Hiatella arctica</i>						
Mollusca	Mytiloida	Mytilidae	<i>Crenella</i> sp.						
Mollusca	Neogastropoda	Buccinidae	<i>Buccinum</i> sp.						
Mollusca	Neogastropoda	Cancellariidae	<i>Admete</i> sp.						
Mollusca	Neogastropoda	Turridae	<i>Oenopota rosea</i>						
Mollusca	Neogastropoda	Turridae	<i>Ophiopodermella</i> sp.						
Mollusca	Neoloricata	Ischnochitonidae	<i>Lepidozona</i> sp.						
Mollusca	Nuculoida	Nuculidae	<i>Ennucula tenuis</i>						
Mollusca	Osteroidea	Propeomussidae	<i>Parvamussium alaskensis</i>						
Mollusca	Pholadomyoida	Cuspidariidae	<i>Cardiomya pectinata</i>						
Mollusca	Pholadomyoida	Pandoridae	<i>Pandora filosa</i>			1			

Mollusca	Pyramidellacea	Pyramidellidae	<i>Odostomia</i> sp.						
Mollusca	Pyramidellacea	Pyramidellidae	<i>Turbonilla</i> sp.		1				
Mollusca	Veneroidea	Astartiidae	<i>Astarte esquimalti</i>						
Mollusca	Veneroidea	Carditidae	<i>Cyclocardia</i> sp.						
Mollusca	Veneroidea	Cultellidae	<i>Siliqua alta</i>						
Mollusca	Veneroidea	Malletiidae	<i>Tindaria brunea</i>		1				
Mollusca	Veneroidea	Tellinidae	<i>Macoma eliminata</i>	1	3	1		6	5
Mollusca	Veneroidea	Tellinidae	<i>Macoma moesta</i>	2	1	3	1		
Mollusca	Veneroidea	Thyasiridae	<i>Axinospida serricata</i>	2	4	2		1	1
Mollusca	Veneroidea	Thyasiridae	<i>Thyasira flexuosa</i>						
Nemertea	Heteronemertea	Lineidae	<i>Cerebratulus</i> sp.						
Nemertea	Heteronemertea	Lineidae	<i>Linea</i> sp.						1
Priapulida	Priapulomorpha	Priapulidae	<i>Priapulus caudata</i>						
Sipunucula	Sipunuculida	Golfingiidae							
Aschelminths									
			Total No. of Species	18	23	18	15	15	13
			Total No. of Individuals	103	84	53	36	39	28

Appendix Table 6. -- Number of individuals of each infauna taxon collected per grab sample at Transect 11 in Trinity Islands during August 1999.

Phylum	Order	Family	Species	11A	11B	11C	11D	11E	11F
Annelida									
Annelida	Capitallida	Capitellidae	<i>Mediomastus californiensis</i>		3	4	3	4	4
Annelida	Capitallida	Maldanidae	<i>Axiothella rubrocincta</i>				1		
Annelida	Capitallida	Maldanidae	<i>Clymenella</i> sp.						
Annelida	Capitallida	Maldanidae							
Annelida	Capitallida	Maldanidae	<i>Euclymene zonalis</i>	1					
Annelida	Capitallida	Maldanidae	<i>Praxillella gracilis</i>						
Annelida	Capitallida	Maldanidae	<i>Praxilura</i> sp.						
Annelida	Chaetoptera	Chaetopteridae	<i>Spiochaetopterus costarum</i>						
Annelida	Eunicida	Lumbrineridae	<i>Lumbrineris bicirrata</i>						
Annelida	Eunicida	Lumbrineridae	<i>Lumbrineris luti</i>	1				1	
Annelida	Eunicida	Onuphidae	<i>Onuphis iridescens</i>		1				1
Annelida	Magelonida	Magelonidae	<i>Magelona berkeleyi</i>	1	1	1	2	3	2
Annelida	Opheliida	Opheliidae	<i>Travisia forbesii</i>	1					
Annelida	Opheliida	Opheliidae	<i>Travisia japonica</i>						
Annelida	Opheliida	Scalibregmidae	<i>Hyboscolex pacificus</i>						
Annelida	Opheliida	Scalibregmidae	<i>Scalibregma inflatum</i>						
Annelida	Orbiniida	Orbiniidae	<i>Leitoscoloplos pugettensis</i>	2	1		1	1	
Annelida	Orbiniida	Paraonidae	<i>Aricidea antennata</i>						
Annelida	Orbiniida	Paraonidae	<i>Aricidea lopezi</i>		1	3			
Annelida	Orbiniida	Paraonidae	<i>Chaetozone</i> sp.	8	4	2		9	4
Annelida	Orbiniida	Paraonidae	<i>Cirratulus</i> sp.						
Annelida	Orbiniida	Paraonidae	<i>Levinsenia gracilis</i>						
Annelida	Orbiniida	Paraonidae	<i>Tharyx</i> sp. I		1				
Annelida	Orbiniida	Paraonidae	<i>Tharyx</i> sp. II						
Annelida	Phyllodocida	Aphrodotidae	<i>Aphrodites japonica</i>			1			
Annelida	Phyllodocida	Glyceridae	<i>Hemipodus borealis</i>						
Annelida	Phyllodocida	Goniadidae	<i>Goniada brunnea</i>	2	1		1	1	2
Annelida	Phyllodocida	Hesionidae							

