PUGET SOUND REFERENCE VALUE PROJECT

TASK 3: Development of Benthic Effects Sediment Quality Standards

April 1999

Submitted To:

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SECTION 1

INTRODUCTION

Striplin Environmental Associates (SEA), under contract to the Washington State Department of Ecology (Ecology), conducted studies in 1995 to refine the use of benthic infaunal community data in decision making under the Sediment Management Standards (SMS) Rule (Chapter 173-204 WAC). That project was an outgrowth of recommendations made by the National Benthic Experts Workshop (February 1993) panel members, as presented in *Recommendations for Assessing Adverse Benthic Effects in Puget Sound* [PTI Environmental Services (PTI) 1993]. In support of that effort, SEA compiled and analyzed historical Puget Sound data for the purpose of developing and testing programmatic reference ranges for 14 ecological endpoints representing benthic infaunal communities in four different shallow water (less than 150 feet MLLW) soft-bottom habitats. This work was presented in the 1996 report *Development of Reference Ranges for Benthic Infauna Assessment Endpoints in Puget Sound* (SEA 1996). SEA's subcontractor, Roy F. Weston, Inc. (WESTON), independently evaluated the effectiveness of these same endpoints in identifying potentially impacted stations when compared to site-specific reference stations using a series of statistical approaches in a case study based on the Elliott Bay Action Program data. WESTON's results were reported in the *Task 3 Evaluation of Analytical Methods and Benthic Community Endpoints for Potential Inclusion in the Sediment Management Standards* (WESTON 1995). In this same case study, WESTON compared the effectiveness of using reference ranges in lieu of site-specific reference data to identify benthic community impacts.

In both reports, the authors made recommendations regarding the most effective benthic community endpoints and types of comparisons (e.g., statistical versus numeric) to potentially include in the SMS Rule. However, because of differences in approach and the types of evaluations conducted, recommended endpoints and comparative methods differed. The purpose of this report is to consolidate the recommendations by refining the reference ranges for a set of benthic endpoints and testing the effectiveness of those endpoints in identifying benthic impacts. It is anticipated that these final recommendations will be evaluated and discussed as part of a Regional Benthic Experts Workshop to be held in 1999.

1.1 REVIEW OF PREVIOUS WORK

The project for refining the use of benthic endpoints in the SMS Rule began in 1993 and was divided into three phases, with each phase consisting of several tasks. Phase I contained three tasks: compiling chemical and biological data from Puget Sound, dividing station data from multiple sampling events or studies into two matrices representing potentially impacted and unimpacted stations using the Washington State chemical Sediment Quality Standards (SQS) to demarcate the two groups, and further dividing each matrix into habitat categories (e.g., shallow water/fine-grained sediment; shallow water/coarse-grained sediment). This phase of the project

culminated in a report titled *Status Report: Benthic Infauna Reference Value Project* (SEA 1993).

Phase II consisted of two major tasks. The first task included statistical evaluations of infaunal data among and within habitat categories, statistical testing between uncontaminated and contaminated habitat categories, and determining whether habitat categories varied geographically within Puget Sound. The appropriateness of the reference range values as representations of reference conditions and their effectiveness in identifying an impacted station for each habitat category were discussed in the 1996 report prepared by SEA. The second task of this phase of the project involved conducting an additional case study, based on the Elliott Bay Action Program data, which was reported in WESTON (1995). This case study, which used investigation-specific reference stations, examined the effectiveness of both benthic community endpoints and analytical approaches in identifying impacted versus unimpacted stations. When the preliminary reference range means became available, a numeric comparison of the various endpoints to the matching habitat reference range mean was included in the evaluation. Because the two evaluations used different approaches to identify reference conditions, the resulting priority of the recommended endpoints differed.

The final phase of the project and the subject of this report consists of two elements. The first element was the refinement of the reference value ranges by identifying and excluding potentially anomalous values. Anomalous values were assessed using several statistical methods that evaluated the distribution of the data and the effects of percent fines (combined percentage of silt and clay), total organic carbon, and total sulfides on each habitat category and benthic infaunal endpoint. The second element was the recommendation of benthic infaunal endpoints by testing their efficiency to detect benthic impacts using the procedure outlined in the Sediment Management Standards, as well as several alternative approaches that may be recommended for inclusion in the SMS Rule.

1.2 REPORT ORGANIZATION

The remainder of this report describes the methods and results used to refine the reference range values and to arrive at a final recommendation of benthic endpoints for possible incorporation into the SMS Rule. Section 2 describes the selection of benthic infaunal endpoints for further evaluation. It includes a summary of the recommendations of the benthic experts workshop and the priority endpoints based on the previous case studies and the reference range results. Section 3 discusses the methods used to refine the reference range values. Section 4 describes the process used to separate the chemically-contaminated stations into categories based on the level of contamination, and provides the results of the testing of the benthic infauna endpoints using the reference area database. Lastly, Section 5 presents the recommendations for the benthic infaunal endpoints along with a discussion of analytical techniques and statistical design.

SECTION 2

SELECTION OF BENTHIC ENDPOINTS FOR EVALUATION

Most of the endpoints used to describe benthic communities are based on expressions of abundance (i.e., the number of individuals in a given area) and diversity (i.e., the number of types and relative abundance of organisms in a given area). The Washington State Sediment Management Standards for benthic infaunal communities currently relies solely on measures of abundance. It uses both a 50 percent reduction in the mean abundance of one of the major taxa groups (polychaetes, crustaceans, and molluscs) relative to a site-specific reference station, and statistically significant difference between the reference and test station to identify an impact. A 50 percent reduction in the abundance of the major taxa groups was selected in the SMS because prior studies showed that seasonal changes in abundance of major taxa groups can vary by a factor of two. In addition, the typical sampling design (five replicate samples per station) used in Puget Sound benthic community investigations often has a statistical power that is only capable of detecting a change in abundance greater than 50 percent because of the inherent variability in these measures. In contrast, recent studies have suggested that measures based on diversity (i.e., numbers of species) may be equally, if not more, sensitive than abundance measures (Rakocinski et al. 1995, SEA 1996), in part, because of the lower statistical variability associated with these measures.

Fourteen endpoints were initially selected for inclusion in this project: total richness, major taxa richness (i.e., polychaetes, crustaceans, amphipods, and molluscs), total abundance, major taxa abundance (polychaetes, crustaceans, amphipods, and molluscs), Shannon-Wiener diversity (H' Pielou 1966), Pielou's evenness (J', Pielou 1966), Swartz's dominance index (SDI, Swartz et al. 1985), and the infaunal trophic index (ITI, Word 1982). Each endpoint is briefly described below, along with some of the associated statistical properties.

2.1 TOTAL RICHNESS

Total richness is the simplest and most direct measure of diversity and is defined as the total number of individual species or taxa identified to the lowest practical taxonomic level in a sample. From a statistical perspective, measures based on diversity (or richness) tend to be normally-distributed with lower variability than abundance-based measures. The lower variability tends to improve the statistical power of a comparison outcome, given a typical benthic sampling design.

2.1.1 Major Taxa Richness

Major taxa richness is the number of species or taxa within each major phylogenetic group identified from a sample (polychaetes, molluscs, crustaceans, amphipods, echinoderms, and the miscellaneous phyla). The richness of each phylogenetic group contributes the total taxa richness measure and therefore tends to reflect the statistical properties of total taxa richness.

2.1.2 Total Abundance

Total abundance is a measure of density and is defined as the number of individual organisms found in a sample with a specified area or volume. Abundance measures tend to be highly variable and are often log-normally distributed. The variability often affects the ability to detect a true difference between site and reference conditions when sample replication is limited.

2.1.3 Major Taxa Abundance

Major taxa abundance is defined as the number of individual organisms within each major phylogenetic group (polychaetes, molluscs, crustaceans, amphipods, echinoderms, and the miscellaneous phyla) found in a sample. These endpoints also tend to be highly variable, and share similar statistical characteristics as total abundance. Currently, the SMS Rule incorporates decisions based on the three most prevalent groups: polychaetes, molluscs, and crustaceans.

2.1.4 Shannon-Weiner Diversity (H')

The Shannon-Wiener diversity index is one of the more common diversity indices used worldwide and represents the distribution of individuals among the species or taxa present (Shannon and Weaver 1964). This index has an advantage for use in regulatory programs in that it is normally distributed, relatively independent of sample size, and statistically testable (Tetra Tech 1990). Values of H'can range from 0 up to 4, depending on the number of species in the sample (H'max = log number of species), and tend to have minimal statistical variability. Theoretically, in habitats with no pollution or environmental stress, the H' values should be large; conversely, where pollution is present or where environmental stress is high, the H' value should be low. However, because H' is affected by the distribution of individuals among species, it may actually increase in conditions of slight to moderate pollution (stress) when the total number of species may be reduced but the distribution of individuals is still relatively even, resulting in a false indicator of an unstressed community (i.e., a false positive).

2.1.5 Pielou's Evenness (J')

Pielou's evenness is expressed as the observed diversity of a sample as a proportion of the maximum possible diversity (Pielou 1966, Zar 1984). Evenness values range from 0 to 1.0, with values close to 1.0 indicative of a homogeneously distributed population with little or no dominance by only a few taxa. Because of minimal variability among the measures, this index can be used statistically to identify small differences among site and reference conditions. However, this index can also falsely indicate an unstressed community under conditions of moderate contamination.

2.1.6 Swartz's Dominance Index (SDI)

Swartz's Dominance Index is defined as the minimum number of taxa that comprises 75 percent of the total sample abundance (Swartz et al. 1985). Values of 5.0 or less have been used to identify stressed communities (PTI 1993). Similar to other diversity and related dominance

indices, this index also has fairly high power to correctly identify differences between site and reference conditions when used in a statistical pair-wise test.

2.1.7 Infaunal Trophic Index (ITI)

The infaunal trophic index is a functional measure of benthic community structure based on feeding strategy (Word 1982). Values range from 0 to 100, with low values indicating a community dominated by surface or subsurface detrital/deposit feeders and high values indicating a community dominated by suspension feeders. Surface detrital and subsurface deposit feeders tend to be dominant groups present in fine-grained, organically enriched sediments, whereas suspension feeders are common coarser-grained, higher energy habitats. This index tends to exhibit fairly low variability compared to abundance measures, and thus can be used to identify small differences between samples.

Each of the above endpoints was evaluated by the National Benthic Experts Workshop (1993), by WESTON in their analysis of data for the case studies (WESTON 1996), and by SEA in the reference range project (SEA 1996). The outcome of those evaluations is summarized in the following sections.

2.2 RECOMMENDATIONS OF THE 1993 BENTHIC EXPERTS WORKSHOP

In 1993, Ecology convened a group of nationally recognized experts to review a case study based on Everett Harbor Action Program benthic data for the purposes of recommending endpoints and analytical approaches for assessing adverse benthic effects in Puget Sound (PTI 1993). The recommendations of the panel laid the groundwork for the reference value development project.

The general recommendations of the panel following review of the initial case study included:

- Reference conditions should be defined for Puget Sound.
- More than one benthic endpoint should be used to assess adverse benthic effects.
- Primary benthic endpoints that should be used to evaluate impacts include:
  - Total richness (requires species-level taxonomy)
  - Total abundance
  - Infaunal Trophic Index (requires species-level taxonomy)
  - Dominance (requires species-level taxonomy)
  - Biomass as a function of depth
- Secondary endpoints that may also provide some information include:
  - Indicator species
- Species abundance (i.e., community composition)

- Univariate statistical tests (i.e., *t*-tests and ANOVAs) should be performed to compare the study area and reference conditions. If an ANOVA is performed, *a posteriori* contrasts should be used to determine significant differences from reference conditions.
- Alternative analytical techniques should be considered, including nonparametric univariate statistics and multivariate techniques that do not rely on assumptions of normality (no one specific approach was recommended).
- The relative sensitivity among various benthic community endpoints should be tested using more than one case study.

Of the above recommendations, this report focuses primarily on the selection of endpoints and the identification of reference conditions for benthic invertebrates in Puget Sound. Although the endpoints based on individual species abundance (secondary endpoints listed above) were also highly recommended, indicator species have not been fully developed for Puget Sound. In addition, no agreement was reached by the experts regarding selection of a single multivariate analytical technique that incorporates species abundance data and can also be clearly interpreted by sediment program managers. Additional work will be needed to develop an evaluation approach based on individual species abundance and indicator species endpoints prior to incorporation in the SMS.

2.3 PRIORITY ENDPOINTS BASED ON CASE STUDIES

WESTON prepared the first case study (PTI 1993), participated in the National Benthic Experts Workshop, and subsequently performed the second case study in response to the experts' recommendations. The second case study used data from the Elliott Bay Action Program to evaluate the effectiveness of the recommended benthic endpoints using site-specific reference stations (WESTON 1996). A second component of that evaluation compared the results of the Elliott Bay and Everett Harbor case studies to the preliminary Puget Sound reference range results (SEA 1996). Comparisons were made using the mean reference range value and were numeric only (i.e., no statistical tests using the reference data set were performed). Based on the results of the study, WESTON recommended that priority be given to the following endpoints for incorporation in the SMS Rule:

- Diversity, measured as total richness.
- Swartz's Dominance Index.
- Major taxa abundance, with potential modifications to the polychaete endpoint (enhanced abundance).

Shannon-Wiener Diversity (H') also performed well in identifying impacted versus unimpacted stations; however, it was not included in the recommended endpoints because the same information is inherent in the SDI, which is easier to interpret. Molluscan richness also was effective at identifying differences between reference and moderately impacted stations, but was not included in WESTON's recommendations because it did not provide any additional

capabilities beyond that provided by total richness. Major taxa abundance was retained as a recommended endpoint because of the value in maintaining comparability with the large body of Puget Sound data that currently exist.

2.4 PRIORITY ENDPOINTS BASED ON PRELIMINARY REFERENCE RANGE RESULTS

The reference range project (SEA 1996) evaluated all benthic endpoints in relation to four habitat categories for shallow water environments (water depths less than 150 feet MLLW) based on the amount of fine-grained sediment present. The habitat categories as defined by percent fines (combined percentage of silt and clay) ranged from 0 to 20 percent, 20 to 50 percent, 50 to 80 percent and 80 to 100 percent fines. Within each of these habitat categories, summary statistics (e.g., mean, standard deviation, coefficient of variation) were calculated for each of the 14 benthic community endpoints and a range of one standard deviation around the reference data set mean was selected as the reference range.

Endpoints that reflected the following characteristics were considered good reference endpoints and were subsequently subjected to statistical tests:

- Low variability within habitat categories
- Statistically significant separation among habitat categories,
- Ability to statistically differentiate between stations exceeding and not exceeding chemical criteria.

Following statistical testing, the results were scored with endpoints reflecting the three characteristics receiving the highest scores. The details of the analysis and the scoring are provided in SEA (1996). In order of rank (i.e., highest to lowest scoring out of a possible 22 points), results were as follows:

Endpoint	Score
• Molluscan richness	15
• Shannon-Wiener diversity index, Infaunal Tropic Index	14
• Total richness, Swartz's Dominance Index	13
• Crustacean richness, Pielou's evenness	9
• Amphipod richness	8
• Polychaete richness	7
• Polychaete abundance, Amphipod abundance	5
• Total abundance	4
• Molluscan abundance, Crustacean abundance	0

2.5 REFINEMENT OF BENTHIC INFAUNA ENDPOINTS FOR THE PUGET SOUND REFERENCE VALUE PROJECT

The endpoints evaluated in this report were selected based on a synthesis of the recommendations made in the prior three reports. While there was much agreement among the recommendations, the major dissimilarity was in the retention of the abundance of the major taxa groups by the experts panel and the case study compared to the low priority assigned to this endpoint in the reference range value report. Inclusion of major taxa abundance endpoints in WESTON's and the experts panel recommendations was due to the value in maintaining consistency with the current regulations and much of the historical data in Puget Sound.

In meetings among WESTON, SEA, and Ecology staff, a consensus was reached regarding prioritization of the benthic endpoints to be evaluated. The following three endpoints were removed from further consideration:

- Shannon-Wiener Diversity—While this index was highly ranked in the reference range report, there was a general consensus that it should be removed because of the potential for false positives (PTI 1993). Under the conditions of both low and moderate levels of contamination, the index can be high if the individuals are evenly distributed across the few species present.
- Pielou's evenness—Similar to the Shannon-Wiener diversity measure, this index was also dropped because of the potential for false positives.
- Amphipod richness and abundance—These two endpoints were dropped because in an environment lacking chemical contamination (including excess organic carbon), there can be samples that naturally contain no amphipods as a function of habitat constraints or predator-prey interactions (Barnard and Ziesenhenne 1963).

The endpoints that were retained for further consideration are presented in Table 1 and include total richness and total abundance, richness and abundance of the major taxa groups (polychaetes, crustaceans, and molluscs), SDI, and the ITI.

Additionally, the types of comparisons that would be considered were also agreed to during meetings with Ecology and included both statistical and numeric comparisons. Table 1 indicates the type of comparison that was evaluated for each endpoint. A single pair-wise test (t-test) between site and reference values comprised the statistical comparison evaluated for each endpoint. Several approaches to numeric comparisons for each endpoint were evaluated including reference ranges, confidence limits, and reference means.

For all but one of these benthic endpoints (polychaete abundance), depressions in the values relative to a reference condition were used to indicate potential benthic community impacts. For the purposes of this study, enhancement in the abundance of polychaetes relative to reference was also evaluated as an endpoint for possible inclusion in the SMS Rule. In most cases, declines in polychaete abundance appear to occur at higher chemical concentrations than at those causing loss of molluscs or crustaceans from the benthic community. Therefore, under the SMS Rule, reduced polychaete abundance tends to be a redundant measure of impacts because both mollusc

and crustacean abundances will generally be reduced relative to reference prior to a reduction in polychaete abundance. However, polychaetes are known to increase in abundance under conditions of low to moderate chemical contamination or organic enrichment and typically do not decrease in abundance until contaminant concentrations result in toxicity (Pearson and Rosenberg 1978). Therefore, increases in polychaete abundance may be a more sensitive endpoint under conditions of minor to moderate contamination. To investigate the effectiveness of this endpoint, enhancements in polychaete abundance were also tabulated as a measure of potential impact.

SECTION 3

REFINEMENT OF THE REFERENCE DATABASE

Prior to conducting comparisons based on reference ranges, the ranges were refined, in part, to address concerns raised by some reviewers of the reference range report (SEA 1996). It was suggested that some of the reference ranges may have included stations that were contaminated by chemicals other than those addressed by the SMS or were physically disturbed, because some of the reference ranges had extremely low values. Specifically, the low end of the reference ranges for the following endpoints was equal to or less than 1.

Habitat Category	Endpoint
20-50 percent fines	Amphipod abundance
50-80 percent fines	Crustacean abundance
	Amphipod abundance
	Amphipod richness
80-100 percent fines	Amphipod abundance
	Amphipod richness

Reference ranges were refined by removing extreme values from the reference data set for each endpoint and habitat category. Extreme values were distinguished based on identification of statistical outliers and upper (95^{th}) and lower (5^{th}) percentiles. A regression analysis of the relationship between benthic endpoints and conventional parameters (total organic carbon, total sulfides, percent fines) was also used to identify samples that may have been strongly influenced by organic enrichment. Details of the refinement process are discussed in the following sections.

Other refinements recommended by reviewers included the possibility of combining habitat categories, as there appeared to be few significant differences in endpoint ranges between the two coarser-grained habitat categories and between the two finer-grained habitat categories. An additional recommendation was that the dominant taxa within each habitat category be examined to evaluate the possibility of physical or biological disturbance. While an investigation of these recommendations would go far to further validate the reference range data set, such an investigation is beyond the current scope of work with Ecology. However, exclusion of extreme values (included in the current refinements) will likely address the potential impact of disturbed habitats.

3.1 IDENTIFICATION OF ANOMALOUS REFERENCE VALUES

The reference data set compiled by SEA for development of the preliminary reference ranges was re-examined using several techniques to identify potentially anomalous or extreme reference values. Originally, benthic data from all stations exhibiting chemical concentrations less than the promulgated SQS were included in the reference data set. To determine whether chemically contaminated stations had inadvertently been used in the reference data set, chemical data for

stations with low abundance and richness values were reexamined relative to the SQS. Several samples were identified as having been misidentified as clean (detection limits exceeded SQS) and were subsequently excluded. Statistical outliers or extreme values for each endpoint and habitat were also identified as part of this process for refinement of the reference data set. In addition, conventional parameters, including percent fines, total organic carbon (TOC), and total sulfides were examined to identify those stations that may have been misclassified, or may be organically enriched and thus potentially impacted from a non-chemical sediment constituent.

3.1.1 Identification of Anomalous or Extreme Values Based on Percentiles

For each reference data set, the 5th, 25th, 50th, 75th and 95th percentile values for each endpoint were calculated. Statistical outliers were identified as those values that fell outside of the median plus or minus 1.5 times the inner quartile range (IQR = 75th - 25th percentile). Few statistical outliers were identified. Extreme values in the data set were identified as those less than the 5th percentile or greater than the 95th percentile. In most cases, percentiles were used to delimit the reference data set for each endpoint.

3.1.2 Identification of Anomalous Values Based on Regressions

As another method of identifying anomalous values, a regression analysis examining each benthic endpoint relative to each conventional parameter was conducted for each habitat category using SYSTAT statistical software (Version 7.0 1997). The regression module returns values for "r" and "r^2," as well as the results of an ANOVA that identifies whether the slope of the regression line is statistically different from zero. A slope that is statistically different from zero indicates that the conventional parameter affects the benthic endpoint being evaluated. A relatively strong relationship is indicated by r values greater than 0.70 (either positive or negative) and r2 values greater than 0.49. Values of r and r2 below these thresholds indicate that there may be other factors that better account for changes in the benthic endpoint or that there is no effect from that conventional parameter on the community endpoint. The software will also indicate whether some data are statistical outliers or have undue influence on the relationship between the variables. Samples characterized by abnormally large abundance values relative to the group mean were typically considered outliers. Samples having excessive influence were those where the conventional parameter had an abnormally large concentration relative to that group mean. The conventional parameter that was most frequently identified as having excess influence was total sulfides.

The analyses were conducted using both original and $\log_{10}$-transformed data. Results indicated that in some cases there was an increase in the strength of the regression (r and r2 value) with a corresponding decrease in the probability (p) value derived from the ANOVA when the data were transformed. However the transformation did not cause a substantial increase in the r and r2 value. Table 2 shows that there were no r^2 values above 0.286, indicating the absence of strong relationships between benthic endpoints and conventional parameters within each habitat category. Although the ANOVA results indicated that in some cases the slope of the line was significantly different from zero, the r^2 value indicated that the relationship is not strong enough to significantly affect the endpoint under review.

No samples were excluded from the reference data set based on anomalous conventional parameters, although the regression analysis consistently identified a specific group of stations where the conventional parameter had undue influence on the benthic endpoint in the regression analysis. The rationale for retaining these data was based on an examination of chemical and biological data from those stations. The review showed no chemical contamination and abundance and richness measures that were within the range of the remaining samples.

3.1.3 Outlier Method Comparison

A comparison of the methods for identifying outlier samples found that, in most cases, the results overlapped; therefore, outliers identified using either method (i.e., statistical outliers and those values outside of the range defined by the 5th and 95th percentiles) were dropped from the reference data set. The outlier assessment was not conducted for SDI and the ITI. Rather, for SDI, a lower threshold value of 5.0 (with no corresponding upper threshold) was used to crop the reference data set because it is believed that values of 5.0 and below indicate a severely impacted infaunal community (Swartz et al. 1985). For the ITI, no changes were made because it is a functional measure of benthic communities among the endpoints and only reflects the predominant feeding strategies within a community. The final reference data set for each endpoint and habitat category is presented in Appendix 1. Data that were excluded from the final reference data set are delimited with a shaded background.

3.2 REFINED REFERENCE AREA VALUES

Following removal of outliers or extreme values, a new set of reference ranges was calculated for benthic community endpoints in water depths less than 150 feet (Table 3, Appendix 2). The reference ranges for each endpoint and habitat category were calculated as the mean value plus or minus one standard deviation. These values replace the reference ranges presented in SEA (1996). Refined reference values were used along with the associated reference area database, to evaluate the effectiveness of various endpoints and comparison methods in identifying impacted benthic communities.

SECTION 4

TESTING OF BENTHIC INFAUNA ENDPOINTS

Benthic infaunal endpoints and comparison methods were evaluated to determine which combination of endpoints and methods most consistently identified benthic community impacts at stations with impaired sediment chemical quality. This process first required the development of appropriate data sets for testing, followed by actual testing, an evaluation of the effectiveness of each individual endpoint in predicting impacts, and an overall ranking of the endpoints.

4.1 DATA SET COMPILATION

SMS chemical criteria were initially used to develop the "impaired chemical quality" data set for use in testing the predictiveness of the selected benthic community endpoints. The chemical criteria in the SMS are derived from the Puget Sound Apparent Effects Thresholds (AETs), which are defined as the concentrations in sediment above which significant adverse biological effects always occur. The AETs were developed from the following four biological tests:

1. Amphipod mortality
2. Oyster larval abnormality
3. Microtox™ bacterial luminescence
4. Benthic infaunal abundance

These AETs were used to define two regulatory levels in the SMS: the Sediment Quality Standard (SQS) and the Cleanup Screening Level (CSL). The SQS chemical criteria were established by the lowest of the four AETs (referred to as the LAET) and represent the no effects threshold for a given chemical, below which no or minimal effects to benthic communities are predicted. The CSL chemical criteria were set by the second-lowest AET (referred to as the 2LAET) and represent the chemical concentration below which minor adverse effects to benthic communities may occur. Sediment concentrations above the CSL or 2LAET are anticipated to be associated with moderate to severe effects depending on the chemical magnitude and benthic endpoint being evaluated.

Further review of the 1988 AETs indicated that depressions in major taxa abundance defined the LAET (and therefore the SQS chemical criterion, where adopted[1]) for most inorganics (except copper, mercury, and silver), pesticides, volatile organic compounds, and three phthalates compounds including bis(2-ethylhexyl)phthalate. The LAET for several other chlorinated organic compounds were also set by this benthic endpoint, including hexachlorobutadiene, hexachlorobenzene, and 1,4-dichlorobenzene. Major taxa abundance defined the 2LAET (and

[1] It should be noted that AETs were calculated for more chemicals than were adopted into regulation due to the uncertainties associated with the predictiveness of some AETs. Examples include some of the pesticides and volatile organic compounds

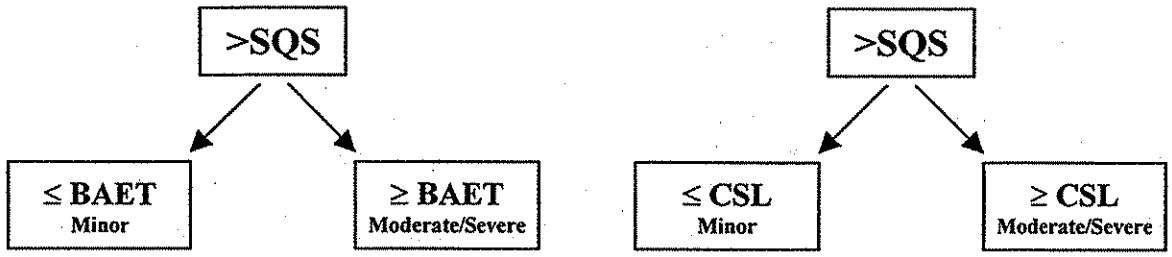
thus the CSL chemical criterion) for most of the low molecular weight polycyclic aromatic hydrocarbons (PAHs) and phenols. For the high molecular weight PAHs, this benthic endpoint established the second highest or highest AET for most of these compounds (i.e., benthic effects would be predicted at concentrations greater than SQS or CSL chemical criteria).

As can be seen from this review, the original data set compiled for testing could include stations at which benthic impacts would not be predicted (i.e., stations exhibiting chemical concentrations in excess of SQS or CSL criteria that were not based on the benthic AET or BAET). Therefore, the question arose regarding how to assess the effectiveness or sensitivity of the 10 benthic endpoints evaluated in this report using this initial data set. It was concluded that different groupings or sets of chemically impacted stations were required to effectively evaluate the predictiveness of the various benthic endpoints.

The first grouping was designed to allow for an evaluation of how effective each benthic endpoint was in identifying effects predicted by the BAET. Stations exceeding the SQS (at a minimum) were grouped based on whether or not their sediment chemical concentrations were above or below the BAET. Stations with chemical concentrations below the BAET were considered to have the potential for minor adverse benthic impacts; stations with chemical concentrations above the BAET were considered to have the potential for moderate to severe benthic effects.

The second grouping was designed to determine if any of the new benthic endpoints performed well in terms of identifying effects predicted by SQS or CSL chemical criteria (i.e., how sensitive were the new benthic endpoints relative to other ecological endpoints [amphipod mortality, larval abnormality) that may have set the LAET]. Stations exceeding the SQS (at a minimum) were grouped based on whether or not their sediment chemical concentrations were between SQS and CSLs or above the CSLs. The magnitude of impacts as indicated by benthic endpoints within each of these categories was expected to vary because the BAET may not have set either of the criteria used to define these groups for some chemicals.

This approach resulted in two main chemical data sets, each with two subgroups representing potential minor versus moderate to severe impacts (given that all data were above the SQS):



4.2 TESTING ENDPOINTS

Within the data groupings defined above, numerical comparisons and a pair-wise statistical test were conducted on a station-by-station and endpoint-specific basis to identify impacted stations.

The numeric comparisons and the statistical tests were made relative to the revised reference values and the reference data set for each habitat type. All comparisons and tests were conducted by matching the contaminated stations with the appropriate reference habitat category.

Two phases of community endpoint testing were performed. An initial screening step was performed to identify those stations that could be considered impacted for the purposes of this study. In Phase 1, stations were considered impacted if the station mean was less than the mean reference value for a given benthic community endpoint (with the exception of polychaete abundances, which was also considered impacted if a given value was greater than the reference mean). For each endpoint, stations that were defined as impacted were subjected to additional testing in Phase 2. *The term "impacted" has been used to represent stations identified in Phase 1 screening that are simply less than the mean reference value. It is emphasized that this term has been chosen only for such use in this report and that its use does not convey regulatory meaning. It is anticipated that actual environmental stations with ecological impacts would be identified through a series of more complex statistical tests such as those used in the Phase 2 testing.* The objective of the additional testing was to determine, using a suite of numerical and statistical tests, which endpoint(s) were the most effective in consistently identifying impacted stations. See Figure 1 for an overview of the complete testing approach.

Phase 2 tests included:

- Comparison of the impacted station mean to 50 percent of the reference mean (or two times the reference mean, in the case of increased polychaete abundance). Use of 50 percent addresses the minimum difference required to accurately detect a difference between a sample and its reference for those endpoints with high variability (typically abundance-based endpoints).
- Comparison of the impacted station mean to the lower reference range limit (reference mean minus one standard deviation) for the matching habitat category (or upper reference range limit[reference mean plus one standard deviation], in the case of increased polychaete abundance)
- Comparison of the impacted station mean to the lower 95th confidence interval value of the reference data set mean for the matching habitat category (or upper 95th confidence interval, in the case of increased polychaete abundance)
- Statistical pair-wise testing for differences between individual impacted stations and the matching reference data set (i.e., a given impacted station mean was tested against the mean of the pooled data that had been used to derive the reference range). *T*-tests were conducted using both pooled and separate variance terms. Prior to initiating statistical testing, histogram plots were constructed to determine the structure of the data and to assess whether it departed from normality. Data with large departures from normality were log-transformed prior to continued statistical testing.
- Figure 2 shows the general relationship among these test endpoints for a given endpoint.

4.3 EVALUATION OF ENDPOINT EFFECTIVENESS

Phase 1 Screening—The results of the Phase 1 screening of the mean benthic endpoint value for each station relative to the reference mean and the results of the individual tests described above are compiled in Appendix 3 by chemical group. The Phase 1 comparison of each endpoint value for a station to the related reference mean resulted in the identification of impacted stations for each endpoint.

Phase 2 Testing—The outcome of Phase 2 testing of the impacted stations was used to determine the effectiveness of each endpoint. An effective endpoint was defined as one that agreed with the Phase 1 screening results in more than 65 percent of the cases (i.e., correctly predicted an impact), whereas an ineffective endpoint did not. The preliminary measure of effectiveness was determined by calculating the percent of the Phase 2 test results that concurred with the Phase 1 screening results, with respect to which stations were impacted for each endpoint and test endpoint within a chemical group.

The percentage denoting effectiveness was ranked from high to low. Shared or tied ranks were represented by the mean of the tied ranks. Higher ranks were considered indicative of greater effectiveness in identifying impacts. Ranks for each endpoint were summed within each chemical group and test comparison and again across all test types within a chemical grouping to represent the overall effectiveness. Percent of the samples correctly identifying an impact were also used in the effectiveness evaluation.

4.4 INITIAL RANKING OF BENTHIC ENDPOINTS

Phase 1 Screening Results—An initial ranking of endpoints was done based on how often an endpoint was less than reference for each chemical category (SMS versus BAET category). The results for stations grouped by SMS chemical category are reported in Table 4 and the results for the stations grouped by BAET category are presented in Table 5. The endpoints that appeared to be most sensitive, in that more than 65 percent of the samples were different from reference under conditions of elevated sediment chemistry (greater than the SQS at a minimum) included:

- The SDI,
- The ITI,
- Molluscan richness
- Total richness, and
- Polychaete richness.

There were almost no differences among endpoints that were most often different from reference among chemical groups, with the exception that polychaete richness was not consistent in its ability to indicate a difference from reference.

Phase 2 Testing Results—The rankings of each endpoint when compared to one half the reference mean (or two times the reference mean for polychaete abundance) are reported in Tables 6 and 7. For this type of comparison, abundance endpoints and the SDI were the most effective at correctly identifying a difference from reference. When stations were grouped by SMS chemical category (Table 6), the top four most effective endpoints included:

- Crustacean abundance,
- The SDI,
- Enhanced polychaete abundance, and
- Molluscan abundance

Although these endpoints were ranked the highest, under conditions of minor elevations in chemistry, fewer than 50 percent of the samples indicated an impact, with the exception of molluscan abundance that indicated 67 percent of the samples were impacted at stations with chemistry less than the CSL.

When stations were grouped by BAET category (Table 7), the highest-ranking endpoints were:

- Enhanced polychaete abundance,
- The SDI,
- Crustacean abundance, and
- Total abundance.

The SDI was slightly more effective than abundance measures at identifying differences from reference for stations that were predicted to have minor benthic impacts based on chemistry less than the BAET. The SDI tied with other abundance measures when the station chemistry was less than the CSL. Enhanced polychaete abundance was always more effective than depressed polychaete abundance at identifying a difference.

Again, although these benthic endpoints were ranked the highest for the "less than BAET" chemical category, fewer than 50 percent of the samples indicated an impact when one half the reference value was used as the test endpoint.

Comparisons based on reference range exceedances identified a different set of endpoints being most effective at identifying a change relative to reference (see Tables 8 and 9). For this comparison method, the most effective endpoints were:

- Enhanced polychaete abundance,
- The SDI,
- Total richness,
- Molluscan richness and
- Polychaete richness.

The first two benthic endpoints worked well for any chemical category, whereas the remaining three endpoints were more effective under conditions of elevated chemistry (greater than CSL).

A number of benthic endpoints (depending on chemical category) shared the top ranking for identifying impacts when 95% confidence limits of the reference data set were used as the test endpoint and included:

- The SDI,
- Total richness,
- Enhanced polychaete abundance, and
- Crustacean abundance.

For identifying benthic impacts when minor benthic impacts were predicted by chemistry less than the CSL (Table 10), molluscan abundance, molluscan richness, also proved to be as equally effective as the four endpoints listed above. Total abundance was also effective at identifying impacts for the category of stations with chemistry greater than the CSL, while molluscan richness and abundance were no longer as effective for this chemical category. A similar pattern was seen when stations were grouped by BAET category (Table 11), with the inclusion of the ITI as an effective endpoint for identifying impacts when chemical concentrations are elevated.

When statistical testing was used to distinguish potentially impacted stations from the reference data set, different endpoints were more effective than others depending on the predicted degree of benthic impacts (see Tables 12 and 13). Overall, based on the percentage impacted, the SDI, the ITI, crustacean abundance and molluscan abundance were the most effective at identifying impacts under any chemical category. For SMS or BAET categories predicting minor benthic impacts, the following endpoints were ranked the highest:

- The SDI,
- Molluscan abundance,
- Total richness
- Crustacean abundance, and
- The ITI

For SMS or BAET chemical groups where moderate to severe benthic effects would be predicted, some differences were noted among effective endpoints. The most effective endpoints at identifying greater impacts were:

- Depressed polychaete abundance
- Crustacean or total abundance,
- The SDI, and
- The ITI.

A summary of the effectiveness of the endpoints evaluated for each chemical category and comparison type is provided in Tables 14 (a and b), and 15 (a and b) based on both the sum of the ranks and the percent of the samples indicating an impact, averaged across comparison methods. An endpoint was considered effective if more than 65 percent of the samples indicated a difference from the test endpoint. For the chemical categories associated with potentially minor effects (less than the SQS or the BAET), the SDI was the most effective at identifying impacted benthic communities, followed by enhanced polychaete abundance or molluscan abundance. When chemical concentrations were associated with moderate to severe effects, enhanced polychaete abundance took the lead in effectiveness, followed by the SDI and crustacean abundance. Other endpoints that were effective (greater than 65 percent of the samples indicated a difference when averaged over all test methods) at identifying impacts to the community under conditions of more severe chemical concentration included total richness, molluscan abundance, molluscan richness, decreased polychaete abundance and polychaete richness.

SECTION 5

RECOMMENDATIONS

Healthy soft-bottom benthic communities are generally expected to be diverse with abundant numbers of individuals representing each species present. While some species may be more abundant than others depending on habitat conditions, overall, most types of marine invertebrate organisms will be represented (molluscs, crustaceans, polychaetes, echinoderms, etc.).

Several models have been used to describe changes in benthic communities that occur as a result of increasing chemical contamination or organic enrichment. In general, as concentrations of contaminants or organic material increase in sediment, species with the least tolerance to these conditions either die or do not recruit to the community. The resources that would have been utilized by these sensitive species are instead used by the more tolerant taxa that remain or opportunistic taxa that recruit in the place of more sensitive taxa. As a result, the more tolerant or opportunistic taxa tend to increase in abundance.

As contamination or organic enrichment increases, the productivity of the more tolerant taxa may decline, while the most tolerant species would take advantage of any newly available resources caused by the loss of the species with lower tolerances to the environmental conditions. Under conditions of the most severe contamination or organic enrichment, even the most tolerant taxa drop in productivity. A depiction of this generalized benthic community response model is presented in Figure 3.

Although each major taxonomic group has species representing a range of tolerances, it appears that echinoderms are one of the most sensitive major taxonomic groups, followed by crustaceans and/or molluscs and finally polychaetes (based on such endpoints as mortality, reduced recruitment or fecundity).

In this general model of soft-bottom benthic community response to chemical or organic alterations of sediment, a decrease in the SDI may be one of the first indicators of community stress as some members of the community become more abundant due to the decline in abundance of some of the more sensitive taxa. Small changes in dominance may not result in any changes in other community measures because all taxa are still present although the abundance of individual taxa is changing. As dominance increases, the SDI would continue to drop and would be paired with possible increases in the major taxa group abundances that have more tolerant species (e.g., polychaetes) and losses in those made up of more sensitive taxa (molluscs or crustaceans). A drop in total richness and major taxa richness for all groups may also be evident. As the species composition and associated feeding strategies change, the ITI would also shift (generally dropping in value with increasing contamination). As the contamination increased, the magnitude of these changes would also increase until the more tolerant taxa were affected, which would be reflected by a drop in primarily polychaete abundance.

The results of the evaluation of benthic endpoints conducted as part of the Reference Value Project appeared to be consistent with this model of benthic community response to contamination.

Shifts in dominance (represented by the SDI) was one of the most effective benthic endpoints to identify impacts regardless of the comparison method and represent increasing abundance of more tolerant taxa under the benthic community response model. Enhancement in polychaete abundance was also one of the most effective endpoints and may also be representing the phenomena of increasing abundance of more tolerant or opportunistic taxa that are already present in the benthic community. When paired with decreases in molluscan or crustacean abundance or total richness, these endpoints would follow the model described previously for conditions of low to moderate chemical contamination. As was shown in this study, molluscan abundance, crustacean abundance, and total richness were effective benthic endpoints when the sediment chemistry was less than the CSL or BAET. Under the benthic response model, it would also be anticipated that other endpoints would be effective at levels of higher chemical contamination. This was again demonstrated in this study where all of the above endpoints continued to be effective, in addition to major taxa richness for molluscs and polychaetes and depressions in polychaete abundance.

For the purpose of developing recommendations for the SMS Rule, the ability of an endpoint to be effective at lower levels of contamination was considered a priority because of the potential contribution to a cleanup decision. The decision to clean up an area or a site under the SMS evaluation process relies on the magnitude of actual or potential biological impacts. Under the SMS, two failures of the more protective SQS biological decision criteria within a suite of three biological tests is considered equivalent to a failure of the higher magnitude CSL decision criteria, indicating the possible need for cleanup under the SMS.

Differences in the effectiveness of test comparison methods were also demonstrated in this study. Overall, use of one half the reference mean as the test endpoint was the least effective at identifying impacts, particularly where only minor adverse impacts were predicted based on a lower level (less than CSL or BAET) of chemical contamination. As an example, only one benthic endpoint was able to identify impacts in more than 65 percent of the cases using this comparison method. Conversely, use of an exceedance of the 95th confidence interval as the test endpoint was highly effective for almost all endpoints and chemical categories. Only one benthic endpoint (total abundance) failed to identify impacts in more than 65 percent of the samples. The effectiveness of comparing benthic endpoints based on reference ranges or the t-test fell between these two extremes. The t-test had five effective benthic endpoints under conditions of low-level contamination, whereas three endpoints were effective using reference range comparisons under the same conditions. The number of effective benthic endpoints doubled for these two comparison methods when chemical contamination was greater than the CSL or BAET.

In developing recommendations for modifications to the SMS Rule, it was considered important to select a comparison method that was effective at identifying lower-level impacts for more than one benthic endpoint. Overall, use of the 95th confidence interval was identified as the most effective comparison method. However, this endpoint was unable to distinguish between low to

moderate and more severe environmental contamination. In most cases, use of this test endpoint resulted in identification of an impact regardless of chemical category or benthic endpoint. One half the reference mean was also unable to distinguish between low versus higher chemical contamination in that it was not effective at identifying a minor adverse effect. From a programmatic perspective, these were viewed as shortcomings.

Based the results of this study, the following recommendations are made regarding potential programmatic changes to the Sediment Management Standards Rule where benthic community endpoints are used in decision-making:

- Benthic community evaluations should be based primarily on the SDI and enhanced polychaete abundance. Molluscan richness and abundance, crustacean abundance, and total richness should be used to confirm the magnitude of the impact.
- Numerical comparisons to reference ranges (a non-statistical approach) are recommended as the method for identifying impacts.
- A minor adverse impact (SQS level "hit" or failure) should be defined by a single exceedance of either the SDI or enhanced polychaete abundance decision criterion. (A single failure of molluscan richness or abundance, crustacean abundance or total richness should not trigger an SQS level hit. An evaluation of the data used in this study showed that there were no cases where the recommended major taxa or richness indices had more than one failure without an accompanying SDI or enhanced polychaete abundance failure).
- A moderate to severe impact (CSL level hit) should be defined by a failure of both the SDI and enhanced polychaete abundance, or either the SDI or enhance polychaete abundance coupled with a failure of molluscan richness or abundance, crustacean abundance or total richness test criterion. If the SDI is less than or equal to 5.0 this should also be consider sufficient to trigger a CSL failure. Table 16 illustrates the proposed decision rules using the recommended benthic endpoints when compared to the reference ranges.

Use of the t-test as the comparison method was also considered a valuable tool in evaluating changes in benthic community structure. A pair-wise test between a single potentially impacted station and its matching Puget Sound reference data set tended to have a high degree of statistical power to identify differences. However, from a programmatic perspective, management of the distribution of the reference data sets to potentially liable parties or project proponents that have been required to perform biological testing under the SMS Rule seemed unwieldy with a high degree of uncertainty in maintaining the integrity of the data set. Therefore, use of the t-test for reference area comparisons was not included in the recommendations.

Use of programmatic reference ranges for evaluating benthic community structure would not be subject to issues of data integrity. In addition, a shift to a reference range approach would allow greater use of the benthic endpoints in sediment management decisions because it addresses the difficulties experienced by many regulated parties in identifying appropriate reference sites. In addition, the use of reference ranges may allow for simplification of sampling designs over time, such that fewer replicate samples can be used. This would tend to reduce the cost of this test and thus make it a effective tool because of the ability of benthic communities to represent actual

conditions at a site (something no other biological test does under the current suite of SMS biological effects tests).

Use of a reference range approach has precedence. Standardized reference data or reference ranges have been used in other programs outside of the Puget Sound region. Standardization or characterization of reference conditions has been attempted by a number of scientists to more effectively identify impacts to benthic communities due to anthropogenic inputs. Although these methods have not been developed within a regulatory context, they have been discussed for use in resource management decision-making.

One method that has been used in monitoring programs in Southern California coastal waters is based on calculation of a tolerance interval. Smith (1995) used tolerance intervals as thresholds or indicators for distinguishing between a reference population and impacted locations. Tolerance intervals are calculated using upper and lower percentile values of the reference data set for a given endpoint, which then define the acceptable range of values for that endpoint for comparison to a potentially impacted site. As an example, if the total abundance at a potentially impacted station was less than the lower tolerance interval for the reference population, the station would be considered impacted. There is some uncertainty associated with use of percentiles as tolerance intervals because the true population value is unknown (i.e., all organisms in the population have not been sampled, identified, and counted, the population has just been subsampled). To address this uncertainty, a tolerance interval bound (Vardeman 1992) was developed. The tolerance interval bound is the confidence interval associated with the percentile value that defined the tolerance interval. Upper and lower confidence intervals are determined for each endpoint under consideration and then the values are used to predict impacts, similar to the use of percentiles (Smith 1998).

Another reference condition approach that has been used in monitoring programs was developed for freshwater systems and presented during a Technical Information Workshop for the 44th Annual meeting of the North American Benthological Society (Bailey et al. 1996). The reference condition approach relies on establishing a database of sites that represent unimpacted conditions (based on physical, chemical, and biological data). The database is then used to develop predictive models that match a set of environmental variables to the measured biological endpoints. The model is used to predict expected biological conditions at a new site by inputting the measured environmental conditions from the new site into the model. The actual biological condition at the new site can then be compared to matching reference conditions. Data from reference sites are analyzed using Discriminant Function Analysis, which is used to determine the 90 percent probability ellipses for a given reference condition. The location of the new test station in ordination space relative to the reference ellipse determines its similarity to the reference condition. If the test station was located within the 90 percent probability ellipse for the reference data set, then it was considered to be similar to the reference condition (Bailey et al. 1996).