Annelida	Phyllodocida	Nephtidae	<i>Nephtys</i> sp.						
Annelida	Phyllodocida	Nephtidae	<i>Nephtys caeca</i>	1	2		1		2
Annelida	Phyllodocida	Nephtidae	<i>Nephtys cornuta</i>	1	1			5	1
Annelida	Phyllodocida	Nereididae	<i>Nereis</i> sp.						
Annelida	Phyllodocida	Pholodidae	<i>Pholoe glabra</i>		1				
Annelida	Phyllodocida	Pholodidae	<i>Sigalona</i> sp.						
Annelida	Phyllodocida	Phyllodocidae	<i>Eteone longa</i>					1	1
Annelida	Phyllodocida	Polynoidae							
Annelida	Phyllodocida	Polynoidae	<i>Hesperonoe</i> sp.						
Annelida	Phyllodocida	Polynoidae	<i>Hololepida magna</i>						
Annelida	Phyllodocida	Syllidae	<i>Syllis</i> sp.						
Annelida	Sabellida	Sabellidae			1	1			
Annelida	Sabellida	Sabellidae	<i>Potamilla</i> sp.						
Annelida	Sabellida	Serpulidae							
Annelida	Spionida	Spionidae	<i>Dipolydora socialis</i>						
Annelida	Spionida	Spionidae	<i>Laonice</i> sp.						1
Annelida	Spionida	Spionidae	<i>Prionospio lighti</i>					1	
Annelida	Spionida	Spionidae	<i>Prionospio steenstrupi</i>	12	4	4	13	11	9
Annelida	Spionida	Spionidae	<i>Pygospio elegans</i>						
Annelida	Spionida	Spionidae	<i>Spio cirrifera</i>						
Annelida	Terebellida	Amphaeretidae	<i>Amphicteis scaphobranchiata</i>		1			1	
Annelida	Terebellida	Pectinariidae	<i>Pectinaria moorei</i>						
Annelida	Terebellida	Sabellaridae	<i>Sabellaria cementarium</i>						
Annelida	Terebellida	Terebellidae					1		
Annelida	Terebellida	Terebellidae	<i>Scionella</i> sp.			1		1	
Annelida	Terebellida	Terebellidae	<i>Thelepa</i> sp.					1	
Annelida	Terebellida	Trichobranchidae	<i>Terebellides stroemi</i>						
Arthropoda	Amphipoda	Ampeliscidae	<i>Ampelisca</i> cf. <i>unsocalae</i>	2	1			4	7
Arthropoda	Amphipoda	Ampeliscidae	<i>Byblis veleronis</i>					2	
Arthropoda	Amphipoda	Dexaminidae							
Arthropoda	Amphipoda	Ischyroceridae							
Arthropoda	Amphipoda	Oedicerotidae	<i>Monoculoides</i> sp.		1			1	
Arthropoda	Amphipoda	Synopiidae	<i>Tiron biocellata</i>						