Adoption of a reference range approach will require a commitment on the part of the regulatory agencies to continue to identify and characterize reference conditions throughout Puget Sound. The existing Puget Sound database is insufficient to characterize many habitats that are found at

impacted sites. In addition, taxonomic changes have made the database potentially inaccurate with respect to those endpoints that are based on measures of richness.

Prior to adoption of a reference range approach, the following tasks should be completed:

- Sediment management program staff, potentially affected parties, and regional benthic experts should review the recommendations.
- An evaluation of the sensitivity and efficiency of the recommended endpoints should be conducted, based on reference range comparisons.
- The effect of the taxonomic changes should be evaluated as to the magnitude of the impact on the reference ranges for benthic endpoints based on richness. If significant, the reference ranges should be recalculated.

Once implemented, addition work is also needed:

- As the reference database is refined or expanded, the habitat definitions should be re-evaluated. There is some evidence that habitat categories could be combined. Reviewers of the earlier reference range development documents have also made this observation.
- Evaluate the potential for geographical variability in endpoint values as the reference database is expanded.
- Develop and evaluate an approach to incorporate indicator taxa.
- Continue to collect data within Puget Sound in potential reference areas and habitat types not represented in the current reference database.

SECTION 6

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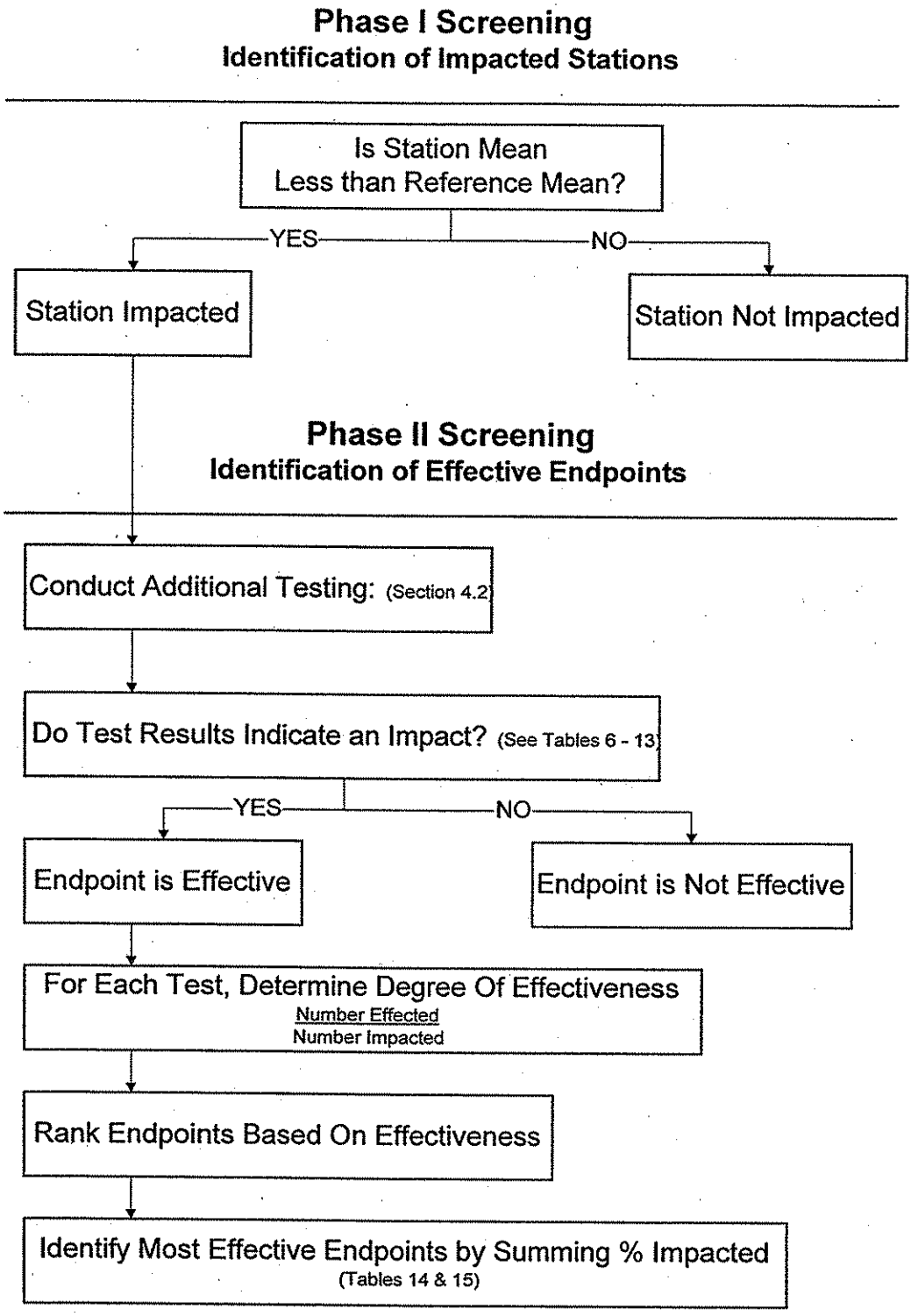
FIGURES



Process for the Phased Identification of Impacted Stations Effective Endpoints

FIGURE

1

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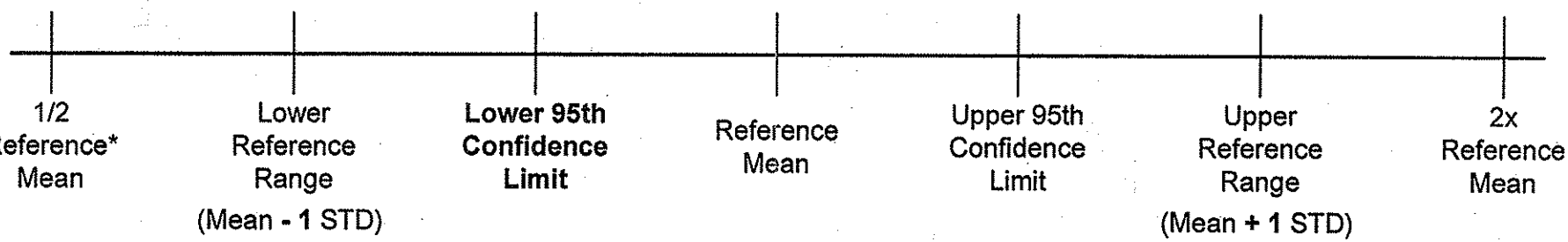
99-0167.FIG



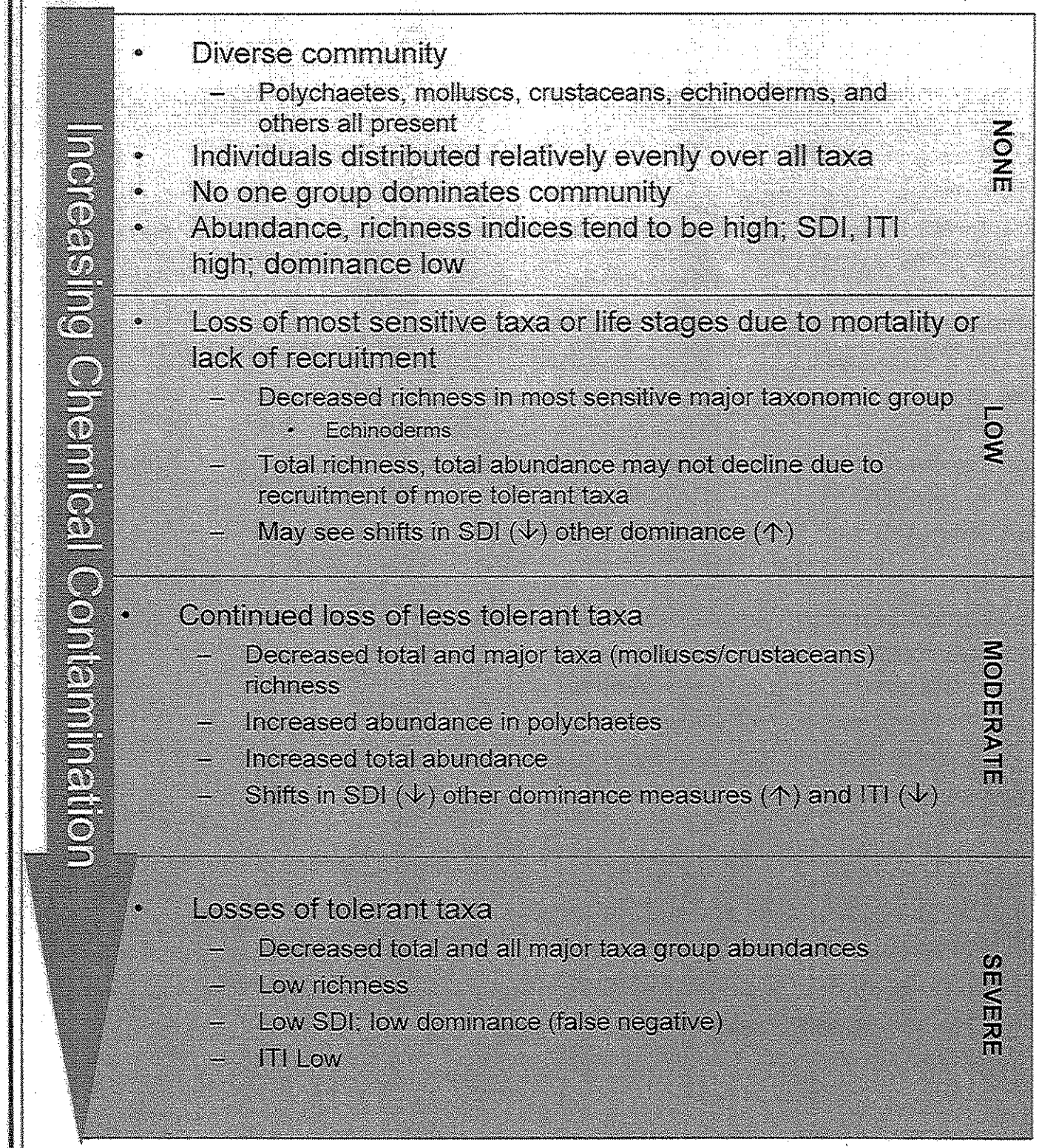
* Overlapped with lower reference range for highly variable (coefficient of variation > 50%) endpoints (crustacean abundance, molluscan abundance, and polychaete abundance).

NAMOI-Generalized Relationships of Test Endpoints

WESTON MANAGERS DESIGNERS CONSULTANTS

FIGURE
2

99-0167B.FIG



Benthic Community Response to Contamination

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FIGURE
3

99-0167C.FIG

TABLES

Table 1—Priority Endpoints, Major Effects, and Method of Comparison Selected for Further Evaluation

Endpoint	Effect	Type of Comparison[a]	
		Statistical	Non-Statistical
Polychaete Abundance	Enhancement	X	X
Polychaete Abundance	Depression	X	X
Polychaete Richness	Depression	X	X
Molluscan Abundance	Depression	X	X
Molluscan Richness	Depression	X	X
Crustacean Abundance	Depression	X	X
Crustacean Richness	Depression	X	X
Total Abundance	Depression	X	X
Total Richness	Depression	X	X
Swartz's Dominance Index (SDI)	Depression	X	X
Infaunal Tropic Index (ITI)	Depression	X	X

[a] Comparisons to be made to Puget Sound habitat-specific reference data set.

Table 2—Results of Regression Analysis Between Benthic Endpoints and Habitat Characteristics [a]

Benthic Endpoint	Habitat Category											
	0 - 20% Fines			20 - 50% Fines			50 - 80% Fines			80 - 100% Fines		
	Fines	TOC	TS	Fines	TOC	TS	Fines	TOC	TS	Fines	TOC	TS
Total Abundance	0.002 0.020	0.004 0.005	0.012 0.003	0.033 0.048	0.034 0.000	0.007 0.084	0.003 0.003	0.030 0.102	0.002 0.019	0.000 0.030	0.147 0.115	0.115 0.146
Total Richness	0.030	0.019	0.042	0.001	0.007	0.079	0.006	0.154	0.000	0.131	0.187	0.014
Crustacean Abundance	0.020 0.001	0.030 0.000	0.083 0.053	0.069 0.244	0.019 0.041	0.008 0.027	0.030 0.048	0.002 0.017	0.024 0.001	0.016 0.027	0.000 0.000	0.039 0.028
Crustacean Richness	0.000	0.002	0.089	0.105	0.023	0.043	0.002	0.003	0.071	0.027	0.159	0.064
Polychaete Abundance	0.074 0.037	0.039 0.049	0.073 0.041	0.002 0.013	0.002 0.004	0.089 0.230	0.003 0.017	0.079 0.018	0.003 0.015	0.046 0.098	0.055 0.150	0.045 0.016
Polychaete Richness	0.059	0.041	0.018	0.001	0.006	0.133	0.012	0.076	0.022	0.032	0.152	0.014
Molluscan Abundance	0.009 0.023	0.004 0.005	0.047 0.025	0.065 0.241	0.040 0.031	0.035 0.061	0.001 0.106	0.107 0.049	0.118 0.038	0.002 0.003	0.041 0.019	0.008 0.002
Molluscan Richness	0.018	0.002	0.099	0.001	0.004	0.083	0.003	0.055	0.113	0.000	0.142	0.020
Infaunal Trophic Index (ITI)	0.044	0.002	0.023	0.092	0.134	0.005	0.000	0.001	0.000	0.222	0.080	0.068
Swartz's Dominance Index (SDI)	0.004	0.003	0.063	0.007	0.012	0.005	0.130	0.003	0.113	0.286	0.056	0.005

[a] r^2 values generated by the regression anaylsis of untransformed (richness, SDI and ITI) and $\log_{10}$ transformed data. Where two values are listed, the top value represents the r^2 value from untransformed data and the bottom value is the r^2 value from the transformed data.

Fines = Percent fines.
TOC = Total Organic Carbon.
TS = Total Sulfides.

Table 3—Revised Reference Ranges for Puget Sound Habitats in Water Depths Less Than 150 Feet

Benthic Endpoint	Habitat Category < 150 Feet							
	n	0 - 20% Fines ($0.1m^2$)	n	20 - 50% Fines ($0.1m^2$)	n	50 - 80% Fines ($0.1m^2$)	n	80 - 100% Fines ($0.1m^2$)
Total Abundance	164	328 - 651	61	365 - 617	68	191 - 446	85	195 - 396
Total Richness	163	50 - 87	57	53 - 76	66	44 - 62	84	25 - 39
Crustacean Abundance	161	51 - 185	60	47 - 159	65	10 - 69	79	12 - 94
Crustacean Richness	159	9 - 16	57	7 - 13	67	5 - 9	91	4 - 6
Polychaete Abundance	155	91 - 275	59	140 - 302	68	91 - 205	86	39 - 126
Polychaete Richness	168	23 - 44	58	30 - 46	69	22 - 34	76	11 - 20
Molluscan Abundance	160	37 - 124	53	40 - 139	69	9 - 188	82	30 - 86
Molluscan Richness	161	13 - 20	55	10 - 15	68	10 - 17	85	6 - 12
Infaunal Trophic Index (ITI)	183	68 - 81	65	66 - 77	83	63 - 77	101	67 - 87
Swartz's Dominance Index (SDI)	163	9 - 22	60	11 - 19	70	7 - 17	64	7 - 10

All values are presented per $0.1m^2$.
n = Number of Samples.

Table 4—Results of Phase 1 Screening to Identify Impacted Stations Grouped by SMS Category[a]

Benthic Endpoint	No. of Impacted Stations ≤ CSL[a]	No. of Stations ≤ CSL	% Impacted	Rank[b]	No. of Impacted Stations > CSL[a]	No. of Stations > CSL	% Impacted	Rank[b]	Sum of the Ranks
Swartz's Dominance Index (SDI)	20	21	95%	11	30	34	88%	10	*21*
Infaunal Trophic Index (ITI)	17	21	81%	9	32	34	94%	11	*20*
Total Richness	17	21	81%	9	23	34	68%	8	*17*
Molluscan Richness	16	21	76%	7	25	34	74%	9	*16*
Polychaete Richness	17	21	81%	9	20	34	59%	7	*16*
Enhanced Polychaete Abundance	12	21	57%	4.5	19	34	56%	6	*10.5*
Molluscan Abundance	12	21	57%	4.5	17	34	50%	5	*9.5*
Crustacean Richness	15	21	71%	6	14	34	41%	3	*9*
Depressed Polychaete Abundance	9	21	43%	1	15	34	44%	4	*5*
Total Abundance	10	21	48%	2.5	7	34	21%	1.5	*4*
Crustacean Abundance	10	21	48%	2.5	7	34	21%	1.5	*4*

[a] Impacted stations were identified when the mean station value was numerically less than reference mean.

[b] Ranks based on the number of impacted stations relative to the total number of stations for a chemical group.

Table 5—Results of Phase 1 Screening to Identify Impacted Stations Grouped by BAET Category[a]

Benthic Endpoint	No. of Impacted Stations ≤ BAET[a]	No. of Stations ≤ BAET	% Impacted	Rank[b]	No. of Impacted Stations > BAET[a]	No. of Stations > BAET	% Impacted	Rank[b]	Sum of the Ranks
Swartz's Dominance Index (SDI)	25	28	89%	**11**	25	27	93%	**10**	***21***
Infaunal Trophic Index (ITI)	23	28	82%	**10**	26	27	96%	**11**	***21***
Molluscan Richness	20	28	71%	**9**	21	27	78%	**8.5**	***17.5***
Total Richness	19	28	68%	**8**	21	27	78%	**8.5**	***16.5***
Polychaete Richness	17	28	61%	**6.5**	20	27	74%	**7**	***13.5***
Enhanced Polychaete Abundance	17	28	61%	**6.5**	14	27	52%	**5.5**	***12***
Molluscan Abundance	15	28	54%	**4**	14	27	52%	**5.5**	***9.5***
Crustacean Richness	16	28	57%	**5**	13	27	48%	**3.5**	***8.5***
Depressed Polychaete Abundance	11	28	39%	**3**	13	27	48%	**3.5**	***6.5***
Total Abundance	10	28	36%	**2**	7	27	26%	**1**	***3***
Crustacean Abundance	8	28	29%	**1**	9	27	33%	**2**	***3***

[a] Impacted stations were identified when the mean station value was numerically less than reference mean.

[b] Ranks based on the number of impacted stations relative to the total number of stations for a chemical group (i.e., percent impacted).

Table 6—Results of Comparisons Based on Exceedance of One-Half the Reference Mean for Stations Grouped by SMS Category

Benthic Endpoint	Station Chemistry ≤ CSL (n=21)				Station Chemistry > CSL (n=34)				
	No. of Impacted Stations[a]	No. of Stations <1/2 Ref. Mean	% Impacted	Rank[b]	No. of Impacted Stations [a]	No. of Stations <1/2 Ref. Mean	% Impacted	Rank[b]	Sum of the Ranks
Crustacean Abundance	10	5	50%	**8.5**	7	5	71%	**11**	***19.5***
Swartz's Dominance Index (SDI)	20	10	50%	**8.5**	30	19	63%	**9.5**	***18***
Enhanced Polychaete Abundance[c]	12	6	50%	**8.5**	19	12	63%	**9.5**	***18***
Molluscan Abundance	12	8	67%	**11**	17	8	47%	**6**	***17***
Total Abundance	10	5	50%	**8.5**	7	4	57%	**7**	***15.5***
Molluscan Richness	16	5	31%	**6**	25	9	36%	**4**	***10***
Depressed Polychaete Abundance	9	1	11%	**2**	15	9	60%	**8**	***10***
Polychaete Richness	17	3	18%	**4.5**	20	9	45%	**5**	***9.5***
Total Richness	17	3	18%	**4.5**	23	7	30%	**3**	***7.5***
Crustacean Richness	15	2	13%	**3**	14	4	29%	**2**	***5***
Infaunal Trophic Index (ITI)	17	0	0%	**1**	32	2	6%	**1**	***2***

[a] Impacted stations were identified when the mean station value was numerically less than reference mean.

[b] Ranks based on the number of stations exceeding endpoint criterion relative to the number of impacted stations (see Table 4).

[c] Comparison based on 2 times reference mean.

Table 7—Results of Comparisons Based on Exceedance of One-Half the Reference Mean for Stations Grouped by BAET Category

Benthic Endpoint	Station Chemistry ≤ BAET (n=28)				Station Chemistry > BAET (n=27)				Sum of the Ranks
	No. of Impacted Stations[a]	No. of Stations <1/2 Ref. Mean	% Impacted	Rank[b]	No. of Impacted Stations [a]	No. of Stations <1/2 Ref. Mean	% Impacted	Rank[b]	
Enhanced Polychaete Abundance[c]	17	8	47%	**10**	14	10	71%	**9.5**	***19.5***
Swartz's Dominance Index (SDI)	25	12	48%	**11**	25	17	68%	**8**	***19***
Crustacean Abundance	8	3	38%	**8**	9	7	78%	**11**	***19***
Total Abundance	10	4	40%	**9**	7	5	71%	**9.5**	***18.5***
Molluscan Abundance	15	5	33%	**7**	14	9	64%	**7**	***14***
Depressed Polychaete Abundance	11	2	18%	**5**	13	8	62%	**6**	***11***
Molluscan Richness	20	5	25%	**6**	21	9	43%	**4**	***10***
Polychaete Richness	17	2	12%	**3**	20	10	50%	**5**	***8***
Crustacean Richness	16	2	13%	**4**	13	4	31%	**2**	***6***
Total Richness	19	2	11%	**2**	21	8	38%	**3**	***5***
Infaunal Trophic Index (ITI)	23	0	0%	**1**	26	2	8%	**1**	***2***

[a] Impacted stations were identified when the mean station value was numerically less than reference mean.

[b] Ranks based on the number of stations exceeding endpoint criterion relative to the number of impacted stations (see Table 5).

[c] Comparison based on 2 times reference mean.

Table 8—Results of Comparisons Based on Exceedance of Reference Range Limits for Stations Grouped by SMS Category

Benthic Endpoint	Station Chemistry ≤ CSL (n=21)				Station Chemistry > CSL (n=34)				
	No. of Impacted Stations[a]	No. of Stations < Ref. Range Limit	% Impacted	Rank[b]	No. of Impacted Stations [a]	No. of Stations < Ref. Range Limit	% Impacted	Rank[b]	Sum of the Ranks
Enhanced Polychaete Abundance[c]	12	11	92%	**11**	19	18	95%	**11**	***22***
Swartz's Dominance Index	20	17	85%	**10**	30	22	73%	**10**	***20***
Total Richness	17	11	65%	**9**	23	14	61%	**7**	***16***
Molluscan Richness	16	10	63%	**8**	25	17	68%	**8**	***16***
Polychaete Richness	17	8	47%	**3**	20	14	70%	**9**	***12***
Molluscan Abundance	12	7	58%	**7**	17	7	41%	**3**	***10***
Infaunal Trophic Index	17	9	53%	**5.5**	32	18	56%	**4**	***9.5***
Crustacean Abundance	10	5	50%	**2.5**	7	4	57%	**5**	***7.5***
Crustacean Richness	15	8	53%	**5.5**	14	5	36%	**2**	***7.5***
Depressed Polychaete Abundance	9	1	11%	**1**	15	9	60%	**6**	***7***
Total Abundance	10	5	50%	**2.5**	7	0	0%	**1**	***3.5***

[a] Impacted stations were identified when the mean station value was numerically less than reference mean.

[b] Ranks based on the number of stations exceeding endpoint criterion relative to the number of impacted stations (see Table 4).

[c] Comparison based on polychaete abundance > upper reference range limit.

Table 9—Comparisons Based on Exceedance of Reference Range Limits for Stations Grouped by BAET Category

Benthic Endpoint	Station Chemistry ≤ BAET (n=28)				Station Chemistry > BAET (n=27)				Sum of the Ranks
	No. of Impacted Stations[a]	No. of Stations < Ref. Range Limit	% Impacted	Rank[b]	No. of Impacted Stations [a]	No. of Stations < Ref. Range Limit	% Impacted	Rank[b]	
Enhanced Polychaete Abundance[c]	17	16	94%	**11**	14	13	93%	**11**	***22***
Swartz's Dominance Index (SDI)	25	18	72%	**10**	25	21	84%	**10**	***20***
Molluscan Richness	20	12	60%	**9**	21	15	71%	**9**	***18***
Total Richness	19	11	58%	**8**	21	14	67%	**7.5**	***15.5***
Polychaete Richness	17	9	53%	**7**	20	13	65%	**6**	***13***
Infaunal Trophic Index (ITI)	23	12	52%	**6**	26	15	58%	**4**	***10***
Crustacean Abundance	8	3	38%	**2.5**	9	6	67%	**7.5**	***10***
Total Abundance	10	5	50%	**5**	7	0	0%	**1**	***6***
Depressed Polychaete Abundance	11	2	18%	**1**	13	8	62%	**5**	***6***
Molluscan Abundance	15	7	47%	**4**	14	7	50%	**2**	***6***
Crustacean Richness	16	6	38%	**2.5**	13	7	54%	**3**	***5.5***

[a] Impacted stations were identified when the mean station value was numerically less than reference mean.

[b] Ranks based on the number of stations exceeding endpoint criterion relative to the number of impacted stations (see Table 5).

[c] Comparison based on polychaete abundance > upper reference range limit.

Table 10—Results of Comparisons Based on Exceedance of 95th Confidence Limit for Stations Grouped by SMS Category

	Station Chemistry ≤ CSL (n=21)				Station Chemistry > CSL (n=34)				
Benthic Endpoint	No. of Impacted Stations[a]	No. of Stations < 95th LCL	% Impacted	Rank[b]	No. of Impacted Stations [a]	No. of Stations < 95th LCL	% Impacted	Rank[b]	Sum of the Ranks
Swartz's Dominance Index (SDI)	20	20	100%	**8.5**	30	30	100%	**9**	***17.5***
Total Richness	17	17	100%	**8.5**	23	23	100%	**9**	***17.5***
Enhanced Polychaete Abundance[c]	12	12	100%	**8.5**	19	19	100%	**9**	***17.5***
Crustacean Abundance	10	10	100%	**8.5**	7	7	100%	**9**	***17.5***
Molluscan Abundance	12	12	100%	**8.5**	17	16	94%	**5**	***13.5***
Molluscan Richness	16	16	100%	**8.5**	25	23	92%	**4**	***12.5***
Total Abundance	10	6	60%	**1**	7	7	100%	**9**	***10***
Infaunal Trophic Index (ITI)	17	14	82%	**3.5**	32	31	97%	**6**	***9.5***
Crustacean Richness	15	14	93%	**5**	14	12	86%	**1.5**	***6.5***
Depressed Polychaete Abundance	9	7	78%	**2**	15	13	87%	**3**	***5***
Polychaete Richness	17	14	82%	**3.5**	20	17	85%	**1.5**	***4.5***

[a] Impacted stations were identified when the mean station value was numerically less than reference mean.

[b] Ranks based on the number of stations exceeding endpoint criterion relative to the number of impacted stations (see Table 4).

[c] Comparison based on polychaete abundance > 95th UCL.

Table 11—Results of Comparisons Based on Exceedance of 95th Confidence Limit for Stations Grouped by BAET Category

Benthic Endpoint	Station Chemistry ≤ BAET (n=28)				Station Chemistry > BAET (n=27)				Sum of the Ranks
	No. of Impacted Stations[a]	No. of Stations <95th LCL	% Impacted	Rank[b]	No. of Impacted Stations [a]	No. of Stations <95th LCL	% Impacted	Rank[b]	
Swartz's Dominance Index (SDI)	25	25	100%	**9**	25	25	100%	**8**	***17***
Total Richness	19	19	100%	**9**	21	21	100%	**8**	***17***
Enhanced Polychaete Abundance[c]	17	17	100%	**9**	14	14	100%	**8**	***17***
Crustacean Abundance	8	8	100%	**9**	9	9	100%	**8**	***17***
Molluscan Abundance	15	14	93%	**6**	14	14	100%	**8**	***14***
Infaunal Trophic Index (ITI)	23	19	83%	**3.5**	26	26	100%	**8**	***11.5***
Molluscan Richness	20	20	100%	**9**	21	19	90%	**2**	***11***
Total Abundance	10	6	60%	**1**	7	7	100%	**8**	***9***
Crustacean Richness	16	14	88%	**5**	13	12	92%	**3.5**	***8.5***
Depressed Polychaete Abundance	11	8	73%	**2**	13	12	92%	**3.5**	***5.5***
Polychaete Richness	17	14	82%	**3.5**	20	17	85%	**1**	***4.5***

[a] Impacted stations were identified when the mean station value was numerically less than reference mean.

[b] Ranks based on the number of stations exceeding endpoint criterion relative to the number of impacted stations (see Table 5).

[c] Comparison based on polychaete abundance > 95th UCL.

Table 12—Results of Comparisons Based on the t-test for Stations Grouped by SMS Category

Benthic Endpoint	Station Chemistry ≤ CSL (n=21)				Station Chemistry > CSL (n=34)				Sum of the Ranks
	No. of Impacted Stations[a]	No. of Significantly Different Stations	% Impacted	Rank[b]	No. of Impacted Stations [a]	No. of Significantly Different Stations	% Impacted	Rank[b]	
Swartz's Dominance Index (SDI)	20	17	85%	**11**	30	25	83%	**9**	***20***
Crustacean Abundance	10	7	70%	**7**	7	6	86%	**10**	***17***
Infaunal Trophic Index (ITI)	17	13	76%	**8.5**	32	25	78%	**8**	***16.5***
Molluscan Abundance	12	10	83%	**10**	17	12	71%	**3.5**	***13.5***
Depressed Polychaete Abundance	9	4	44%	**2**	15	14	93%	**11**	***13***
Molluscan Richness	16	10	63%	**6**	25	18	72%	**6**	***12***
Total Richness	17	13	76%	**8.5**	23	16	70%	**2**	***10.5***
Total Abundance	10	6	60%	**5**	7	5	71%	**5**	***10***
Enhanced Polychaete Abundance	12	4	33%	**1**	19	14	74%	**7**	***8***
Polychaete Richness	17	9	53%	**4**	20	14	70%	**3.5**	***7.5***
Crustacean Richness	15	7	47%	**3**	14	6	43%	**1**	***4***

[a] Impacted stations were identified when the mean station value was numerically less than reference mean.

[b] Ranks based on the number of stations exceeding endpoint criterion relative to the number of impacted stations (see Table 4).

Table 13—Results of Comparisons Based on the t-test for Stations Grouped by BAET Category

Benthic Endpoint	Station Chemistry ≤ BAET (n=28)				Station Chemistry > BAET (n=27)				Sum of the Ranks
	No. of Impacted Stations[a]	No. of Significantly Different Stations	% Impacted	Rank[b]	No. of Impacted Stations [a]	No. of Significantly Different Stations	% Impacted	Rank[b]	
Swartz's Dominance Index (SDI)	25	20	80%	**10.5**	25	22	88%	**11**	***21.5***
Infaunal Trophic Index (ITI)	23	17	74%	**8**	26	21	81%	**8**	***16***
Depressed Polychaete Abundance	11	7	64%	**6**	13	1	8%	**9.5**	***15.5***
Crustacean Abundance	8	6	75%	**9**	9	7	78%	**6**	***15***
Molluscan Abundance	15	12	80%	**10.5**	14	10	71%	**3**	***13.5***
Total Abundance	10	5	50%	**2.5**	7	6	86%	**9.5**	***12***
Total Richness	19	13	68%	**7**	21	16	76%	**4.5**	***11.5***
Molluscan Richness	20	12	60%	**5**	21	16	76%	**4.5**	***9.5***
Enhanced Polychaete Abundance	17	7	41%	**1**	14	11	79%	**7**	***8***
Polychaete Richness	17	10	59%	**4**	20	13	65%	**2**	***6***
Crustacean Richness	16	8	50%	**2.5**	13	5	38%	**1**	***3.5***

[a] Impacted stations were identified when the mean station value was numerically less than reference mean.

[b] Ranks based on the number of stations exceeding endpoint criterion relative to the number of impacted stations (see Table 5).

Table 14a—Summary of Ranks for Benthic Endpoints Evaluated by SMS Category

Benthic Endpoint	Station Chemistry ≤ CSL					Station Chemistry > CSL				
	<1/2 Ref. Mean	Ref. Range Exceedance	95th CL Exceedance	Significantly Different (t-test)	Sum of the Ranks	<1/2 Ref. Mean	Ref. Range Exceedance	95th CL Exceedance	Significantly Different (t-test)	Sum of the Ranks
Total Abundance	8.5	2.5	1	5	**17**	7	1	9	5	***22***
Total Richness	4.5	9	8.5	8.5	**30.5**	3	7	9	2	***21***
Crustacean Abundance	8.5	2.5	8.5	7	**26.5**	11	5	9	10	***35***
Crustacean Richness	3	5.5	5	3	**16.5**	2	2	1.5	1	***6.5***
Dep. Polychaete Abundance	2	1	2	2	**7**	8	6	3	11	***28***
Enh. Polychaete Abundance	8.5	11	8.5	1	**29**	9.5	11	9	7	***36.5***
Polychaete Richness	4.5	3	3.5	4	**15**	5	9	1.5	3.5	***19***
Molluscan Abundance	11	7	8.5	10	**36.5**	6	3	5	3.5	***17.5***
Molluscan Richness	6	8	8.5	6	**28.5**	4	8	4	6	***22***
Infaunal Trophic Index (ITI)	1	5.5	3.5	8.5	**18.5**	1	4	6	8	***19***
Swartz's Dominance Index (SDI)	8.5	10	8.5	11	**38**	9.5	10	9	9	***37.5***

Table 14b—Summary of the Benthic Endpoints Evaluated by SMS Category Based on the Percent Impacted

Benthic Endpoint	Station Chemistry ≤ CSL					Station Chemistry > CSL				
	<1/2 Ref. Mean	Ref. Range Exceedance	95th CL Exceedance	Significantly Different (t-test)	Sum of the Ranks	<1/2 Ref. Mean	Ref. Range Exceedance	95th CL Exceedance	Significantly Different (t-test)	Sum of the Ranks
Total Abundance	50	50	60	66	**55%**	57	0	100	**71**	***57%***
Total Richness	18	65	100	76	**65%**	30	61	100	**70**	***65%***
Crustacean Abundance	50	30	100	70	**68%**	71	57	100	**86**	***78%***
Crustacean Richness	13	53	93	47	**52%**	29	36	86	**43**	***48%***
Dep. Polychaete Abundance	11	11	78	44	**36%**	60	60	87	**93**	***75%***
Enh. Polychaete Abundance	50	92	100	33	**69%**	63	95	100	**74**	***83%***
Polychaete Richness	18	47	82	53	**50%**	45	70	85	**70**	***68%***
Molluscan Abundance	67	58	100	83	**77%**	47	41	94	**71**	***63%***
Molluscan Richness	31	63	100	63	**64%**	36	68	92	**72**	***67%***
Infaunal Trophic Index (ITI)	0	53	82	76	**53%**	6	56	97	**98**	***59%***
Swartz's Dominance Index (SDI)	50	85	100	85	**80%**	63	73	100	**83**	***80%***

Table 15a—Summary of Ranks for Benthic Endpoints Evaluated by BAET Category

Benthic Endpoint	Station Chemistry ≤ BAET					Station Chemistry > BAET				
	<1/2 Ref. Mean	Ref. Range Exceedance	95th CL Exceedance	Significantly Different (t-test)	Sum of the Ranks	<1/2 Ref. Mean	Ref. Range Exceedance	95th CL Exceedance	Significantly Different (t-test)	Sum of the Ranks
Total Abundance	9	5	1	2.5	**17.5**	9.5	1	8	**9.5**	***28***
Total Richness	2	8	9	7	**26**	3	7.5	8	**4.5**	***23***
Crustacean Abundance	8	2.5	9	9	**28.5**	11	7.5	8	**6**	***32.5***
Crustacean Richness	4	2.5	5	2.5	**14**	2	3	3.5	**1**	***9.5***
Dep. Polychaete Abundance	5	1	2	6	**14**	6	5	3.5	**9.5**	***24***
Enh. Polychaete Abundance	10	11	9	1	**31**	9.5	11	8	**7**	***35.5***
Polychaete Richness	3	7	3.5	4	**17.5**	5	6	1	**2**	***13***
Molluscan Abundance	7	4	6	10.5	**27.5**	7	2	8	**3**	***20***
Molluscan Richness	6	9	9	5	**29**	4	9	2	**4.5**	***19.5***
Infaunal Trophic Index (ITI)	1	6	3.5	8	**18.5**	1	4	8	**8**	***21***
Swartz's Dominance Index (SDI)	11	10	9	10.5	**40.5**	8	10	8	**11**	***37***

Table 15b—Summary of the Benthic Endpoints Evaluated by BAET Category Based on the Percent Impacted

Benthic Endpoint	Station Chemistry ≤ BAET					Station Chemistry > BAET				
	<1/2 Ref. Mean	Ref. Range Exceedance	95th CL Exceedance	Significantly Different (t-test)	Sum of the Ranks	<1/2 Ref. Mean	Ref. Range Exceedance	95th CL Exceedance	Significantly Different (t-test)	Sum of the Ranks
Total Abundance	40	50	60	50	**50**	71	0	100	**86**	***64***
Total Richness	11	58	100	68	**59**	38	67	100	**76**	***70***
Crustacean Abundance	38	38	100	75	**63**	78	67	100	**78**	***81***
Crustacean Richness	13	38	88	50	**47**	31	54	92	**38**	***54***
Dep. Polychaete Abundance	18	18	73	64	**43**	62	62	92	**8**	***56***
Enh. Polychaete Abundance	47	94	100	41	**71**	71	93	100	**79**	***86***
Polychaete Richness	12	53	82	59	**53**	50	65	85	**65**	***66***
Molluscan Abundance	33	47	93	80	**63**	64	50	100	**71**	***71***
Molluscan Richness	25	60	100	60	**61**	43	71	90	**76**	***70***
Infaunal Trophic Index (ITI)	0	53	83	74	**52**	8	58	100	**81**	***62***
Swartz's Dominance Index (SDI)	48	72	100	80	**75**	68	84	100	**88**	***85***

Table 16—Proposed Decision Rules for the Recommended Benthic Endpoints Based on Comparison to Reference Ranges

SMS Criteria	Benthic Endpoint that Exceeds Decision Criterion[a]					
	SDI	Enhanced Polychaete Abundance	Molluscan Abundance	Molluscan Richness	Crustacean Abundance	Total Richness
SQS—Single failure of either endpoint						
Scenario A	X					
Scenario B		X				
CSL—Failure of at least two endpoints in any of the following combinations						
Scenario C	X	X				
Scenario D	X		X			
Scenario E	X			X		
Scenario F	X				X	
Scenario G	X					X
Scenario H		X	X			
Scenario I		X		X		
Scenario J		X			X	
Scenario K		X				X
CSL—Single failure of an endpoint	< 5.0					

[a]Habitat-specific reference ranges defined in Table 3.

APPENDIX 1

STATIONS AND SAMPLES COMPRISING THE REVISED REFERENCE VALUES

Appendix 1. Stations and samples making up the 0-20% fines category for total taxa richness.

SURVEY$	REGION$	STATION$	SAMPLE$	DEPTHM	FINES	TOC	TOTAX20
SED19103	N	R 9	4	16.5	0.92	0.1	25
SED19103	N	R 9	5	16.5	0.92	0.1	25
SED19103	N	R 9	3	16.5	0.92	0.1	26
SED19103	N	R 9	1	16.5	0.92	0.1	28
EVCHEM	C	NG-02	5	8.6	3.1	0.2	31
SED18903	C	22	1	21	4.19	0.15	33
SED19103	N	R 9	2	16.5	0.92	0.1	33
EVCHEM	C	NG-02	1	8.6	3.1	0.2	34
EVCHEM	C	NG-02	3	8.6	3.1	0.2	35
SED19103	C	39	4	14.8	2.44	0.1	36
SED18903	C	22	3	21	4.19	0.15	37
SED19103	C	39	1	14.8	2.44	0.1	38
SED19203	C	R301	1	22.1	5.9	0.2959	38
SED19103	C	22	5	22.5	12.9	0.2	39
EVCHEM	C	NG-02	2	8.6	3.1	0.2	40
EVCHEM	C	NG-02	4	8.6	3.1	0.2	40
SED19103	C	13	1	19.3	9.8	0.2	40
SED19203	C	39	4	15.8	2.7	0.1453	40
SED18903	N	6	5	20	7.1	0.2	41
SED18903	C	22	5	21	4.19	0.15	41
SED19103	C	39	2	14.8	2.44	0.1	41
SED19203	C	39	3	15.8	2.7	0.1453	41
SED19003	S	R103	1	20.5	8	0.5	42
SED19103	C	22	1	22.5	12.9	0.2	43
SED19103	C	39	3	14.8	2.44	0.1	43
SED19203	C	39	2	15.8	2.7	0.1453	43
SED19003	S	R103	3	20.5	8	0.5	46
SED19203	C	36	1	17.7	2.3	0.2236	46
SED19103	C	22	4	22.5	12.9	0.2	47
SEASEP82	C	C-50E	C50EVB	15.384615	2.3	0.1	48
SED18903	S	43	1	20	6.3	0.14	48
SED19003	S	R103	2	20.5	8	0.5	48
SED19103	C	22	3	22.5	12.9	0.2	48
SED18903	S	43	5	20	6.3	0.14	49
SED19203	C	39	1	15.8	2.7	0.1453	49
SED19203	C	R308	3	18.9	11	0.388	49
EVCHEM	C	SD-02	1	9.6	11.5	0.5	50
SED19203	C	25	3	20.4	3	0.1481	50
EVCHEM	C	PS-03	4	9.1	8	0.4	51
SED19203	S	44	1	20.5	17.9	0.519675	51
EVCHEM	C	PS-03	5	9.1	8	0.4	52
EVCHEM	C	SD-02	4	9.6	11.5	0.5	52
SED18903	C	16	1	20	3.9	0.18	52
SED18903	C	36	5	15	2.2	0.13	52
SED19103	C	13	3	19.3	9.8	0.2	52
SED19103	C	39	5	14.8	2.44	0.1	52
SED19203	C	R301	3	22.1	5.9	0.2959	52
EVCHEM	C	PS-03	3	9.1	8	0.4	53
EVCHEM	C	SD-02	3	9.6	11.5	0.5	53
SED19203	C	25	1	20.4	3	0.1481	53
SED19203	C	R308	4	18.9	11	0.388	53

Appendix 1. Stations and samples making up the 0-20% fines category for total taxa richness.

SURVEY$	REGION$	STATION$	SAMPLE$	DEPTHM	FINES	TOC	TOTAX20
SED18903	N	6	1	20	7.1	0.2	54
SED19103	S	43	3	20.8	5.9	0.1	54
EVCHEM	C	PS-04	4	8.7	7.4	0.3	55
EVCHEM	C	SD-02	5	9.6	11.5	0.5	55
SED18903	C	23	1	20	2.1	0.12	55
SED18903	S	46	1	22	9.5	0.42	55
EVCHEM	C	SD-02	2	9.6	11.5	0.5	56
SEAJUN82	C	H-75E	H75EUA	23.076923	1.8	0.1	56
SED18903	N	6	3	20	7.1	0.2	56
SED18903	C	36	1	15	2.2	0.13	56
SED18903	S	50	1	7	3.8	0.2	56
EVCHEM	C	PS-04	1	8.7	7.4	0.3	57
SED18903	S	43	3	20	6.3	0.14	57
SED19203	C	15	1	19.4	5.2	0.2149	57
SED19203	C	36	2	17.7	2.3	0.2236	57
SED18903	S	50	5	7	3.8	0.2	58
SED19003	S	43	2	19.8	7	0.26	58
SED19203	S	43	4	19.8	6	0.2859	58
SED18903	C	23	5	20	2.1	0.12	59
SED19103	C	22	2	22.5	12.9	0.2	59
SED19203	C	R308	1	18.9	11	0.388	59
SED18903	S	50	3	7	3.8	0.2	60
SED19003	C	69	1	32.4	15	0.47	60
SED19203	C	R301	4	22.1	5.9	0.2959	60
SED18903	C	16	3	20	3.9	0.18	61
SED19103	S	43	5	20.8	5.9	0.1	61
EVCHEM	C	PS-04	3	8.7	7.4	0.3	62
SED18903	C	23	3	20	2.1	0.12	62
SED18903	C	36	3	15	2.2	0.13	62
EVCHEM	C	PS-03	1	9.1	8	0.4	63
SED19003	S	43	3	19.8	7	0.26	63
SED19003	S	46	1	19.8	19	0.39	63
SED18903	C	16	5	20	3.9	0.18	64
SED19003	S	43	1	19.8	7	0.26	64
SED19203	C	22	4	20.5	8	0.2596	64
SEAJUN82	C	E-50E	E50EUA	15.384615	4	0.2	65
SEAJUN82	C	K-50E	K50EUA	15.384615	1.8	0.7	65
SED19203	C	R308	2	18.9	11	0.388	65
SED19103	S	43	1	20.8	5.9	0.1	66
SED19103	S	43	4	20.8	5.9	0.1	66
SED19203	C	15	4	19.4	5.2	0.2149	66
SED19203	C	R301	2	22.1	5.9	0.2959	66
EVCHEM	C	PS-03	2	9.1	8	0.4	67
SED18903	S	46	5	22	9.5	0.42	68
SED19003	C	69	2	32.4	15	0.47	68
EVCHEM	C	NG-06	3	10.2	7.1	0.4	69
EVCHEM	C	PS-04	2	8.7	7.4	0.3	69
SED19003	S	46	2	19.8	19	0.39	69
SED19003	S	46	3	19.8	19	0.39	69
SED19103	S	43	2	20.8	5.9	0.1	69
SED19203	S	43	1	19.8	6	0.2859	69
SEAJUN82	C	E-50E	E50EUB	15.384615	4	0.2	70

Appendix 1. Stations and samples making up the 0-20% fines category for total taxa richness.

SURVEY$	REGION$	STATION$	SAMPLE$	DEPTHM	FINES	TOC	TOTAX20
SED19203	C	22	3	20.5	8	0.2596	70
SED19203	S	43	2	19.8	6	0.2859	71
EVCHEM	C	PS-04	5	8.7	7.4	0.3	72
SED19203	C	36	4	17.7	2.3	0.2236	72
SED19203	C	69	3	35.4	18.1	0.4569	72
SED19203	C	22	1	20.5	8	0.2596	73
SED19203	C	36	3	17.7	2.3	0.2236	73
SEAJUN83	C	K5-75E	K575EYB	21.336	3	0.2	74
SED19003	C	69	3	32.4	15	0.47	74
SED18903	C	31	3	22	1.7	0.15	76
SED18903	S	46	3	22	9.5	0.42	76
SED19203	C	15	3	19.4	5.2	0.2149	76
SED19203	S	43	3	19.8	6	0.2859	76
SED19203	C	15	2	19.4	5.2	0.2149	77
SEAJUN82	C	E-50W	E50WUA	15.384615	5	0.2	78
SED19103	S	44	5	21.5	17.1	0.5	78
SED19203	C	69	4	35.4	18.1	0.4569	79
EVCHEM	C	NG-06	4	10.2	7.1	0.4	80
SED18903	C	31	1	22	1.7	0.15	80
SED19103	S	47	4	21.5	9.4	0.3	81
SED19103	S	47	5	21.5	9.4	0.3	81
SEAJUN82	C	K-50E	K50EUB	15.384615	1.8	0.7	82
SED19103	S	44	2	21.5	17.1	0.5	83
EVCHEM	C	NG-06	1	10.2	7.1	0.4	84
EVCHEM	C	NG-06	2	10.2	7.1	0.4	84
SED18903	C	15	5	20	8.22	0.24	84
SED18903	C	27	5	20	3.2	0.12	84
SED19203	C	32	1	20.4	5.7	0.329525	84
SED18903	C	15	1	20	8.22	0.24	85
SED18903	C	15	3	20	8.22	0.24	85
SED18903	C	28	1	20	4.9	0.15	86
SED19103	S	47	3	21.5	9.4	0.3	86
SED19203	C	69	1	35.4	18.1	0.4569	86
SEAJUN82	C	B-75W	B75WUC	23.076923	5.3	0.3	87
SED18903	C	31	5	22	1.7	0.15	87
SED19203	C	32	2	20.4	5.7	0.329525	87
SEAJUN82	C	H-75W	H75WUA	23.076923	5.4	0.05	88
SEAJUN82	C	J-75E	J75EUA	23.076923	2.1	0.1	88
SEAJUN82	C	N-75W	N75WUA	23.076923	3.3	0.1	88
SED19003	C	32	2	20.4	7.5	0.22	88
SED19003	C	32	3	20.4	7.5	0.22	88
SED19203	C	32	3	20.4	5.7	0.329525	88
SED18903	C	32	1	20	7.23	0.17	89
SED19003	S	47	2	19.5	12	0.32	90
SEAJUN82	C	E-75E	E75EUA	23.076923	3.5	0.2	91
SED18903	C	27	1	20	3.2	0.12	91
SED19003	S	47	1	19.5	12	0.32	91
SED19203	C	32	4	20.4	5.7	0.329525	91
SED18903	C	37	3	20	5.9	0.21	92
SED18903	C	37	5	20	5.9	0.21	92
SED19003	C	32	1	20.4	7.5	0.22	92
SED19103	S	47	1	21.5	9.4	0.3	92

Appendix 1. Stations and samples making up the 0-20% fines category for total taxa richness.

SURVEY$	REGION$	STATION$	SAMPLE$	DEPTHM	FINES	TOC	TOTAX20
SED19203	C	27	2	20.7	2.6	0.1656	92
SED19203	C	69	2	35.4	18.1	0.4569	92
SED18903	C	28	3	20	4.9	0.15	93
SED19003	S	47	3	19.5	12	0.32	95
SED19103	S	47	2	21.5	9.4	0.3	95
SED18903	C	32	5	20	7.23	0.17	96
SED19203	S	47	4	19.5	13.2	0.5249	96
SED18903	C	27	3	20	3.2	0.12	97
SED19003	S	44	3	19.5	14.5	0.51	97
SED19103	S	44	4	21.5	17.1	0.5	97
SED19203	C	25	2	20.4	3	0.1481	97
SEAJUN82	C	D-50W	D50WUC	15.384615	6	0.2	98
SED18903	C	28	5	20	4.9	0.15	99
SED19203	C	37	2	21.2	3.2	0.1817	99
SED19203	S	44	2	20.5	17.9	0.519675	100
SED18903	C	32	3	20	7.23	0.17	103
SED19003	S	44	2	19.5	14.5	0.51	103
SED19203	S	44	3	20.5	17.9	0.519675	104
SED19203	S	47	3	19.5	13.2	0.5249	105
SED19103	S	44	1	21.5	17.1	0.5	106
SED19203	C	27	4	20.7	2.6	0.1656	106
SED19003	S	44	1	19.5	14.5	0.51	109
SED18903	C	37	1	20	5.9	0.21	110
SED19203	C	27	1	20.7	2.6	0.1656	110
SED19103	S	44	3	21.5	17.1	0.5	111
SED19203	C	27	3	20.7	2.6	0.1656	113
SED19203	S	44	4	20.5	17.9	0.519675	113
SED19203	S	47	2	19.5	13.2	0.5249	115

Appendix 1. Stations and samples making up the 20-50% fines category for total taxa richness.

SURVEY$	STATION$	SAMPLE$	DEPTHM	FINES	TOC	TOTAX50
SED19103	18	4	19	41.8	0.6	30
SED19203	18	4	19.1	42.8	1.3271	33
SED19103	18	3	19	41.8	0.6	35
SED19103	18	5	19	41.8	0.6	36
SED19103	18	1	19	41.8	0.6	39
SED19103	R209	4	19.6	34	0.5	41
EVCHEM	SR-08	1	10.9	22.1	1.7	44
SED19103	R209	3	19.6	34	0.5	48
SED19103	R209	2	19.6	34	0.5	50
SED19103	R209	5	19.6	34	0.5	50
SED19103	18	2	19	41.8	0.6	51
EVCHEM	SR-08	2	10.9	22.1	1.7	52
SED19203	18	3	19.1	42.8	1.3271	53
SED19203	30	3	13.3	36.3	1.0317	53
SED19103	30	4	13.3	23.5	0.7	54
SED19203	18	1	19.1	42.8	1.3271	54
SED19203	30	2	13.3	36.3	1.0317	54
EVCHEM	SR-08	4	10.9	22.1	1.7	57
SED19003	R111	1	20.1	36	1.3	58
SED19003	R111	3	20.1	36	1.3	58
SED19203	18	2	19.1	42.8	1.3271	58
EVCHEM	SR-08	3	10.9	22.1	1.7	59
SED19203	30	4	13.3	36.3	1.0317	59
EVCHEM	SR-08	5	10.9	22.1	1.7	61
SED18903	10	5	20	37.2	0.61	61
SED19103	30	1	13.3	23.5	0.7	61
SED19103	30	3	13.3	23.5	0.7	61
SED19103	30	5	13.3	23.5	0.7	61
SED19003	71	3	6.1	46	1.4	62
SED18903	33	1	20	24.04	0.64	63
SED18903	47	3	20	23.47	0.29	63
SED18903	47	5	20	23.47	0.29	63
SED19203	30	1	13.3	36.3	1.0317	63
SED18903	10	1	20	37.2	0.61	64
SED19103	30	2	13.3	23.5	0.7	64
SED19003	0033	3	19.8	34	1.1	65
SED18903	33	3	20	24.04	0.64	66
SED19103	69	3	34.4	21.4	0.6	69
SED19103	69	4	34.4	21.4	0.6	69
SED18903	33	5	20	24.04	0.64	70
SED19203	40	4	9.4	32.2	2.1687	70
SED19103	R209	1	19.6	34	0.5	71
SED19103	10	4	20.7	32.8	0.6	72
SED19103	69	5	34.4	21.4	0.6	72
SED19103	R206	1	19.4	35.6	0.8	72
SED19003	71	2	6.1	46	1.4	73
SED19103	10	2	20.7	32.8	0.6	74
SED19103	R206	5	19.4	35.6	0.8	74
SED18903	10	3	20	37.2	0.61	75
SED18903	47	1	20	23.47	0.29	75
SED19103	69	2	34.4	21.4	0.6	75

Appendix 1. Stations and samples making up the 20-50% fines category for total taxa richness.

SURVEY$	STATION$	SAMPLE$	DEPTHM	FINES	TOC	TOTAX50
SED19003	0033	1	19.8	34	1.1	76
SED19103	10	1	20.7	32.8	0.6	78
SED19203	40	3	9.4	32.2	2.1687	78
SED19203	40	2	9.4	32.2	2.1687	79
SED19003	71	1	6.1	46	1.4	80
SED19003	0033	2	19.8	34	1.1	81
SED19103	33	5	20.8	31.5	0.9	82
SED19103	R206	2	19.4	35.6	0.8	82
SED19203	40	1	9.4	32.2	2.1687	82
SED19103	10	5	20.7	32.8	0.6	84
SED19103	33	1	20.8	31.5	0.9	85
SED19103	33	3	20.8	31.5	0.9	85
SED19103	R206	3	19.4	35.6	0.8	87
SED19103	33	2	20.8	31.5	0.9	88
SED19103	69	1	34.4	21.4	0.6	89

Appendix 1. Stations and samples making up the 50-80% fines category for total taxa richness.

SURVEY$	STATION$	SAMPLE$	DEPTHM	FINES	TOC	TOTAX80
SED19003	70	3	5.2	64	3.1	19
SED19103	70	2	6.5	67.2	3.2	20
SED19003	70	1	5.2	64	3.1	21
SED19103	70	3	6.5	67.2	3.2	22
SED19003	70	2	5.2	64	3.1	23
SED19203	70	3	7.2	66.5	2.1101	25
SED19203	70	1	7.2	66.5	2.1101	26
SED18903	18	5	20	60.15	0.93	29
SED18903	18	1	20	60.15	0.93	32
SED19003	R105	3	14	75	2.2	34
SED19203	R303	3	14.5	76.8	1.2708	34
SED19203	R303	2	14.5	76.8	1.2708	39
SED18903	18	3	20	60.15	0.93	41
SED18903	30	5	13	56.04	1.4	41
SED19003	R105	2	14	75	2.2	41
SED19203	R303	1	14.5	76.8	1.2708	41
SED19003	0030	3	13.3	62	1.4	42
SED19203	R302	1	20.6	68.5	0.9448	44
SED18903	2	1	20	60.7	0.68	45
SED19103	71	5	7.1	55.8	1.2	45
SED19203	41	2	19.1	75.1	1.1428	45
SED19103	R205	1	31.9	62.1	1.1	46
SED19203	21	2	21.7	62.2	1.2178	46
SED19203	R303	4	14.5	76.8	1.2708	47
SED19003	R105	1	14	75	2.2	48
SED19103	2	2	21.3	57.7	0.8	48
SED19203	R302	4	20.6	68.5	0.9448	48
SED18903	21	3	20	52.16	1.3	49
SED19103	8	4	22.1	63.7	2.9	49
SED19103	71	3	7.1	55.8	1.2	49
SED19203	41	3	19.1	75.1	1.1428	49
SED19103	2	3	21.3	57.7	0.8	50
SED18903	21	5	20	52.16	1.3	51
SED19103	8	3	22.1	63.7	2.9	51
SED19103	R207	1	29.9	73.4	1.5	51
SED19103	R207	5	29.9	73.4	1.5	51
SED19103	71	1	7.1	55.8	1.2	52
SED19103	R205	2	31.9	62.1	1.1	52
SED19203	21	1	21.7	62.2	1.2178	52
SED19203	R302	2	20.6	68.5	0.9448	52
SED19103	71	2	7.1	55.8	1.2	53
SED19103	71	4	7.1	55.8	1.2	53
SED19103	R205	4	31.9	62.1	1.1	53
SED19203	21	4	21.7	62.2	1.2178	53
SED19203	71	1	6.1	53	1.2331	53
SED19003	0030	2	13.3	62	1.4	54
SED19103	R205	3	31.9	62.1	1.1	54
SED19103	R205	5	31.9	62.1	1.1	54
SED19103	2	1	21.3	57.7	0.8	55
SED19103	R207	2	29.9	73.4	1.5	55
SED19203	21	3	21.7	62.2	1.2178	55

Appendix 1. Stations and samples making up the 50-80% fines category for total taxa richness.

SURVEY$	STATION$	SAMPLE$	DEPTHM	FINES	TOC	TOTAX80
SED18903	8	3	21	65.77	3.9	56
SED19103	2	4	21.3	57.7	0.8	57
SED18903	21	1	20	52.16	1.3	58
SED18903	2	3	20	60.7	0.68	59
SED19203	71	3	6.1	53	1.2331	59
SED19003	0030	1	13.3	62	1.4	60
SED19103	R207	3	29.9	73.4	1.5	60
SED19203	8	3	21.1	71.8	2.2161	60
SED19203	41	4	19.1	75.1	1.1428	60
SED19103	8	2	22.1	63.7	2.9	61
SED19103	8	5	22.1	63.7	2.9	62
SED19103	2	5	21.3	57.7	0.8	62
SED19203	8	2	21.1	71.8	2.2161	63
SED19203	23	3	6.1	53	1.2331	63
SED19203	41	1	19.1	75.1	1.1428	63
SED19103	8	1	22.1	63.7	2.9	64
SED19003	8	1	21.1	64	3.4	65
SED19203	71	2	6.1	53	1.2331	65
SED19003	8	3	21.1	64	3.4	67
SED19203	R302	3	20.6	68.5	0.9448	67
SED19003	8	2	21.1	64	3.4	68
SED19203	23	4	6.1	53	1.2331	69
SED18903	8	5	21	65.77	3.9	71
SED19103	R207	4	29.9	73.4	1.5	71
SED19203	8	4	21.1	71.8	2.2161	71
SED18903	2	5	20	60.7	0.68	72
SED18903	8	1	21	65.77	3.9	72
SED19203	71	4	6.1	53	1.2331	72
SED19203	8	1	21.1	71.8	2.2161	78
SED19203	23	2	6.1	53	1.2331	80

Appendix 1. Stations and samples making up the 80-100% fines category for total taxa richness.

SURVEY$	STATION$	SAMPLE$	DEPTHM	FINES	TOC	TOTAX100
SED19003	R102	2	11.6	88	2.6	18
SED19003	R101	2	2.1	90	4	19
SED19203	49	1	4.7	88.1	2.1381	19
SED19203	49	3	4.7	88.1	2.1381	19
SED19003	R101	3	2.1	90	4	21
SED19103	1	3	23.5	95.8	1.7	21
SED19103	4	3	25.4	97.6	2	21
SED19003	R101	1	2.1	90	4	22
SED19103	1	1	23.5	95.8	1.7	22
SED19203	1	4	22.5	94.1	1.7421	22
SED19203	49	4	4.7	88.1	2.1381	22
SED19103	R204	4	31.7	94.1	2.4	23
SED19003	0018	3	19.1	92	1.5	24
SED19003	R102	1	11.6	88	2.6	24
SED19103	1	2	23.5	95.8	1.7	24
SED19103	1	4	23.5	95.8	1.7	24
SED19103	48	1	21.3	89.8	2.3	24
SED19103	48	3	21.3	89.8	2.3	24
SED19103	R204	3	31.7	94.1	2.4	24
SED18903	1	3	22	93.32	1.5	25
SED19003	R102	3	11.6	88	2.6	25
SED19003	R106	1	11.2	86	2.8	25
SED19003	R109	3	22.7	91	2.5	25
SED19103	1	5	23.5	95.8	1.7	25
SED19103	48	5	21.3	89.8	2.3	25
SED19103	R204	1	31.7	94.1	2.4	25
SED19203	48	1	20.5	88.7	1.5201	25
SED19003	1	3	22.5	97	1.8	26
SED19103	20	3	11.8	96.2	1	26
SED19103	R204	2	31.7	94.1	2.4	26
SED19003	0018	2	19.1	92	1.5	27
SED19003	R106	2	11.2	86	2.8	27
SED19003	R106	3	11.2	86	2.8	27
SED19103	4	4	25.4	97.6	2	27
SED19103	20	5	11.8	96.2	1	27
SED19103	R204	5	31.7	94.1	2.4	27
SED19203	48	3	20.5	88.7	1.5201	27
SED19103	48	2	21.3	89.8	2.3	28
SED18903	1	1	22	93.32	1.5	29
SED19003	R109	2	22.7	91	2.5	29
SED19203	48	2	20.5	88.7	1.5201	29
SED19103	4	2	25.4	97.6	2	30
SED19203	49	2	4.7	88.1	2.1381	30
SED19003	1	1	22.5	97	1.8	31
SED19003	1	2	22.5	97	1.8	31
SED19103	4	1	25.4	97.6	2	31
SED19103	48	4	21.3	89.8	2.3	31
SED19203	1	3	22.5	94.1	1.7421	31
SED19203	1	1	22.5	94.1	1.7421	32
SEAJUN82	QM-2	QM2UA	16.307692	85	1.3	33
SED18903	1	5	22	93.32	1.5	33

Appendix 1. Stations and samples making up the 80-100% fines category for total taxa richness.

SURVEY$	STATION$	SAMPLE$	DEPTHM	FINES	TOC	TOTAX100
SED19003	0020	1	10.3	97	1.2	33
SED19003	R109	1	22.7	91	2.5	33
SED19003	0048	3	20	92	2.2	34
SED19103	4	5	25.4	97.6	2	34
SED19203	4	1	24	96.8	2.4931	34
SED19203	12	1	21.1	93.1	1.1471	34
SED19203	1	2	22.5	94.1	1.7421	35
SED19203	5	4	21	94.8	1.9311	35
SED18903	20	1	11	94.11	1	36
SED19003	0048	1	20	92	2.2	36
SED19203	4	2	24	96.8	2.4931	36
SED19203	48	4	20.5	88.7	1.5201	36
SED19103	20	2	11.8	96.2	1	37
SED19203	4	4	24	96.8	2.4931	37
SED19203	5	3	21	94.8	1.9311	37
SED18903	20	5	11	94.11	1	38
SED19103	5	2	20.2	95.6	1.8	38
SED19103	20	1	11.8	96.2	1	38
SED19103	20	4	11.8	96.2	1	38
SED19203	5	1	21	94.8	1.9311	38
SED19003	0018	1	19.1	92	1.5	39
SED19003	0020	2	10.3	97	1.2	39
SED19003	0048	2	20	92	2.2	39
SED19103	5	4	20.2	95.6	1.8	39
SED19103	5	5	20.2	95.6	1.8	39
SED19203	12	2	21.1	93.1	1.1471	40
SED19203	12	3	21.1	93.1	1.1471	40
SED19103	5	3	20.2	95.6	1.8	41
SED19203	4	3	24	96.8	2.4931	41
SED19203	5	2	21	94.8	1.9311	41
SED19203	12	4	21.1	93.1	1.1471	41
SED19103	5	1	20.2	95.6	1.8	43
SED19103	12	1	21.1	91.4	1.5	43
SED19103	12	5	21.1	91.4	1.5	43
SED19203	20	2	10.3	95.7	1.0068	43
SED18903	20	3	11	94.11	1	44
SED19103	12	3	21.1	91.4	1.5	44
SED19103	R203	3	12.5	98.7	1.7	45
SED19003	0020	3	10.3	97	1.2	47
SED19103	R203	5	12.5	98.7	1.7	47
SED19003	0012	2	21.1	93	1.8	49
SED19103	12	4	21.1	91.4	1.5	49
SED19103	R203	1	12.5	98.7	1.7	49
SED19103	R203	2	12.5	98.7	1.7	49
SED19203	20	1	10.3	95.7	1.0068	49
SED19003	0012	3	21.1	93	1.8	50
SED19103	12	2	21.1	91.4	1.5	50
SED19103	R203	4	12.5	98.7	1.7	52

Appendix 1. Stations and samples making up the 0-20% fines category for total taxa abundance.

SURVEY$	STATION$	SAMPLE$	DEPTHM	FINES	TOC	TOAB20
EVCHEM	SD-01	5	4.2	4.6	0.2	57
SED19103	39	2	14.8	2.44	0.1	116
SED19103	39	1	14.8	2.44	0.1	118
SED19203	R301	1	22.1	5.9	0.2959	122
SED18903	6	5	20	7.1	0.2	139
SED19103	39	4	14.8	2.44	0.1	142
SED19203	39	3	15.8	2.7	0.1453	145
SED19203	36	1	17.7	2.3	0.2236	149
SED19203	39	4	15.8	2.7	0.1453	163
SED19203	39	2	15.8	2.7	0.1453	165
SED19003	R103	1	20.5	8	0.5	181
SED19203	39	1	15.8	2.7	0.1453	191
SED19103	39	5	14.8	2.44	0.1	197
SED19203	44	1	20.5	17.9	0.519675	200
SED19103	39	3	14.8	2.44	0.1	211
SED19003	R103	2	20.5	8	0.5	212
SED19203	36	2	17.7	2.3	0.2236	212
SED18903	16	1	20	3.9	0.18	216
SED19203	R301	3	22.1	5.9	0.2959	222
SED18903	16	5	20	3.9	0.18	225
EVCHEM	NG-02	1	8.6	3.1	0.2	228
EVCHEM	NG-02	5	8.6	3.1	0.2	229
SED19003	R103	3	20.5	8	0.5	233
SED19203	36	3	17.7	2.3	0.2236	264
SED19203	36	4	17.7	2.3	0.2236	264
SED18903	22	5	21	4.19	0.15	270
SED19103	44	5	21.5	17.1	0.5	271
SED19203	R301	4	22.1	5.9	0.2959	271
SED19203	15	1	19.4	5.2	0.2149	276
EVCHEM	NG-02	2	8.6	3.1	0.2	284
SED19103	22	1	22.5	12.9	0.2	284
SED18903	31	1	22	1.7	0.15	290
EVCHEM	NG-02	4	8.6	3.1	0.2	292
SED18903	16	3	20	3.9	0.18	293
EVCHEM	NG-02	3	8.6	3.1	0.2	306
SED18903	22	1	21	4.19	0.15	307
SED18903	6	1	20	7.1	0.2	316
EVCHEM	PS-03	3	9.1	8	0.4	334
SED19103	22	2	22.5	12.9	0.2	334
SED18903	31	3	22	1.7	0.15	337
SED19003	69	3	32.4	15	0.47	338
SED18903	46	1	22	9.5	0.42	342
SED18903	22	3	21	4.19	0.15	343
SED19103	22	5	22.5	12.9	0.2	350
SED18903	36	1	15	2.2	0.13	356
SED18903	23	5	20	2.1	0.12	367
SED19203	15	4	19.4	5.2	0.2149	368
SED19203	R308	4	18.9	11	0.388	369
SED18903	15	5	20	8.22	0.24	372
EVCHEM	PS-04	4	8.7	7.4	0.3	373
EVCHEM	PS-04	1	8.7	7.4	0.3	375

Appendix 1. Stations and samples making up the 0-20% fines category for total taxa abundance.

SURVEY$	STATION$	SAMPLE$	DEPTHM	FINES	TOC	TOAB20
SED19203	69	3	35.4	18.1	0.4569	378
SED18903	50	5	7	3.8	0.2	381
SED19203	32	1	20.4	5.7	0.329525	383
SED18903	36	5	15	2.2	0.13	384
SED19003	69	1	32.4	15	0.47	385
SED19103	44	2	21.5	17.1	0.5	385
SEAJUN82	H-75W	H75WUA	23.076923	5.4	0.05	389
SED18903	37	3	20	5.9	0.21	391
SED19203	37	2	21.2	3.2	0.1817	391
SED19103	44	4	21.5	17.1	0.5	394
SED19203	32	2	20.4	5.7	0.329525	395
SEAJUN82	H-75E	H75EUA	23.076923	1.8	0.1	397
EVCHEM	PS-03	4	9.1	8	0.4	398
SED19203	32	3	20.4	5.7	0.329525	399
SED18903	6	3	20	7.1	0.2	400
SED18903	15	3	20	8.22	0.24	404
SEAJUN82	E-50W	E50WUA	15.384615	5	0.2	409
SED19203	32	4	20.4	5.7	0.329525	409
EVCHEM	PS-03	5	9.1	8	0.4	412
SED19203	15	2	19.4	5.2	0.2149	412
SED19003	69	2	32.4	15	0.47	414
EVCHEM	PS-03	2	9.1	8	0.4	415
EVCHEM	PS-03	1	9.1	8	0.4	416
SED18903	28	1	20	4.9	0.15	427
SEAJUN82	B-75W	B75WUC	23.076923	5.3	0.3	428
SEAJUN83	K5-75E	K575EYB	21.336	3	0.2	431
EVCHEM	PS-04	3	8.7	7.4	0.3	437
SED18903	50	3	7	3.8	0.2	440
SEAJUN82	N-75W	N75WUA	23.076923	3.3	0.1	441
SED19003	46	1	19.8	19	0.39	442
SED18903	46	5	22	9.5	0.42	445
SED18903	43	1	20	6.3	0.14	467
SED18903	23	3	20	2.1	0.12	468
SED19203	15	3	19.4	5.2	0.2149	474
EVCHEM	PS-04	5	8.7	7.4	0.3	476
SED18903	36	3	15	2.2	0.13	480
SED19103	22	4	22.5	12.9	0.2	480
SED19203	44	3	20.5	17.9	0.519675	483
SED19203	44	2	20.5	17.9	0.519675	484
EVCHEM	SD-02	3	9.6	11.5	0.5	487
SED19203	R308	3	18.9	11	0.388	489
EVCHEM	SD-02	4	9.6	11.5	0.5	491
SED19103	R 9	1	16.5	0.92	0.1	493
SED19103	44	3	21.5	17.1	0.5	496
SED19203	R308	2	18.9	11	0.388	497
SED18903	46	3	22	9.5	0.42	502
SED19103	47	2	21.5	9.4	0.3	505
SED19103	22	3	22.5	12.9	0.2	511
SEASEP82	C-50E	C50EVB	15.384615	2.3	0.1	513
EVCHEM	SD-02	1	9.6	11.5	0.5	514
SED19003	46	2	19.8	19	0.39	514
SED19103	47	5	21.5	9.4	0.3	516

Appendix 1. Stations and samples making up the 0-20% fines category for total taxa abundance.

SURVEY$	STATION$	SAMPLE$	DEPTHM	FINES	TOC	TOAB20
SEAJUN82	D-50E	D50EUA	15.384615	3.9	0.2	521
SED19203	47	4	19.5	13.2	0.5249	523
EVCHEM	PS-04	2	8.7	7.4	0.3	529
SEAJUN82	E-75E	E75EUA	23.076923	3.5	0.2	531
SED19003	47	3	19.5	12	0.32	532
EVCHEM	SD-02	5	9.6	11.5	0.5	533
SED19203	27	2	20.7	2.6	0.1656	533
SED18903	15	1	20	8.22	0.24	538
SED18903	28	5	20	4.9	0.15	538
SED19203	69	4	35.4	18.1	0.4569	541
SED18903	23	1	20	2.1	0.12	542
SED18903	43	3	20	6.3	0.14	544
SED18903	27	1	20	3.2	0.12	545
SED19203	69	1	35.4	18.1	0.4569	549
SED19103	R 9	3	16.5	0.92	0.1	551
SED19003	47	1	19.5	12	0.32	553
SED19203	R301	2	22.1	5.9	0.2959	557
SED19003	47	2	19.5	12	0.32	562
SEAJUN82	D-50W	D50WUC	15.384615	6	0.2	563
SED19103	47	3	21.5	9.4	0.3	565
SED19103	43	3	20.8	5.9	0.1	573
SED19003	46	3	19.8	19	0.39	586
SED19203	22	4	20.5	8	0.2596	586
SED18903	31	5	22	1.7	0.15	587
SED18903	37	1	20	5.9	0.21	590
EVCHEM	SD-02	2	9.6	11.5	0.5	595
SED19103	43	4	20.8	5.9	0.1	609
SED19203	69	2	35.4	18.1	0.4569	614
SED18903	43	5	20	6.3	0.14	616
SEAJUN82	K-50E	K50EUB	15.384615	1.8	0.7	617
SED19203	R308	1	18.9	11	0.388	619
SED18903	37	5	20	5.9	0.21	620
SED19003	44	3	19.5	14.5	0.51	624
SED19003	43	2	19.8	7	0.26	630
SED19003	43	3	19.8	7	0.26	634
SEAJUN82	K-50E	K50EUA	15.384615	1.8	0.7	635
SED19103	44	1	21.5	17.1	0.5	635
SED18903	50	1	7	3.8	0.2	640
SED19203	44	4	20.5	17.9	0.519675	644
SED18903	27	5	20	3.2	0.12	655
SED19103	47	4	21.5	9.4	0.3	656
SED19203	27	3	20.7	2.6	0.1656	668
SED18903	27	3	20	3.2	0.12	673
SED19103	47	1	21.5	9.4	0.3	676
SED19103	13	1	19.3	9.8	0.2	685
SED19203	22	3	20.5	8	0.2596	686
SEAJUN82	J-75E	J75EUA	23.076923	2.1	0.1	687
SED19103	43	5	20.8	5.9	0.1	693
SED19203	27	4	20.7	2.6	0.1656	694
SED18903	32	1	20	7.23	0.17	696
SED19003	32	2	20.4	7.5	0.22	696
SED19103	43	1	20.8	5.9	0.1	699

Appendix 1. Stations and samples making up the 0-20% fines category for total taxa abundance.

SURVEY$	STATION$	SAMPLE$	DEPTHM	FINES	TOC	TOAB20
SED18903	32	3	20	7.23	0.17	703
SED19103	R 9	4	16.5	0.92	0.1	716
SED19203	47	3	19.5	13.2	0.5249	717
SEAJUN82	E-50E	E50EUB	15.384615	4	0.2	722
SED19103	R 9	5	16.5	0.92	0.1	724
SED19203	22	1	20.5	8	0.2596	724
SED19203	27	1	20.7	2.6	0.1656	730
SED18903	32	5	20	7.23	0.17	732
SED19003	43	1	19.8	7	0.26	754
SED19003	44	2	19.5	14.5	0.51	759
SED19103	43	2	20.8	5.9	0.1	761
SED19203	43	1	19.8	6	0.2859	767
SED19003	32	3	20.4	7.5	0.22	770
SED18903	28	3	20	4.9	0.15	780
SED19003	32	1	20.4	7.5	0.22	783
SED19103	13	3	19.3	9.8	0.2	783
SEAJUN82	E-50E	E50EUA	15.384615	4	0.2	784
SED19203	37	4	21.2	3.2	0.1817	787
SED19203	25	3	20.4	3	0.1481	789
SED19103	R 9	2	16.5	0.92	0.1	817
SED19203	37	3	21.2	3.2	0.1817	828
EVCHEM	NG-06	3	10.2	7.1	0.4	833
SED19203	43	4	19.8	6	0.2859	844
SED19203	43	3	19.8	6	0.2859	852
SED19203	25	1	20.4	3	0.1481	853
SED19203	37	1	21.2	3.2	0.1817	881
SED19203	25	2	20.4	3	0.1481	901
SED19203	43	2	19.8	6	0.2859	973
SED19003	44	1	19.5	14.5	0.51	994

Appendix 1. Stations and samples making up the 20-50% fines category for total taxa abundance.

SURVEY$	STATION$	SAMPLE$	DEPTHM	FINES	TOC	TOAB50
EVCHEM	SR-08	1	10.9	22.1	1.7	192
SED19003	R111	1	20.1	36	1.3	241
EVCHEM	SR-08	2	10.9	22.1	1.7	257
SED19203	30	2	13.3	36.3	1.0317	260
SED19103	18	3	19	41.8	0.6	274
SED19103	30	5	13.3	23.5	0.7	278
SED19103	30	4	13.3	23.5	0.7	300
SED19103	30	2	13.3	23.5	0.7	311
SED19103	30	3	13.3	23.5	0.7	321
SED19003	R111	3	20.1	36	1.3	328
SED19203	30	3	13.3	36.3	1.0317	331
SED19003	0033	3	19.8	34	1.1	335
SED18903	47	5	20	23.47	0.29	345
SED19103	R206	1	19.4	35.6	0.8	349
SED19203	30	4	13.3	36.3	1.0317	349
SED19103	R209	1	19.6	34	0.5	354
SED19203	30	1	13.3	36.3	1.0317	366
SED19103	10	4	20.7	32.8	0.6	370
SED19103	R209	4	19.6	34	0.5	381
EVCHEM	SR-08	4	10.9	22.1	1.7	385
SED19203	18	4	19.1	42.8	1.3271	394
SED18903	47	3	20	23.47	0.29	398
SED19103	69	5	34.4	21.4	0.6	401
SED19103	R209	3	19.6	34	0.5	402
SED19103	R209	5	19.6	34	0.5	405
SED19103	R206	3	19.4	35.6	0.8	421
EVCHEM	SR-08	5	10.9	22.1	1.7	422
SED19103	R209	2	19.6	34	0.5	441
SED19103	10	1	20.7	32.8	0.6	469
SED19103	30	1	13.3	23.5	0.7	470
SED19103	R206	5	19.4	35.6	0.8	472
SED19103	10	5	20.7	32.8	0.6	483
SED19103	69	3	34.4	21.4	0.6	485
SED19103	10	2	20.7	32.8	0.6	486
SED19003	71	3	6.1	46	1.4	490
SED19103	18	5	19	41.8	0.6	491
SED19003	0033	2	19.8	34	1.1	498
SED19103	69	4	34.4	21.4	0.6	499
SED19103	33	5	20.8	31.5	0.9	507
SED19003	0033	1	19.8	34	1.1	509
SED19103	69	2	34.4	21.4	0.6	527
EVCHEM	SR-08	3	10.9	22.1	1.7	531
SED19103	33	3	20.8	31.5	0.9	539
SED19003	71	2	6.1	46	1.4	544
SED19103	33	2	20.8	31.5	0.9	546
SED19203	18	3	19.1	42.8	1.3271	565
SED19203	40	1	9.4	32.2	2.1687	573
SED18903	10	5	20	37.2	0.61	579
SED19203	40	2	9.4	32.2	2.1687	595
SED18903	10	1	20	37.2	0.61	603
SED19103	69	1	34.4	21.4	0.6	603

Appendix 1. Stations and samples making up the 20-50% fines category for total taxa abundance.

SURVEY$	STATION$	SAMPLE$	DEPTHM	FINES	TOC	TOAB50
SED18903	47	1	20	23.47	0.29	609
SED19003	71	1	6.1	46	1.4	617
SED19203	18	2	19.1	42.8	1.3271	620
SED19103	18	1	19	41.8	0.6	626
SED18903	33	1	20	24.04	0.64	632
SED18903	33	5	20	24.04	0.64	643
SED18903	33	3	20	24.04	0.64	644
SED19103	R206	2	19.4	35.6	0.8	649
SED19103	18	4	19	41.8	0.6	655
SED19203	18	1	19.1	42.8	1.3271	672
SED19103	33	1	20.8	31.5	0.9	686
SED19203	40	4	9.4	32.2	2.1687	716
SED19103	R206	4	19.4	35.6	0.8	727
SED18903	10	3	20	37.2	0.61	756
SED19103	18	2	19	41.8	0.6	759
SED19203	40	3	9.4	32.2	2.1687	769
SED19103	33	4	20.8	31.5	0.9	782
SED19103	10	3	20.7	32.8	0.6	864

Appendix 1. Stations and samples making up the 50-80% fines category for total taxa abundance.

SURVEY$	STATION$	SAMPLE$	DEPTHM	FINES	TOC	TOAB80
SED19203	70	4	7.2	66.5	2.1101	43
SED19203	70	2	7.2	66.5	2.1101	62
SED19103	70	5	6.5	67.2	3.2	79
SED19003	70	3	5.2	64	3.1	84
SED19103	70	4	6.5	67.2	3.2	87
SED19103	70	2	6.5	67.2	3.2	93
SED19103	70	1	6.5	67.2	3.2	96
SED19103	70	3	6.5	67.2	3.2	111
SED19203	70	3	7.2	66.5	2.1101	112
SED19003	70	2	5.2	64	3.1	114
SED19203	70	1	7.2	66.5	2.1101	119
SED19003	70	1	5.2	64	3.1	135
SED19203	R302	1	20.6	68.5	0.9448	151
SED19203	R302	4	20.6	68.5	0.9448	163
SED18903	18	5	20	60.15	0.93	170
SED19103	8	4	22.1	63.7	2.9	185
SED19103	2	4	21.3	57.7	0.8	197
SED19103	2	2	21.3	57.7	0.8	204
SED19103	71	5	7.1	55.8	1.2	211
SED19103	71	1	7.1	55.8	1.2	213
SED19203	R302	3	20.6	68.5	0.9448	218
SED19103	71	3	7.1	55.8	1.2	222
SED19203	R303	2	14.5	76.8	1.2708	225
SED19203	8	3	21.1	71.8	2.2161	227
SED19103	8	3	22.1	63.7	2.9	230
SED19203	R303	1	14.5	76.8	1.2708	230
SED18903	2	1	20	60.7	0.68	252
SED19103	71	2	7.1	55.8	1.2	253
SED19103	2	5	21.3	57.7	0.8	256
SED19203	R302	2	20.6	68.5	0.9448	282
SED19203	8	2	21.1	71.8	2.2161	296
SED19103	71	4	7.1	55.8	1.2	299
SED19203	R303	3	14.5	76.8	1.2708	299
SED19103	2	3	21.3	57.7	0.8	300
SED19103	8	5	22.1	63.7	2.9	302
SED19103	8	2	22.1	63.7	2.9	309
SED19103	2	1	21.3	57.7	0.8	310
SED19103	8	1	22.1	63.7	2.9	319
SED19203	R303	4	14.5	76.8	1.2708	329
SED19003	R105	3	14	75	2.2	336
SED19103	R207	1	29.9	73.4	1.5	352
SED19003	8	2	21.1	64	3.4	354
SED19203	71	1	6.1	53	1.2331	359
SED19203	71	3	6.1	53	1.2331	365
SED18903	30	5	13	56.04	1.4	368
SED19103	R205	1	31.9	62.1	1.1	373
SED18903	8	5	21	65.77	3.9	377
SED18903	8	1	21	65.77	3.9	381
SED19103	R205	4	31.9	62.1	1.1	381
SED19003	8	3	21.1	64	3.4	388
SED19103	R205	2	31.9	62.1	1.1	391

Appendix 1. Stations and samples making up the 50-80% fines category for total taxa abundance.

SURVEY$	STATION$	SAMPLE$	DEPTHM	FINES	TOC	TOAB80
SED19003	8	1	21.1	64	3.4	393
SED19203	8	4	21.1	71.8	2.2161	401
SED19203	71	2	6.1	53	1.2331	404
SED18903	8	3	21	65.77	3.9	406
SED19103	R205	5	31.9	62.1	1.1	406
SED18903	18	1	20	60.15	0.93	418
SED19003	0030	3	13.3	62	1.4	422
SED19203	23	3	6.1	53	1.2331	424
SED19103	R205	3	31.9	62.1	1.1	425
SED19203	8	1	21.1	71.8	2.2161	426
SED19203	71	4	6.1	53	1.2331	449
SED19103	R207	2	29.9	73.4	1.5	453
SED19103	R207	3	29.9	73.4	1.5	453
SED18903	2	5	20	60.7	0.68	469
SED18903	2	3	20	60.7	0.68	496
SED19003	0030	2	13.3	62	1.4	499
SED19103	R207	5	29.9	73.4	1.5	504
SED18903	18	3	20	60.15	0.93	514
SED19003	0030	1	13.3	62	1.4	514
SED19103	R207	4	29.9	73.4	1.5	531
SED19003	R105	1	14	75	2.2	552
SED19003	R105	2	14	75	2.2	564
SED19203	41	2	19.1	75.1	1.1428	668
SED19203	23	1	6.1	53	1.2331	729
SED19203	23	4	6.1	53	1.2331	783
SED19203	41	4	19.1	75.1	1.1428	862
SED18903	21	3	20	52.16	1.3	864
SED18903	21	1	20	52.16	1.3	894

Appendix 1. Stations and samples making up the 80-100% fines category for total taxa abundance.

SURVEY$	STATION$	SAMPLE$	DEPTHM	FINES	TOC	TOAB100
SED19203	49	1	4.7	88.1	2.1381	90
SED19203	49	3	4.7	88.1	2.1381	109
SED19003	R101	1	2.1	90	4	111
SED19203	49	4	4.7	88.1	2.1381	117
SED19103	48	5	21.3	89.8	2.3	118
SED19003	R102	2	11.6	88	2.6	130
SED19003	R102	1	11.6	88	2.6	132
SED19103	20	5	11.8	96.2	1	145
SED19103	R204	3	31.7	94.1	2.4	147
SED19203	49	2	4.7	88.1	2.1381	153
SED19103	48	3	21.3	89.8	2.3	161
SED19103	R204	4	31.7	94.1	2.4	163
SEAJUN82	QM-2	QM2UA	16.307692	85	1.3	172
SED19103	20	3	11.8	96.2	1	173
SED19103	48	1	21.3	89.8	2.3	176
SED19203	4	1	24	96.8	2.4931	178
SED19103	20	1	11.8	96.2	1	186
SED19103	48	2	21.3	89.8	2.3	187
SED19203	4	3	24	96.8	2.4931	190
SED19103	48	4	21.3	89.8	2.3	196
SED19103	20	4	11.8	96.2	1	197
SED19203	4	4	24	96.8	2.4931	200
SED19103	4	2	25.4	97.6	2	202
SED19103	R203	5	12.5	98.7	1.7	206
SED19103	4	1	25.4	97.6	2	215
SED19103	20	2	11.8	96.2	1	215
SED19203	4	2	24	96.8	2.4931	216
SED19003	R101	3	2.1	90	4	217
SED19103	4	5	25.4	97.6	2	219
SED19103	R204	2	31.7	94.1	2.4	225
SED19003	R101	2	2.1	90	4	226
SED19103	R203	3	12.5	98.7	1.7	231
SED19103	4	3	25.4	97.6	2	238
SED19103	5	4	20.2	95.6	1.8	238
SED19103	5	2	20.2	95.6	1.8	239
SED19203	5	3	21	94.8	1.9311	241
SED19003	0018	3	19.1	92	1.5	248
SED19103	4	4	25.4	97.6	2	253
SED19103	R203	1	12.5	98.7	1.7	260
SED19203	48	1	20.5	88.7	1.5201	262
SED19103	R203	4	12.5	98.7	1.7	263
SED19203	5	4	21	94.8	1.9311	263
SED19203	5	1	21	94.8	1.9311	266
SED19203	48	3	20.5	88.7	1.5201	266
SED19103	1	1	23.5	95.8	1.7	272
SED19003	R102	3	11.6	88	2.6	273
SED19103	R204	5	31.7	94.1	2.4	276
SED19203	5	2	21	94.8	1.9311	286
SED19103	R204	1	31.7	94.1	2.4	288
SED19003	0018	2	19.1	92	1.5	290
SED19103	5	5	20.2	95.6	1.8	291

Appendix 1. Stations and samples making up the 80-100% fines category for total taxa abundance.

SURVEY$	STATION$	SAMPLE$	DEPTHM	FINES	TOC	TOAB100
SED19203	48	2	20.5	88.7	1.5201	291
SED19203	12	3	21.1	93.1	1.1471	293
SED18903	1	3	22	93.32	1.5	299
SED19103	5	3	20.2	95.6	1.8	301
SED19103	1	2	23.5	95.8	1.7	303
SED19003	0048	2	20	92	2.2	316
SED19003	0018	1	19.1	92	1.5	324
SED19003	R106	3	11.2	86	2.8	324
SED19103	12	1	21.1	91.4	1.5	334
SED19103	R203	2	12.5	98.7	1.7	335
SED19103	5	1	20.2	95.6	1.8	345
SED19203	12	4	21.1	93.1	1.1471	349
SED19203	12	2	21.1	93.1	1.1471	350
SED19003	R106	1	11.2	86	2.8	353
SED19003	0048	1	20	92	2.2	361
SED19103	12	5	21.1	91.4	1.5	361
SED19103	12	4	21.1	91.4	1.5	368
SED19003	0020	2	10.3	97	1.2	369
SED19203	48	4	20.5	88.7	1.5201	373
SED18903	20	1	11	94.11	1	375
SED19103	1	3	23.5	95.8	1.7	376
SED19203	12	1	21.1	93.1	1.1471	376
SED19103	12	3	21.1	91.4	1.5	378
SED18903	1	1	22	93.32	1.5	385
SED19003	0020	1	10.3	97	1.2	388
SED19003	0048	3	20	92	2.2	388
SED19003	0020	3	10.3	97	1.2	404
SED19203	20	2	10.3	95.7	1.0068	421
SED19003	R106	2	11.2	86	2.8	445
SED19103	12	2	21.1	91.4	1.5	447
SED18903	20	5	11	94.11	1	456
SED19203	20	1	10.3	95.7	1.0068	463
SED19003	0012	3	21.1	93	1.8	466
SED19103	1	5	23.5	95.8	1.7	482
SED19203	20	3	10.3	95.7	1.0068	488
SED19003	0012	2	21.1	93	1.8	495
SED18903	20	3	11	94.11	1	499
SED19003	0012	1	21.1	93	1.8	500
SED19203	20	4	10.3	95.7	1.0068	507
SED19003	R109	3	22.7	91	2.5	536
SED19103	1	4	23.5	95.8	1.7	543
SED18903	1	5	22	93.32	1.5	574
SED19003	1	1	22.5	97	1.8	582
SED19003	R109	2	22.7	91	2.5	585
SED19003	R109	1	22.7	91	2.5	612
SED19203	1	4	22.5	94.1	1.7421	644

Appendix 1. Stations and samples making up the 0-20% fines category for polychaete richness.

SURVEY$	STATION$	SAMPLE$	DEPTHM	FINES	TOC	POTAX20
SED19203	44	1	20.5	17.9	0.52	6
SED18903	22	1	21	4.19	0.15	11
SED19103	22	5	22.5	12.9	0.20	12
SED19103	R 9	3	16.5	0.92	0.10	12
SED19103	R 9	4	16.5	0.92	0.10	12
SED19103	R 9	5	16.5	0.92	0.10	12
EVCHEM	NG-02	1	8.6	3.1	0.20	14
EVCHEM	NG-02	2	8.6	3.1	0.20	14
EVCHEM	NG-02	5	8.6	3.1	0.20	14
SED18903	22	5	21	4.19	0.15	14
SED19003	R103	1	20.5	8	0.50	14
SED19103	22	1	22.5	12.9	0.20	14
SED19103	R 9	2	16.5	0.92	0.10	14
EVCHEM	NG-02	3	8.6	3.1	0.20	15
SED18903	23	5	20	2.1	0.12	15
SED19103	13	4	19.3	9.8	0.20	15
SED19103	R 9	1	16.5	0.92	0.10	15
SED18903	22	3	21	4.19	0.15	16
SED19203	39	4	15.8	2.7	0.15	16
EVCHEM	NG-02	4	8.6	3.1	0.20	17
SED19103	39	4	14.8	2.44	0.10	17
SED19203	25	3	20.4	3	0.15	17
SED19103	13	1	19.3	9.8	0.20	18
SED19103	39	2	14.8	2.44	0.10	18
SED19203	25	1	20.4	3	0.15	18
SED19103	39	1	14.8	2.44	0.10	19
SED19203	39	3	15.8	2.7	0.15	19
SED18903	50	5	7	3.8	0.20	20
SED19103	22	4	22.5	12.9	0.20	20
SED18903	6	5	20	7.1	0.20	21
SED18903	23	1	20	2.1	0.12	21
SED19103	22	3	22.5	12.9	0.20	21
SED19103	39	3	14.8	2.44	0.10	21
SED19203	36	1	17.7	2.3	0.22	21
SED18903	6	1	20	7.1	0.20	22
SED18903	43	1	20	6.3	0.14	22
SED18903	50	1	7	3.8	0.20	22
SED19003	R103	2	20.5	8	0.50	22
SED19103	13	3	19.3	9.8	0.20	22
SED19203	39	2	15.8	2.7	0.15	22
SED19203	R301	1	22.1	5.9	0.30	22
SEASEP82	C-50E	C50EVB	15.384615	2.3	0.10	23
SED18903	6	3	20	7.1	0.20	23
SED18903	36	1	15	2.2	0.13	23
SED18903	43	5	20	6.3	0.14	23
SED18903	46	1	22	9.5	0.42	23
SED19003	R103	3	20.5	8	0.50	23
SED19103	39	5	14.8	2.44	0.10	23
SED19103	43	3	20.8	5.9	0.10	23
SED19203	25	4	20.4	3	0.15	23
SED18903	36	5	15	2.2	0.13	24
SED18903	50	3	7	3.8	0.20	24

Appendix 1. Stations and samples making up the 0-20% fines category for polychaete richness.