Arthropoda	Calanoida								
Arthropoda	Cumacea	Diastylidae	<i>Diastylis</i> sp.	1					
Arthropoda	Cumacea	Diastylidae	<i>Diastylis dawsoni</i>		1				
Arthropoda	Cumacea	Leuconiidae	<i>Eudorella</i> sp.		1	1			
Arthropoda	Cumacea	Leuconiidae	<i>Lamprops fuscata</i>						
Arthropoda	Cumacea	Leuconiidae	<i>Leucon fulvus</i>						
Arthropoda	Cumacea	Leuconiidae	<i>Leucon magnadentata</i>						
Arthropoda	Decapoda	Pinnixidae	<i>Pinnixa</i> sp.						
Arthropoda	Isopoda	Gnathidae	<i>Gnathia</i> sp.		1				
Arthropoda	Ostracoda		Species I						
Arthropoda	Ostracoda		Species II						
Arthropoda	Ostracoda		Species III						
Arthropoda	Tanaidacea	Paratanaidea	<i>Leptognathia</i> sp.						
Echinodermata	Apodida	Chiridotidae							
Echinodermata	Dendrochiridotida								
Echinodermata	Ophiurida	Amphiuridae	<i>Amphiodia</i> sp.						3
Echiura	Echiuroinea	Echiuridae	<i>Echiurus echiurus alaskensis</i>			1			2
Mollusca	Archaeogastropoda	Trochidae	<i>Solariella vancouverense</i>						
Mollusca	Cephalaspidea	Atyidae	<i>Haminoea virescens</i>						1
Mollusca	Dentaliida	Dentaliidae	<i>Antalis pretiosum</i>						
Mollusca	Dentaliida	Dentaliidae	<i>Rhabdus rectius</i>	1					
Mollusca	Mesogastropoda	Naticidae	<i>Euspira pallida</i>						
Mollusca	Myoida	Hiatellidae	<i>Hiatella arctica</i>						
Mollusca	Mytiloida	Mytilidae	<i>Crenella</i> sp.						
Mollusca	Neogastropoda	Buccinidae	<i>Buccinum</i> sp.		1				
Mollusca	Neogastropoda	Cancellariidae	<i>Admete</i> sp.						
Mollusca	Neogastropoda	Turridae	<i>Oenopota rosea</i>						
Mollusca	Neogastropoda	Turridae	<i>Ophiopodermella</i> sp.						
Mollusca	Neoloricata	Ischnochitonidae	<i>Lepidozona</i> sp.						
Mollusca	Nuculoida	Nuculidae	<i>Ennucula tenuis</i>						
Mollusca	Osteroida	Propeomussidae	<i>Parvamussium alaskensis</i>						
Mollusca	Pholadomyoida	Cuspidariidae	<i>Cardiomya pectinata</i>						
Mollusca	Pholadomyoida	Pandoridae	<i>Pandora filosa</i>						



Mollusca	Pyramidellacea	Pyramidellidae	<i>Odostomia</i> sp.						
Mollusca	Pyramidellacea	Pyramidellidae	<i>Turbonilla</i> sp.						
Mollusca	Veneroidea	Astartiidae	<i>Astarte esquimalti</i>						
Mollusca	Veneroidea	Carditidae	<i>Cyclocardia</i> sp.						
Mollusca	Veneroidea	Cultellidae	<i>Siliqua alta</i>						
Mollusca	Veneroidea	Malletiidae	<i>Tindaria brunea</i>						
Mollusca	Veneroidea	Tellinidae	<i>Macoma eliminata</i>		4	5	1	1	11
Mollusca	Veneroidea	Tellinidae	<i>Macoma moesta</i>		1	3		2	
Mollusca	Veneroidea	Thyasiridae	<i>Axinospida serricata</i>	1	1	2	2		2
Mollusca	Veneroidea	Thyasiridae	<i>Thyasira flexuosa</i>						
Nemertea	Heteronemertea	Lineidae	<i>Cerebratulus</i> sp.						
Nemertea	Heteronemertea	Lineidae	<i>Linea</i> sp.			1			
Priapulida	Priapulomorpha	Priapulidae	<i>Priapulus caudata</i>						
Sipunucula	Sipunuculida	Golfingiidae							
Aschelminths									
			Total No. of Species	14	23	14	10	18	16
			Total No. of Individuals	35	35	30	26	50	53

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