SURVEY$	STATION$	SAMPLE$	DEPTHM	FINES	TOC	POTAX20
SED19203	R301	3	22.1	5.9	0.30	24
EVCHEM	PS-03	4	9.1	8	0.40	25
SED18903	16	1	20	3.9	0.18	25
SED19203	39	1	15.8	2.7	0.15	25
EVCHEM	PS-03	5	9.1	8	0.40	26
EVCHEM	PS-04	4	8.7	7.4	0.30	26
SED18903	23	3	20	2.1	0.12	26
SED18903	13	3	20	9.7	0.18	27
SED19103	22	2	22.5	12.9	0.20	27
SED19203	22	4	20.5	8	0.26	27
SED19203	43	4	19.8	6	0.29	27
EVCHEM	NG-06	3	10.2	7.1	0.40	28
EVCHEM	PS-03	3	9.1	8	0.40	28
EVCHEM	PS-04	3	8.7	7.4	0.30	28
EVCHEM	SD-02	1	9.6	11.5	0.50	28
SEAJUN82	K-50E	K50EUA	15.384615	1.8	0.70	28
SED19203	15	1	19.4	5.2	0.21	28
SED19203	R308	3	18.9	11	0.39	28
EVCHEM	SD-02	4	9.6	11.5	0.50	29
SEAJUN82	E-50E	E50EUA	15.384615	4	0.20	29
SED18903	13	1	20	9.7	0.18	29
SED19003	69	1	32.4	15	0.47	29
SED19103	15	1	21.8	5.8	0.20	29
SED19203	22	3	20.5	8	0.26	29
SED19203	36	2	17.7	2.3	0.22	29
EVCHEM	PS-04	1	8.7	7.4	0.30	30
EVCHEM	SD-02	3	9.6	11.5	0.50	30
EVCHEM	SD-02	5	9.6	11.5	0.50	30
SEAJUN82	H-75E	H75EUA	23.076923	1.8	0.10	30
SED18903	43	3	20	6.3	0.14	30
SED19003	43	2	19.8	7	0.26	30
SED19003	46	1	19.8	19	0.39	30
SED19103	13	2	19.3	9.8	0.20	30
SED19103	43	5	20.8	5.9	0.10	30
SEAJUN82	E-50E	E50EUB	15.384615	4	0.20	31
SED18903	36	3	15	2.2	0.13	31
SED19103	15	4	21.8	5.8	0.20	31
SED19203	R308	4	18.9	11	0.39	31
EVCHEM	PS-03	1	9.1	8	0.40	32
EVCHEM	PS-04	5	8.7	7.4	0.30	32
EVCHEM	SD-02	2	9.6	11.5	0.50	32
SEAJUN82	E-50W	E50WUA	15.384615	5	0.20	32
SEAJUN82	H-75W	H75WUA	23.076923	5.4	0.05	32
SED19003	43	1	19.8	7	0.26	32
SED19103	15	5	21.8	5.8	0.20	32
SED19103	43	4	20.8	5.9	0.10	32
SED19203	15	4	19.4	5.2	0.21	32
SED19203	R301	4	22.1	5.9	0.30	32
EVCHEM	NG-06	1	10.2	7.1	0.40	33
SED18903	16	3	20	3.9	0.18	33
SED19003	43	3	19.8	7	0.26	33
SED19203	36	4	17.7	2.3	0.22	33
SED19203	69	3	35.4	18.1	0.46	33

Appendix 1. Stations and samples making up the 0-20% fines category for polychaete richness.

SURVEY$	STATION$	SAMPLE$	DEPTHM	FINES	TOC	POTAX20
SED18903	16	5	20	3.9	0.18	34
SED18903	27	5	20	3.2	0.12	34
SED19103	15	2	21.8	5.8	0.20	34
SED19103	43	2	20.8	5.9	0.10	34
SED19003	46	2	19.8	19	0.39	36
SED19103	43	1	20.8	5.9	0.10	36
SED19203	36	3	17.7	2.3	0.22	36
SED19203	43	1	19.8	6	0.29	36
EVCHEM	NG-06	2	10.2	7.1	0.40	37
EVCHEM	NG-06	4	10.2	7.1	0.40	37
EVCHEM	PS-03	2	9.1	8	0.40	37
EVCHEM	PS-04	2	8.7	7.4	0.30	37
SED19003	46	3	19.8	19	0.39	37
SED19103	13	5	19.3	9.8	0.20	37
SED19103	15	3	21.8	5.8	0.20	37
SED19203	R308	1	18.9	11	0.39	37
SED19203	R308	2	18.9	11	0.39	37
SEAJUN82	K-50E	K50EUB	15.384615	1.8	0.70	38
SED18903	31	1	22	1.7	0.15	38
SED18903	31	3	22	1.7	0.15	38
SED18903	46	5	22	9.5	0.42	38
SED19003	69	2	32.4	15	0.47	38
SED19203	22	1	20.5	8	0.26	38
SED19203	43	2	19.8	6	0.29	38
SED19203	43	3	19.8	6	0.29	38
SED19203	69	4	35.4	18.1	0.46	38
SEAJUN82	E-75E	E75EUA	23.076923	3.5	0.20	39
SED19203	R301	2	22.1	5.9	0.30	39
SEAJUN82	B-75W	B75WUC	23.076923	5.3	0.30	40
SED19203	15	3	19.4	5.2	0.21	40
SEAJUN82	N-75W	N75WUA	23.076923	3.3	0.10	41
SED18903	27	1	20	3.2	0.12	41
SEAJUN82	D-50W	D50WUC	15.384615	6	0.20	42
SEAJUN83	K5-75E	K575EYB	21.336	3	0.20	42
SED18903	15	1	20	8.22	0.24	42
SED18903	15	5	20	8.22	0.24	42
SED18903	28	3	20	4.9	0.15	42
SED19203	22	2	20.5	8	0.26	42
SED19003	69	3	32.4	15	0.47	43
SED18903	46	3	22	9.5	0.42	44
SEAJUN82	J-75E	J75EUA	23.076923	2.1	0.10	45
SED18903	13	5	20	9.7	0.18	45
SED18903	15	3	20	8.22	0.24	45
SED18903	31	5	22	1.7	0.15	45
SED18903	37	3	20	5.9	0.21	45
SED19103	47	4	21.5	9.4	0.30	45
SED19203	15	2	19.4	5.2	0.21	45
SED19203	25	2	20.4	3	0.15	45
SED18903	27	3	20	3.2	0.12	46
SED18903	37	5	20	5.9	0.21	46
SED19103	47	3	21.5	9.4	0.30	46
SED19203	32	1	20.4	5.7	0.33	46
SED19003	32	2	20.4	7.5	0.22	47

Appendix 1. Stations and samples making up the 0-20% fines category for polychaete richness.

SURVEY$	STATION$	SAMPLE$	DEPTHM	FINES	TOC	POTAX20
SED19003	32	3	20.4	7.5	0.22	48
SED19103	47	5	21.5	9.4	0.30	48
SED19203	32	4	20.4	5.7	0.33	48
SED18903	28	1	20	4.9	0.15	49
SED18903	32	1	20	7.23	0.17	49
SED19003	32	1	20.4	7.5	0.22	49
SED19103	44	2	21.5	17.1	0.50	49
SED19203	69	1	35.4	18.1	0.46	49
SED19103	47	2	21.5	9.4	0.30	50
SED19203	69	2	35.4	18.1	0.46	50
SED19203	27	2	20.7	2.6	0.17	51
SED19203	32	2	20.4	5.7	0.33	51
SED19203	32	3	20.4	5.7	0.33	51
SED18903	32	3	20	7.23	0.17	52
SED19103	44	5	21.5	17.1	0.50	52
SED19103	47	1	21.5	9.4	0.30	53
SEAJUN82	D-50E	D50EUA	15.384615	3.9	0.20	54
SED18903	28	5	20	4.9	0.15	54
SED19003	47	1	19.5	12	0.32	55
SED19203	27	3	20.7	2.6	0.17	55
SED19103	44	4	21.5	17.1	0.50	56
SED19003	47	2	19.5	12	0.32	57
SED19203	27	1	20.7	2.6	0.17	57
SED19003	44	3	19.5	14.5	0.51	58
SED19003	47	3	19.5	12	0.32	58
SED19203	27	4	20.7	2.6	0.17	58
SED18903	32	5	20	7.23	0.17	59
SED18903	37	1	20	5.9	0.21	59
SED19203	44	2	20.5	17.9	0.52	59
SED19203	37	2	21.2	3.2	0.18	60
SED19003	44	2	19.5	14.5	0.51	62
SED19103	44	1	21.5	17.1	0.50	62
SED19203	44	3	20.5	17.9	0.52	62
SED19003	44	1	19.5	14.5	0.51	65
SED19203	47	4	19.5	13.2	0.52	65

Appendix 1. Stations and samples making up the 20-50% fines category for polychaete richness.

SURVEY$	STATION$	SAMPLE$	DEPTHM	FINES	TOC	POTAX50
EVCHEM	SR-08	2	10.9	22.1	1.70	19
SED19103	18	4	19	41.8	0.60	19
SED19103	R209	4	19.6	34	0.50	19
EVCHEM	SR-08	1	10.9	22.1	1.70	20
SED19103	18	5	19	41.8	0.60	20
SED19203	18	4	19.1	42.8	1.33	20
SED19103	18	3	19	41.8	0.60	22
SED19103	R209	3	19.6	34	0.50	22
EVCHEM	SR-08	3	10.9	22.1	1.70	24
SED19103	18	1	19	41.8	0.60	24
EVCHEM	SR-08	5	10.9	22.1	1.70	26
SED19203	30	3	13.3	36.3	1.03	26
EVCHEM	SR-08	4	10.9	22.1	1.70	27
SED19103	R209	2	19.6	34	0.50	27
SED19103	R209	5	19.6	34	0.50	27
SED19003	R111	3	20.1	36	1.30	28
SED18903	47	5	20	23.47	0.29	29
SED19103	30	4	13.3	23.5	0.70	30
SED18903	47	3	20	23.47	0.29	33
SED19203	30	4	13.3	36.3	1.03	33
SED19003	71	3	6.1	46	1.40	34
SED19103	18	2	19	41.8	0.60	34
SED19203	18	1	19.1	42.8	1.33	34
SED19203	18	2	19.1	42.8	1.33	34
SED19203	30	2	13.3	36.3	1.03	35
SED18903	10	1	20	37.2	0.61	36
SED18903	10	5	20	37.2	0.61	36
SED19003	R111	1	20.1	36	1.30	36
SED18903	47	1	20	23.47	0.29	37
SED19103	30	3	13.3	23.5	0.70	37
SED19103	69	5	34.4	21.4	0.60	37
SED19203	18	3	19.1	42.8	1.33	37
SED18903	33	1	20	24.04	0.64	38
SED18903	33	3	20	24.04	0.64	38
SED19103	30	5	13.3	23.5	0.70	38
SED19203	30	1	13.3	36.3	1.03	38
SED19203	40	4	9.4	32.2	2.17	38
SED18903	33	5	20	24.04	0.64	39
SED19003	71	2	6.1	46	1.40	39
SED19103	30	2	13.3	23.5	0.70	39
SED18903	10	3	20	37.2	0.61	40
SED19103	R206	1	19.4	35.6	0.80	41
SED19103	R206	5	19.4	35.6	0.80	41
SED19103	R209	1	19.6	34	0.50	41
SED19003	0033	3	19.8	34	1.10	42
SED19103	30	1	13.3	23.5	0.70	42
SED19103	69	3	34.4	21.4	0.60	42
SED19003	71	1	6.1	46	1.40	43
SED19103	69	4	34.4	21.4	0.60	44
SED19003	0033	1	19.8	34	1.10	45
SED19103	33	1	20.8	31.5	0.90	45
SED19103	69	2	34.4	21.4	0.60	45

Appendix 1. Stations and samples making up the 20-50% fines category for polychaete richness.

SURVEY$	STATION$	SAMPLE$	DEPTHM	FINES	TOC	POTAX50
SED19203	40	3	9.4	32.2	2.17	45
SED19103	10	1	20.7	32.8	0.60	47
SED19103	R206	2	19.4	35.6	0.80	47
SED19203	40	1	9.4	32.2	2.17	47
SED19103	10	2	20.7	32.8	0.60	48
SED19103	10	4	20.7	32.8	0.60	49
SED19103	33	2	20.8	31.5	0.90	49
SED19103	33	3	20.8	31.5	0.90	49
SED19003	0033	2	19.8	34	1.10	50
SED19103	33	5	20.8	31.5	0.90	50
SED19203	40	2	9.4	32.2	2.17	50
SED19103	R206	3	19.4	35.6	0.80	53
SED19103	10	5	20.7	32.8	0.60	55
SED19103	69	1	34.4	21.4	0.60	55
SED19103	33	4	20.8	31.5	0.90	59
SED19103	R206	4	19.4	35.6	0.80	60

Appendix 1. Stations and samples making up the 50-80% fines category for polychaete richness.

SURVEY$	STATION$	SAMPLE$	DEPTHM	FINES	TOC	POTAX80
SED19103	70	3	6.5	67.2	3.2	9
SED19203	70	2	7.2	66.5	2.1101	9
SED19003	70	1	5.2	64	3.1	10
SED19003	70	2	5.2	64	3.1	10
SED19003	70	3	5.2	64	3.1	10
SED19203	70	1	7.2	66.5	2.1101	14
SED19203	70	3	7.2	66.5	2.1101	15
SED19003	R105	3	14	75	2.2	16
SED18903	18	5	20	60.15	0.93	18
SED18903	2	1	20	60.7	0.68	19
SED18903	18	1	20	60.15	0.93	20
SED19203	R303	3	14.5	76.8	1.2708	20
SED19003	R105	2	14	75	2.2	21
SED19103	71	5	7.1	55.8	1.2	21
SED19203	R302	1	20.6	68.5	0.9448	21
SED19203	R303	1	14.5	76.8	1.2708	21
SED19003	R105	1	14	75	2.2	23
SED18903	21	5	20	52.16	1.3	24
SED19103	2	2	21.3	57.7	0.8	24
SED19103	2	3	21.3	57.7	0.8	24
SED19103	R205	1	31.9	62.1	1.1	24
SED19203	21	2	21.7	62.2	1.2178	24
SED19203	21	3	21.7	62.2	1.2178	24
SED19203	21	4	21.7	62.2	1.2178	24
SED19203	41	2	19.1	75.1	1.1428	24
SED19203	41	3	19.1	75.1	1.1428	24
SED19203	R302	4	20.6	68.5	0.9448	24
SED19003	0030	3	13.3	62	1.4	26
SED19103	R207	5	29.9	73.4	1.5	26
SED19203	21	1	21.7	62.2	1.2178	26
SED19203	R302	2	20.6	68.5	0.9448	26
SED18903	8	3	21	65.77	3.9	27
SED18903	18	3	20	60.15	0.93	27
SED18903	21	1	20	52.16	1.3	27
SED18903	21	3	20	52.16	1.3	27
SED19103	R205	4	31.9	62.1	1.1	27
SED19103	R207	1	29.9	73.4	1.5	27
SED19203	R303	2	14.5	76.8	1.2708	27
SED18903	2	3	20	60.7	0.68	28
SED19103	8	4	22.1	63.7	2.9	28
SED19103	2	1	21.3	57.7	0.8	28
SED19103	71	3	7.1	55.8	1.2	28
SED19103	R205	5	31.9	62.1	1.1	28
SED19203	23	4	6.1	53	1.2331	28
SED19203	71	1	6.1	53	1.2331	28
SED19103	71	2	7.1	55.8	1.2	29
SED19203	R303	4	14.5	76.8	1.2708	29
SED18903	2	5	20	60.7	0.68	30
SED18903	30	5	13	56.04	1.4	30
SED19003	8	2	21.1	64	3.4	31
SED19103	2	4	21.3	57.7	0.8	31
SED19103	71	4	7.1	55.8	1.2	31

Appendix 1. Stations and samples making up the 50-80% fines category for polychaete richness.

SURVEY$	STATION$	SAMPLE$	DEPTHM	FINES	TOC	POTAX80
SED19203	41	4	19.1	75.1	1.1428	31
SED19003	8	1	21.1	64	3.4	32
SED19203	71	3	6.1	53	1.2331	32
SED19103	71	1	7.1	55.8	1.2	33
SED19103	R205	2	31.9	62.1	1.1	33
SED19203	23	2	6.1	53	1.2331	33
SED19203	41	1	19.1	75.1	1.1428	33
SED19103	2	5	21.3	57.7	0.8	34
SED19103	R205	3	31.9	62.1	1.1	34
SED19103	R207	2	29.9	73.4	1.5	34
SED19203	71	2	6.1	53	1.2331	34
SED19103	8	5	22.1	63.7	2.9	35
SED19103	R207	3	29.9	73.4	1.5	35
SED19203	8	3	21.1	71.8	2.2161	35
SED19203	8	2	21.1	71.8	2.2161	36
SED19203	71	4	6.1	53	1.2331	36
SED19203	R302	3	20.6	68.5	0.9448	36
SED19003	8	3	21.1	64	3.4	37
SED19003	0030	1	13.3	62	1.4	37
SED19003	0030	2	13.3	62	1.4	37
SED19103	8	1	22.1	63.7	2.9	37
SED18903	8	5	21	65.77	3.9	38
SED19103	8	3	22.1	63.7	2.9	38
SED19203	8	4	21.1	71.8	2.2161	39
SED19103	8	2	22.1	63.7	2.9	40
SED19103	R207	4	29.9	73.4	1.5	40
SED19203	23	3	6.1	53	1.2331	40
SED18903	8	1	21	65.77	3.9	42
SED19203	8	1	21.1	71.8	2.2161	44

Appendix 1. Stations and samples making up the 80-100% fines category for polychaete richness.

SURVEY $	STATION $	SAMPLE$	DEPTHM	FINES	TOC	POTAX100
SED19103	48	3	21.3	89.8	2.3	5
SED19003	R101	1	2.1	90	4	6
SED19203	49	1	4.7	88.1	2.1381	6
SED19203	49	3	4.7	88.1	2.1381	7
SED18903	1	3	22.0	93.32	1.5	8
SED19003	R101	2	2.1	90	4	8
SED19103	1	2	23.5	95.8	1.7	8
SED19103	1	3	23.5	95.8	1.7	8
SED19103	48	1	21.3	89.8	2.3	8
SED19103	48	5	21.3	89.8	2.3	8
SED19203	1	4	22.5	94.1	1.7421	8
SED19203	48	1	20.5	88.7	1.5201	8
SED19203	49	4	4.7	88.1	2.1381	8
SED19003	R102	2	11.6	88	2.6	9
SED19103	4	3	25.4	97.6	2	9
SED19003	1	3	22.5	97	1.8	10
SED19003	R101	3	2.1	90	4	10
SED19003	R106	3	11.2	86	2.8	10
SED19103	1	1	23.5	95.8	1.7	10
SED19103	4	4	25.4	97.6	2	10
SED19203	48	2	20.5	88.7	1.5201	10
SED19003	1	1	22.5	97	1.8	11
SED19003	0018	2	19.1	92	1.5	11
SED19003	R102	1	11.6	88	2.6	11
SED19103	1	4	23.5	95.8	1.7	11
SED19103	R204	3	31.7	94.1	2.4	11
SED19203	1	3	22.5	94.1	1.7421	11
SED19203	48	3	20.5	88.7	1.5201	11
SED18903	1	1	22.0	93.32	1.5	12
SED18903	20	1	11.0	94.11	1	12
SED19003	0018	3	19.1	92	1.5	12
SED19003	R106	1	11.2	86	2.8	12
SED19103	1	5	23.5	95.8	1.7	12
SED19103	48	2	21.3	89.8	2.3	12
SED19103	R204	4	31.7	94.1	2.4	12
SED19203	5	4	21.0	94.8	1.9311	12
SED18903	1	5	22.0	93.32	1.5	13
SED18903	20	5	11.0	94.11	1	13
SED19003	1	2	22.5	97	1.8	13
SED19003	0048	3	20.0	92	2.2	13
SED19003	R109	3	22.7	91	2.5	13
SED19103	48	4	21.3	89.8	2.3	13
SED19203	1	1	22.5	94.1	1.7421	13
SED19003	R102	3	11.6	88	2.6	14
SED19003	R106	2	11.2	86	2.8	14
SED19003	R109	2	22.7	91	2.5	14
SED19103	4	2	25.4	97.6	2	14
SED19103	12	5	21.1	91.4	1.5	14
SED19103	R204	2	31.7	94.1	2.4	14
SED19203	49	2	4.7	88.1	2.1381	14
SEAJUN82	QM-2	QM2UA	16.3	85	1.3	15
SED19103	4	5	25.4	97.6	2	15

Appendix 1. Stations and samples making up the 80-100% fines category for polychaete richness.

SURVEY $	STATION $	SAMPLE$	DEPTHM	FINES	TOC	POTAX100
SED19103	5	2	20.2	95.6	1.8	15
SED19103	20	3	11.8	96.2	1	15
SED19103	R204	1	31.7	94.1	2.4	15
SED19203	1	2	22.5	94.1	1.7421	15
SED19003	0020	1	10.3	97	1.2	16
SED19003	0048	2	20.0	92	2.2	16
SED19003	R109	1	22.7	91	2.5	16
SED19103	4	1	25.4	97.6	2	16
SED19103	5	5	20.2	95.6	1.8	16
SED19103	R204	5	31.7	94.1	2.4	16
SED19203	5	3	21.0	94.8	1.9311	16
SED19203	12	1	21.1	93.1	1.1471	16
SED19103	5	3	20.2	95.6	1.8	17
SED19203	4	4	24.0	96.8	2.4931	17
SED19203	5	2	21.0	94.8	1.9311	17
SED19103	5	1	20.2	95.6	1.8	18
SED19203	4	1	24.0	96.8	2.4931	18
SED19103	5	4	20.2	95.6	1.8	19
SED19103	20	5	11.8	96.2	1	19
SED19203	5	1	21.0	94.8	1.9311	19
SED19203	12	2	21.1	93.1	1.1471	19
SED19203	12	3	21.1	93.1	1.1471	19
SED19203	48	4	20.5	88.7	1.5201	19
SED19203	12	4	21.1	93.1	1.1471	20
SED19203	20	2	10.3	95.7	1.0068	20
SED19003	0048	1	20.0	92	2.2	21
SED19003	0018	1	19.1	92	1.5	22
SED19003	0020	2	10.3	97	1.2	22
SED19103	12	1	21.1	91.4	1.5	22
SED19203	4	2	24.0	96.8	2.4931	22
SED18903	20	3	11.0	94.11	1	23
SED19003	0012	2	21.1	93	1.8	23
SED19103	12	3	21.1	91.4	1.5	23
SED19103	12	4	21.1	91.4	1.5	24
SED19003	0012	3	21.1	93	1.8	25
SED19103	20	2	11.8	96.2	1	25
SED19103	20	4	11.8	96.2	1	25
SED19103	12	2	21.1	91.4	1.5	26
SED19103	20	1	11.8	96.2	1	27
SED19103	R203	3	12.5	98.7	1.7	27
SED19203	20	1	10.3	95.7	1.0068	27
SED19003	0012	1	21.1	93	1.8	28
SED19203	4	3	24.0	96.8	2.4931	28
SED19003	0020	3	10.3	97	1.2	29
SED19103	R203	5	12.5	98.7	1.7	29
SED19103	R203	1	12.5	98.7	1.7	30
SED19103	R203	2	12.5	98.7	1.7	30

Appendix 1. Stations and samples making up the 0-20% fines category for polychaete abundance.

SURVEY$	STATION$	SAMPLE$	DEPTHM	FINES	TOC	POAB20
SED19203	44	1	20.5	17.9	0.519675	10
SED18903	22	5	21	4.19	0.15	24
SED19103	22	1	22.5	12.9	0.2	24
SED19103	22	5	22.5	12.9	0.2	24
SED19103	39	2	14.8	2.44	0.1	33
SED18903	22	1	21	4.19	0.15	37
SED19103	39	1	14.8	2.44	0.1	41
SED19103	13	1	19.3	9.8	0.2	46
SED19103	39	4	14.8	2.44	0.1	46
SED19203	36	1	17.7	2.3	0.2236	46
SED19103	22	2	22.5	12.9	0.2	47
EVCHEM	NG-02	1	8.6	3.1	0.2	49
EVCHEM	NG-02	5	8.6	3.1	0.2	49
SED18903	22	3	21	4.19	0.15	49
EVCHEM	NG-02	3	8.6	3.1	0.2	51
SED19203	R301	1	22.1	5.9	0.2959	51
SED18903	6	5	20	7.1	0.2	52
EVCHEM	NG-02	4	8.6	3.1	0.2	58
SED18903	23	5	20	2.1	0.12	60
SEASEP82	C-50E	C50EVB	15.384615	2.3	0.1	61
SED19103	22	4	22.5	12.9	0.2	61
SED19103	13	3	19.3	9.8	0.2	62
SED18903	23	1	20	2.1	0.12	67
SEAJUN82	H-75W	H75WUA	23.076923	5.4	0.05	68
SED19103	39	3	14.8	2.44	0.1	69
EVCHEM	NG-02	2	8.6	3.1	0.2	70
SED19003	R103	1	20.5	8	0.5	70
SED19103	22	3	22.5	12.9	0.2	71
SED19203	39	3	15.8	2.7	0.1453	71
SED19103	39	5	14.8	2.44	0.1	73
SEAJUN82	H-75E	H75EUA	23.076923	1.8	0.1	78
SED19203	25	3	20.4	3	0.1481	82
SED18903	50	5	7	3.8	0.2	83
SED18903	6	1	20	7.1	0.2	85
SED18903	23	3	20	2.1	0.12	86
SED19203	36	2	17.7	2.3	0.2236	90
SED19203	39	4	15.8	2.7	0.1453	92
SEAJUN82	E-50E	E50EUB	15.384615	4	0.2	95
SED18903	50	3	7	3.8	0.2	96
SED19203	25	1	20.4	3	0.1481	98
SEAJUN82	E-50E	E50EUA	15.384615	4	0.2	103
SED18903	50	1	7	3.8	0.2	104
SED19203	22	3	20.5	8	0.2596	105
SED19203	39	2	15.8	2.7	0.1453	105
SED18903	46	1	22	9.5	0.42	108
EVCHEM	SD-02	3	9.6	11.5	0.5	109
SED18903	16	1	20	3.9	0.18	109
SED19203	39	1	15.8	2.7	0.1453	109
SED19003	R103	2	20.5	8	0.5	111
SEAJUN82	K-50E	K50EUA	15.384615	1.8	0.7	112
SED19203	69	3	35.4	18.1	0.4569	113
SED19003	R103	3	20.5	8	0.5	115

Appendix 1. Stations and samples making up the 0-20% fines category for polychaete abundance.

SURVEY$	STATION$	SAMPLE$	DEPTHM	FINES	TOC	POAB20
SED18903	31	1	22	1.7	0.15	116
EVCHEM	SD-02	1	9.6	11.5	0.5	117
SED18903	6	3	20	7.1	0.2	117
EVCHEM	PS-03	3	9.1	8	0.4	118
EVCHEM	SD-02	5	9.6	11.5	0.5	120
SED19203	22	4	20.5	8	0.2596	123
SEAJUN83	K5-75E	K575EYB	21.336	3	0.2	125
SEAJUN82	E-50W	E50WUA	15.384615	5	0.2	126
SED19203	15	1	19.4	5.2	0.2149	126
SED19003	69	3	32.4	15	0.47	128
SED19203	36	3	17.7	2.3	0.2236	128
SED18903	16	5	20	3.9	0.18	129
SED18903	43	1	20	6.3	0.14	130
EVCHEM	SD-02	2	9.6	11.5	0.5	134
SED19203	R301	3	22.1	5.9	0.2959	134
EVCHEM	SD-02	4	9.6	11.5	0.5	136
SED18903	43	3	20	6.3	0.14	137
EVCHEM	PS-03	4	9.1	8	0.4	138
SED18903	36	5	15	2.2	0.13	138
SED18903	15	5	20	8.22	0.24	140
EVCHEM	NG-06	3	10.2	7.1	0.4	141
SEAJUN82	N-75W	N75WUA	23.076923	3.3	0.1	144
SED19103	43	3	20.8	5.9	0.1	144
SED19203	36	4	17.7	2.3	0.2236	145
SEAJUN82	K-50E	K50EUB	15.384615	1.8	0.7	149
SED18903	36	1	15	2.2	0.13	149
SED19003	43	1	19.8	7	0.26	153
EVCHEM	PS-03	5	9.1	8	0.4	154
SED19203	R301	4	22.1	5.9	0.2959	154
SED18903	36	3	15	2.2	0.13	158
SEAJUN82	E-75E	E75EUA	23.076923	3.5	0.2	159
SED18903	43	5	20	6.3	0.14	159
SED19103	44	5	21.5	17.1	0.5	159
EVCHEM	PS-04	1	8.7	7.4	0.3	160
SEAJUN82	D-50W	D50WUC	15.384615	6	0.2	163
SED19003	43	3	19.8	7	0.26	163
EVCHEM	PS-04	4	8.7	7.4	0.3	165
SED19003	69	1	32.4	15	0.47	172
SED18903	15	3	20	8.22	0.24	178
SED19003	43	2	19.8	7	0.26	178
EVCHEM	PS-03	2	9.1	8	0.4	179
SED19203	15	2	19.4	5.2	0.2149	179
SED18903	16	3	20	3.9	0.18	180
SED18903	31	3	22	1.7	0.15	184
SED19203	69	4	35.4	18.1	0.4569	186
SEAJUN82	J-75E	J75EUA	23.076923	2.1	0.1	187
SED19203	15	4	19.4	5.2	0.2149	187
EVCHEM	PS-03	1	9.1	8	0.4	189
SED18903	15	1	20	8.22	0.24	191
SED18903	27	1	20	3.2	0.12	191
SED19203	R301	2	22.1	5.9	0.2959	192
SED19203	69	2	35.4	18.1	0.4569	199
SED19203	25	2	20.4	3	0.1481	200

Appendix 1. Stations and samples making up the 0-20% fines category for polychaete abundance.

SURVEY$	STATION$	SAMPLE$	DEPTHM	FINES	TOC	POAB20
SED18903	37	3	20	5.9	0.21	201
SED18903	46	5	22	9.5	0.42	201
SED19203	22	1	20.5	8	0.2596	202
EVCHEM	NG-06	2	10.2	7.1	0.4	205
SED19003	69	2	32.4	15	0.47	205
SED18903	27	5	20	3.2	0.12	206
SEAJUN82	B-75W	B75WUC	23.076923	5.3	0.3	209
SED19103	43	5	20.8	5.9	0.1	212
SED19203	69	1	35.4	18.1	0.4569	214
SED19203	32	4	20.4	5.7	0.329525	225
SED19003	47	1	19.5	12	0.32	233
SED19203	32	2	20.4	5.7	0.329525	234
EVCHEM	PS-04	5	8.7	7.4	0.3	235
SED19203	27	2	20.7	2.6	0.1656	235
SED19203	32	1	20.4	5.7	0.329525	236
SED18903	28	1	20	4.9	0.15	238
SEAJUN82	D-50E	D50EUA	15.384615	3.9	0.2	240
EVCHEM	PS-04	3	8.7	7.4	0.3	242
SED19103	43	4	20.8	5.9	0.1	242
SED19103	47	4	21.5	9.4	0.3	242
SED19103	44	4	21.5	17.1	0.5	249
SED19203	32	3	20.4	5.7	0.329525	249
SED19103	43	1	20.8	5.9	0.1	250
SED19103	44	2	21.5	17.1	0.5	258
SED19103	47	5	21.5	9.4	0.3	260
SED19203	43	3	19.8	6	0.2859	263
SED19003	46	1	19.8	19	0.39	266
SED18903	27	3	20	3.2	0.12	267
SED19103	43	2	20.8	5.9	0.1	269
SED19203	37	2	21.2	3.2	0.1817	269
SED18903	31	5	22	1.7	0.15	271
SED19203	43	1	19.8	6	0.2859	271
SED19203	15	3	19.4	5.2	0.2149	272
EVCHEM	PS-04	2	8.7	7.4	0.3	274
SED19203	R308	4	18.9	11	0.388	278
SED18903	46	3	22	9.5	0.42	279
SED19003	47	3	19.5	12	0.32	285
SED19203	43	4	19.8	6	0.2859	286
SED19003	47	2	19.5	12	0.32	287
SED19203	44	3	20.5	17.9	0.519675	299
EVCHEM	NG-06	1	10.2	7.1	0.4	300
SED18903	28	5	20	4.9	0.15	311
EVCHEM	NG-06	4	10.2	7.1	0.4	313
SED19003	46	2	19.8	19	0.39	317
SED19103	44	3	21.5	17.1	0.5	319
SED19203	43	2	19.8	6	0.2859	325
SED19103	47	3	21.5	9.4	0.3	331
SED19203	27	3	20.7	2.6	0.1656	332
SED19103	47	2	21.5	9.4	0.3	335
SED19203	27	4	20.7	2.6	0.1656	339
SED19203	44	2	20.5	17.9	0.519675	339
SED19103	R 9	1	16.5	0.92	0.1	344
SED19003	46	3	19.8	19	0.39	359

Appendix 1. Stations and samples making up the 0-20% fines category for polychaete abundance.

SURVEY$	STATION$	SAMPLE$	DEPTHM	FINES	TOC	POAB20
SED19203	27	1	20.7	2.6	0.1656	367
SED18903	37	1	20	5.9	0.21	386
SED19203	47	4	19.5	13.2	0.5249	387
SED19103	47	1	21.5	9.4	0.3	393
SED19203	R308	2	18.9	11	0.388	393
SED19203	R308	3	18.9	11	0.388	395
SED19103	R 9	3	16.5	0.92	0.1	402
SED18903	37	5	20	5.9	0.21	419
SED19103	R 9	4	16.5	0.92	0.1	428
SED19103	44	1	21.5	17.1	0.5	434
SED19203	44	4	20.5	17.9	0.519675	443
SED19003	44	3	19.5	14.5	0.51	449
SED19203	47	3	19.5	13.2	0.5249	497
SED19003	32	2	20.4	7.5	0.22	501
SED18903	32	1	20	7.23	0.17	508
SED19003	32	1	20.4	7.5	0.22	518
SED18903	32	3	20	7.23	0.17	520
SED19203	R308	1	18.9	11	0.388	522
SED18903	32	5	20	7.23	0.17	527
SED19203	37	3	21.2	3.2	0.1817	610

Appendix 1. Stations and samples making up the 20-50% fines category for polychaete abundance.

SURVEY$	STATION$	SAMPLE$	DEPTHM	FINES	TOC	POAB50
EVCHEM	SR-08	1	10.9	22.1	1.7	62
EVCHEM	SR-08	2	10.9	22.1	1.7	69
SED19103	18	3	19	41.8	0.6	82
SED19203	18	4	19.1	42.8	1.3271	90
EVCHEM	SR-08	4	10.9	22.1	1.7	96
SED19103	R209	4	19.6	34	0.5	104
SED19203	30	3	13.3	36.3	1.0317	105
SED18903	47	5	20	23.47	0.29	108
SED19103	R209	1	19.6	34	0.5	124
SED19103	30	4	13.3	23.5	0.7	125
EVCHEM	SR-08	3	10.9	22.1	1.7	127
EVCHEM	SR-08	5	10.9	22.1	1.7	128
SED19003	R111	1	20.1	36	1.3	129
SED19103	R206	1	19.4	35.6	0.8	134
SED19103	R209	3	19.6	34	0.5	142
SED19203	30	4	13.3	36.3	1.0317	142
SED19103	30	2	13.3	23.5	0.7	146
SED19103	R209	5	19.6	34	0.5	150
SED19003	0033	3	19.8	34	1.1	151
SED19103	18	4	19	41.8	0.6	152
SED19103	30	5	13.3	23.5	0.7	162
SED19203	30	1	13.3	36.3	1.0317	167
SED19203	30	2	13.3	36.3	1.0317	167
SED19103	30	3	13.3	23.5	0.7	174
SED18903	47	3	20	23.47	0.29	175
SED19103	R206	3	19.4	35.6	0.8	180
SED19103	69	5	34.4	21.4	0.6	182
SED18903	47	1	20	23.47	0.29	184
SED19003	R111	3	20.1	36	1.3	184
SED19103	18	5	19	41.8	0.6	184
SED19103	R206	5	19.4	35.6	0.8	192
SED19203	18	2	19.1	42.8	1.3271	192
SED19103	33	2	20.8	31.5	0.9	199
SED19103	R209	2	19.6	34	0.5	203
SED19203	40	1	9.4	32.2	2.1687	206
SED19103	18	1	19	41.8	0.6	217
SED19103	R206	2	19.4	35.6	0.8	222
SED19103	33	3	20.8	31.5	0.9	223
SED19003	0033	1	19.8	34	1.1	230
SED19003	0033	2	19.8	34	1.1	230
SED19103	33	1	20.8	31.5	0.9	234
SED19103	33	5	20.8	31.5	0.9	234
SED19003	71	3	6.1	46	1.4	259
SED19203	18	3	19.1	42.8	1.3271	259
SED19103	69	2	34.4	21.4	0.6	260
SED19103	R206	4	19.4	35.6	0.8	262
SED19103	69	3	34.4	21.4	0.6	280
SED19003	71	2	6.1	46	1.4	297
SED19203	18	1	19.1	42.8	1.3271	299
SED19103	10	4	20.7	32.8	0.6	301
SED19103	18	2	19	41.8	0.6	302
SED19103	69	4	34.4	21.4	0.6	304

Appendix 1. Stations and samples making up the 20-50% fines category for polychaete abundance.

SURVEY$	STATION$	SAMPLE$	DEPTHM	FINES	TOC	POAB50
SED19003	71	1	6.1	46	1.4	318
SED18903	33	5	20	24.04	0.64	320
SED19103	30	1	13.3	23.5	0.7	335
SED18903	33	1	20	24.04	0.64	336
SED19203	40	2	9.4	32.2	2.1687	337
SED18903	33	3	20	24.04	0.64	341
SED19103	10	1	20.7	32.8	0.6	344
SED19103	33	4	20.8	31.5	0.9	356
SED19103	69	1	34.4	21.4	0.6	358
SED19103	10	2	20.7	32.8	0.6	382
SED19103	10	5	20.7	32.8	0.6	382
SED19203	40	4	9.4	32.2	2.1687	389
SED18903	10	5	20	37.2	0.61	412
SED19203	40	3	9.4	32.2	2.1687	439
SED18903	10	1	20	37.2	0.61	449

Appendix 1. Stations and samples making up the 50-80% fines category for polychaete abundance.

SURVEY$	STATION$	SAMPLE$	DEPTHM	FINES	TOC	POAB80
SED19203	70	4	7.2	66.5	2.1101	16
SED19103	70	4	6.5	67.2	3.2	23
SED19103	70	5	6.5	67.2	3.2	25
SED19103	70	2	6.5	67.2	3.2	28
SED19003	70	3	5.2	64	3.1	32
SED19103	70	1	6.5	67.2	3.2	32
SED19203	70	2	7.2	66.5	2.1101	34
SED19003	70	1	5.2	64	3.1	44
SED19203	R302	1	20.6	68.5	0.9448	57
SED19203	R302	2	20.6	68.5	0.9448	57
SED19203	R302	4	20.6	68.5	0.9448	57
SED19003	70	2	5.2	64	3.1	60
SED19103	70	3	6.5	67.2	3.2	65
SED19203	R303	1	14.5	76.8	1.2708	69
SED19203	70	3	7.2	66.5	2.1101	79
SED19203	70	1	7.2	66.5	2.1101	81
SED19103	R205	1	31.9	62.1	1.1	83
SED19103	R205	5	31.9	62.1	1.1	84
SED19103	R205	4	31.9	62.1	1.1	87
SED18903	18	5	20	60.15	0.93	98
SED19203	R303	2	14.5	76.8	1.2708	99
SED19103	71	5	7.1	55.8	1.2	100
SED19103	R205	3	31.9	62.1	1.1	105
SED19203	R302	3	20.6	68.5	0.9448	107
SED19203	R303	3	14.5	76.8	1.2708	107
SED19103	2	4	21.3	57.7	0.8	112
SED19103	2	2	21.3	57.7	0.8	115
SED19003	R105	3	14	75	2.2	116
SED19103	71	1	7.1	55.8	1.2	118
SED19203	23	4	6.1	53	1.2331	120
SED18903	18	1	20	60.15	0.93	121
SED19103	71	3	7.1	55.8	1.2	121
SED19103	R205	2	31.9	62.1	1.1	127
SED19103	2	3	21.3	57.7	0.8	129
SED19203	R303	4	14.5	76.8	1.2708	129
SED19103	R207	1	29.9	73.4	1.5	139
SED19203	41	2	19.1	75.1	1.1428	139
SED19103	R207	2	29.9	73.4	1.5	145
SED19103	R207	5	29.9	73.4	1.5	146
SED18903	21	5	20	52.16	1.3	148
SED19103	2	5	21.3	57.7	0.8	149
SED18903	2	1	20	60.7	0.68	153
SED19103	8	4	22.1	63.7	2.9	153
SED18903	21	3	20	52.16	1.3	155
SED19203	21	2	21.7	62.2	1.2178	155
SED19103	71	4	7.1	55.8	1.2	156
SED19203	8	3	21.1	71.8	2.2161	157
SED19103	71	2	7.1	55.8	1.2	160
SED19203	23	3	6.1	53	1.2331	161
SED18903	21	1	20	52.16	1.3	164
SED19103	R207	3	29.9	73.4	1.5	165
SED19203	41	1	19.1	75.1	1.1428	171

Appendix 1. Stations and samples making up the 50-80% fines category for polychaete abundance.

SURVEY$	STATION$	SAMPLE$	DEPTHM	FINES	TOC	POAB80
SED19203	21	3	21.7	62.2	1.2178	176
SED19203	41	3	19.1	75.1	1.1428	176
SED19203	8	2	21.1	71.8	2.2161	182
SED18903	18	3	20	60.15	0.93	189
SED19103	8	3	22.1	63.7	2.9	193
SED19203	23	2	6.1	53	1.2331	193
SED19203	41	4	19.1	75.1	1.1428	193
SED19203	71	2	6.1	53	1.2331	194
SED18903	8	5	21	65.77	3.9	195
SED19203	71	3	6.1	53	1.2331	196
SED19003	R105	1	14	75	2.2	205
SED19003	8	1	21.1	64	3.4	208
SED19103	8	5	22.1	63.7	2.9	213
SED19203	71	1	6.1	53	1.2331	213
SED19003	R105	2	14	75	2.2	216
SED19103	8	1	22.1	63.7	2.9	216
SED18903	8	3	21	65.77	3.9	219
SED19203	21	4	21.7	62.2	1.2178	227
SED19103	R207	4	29.9	73.4	1.5	233
SED19203	21	1	21.7	62.2	1.2178	233
SED19003	8	2	21.1	64	3.4	234
SED19103	2	1	21.3	57.7	0.8	235
SED18903	8	1	21	65.77	3.9	236
SED19103	8	2	22.1	63.7	2.9	241
SED19203	8	4	21.1	71.8	2.2161	243
SED19203	71	4	6.1	53	1.2331	246
SED19003	0030	3	13.3	62	1.4	249
SED18903	30	5	13	56.04	1.4	255
SED19203	8	1	21.1	71.8	2.2161	281
SED19003	8	3	21.1	64	3.4	287

Appendix 1. Stations and samples making up the 80-100% fines category for polychaete abundance.

SURVEY$	STATION$	SAMPLE$	DEPTHM	FINES	TOC	POAB100
SED19103	48	5	21.3	89.8	2.30	11
SED19103	48	1	21.3	89.8	2.30	14
SED19103	48	3	21.3	89.8	2.30	14
SED19103	4	3	25.4	97.6	2.00	16
SED19003	R101	2	2.1	90	4.00	19
SED19003	R101	1	2.1	90	4.00	22
SED19103	1	3	23.5	95.8	1.70	22
SED19203	48	1	20.5	88.7	1.52	22
SED19103	4	4	25.4	97.6	2.00	23
SED19203	48	3	20.5	88.7	1.52	23
SED19203	48	2	20.5	88.7	1.52	27
SED19203	1	4	22.5	94.1	1.74	29
SED19203	49	1	4.7	88.1	2.14	30
SED19003	R101	3	2.1	90	4.00	31
SED19103	48	2	21.3	89.8	2.30	31
SED19103	1	5	23.5	95.8	1.70	34
SED19103	48	4	21.3	89.8	2.30	36
SED19203	5	1	21.0	94.8	1.93	37
SED19103	1	1	23.5	95.8	1.70	38
SED19103	4	2	25.4	97.6	2.00	39
SED19203	4	1	24.0	96.8	2.49	40
SED19003	R102	2	11.6	88	2.60	41
SED19203	4	4	24.0	96.8	2.49	41
SED19103	4	1	25.4	97.6	2.00	42
SED19203	49	3	4.7	88.1	2.14	43
SED19203	5	3	21.0	94.8	1.93	44
SED19103	1	4	23.5	95.8	1.70	45
SED19103	4	5	25.4	97.6	2.00	46
SED19103	5	2	20.2	95.6	1.80	46
SED18903	1	3	22.0	93.32	1.50	50
SED19103	12	5	21.1	91.4	1.50	50
SED19003	R102	1	11.6	88	2.60	51
SED19203	5	4	21.0	94.8	1.93	53
SED19003	0048	2	20.0	92	2.20	54
SED19203	49	4	4.7	88.1	2.14	54
SED19103	R204	3	31.7	94.1	2.40	56
SED19203	49	2	4.7	88.1	2.14	56
SEAJUN82	QM-2	QM2UA	16.3	85	1.30	57
SED19003	0018	2	19.1	92	1.50	60
SED19103	R204	4	31.7	94.1	2.40	62
SED19003	0048	1	20.0	92	2.20	67
SED19203	5	2	21.0	94.8	1.93	67
SED19003	0018	3	19.1	92	1.50	70
SED19003	0018	1	19.1	92	1.50	71
SED19003	R102	3	11.6	88	2.60	72
SED19103	12	3	21.1	91.4	1.50	74
SED19103	5	5	20.2	95.6	1.80	79
SED19203	1	3	22.5	94.1	1.74	79
SED19103	1	2	23.5	95.8	1.70	80
SED19103	5	4	20.2	95.6	1.80	80
SED19203	12	3	21.1	93.1	1.15	82
SED19103	12	1	21.1	91.4	1.50	83

Appendix 1. Stations and samples making up the 80-100% fines category for polychaete abundance.

SURVEY$	STATION$	SAMPLE$	DEPTHM	FINES	TOC	POAB100
SED19203	4	3	24.0	96.8	2.49	83
SED19203	48	4	20.5	88.7	1.52	84
SED19203	12	1	21.1	93.1	1.15	88
SED19203	12	2	21.1	93.1	1.15	91
SED19103	5	1	20.2	95.6	1.80	92
SED19203	4	2	24.0	96.8	2.49	92
SED19103	12	4	21.1	91.4	1.50	95
SED19203	12	4	21.1	93.1	1.15	95
SED19003	1	3	22.5	97	1.80	96
SED19103	R204	2	31.7	94.1	2.40	96
SED19103	12	2	21.1	91.4	1.50	99
SED19003	0012	3	21.1	93	1.80	100
SED19003	R106	3	11.2	86	2.80	103
SED19003	0012	2	21.1	93	1.80	106
SED19103	5	3	20.2	95.6	1.80	108
SED19003	0012	1	21.1	93	1.80	109
SED19003	0048	3	20.0	92	2.20	112
SED19103	R204	5	31.7	94.1	2.40	112
SED19203	1	2	22.5	94.1	1.74	114
SED19203	1	1	22.5	94.1	1.74	115
SED19103	R203	5	12.5	98.7	1.70	119
SED19103	20	5	11.8	96.2	1.00	120
SED18903	1	1	22.0	93.32	1.50	122
SED19003	R106	1	11.2	86	2.80	125
SED19103	20	3	11.8	96.2	1.00	128
SED19003	R106	2	11.2	86	2.80	129
SED19103	20	4	11.8	96.2	1.00	130
SED19003	R109	3	22.7	91	2.50	139
SED19103	R203	3	12.5	98.7	1.70	139
SED19103	20	1	11.8	96.2	1.00	141
SED19103	R204	1	31.7	94.1	2.40	147
SED18903	1	5	22.0	93.32	1.50	148
SED19103	R203	1	12.5	98.7	1.70	158
SED19003	1	1	22.5	97	1.80	160
SED19003	R109	2	22.7	91	2.50	162
SED19003	R109	1	22.7	91	2.50	173
SED19103	20	2	11.8	96.2	1.00	174
SED19103	R203	4	12.5	98.7	1.70	179
SED18903	20	1	11.0	94.11	1.00	188
SED19003	1	2	22.5	97	1.80	207
SED19003	0020	2	10.3	97	1.20	211
SED18903	20	5	11.0	94.11	1.00	215
SED19103	R203	2	12.5	98.7	1.70	241
SED19003	0020	1	10.3	97	1.20	245
SED19003	0020	3	10.3	97	1.20	266

Appendix 1. Stations and samples making up the 0-20% fines category for mollusc richness.

SURVEY$	STATION$	SAMPLE$	DEPTHM	FINES	TOC	MOTAX20
SED19103	R 9	1	16.5	0.92	0.1	3
SED19103	R 9	5	16.5	0.92	0.1	5
SED19103	R 9	3	16.5	0.92	0.1	6
SED19103	R 9	4	16.5	0.92	0.1	6
SED19103	R 9	2	16.5	0.92	0.1	7
SED18903	27	1	20	3.2	0.12	8
SED19103	22	1	22.5	12.9	0.2	8
SED19103	47	1	21.5	9.4	0.3	8
SED19203	44	3	20.5	17.9	0.519675	8
SED19203	R308	4	18.9	11	0.388	8
SED19103	39	1	14.8	2.44	0.1	9
SED19103	39	3	14.8	2.44	0.1	9
SED19103	39	4	14.8	2.44	0.1	9
SED19203	R301	1	22.1	5.9	0.2959	9
SED19203	R301	2	22.1	5.9	0.2959	9
SED19203	36	1	17.7	2.3	0.2236	10
SED19203	36	2	17.7	2.3	0.2236	10
SED19203	39	1	15.8	2.7	0.1453	10
SED19103	39	2	14.8	2.44	0.1	10
SED19203	39	2	15.8	2.7	0.1453	10
SED19203	39	4	15.8	2.7	0.1453	10
SED18903	43	1	20	6.3	0.14	10
SED19003	R103	3	20.5	8	0.5	10
SED18903	43	3	20	6.3	0.14	11
SED19003	46	2	19.8	19	0.39	11
SEAJUN82	B-75W	B75WUC	23.07692	5.3	0.3	11
SEAJUN82	E-50E	E50EUA	15.38462	4	0.2	11
SEAJUN82	H-75E	H75EUA	23.07692	1.8	0.1	11
SED19203	R308	1	18.9	11	0.388	11
EVCHEM	SD-02	1	9.6	11.5	0.5	11
EVCHEM	SD-02	2	9.6	11.5	0.5	11
EVCHEM	SD-02	3	9.6	11.5	0.5	11
SED19103	13	3	19.3	9.8	0.2	12
SED18903	22	1	21	4.19	0.15	12
SED19203	39	3	15.8	2.7	0.1453	12
SED19003	44	3	19.5	14.5	0.51	12
SED18903	46	3	22	9.5	0.42	12
SED19103	47	5	21.5	9.4	0.3	12
EVCHEM	NG-02	1	8.6	3.1	0.2	12
EVCHEM	NG-02	5	8.6	3.1	0.2	12
SED19003	R103	1	20.5	8	0.5	12
SED19203	R301	3	22.1	5.9	0.2959	12
SED19103	13	1	19.3	9.8	0.2	13
SED19003	32	3	20.4	7.5	0.22	13
SED19103	43	1	20.8	5.9	0.1	13
SED19203	43	1	19.8	6	0.2859	13
SED18903	43	5	20	6.3	0.14	13
SED18903	46	1	22	9.5	0.42	13
SED19003	46	3	19.8	19	0.39	13
SED19003	47	2	19.5	12	0.32	13
SED19203	47	4	19.5	13.2	0.5249	13

Appendix 1. Stations and samples making up the 0-20% fines category for mollusc richness.

SURVEY$	STATION$	SAMPLE$	DEPTHM	FINES	TOC	MOTAX20
SED19003	69	2	32.4	15	0.47	13
SEAJUN83	K5-75E	K575EYB	21.336	3	0.2	13
EVCHEM	NG-02	2	8.6	3.1	0.2	13
EVCHEM	NG-02	3	8.6	3.1	0.2	13
EVCHEM	NG-02	4	8.6	3.1	0.2	13
EVCHEM	PS-04	1	8.7	7.4	0.3	13
SED19003	R103	2	20.5	8	0.5	13
SED19203	R308	3	18.9	11	0.388	13
EVCHEM	SD-02	4	9.6	11.5	0.5	13
EVCHEM	SD-02	5	9.6	11.5	0.5	13
SED18903	22	3	21	4.19	0.15	14
SED18903	36	5	15	2.2	0.13	14
SED19203	37	2	21.2	3.2	0.1817	14
SED19203	43	4	19.8	6	0.2859	14
SEASEP82	C-50E	C50EVB	15.38462	2.3	0.1	14
SEAJUN82	J-75E	J75EUA	23.07692	2.1	0.1	14
SEAJUN82	K-50E	K50EUA	15.38462	1.8	0.7	14
SEAJUN82	K-50E	K50EUB	15.38462	1.8	0.7	14
SED19203	R308	2	18.9	11	0.388	14
SED18903	6	5	20	7.1	0.2	15
SED18903	22	5	21	4.19	0.15	15
SED19203	25	1	20.4	3	0.1481	15
SED18903	31	3	22	1.7	0.15	15
SED19203	32	2	20.4	5.7	0.329525	15
SED18903	36	1	15	2.2	0.13	15
SED18903	36	3	15	2.2	0.13	15
SED19203	36	3	17.7	2.3	0.2236	15
SED19103	39	5	14.8	2.44	0.1	15
SED19203	43	2	19.8	6	0.2859	15
SED19103	43	5	20.8	5.9	0.1	15
SED19003	44	2	19.5	14.5	0.51	15
SED19003	46	1	19.8	19	0.39	15
SED18903	46	5	22	9.5	0.42	15
SED19103	47	4	21.5	9.4	0.3	15
SED19003	69	1	32.4	15	0.47	15
SEAJUN82	E-50E	E50EUB	15.38462	4	0.2	15
EVCHEM	PS-03	4	9.1	8	0.4	15
SED19203	25	3	20.4	3	0.1481	16
SED19203	36	4	17.7	2.3	0.2236	16
SED19003	43	1	19.8	7	0.26	16
SED19003	43	2	19.8	7	0.26	16
SED19103	43	4	20.8	5.9	0.1	16
SED19103	44	5	21.5	17.1	0.5	16
SED18903	50	1	7	3.8	0.2	16
SED19003	69	3	32.4	15	0.47	16
SEAJUN82	H-75W	H75WUA	23.07692	5.4	0.05	16
EVCHEM	PS-03	5	9.1	8	0.4	16
SED19203	R301	4	22.1	5.9	0.2959	16
SED19103	22	3	22.5	12.9	0.2	17
SED19103	22	5	22.5	12.9	0.2	17
SED19203	32	3	20.4	5.7	0.329525	17
SED18903	32	5	20	7.23	0.17	17

Appendix 1. Stations and samples making up the 0-20% fines category for mollusc richness.

SURVEY$	STATION$	SAMPLE$	DEPTHM	FINES	TOC	MOTAX20
SED19003	43	3	19.8	7	0.26	17
SED19203	43	3	19.8	6	0.2859	17
SED19103	44	3	21.5	17.1	0.5	17
SED18903	50	3	7	3.8	0.2	17
SEAJUN82	E-50W	E50WUA	15.38462	5	0.2	17
SEAJUN82	N-75W	N75WUA	23.07692	3.3	0.1	17
EVCHEM	PS-04	3	8.7	7.4	0.3	17
EVCHEM	PS-04	4	8.7	7.4	0.3	17
SED18903	16	1	20	3.9	0.18	18
SED19103	22	4	22.5	12.9	0.2	18
SED18903	31	1	22	1.7	0.15	18
SED18903	32	1	20	7.23	0.17	18
SED19203	32	1	20.4	5.7	0.329525	18
SED19203	37	4	21.2	3.2	0.1817	18
SED19103	44	2	21.5	17.1	0.5	18
SED19003	47	1	19.5	12	0.32	18
SED19103	47	2	21.5	9.4	0.3	18
SED19003	47	3	19.5	12	0.32	18
SED19103	47	3	21.5	9.4	0.3	18
SED19203	47	3	19.5	13.2	0.5249	18
SED18903	50	5	7	3.8	0.2	18
SEAJUN82	E-75E	E75EUA	23.07692	3.5	0.2	18
EVCHEM	PS-03	2	9.1	8	0.4	18
EVCHEM	PS-03	3	9.1	8	0.4	18
EVCHEM	PS-04	5	8.7	7.4	0.3	18
SED19203	15	1	19.4	5.2	0.2149	19
SED19203	15	2	19.4	5.2	0.2149	19
SED19203	27	2	20.7	2.6	0.1656	19
SED18903	31	5	22	1.7	0.15	19
SED19003	32	2	20.4	7.5	0.22	19
SED19203	32	4	20.4	5.7	0.329525	19
SED18903	37	3	20	5.9	0.21	19
SED19203	37	3	21.2	3.2	0.1817	19
SED19103	43	2	20.8	5.9	0.1	19
SED19103	43	3	20.8	5.9	0.1	19
SED19003	44	1	19.5	14.5	0.51	19
SED19103	44	1	21.5	17.1	0.5	19
SED19203	44	1	20.5	17.9	0.519675	19
SED19203	69	3	35.4	18.1	0.4569	19
SEAJUN82	D-50W	D50WUC	15.38462	6	0.2	19
EVCHEM	PS-03	1	9.1	8	0.4	19
EVCHEM	PS-04	2	8.7	7.4	0.3	19
SED18903	6	3	20	7.1	0.2	20
SED18903	16	5	20	3.9	0.18	20
SED19103	22	2	22.5	12.9	0.2	20
SED18903	28	1	20	4.9	0.15	20
SED19003	32	1	20.4	7.5	0.22	20
SED18903	32	3	20	7.23	0.17	20
SED18903	37	1	20	5.9	0.21	20
SED19103	44	4	21.5	17.1	0.5	20
SED19203	44	4	20.5	17.9	0.519675	20
SED19203	47	1	19.5	13.2	0.5249	20

Appendix 1. Stations and samples making up the 0-20% fines category for mollusc richness.

SURVEY$	STATION$	SAMPLE$	DEPTHM	FINES	TOC	MOTAX20
SED19203	69	1	35.4	18.1	0.4569	20
SED19203	15	4	19.4	5.2	0.2149	21
SED18903	16	3	20	3.9	0.18	21
SED19203	27	1	20.7	2.6	0.1656	21
SED19203	27	4	20.7	2.6	0.1656	21
SED18903	37	5	20	5.9	0.21	21
SED19203	44	2	20.5	17.9	0.519675	21
SED19203	69	4	35.4	18.1	0.4569	21
SED19203	15	3	19.4	5.2	0.2149	22
SED18903	27	3	20	3.2	0.12	22
SEAJUN82	D-50E	D50EUA	15.38462	3.9	0.2	22
SED18903	6	1	20	7.1	0.2	23
SED19203	22	1	20.5	8	0.2596	23
SED19203	22	4	20.5	8	0.2596	23
SED18903	23	3	20	2.1	0.12	23
SED19203	27	3	20.7	2.6	0.1656	23
SED18903	28	5	20	4.9	0.15	23
SED19203	69	2	35.4	18.1	0.4569	23
SED18903	15	3	20	8.22	0.24	24
SED18903	23	1	20	2.1	0.12	24
SED19203	25	2	20.4	3	0.1481	24
SED19203	37	1	21.2	3.2	0.1817	24
EVCHEM	NG-06	1	10.2	7.1	0.4	24
EVCHEM	NG-06	3	10.2	7.1	0.4	24
SED18903	15	1	20	8.22	0.24	25
SED19203	47	2	19.5	13.2	0.5249	25
EVCHEM	NG-06	2	10.2	7.1	0.4	25
EVCHEM	NG-06	4	10.2	7.1	0.4	25
SED19203	22	3	20.5	8	0.2596	26
SED18903	27	5	20	3.2	0.12	26

Appendix 1. Stations and samples making up the 20-50% fines category for mollusc richness.

SURVEY$	STATION$	SAMPLE$	DEPTHM	FINES	TOC	MOTAX50
SED19103	18	3	19	41.8	0.6	5
SED19103	10	4	20.7	32.8	0.6	6
EVCHEM	SR-08	1	10.9	22.1	1.7	7
SED19103	18	4	19	41.8	0.6	7
SED19103	30	1	13.3	23.5	0.7	8
EVCHEM	SR-08	2	10.9	22.1	1.7	9
EVCHEM	SR-08	4	10.9	22.1	1.7	9
SED18903	10	3	20	37.2	0.61	9
SED19103	30	2	13.3	23.5	0.7	9
SED19203	18	4	19.1	42.8	1.3271	9
SED18903	10	5	20	37.2	0.61	10
SED19003	R111	1	20.1	36	1.3	10
SED19103	18	1	19	41.8	0.6	10
SED19103	18	5	19	41.8	0.6	10
SED19203	18	3	19.1	42.8	1.3271	10
EVCHEM	SR-08	3	10.9	22.1	1.7	11
EVCHEM	SR-08	5	10.9	22.1	1.7	11
SED18903	10	1	20	37.2	0.61	11
SED19103	10	1	20.7	32.8	0.6	11
SED19103	10	3	20.7	32.8	0.6	11
SED19103	10	5	20.7	32.8	0.6	11
SED19103	18	2	19	41.8	0.6	11
SED19103	30	4	13.3	23.5	0.7	11
SED19103	30	5	13.3	23.5	0.7	11
SED19203	18	1	19.1	42.8	1.3271	11
SED19203	30	1	13.3	36.3	1.0317	11
SED19203	30	2	13.3	36.3	1.0317	11
SED19003	0033	1	19.8	34	1.1	12
SED19003	0033	3	19.8	34	1.1	12
SED19103	10	2	20.7	32.8	0.6	12
SED19103	30	3	13.3	23.5	0.7	12
SED19103	69	3	34.4	21.4	0.6	12
SED19103	R209	4	19.6	34	0.5	12
SED18903	33	1	20	24.04	0.64	13
SED19103	69	2	34.4	21.4	0.6	13
SED19103	R209	5	19.6	34	0.5	13
SED19203	18	2	19.1	42.8	1.3271	13
SED18903	33	5	20	24.04	0.64	14
SED18903	47	3	20	23.47	0.29	14
SED19103	69	4	34.4	21.4	0.6	14
SED19103	69	5	34.4	21.4	0.6	14
SED19103	R209	2	19.6	34	0.5	14
SED19103	R209	3	19.6	34	0.5	14
SED19203	30	3	13.3	36.3	1.0317	14
SED19203	40	2	9.4	32.2	2.1687	14
SED18903	33	3	20	24.04	0.64	15
SED18903	47	5	20	23.47	0.29	15
SED19003	71	3	6.1	46	1.4	15
SED19003	R111	3	20.1	36	1.3	15
SED19103	69	1	34.4	21.4	0.6	15
SED19103	R209	1	19.6	34	0.5	15

Appendix 1. Stations and samples making up the 20-50% fines category for mollusc richness.

SURVEY$	STATION$	SAMPLE$	DEPTHM	FINES	TOC	MOTAX50
SED19203	30	4	13.3	36.3	1.0317	15
SED19003	0033	2	19.8	34	1.1	16
SED19003	71	2	6.1	46	1.4	17
SED19203	40	3	9.4	32.2	2.1687	17
SED18903	47	1	20	23.47	0.29	18
SED19103	33	4	20.8	31.5	0.9	18
SED19103	33	5	20.8	31.5	0.9	18
SED19203	40	4	9.4	32.2	2.1687	18
SED19003	71	1	6.1	46	1.4	19
SED19103	33	2	20.8	31.5	0.9	19
SED19103	33	3	20.8	31.5	0.9	19
SED19103	R206	1	19.4	35.6	0.8	20
SED19103	R206	3	19.4	35.6	0.8	20
SED19103	33	1	20.8	31.5	0.9	21
SED19203	40	1	9.4	32.2	2.1687	21

Appendix 1. Stations and samples making up the 50-80% fines category for mollusc richness.

SURVEY$	STATION$	SAMPLE$	DEPTHM	FINES	TOC	MOTAX80
SED19203	R303	2	14.5	76.8	1.2708	2
SED19203	R303	3	14.5	76.8	1.2708	3
SED19203	R303	1	14.5	76.8	1.2708	4
SED19203	R303	4	14.5	76.8	1.2708	4
SED19003	70	1	5.2	64	3.1	5
SED19103	70	1	6.5	67.2	3.2	5
SED19203	70	2	7.2	66.5	2.1101	5
SED19203	70	3	7.2	66.5	2.1101	5
SED19003	70	2	5.2	64	3.1	6
SED19003	70	3	5.2	64	3.1	6
SED19203	70	1	7.2	66.5	2.1101	6
SED19203	70	4	7.2	66.5	2.1101	7
SED18903	18	5	20	60.15	0.93	8
SED19003	0030	2	13.3	62	1.4	8
SED19003	0030	3	13.3	62	1.4	8
SED19003	R105	2	14	75	2.2	8
SED19103	70	2	6.5	67.2	3.2	8
SED19103	70	3	6.5	67.2	3.2	8
SED19103	70	4	6.5	67.2	3.2	8
SED18903	18	3	20	60.15	0.93	9
SED19003	R105	3	14	75	2.2	9
SED19103	8	3	22.1	63.7	2.9	9
SED19103	8	4	22.1	63.7	2.9	9
SED19103	70	5	6.5	67.2	3.2	9
SED18903	18	1	20	60.15	0.93	10
SED19103	71	1	7.1	55.8	1.2	10
SED19103	71	3	7.1	55.8	1.2	11
SED19103	R205	2	31.9	62.1	1.1	11
SED18903	21	1	20	52.16	1.3	12
SED18903	21	3	20	52.16	1.3	12
SED19003	0030	1	13.3	62	1.4	12
SED19103	8	2	22.1	63.7	2.9	12
SED19103	2	1	21.3	57.7	0.8	12
SED19203	8	3	21.1	71.8	2.2161	12
SED19203	R302	1	20.6	68.5	0.9448	12
SED19103	8	1	22.1	63.7	2.9	13
SED19103	71	4	7.1	55.8	1.2	13
SED19103	R205	3	31.9	62.1	1.1	13
SED19203	R302	4	20.6	68.5	0.9448	13
SED19003	8	3	21.1	64	3.4	14
SED19103	8	5	22.1	63.7	2.9	14
SED19103	71	5	7.1	55.8	1.2	14
SED19103	R207	1	29.9	73.4	1.5	14
SED19103	R207	4	29.9	73.4	1.5	14
SED19203	21	2	21.7	62.2	1.2178	14
SED19203	41	2	19.1	75.1	1.1428	14
SED18903	21	5	20	52.16	1.3	15
SED19003	R105	1	14	75	2.2	15
SED19103	71	2	7.1	55.8	1.2	15
SED19103	R205	4	31.9	62.1	1.1	15
SED19103	R207	2	29.9	73.4	1.5	15

Appendix 1. Stations and samples making up the 50-80% fines category for mollusc richness.

SURVEY$	STATION$	SAMPLE$	DEPTHM	FINES	TOC	MOTAX80
SED19103	R207	5	29.9	73.4	1.5	15
SED19203	71	1	6.1	53	1.2331	15
SED18903	8	1	21	65.77	3.9	16
SED19003	8	2	21.1	64	3.4	16
SED19103	2	2	21.3	57.7	0.8	16
SED19103	R205	1	31.9	62.1	1.1	16
SED19103	R205	5	31.9	62.1	1.1	16
SED19103	R207	3	29.9	73.4	1.5	16
SED19203	8	1	21.1	71.8	2.2161	16
SED19203	8	2	21.1	71.8	2.2161	16
SED19203	8	4	21.1	71.8	2.2161	16
SED19203	71	3	6.1	53	1.2331	16
SED19203	R302	2	20.6	68.5	0.9448	16
SED19203	41	3	19.1	75.1	1.1428	17
SED19203	71	2	6.1	53	1.2331	17
SED18903	2	1	20	60.7	0.68	18
SED18903	2	3	20	60.7	0.68	18
SED18903	8	3	21	65.77	3.9	18
SED18903	8	5	21	65.77	3.9	18
SED19003	8	1	21.1	64	3.4	18
SED19103	2	5	21.3	57.7	0.8	18
SED19203	21	3	21.7	62.2	1.2178	18
SED19103	2	3	21.3	57.7	0.8	19
SED19103	2	4	21.3	57.7	0.8	19
SED19203	R302	3	20.6	68.5	0.9448	19
SED19203	21	1	21.7	62.2	1.2178	20
SED19203	21	4	21.7	62.2	1.2178	20
SED19203	41	1	19.1	75.1	1.1428	20
SED19203	41	4	19.1	75.1	1.1428	20
SED18903	2	5	20	60.7	0.68	21
SED19203	71	4	6.1	53	1.2331	24

Appendix 1. Stations and samples making up the 80-100% fines category for mollusc richness.

SURVEY$	STATION$	SAMPLE$	DEPTHM	FINES	TOC	MOTAX100
SED19103	1	1	23.5	95.8	1.7	3
SED19003	R101	3	2.1	90	4	4
SED19003	R102	2	11.6	88	2.6	4
SED19003	R102	3	11.6	88	2.6	4
SED19103	1	3	23.5	95.8	1.7	4
SED19103	R203	4	12.5	98.7	1.7	4
SED19003	R101	2	2.1	90	4	5
SED19003	R106	1	11.2	86	2.8	5
SED19003	R109	2	22.7	91	2.5	5
SED19003	R109	3	22.7	91	2.5	5
SED19103	1	4	23.5	95.8	1.7	5
SED19103	1	5	23.5	95.8	1.7	5
SED19103	R203	3	12.5	98.7	1.7	5
SED19203	1	4	22.5	94.1	1.7421	5
SED18903	1	1	22	93.32	1.5	6
SED18903	1	3	22	93.32	1.5	6
SED19003	R102	1	11.6	88	2.6	6
SED19003	R106	2	11.2	86	2.8	6
SED19003	R109	1	22.7	91	2.5	6
SED19103	20	5	11.8	96.2	1	6
SED19103	R203	1	12.5	98.7	1.7	6
SED19103	R204	1	31.7	94.1	2.4	6
SED19103	R204	4	31.7	94.1	2.4	6
SED19103	R204	5	31.7	94.1	2.4	6
SED19203	4	2	24	96.8	2.4931	6
SED19003	0048	1	20	92	2.2	7
SED19003	R101	1	2.1	90	4	7
SED19003	R106	3	11.2	86	2.8	7
SED19103	4	3	25.4	97.6	2	7
SED19103	R203	5	12.5	98.7	1.7	7
SED19103	R204	2	31.7	94.1	2.4	7
SED19203	1	1	22.5	94.1	1.7421	7
SED19203	4	3	24	96.8	2.4931	7
SED18903	1	5	22	93.32	1.5	8
SED19003	1	1	22.5	97	1.8	8
SED19003	1	2	22.5	97	1.8	8
SED19003	0018	1	19.1	92	1.5	8
SED19003	0018	3	19.1	92	1.5	8
SED19103	1	2	23.5	95.8	1.7	8
SED19103	20	2	11.8	96.2	1	8
SED19103	20	4	11.8	96.2	1	8
SED19103	48	1	21.3	89.8	2.3	8
SED19103	48	2	21.3	89.8	2.3	8
SED19103	R203	2	12.5	98.7	1.7	8
SED19103	R204	3	31.7	94.1	2.4	8
SED19203	1	3	22.5	94.1	1.7421	8
SED19203	49	1	4.7	88.1	2.1381	8
SED19203	49	3	4.7	88.1	2.1381	8
SED19103	4	1	25.4	97.6	2	9
SED19103	4	2	25.4	97.6	2	9
SED19103	20	3	11.8	96.2	1	9

Appendix 1. Stations and samples making up the 80-100% fines category for mollusc richness.

SURVEY$	STATION$	SAMPLE$	DEPTHM	FINES	TOC	MOTAX100
SED19203	1	2	22.5	94.1	1.7421	9
SED19203	49	4	4.7	88.1	2.1381	9
SEAJUN82	QM-2	QM2UA	16.30769	85	1.3	10
SED19003	1	3	22.5	97	1.8	10
SED19003	0018	2	19.1	92	1.5	10
SED19103	4	4	25.4	97.6	2	10
SED19103	20	1	11.8	96.2	1	10
SED19203	4	1	24	96.8	2.4931	10
SED19203	48	1	20.5	88.7	1.5201	10
SED19203	49	2	4.7	88.1	2.1381	10
SED19003	0020	2	10.3	97	1.2	11
SED19003	0020	3	10.3	97	1.2	11
SED19103	4	5	25.4	97.6	2	11
SED19103	5	4	20.2	95.6	1.8	11
SED19103	12	1	21.1	91.4	1.5	11
SED19103	48	5	21.3	89.8	2.3	11
SED19203	4	4	24	96.8	2.4931	11
SED19203	5	1	21	94.8	1.9311	11
SED19203	12	1	21.1	93.1	1.1471	11
SED19203	48	3	20.5	88.7	1.5201	11
SED19203	48	4	20.5	88.7	1.5201	11
SED18903	20	3	11	94.11	1	12
SED19003	0048	2	20	92	2.2	12
SED19003	0048	3	20	92	2.2	12
SED19103	5	3	20.2	95.6	1.8	12
SED19103	12	3	21.1	91.4	1.5	12
SED19103	48	3	21.3	89.8	2.3	12
SED19103	48	4	21.3	89.8	2.3	12
SED19203	12	4	21.1	93.1	1.1471	12
SED19203	48	2	20.5	88.7	1.5201	12
SED19003	0012	3	21.1	93	1.8	13
SED19003	0020	1	10.3	97	1.2	13
SED19203	5	3	21	94.8	1.9311	13
SED19203	5	4	21	94.8	1.9311	13
SED19203	12	2	21.1	93.1	1.1471	13
SED19203	12	3	21.1	93.1	1.1471	13
SED19003	0012	2	21.1	93	1.8	14
SED19103	5	2	20.2	95.6	1.8	14
SED19103	5	5	20.2	95.6	1.8	14
SED19103	12	4	21.1	91.4	1.5	14
SED19003	0012	1	21.1	93	1.8	15
SED19103	12	2	21.1	91.4	1.5	15
SED19203	5	2	21	94.8	1.9311	15
SED19203	20	1	10.3	95.7	1.0068	15
SED19203	20	2	10.3	95.7	1.0068	15
SED18903	20	5	11	94.11	1	16
SED19103	5	1	20.2	95.6	1.8	16
SED19203	20	3	10.3	95.7	1.0068	16
SED19203	20	4	10.3	95.7	1.0068	16

Appendix 1. Stations and samples making up the 0-20% fines category for mollusc abundance.

SURVEY$	STATION$	SAMPLE$	DEPTHM	FINES	TOC	MOAB20
SED19203	R308	4	18.9	11	0.388	18
SED19203	R308	2	18.9	11	0.388	22
SED19203	39	4	15.8	2.7	0.1453	23
SED18903	31	3	22	1.7	0.15	25
SED19103	39	4	14.8	2.44	0.1	27
SED19203	37	2	21.2	3.2	0.1817	27
SED19203	39	2	15.8	2.7	0.1453	27
SED19203	36	2	17.7	2.3	0.2236	28
SED19203	36	4	17.7	2.3	0.2236	28
SED19103	R 9	5	16.5	0.92	0.1	30
SED19203	36	1	17.7	2.3	0.2236	31
SED19203	32	2	20.4	5.7	0.329525	32
SEAJUN82	H-75E	H75EUA	23.076923	1.8	0.1	33
SED18903	31	1	22	1.7	0.15	33
SED19203	32	3	20.4	5.7	0.329525	33
SED19203	39	1	15.8	2.7	0.1453	33
SED18903	43	3	20	6.3	0.14	34
SED19003	46	2	19.8	19	0.39	35
SED19203	39	3	15.8	2.7	0.1453	35
SED19103	39	3	14.8	2.44	0.1	36
SED19203	36	3	17.7	2.3	0.2236	37
SED19203	43	4	19.8	6	0.2859	37
SED19203	R308	3	18.9	11	0.388	37
SEAJUN82	B-75W	B75WUC	23.076923	5.3	0.3	39
SED18903	32	3	20	7.23	0.17	39
SED19103	39	1	14.8	2.44	0.1	40
SED19103	39	2	14.8	2.44	0.1	40
SED19203	32	1	20.4	5.7	0.329525	40
SED18903	46	1	22	9.5	0.42	41
SED19003	44	3	19.5	14.5	0.51	41
SED18903	43	1	20	6.3	0.14	42
SED18903	46	3	22	9.5	0.42	42
SEAJUN82	H-75W	H75WUA	23.076923	5.4	0.05	43
SED19003	32	3	20.4	7.5	0.22	43
SED19103	39	5	14.8	2.44	0.1	43
EVCHEM	NG-02	1	8.6	3.1	0.2	44
SED19103	R 9	3	16.5	0.92	0.1	44
SED19203	15	1	19.4	5.2	0.2149	44
SED19003	32	1	20.4	7.5	0.22	45
SED19103	R 9	1	16.5	0.92	0.1	45
SED18903	32	5	20	7.23	0.17	46
SED19003	46	1	19.8	19	0.39	46
SED19203	44	2	20.5	17.9	0.519675	46
SED19203	47	4	19.5	13.2	0.5249	46
SEAJUN83	K5-75E	K575EYB	21.336	3	0.2	47
SED19203	37	3	21.2	3.2	0.1817	47
SED19203	R301	3	22.1	5.9	0.2959	47
SED18903	43	5	20	6.3	0.14	48
SED19103	44	4	21.5	17.1	0.5	48
SED19103	44	5	21.5	17.1	0.5	48
SED19203	R301	1	22.1	5.9	0.2959	48

Appendix 1. Stations and samples making up the 0-20% fines category for mollusc abundance.

SURVEY$	STATION$	SAMPLE$	DEPTHM	FINES	TOC	MOAB20
SEAJUN82	N-75W	N75WUA	23.076923	3.3	0.1	49
SED18903	37	1	20	5.9	0.21	50
SED19103	43	1	20.8	5.9	0.1	51
SED19103	43	5	20.8	5.9	0.1	52
SED19203	32	4	20.4	5.7	0.329525	52
SED18903	32	1	20	7.23	0.17	53
SED18903	37	3	20	5.9	0.21	53
SED19003	32	2	20.4	7.5	0.22	53
EVCHEM	NG-02	5	8.6	3.1	0.2	54
SED19203	15	4	19.4	5.2	0.2149	54
SED19203	43	1	19.8	6	0.2859	54
SED19003	44	2	19.5	14.5	0.51	55
SED18903	16	5	20	3.9	0.18	57
SED19003	69	2	32.4	15	0.47	57
SED19103	44	3	21.5	17.1	0.5	57
SED19103	47	5	21.5	9.4	0.3	59
SED18903	16	1	20	3.9	0.18	60
SED19203	44	4	20.5	17.9	0.519675	60
SED19003	44	1	19.5	14.5	0.51	61
SED19203	43	2	19.8	6	0.2859	61
SEAJUN82	D-50E	D50EUA	15.384615	3.9	0.2	62
SED19003	46	3	19.8	19	0.39	62
SED19203	R308	1	18.9	11	0.388	62
SED18903	37	5	20	5.9	0.21	63
SED19003	43	1	19.8	7	0.26	63
SED19003	43	3	19.8	7	0.26	63
SED19103	43	4	20.8	5.9	0.1	63
SED19203	15	2	19.4	5.2	0.2149	63
SED18903	31	5	22	1.7	0.15	64
SED19203	44	1	20.5	17.9	0.519675	64
SEAJUN82	E-75E	E75EUA	23.076923	3.5	0.2	65
SED19103	R 9	2	16.5	0.92	0.1	65
SED18903	27	3	20	3.2	0.12	66
SED19103	43	3	20.8	5.9	0.1	66
SED19103	47	2	21.5	9.4	0.3	66
SEAJUN82	J-75E	J75EUA	23.076923	2.1	0.1	67
SED18903	46	5	22	9.5	0.42	67
SED19103	43	2	20.8	5.9	0.1	67
EVCHEM	PS-04	1	8.7	7.4	0.3	68
SED18903	36	1	15	2.2	0.13	68
SED19203	43	3	19.8	6	0.2859	68
SED19003	R103	2	20.5	8	0.5	69
SED19103	R 9	4	16.5	0.92	0.1	69
SED18903	16	3	20	3.9	0.18	70
SED19203	27	1	20.7	2.6	0.1656	70
EVCHEM	PS-04	4	8.7	7.4	0.3	71
SED19003	69	1	32.4	15	0.47	71
SED19103	44	2	21.5	17.1	0.5	71
SED19003	69	3	32.4	15	0.47	72
SED19103	47	3	21.5	9.4	0.3	72
SEAJUN82	E-50W	E50WUA	15.384615	5	0.2	73
SED19203	37	4	21.2	3.2	0.1817	73

Appendix 1. Stations and samples making up the 0-20% fines category for mollusc abundance.

SURVEY$	STATION$	SAMPLE$	DEPTHM	FINES	TOC	MOAB20
EVCHEM	NG-02	2	8.6	3.1	0.2	74
SED19003	47	1	19.5	12	0.32	74
SED19203	27	4	20.7	2.6	0.1656	74
SED19003	R103	1	20.5	8	0.5	75
SED19003	R103	3	20.5	8	0.5	75
SED19203	R301	4	22.1	5.9	0.2959	75
SED18903	6	5	20	7.1	0.2	76
SED19203	47	1	19.5	13.2	0.5249	76
SED19203	27	2	20.7	2.6	0.1656	78
EVCHEM	PS-04	5	8.7	7.4	0.3	81
SED19003	47	3	19.5	12	0.32	81
EVCHEM	NG-02	3	8.6	3.1	0.2	82
EVCHEM	PS-04	3	8.7	7.4	0.3	82
SEAJUN82	K-50E	K50EUA	15.384615	1.8	0.7	83
SED19103	47	4	21.5	9.4	0.3	83
SED19203	47	3	19.5	13.2	0.5249	84
SED19203	27	3	20.7	2.6	0.1656	85
SED19203	44	3	20.5	17.9	0.519675	85
SED18903	36	5	15	2.2	0.13	87
SED19003	43	2	19.8	7	0.26	90
SED19103	44	1	21.5	17.1	0.5	91
SED19203	R301	2	22.1	5.9	0.2959	92
EVCHEM	PS-03	1	9.1	8	0.4	93
SEAJUN82	K-50E	K50EUB	15.384615	1.8	0.7	95
SED18903	36	3	15	2.2	0.13	96
EVCHEM	NG-02	4	8.6	3.1	0.2	97
SED19203	15	3	19.4	5.2	0.2149	98
SED19203	69	3	35.4	18.1	0.4569	98
SEAJUN82	D-50W	D50WUC	15.384615	6	0.2	100
SED18903	27	5	20	3.2	0.12	100
SED18903	28	1	20	4.9	0.15	106
EVCHEM	PS-04	2	8.7	7.4	0.3	107
SED19203	69	1	35.4	18.1	0.4569	109
SEAJUN82	E-50E	E50EUB	15.384615	4	0.2	110
SED18903	28	5	20	4.9	0.15	110
SED19203	47	2	19.5	13.2	0.5249	110
SED18903	27	1	20	3.2	0.12	118
SED19003	47	2	19.5	12	0.32	118
SEASEP82	C-50E	C50EVB	15.384615	2.3	0.1	119
SED18903	28	3	20	4.9	0.15	120
SED19203	37	1	21.2	3.2	0.1817	122
EVCHEM	PS-03	3	9.1	8	0.4	123
EVCHEM	SD-02	3	9.6	11.5	0.5	125
SED19103	47	1	21.5	9.4	0.3	126
EVCHEM	PS-03	2	9.1	8	0.4	127
EVCHEM	SD-02	4	9.6	11.5	0.5	134
SED19203	69	4	35.4	18.1	0.4569	134
EVCHEM	SD-02	1	9.6	11.5	0.5	136
SED18903	22	5	21	4.19	0.15	146
EVCHEM	PS-03	5	9.1	8	0.4	149
EVCHEM	PS-03	4	9.1	8	0.4	152
SED19203	69	2	35.4	18.1	0.4569	155

Appendix 1. Stations and samples making up the 0-20% fines category for mollusc abundance.

SURVEY$	STATION$	SAMPLE$	DEPTHM	FINES	TOC	MOAB20
SED19103	22	1	22.5	12.9	0.2	163
EVCHEM	SD-02	5	9.6	11.5	0.5	172
SED18903	22	1	21	4.19	0.15	176
SED18903	50	3	7	3.8	0.2	177
SED19103	22	2	22.5	12.9	0.2	178
SED18903	15	3	20	8.22	0.24	182
EVCHEM	SD-02	2	9.6	11.5	0.5	183
SED18903	50	5	7	3.8	0.2	189
SEAJUN82	E-50E	E50EUA	15.384615	4	0.2	190
SED18903	15	5	20	8.22	0.24	196
SED18903	6	1	20	7.1	0.2	197
SED18903	22	3	21	4.19	0.15	204
SED19103	22	5	22.5	12.9	0.2	212
SED18903	23	5	20	2.1	0.12	216
SED19203	22	4	20.5	8	0.2596	224
SED18903	6	3	20	7.1	0.2	251
SED19203	22	1	20.5	8	0.2596	262
SED19103	22	4	22.5	12.9	0.2	267
SED19203	22	3	20.5	8	0.2596	280
SED18903	23	3	20	2.1	0.12	283
SED18903	15	1	20	8.22	0.24	291
SED18903	50	1	7	3.8	0.2	313
SED19103	22	3	22.5	12.9	0.2	318

Appendix 1. Stations and samples making up the 20-50% fines category for mollusc abundance.

SURVEY$	STATION$	SAMPLE$	DEPTHM	FINES	TOC	MOAB50
SED19103	10	4	20.7	32.8	0.6	16
SED19103	30	1	13.3	23.5	0.7	26
EVCHEM	SR-08	1	10.9	22.1	1.7	28
SED19103	30	3	13.3	23.5	0.7	34
EVCHEM	SR-08	2	10.9	22.1	1.7	37
SED18903	47	3	20	23.47	0.29	38
SED19003	R111	1	20.1	36	1.3	38
SED19103	69	3	34.4	21.4	0.6	39
SED19203	30	1	13.3	36.3	1.0317	40
EVCHEM	SR-08	5	10.9	22.1	1.7	43
SED19103	30	5	13.3	23.5	0.7	44
SED19203	30	2	13.3	36.3	1.0317	47
SED19103	10	1	20.7	32.8	0.6	48
SED19103	30	4	13.3	23.5	0.7	48
SED18903	47	5	20	23.47	0.29	51
SED19203	30	4	13.3	36.3	1.0317	52
SED19103	69	4	34.4	21.4	0.6	53
SED18903	10	1	20	37.2	0.61	54
EVCHEM	SR-08	4	10.9	22.1	1.7	55
SED19103	69	1	34.4	21.4	0.6	55
SED19103	10	5	20.7	32.8	0.6	56
SED19103	69	2	34.4	21.4	0.6	56
SED19103	69	5	34.4	21.4	0.6	56
SED19003	R111	3	20.1	36	1.3	58
SED19103	30	2	13.3	23.5	0.7	59
SED19003	0033	3	19.8	34	1.1	62
SED18903	10	5	20	37.2	0.61	65
SED18903	47	1	20	23.47	0.29	65
SED19103	R209	2	19.6	34	0.5	66
SED19103	R209	1	19.6	34	0.5	70
SED19203	30	3	13.3	36.3	1.0317	72
SED19003	71	2	6.1	46	1.4	73
SED19103	10	2	20.7	32.8	0.6	75
SED19003	71	3	6.1	46	1.4	77
SED19103	R209	5	19.6	34	0.5	78
SED19103	R209	4	19.6	34	0.5	80
SED19103	R209	3	19.6	34	0.5	81
SED19203	40	2	9.4	32.2	2.1687	83
SED18903	33	1	20	24.04	0.64	92
EVCHEM	SR-08	3	10.9	22.1	1.7	95
SED18903	10	3	20	37.2	0.61	95
SED19103	33	5	20.8	31.5	0.9	108
SED19003	71	1	6.1	46	1.4	113
SED19003	0033	2	19.8	34	1.1	118
SED19103	10	3	20.7	32.8	0.6	131
SED19203	40	3	9.4	32.2	2.1687	132
SED18903	33	3	20	24.04	0.64	135
SED19103	33	2	20.8	31.5	0.9	146
SED18903	33	5	20	24.04	0.64	149
SED19103	33	3	20.8	31.5	0.9	159
SED19203	40	4	9.4	32.2	2.1687	164

Appendix 1. Stations and samples making up the 20-50% fines category for mollusc abundance.

SURVEY$	STATION$	SAMPLE$	DEPTHM	FINES	TOC	MOAB50
SED19103	R206	1	19.4	35.6	0.8	170
SED19103	18	3	19	41.8	0.6	174
SED19003	0033	1	19.8	34	1.1	176
SED19203	40	1	9.4	32.2	2.1687	189
SED19103	R206	3	19.4	35.6	0.8	209
SED19103	33	4	20.8	31.5	0.9	219
SED19103	33	1	20.8	31.5	0.9	227
SED19103	R206	5	19.4	35.6	0.8	241
SED19203	18	3	19.1	42.8	1.3271	246
SED19203	18	4	19.1	42.8	1.3271	262
SED19103	18	5	19	41.8	0.6	286
SED19203	18	1	19.1	42.8	1.3271	321
SED19203	18	2	19.1	42.8	1.3271	338
SED19103	R206	2	19.4	35.6	0.8	346

Appendix 1. Stations and samples making up the 50-80% fines category for mollusc abundance.

SURVEY$	STATION$	SAMPLE$	DEPTHM	FINES	TOC	MOAB80
SED18903	30	5	13	56.04	1.4	0
SED19203	23	3	6.1	53	1.2331	0
SED19203	R303	2	14.5	76.8	1.2708	3
SED19203	R303	1	14.5	76.8	1.2708	5
SED19203	R303	3	14.5	76.8	1.2708	7
SED19203	R303	4	14.5	76.8	1.2708	9
SED19103	8	4	22.1	63.7	2.9	11
SED19003	R105	3	14	75	2.2	16
SED19203	70	1	7.2	66.5	2.1101	17
SED19203	70	4	7.2	66.5	2.1101	19
SED19203	70	2	7.2	66.5	2.1101	23
SED19203	70	3	7.2	66.5	2.1101	23
SED19103	8	3	22.1	63.7	2.9	26
SED19103	71	1	7.1	55.8	1.2	28
SED19103	70	3	6.5	67.2	3.2	35
SED19103	71	3	7.1	55.8	1.2	36
SED19003	70	2	5.2	64	3.1	37
SED19203	8	3	21.1	71.8	2.2161	39
SED19003	R105	2	14	75	2.2	40
SED19103	8	2	22.1	63.7	2.9	40
SED19203	R302	1	20.6	68.5	0.9448	40
SED19103	2	1	21.3	57.7	0.8	44
SED19003	0030	2	13.3	62	1.4	47
SED19003	70	3	5.2	64	3.1	47
SED19103	71	2	7.1	55.8	1.2	47
SED19003	0030	3	13.3	62	1.4	49
SED19103	8	5	22.1	63.7	2.9	51
SED19103	71	5	7.1	55.8	1.2	51
SED19103	71	4	7.1	55.8	1.2	52
SED19203	8	2	21.1	71.8	2.2161	52
SED19003	8	3	21.1	64	3.4	53
SED19103	70	5	6.5	67.2	3.2	54
SED19003	R105	1	14	75	2.2	55
SED19103	70	4	6.5	67.2	3.2	58
SED19203	R302	4	20.6	68.5	0.9448	58
SED19103	70	2	6.5	67.2	3.2	59
SED19203	71	1	6.1	53	1.2331	61
SED19103	8	1	22.1	63.7	2.9	62
SED19103	70	1	6.5	67.2	3.2	62
SED18903	8	1	21	65.77	3.9	63
SED18903	18	5	20	60.15	0.93	63
SED19003	8	2	21.1	64	3.4	64
SED19103	2	4	21.3	57.7	0.8	66
SED18903	2	1	20	60.7	0.68	68
SED19203	8	1	21.1	71.8	2.2161	71
SED19203	R302	3	20.6	68.5	0.9448	71
SED19103	2	2	21.3	57.7	0.8	72
SED18903	2	3	20	60.7	0.68	76
SED18903	2	5	20	60.7	0.68	76
SED19103	2	5	21.3	57.7	0.8	77
SED19203	8	4	21.1	71.8	2.2161	80

Appendix 1. Stations and samples making up the 50-80% fines category for mollusc abundance.

SURVEY$	STATION$	SAMPLE$	DEPTHM	FINES	TOC	MOAB80
SED19003	70	1	5.2	64	3.1	81
SED19003	0030	1	13.3	62	1.4	86
SED19203	71	3	6.1	53	1.2331	86
SED19203	R302	2	20.6	68.5	0.9448	94
SED18903	8	5	21	65.77	3.9	96
SED19003	8	1	21.1	64	3.4	99
SED18903	8	3	21	65.77	3.9	101
SED19203	71	2	6.1	53	1.2331	120
SED19203	71	4	6.1	53	1.2331	133
SED19103	2	3	21.3	57.7	0.8	156
SED19103	R207	1	29.9	73.4	1.5	192
SED19103	R205	2	31.9	62.1	1.1	202
SED19103	R205	3	31.9	62.1	1.1	234
SED19103	R205	4	31.9	62.1	1.1	249
SED19103	R205	1	31.9	62.1	1.1	252
SED19103	R207	4	29.9	73.4	1.5	253
SED19103	R207	3	29.9	73.4	1.5	266
SED19103	R205	5	31.9	62.1	1.1	272
SED18903	18	1	20	60.15	0.93	285
SED18903	18	3	20	60.15	0.93	288
SED19103	R207	2	29.9	73.4	1.5	294
SED19103	R207	5	29.9	73.4	1.5	333
SED19203	23	4	6.1	53	1.2331	382
SED18903	21	3	20	52.16	1.3	439
SED18903	21	1	20	52.16	1.3	457
SED19203	41	2	19.1	75.1	1.1428	460
SED19203	21	1	21.7	62.2	1.2178	503

Appendix 1. Stations and samples making up the 80-100% fines category for mollusc abundance.

SURVEY$	STATION$	SAMPLE$	DEPTHM	FINES	TOC	MOAB100
SED19103	1	1	23.5	95.8	1.7	5
SED19003	R109	2	22.7	91	2.5	8
SED19003	R109	3	22.7	91	2.5	9
SED19003	R106	1	11.2	86	2.8	10
SED19003	R106	2	11.2	86	2.8	10
SED19103	1	3	23.5	95.8	1.7	10
SED19003	R109	1	22.7	91	2.5	11
SED19103	R203	4	12.5	98.7	1.7	12
SED18903	1	1	22.0	93.32	1.5	13
SED19103	1	5	23.5	95.8	1.7	14
SED19103	R203	1	12.5	98.7	1.7	15
SED19103	R203	2	12.5	98.7	1.7	16
SED19103	R203	5	12.5	98.7	1.7	16
SED19103	R203	3	12.5	98.7	1.7	17
SED19103	1	2	23.5	95.8	1.7	22
SED19103	20	5	11.8	96.2	1	23
SED19003	R106	3	11.2	86	2.8	26
SED19203	4	2	24.0	96.8	2.4931	26
SED19003	0048	1	20.0	92	2.2	33
SED19103	20	2	11.8	96.2	1	33
SED19103	48	5	21.3	89.8	2.3	33
SED19203	48	4	20.5	88.7	1.5201	34
SED18903	1	3	22.0	93.32	1.5	35
SED19003	R102	1	11.6	88	2.6	35
SED19103	1	4	23.5	95.8	1.7	35
SED19203	1	4	22.5	94.1	1.7421	36
SED19203	48	1	20.5	88.7	1.5201	38
SED19203	48	3	20.5	88.7	1.5201	41
SED19003	R102	2	11.6	88	2.6	42
SED19103	48	3	21.3	89.8	2.3	42
SED19103	20	3	11.8	96.2	1	43
SED19103	20	1	11.8	96.2	1	44
SED19103	R204	3	31.7	94.1	2.4	44
SED19203	49	1	4.7	88.1	2.1381	44
SED19203	49	4	4.7	88.1	2.1381	44
SED19103	48	1	21.3	89.8	2.3	45
SED19203	1	1	22.5	94.1	1.7421	45
SED19203	12	3	21.1	93.1	1.1471	45
SED19003	1	1	22.5	97	1.8	47
SED19103	R204	4	31.7	94.1	2.4	47
SED19203	12	4	21.1	93.1	1.1471	48
SED19103	48	2	21.3	89.8	2.3	49
SED19003	0048	2	20.0	92	2.2	51
SED19103	R204	1	31.7	94.1	2.4	51
SED19103	48	4	21.3	89.8	2.3	52
SED19203	1	3	22.5	94.1	1.7421	53
SED19203	4	3	24.0	96.8	2.4931	53
SED19203	49	3	4.7	88.1	2.1381	54
SED19003	0048	3	20.0	92	2.2	55
SED19103	4	2	25.4	97.6	2	56
SED19103	20	4	11.8	96.2	1	56

Appendix 1. Stations and samples making up the 80-100% fines category for mollusc abundance.

SURVEY$	STATION$	SAMPLE$	DEPTHM	FINES	TOC	MOAB100
SED19103	R204	5	31.7	94.1	2.4	57
SED19003	1	2	22.5	97	1.8	60
SED19003	0020	3	10.3	97	1.2	63
SED19003	0020	1	10.3	97	1.2	64
SED19003	R101	1	2.1	90	4	64
SED19203	12	1	21.1	93.1	1.1471	64
SED19203	1	2	22.5	94.1	1.7421	65
SED18903	1	5	22.0	93.32	1.5	68
SED19103	4	4	25.4	97.6	2	68
SED19203	48	2	20.5	88.7	1.5201	68
SED19203	20	4	10.3	95.7	1.0068	69
SEAJUN82	QM-2	QM2UA	16.3	85	1.3	70
SED19103	R204	2	31.7	94.1	2.4	71
SED19203	4	1	24.0	96.8	2.4931	71
SED19203	49	2	4.7	88.1	2.1381	74
SED19203	12	2	21.1	93.1	1.1471	76
SED19003	0020	2	10.3	97	1.2	77
SED19103	4	3	25.4	97.6	2	78
SED19103	12	1	21.1	91.4	1.5	82
SED19103	12	3	21.1	91.4	1.5	83
SED18903	20	3	11.0	94.11	1	84
SED19103	12	4	21.1	91.4	1.5	84
SED19103	5	4	20.2	95.6	1.8	85
SED19103	4	5	25.4	97.6	2	89
SED19103	4	1	25.4	97.6	2	91
SED18903	20	1	11.0	94.11	1	96
SED19203	4	4	24.0	96.8	2.4931	96
SED19103	12	5	21.1	91.4	1.5	97
SED19203	5	3	21.0	94.8	1.9311	99
SED19203	20	3	10.3	95.7	1.0068	101
SED19203	20	1	10.3	95.7	1.0068	104
SED19003	0012	3	21.1	93	1.8	107
SED18903	20	5	11.0	94.11	1	108
SED19103	12	2	21.1	91.4	1.5	110
SED19203	20	2	10.3	95.7	1.0068	110
SED19203	5	4	21.0	94.8	1.9311	115
SED19103	5	2	20.2	95.6	1.8	116
SED19103	5	5	20.2	95.6	1.8	131
SED19203	5	2	21.0	94.8	1.9311	131
SED19003	1	3	22.5	97	1.8	135
SED19103	5	3	20.2	95.6	1.8	137
SED19003	R102	3	11.6	88	2.6	139
SED19003	0012	1	21.1	93	1.8	142
SED19003	0018	3	19.1	92	1.5	159
SED19003	R101	3	2.1	90	4	160
SED19103	5	1	20.2	95.6	1.8	164
SED19003	0012	2	21.1	93	1.8	171

Appendix 1. Stations and samples making up the 0-20% fines category for crustacean richness.

SURVEY$	STATION$	SAMPLE$	DEPTHM	FINES	TOC	ARTAX20
SED18903	6	5	20	7.1	0.2	2
SED19103	R 9	4	16.5	0.92	0.1	2
SED19103	R 9	5	16.5	0.92	0.1	2
EVCHEM	NG-02	5	8.6	3.1	0.2	3
SED18903	16	3	20	3.9	0.18	3
SED19103	R 9	3	16.5	0.92	0.1	3
EVCHEM	PS-03	3	9.1	8	0.4	4
SED18903	16	1	20	3.9	0.18	4
SED19103	R 9	1	16.5	0.92	0.1	4
SED19103	R 9	2	16.5	0.92	0.1	4
SED19203	R308	3	18.9	11	0.388	4
EVCHEM	NG-02	1	8.6	3.1	0.2	5
EVCHEM	NG-02	3	8.6	3.1	0.2	5
SED18903	6	1	20	7.1	0.2	5
SED18903	16	5	20	3.9	0.18	5
SED19103	44	5	21.5	17.1	0.5	5
EVCHEM	PS-03	4	9.1	8	0.4	6
EVCHEM	PS-03	5	9.1	8	0.4	6
SED18903	6	3	20	7.1	0.2	6
SED18903	22	3	21	4.19	0.15	6
SED19203	R301	1	22.1	5.9	0.2959	6
EVCHEM	SD-02	1	9.6	11.5	0.5	7
EVCHEM	SD-02	3	9.6	11.5	0.5	7
SED19103	22	1	22.5	12.9	0.2	7
SED19203	15	1	19.4	5.2	0.2149	7
EVCHEM	NG-02	2	8.6	3.1	0.2	8
EVCHEM	NG-02	4	8.6	3.1	0.2	8
EVCHEM	PS-03	1	9.1	8	0.4	8
EVCHEM	PS-03	2	9.1	8	0.4	8
EVCHEM	SD-02	4	9.6	11.5	0.5	8
SED18903	23	1	20	2.1	0.12	8
SED19003	43	3	19.8	7	0.26	8
SED19103	13	1	19.3	9.8	0.2	8
SED19103	22	3	22.5	12.9	0.2	8
SED19103	22	4	22.5	12.9	0.2	8
SED19103	22	5	22.5	12.9	0.2	8
SED19103	39	1	14.8	2.44	0.1	8
SED19103	39	4	14.8	2.44	0.1	8
SED19203	39	3	15.8	2.7	0.1453	8
SED19203	R308	2	18.9	11	0.388	8
SED19203	R308	4	18.9	11	0.388	8
EVCHEM	PS-04	4	8.7	7.4	0.3	9
SED18903	22	1	21	4.19	0.15	9
SED19003	43	2	19.8	7	0.26	9
SED19003	69	3	32.4	15	0.47	9
SED19003	R103	3	20.5	8	0.5	9
SED19103	22	2	22.5	12.9	0.2	9
SED19103	39	2	14.8	2.44	0.1	9
SED19103	39	3	14.8	2.44	0.1	9
SED19103	43	3	20.8	5.9	0.1	9
SED19103	44	2	21.5	17.1	0.5	9
EVCHEM	SD-02	2	9.6	11.5	0.5	10
EVCHEM	SD-02	5	9.6	11.5	0.5	10
SEASEP82	C-50E	C50EVB	15.384615	2.3	0.1	10
SED18903	22	5	21	4.19	0.15	10

Appendix 1. Stations and samples making up the 0-20% fines category for crustacean richness.

SURVEY$	STATION$	SAMPLE$	DEPTHM	FINES	TOC	ARTAX20
SED18903	23	3	20	2.1	0.12	10
SED18903	43	5	20	6.3	0.14	10
SED18903	46	5	22	9.5	0.42	10
SED19003	47	1	19.5	12	0.32	10
SED19003	R103	1	20.5	8	0.5	10
SED19203	15	2	19.4	5.2	0.2149	10
SED19203	22	1	20.5	8	0.2596	10
SED19203	22	4	20.5	8	0.2596	10
SED19203	39	2	15.8	2.7	0.1453	10
SED19203	47	2	19.5	13.2	0.5249	10
SED19203	R301	3	22.1	5.9	0.2959	10
SED19203	R301	4	22.1	5.9	0.2959	10
SED19203	R308	1	18.9	11	0.388	10
EVCHEM	PS-04	1	8.7	7.4	0.3	11
EVCHEM	PS-04	2	8.7	7.4	0.3	11
SEAJUN82	H-75E	H75EUA	23.076923	1.8	0.1	11
SED18903	15	1	20	8.22	0.24	11
SED18903	15	5	20	8.22	0.24	11
SED18903	32	5	20	7.23	0.17	11
SED18903	43	1	20	6.3	0.14	11
SED18903	43	3	20	6.3	0.14	11
SED19003	43	1	19.8	7	0.26	11
SED19003	R103	2	20.5	8	0.5	11
SED19103	43	1	20.8	5.9	0.1	11
SED19103	43	5	20.8	5.9	0.1	11
SED19203	15	4	19.4	5.2	0.2149	11
EVCHEM	NG-06	3	10.2	7.1	0.4	12
EVCHEM	NG-06	4	10.2	7.1	0.4	12
EVCHEM	PS-04	3	8.7	7.4	0.3	12
SEAJUN83	K5-75E	K575EYB	21.336	3	0.2	12
SED18903	15	3	20	8.22	0.24	12
SED18903	36	1	15	2.2	0.13	12
SED18903	36	5	15	2.2	0.13	12
SED18903	50	1	7	3.8	0.2	12
SED18903	50	5	7	3.8	0.2	12
SED19103	39	5	14.8	2.44	0.1	12
SED19103	43	2	20.8	5.9	0.1	12
SED19103	47	5	21.5	9.4	0.3	12
SED19203	22	3	20.5	8	0.2596	12
SED19203	39	4	15.8	2.7	0.1453	12
SED19203	43	2	19.8	6	0.2859	12
SED19203	47	3	19.5	13.2	0.5249	12
SED19203	47	4	19.5	13.2	0.5249	12
SED19203	R301	2	22.1	5.9	0.2959	12
SED18903	46	1	22	9.5	0.42	13
SED19003	46	3	19.8	19	0.39	13
SED19003	47	2	19.5	12	0.32	13
SED19003	47	3	19.5	12	0.32	13
SED19103	47	1	21.5	9.4	0.3	13
SED19103	47	3	21.5	9.4	0.3	13
SED19203	15	3	19.4	5.2	0.2149	13
SED19203	39	1	15.8	2.7	0.1453	13
SED19203	43	1	19.8	6	0.2859	13
SED19203	69	1	35.4	18.1	0.4569	13
SED19203	69	2	35.4	18.1	0.4569	13
SED19203	69	3	35.4	18.1	0.4569	13

Appendix 1. Stations and samples making up the 0-20% fines category for crustacean richness.

SURVEY$	STATION$	SAMPLE$	DEPTHM	FINES	TOC	ARTAX20
SED19203	69	4	35.4	18.1	0.4569	13
SED18903	23	5	20	2.1	0.12	14
SED18903	31	3	22	1.7	0.15	14
SED18903	31	5	22	1.7	0.15	14
SED18903	36	3	15	2.2	0.13	14
SED18903	37	5	20	5.9	0.21	14
SED18903	46	3	22	9.5	0.42	14
SED18903	50	3	7	3.8	0.2	14
SED19003	69	2	32.4	15	0.47	14
SED19103	13	3	19.3	9.8	0.2	14
SED19103	43	4	20.8	5.9	0.1	14
SED19103	44	4	21.5	17.1	0.5	14
SED19103	47	4	21.5	9.4	0.3	14
SED19203	32	1	20.4	5.7	0.329525	14
SED19203	44	2	20.5	17.9	0.519675	14
EVCHEM	NG-06	2	10.2	7.1	0.4	15
SED18903	28	1	20	4.9	0.15	15
SED18903	28	3	20	4.9	0.15	15
SED19003	32	2	20.4	7.5	0.22	15
SED19003	46	1	19.8	19	0.39	15
SED19003	69	1	32.4	15	0.47	15
SED19203	25	3	20.4	3	0.1481	15
SED19203	27	2	20.7	2.6	0.1656	15
SED19203	32	3	20.4	5.7	0.329525	15
SED19203	36	1	17.7	2.3	0.2236	15
SED19203	43	4	19.8	6	0.2859	15
SED19203	44	3	20.5	17.9	0.519675	15
EVCHEM	PS-04	5	8.7	7.4	0.3	16
SEAJUN82	K-50E	K50EUB	15.384615	1.8	0.7	16
SED18903	28	5	20	4.9	0.15	16
SED18903	31	1	22	1.7	0.15	16
SED18903	32	1	20	7.23	0.17	16
SED18903	37	3	20	5.9	0.21	16
SED19103	44	1	21.5	17.1	0.5	16
SED19203	25	1	20.4	3	0.1481	16
SED19203	32	2	20.4	5.7	0.329525	16
SED19203	36	2	17.7	2.3	0.2236	16
SED19203	43	3	19.8	6	0.2859	16
SED19003	32	1	20.4	7.5	0.22	17
SED19003	32	3	20.4	7.5	0.22	17
SED19003	46	2	19.8	19	0.39	17
SED19103	44	3	21.5	17.1	0.5	17
SED19203	32	4	20.4	5.7	0.329525	17
SED19203	36	3	17.7	2.3	0.2236	17
SEAJUN82	B-75W	B75WUC	23.076923	5.3	0.3	18
SEAJUN82	E-50E	E50EUB	15.384615	4	0.2	18
SEAJUN82	J-75E	J75EUA	23.076923	2.1	0.1	18
SED18903	27	3	20	3.2	0.12	18
SED18903	27	5	20	3.2	0.12	18
SED18903	37	1	20	5.9	0.21	18
SED19003	44	1	19.5	14.5	0.51	18
SED19103	47	2	21.5	9.4	0.3	18
SED19203	37	2	21.2	3.2	0.1817	18
SED19203	37	3	21.2	3.2	0.1817	18
SED19203	44	1	20.5	17.9	0.519675	18
SED19203	44	4	20.5	17.9	0.519675	18

Appendix 1. Stations and samples making up the 0-20% fines category for crustacean richness.

SURVEY$	STATION$	SAMPLE$	DEPTHM	FINES	TOC	ARTAX20
SED19203	47	1	19.5	13.2	0.5249	18
SED18903	32	3	20	7.23	0.17	19
SED19203	36	4	17.7	2.3	0.2236	19
EVCHEM	NG-06	1	10.2	7.1	0.4	20
SEAJUN82	K-50E	K50EUA	15.384615	1.8	0.7	20
SED18903	27	1	20	3.2	0.12	20
SED19003	44	2	19.5	14.5	0.51	20
SEAJUN82	E-50E	E50EUA	15.384615	4	0.2	21
SEAJUN82	E-50W	E50WUA	15.384615	5	0.2	21
SED19003	44	3	19.5	14.5	0.51	21
SED19203	27	4	20.7	2.6	0.1656	21
SED19203	37	4	21.2	3.2	0.1817	21
SEAJUN82	E-75E	E75EUA	23.076923	3.5	0.2	22
SED19203	25	2	20.4	3	0.1481	23

Appendix 1. Stations and samples making up the 20-50% fines category for crustacean richness.

SURVEY$	STATION$	SAMPLE$	DEPTHM	FINES	TOC	ARTAX50
SED19103	18	4	19	41.8	0.6	1
SED19203	18	4	19.1	42.8	1.3271	2
SED19103	18	1	19	41.8	0.6	3
SED19103	18	2	19	41.8	0.6	3
SED19103	18	5	19	41.8	0.6	3
SED19203	18	3	19.1	42.8	1.3271	4
SED19103	18	3	19	41.8	0.6	5
SED19003	R111	1	20.1	36	1.3	6
SED19103	R209	5	19.6	34	0.5	6
SED19203	18	1	19.1	42.8	1.3271	6
SED19003	0033	3	19.8	34	1.1	7
SED19103	R206	2	19.4	35.6	0.8	7
SED19103	R209	2	19.6	34	0.5	7
SED19103	R209	4	19.6	34	0.5	7
SED19203	30	4	13.3	36.3	1.0317	7
SED19003	R111	3	20.1	36	1.3	8
SED19103	30	1	13.3	23.5	0.7	8
SED19103	33	5	20.8	31.5	0.9	8
SED19103	R206	5	19.4	35.6	0.8	8
SED19203	30	2	13.3	36.3	1.0317	8
SED18903	33	1	20	24.04	0.64	9
SED18903	47	3	20	23.47	0.29	9
SED19003	71	3	6.1	46	1.4	9
SED19103	30	3	13.3	23.5	0.7	9
SED19103	69	4	34.4	21.4	0.6	9
SED19103	R206	1	19.4	35.6	0.8	9
SED19203	18	2	19.1	42.8	1.3271	9
SED19203	30	3	13.3	36.3	1.0317	9
SED19203	40	1	9.4	32.2	2.1687	9
SED19203	40	4	9.4	32.2	2.1687	9
SED18903	33	5	20	24.04	0.64	10
SED18903	47	5	20	23.47	0.29	10
SED19103	R206	3	19.4	35.6	0.8	10
SED19103	R209	3	19.6	34	0.5	10
SED19203	30	1	13.3	36.3	1.0317	10
SED19203	40	2	9.4	32.2	2.1687	10
SED19003	71	2	6.1	46	1.4	11
SED19103	30	5	13.3	23.5	0.7	11
SED19103	69	3	34.4	21.4	0.6	11
SED19103	R206	4	19.4	35.6	0.8	11
SED19203	40	3	9.4	32.2	2.1687	11
SED18903	33	3	20	24.04	0.64	12
SED18903	47	1	20	23.47	0.29	12
SED19003	0033	2	19.8	34	1.1	12
SED19003	71	1	6.1	46	1.4	12
SED19103	30	4	13.3	23.5	0.7	12
SED19103	33	4	20.8	31.5	0.9	12
SED19103	R209	1	19.6	34	0.5	12
SED18903	10	5	20	37.2	0.61	13
SED19103	10	2	20.7	32.8	0.6	13
SED19103	33	2	20.8	31.5	0.9	13
SED19103	33	3	20.8	31.5	0.9	13
SED19003	0033	1	19.8	34	1.1	14
SED19103	69	2	34.4	21.4	0.6	14
EVCHEM	SR-08	1	10.9	22.1	1.7	15

Appendix 1. Stations and samples making up the 20-50% fines category for crustacean richness.

SURVEY$	STATION$	SAMPLE$	DEPTHM	FINES	TOC	ARTAX50
SED19103	10	1	20.7	32.8	0.6	15
SED19103	10	5	20.7	32.8	0.6	15
SED19103	30	2	13.3	23.5	0.7	15
SED19103	33	1	20.8	31.5	0.9	15
SED19103	69	1	34.4	21.4	0.6	15
SED18903	10	1	20	37.2	0.61	16
SED19103	10	4	20.7	32.8	0.6	16
SED19103	10	3	20.7	32.8	0.6	17
SED19103	69	5	34.4	21.4	0.6	17
EVCHEM	SR-08	2	10.9	22.1	1.7	20
EVCHEM	SR-08	4	10.9	22.1	1.7	20

Appendix 1. Stations and samples making up the 50-80% fines category for crustacean richness.

SURVEY$	STATION$	SAMPLE$	DEPTHM	FINES	TOC	ARTAX80
SED18903	18	1	20	60.15	0.93	0
SED19103	70	5	6.5	67.2	3.2	0
SED18903	18	5	20	60.15	0.93	1
SED19003	70	3	5.2	64	3.1	2
SED19103	70	1	6.5	67.2	3.2	2
SED19103	70	4	6.5	67.2	3.2	2
SED19203	70	2	7.2	66.5	2.1101	2
SED18903	18	3	20	60.15	0.93	3
SED19103	70	3	6.5	67.2	3.2	3
SED19103	R207	2	29.9	73.4	1.5	3
SED19203	70	4	7.2	66.5	2.1101	3
SED19003	70	1	5.2	64	3.1	4
SED19003	70	2	5.2	64	3.1	4
SED19003	R105	3	14	75	2.2	4
SED19103	8	3	22.1	63.7	2.9	4
SED19103	2	3	21.3	57.7	0.8	4
SED19103	2	4	21.3	57.7	0.8	4
SED19103	70	2	6.5	67.2	3.2	4
SED19103	R205	1	31.9	62.1	1.1	4
SED19103	R205	3	31.9	62.1	1.1	4
SED19203	21	1	21.7	62.2	1.2178	4
SED19203	70	3	7.2	66.5	2.1101	4
SED19103	R205	2	31.9	62.1	1.1	5
SED19203	21	2	21.7	62.2	1.2178	5
SED19203	41	2	19.1	75.1	1.1428	5
SED19203	41	3	19.1	75.1	1.1428	5
SED19203	70	1	7.2	66.5	2.1101	5
SED19003	0030	2	13.3	62	1.4	6
SED19003	R105	1	14	75	2.2	6
SED19103	2	2	21.3	57.7	0.8	6
SED19103	2	5	21.3	57.7	0.8	6
SED19103	71	1	7.1	55.8	1.2	6
SED19103	71	2	7.1	55.8	1.2	6
SED19103	71	4	7.1	55.8	1.2	6
SED19103	R207	3	29.9	73.4	1.5	6
SED19203	41	1	19.1	75.1	1.1428	6
SED18903	2	1	20	60.7	0.68	7
SED19103	71	3	7.1	55.8	1.2	7
SED19103	71	5	7.1	55.8	1.2	7
SED19103	R205	5	31.9	62.1	1.1	7
SED19203	21	4	21.7	62.2	1.2178	7
SED19203	41	4	19.1	75.1	1.1428	7
SED19203	71	1	6.1	53	1.2331	7
SED18903	2	3	20	60.7	0.68	8
SED18903	21	3	20	52.16	1.3	8
SED19003	0030	3	13.3	62	1.4	8
SED19103	R205	4	31.9	62.1	1.1	8
SED19103	R207	1	29.9	73.4	1.5	8
SED19103	R207	5	29.9	73.4	1.5	8
SED19203	71	3	6.1	53	1.2331	8
SED19203	R303	2	14.5	76.8	1.2708	8
SED19203	R303	3	14.5	76.8	1.2708	8
SED18903	8	1	21	65.77	3.9	9
SED18903	8	3	21	65.77	3.9	9
SED19003	R105	2	14	75	2.2	9

Appendix 1. Stations and samples making up the 50-80% fines category for crustacean richness.

SURVEY$	STATION$	SAMPLE$	DEPTHM	FINES	TOC	ARTAX80
SED19103	8	2	22.1	63.7	2.9	9
SED19103	2	1	21.3	57.7	0.8	9
SED19203	R302	1	20.6	68.5	0.9448	9
SED19203	R302	2	20.6	68.5	0.9448	9
SED19203	R302	3	20.6	68.5	0.9448	9
SED19203	R302	4	20.6	68.5	0.9448	9
SED19203	R303	1	14.5	76.8	1.2708	9
SED19203	R303	4	14.5	76.8	1.2708	9
SED19003	8	3	21.1	64	3.4	10
SED19003	0030	1	13.3	62	1.4	10
SED19103	8	1	22.1	63.7	2.9	10
SED19203	8	2	21.1	71.8	2.2161	10
SED19203	8	3	21.1	71.8	2.2161	10
SED19203	21	3	21.7	62.2	1.2178	10
SED19203	71	4	6.1	53	1.2331	10
SED18903	21	5	20	52.16	1.3	11
SED19103	8	4	22.1	63.7	2.9	11
SED19103	8	5	22.1	63.7	2.9	11
SED19203	71	2	6.1	53	1.2331	11
SED18903	2	5	20	60.7	0.68	12
SED18903	8	5	21	65.77	3.9	12
SED19003	8	1	21.1	64	3.4	12
SED19103	R207	4	29.9	73.4	1.5	12
SED19203	8	4	21.1	71.8	2.2161	13
SED19203	23	2	6.1	53	1.2331	13

Appendix 1. Stations and samples making up the 80-100% fines category for crustacean richness.

SURVEY$	STATION$	SAMPLE$	DEPTHM	FINES	TOC	ARTAX100
SED19103	20	1	11.8	96.2	1	0
SED19103	20	3	11.8	96.2	1	1
SED19103	20	5	11.8	96.2	1	1
SED19103	4	1	25.4	97.6	2	2
SED19103	R204	1	31.7	94.1	2.4	2
SED19203	48	3	20.5	88.7	1.5201	2
SED19003	0018	3	19.1	92	1.5	3
SED19003	R101	2	2.1	90	4	3
SED19003	R102	2	11.6	88	2.6	3
SED19103	4	3	25.4	97.6	2	3
SED19103	5	3	20.2	95.6	1.8	3
SED19103	20	2	11.8	96.2	1	3
SED19103	48	4	21.3	89.8	2.3	3
SED19103	48	5	21.3	89.8	2.3	3
SED19103	R204	2	31.7	94.1	2.4	3
SED19103	R204	3	31.7	94.1	2.4	3
SED19103	R204	4	31.7	94.1	2.4	3
SED19103	R204	5	31.7	94.1	2.4	3
SED19203	4	1	24	96.8	2.4931	3
SED19203	4	3	24	96.8	2.4931	3
SED19203	20	4	10.3	95.7	1.0068	3
SED19203	48	4	20.5	88.7	1.5201	3
SED19203	49	3	4.7	88.1	2.1381	3
SED19003	1	3	22.5	97	1.8	4
SED19003	0020	1	10.3	97	1.2	4
SED19003	0048	1	20	92	2.2	4
SED19003	0048	2	20	92	2.2	4
SED19003	R101	3	2.1	90	4	4
SED19003	R106	1	11.2	86	2.8	4
SED19003	R106	2	11.2	86	2.8	4
SED19003	R109	3	22.7	91	2.5	4
SED19103	4	2	25.4	97.6	2	4
SED19103	4	4	25.4	97.6	2	4
SED19103	5	5	20.2	95.6	1.8	4
SED19103	20	4	11.8	96.2	1	4
SED19103	48	1	21.3	89.8	2.3	4
SED19103	48	2	21.3	89.8	2.3	4
SED19103	48	3	21.3	89.8	2.3	4
SED19203	4	2	24	96.8	2.4931	4
SED19203	4	4	24	96.8	2.4931	4
SED19203	12	1	21.1	93.1	1.1471	4
SED19203	48	1	20.5	88.7	1.5201	4
SED19203	48	2	20.5	88.7	1.5201	4
SED19203	49	1	4.7	88.1	2.1381	4
SED19203	49	2	4.7	88.1	2.1381	4
SED19203	49	4	4.7	88.1	2.1381	4
SEAJUN82	QM-2	QM2UA	16.307692	85	1.3	5
SED19003	1	2	22.5	97	1.8	5
SED19003	0018	2	19.1	92	1.5	5
SED19003	0048	3	20	92	2.2	5
SED19003	R102	1	11.6	88	2.6	5
SED19003	R102	3	11.6	88	2.6	5
SED19003	R106	3	11.2	86	2.8	5
SED19003	R109	1	22.7	91	2.5	5
SED19003	R109	2	22.7	91	2.5	5

Appendix 1. Stations and samples making up the 80-100% fines category for crustacean richness.

SURVEY$	STATION$	SAMPLE$	DEPTHM	FINES	TOC	ARTAX100
SED19103	1	2	23.5	95.8	1.7	5
SED19103	1	4	23.5	95.8	1.7	5
SED19103	1	5	23.5	95.8	1.7	5
SED19103	4	5	25.4	97.6	2	5
SED19103	5	1	20.2	95.6	1.8	5
SED19103	5	2	20.2	95.6	1.8	5
SED19103	5	4	20.2	95.6	1.8	5
SED19103	12	2	21.1	91.4	1.5	5
SED19103	12	3	21.1	91.4	1.5	5
SED19203	5	3	21	94.8	1.9311	5
SED18903	1	1	22	93.32	1.5	6
SED18903	1	3	22	93.32	1.5	6
SED18903	20	1	11	94.11	1	6
SED19003	1	1	22.5	97	1.8	6
SED19003	0020	2	10.3	97	1.2	6
SED19003	0020	3	10.3	97	1.2	6
SED19003	R101	1	2.1	90	4	6
SED19103	1	3	23.5	95.8	1.7	6
SED19103	R203	3	12.5	98.7	1.7	6
SED19103	R203	5	12.5	98.7	1.7	6
SED19203	1	4	22.5	94.1	1.7421	6
SED19203	5	2	21	94.8	1.9311	6
SED19203	5	4	21	94.8	1.9311	6
SED19203	12	2	21.1	93.1	1.1471	6
SED19203	12	3	21.1	93.1	1.1471	6
SED19203	20	1	10.3	95.7	1.0068	6
SED19203	20	3	10.3	95.7	1.0068	6
SED18903	1	5	22	93.32	1.5	7
SED18903	20	5	11	94.11	1	7
SED18903	41	3	20	81.14	0.8	7
SED19003	0018	1	19.1	92	1.5	7
SED19103	1	1	23.5	95.8	1.7	7
SED19103	12	1	21.1	91.4	1.5	7
SED19103	12	4	21.1	91.4	1.5	7
SED19103	12	5	21.1	91.4	1.5	7
SED19103	R203	1	12.5	98.7	1.7	7
SED19103	R203	2	12.5	98.7	1.7	7
SED19103	R203	4	12.5	98.7	1.7	7
SED19203	1	1	22.5	94.1	1.7421	7
SED19203	1	3	22.5	94.1	1.7421	7
SED19203	5	1	21	94.8	1.9311	7
SED19203	12	4	21.1	93.1	1.1471	7
SED18903	20	3	11	94.11	1	8
SED19003	0012	1	21.1	93	1.8	8
SED19203	1	2	22.5	94.1	1.7421	8
SED19203	20	2	10.3	95.7	1.0068	8
SED18903	41	5	20	81.14	0.8	9
SED18903	41	1	20	81.14	0.8	10

Appendix 1. Stations and samples making up the 0-20% fines category for crustacean abundance.

SURVEY$	STATION$	SAMPLE$	DEPTHM	FINES	TOC	ARAB20
SED18903	6	5	20	7.1	0.2	6
SED19103	R 9	1	16.5	0.92	0.1	6
SED19103	R 9	3	16.5	0.92	0.1	8
SED19103	R 9	5	16.5	0.92	0.1	8
SED18903	16	1	20	3.9	0.18	9
SED18903	16	3	20	3.9	0.18	10
SED18903	6	1	20	7.1	0.2	11
SED18903	16	5	20	3.9	0.18	12
SED18903	6	3	20	7.1	0.2	13
SED19203	15	1	19.4	5.2	0.2149	17
SED19103	R 9	4	16.5	0.92	0.1	19
SED19203	R301	1	22.1	5.9	0.2959	21
SED19103	R 9	2	16.5	0.92	0.1	25
SED19203	15	4	19.4	5.2	0.2149	25
SED18903	15	5	20	8.22	0.24	26
SED19003	R103	1	20.5	8	0.5	26
SED19003	R103	2	20.5	8	0.5	26
SED19103	44	5	21.5	17.1	0.5	26
SED19203	R301	3	22.1	5.9	0.2959	26
SED19003	47	2	19.5	12	0.32	29
SED19203	R308	1	18.9	11	0.388	30
SED19203	R308	3	18.9	11	0.388	30
SED19203	R308	2	18.9	11	0.388	31
SED19203	R308	4	18.9	11	0.388	31
SED19103	47	5	21.5	9.4	0.3	32
SED19203	39	2	15.8	2.7	0.1453	32
SED19003	R103	3	20.5	8	0.5	33
SED19203	15	2	19.4	5.2	0.2149	33
SED19203	R301	4	22.1	5.9	0.2959	34
SED18903	15	1	20	8.22	0.24	35
SED18903	15	3	20	8.22	0.24	35
SED19103	39	1	14.8	2.44	0.1	35
SED19103	47	2	21.5	9.4	0.3	35
SED19103	47	4	21.5	9.4	0.3	35
SED19103	39	2	14.8	2.44	0.1	36
SED19203	39	3	15.8	2.7	0.1453	36
SED19003	47	1	19.5	12	0.32	38
SED19103	44	2	21.5	17.1	0.5	41
SED19103	47	3	21.5	9.4	0.3	41
SED19203	39	1	15.8	2.7	0.1453	41
SED19203	39	4	15.8	2.7	0.1453	44
SED19203	15	3	19.4	5.2	0.2149	47
SED19203	47	4	19.5	13.2	0.5249	50
SED19003	47	3	19.5	12	0.32	57
SED19203	37	2	21.2	3.2	0.1817	58
SED19103	44	4	21.5	17.1	0.5	65
SED19103	39	4	14.8	2.44	0.1	67
SED19203	47	2	19.5	13.2	0.5249	67
SED19203	47	3	19.5	13.2	0.5249	67
SED19103	44	1	21.5	17.1	0.5	68
SEAJUN82	B-75W	B75WUC	23.0769231	5.3	0.3	71

Appendix 1. Stations and samples making up the 0-20% fines category for crustacean abundance.

SURVEY$	STATION$	SAMPLE$	DEPTHM	FINES	TOC	ARAB20
SED19103	47	1	21.5	9.4	0.3	71
SED19203	36	1	17.7	2.3	0.2236	72
SED19103	44	3	21.5	17.1	0.5	75
SED18903	28	1	20	4.9	0.15	77
SED19103	39	5	14.8	2.44	0.1	78
SED19203	36	4	17.7	2.3	0.2236	80
SED19203	44	3	20.5	17.9	0.519675	82
SED19203	44	2	20.5	17.9	0.519675	84
SED19203	47	1	19.5	13.2	0.5249	87
SED18903	23	5	20	2.1	0.12	88
SED18903	37	5	20	5.9	0.21	88
SED18903	22	3	21	4.19	0.15	89
SED18903	50	5	7	3.8	0.2	89
EVCHEM	PS-03	3	9.1	8	0.4	90
SED19203	36	3	17.7	2.3	0.2236	91
SED18903	37	3	20	5.9	0.21	92
SED19203	36	2	17.7	2.3	0.2236	92
SED18903	22	1	21	4.19	0.15	93
SED19203	32	1	20.4	5.7	0.329525	93
SED19003	44	2	19.5	14.5	0.51	94
SED19203	44	1	20.5	17.9	0.519675	94
SED18903	23	3	20	2.1	0.12	95
SED18903	31	3	22	1.7	0.15	95
SED19003	44	1	19.5	14.5	0.51	95
SED19103	22	1	22.5	12.9	0.2	96
EVCHEM	PS-03	4	9.1	8	0.4	98
SED18903	22	5	21	4.19	0.15	98
SED18903	28	3	20	4.9	0.15	99
SED19103	39	3	14.8	2.44	0.1	99
SED19203	37	4	21.2	3.2	0.1817	99
EVCHEM	PS-03	2	9.1	8	0.4	102
EVCHEM	PS-03	5	9.1	8	0.4	103
SED18903	28	5	20	4.9	0.15	104
SED19003	46	3	19.8	19	0.39	104
SED19103	22	2	22.5	12.9	0.2	104
SED19203	44	4	20.5	17.9	0.519675	104
SED19003	44	3	19.5	14.5	0.51	105
EVCHEM	PS-04	3	8.7	7.4	0.3	106
SED19103	13	3	19.3	9.8	0.2	106
SED18903	32	3	20	7.23	0.17	109
SED19203	25	3	20.4	3	0.1481	109
SED19203	32	3	20.4	5.7	0.329525	109
SED18903	32	1	20	7.23	0.17	111
SED19003	32	2	20.4	7.5	0.22	111
EVCHEM	PS-03	1	9.1	8	0.4	112
SED19003	46	2	19.8	19	0.39	112
SED19103	22	5	22.5	12.9	0.2	112
SED19003	46	1	19.8	19	0.39	115
SED18903	23	1	20	2.1	0.12	116
SED19003	32	3	20.4	7.5	0.22	116
SED19203	32	4	20.4	5.7	0.329525	118
SED19203	37	3	21.2	3.2	0.1817	118

Appendix 1. Stations and samples making up the 0-20% fines category for crustacean abundance.

SURVEY$	STATION$	SAMPLE$	DEPTHM	FINES	TOC	ARAB20
SED18903	31	1	22	1.7	0.15	119
SED19103	22	3	22.5	12.9	0.2	119
SED19203	69	3	35.4	18.1	0.4569	119
SED19203	32	2	20.4	5.7	0.329525	120
SED19003	69	3	32.4	15	0.47	121
EVCHEM	NG-02	5	8.6	3.1	0.2	123
SED18903	37	1	20	5.9	0.21	123
SED18903	32	5	20	7.23	0.17	126
SED18903	36	1	15	2.2	0.13	128
SED19203	37	1	21.2	3.2	0.1817	128
EVCHEM	NG-02	1	8.6	3.1	0.2	129
SED19203	69	4	35.4	18.1	0.4569	129
EVCHEM	NG-02	2	8.6	3.1	0.2	130
EVCHEM	NG-02	4	8.6	3.1	0.2	130
EVCHEM	PS-04	4	8.7	7.4	0.3	133
SED19203	69	1	35.4	18.1	0.4569	134
SED18903	46	5	22	9.5	0.42	135
SED19003	69	2	32.4	15	0.47	137
SED19103	43	3	20.8	5.9	0.1	137
SED19003	69	1	32.4	15	0.47	140
EVCHEM	PS-04	1	8.7	7.4	0.3	142
SED18903	46	3	22	9.5	0.42	143
EVCHEM	PS-04	2	8.7	7.4	0.3	144
SED19003	32	1	20.4	7.5	0.22	146
EVCHEM	PS-04	5	8.7	7.4	0.3	147
SED18903	46	1	22	9.5	0.42	148
SED19103	22	4	22.5	12.9	0.2	150
SED18903	50	3	7	3.8	0.2	152
SED18903	36	5	15	2.2	0.13	153
SED18903	43	1	20	6.3	0.14	169
SED19203	69	2	35.4	18.1	0.4569	169
EVCHEM	NG-02	3	8.6	3.1	0.2	170
SED19103	13	1	19.3	9.8	0.2	174
SED19003	43	3	19.8	7	0.26	175
SED19103	43	4	20.8	5.9	0.1	175
SEAJUN82	E-50W	E50WUA	15.3846154	5	0.2	180
EVCHEM	NG-06	4	10.2	7.1	0.4	181
SEAJUN82	D-50E	D50EUA	15.3846154	3.9	0.2	181
SED19103	43	1	20.8	5.9	0.1	188
EVCHEM	NG-06	3	10.2	7.1	0.4	189
SED19103	43	5	20.8	5.9	0.1	191
SED18903	50	1	7	3.8	0.2	198
SED19203	27	2	20.7	2.6	0.1656	200
SED18903	31	5	22	1.7	0.15	202
EVCHEM	SD-02	4	9.6	11.5	0.5	210
SED18903	27	1	20	3.2	0.12	215
SED19203	22	1	20.5	8	0.2596	215
SED19203	22	4	20.5	8	0.2596	217
SED18903	36	3	15	2.2	0.13	220
SED19203	43	1	19.8	6	0.2859	229
SED19103	43	2	20.8	5.9	0.1	230
EVCHEM	SD-02	5	9.6	11.5	0.5	233

Appendix 1. Stations and samples making up the 0-20% fines category for crustacean abundance.

SURVEY$	STATION$	SAMPLE$	DEPTHM	FINES	TOC	ARAB20
EVCHEM	NG-06	2	10.2	7.1	0.4	237
SEAJUN82	D-50W	D50WUC	15.3846154	6	0.2	237
SED19203	27	3	20.7	2.6	0.1656	237
SED19003	43	2	19.8	7	0.26	238
EVCHEM	SD-02	3	9.6	11.5	0.5	240
SED18903	43	5	20	6.3	0.14	242
SED19203	27	1	20.7	2.6	0.1656	242
SEAJUN82	N-75W	N75WUA	23.0769231	3.3	0.1	243
SEAJUN83	K5-75E	K575EYB	21.336	3	0.2	247
SED19003	43	1	19.8	7	0.26	247
SED19203	R301	2	22.1	5.9	0.2959	247
EVCHEM	SD-02	1	9.6	11.5	0.5	252
SED18903	43	3	20	6.3	0.14	252
SED19203	25	1	20.4	3	0.1481	252
SEAJUN82	H-75W	H75WUA	23.0769231	5.4	0.05	257
SED19203	25	2	20.4	3	0.1481	261
EVCHEM	SD-02	2	9.6	11.5	0.5	265
SED19203	27	4	20.7	2.6	0.1656	271
EVCHEM	NG-06	1	10.2	7.1	0.4	275
SEAJUN82	H-75E	H75EUA	23.0769231	1.8	0.1	282
SEAJUN82	E-75E	E75EUA	23.0769231	3.5	0.2	286
SED18903	27	3	20	3.2	0.12	292
SED19203	43	3	19.8	6	0.2859	292
SED19203	22	3	20.5	8	0.2596	297
SED19203	43	4	19.8	6	0.2859	298

Appendix 1. Stations and samples making up the 20-50% fines category for crustacean abundance.

SURVEY$	STATION$	SAMPLE$	DEPTHM	FINES	TOC	ARAB50
SED19103	18	4	19	41.8	0.6	2
SED19103	18	2	19	41.8	0.6	4
SED19103	18	5	19	41.8	0.6	5
SED19103	18	1	19	41.8	0.6	7
SED19103	18	3	19	41.8	0.6	8
SED19203	18	3	19.1	42.8	1.3271	9
SED19203	18	1	19.1	42.8	1.3271	10
SED19103	R206	5	19.4	35.6	0.8	20
SED19103	R206	3	19.4	35.6	0.8	23
SED19103	10	2	20.7	32.8	0.6	26
SED19003	R111	1	20.1	36	1.3	27
SED19203	18	2	19.1	42.8	1.3271	27
SED19103	R206	1	19.4	35.6	0.8	30
SED19103	R206	2	19.4	35.6	0.8	30
SED18903	47	3	20	23.47	0.29	32
SED19203	18	4	19.1	42.8	1.3271	34
SED19103	10	5	20.7	32.8	0.6	40
SED19103	R206	4	19.4	35.6	0.8	40
SED18903	47	5	20	23.47	0.29	41
SED19203	30	2	13.3	36.3	1.0317	46
SED19103	10	4	20.7	32.8	0.6	52
SED19103	10	3	20.7	32.8	0.6	62
SED19003	R111	3	20.1	36	1.3	64
SED19103	10	1	20.7	32.8	0.6	69
SED19103	30	5	13.3	23.5	0.7	71
EVCHEM	SR-08	1	10.9	22.1	1.7	74
SED18903	47	1	20	23.47	0.29	91
SED18903	10	5	20	37.2	0.61	96
SED19003	0033	1	19.8	34	1.1	98
SED18903	10	1	20	37.2	0.61	99
SED19103	30	1	13.3	23.5	0.7	103
SED18903	10	3	20	37.2	0.61	104
SED19103	30	2	13.3	23.5	0.7	105
SED19103	30	3	13.3	23.5	0.7	106
SED19103	69	4	34.4	21.4	0.6	110
SED19003	0033	3	19.8	34	1.1	111
SED19003	71	3	6.1	46	1.4	111
SED19103	69	3	34.4	21.4	0.6	118
SED19103	30	4	13.3	23.5	0.7	125
EVCHEM	SR-08	2	10.9	22.1	1.7	132
SED19003	71	1	6.1	46	1.4	134
SED19003	71	2	6.1	46	1.4	134
SED19103	69	5	34.4	21.4	0.6	137
SED19103	69	2	34.4	21.4	0.6	142
SED19203	30	3	13.3	36.3	1.0317	144
SED19003	0033	2	19.8	34	1.1	145
SED19203	30	4	13.3	36.3	1.0317	146
SED19103	R209	1	19.6	34	0.5	147
SED19103	33	3	20.8	31.5	0.9	150
SED19203	40	4	9.4	32.2	2.1687	150
SED19203	30	1	13.3	36.3	1.0317	152

Appendix 1. Stations and samples making up the 20-50% fines category for crustacean abundance.

SURVEY$	STATION$	SAMPLE$	DEPTHM	FINES	TOC	ARAB50
SED19103	33	5	20.8	31.5	0.9	153
SED18903	33	5	20	24.04	0.64	160
SED19203	40	1	9.4	32.2	2.1687	164
SED19203	40	2	9.4	32.2	2.1687	164
SED19103	R209	2	19.6	34	0.5	165
SED18903	33	3	20	24.04	0.64	167
SED19103	R209	3	19.6	34	0.5	169
SED19103	R209	5	19.6	34	0.5	171
SED19103	69	1	34.4	21.4	0.6	176
SED19103	33	4	20.8	31.5	0.9	183
SED19103	R209	4	19.6	34	0.5	185
SED19203	40	3	9.4	32.2	2.1687	187
SED19103	33	2	20.8	31.5	0.9	189
SED18903	33	1	20	24.04	0.64	201
EVCHEM	SR-08	5	10.9	22.1	1.7	210
SED19103	33	1	20.8	31.5	0.9	218
EVCHEM	SR-08	4	10.9	22.1	1.7	222

Appendix 1. Stations and samples making up the 50-80% fines category for crustacean abundance.

SURVEY$	STATION$	SAMPLE$	DEPTHM	FINES	TOC	ARAB80
SED18903	18	1	20	60.15	0.93	0
SED19103	70	5	6.5	67.2	3.2	0
SED18903	18	5	20	60.15	0.93	1
SED19103	70	1	6.5	67.2	3.2	2
SED19003	70	3	5.2	64	3.1	3
SED19203	70	4	7.2	66.5	2.1101	4
SED19103	70	2	6.5	67.2	3.2	5
SED19103	70	4	6.5	67.2	3.2	5
SED19203	70	2	7.2	66.5	2.1101	5
SED19103	70	3	6.5	67.2	3.2	6
SED19003	70	1	5.2	64	3.1	7
SED19203	70	3	7.2	66.5	2.1101	7
SED18903	18	3	20	60.15	0.93	8
SED19103	2	3	21.3	57.7	0.8	8
SED19103	R207	2	29.9	73.4	1.5	8
SED19103	2	4	21.3	57.7	0.8	9
SED19003	70	2	5.2	64	3.1	10
SED19103	2	2	21.3	57.7	0.8	10
SED19103	8	3	22.1	63.7	2.9	11
SED19103	R207	3	29.9	73.4	1.5	16
SED19103	2	1	21.3	57.7	0.8	18
SED19103	2	5	21.3	57.7	0.8	18
SED19103	R207	1	29.9	73.4	1.5	18
SED19103	8	4	22.1	63.7	2.9	19
SED19103	R205	1	31.9	62.1	1.1	19
SED19103	R205	3	31.9	62.1	1.1	19
SED19203	70	1	7.2	66.5	2.1101	19
SED19103	R205	4	31.9	62.1	1.1	20
SED19103	R207	5	29.9	73.4	1.5	20
SED19103	R205	5	31.9	62.1	1.1	23
SED19103	R205	2	31.9	62.1	1.1	26
SED19103	8	2	22.1	63.7	2.9	28
SED19203	8	3	21.1	71.8	2.2161	28
SED18903	2	1	20	60.7	0.68	30
SED19103	8	1	22.1	63.7	2.9	31
SED18903	2	5	20	60.7	0.68	33
SED19203	R302	3	20.6	68.5	0.9448	33
SED19103	71	2	7.1	55.8	1.2	34
SED19103	R207	4	29.9	73.4	1.5	34
SED19103	8	5	22.1	63.7	2.9	36
SED19203	R302	4	20.6	68.5	0.9448	36
SED19103	71	3	7.1	55.8	1.2	38
SED19003	8	3	21.1	64	3.4	41
SED19203	41	4	19.1	75.1	1.1428	43
SED19103	71	1	7.1	55.8	1.2	44
SED19103	71	5	7.1	55.8	1.2	44
SED19203	R302	1	20.6	68.5	0.9448	46
SED19003	8	2	21.1	64	3.4	47
SED19203	71	3	6.1	53	1.2331	49
SED18903	2	3	20	60.7	0.68	50
SED19203	41	2	19.1	75.1	1.1428	54

Appendix 1. Stations and samples making up the 50-80% fines category for crustacean abundance.

SURVEY$	STATION$	SAMPLE$	DEPTHM	FINES	TOC	ARAB80
SED19203	41	3	19.1	75.1	1.1428	57
SED19203	71	4	6.1	53	1.2331	58
SED19203	8	2	21.1	71.8	2.2161	61
SED19203	71	2	6.1	53	1.2331	63
SED19203	71	1	6.1	53	1.2331	68
SED19203	8	4	21.1	71.8	2.2161	69
SED19203	8	1	21.1	71.8	2.2161	71
SED19103	71	4	7.1	55.8	1.2	74
SED18903	8	1	21	65.77	3.9	75
SED19003	8	1	21.1	64	3.4	79
SED18903	8	5	21	65.77	3.9	81
SED19003	0030	1	13.3	62	1.4	82
SED18903	8	3	21	65.77	3.9	84
SED19203	41	1	19.1	75.1	1.1428	85
SED19003	R105	3	14	75	2.2	100
SED19003	R105	1	14	75	2.2	108
SED19203	R303	2	14.5	76.8	1.2708	110
SED19003	0030	2	13.3	62	1.4	112
SED19203	R302	2	20.6	68.5	0.9448	122
SED19003	0030	3	13.3	62	1.4	124
SED19203	R303	1	14.5	76.8	1.2708	138
SED19003	R105	2	14	75	2.2	155
SED19203	R303	3	14.5	76.8	1.2708	167
SED19203	R303	4	14.5	76.8	1.2708	174
SED19203	23	2	6.1	53	1.2331	249
SED19203	23	3	6.1	53	1.2331	250

Appendix 1. Stations and samples making up the 80-100% fines category for crustacean abundance.

SURVEY$	STATION$	SAMPLE$	DEPTHM	FINES	TOC	ARAB100
SED19103	20	1	11.8	96.2	1	0
SED19103	20	3	11.8	96.2	1	1
SED19103	20	5	11.8	96.2	1	1
SED19003	R101	2	2.1	90	4	3
SED19103	20	2	11.8	96.2	1	5
SED19103	20	4	11.8	96.2	1	5
SED19203	4	1	24	96.8	2.4931	6
SED19203	49	3	4.7	88.1	2.1381	10
SED19003	0018	3	19.1	92	1.5	13
SED19003	R101	3	2.1	90	4	13
SED19203	4	2	24	96.8	2.4931	13
SED19003	0018	2	19.1	92	1.5	14
SED19203	4	4	24	96.8	2.4931	14
SED19203	49	1	4.7	88.1	2.1381	14
SED19203	49	2	4.7	88.1	2.1381	14
SED19003	R101	1	2.1	90	4	16
SED19203	20	1	10.3	95.7	1.0068	16
SED19203	20	4	10.3	95.7	1.0068	16
SED19203	49	4	4.7	88.1	2.1381	16
SED19103	5	3	20.2	95.6	1.8	19
SED19203	4	3	24	96.8	2.4931	19
SED19203	20	3	10.3	95.7	1.0068	20
SED19103	5	5	20.2	95.6	1.8	22
SED19203	20	2	10.3	95.7	1.0068	22
SED19103	12	3	21.1	91.4	1.5	23
SED19103	5	4	20.2	95.6	1.8	24
SED19103	12	4	21.1	91.4	1.5	24
SED19003	0018	1	19.1	92	1.5	25
SED19103	5	2	20.2	95.6	1.8	26
SED19203	5	1	21	94.8	1.9311	26
SED19203	5	2	21	94.8	1.9311	26
SED19203	5	4	21	94.8	1.9311	27
SED19103	R204	2	31.7	94.1	2.4	28
SED19203	5	3	21	94.8	1.9311	28
SED19103	12	2	21.1	91.4	1.5	31
SEAJUN82	QM-2	QM2UA	16.307692	85	1.3	33
SED19103	5	1	20.2	95.6	1.8	34
SED19103	12	1	21.1	91.4	1.5	35
SED19103	12	5	21.1	91.4	1.5	35
SED19103	R204	3	31.7	94.1	2.4	35
SED19103	4	3	25.4	97.6	2	36
SED19203	12	1	21.1	93.1	1.1471	37
SED19103	4	2	25.4	97.6	2	38
SED19003	R102	1	11.6	88	2.6	39
SED19103	4	5	25.4	97.6	2	39
SED19103	R204	4	31.7	94.1	2.4	39
SED19103	4	1	25.4	97.6	2	41
SED19103	R203	5	12.5	98.7	1.7	41
SED19203	12	2	21.1	93.1	1.1471	41
SED19003	R102	2	11.6	88	2.6	43
SED19103	4	4	25.4	97.6	2	46

Appendix 1. Stations and samples making up the 80-100% fines category for crustacean abundance.

SURVEY$	STATION$	SAMPLE$	DEPTHM	FINES	TOC	ARAB100
SED19103	R203	3	12.5	98.7	1.7	49
SED19203	12	4	21.1	93.1	1.1471	54
SED19003	R102	3	11.6	88	2.6	56
SED19103	R203	1	12.5	98.7	1.7	57
SED19003	0012	2	21.1	93	1.8	60
SED19103	R203	4	12.5	98.7	1.7	62
SED19203	12	3	21.1	93.1	1.1471	62
SED19103	48	5	21.3	89.8	2.3	63
SED19003	0012	1	21.1	93	1.8	65
SED19103	R203	2	12.5	98.7	1.7	65
SED19003	0012	3	21.1	93	1.8	68
SED19003	0020	3	10.3	97	1.2	73
SED19103	R204	1	31.7	94.1	2.4	75
SED19103	48	2	21.3	89.8	2.3	76
SED19003	0020	1	10.3	97	1.2	79
SED19003	0020	2	10.3	97	1.2	81
SED19103	R204	5	31.7	94.1	2.4	85
SED18903	20	1	11	94.11	1	87
SED19103	48	3	21.3	89.8	2.3	95
SED19103	48	4	21.3	89.8	2.3	96
SED18903	1	3	22	93.32	1.5	98
SED19103	48	1	21.3	89.8	2.3	103
SED18903	20	3	11	94.11	1	114
SED18903	20	5	11	94.11	1	129
SED18903	1	5	22	93.32	1.5	130
SED19003	R106	3	11.2	86	2.8	133
SED19103	1	2	23.5	95.8	1.7	133
SED18903	1	1	22	93.32	1.5	138
SED19003	0048	1	20	92	2.2	148
SED19003	1	1	22.5	97	1.8	150
SED19003	0048	2	20	92	2.2	150
SED19003	R106	1	11.2	86	2.8	159
SED19003	1	3	22.5	97	1.8	168
SED19203	48	2	20.5	88.7	1.5201	190
SED19003	1	2	22.5	97	1.8	192
SED19003	R109	3	22.7	91	2.5	196
SED19203	48	3	20.5	88.7	1.5201	197
SED19203	48	1	20.5	88.7	1.5201	198
SED19103	1	1	23.5	95.8	1.7	201
SED19003	0048	3	20	92	2.2	212
SED19003	R106	2	11.2	86	2.8	216
SED19003	R109	1	22.7	91	2.5	228
SED19003	R109	2	22.7	91	2.5	245
SED19103	1	4	23.5	95.8	1.7	248
SED19103	1	3	23.5	95.8	1.7	249
SED19203	1	4	22.5	94.1	1.7421	252
SED19203	48	4	20.5	88.7	1.5201	252

Appendix 1. Stations and samples making up the 0-20% fines category for the Infaunal Trophic Index.

SURVEY$	STATIONS$	SAMPLES$	DEPTHM	FINES	TOC	ITI120
EVCHEM	NG-06	4	10.2	7.1	0.4	69
SEAJUN82	K-50E	K50EUB	15.4	1.8	0.7	69
SED18903	36	1	15.0	2.2	0.1	69
SED19103	R 9	3	16.5	0.9	0.1	69
SED19103	R 9	2	16.5	0.9	0.1	69
SED19103	39	3	14.8	2.4	0.1	69
SED19203	39	3	15.8	2.7	0.1	69
SED19203	R301	2	22.1	5.9	0.3	69
SED19203	R301	3	22.1	5.9	0.3	69
SED19203	R308	2	18.9	11.0	0.4	69
SED19103	22	5	22.5	12.9	0.2	60
SED18903	6	3	20.0	7.1	0.2	62
SED19003	R103	1	20.5	8.0	0.5	62
SED18903	6	5	20.0	7.1	0.2	63
SED19103	22	1	22.5	12.9	0.2	63
SED19103	39	2	14.8	2.4	0.1	64
EVCHEM	NG-06	3	10.2	7.1	0.4	65
SED19203	22	3	20.5	8.0	0.3	65
EVCHEM	NG-06	2	10.2	7.1	0.4	66
SEAJUN82	H-75E	H75EUA	23.1	1.8	0.1	66
SED18903	50	5	7.0	3.8	0.2	66
SED18903	36	5	15.0	2.2	0.1	66
SED18903	36	3	15.0	2.2	0.1	66
SED19003	R103	2	20.5	8.0	0.5	66
SED19003	R103	3	20.5	8.0	0.5	66
SED19103	22	2	22.5	12.9	0.2	66
SED19103	R 9	5	16.5	0.9	0.1	66
SED19103	39	1	14.8	2.4	0.1	66
EVCHEM	NG-02	2	8.6	3.1	0.2	67
EVCHEM	NG-02	1	8.6	3.1	0.2	67
EVCHEM	NG-06	1	10.2	7.1	0.4	67
EVCHEM	NG-02	3	8.6	3.1	0.2	67
EVCHEM	NG-02	5	8.6	3.1	0.2	67
SEAJUN82	B-75W	B75WUC	23.1	5.3	0.3	67
SED18903	15	5	20.0	8.2	0.2	67
SED18903	22	3	21.0	4.2	0.2	67
SED19203	R308	1	18.9	11.0	0.4	67
SED19203	27	1	20.7	2.6	0.2	67
SED19203	39	1	15.8	2.7	0.1	67
SED19203	R308	4	18.9	11.0	0.4	67
EVCHEM	NG-02	4	8.6	3.1	0.2	68
SEAJUN82	E-50E	E50EUA	15.4	4.0	0.2	68
SEAJUN82	E-50E	E50EUB	15.4	4.0	0.2	68
SEAJUN82	K-50E	K50EUA	15.4	1.8	0.7	68
SED18903	16	1	20.0	3.9	0.2	68
SED19103	39	5	14.8	2.4	0.1	68
SED19103	39	4	14.8	2.4	0.1	68
SED19103	13	3	19.3	9.8	0.2	68
SED19203	22	4	20.5	8.0	0.3	68
SED19203	R301	4	22.1	5.9	0.3	68
SED19103	R 9	4	16.5	0.9	0.1	69
SED19203	R308	3	18.9	11.0	0.4	69
EVCHEM	PS-03	3	9.1	8.0	0.4	70

Appendix 1. Stations and samples making up the 0-20% fines category for the Infaunal Trophic Index.

SEAJUN82	J-75E	J75EUA	23.1	2.1	0.1	70
SEASEP82	C-50E	C50EVB	15.4	2.3	0.1	70
SED18903	22	5	21.0	4.2	0.2	70
SED18903	15	3	20.0	8.2	0.2	70
SED18903	22	1	21.0	4.2	0.2	70
SED18903	50	1	7.0	3.8	0.2	70
SED19103	47	1	21.5	9.4	0.3	70
SED19203	22	1	20.5	8.0	0.3	70
SED19203	27	2	20.7	2.6	0.2	70
SED19203	R301	1	22.1	5.9	0.3	70
SEAJUN83	K5-75E	K575EYB	21.3	3.0	0.2	71
SED18903	50	3	7.0	3.8	0.2	71
SED19203	39	2	15.8	2.7	0.1	71
SED19203	25	1	20.4	3.0	0.1	71
SED19203	27	3	20.7	2.6	0.2	71
EVCHEM	PS-03	4	9.1	8.0	0.4	72
EVCHEM	SD-02	2	9.6	11.5	0.5	72
SEAJUN82	D-50W	D50WUC	15.4	6.0	0.2	72
SED18903	23	5	20.0	2.1	0.1	72
SED18903	16	5	20.0	3.9	0.2	72
SED18903	15	1	20.0	8.2	0.2	72
SED19203	32	4	20.4	5.7	0.3	72
SED19203	32	2	20.4	5.7	0.3	72
SED19203	47	3	19.5	13.2	0.5	72
SED19203	39	4	15.8	2.7	0.1	72
SED19203	32	3	20.4	5.7	0.3	72
EVCHEM	SD-02	3	9.6	11.5	0.5	73
EVCHEM	SD-02	1	9.6	11.5	0.5	73
EVCHEM	PS-02	5	9.1	8.0	0.4	73
SED18903	23	1	20.0	2.1	0.1	73
SED18903	16	3	20.0	3.9	0.2	73
SED19103	44	5	21.5	17.1	0.5	73
SED19103	R9	1	16.5	0.9	0.1	73
SED19203	69	2	35.4	18.1	0.5	73
SED19203	27	4	20.7	2.6	0.2	73
EVCHEM	PS-03	1	9.1	8.0	0.4	74
EVCHEM	PS-04	4	8.7	7.4	0.3	74
EVCHEM	SD-02	5	9.6	11.5	0.5	74
EVCHEM	SD-02	4	9.6	11.5	0.5	74
SEAJUN82	E-75E	E75EUA	23.1	3.5	0.2	74
SEAJUN82	H-75W	H75WUA	23.1	5.4	0.1	74
SED18903	27	5	20.0	3.2	0.1	74
SED19003	47	3	19.5	12.0	0.3	74
SED19003	47	2	19.5	12.0	0.3	74
SED19203	44	3	20.5	17.9	0.5	74
SED19203	44	1	20.5	17.9	0.5	74
SED19203	36	2	17.7	2.3	0.2	74
SED19203	44	2	20.5	17.9	0.5	74
SED19203	25	2	20.4	3.0	0.1	74
SED19203	25	3	20.4	3.0	0.1	74
SED19203	47	2	19.5	13.2	0.5	74
EVCHEM	PS-04	1	8.7	7.4	0.3	75
EVCHEM	PS-03	2	9.1	8.0	0.4	75
SED18903	27	1	20.0	3.2	0.1	75
SED18903	23	3	20.0	2.1	0.1	75

Appendix 1. Stations and samples making up the 0-20% fines category for the Infaunal Trophic Index.

SED18903	46	5	22.0	9.5	0.4	75
SED18903	31	1	22.0	1.7	0.2	75
SED19103	44	4	21.5	17.1	0.5	75
SED19103	44	2	21.5	17.1	0.5	75
SED19103	47	2	21.5	9.4	0.3	75
SED19203	36	3	17.7	2.3	0.2	75
EVCHEM	PS-04	5	8.7	7.4	0.3	76
SEAJUN82	E-50W	E50WUA	15.4	5.0	0.2	76
SED18903	46	1	22.0	9.5	0.4	76
SED18903	27	3	20.0	3.2	0.1	76
SED19003	69	3	32.4	15.0	0.5	76
SED19103	13	1	19.3	9.8	0.2	76
SED19203	37	3	21.2	3.2	0.2	76
SED19203	37	2	21.2	3.2	0.2	76
SED19203	32	1	20.4	5.7	0.3	76
EVCHEM	PS-04	2	8.7	7.4	0.3	77
SED18903	31	5	22.0	1.7	0.2	77
SED19003	47	1	19.5	12.0	0.3	77
SED19103	44	1	21.5	17.1	0.5	77
SED19203	44	4	20.5	17.9	0.5	77
SED19203	47	4	19.5	13.2	0.5	77
SED19203	36	4	17.7	2.3	0.2	77
SED19203	36	1	17.7	2.3	0.2	77
SED18903	31	3	22.0	1.7	0.2	78
SED19003	46	2	19.8	19.0	0.4	78
SED19003	69	1	32.4	15.0	0.5	78
SED19203	37	4	21.2	3.2	0.2	78
SED19203	69	4	35.4	18.1	0.5	78
SEAJUN82	N-75W	N75WUA	23.1	3.3	0.1	79
SED19003	32	1	20.4	7.5	0.2	79
SED19103	44	3	21.5	17.1	0.5	79
SED19203	69	3	35.4	18.1	0.5	79
SED18903	37	3	20.0	5.9	0.2	80
SED18903	46	3	22.0	9.5	0.4	80
SED18903	37	1	20.0	5.9	0.2	81
SED19003	69	2	32.4	15.0	0.5	81
SED19003	46	1	19.8	19.0	0.4	81
SED19003	32	3	20.4	7.5	0.2	81
SED19103	47	3	21.5	9.4	0.3	81
SED19203	47	1	19.5	13.2	0.5	81
SED19203	37	1	21.2	3.2	0.2	81
SED19203	69	1	35.4	18.1	0.5	81
EVCHEM	PS-04	3	8.7	7.4	0.3	82
SED18903	43	3	20.0	6.3	0.1	82
SED19003	46	3	19.8	19.0	0.4	82
SEAJUN82	D-50E	D50EUA	15.4	3.9	0.2	83
SED18903	28	1	20.0	4.9	0.2	83
SED18903	32	3	20.0	7.2	0.2	83
SED19003	43	2	19.8	7.0	0.3	83
SED19103	43	4	20.8	5.9	0.1	83
SED18903	43	1	20.0	6.3	0.1	84
SED19103	47	5	21.5	9.4	0.3	84
SED19203	15	4	19.4	5.2	0.2	84
SED19003	44	1	19.5	14.5	0.5	85
SED19003	44	3	19.5	14.5	0.5	85

Appendix 1. Stations and samples making up the 0-20% fines category for the Infaunal Trophic Index.

SED19003	32	2	20.4	7.5	0.2	85
SED19103	43	1	20.8	5.9	0.1	85
SED19103	47	4	21.5	9.4	0.3	85
SED19203	43	2	19.8	6.0	0.3	85
SED19203	43	3	19.8	6.0	0.3	85
SED19203	15	1	19.4	5.2	0.2	85
SED18903	32	5	20.0	7.2	0.2	86
SED19103	43	2	20.8	5.9	0.1	86
SED19203	43	1	19.8	6.0	0.3	86
SED18903	43	5	20.0	6.3	0.1	87
SED18903	37	5	20.0	5.9	0.2	87
SED18903	32	1	20.0	7.2	0.2	87
SED19003	43	3	19.8	7.0	0.3	87
SED19203	15	3	19.4	5.2	0.2	87
SED19203	43	4	19.8	6.0	0.3	87
SED18903	28	5	20.0	4.9	0.2	88
SED19003	44	2	19.5	14.5	0.5	88
SED19003	43	1	19.8	7.0	0.3	88
SED19103	43	5	20.8	5.9	0.1	88
SED19203	15	2	19.4	5.2	0.2	88

Appendix 1. Stations and samples making up the 20-50% fines category for the Infaunal Trophic Index.

SURVEY$	STATIONS$	SAMPLES$	DEPTHM	FINES	TOC	ITI150
SED19003	R111	1	20.1	36.0	1.3	66
SED19003	33	1	20.8	31.5	0.9	66
EVCHEM	SR-08	2	10.9	22.1	1.7	66
SED19103	18	5	19.0	41.8	0.6	66
SED19003	0033	3	19.8	34.0	1.1	66
SED19103	18	1	19.0	41.8	0.6	67
SED19203	30	1	13.3	36.3	1.0	67
SED19103	33	4	20.8	31.5	0.9	67
SED19103	18	4	19.0	41.8	0.6	67
SED19103	18	2	19.0	41.8	0.6	67
SED19103	18	3	19.0	41.8	0.6	67
SED19103	33	2	20.8	31.5	0.9	67
SED19203	30	3	13.3	36.3	1.0	67
EVCHEM	SR-08	1	10.9	22.1	1.7	67
SED19103	33	3	20.8	31.5	0.9	67
EVCHEM	SR-08	3	10.9	22.1	1.7	67
EVCHEM	SR-08	4	10.9	22.1	1.7	67
SED19003	0033	1	19.8	34.0	1.1	67
SED18903	33	1	20.0	24.0	0.6	67
SED18903	33	3	20.0	24.0	0.6	68
EVCHEM	SR-08	5	10.9	22.1	1.7	68
SED19103	33	5	20.8	31.5	0.9	68
SED19103	R206	4	19.4	35.6	0.8	68
SED19103	R206	5	19.4	35.6	0.8	68
SED19203	40	2	9.4	32.2	2.2	68
SED18903	33	5	20.0	24.0	0.6	68
SED19203	30	2	13.3	36.3	1.0	68
SED19103	R209	5	19.6	34.0	0.5	68
SED19203	30	4	13.3	36.3	1.0	68
SED19203	18	4	19.1	42.8	1.3	68
SED19003	0033	2	19.8	34.0	1.1	68
SED19203	40	1	9.4	32.2	2.2	68
SED19103	R209	4	19.6	34.0	0.5	69
SED19103	R209	3	19.6	34.0	0.5	69
SED19103	R209	2	19.6	34.0	0.5	69
SED19103	R206	2	19.4	35.6	0.8	69
SED19203	40	4	9.4	32.2	2.2	69
SED19103	R206	1	19.4	35.6	0.8	70
SED19203	40	3	9.4	32.2	2.2	70
SED19103	R209	1	19.6	34.0	0.5	70
SED19103	**R206**	**3**	**19.4**	**35.6**	**0.8**	**70**
SED19203	18	1	19.1	42.8	1.3	71
SED19203	18	2	19.1	42.8	1.3	72
SED19203	18	3	19.1	42.8	1.3	73
SED19003	71	2	6.1	46.0	1.4	74
SED19103	30	3	13.3	23.5	0.7	74
SED19003	71	1	6.1	46.0	1.4	74
SED19103	30	4	13.3	23.5	0.7	75
SED19003	R111	3	20.1	36.0	1.3	76
SED18903	47	1	20.0	23.5	0.3	76
SED19103	30	5	13.3	23.5	0.7	76
SED19003	71	3	6.1	46.0	1.4	78
SED19103	69	5	34.4	21.4	0.6	78

Appendix 1. Stations and samples making up the 20-50% fines category for the Infaunal Trophic Index.

SED19103	30	2	13.3	23.5	0.7	79
SED19103	69	1	34.4	21.4	0.6	80
SED19103	69	4	34.4	21.4	0.6	80
SED19103	69	3	34.4	21.4	0.6	81
SED19103	10	2	20.7	32.8	0.6	81
SED19103	69	2	34.4	21.4	0.6	81
SED18903	47	3	20.0	23.5	0.3	82
SED19103	30	1	13.3	23.5	0.7	82
SED19103	10	3	20.7	32.8	0.6	83
SED18903	47	5	20.0	23.5	0.3	83
SED19103	10	4	20.7	32.8	0.6	83
SED19103	10	5	20.7	32.8	0.6	84

Appendix 1. Stations and samples making up the 50-80% fines category for the Infaunal Trophic Index.

SURVEY$	STATIONS$	SAMPLES$	DEPTHM	FINES	TOC	ITI180
SED19103	70	2	6.5	67.2	3.2	52
SED19203	70	4	7.2	66.5	2.1	56
SED19103	70	4	6.5	67.2	3.2	57
SED19203	21	3	21.7	62.2	1.2	59
SED19003	70	3	5.2	64.0	3.1	60
SED19203	21	4	21.7	62.2	1.2	60
SED18903	21	3	20.0	52.2	1.3	61
SED18903	21	5	20.0	52.2	1.3	61
SED19203	21	2	21.7	62.2	1.2	62
SED18903	21	1	20.0	52.2	1.3	62
SED19103	70	5	6.5	67.2	3.2	62
SED19203	R302	2	20.6	68.5	0.9	63
SED19103	2	2	21.3	57.7	0.8	64
SED19103	2	3	21.3	57.7	0.8	64
SED19103	R207	2	29.9	73.4	1.5	64
SED19103	R207	3	29.9	7.34	1.5	64
SED19203	21	1	21.7	62.2	1.2	64
SED19103	R207	1	29.9	73.4	1.5	65
SED19103	R207	4	29.9	73.4	1.5	65
SED19203	41	2	19.1	75.1	1.1	65
SED19103	R207	5	29.9	73.4	1.5	65
SED19203	70	3	7.2	66.5	2.1	66
SED19203	41	3	19.1	75.1	1.1	66
SED19003	70	2	5.2	64.0	3.1	66
SED19003	70	1	5.2	64.0	3.1	66
SED19203	41	1	19.1	75.1	1.1	66
SED18903	18	1	20.0	60.2	0.9	66
SED19103	70	3	6.5	67.2	3.2	66
SED19203	70	2	7.2	66.5	2.1	67
SED19203	70	1	7.2	66.5	2.1	67
SED19203	41	4	19.1	75.1	1.1	67
SED19103	70	1	6.5	67.2	3.2	67
SED18903	18	3	20.0	60.2	0.9	67
SED18903	18	5	20.0	60.2	0.9	67
SED18903	30	5	13.0	56.0	1.4	68
SED19003	0030	1	13.3	62.0	1.4	68
SED19103	2	4	21.3	57.7	0.8	69
SED19203	R302	1	20.6	68.5	0.9	69
SED19003	0030	3	13.3	62.0	1.4	69
SED19203	R302	3	20.6	68.5	0.9	70
SED19203	R302	4	20.6	68.5	0.9	70
SED19003	0030	2	13.3	62.0	1.4	70
SED19203	71	4	6.1	53.0	1.2	70
SED18903	2	1	20.0	60.7	0.7	70
SED19203	71	1	6.1	53.0	1.2	70
SED19103	8	4	22.1	63.7	2.9	71
SED19203	23	4	6.1	53.0	1.2	71
SED19203	23	2	6.1	53.0	1.2	71
SED19103	8	2	22.1	63.7	2.9	72
SED18903	2	3	20.0	60.7	0.7	72
SED19203	R303	3	14.5	76.8	1.3	72
SED19203	R303	2	14.5	76.8	1.3	73
SED19203	8	1	21.1	71.8	2.2	73

Appendix 1. Stations and samples making up the 50-80% fines category for the Infaunal Trophic Index.

SED19103	71	4	7.1	55.8	1.2	73
SED19103	8	3	22.1	63.7	2.9	73
SED19203	71	3	6.1	53.0	1.2	73
SED19203	71	2	6.1	53.0	1.2	74
SED19203	R303	1	14.5	76.8	1.3	74
SED19203	R303	4	14.5	76.8	1.3	74
SED19103	71	1	7.1	55.8	1.2	74
SED19103	71	5	7.1	55.8	1.2	74
SED19103	R205	1	31.9	62.1	1.1	75
SED19203	23	3	6.1	53.0	1.2	75
SED19103	8	1	22.1	63.7	2.9	76
SED19103	71	3	7.1	55.8	1.2	76
SED19103	2	5	21.3	57.7	0.8	76
SED19103	8	5	22.1	63.7	2.9	77
SED19203	8	3	21.1	71.8	2.2	78
SED19203	8	2	21.1	71.8	2.2	78
SED19003	8	3	21.1	64.0	3.4	79
SED19003	8	2	21.1	64.0	3.4	79
SED19103	R205	2	31.9	62.1	1.1	80
SED18903	2	5	20.0	60.7	0.7	80
SED18903	8	5	21.0	65.8	3.9	80
SED19003	R105	3	14.0	75.0	2.2	80
SED19003	R105	2	14.0	75.0	2.2	80
SED19103	2	1	21.3	57.7	0.8	80
SED19103	R205	5	31.9	62.1	1.1	81
SED19203	8	4	21.1	71.8	2.2	81
SED19103	R205	4	31.9	62.1	1.1	82
SED19003	R105	1	14.0	75.0	2.2	83
SED19103	R205	3	31.9	62.1	1.1	83
SED19003	8	1	21.1	64.0	3.4	84

Appendix 1. Stations and samples making up the 80-100% fines category for the Infaunal Trophic Index.

SURVEY$	STATIONS$	SAMPLES$	DEPTHM	FINES	TOC	ITI100
SEAJUN82	QM-2	QM2UA	16.3	85.0	1.3	54.0
SED19103	R204	3	31.7	94.1	2.4	56.0
SED19003	R102	2	11.6	88.0	2.6	58.0
SED19103	R204	4	31.7	94.1	2.4	58.0
SED19203	49	1	4.7	88.1	2.1	59.0
SED19003	R102	1	11.6	88.0	2.6	62.0
SED19203	5	1	21	94.8	1.9	63.0
SED19203	49	3	4.7	88.1	2.1	63.0
SED19003	R101	3	2.1	90.0	4.0	63.0
SED19003	R101	2	2.1	90.0	4.0	64.0
SED19203	49	2	4.7	88.1	2.1	64.0
SED19203	48	2	20.5	88.7	1.5	65.0
SED19103	48	2	21.3	89.8	2.3	65.0
SED19003	0018	3	19.1	92.0	1.5	66.0
SED19003	0048	3	20.0	92.0	2.2	66.0
SED19003	0048	2	20.0	92.0	2.2	66.0
SED19203	48	3	20.5	88.7	1.5	66.0
SED19003	0018	1	19.1	92.0	1.5	66.0
SED19103	R204	5	31.7	94.1	2.4	66.0
SED19003	0018	2	19.1	92.0	1.5	66.0
SED19103	5	3	20.2	95.6	1.8	67.0
SED19203	48	4	20.5	88.7	1.5	67.0
SED19203	48	1	20.5	88.7	1.5	67.0
SED19203	49	4	4.7	88.1	2.1	67.0
SED19003	0048	1	20.0	92.0	2.2	67.0
SED19103	48	5	21.3	89.8	2.3	68.0
SED19103	R204	2	31.7	94.1	2.4	69.0
SED19103	48	3	21.3	89.8	2.3	69.0
SED19103	48	4	21.3	89.8	2.3	69.0
SED19103	48	1	21.3	89.8	2.3	70.0
SED19103	5	5	20.2	95.6	1.8	71.0
SED19103	R203	2	12.5	98.7	1.7	73.0
SED19103	20	3	11.8	96.2	1.0	73.0
SED19003	R106	3	11.2	86.0	2.8	74.0
SED19103	5	1	20.2	95.6	1.8	74.0
SED19103	20	5	11.8	96.2	1	75.0
SED19203	5	2	21.0	94.8	1.9	75.0
SED19203	5	4	21.0	94.8	1.9	75.0
SED19103	R204	1	31.7	94.1	2.4	75.0
SED19103	4	5	25.4	97.6	2.0	76.0
SED19103	**20**	**1**	**11.8**	**96.2**	**1.0**	**76.0**
SED19103	5	4	20.2	95.6	1.8	76.0
SED19103	20	2	11.8	96.2	1.0	76.0
SED18903	20	5	11.0	94.1	1.0	77.0
SED19203	5	3	21.0	94.8	1.9	77.0
SED19203	4	3	24.0	96.8	2.5	77.0
SED19103	20	4	11.8	96.2	1.0	77.0
SED18903	20	3	11.0	94.1	1.0	77.0
SED19003	R101	1	2.1	90.0	4.0	77.0
SED19103	5	2	20.2	95.6	1.8	77.0
SED19003	0020	2	10.3	97.0	1.2	77.0
SED18903	1	1	22.0	93.3	1.5	78.0
SED18903	20	1	11.0	94.1	1.0	79.0

Appendix 1. Stations and samples making up the 80-100% fines category for the Infaunal Trophic Index.

SED19203	20	3	10.3	95.7	1.0	79.0
SED19103	4	1	25.4	97.6	2.0	80.0
SED19003	0020	1	10.3	97.0	1.2	80.0
SED19203	4	4	24.0	96.8	2.5	80.0
SED19003	R109	2	22.7	91.0	2.5	80.0
SED18903	1	3	22.0	93.3	1.5	81.0
SED19003	0020	3	10.3	97.0	1.2	81.0
SED19003	0012	2	21.1	93.0	1.8	81.0
SED19103	R203	5	12.5	98.7	1.7	81.0
SED19103	1	2	23.5	95.8	1.7	82.0
SED19103	1	1	23.5	95.8	1.7	82.0
SED19103	R203	4	12.5	98.7	1.7	82.0
SED19203	20	4	10.3	95.7	1.0	82.0
SED19103	R203	1	12.5	98.7	1.7	83.0
SED19003	R106	1	11.2	86.0	2.8	83.0
SED19203	20	1	10.3	95.7	1.0	84.0
SED19203	4	1	24.0	96.8	2.5	84.0
SED19203	20	2	10.3	95.7	1.0	84.0
SED19003	R109	1	22.7	91.0	2.5	84.0
SED19003	0012	1	21.1	93.0	1.8	84.0
SED19003	R106	2	11.2	86.0	2.8	84.0
SED19003	0012	3	21.1	93.0	1.8	85.0
SED19203	12	3	21.1	93.1	1.1	85.0
SED19103	R203	3	12.5	98.7	1.7	85.0
SED19103	12	2	21.1	91.4	1.5	85.0
SED19203	12	4	21.1	93.1	1.1	86.0
SED18903	1	5	22.0	93.3	1.5	86.0
SED19003	R109	3	22.7	91.0	2.5	86.0
SED19103	12	1	21.1	91.4	1.5	86.0
SED19103	12	4	21.1	91.4	1.5	86.0
SED19203	12	2	21.1	93.1	1.1	87.0
SED19103	12	3	21.1	91.4	1.5	87.0
SED19103	4	2	25.4	97.6	2.0	87.0
SED19003	1	1	22.5	97.0	1.8	88.0
SED19203	4	2	24.0	96.8	2.5	88.0
SED19103	12	5	21.1	91.4	1.5	88.0
SED19003	1	2	22.5	97.0	1.8	88.0
SED19103	4	3	25.4	97.6	2.0	89.0
SED19203	12	1	21.1	93.1	1.1	90.0
SED19103	4	4	25.4	97.6	2.0	90.0
SED19103	1	3	23.5	95.8	1.7	90.0
SED19203	1	2	22.5	94.1	1.7	92.0
SED19203	1	1	22.5	94.1	1.7	92.0
SED19003	1	3	22.5	97.0	1.8	93.0
SED19103	1	4	23.5	95.8	1.7	93.0
SED19203	1	3	22.5	94.1	1.7	95.0
SED19203	1	4	22.5	94.1	1.7	95.0
SED19103	1	5	23.5	95.8	1.7	96.0

Appendix 1. Stations and samples making up the 0-20% fines category for Swartz's dominance index.

SURVEY$	REGION$	STATION$	SAMPLE$	DEPTHM	FINES	TOC	SDI20
SED19103	C	13	1	19.3	9.8	0.2	2
SED19103	C	13	3	19.3	9.8	0.2	2
SED19203	C	25	3	20.4	3	0.1481	2
EVCHEM	C	SD-01	1	4.2	4.6	0.2	3
EVCHEM	C	SD-01	3	4.2	4.6	0.2	3
SED19103	N	R 9	5	16.5	0.92	0.1	3
SED19203	C	25	1	20.4	3	0.1481	3
EVCHEM	C	NG-02	1	8.6	3.1	0.2	4
EVCHEM	C	NG-02	3	8.6	3.1	0.2	4
EVCHEM	C	NG-02	4	8.6	3.1	0.2	4
EVCHEM	C	NG-02	5	8.6	3.1	0.2	4
EVCHEM	C	SD-01	5	4.2	4.6	0.2	4
SEAJUN82	C	H-75E	H75EUA	23.0769231	1.8	0.1	4
SED19103	N	R 9	2	16.5	0.92	0.1	4
SED19103	N	R 9	3	16.5	0.92	0.1	4
SED19103	N	R 9	4	16.5	0.92	0.1	4
SEASEP82	C	C-50E	C50EVB	15.3846154	2.3	0.1	5
SED18903	C	22	3	21	4.19	0.15	5
SED18903	C	22	5	21	4.19	0.15	5
SED19103	C	22	4	22.5	12.9	0.2	5
SED19103	N	R 9	1	16.5	0.92	0.1	5
EVCHEM	C	SD-01	4	4.2	4.6	0.2	6
SEAJUN82	C	E-50E	E50EUA	15.3846154	4	0.2	6
SED18903	C	22	1	21	4.19	0.15	6
SED18903	C	23	1	20	2.1	0.12	6
SED19103	C	22	1	22.5	12.9	0.2	6
SED19103	C	22	3	22.5	12.9	0.2	6
SED19103	C	22	5	22.5	12.9	0.2	6
SED19203	C	22	3	20.5	8	0.2596	6
SED19203	S	43	4	19.8	6	0.2859	6
EVCHEM	C	NG-02	2	8.6	3.1	0.2	7
EVCHEM	C	NG-06	3	10.2	7.1	0.4	7
EVCHEM	C	SD-01	2	4.2	4.6	0.2	7
EVCHEM	C	SD-02	1	9.6	11.5	0.5	7
EVCHEM	C	SD-02	3	9.6	11.5	0.5	7
EVCHEM	C	SD-02	5	9.6	11.5	0.5	7
SEAJUN82	C	K-50E	K50EUA	15.3846154	1.8	0.7	7
SED18903	S	43	5	20	6.3	0.14	7
SED19003	S	43	1	19.8	7	0.26	7
SED19103	S	43	3	20.8	5.9	0.1	7
SED19203	C	22	4	20.5	8	0.2596	7
SED19203	C	R308	1	18.9	11	0.388	7
SED19203	C	R308	3	18.9	11	0.388	7
EVCHEM	C	NG-06	2	10.2	7.1	0.4	8
SED19003	S	43	2	19.8	7	0.26	8
SED19103	C	22	2	22.5	12.9	0.2	8
SED19103	S	43	5	20.8	5.9	0.1	8
EVCHEM	C	NG-06	1	10.2	7.1	0.4	9
EVCHEM	C	NG-06	4	10.2	7.1	0.4	9
EVCHEM	C	PS-03	3	9.1	8	0.4	9
EVCHEM	C	PS-04	1	8.7	7.4	0.3	9

Appendix 1. Stations and samples making up the 0-20% fines category for Swartz's dominance index.

SURVEY$	REGION$	STATION$	SAMPLE$	DEPTHM	FINES	TOC	SDI20
EVCHEM	C	SD-02	2	9.6	11.5	0.5	9
SEAJUN82	C	E-50E	E50EUB	15.3846154	4	0.2	9
SED18903	C	36	3	15	2.2	0.13	9
SED18903	S	43	3	20	6.3	0.14	9
SED19003	S	43	3	19.8	7	0.26	9
SED19203	C	22	1	20.5	8	0.2596	9
SED19203	C	25	2	20.4	3	0.1481	9
SED19203	S	43	3	19.8	6	0.2859	9
EVCHEM	C	PS-03	4	9.1	8	0.4	10
EVCHEM	C	PS-03	5	9.1	8	0.4	10
EVCHEM	C	PS-04	2	8.7	7.4	0.3	10
EVCHEM	C	PS-04	4	8.7	7.4	0.3	10
EVCHEM	C	SD-02	4	9.6	11.5	0.5	10
SED18903	C	23	3	20	2.1	0.12	10
SED19103	S	43	1	20.8	5.9	0.1	10
SED19103	S	43	2	20.8	5.9	0.1	10
SED19103	S	43	4	20.8	5.9	0.1	10
SED19203	S	43	2	19.8	6	0.2859	10
SED19203	C	R301	2	22.1	5.9	0.2959	10
SED19203	C	R308	2	18.9	11	0.388	10
EVCHEM	C	PS-04	3	8.7	7.4	0.3	11
SEAJUN83	C	K5-75E	K575EYB	21.336	3	0.2	11
SED19103	C	39	4	14.8	2.44	0.1	11
SED19203	C	15	1	19.4	5.2	0.2149	11
SED19203	C	39	2	15.8	2.7	0.1453	11
EVCHEM	C	PS-03	2	9.1	8	0.4	12
SEAJUN82	C	K-50E	K50EUB	15.3846154	1.8	0.7	12
SED18903	C	23	5	20	2.1	0.12	12
SED18903	C	28	3	20	4.9	0.15	12
SED18903	C	32	1	20	7.23	0.17	12
SED18903	S	43	1	20	6.3	0.14	12
SED19003	S	46	1	19.8	19	0.39	12
SED19003	S	46	2	19.8	19	0.39	12
SED19103	C	39	1	14.8	2.44	0.1	12
SED19203	C	39	3	15.8	2.7	0.1453	12
SED19203	C	39	4	15.8	2.7	0.1453	12
SED19203	S	43	1	19.8	6	0.2859	12
SED18903	C	36	5	15	2.2	0.13	13
SED18903	S	50	1	7	3.8	0.2	13
SED18903	S	50	3	7	3.8	0.2	13
SED19003	S	46	3	19.8	19	0.39	13
SED19203	C	R308	4	18.9	11	0.388	13
EVCHEM	C	PS-04	5	8.7	7.4	0.3	14
SEAJUN82	C	J-75E	J75EUA	23.0769231	2.1	0.1	14
SED18903	S	50	5	7	3.8	0.2	14
SED19003	C	32	2	20.4	7.5	0.22	14
SED19003	S	R103	1	20.5	8	0.5	14
SED19003	S	R103	3	20.5	8	0.5	14
SED19103	C	39	3	14.8	2.44	0.1	14
SED19103	S	47	4	21.5	9.4	0.3	14
SED19203	C	R301	1	22.1	5.9	0.2959	14
EVCHEM	C	PS-03	1	9.1	8	0.4	15

Appendix 1. Stations and samples making up the 0-20% fines category for Swartz's dominance index.

SURVEY$	REGION$	STATION$	SAMPLE$	DEPTHM	FINES	TOC	SDI20
SED18903	N	6	1	20	7.1	0.2	15
SED18903	C	27	5	20	3.2	0.12	15
SED18903	C	36	1	15	2.2	0.13	15
SED18903	S	46	1	22	9.5	0.42	15
SED19003	C	32	3	20.4	7.5	0.22	15
SED19003	C	69	1	32.4	15	0.47	15
SED19103	C	39	2	14.8	2.44	0.1	15
SED19103	C	39	5	14.8	2.44	0.1	15
SED19203	C	39	1	15.8	2.7	0.1453	15
SED19203	S	44	1	20.5	17.9	0.519675	15
SEAJUN82	C	E-75E	E75EUA	23.0769231	3.5	0.2	16
SED18903	N	6	3	20	7.1	0.2	16
SED18903	C	32	3	20	7.23	0.17	16
SED19003	C	32	1	20.4	7.5	0.22	16
SED19003	S	R103	2	20.5	8	0.5	16
SED19203	C	36	1	17.7	2.3	0.2236	16
SED19203	C	R301	3	22.1	5.9	0.2959	16
SEAJUN82	C	E-50W	E50WUA	15.3846154	5	0.2	17
SEAJUN82	C	N-75W	N75WUA	23.0769231	3.3	0.1	17
SED18903	C	16	3	20	3.9	0.18	17
SED18903	C	37	5	20	5.9	0.21	17
SED19103	S	47	5	21.5	9.4	0.3	17
SED19203	C	69	4	35.4	18.1	0.4569	17
SED18903	N	6	5	20	7.1	0.2	18
SED18903	C	27	3	20	3.2	0.12	18
SED19003	S	47	1	19.5	12	0.32	18
SED19203	C	69	2	35.4	18.1	0.4569	18
SED18903	C	32	5	20	7.23	0.17	19
SED18903	S	46	5	22	9.5	0.42	19
SED19003	S	47	2	19.5	12	0.32	19
SED19203	C	15	3	19.4	5.2	0.2149	19
SED19203	C	15	4	19.4	5.2	0.2149	19
SED19203	C	R301	4	22.1	5.9	0.2959	19
SED19003	S	44	1	19.5	14.5	0.51	20
SED19003	C	69	2	32.4	15	0.47	20
SED19103	S	47	1	21.5	9.4	0.3	20
SED19203	C	15	2	19.4	5.2	0.2149	20
SED19203	S	47	3	19.5	13.2	0.5249	20
SED19203	C	69	1	35.4	18.1	0.4569	20
SEAJUN82	C	D-50W	D50WUC	15.3846154	6	0.2	21
SEAJUN82	C	H-75W	H75WUA	23.0769231	5.4	0.05	21
SED18903	C	15	1	20	8.22	0.24	21
SED18903	C	16	1	20	3.9	0.18	21
SED18903	C	28	5	20	4.9	0.15	21
SED18903	S	46	3	22	9.5	0.42	21
SED18903	C	27	1	20	3.2	0.12	22
SED18903	C	31	5	22	1.7	0.15	22
SED19003	S	44	3	19.5	14.5	0.51	22
SED19103	S	47	2	21.5	9.4	0.3	22
SED19203	C	27	2	20.7	2.6	0.1656	22
SED19203	C	36	4	17.7	2.3	0.2236	22
SED18903	C	31	3	22	1.7	0.15	23

Appendix 1. Stations and samples making up the 0-20% fines category for Swartz's dominance index.

SURVEY$	REGION$	STATION$	SAMPLE$	DEPTHM	FINES	TOC	SDI20
SED19003	S	47	3	19.5	12	0.32	23
SED19003	C	69	3	32.4	15	0.47	23
SED19103	S	47	3	21.5	9.4	0.3	23
SED19203	C	27	4	20.7	2.6	0.1656	23
SED19203	C	36	2	17.7	2.3	0.2236	23
SED19203	C	69	3	35.4	18.1	0.4569	23
SEAJUN82	C	B-75W	B75WUC	23.0769231	5.3	0.3	24
SED18903	C	28	1	20	4.9	0.15	24
SED18903	C	31	1	22	1.7	0.15	24
SED19203	C	32	1	20.4	5.7	0.329525	24
SED19203	C	32	3	20.4	5.7	0.329525	24
SED19203	S	47	2	19.5	13.2	0.5249	24
SED18903	C	15	3	20	8.22	0.24	25
SED18903	C	16	5	20	3.9	0.18	25
SED19003	S	44	2	19.5	14.5	0.51	25
SED19203	C	32	4	20.4	5.7	0.329525	25
SED19203	C	36	3	17.7	2.3	0.2236	25
SED19203	C	37	1	21.2	3.2	0.1817	25
SED19203	S	44	2	20.5	17.9	0.519675	25
SED19103	S	44	2	21.5	17.1	0.5	26
SED19103	S	44	5	21.5	17.1	0.5	26
SED19203	C	27	1	20.7	2.6	0.1656	26
SED19203	C	27	3	20.7	2.6	0.1656	26
SED19203	C	32	2	20.4	5.7	0.329525	26
SED19203	S	47	1	19.5	13.2	0.5249	27
SED18903	C	37	1	20	5.9	0.21	28
SED18903	C	37	3	20	5.9	0.21	28
SED18903	C	15	5	20	8.22	0.24	29
SED19203	C	37	4	21.2	3.2	0.1817	30
SED19103	S	44	4	21.5	17.1	0.5	34
SED19103	S	44	3	21.5	17.1	0.5	37

Appendix 1. Stations and samples making up the 20-50% fines category for Swartz's dominance index.

SURVEY$	STATION$	SAMPLE$	DEPTHM	FINES	TOC	SDI50
SED19103	18	4	19	41.8	0.6	2
SED19103	18	1	19	41.8	0.6	3
SED19103	18	5	19	41.8	0.6	3
SED19103	18	2	19	41.8	0.6	4
SED19103	18	3	19	41.8	0.6	4
SED19203	18	1	19.1	42.8	1.3271	4
SED19203	18	4	19.1	42.8	1.3271	4
SED19203	18	2	19.1	42.8	1.3271	5
SED19103	R209	2	19.6	34	0.5	6
SED19103	R209	4	19.6	34	0.5	6
SED19103	R209	3	19.6	34	0.5	7
SED19103	R209	5	19.6	34	0.5	8
SED19203	18	3	19.1	42.8	1.3271	8
SED18903	10	1	20	37.2	0.61	9
SED18903	33	1	20	24.04	0.64	9
SED18903	10	3	20	37.2	0.61	10
SED18903	10	5	20	37.2	0.61	10
SED18903	33	3	20	24.04	0.64	10
SED18903	33	5	20	24.04	0.64	11
SED19203	40	4	9.4	32.2	2.1687	11
EVCHEM	SR-08	1	10.9	22.1	1.7	12
SED19103	10	2	20.7	32.8	0.6	12
SED19103	30	1	13.3	23.5	0.7	12
EVCHEM	SR-08	2	10.9	22.1	1.7	13
SED19203	30	3	13.3	36.3	1.0317	13
SED19003	0033	1	19.8	34	1.1	14
SED19003	R111	3	20.1	36	1.3	14
SED19103	30	4	13.3	23.5	0.7	14
SED19103	33	1	20.8	31.5	0.9	14
SED19203	30	1	13.3	36.3	1.0317	14
SED19203	30	4	13.3	36.3	1.0317	14
EVCHEM	SR-08	3	10.9	22.1	1.7	15
EVCHEM	SR-08	5	10.9	22.1	1.7	15
SED18903	47	3	20	23.47	0.29	15
SED19103	30	3	13.3	23.5	0.7	15
SED19103	R209	1	19.6	34	0.5	15
SED19203	30	2	13.3	36.3	1.0317	15
SED19203	40	3	9.4	32.2	2.1687	15
EVCHEM	SR-08	4	10.9	22.1	1.7	16
SED19003	0033	3	19.8	34	1.1	16
SED19103	10	3	20.7	32.8	0.6	16
SED19103	30	2	13.3	23.5	0.7	16
SED19103	30	5	13.3	23.5	0.7	16
SED19103	69	4	34.4	21.4	0.6	16
SED19203	40	2	9.4	32.2	2.1687	16
SED18903	47	1	20	23.47	0.29	17
SED18903	47	5	20	23.47	0.29	17
SED19103	10	1	20.7	32.8	0.6	17
SED19103	10	5	20.7	32.8	0.6	17
SED19103	69	1	34.4	21.4	0.6	17
SED19103	69	2	34.4	21.4	0.6	17

Appendix 1. Stations and samples making up the 20-50% fines category for Swartz's dominance index.

SURVEY$	STATION$	SAMPLE$	DEPTHM	FINES	TOC	SDI50
SED19103	69	3	34.4	21.4	0.6	17
SED19203	40	1	9.4	32.2	2.1687	17
SED19103	33	3	20.8	31.5	0.9	18
SED19103	69	5	34.4	21.4	0.6	18
SED19003	0033	2	19.8	34	1.1	19
SED19003	71	2	6.1	46	1.4	19
SED19003	R111	1	20.1	36	1.3	19
SED19003	71	1	6.1	46	1.4	20
SED19103	10	4	20.7	32.8	0.6	20
SED19103	33	2	20.8	31.5	0.9	20
SED19103	33	5	20.8	31.5	0.9	20
SED19103	R206	2	19.4	35.6	0.8	20
SED19103	R206	5	19.4	35.6	0.8	20
SED19003	71	3	6.1	46	1.4	22
SED19103	R206	4	19.4	35.6	0.8	22
SED19103	33	4	20.8	31.5	0.9	23
SED19103	R206	1	19.4	35.6	0.8	24

Appendix 1. Stations and samples making up the 50-80% fines category for Swartz's dominance index.

SURVEY$	STATION$	SAMPLE$	DEPTHM	FINES	TOC	SDI80
SED18903	21	3	20	52.16	1.3	4
SED18903	21	5	20	52.16	1.3	4
SED18903	30	5	13	56.04	1.4	4
SED19103	70	1	6.5	67.2	3.2	4
SED18903	18	1	20	60.15	0.93	5
SED18903	18	3	20	60.15	0.93	5
SED18903	21	1	20	52.16	1.3	5
SED19203	21	2	21.7	62.2	1.2178	5
SED19203	21	3	21.7	62.2	1.2178	5
SED19203	41	2	19.1	75.1	1.1428	5
SED19203	41	3	19.1	75.1	1.1428	5
SED19003	70	1	5.2	64	3.1	6
SED19003	70	3	5.2	64	3.1	6
SED19003	R105	1	14	75	2.2	6
SED19003	R105	2	14	75	2.2	6
SED19003	R105	3	14	75	2.2	6
SED19103	70	2	6.5	67.2	3.2	6
SED19103	70	3	6.5	67.2	3.2	6
SED19103	70	4	6.5	67.2	3.2	6
SED19103	70	5	6.5	67.2	3.2	6
SED19103	R205	4	31.9	62.1	1.1	6
SED19103	R207	5	29.9	73.4	1.5	6
SED19203	21	4	21.7	62.2	1.2178	6
SED19203	23	2	6.1	53	1.2331	6
SED19003	0030	3	13.3	62	1.4	7
SED19003	70	2	5.2	64	3.1	7
SED19103	R205	1	31.9	62.1	1.1	7
SED19103	R205	3	31.9	62.1	1.1	7
SED19103	R205	5	31.9	62.1	1.1	7
SED19103	R207	2	29.9	73.4	1.5	7
SED19203	21	1	21.7	62.2	1.2178	7
SED19203	23	4	6.1	53	1.2331	7
SED19203	41	1	19.1	75.1	1.1428	7
SED19203	70	2	7.2	66.5	2.1101	8
SED19203	70	3	7.2	66.5	2.1101	8
SED18903	18	5	20	60.15	0.93	9
SED19003	0030	1	13.3	62	1.4	9
SED19003	0030	2	13.3	62	1.4	9
SED19103	2	3	21.3	57.7	0.8	9
SED19103	R207	1	29.9	73.4	1.5	9
SED19103	R207	3	29.9	73.4	1.5	9
SED19203	23	3	6.1	53	1.2331	9
SED19203	41	4	19.1	75.1	1.1428	9
SED19203	70	1	7.2	66.5	2.1101	9
SED19203	70	4	7.2	66.5	2.1101	9
SED19203	R303	1	14.5	76.8	1.2708	9
SED19203	R303	3	14.5	76.8	1.2708	9
SED19103	R205	2	31.9	62.1	1.1	10
SED18903	2	3	20	60.7	0.68	11
SED19103	2	1	21.3	57.7	0.8	11
SED19103	R207	4	29.9	73.4	1.5	11

Appendix 1. Stations and samples making up the 50-80% fines category for Swartz's dominance index.

SURVEY$	STATION$	SAMPLE$	DEPTHM	FINES	TOC	SDI80
SED19203	R303	2	14.5	76.8	1.2708	11
SED19203	R303	4	14.5	76.8	1.2708	11
SED18903	2	5	20	60.7	0.68	13
SED19203	71	1	6.1	53	1.2331	13
SED18903	8	3	21	65.77	3.9	14
SED19203	R302	2	20.6	68.5	0.9448	14
SED18903	2	1	20	60.7	0.68	15
SED19103	8	4	22.1	63.7	2.9	15
SED18903	8	5	21	65.77	3.9	16
SED19103	8	2	22.1	63.7	2.9	16
SED19103	71	4	7.1	55.8	1.2	16
SED19203	71	4	6.1	53	1.2331	16
SED19103	8	3	22.1	63.7	2.9	17
SED19103	2	2	21.3	57.7	0.8	17
SED19103	71	3	7.1	55.8	1.2	17
SED19203	R302	1	20.6	68.5	0.9448	17
SED19203	R302	4	20.6	68.5	0.9448	17
SED19003	8	1	21.1	64	3.4	18
SED19003	8	3	21.1	64	3.4	18
SED19103	71	1	7.1	55.8	1.2	18
SED19103	71	5	7.1	55.8	1.2	18
SED19203	71	3	6.1	53	1.2331	18
SED18903	8	1	21	65.77	3.9	19
SED19203	8	2	21.1	71.8	2.2161	19
SED19203	71	2	6.1	53	1.2331	19
SED19103	8	1	22.1	63.7	2.9	20
SED19103	8	5	22.1	63.7	2.9	20
SED19103	2	5	21.3	57.7	0.8	20
SED19103	71	2	7.1	55.8	1.2	20
SED19003	8	2	21.1	64	3.4	21
SED19103	2	4	21.3	57.7	0.8	21
SED19203	8	3	21.1	71.8	2.2161	21
SED19203	8	4	21.1	71.8	2.2161	22

Appendix 1. Stations and samples making up the 80-100% fines category for Swartz's dominance index.

SURVEY$	STATION$	SAMPLE$	DEPTHM	FINES	TOC	SDI100
SED19003	R101	2	2.1	90	4	2
SED19203	48	1	20.5	88.7	1.5201	2
SED19003	R101	3	2.1	90	4	3
SED19103	1	1	23.5	95.8	1.7	3
SED19103	1	3	23.5	95.8	1.7	3
SED19103	1	4	23.5	95.8	1.7	3
SED19103	1	5	23.5	95.8	1.7	3
SED19203	1	3	22.5	94.1	1.7421	3
SED19203	1	4	22.5	94.1	1.7421	3
SED19203	48	3	20.5	88.7	1.5201	3
SED19203	48	4	20.5	88.7	1.5201	3
SED19003	1	2	22.5	97	1.8	4
SED19003	1	3	22.5	97	1.8	4
SED19003	0018	2	19.1	92	1.5	4
SED19003	R106	2	11.2	86	2.8	4
SED19003	R109	1	22.7	91	2.5	4
SED19003	R109	2	22.7	91	2.5	4
SED19003	R109	3	22.7	91	2.5	4
SED19103	1	2	23.5	95.8	1.7	4
SED19203	1	1	22.5	94.1	1.7421	4
SED19203	1	2	22.5	94.1	1.7421	4
SED19203	48	2	20.5	88.7	1.5201	4
SED19003	1	1	22.5	97	1.8	5
SED19003	0012	2	21.1	93	1.8	5
SED19003	0018	1	19.1	92	1.5	5
SED19003	0018	3	19.1	92	1.5	5
SED19003	0048	1	20.0	92	2.2	5
SED19003	0048	3	20.0	92	2.2	5
SED19103	4	3	25.4	97.6	2	5
SED19103	4	4	25.4	97.6	2	5
SED19103	12	5	21.1	91.4	1.5	5
SED19103	48	3	21.3	89.8	2.3	5
SED19103	48	5	21.3	89.8	2.3	5
SED19203	12	1	21.1	93.1	1.1471	5
SED18903	1	1	22.0	93.32	1.5	6
SED19003	R102	2	11.6	88	2.6	6
SED19003	R102	3	11.6	88	2.6	6
SED19003	R106	1	11.2	86	2.8	6
SED19003	R106	3	11.2	86	2.8	6
SED19103	4	2	25.4	97.6	2	6
SED19103	12	1	21.1	91.4	1.5	6
SED19103	12	2	21.1	91.4	1.5	6
SED19103	12	3	21.1	91.4	1.5	6
SED19103	20	3	11.8	96.2	1	6
SED19103	48	1	21.3	89.8	2.3	6
SED18903	20	5	11.0	94.11	1	7
SED19003	0012	1	21.1	93	1.8	7
SED19003	0012	3	21.1	93	1.8	7
SED19003	R101	1	2.1	90	4	7
SED19103	12	4	21.1	91.4	1.5	7
SED19103	48	2	21.3	89.8	2.3	7

Appendix 1. Stations and samples making up the 80-100% fines category for Swartz's dominance index.

SURVEY$	STATION$	SAMPLE$	DEPTHM	FINES	TOC	SDI100
SED19103	48	4	21.3	89.8	2.3	7
SED19103	R204	1	31.7	94.1	2.4	7
SED19203	12	4	21.1	93.1	1.1471	7
SED19203	49	3	4.7	88.1	2.1381	7
SED18903	1	3	22.0	93.32	1.5	8
SED18903	1	5	22.0	93.32	1.5	8
SED18903	20	1	11.0	94.11	1	8
SED18903	20	3	11.0	94.11	1	8
SED19003	0048	2	20.0	92	2.2	8
SED19103	4	1	25.4	97.6	2	8
SED19103	20	5	11.8	96.2	1	8
SED19103	R204	3	31.7	94.1	2.4	8
SED19103	R204	4	31.7	94.1	2.4	8
SED19103	R204	5	31.7	94.1	2.4	8
SED19203	12	2	21.1	93.1	1.1471	8
SED19203	12	3	21.1	93.1	1.1471	8
SED19203	20	2	10.3	95.7	1.0068	8
SED19203	49	1	4.7	88.1	2.1381	8
SED19203	49	4	4.7	88.1	2.1381	8
SEAJUN82	QM-2	QM2UA	16.3	85	1.3	9
SED19003	0020	1	10.3	97	1.2	9
SED19003	R102	1	11.6	88	2.6	9
SED19103	4	5	25.4	97.6	2	9
SED19203	4	4	24.0	96.8	2.4931	9
SED19203	5	1	21.0	94.8	1.9311	9
SED19003	0020	2	10.3	97	1.2	10
SED19103	5	1	20.2	95.6	1.8	10
SED19103	5	2	20.2	95.6	1.8	10
SED19103	5	5	20.2	95.6	1.8	10
SED19103	R204	2	31.7	94.1	2.4	10
SED19203	4	1	24.0	96.8	2.4931	10
SED19203	4	2	24.0	96.8	2.4931	10
SED19203	5	3	21.0	94.8	1.9311	10
SED19203	5	4	21.0	94.8	1.9311	10
SED19203	20	1	10.3	95.7	1.0068	10
SED19203	20	3	10.3	95.7	1.0068	10
SED19203	49	2	4.7	88.1	2.1381	10
SED19003	0020	3	10.3	97	1.2	11
SED19103	5	4	20.2	95.6	1.8	11
SED19103	20	1	11.8	96.2	1	11
SED19103	R203	2	12.5	98.7	1.7	11
SED19203	4	3	24.0	96.8	2.4931	11
SED19103	5	3	20.2	95.6	1.8	12
SED19103	20	2	11.8	96.2	1	12
SED19103	20	4	11.8	96.2	1	12
SED19203	5	2	21.0	94.8	1.9311	12
SED19203	20	4	10.3	95.7	1.0068	12

APPENDIX 2

SUMMARY STATISTICS FOR REVISED REFERENCE VALUE RANGES

Appendix 2. Summary statistics for revised reference ranges.

	TOTAX100	TOTAX80	TOTAX50	TOTAX20
N of cases	84	66	57	163
Minimum	22	32	39	37
Maximum	47	71	84	104
Range	25	39	45	67
Mean	32.488	53.121	64.614	68.466
0.95 CI Upper	34.011	55.359	67.578	71.261
0.95 CI Lower	30.966	50.883	61.651	65.672
Std. Error	0.765	1.121	1.479	1.415
Standard Dev	7.015	9.104	11.169	18.066
Variance	49.217	82.877	124.741	326.386
C.V.	0.216	0.171	0.173	0.264

	TOAB100	TOAB80	TOAB50	TOAB20
N of cases	85	68	61	164
Minimum	130	87	274	181
Maximum	507	564	756	789
Range	377	477	482	608
Mean	295.988	318.279	491.426	489.805
0.95 CI Upper	317.711	349.13	523.714	514.689
0.95 CI Lower	274.265	287.429	459.138	464.921
Std. Error	10.924	15.456	16.142	12.602
Standard Dev	100.712	127.453	126.07	161.382
Variance	10142.94	16244.383	15893.715	26044.146
C.V.	0.34	0.4	0.257	0.329

	POTAX100	POTAX80	POTAX50	POTAX20
N of cases	76	69	58	168
Minimum	9	14	22	15
Maximum	25	39	53	57
Range	16	25	31	42
Mean	15.474	28.217	38.052	33.714
0.95 CI Upper	16.466	29.674	40.153	35.345
0.95 CI Lower	14.482	26.761	35.95	32.083
Std. Error	0.498	0.73	1.049	0.826
Standard Dev	4.34	6.063	7.992	10.707
Variance	18.839	36.761	63.874	114.636
C.V.	0.281	0.215	0.21	0.318

	POAB100	POAB80	POAB50	POAB20
N of cases	86	68	59	155
Minimum	22	34	96	47
Maximum	188	243	382	402
Range	166	209	286	355
Mean	82.674	148.265	220.949	183.187
0.95 CI Upper	91.966	162.059	242.132	197.778
0.95 CI Lower	73.383	134.471	199.767	168.596
Std. Error	4.673	6.911	10.582	7.386
Standard Dev	43.336	56.989	81.284	91.954
Variance	1878.01	3247.69	6607.015	8455.504
C.V.	0.524	0.384	0.368	0.502

Appendix 2. Summary statistics for revised reference ranges.

	MOTAX100	MOTAX80	MOTAX50	MOTAX20
N of cases	85	68	55	161
Minimum	5	6	8	10
Maximum	14	19	18	23
Range	9	13	10	13
Mean	9.059	13.235	12.691	16.199
0.95 CI Upper	9.637	14.13	13.404	16.75
0.95 CI Lower	8.481	12.34	11.978	15.648
Std. Error	0.291	0.448	0.356	0.279
Standard Dev	2.679	3.698	2.638	3.539
Variance	7.175	13.675	6.958	12.523
C.V.	0.296	0.279	0.208	0.218

	MOAB100	MOAB80	MOAB50	MOAB20
N of cases	82	69	53	160
Minimum	11	9	37	30
Maximum	116	382	219	216
Range	105	373	182	186
Mean	58.024	98.58	89.585	80.65
0.95 CI Upper	64.129	120.092	103.175	87.484
0.95 CI Lower	51.919	77.067	75.995	73.816
Std. Error	3.068	10.781	6.772	3.46
Standard Dev	27.785	89.552	49.304	43.767
Variance	771.999	8019.541	2430.863	1915.512
C.V.	0.479	0.908	0.55	0.543

	CRTAX100	CRTAX80	CRTAX50	CRTAX20
N of cases	91	67	57	159
Minimum	3	3	4	5
Maximum	7	11	16	19
Range	4	8	12	14
Mean	4.89	7	10.404	12.107
0.95 CI Upper	5.174	7.579	11.195	12.667
0.95 CI Lower	4.607	6.421	9.612	11.547
Std. Error	0.143	0.29	0.395	0.284
Standard Dev	1.362	2.374	2.981	3.575
Variance	1.854	5.636	8.888	12.78
C.V.	0.278	0.339	0.287	0.295

	CRAB100	CRAB80	CRAB50	CRAB20
N of cases	79	65	60	161
Minimum	5	3	8	19
Maximum	159	112	189	261
Range	154	109	181	242
Mean	52.911	39.338	102.633	118.075
0.95 CI Upper	62.076	46.692	117.108	128.482
0.95 CI Lower	43.747	31.985	88.159	107.667
Std. Error	4.603	3.681	7.234	5.27
Standard Dev	40.914	29.675	56.031	66.869
Variance	1673.979	880.634	3139.423	4471.469
C.V.	0.773	0.754	0.546	0.566

Appendix 2. Summary statistics for revised reference ranges.

	ITI100	ITI80	ITI50	ITI20
N of cases	101	83	65	183
Minimum	54	52	66	60
Maximum	96	84	84	88
Range	42	32	18	28
Mean	77.198	70.229	71.585	74.377
0.95 CI Upper	79.159	71.758	72.99	75.355
0.95 CI Lower	75.237	68.7	70.18	73.399
Std. Error	0.988	0.769	0.703	0.495
Standard Dev	9.934	7.004	5.67	6.703
Variance	98.68	49.057	32.153	44.928
C.V.	0.129	0.1	0.079	0.09

	SDI100	SDI80	SDI50	SDI20
N of cases	64	70	60	163
Minimum	6	6	6	6
Maximum	12	22	24	30
Range	6	16	18	24
Mean	8.516	12.186	15.133	15.276
0.95 CI Upper	8.978	13.441	16.218	16.268
0.95 CI Lower	8.053	10.93	14.048	14.284
Std. Error	0.231	0.629	0.542	0.502
Standard Dev	1.852	5.265	4.2	6.411
Variance	3.428	27.719	17.643	41.102
C.V.	0.217	0.432	0.278	0.42

APPENDIX 3

SUMMARY RESULTS OF NUMERICAL COMPARISONS AND STATISTICAL TESTS BY STATION AND HABITAT CATEGORY

Appendix 3. Table of comparisons and test results by station.

				TOTAL RICHNESS											
Chemistry	Habitat	Survey	Station	Station Value	Ref Mean	STD	Reference Range		LCL	Relative to reference mean	t-test	t-test	1/2 Ref Mean	Ref Range	95th LCL
>csl and bsel	100	EBCHEM	KG-01	24.8	32.5	7.0	25.5	39.5	31.0	DEP	0.028	X		X	X
	100	EBCHEM	SS-04	44.0	32.5	7.0	25.5	39.5	31.0	ENH	0.086				
	100	SED18903	12	45.7	32.5	7.0	25.5	39.5	31.0	ENH	0.009				
	100	TPPS	1406	36.0	32.5	7.0	25.5	39.5	31.0	ENH	0.159				
	100	TPPS	1606	40.0	32.5	7.0	25.5	39.5	31.0	ENH	0.300				
	80	EBCHEM	EW-04	16.0	53.1	9.1	44.0	62.2	50.9	DEP	0.000	X	X	X	X
	80	EBCHEM	EW-11	40.2	53.1	9.1	44.0	62.2	50.9	DEP	0.023	X		X	X
	80	EBCHEM	NH-03	6.6	53.1	9.1	44.0	62.2	50.9	DEP	0.000	X	X	X	X
	80	EBCHEM	NH-08	40.6	53.1	9.1	44.0	62.2	50.9	DEP	0.104			X	X
	80	EBCHEM	SS-11	58.0	53.1	9.1	44.0	62.2	50.9	ENH	0.265				
	80	EBCHEM	WW-09	47.6	53.1	9.1	44.0	62.2	50.9	DEP	0.201				X
	80	EBCHEM	WW-11	46.8	53.1	9.1	44.0	62.2	50.9	DEP	0.032	X			X
	80	EBCHEM	WW-14	50.4	53.1	9.1	44.0	62.2	50.9	DEP	0.254				X
	80	EVCHCEM	EW-01	4.2	53.1	9.1	44.0	62.2	50.9	DEP	0.000	X	X	X	X
	80	EVCHEM	EW-07	16.0	53.1	9.1	44.0	62.2	50.9	DEP	0.000	X	X	X	X
	80	EVCHEM	EW-10	31.0	53.1	9.1	44.0	62.2	50.9	DEP	0.000	X		X	X
	80	TPPS	1512	46.7	53.1	9.1	44.0	62.2	50.9	DEP	0.484				X
	50	EBCHEM	AB-01	80.0	64.6	11.2	53.4	75.8	61.6	ENH	0.003				
	50	EBCHEM	EW-05	11.0	64.6	11.2	53.4	75.8	61.6	DEP	0.000	X	X	X	X
	50	EBCHEM	NH-02	61.2	64.6	11.2	53.4	75.8	61.6	DEP	0.246				X
	50	EBCHEM	NH-04	32.0	64.6	11.2	53.4	75.8	61.6	DEP	0.000	X	X	X	X
	50	EVCHEM	EW-14	59.4	64.6	11.2	53.4	75.8	61.6	DEP	0.443				X
	50	TPPS	1603	32.0	64.6	11.2	53.4	75.8	61.6	DEP	0.038	X	X	X	X
>csl but <bsel	100	EBCHEM	PS-01	44.2	32.5	7.0	25.5	39.5	31.0	ENH	0.027				
	100	SED18903	34	48.0	32.5	7.0	25.5	39.5	31.0	ENH	0.050				
	100	SED18903	48	29.7	32.5	7.0	25.5	39.5	31.0	DEP	0.052				X
	100	SED19003	4	52.7	32.5	7.0	25.5	39.5	31.0	ENH	0.000				
	100	SED19103	34	50.0	32.5	7.0	25.5	39.5	31.0	ENH	0.024				
	100	SED19103	208R	2.4	32.5	7.0	25.5	39.5	31.0	DEP	0.000	X	X	X	X
	100	SED19203	34	50.8	32.5	7.0	25.5	39.5	31.0	ENH	0.011				
	100	SED19203	305R	9.5	32.5	7.0	25.5	39.5	31.0	DEP	0.000	X	X	X	X
	50	SED19203	33	86.8	64.6	11.2	53.4	75.8	61.6	ENH	0.009				
	20	EBCHEM	NH-01	53.4	68.5	18.1	50.4	86.6	65.7	DEP	0.017	X			X
	20	EBCHEM	PS-04	59.0	68.5	18.1	50.4	86.6	65.7	DEP	0.209				X
	20	EVCHEM	EW-12	52.4	68.5	18.1	50.4	86.6	65.7	DEP	0.011	X			X
	20	EVCHEM	NG-04	46.8	68.5	18.1	50.4	86.6	65.7	DEP	0.000	X		X	X
	20	EVCHEM	PS-02	46.6	68.5	18.1	50.4	86.6	65.7	DEP	0.000	X		X	X
	20	SED18903	40	51.7	68.5	18.1	50.4	86.6	65.7	DEP	0.026	X			X
	20	SED19003	22	43.0	68.5	18.1	50.4	86.6	65.7	DEP	0.000	X		X	X
	20	SED19003	112R	31.0	68.5	18.1	50.4	86.6	65.7	DEP	0.007	X	X	X	X
	20	SED19103	32	90.2	68.5	18.1	50.4	86.6	65.7	ENH	0.004				
>sqs but <csl, >bsel	100	SEA1	QM-1	20.0	32.5	7.0	25.5	39.5	31.0	DEP	0.429			X	X
>sqs, but	100	EBCHEM	NS-08	21.8	32.5	7.0	25.5	39.5	31.0	DEP	0.001	X		X	X
<csl and bsel	100	SED18903	48	29.7	32.5	7.0	25.5	39.5	31.0	DEP	0.052				X
	100	SED19103	21	40.2	32.5	7.0	25.5	39.5	31.0	ENH	0.643				
	100	SED19103	49	22.0	32.5	7.0	25.5	39.5	31.0	DEP	0.002	X		X	X
	80	SED18903	35	38.0	53.1	9.1	44.0	62.2	50.9	DEP	0.000	X		X	X
	80	SED19103	35	45.6	53.1	9.1	44.0	62.2	50.9	DEP	0.119				X
	50	EBCHEM	NS-03	65.4	64.6	11.2	53.4	75.8	61.6	ENH	0.764				
	50	EBCHEM	PS-02	52.2	64.6	11.2	53.4	75.8	61.6	DEP	0.004	X		X	X
	50	SED9003	40	55.3	64.6	11.2	53.4	75.8	61.6	DEP	0.313				X
	20	EBCHEM	PS-03	52.8	68.5	18.1	50.4	86.6	65.7	DEP	0.009	X			X
	20	EVCHEM	NG-01	48.2	68.5	18.1	50.4	86.6	65.7	DEP	0.046	X		X	X
	20	EVCHEM	NG-03	46.0	68.5	18.1	50.4	86.6	65.7	DEP	0.001	X		X	X
	20	SED18903	9	50.7	68.5	18.1	50.4	86.6	65.7	DEP	0.026	X			X
	20	SED19003	39	44.3	68.5	18.1	50.4	86.6	65.7	DEP	0.042	X		X	X

Appendix 3. Table of comparisons and test results by station.

				TOTAL ABUNDANCE											
Chemistry	Habitat	Survey	Station	Station Mean	Ref Mean	STDEV	Reference Range		LCL	Relative to reference mean	t-test	t-test	1/2 Ref Mean	Ref Range	95th LCL
>csf and bsat	100	EBCHEM	KG-01	1220.8	296.0	100.7	195.3	396.7	274.3	ENH	0.004				
	100	EBCHEM	SS-04	1100.2	296.0	100.7	195.3	396.7	274.3	ENH	0.175				
	100	SED18903	12	350.0	296.0	100.7	195.3	396.7	274.3	ENH	0.002				
	100	TPPS	1406	333.0	296.0	100.7	195.3	396.7	274.3	ENH	0.445				
	100	TPPS	1606	641.0	296.0	100.7	195.3	396.7	274.3	ENH	0.005				
	80	EBCHEM	EW-04	2067.6	318.3	127.4	190.9	445.7	287.4	ENH	0.010				
	80	EBCHEM	EW-11	1984.4	318.3	127.4	190.9	445.7	287.4	ENH	0.002				
	80	EBCHEM	NH-03	32.2	318.3	127.4	190.9	445.7	287.4	DEP	0.000	X	X	X	X
	80	EBCHEM	NH-08	492.6	318.3	127.4	190.9	445.7	287.4	ENH	0.000				
	80	EBCHEM	SS-11	647.8	318.3	127.4	190.9	445.7	287.4	ENH	0.022				
	80	EBCHEM	WW-09	759.8	318.3	127.4	190.9	445.7	287.4	ENH	0.016				
	80	EBCHEM	WW-11	1605.2	318.3	127.4	190.9	445.7	287.4	ENH	0.002				
	80	EBCHEM	WW-14	2239.6	318.3	127.4	190.9	445.7	287.4	ENH	0.000				
	80	EVCHCEM	EW-01	116.2	318.3	127.4	190.9	445.7	287.4	DEP	0.000	X	X	X	X
	80	EVCHEM	EW-07	73.6	318.3	127.4	190.9	445.7	287.4	DEP	0.000	X	X	X	X
	80	EVCHEM	EW-10	1357.8	318.3	127.4	190.9	445.7	287.4	ENH	0.007				
	80	TPPS	1512	426.0	318.3	127.4	190.9	445.7	287.4	ENH	0.341				
	50	EBCHEM	AB-01	843.4	491.4	126.1	365.3	617.5	459.1	ENH	0.005				
	50	EBCHEM	EW-05	103.2	491.4	126.1	365.3	617.5	459.1	DEP	0.000	X	X	X	X
	50	EBCHEM	NH-02	695.4	491.4	126.1	365.3	617.5	459.1	ENH	0.198				
	50	EBCHEM	NH-04	897.4	491.4	126.1	365.3	617.5	459.1	ENH	0.050				
	50	EVCHEM	EW-14	554.8	491.4	126.1	365.3	617.5	459.1	ENH	0.649				
	50	TPPS	1603	365.7	491.4	126.1	365.3	617.5	459.1	DEP	0.711				X
>csf but <bsat	100	EBCHEM	PS-01	515.8	296.0	100.7	195.3	396.7	274.3	ENH	0.050				
	100	SED18903	34	489.7	296.0	100.7	195.3	396.7	274.3	ENH	0.077				
	100	SED18903	48	277.3	296.0	100.7	195.3	396.7	274.3	DEP	0.710				
	100	SED19003	4	521.7	296.0	100.7	195.3	396.7	274.3	ENH	0.104				
	100	SED19103	34	1016.6	296.0	100.7	195.3	396.7	274.3	ENH	0.023				
	100	SED19103	208R	126.0	296.0	100.7	195.3	396.7	274.3	DEP	0.000	X	X	X	X
	100	SED19203	34	924.3	296.0	100.7	195.3	396.7	274.3	ENH	0.082				
	100	SED19203	305R	97.0	296.0	100.7	195.3	396.7	274.3	DEP	0.000	X	X	X	X
	50	SED19203	93	604.8	491.4	127.4	364.0	618.8	459.1	ENH	0.008				
	20	EBCHEM	NH-01	524.0	489.8	161.4	328.4	651.2	464.9	ENH	0.756				
	20	EBCHEM	PS-04	575.0	489.8	161.4	328.4	651.2	464.9	ENH	0.104				
	20	EVCHEM	EW-12	1298.0	489.8	161.4	328.4	651.2	464.9	ENH	0.025				
	20	EVCHEM	NG-04	537.2	489.8	161.4	328.4	651.2	464.9	ENH	0.101				
	20	EVCHEM	PS-02	441.8	489.8	161.4	328.4	651.2	464.9	DEP	0.221				X
	20	SED18903	40	654.3	489.8	161.4	328.4	651.2	464.9	ENH	0.006				
	20	SED19003	22	404.7	489.8	161.4	328.4	651.2	464.9	DEP	0.038	X			X
	20	SED19003	112R	166.0	489.8	161.4	328.4	651.2	464.9	DEP	0.003	X	X	X	X
	20	SED19103	92	495.0	489.8	161.4	328.4	651.2	464.9	ENH	0.901				
>sqs but <csf, >bsat	100	SEA1	QM-1	706.0	296.0	100.7	195.3	396.7	274.3	ENH	0.429				
>sqs, but <csf and bsat	100	EBCHEM	NS-08	277.2	296.0	100.7	195.3	396.7	274.3	DEP	0.771				
	100	SED18903	48	277.3	296.0	100.7	195.3	396.7	274.3	DEP	0.710				
	100	SED19103	21	573.2	296.0	100.7	195.3	396.7	274.3	ENH	0.001				
	100	SED19103	49	140.4	296.0	100.7	195.3	396.7	274.3	DEP	0.000	X	X	X	X
	80	SED18903	35	645.3	318.3	127.4	190.9	445.7	287.4	ENH	0.369				
	80	SED19103	35	626.6	318.3	127.4	190.9	445.7	287.4	ENH	0.036				
	50	EBCHEM	NS-03	845.4	491.4	126.1	365.3	617.5	459.1	ENH	0.003				
	50	EBCHEM	PS-02	722.6	491.4	126.1	365.3	617.5	459.1	ENH	0.008				
	50	SED9003	40	353.0	491.4	126.1	365.3	617.5	459.1	DEP	0.027	X		X	X
	20	EBCHEM	PS-03	504.0	489.8	161.4	328.4	651.2	464.9	ENH	0.695				
	20	EVCHEM	NG-01	466.2	489.8	161.4	328.4	651.2	464.9	DEP	0.733				
	20	EVCHEM	NG-03	915.4	489.8	161.4	328.4	651.2	464.9	ENH	0.001				
	20	SED18903	9	462.0	489.8	161.4	328.4	651.2	464.9	DEP	0.819				
	20	SED19003	89	229.3	489.8	161.4	328.4	651.2	464.9	DEP	0.014	X	X	X	X

Appendix 3. Table of comparisons and test results by station.

Chemistry	Habitat	Survey	Station	Station Value	Ref Mean	STDEV	Reference range		LCL	Relative to reference mean	t-test	t-test	1/2 Ref Mean	Ref Range	95th LCL
>cal and sqt	100	EBCHEM	KG-01	14.8	15.5	4.3	11.2	19.8	14.5	DEP	0.781				
	100	EBCHEM	SS-04	25.0	15.5	4.3	11.2	19.8	14.5	ENH	0.057				
	100	SED18903	12	18.0	15.5	4.3	11.2	19.8	14.5	ENH	0.333				
	100	TPPS	1406	22.0	15.5	4.3	11.2	19.8	14.5	ENH	0.109				
	100	TPPS	1606	24.0	15.5	4.3	11.2	19.8	14.5	ENH	0.199				
	80	EBCHEM	EW-04	6.8	28.2	6.1	22.1	34.3	26.8	DEP	0.000	X	X	X	X
	80	EBCHEM	EW-11	24.2	28.2	6.1	22.1	34.3	26.8	DEP	0.082				X
	80	EBCHEM	NH-03	2.8	28.2	6.1	22.1	34.3	26.8	DEP	0.000	X	X	X	X
	80	EBCHEM	NH-08	24.8	28.2	6.1	22.1	34.3	26.8	DEP	0.082				X
	80	EBCHEM	SS-11	28.8	28.2	6.1	22.1	34.3	26.8	ENH	0.857				
	80	EBCHEM	WW-09	27.0	28.2	6.1	22.1	34.3	26.8	DEP	0.559				
	80	EBCHEM	WW-11	28.0	28.2	6.1	22.1	34.3	26.8	DEP	0.889				
	80	EBCHEM	WW-14	31.2	28.2	6.1	22.1	34.3	26.8	ENH	0.022				
	80	EVCHCEM	EW-01	1.4	28.2	6.1	22.1	34.3	26.8	DEP	0.000	X	X	X	X
	80	EVCHEM	EW-07	5.0	28.2	6.1	22.1	34.3	26.8	DEP	0.000	X	X	X	X
	80	EVCHEM	EW-10	10.2	28.2	6.1	22.1	34.3	26.8	DEP	0.000	X	X	X	X
	80	TPPS	1512	25.7	28.2	6.1	22.1	34.3	26.8	DEP	0.657				X
	50	EBCHEM	AB-01	46.8	38.0	8.0	30.0	46.0	36.0	ENH	0.032				
	50	EBCHEM	EW-05	7.4	38.0	8.0	30.0	46.0	36.0	DEP	0.000	X	X	X	X
	50	EBCHEM	NH-02	36.4	38.0	8.0	30.0	46.0	36.0	DEP	0.432				
	50	EBCHEM	NH-04	16.6	38.0	8.0	30.0	46.0	36.0	DEP	0.000	X	X	X	X
	50	EVCHEM	EW-14	28.6	38.0	8.0	30.0	46.0	36.0	DEP	0.025	X		X	X
	50	TPPS	1603	17.3	38.0	8.0	30.0	46.0	36.0	DEP	0.005	X	X	X	X
>cal but <bsat	100	EBCHEM	PS-01	22.0	15.5	4.3	11.2	19.8	14.5	ENH	0.099				
	100	SED18903	84	29.0	15.5	4.3	11.2	19.8	14.5	ENH	0.029				
	100	SED18903	48	15.7	15.5	4.3	11.2	19.8	14.5	ENH	0.859				
	100	SED19003	4	27.3	15.5	4.3	11.2	19.8	14.5	ENH	0.001				
	100	SED19103	84	31.0	15.5	4.3	11.2	19.8	14.5	ENH	0.013				
	100	SED19103	208R	1.4	15.5	4.3	11.2	19.8	14.5	DEP	0.000	X	X	X	X
	100	SED19203	84	30.8	15.5	4.3	11.2	19.8	14.5	ENH	0.003				
	100	SED19203	305R	8.0	15.5	4.3	11.2	19.8	14.5	DEP	0.002	X		X	X
	50	SED18203	33	52.6	38.0	8.0	30.0	46.0	36.0	ENH	0.000				
	20	EBCHEM	NH-01	36.2	33.7	10.7	23.0	44.4	32.1	ENH	0.502				
	20	EBCHEM	PS-04	34.2	33.7	10.7	23.0	44.4	32.1	ENH	0.918				
	20	EVCHEM	EW-12	16.6	33.7	10.7	23.0	44.4	32.1	DEP	0.000	X	X	X	X
	20	EVCHEM	NG-04	17.6	33.7	10.7	23.0	44.4	32.1	DEP	0.000	X		X	X
	20	EVCHEM	PS-02	22.4	33.7	10.7	23.0	44.4	32.1	DEP	0.001	X		X	X
	20	SED18903	40	27.3	33.7	10.7	23.0	44.4	32.1	DEP	0.145				X
	20	SED19003	22	18.0	33.7	10.7	23.0	44.4	32.1	DEP	0.039	X		X	X
	20	SED19003	112R	16.0	33.7	10.7	23.0	44.4	32.1	DEP	0.000	X	X	X	X
	20	SED19103	32	48.6	33.7	10.7	23.0	44.4	32.1	ENH	0.001				
>sqs but <cal, >bsat	100	SEA1	QM-1	7.0	15.5	4.3	11.2	19.8	14.5	DEP	0.130		X	X	X
>sqs, but	100	EBCHEM	NS-08	8.4	15.5	4.3	11.2	19.8	14.5	DEP	0.002	X		X	X
<cal and bsat	100	SED18903	48	15.7	15.5	4.3	11.2	19.8	14.5	ENH	0.859				
	100	SED19103	21	21.8	15.5	4.3	11.2	19.8	14.5	ENH	0.014				
	100	SED19103	49	10.2	15.5	4.3	11.2	19.8	14.5	DEP	0.003	X		X	X
	80	SED18903	95	23.0	28.2	6.1	22.1	34.3	26.8	DEP	0.106				X
	80	SED19103	95	27.4	28.2	6.1	22.1	34.3	26.8	DEP	0.684				
	50	EBCHEM	NS-03	37.2	38.0	8.0	30.0	46.0	36.0	DEP	0.482				
	50	EBCHEM	PS-02	27.2	38.0	8.0	30.0	46.0	36.0	DEP	0.000	X		X	X
	50	SED9003	40	31.0	38.0	8.0	30.0	46.0	36.0	DEP	0.302				X
	20	EBCHEM	PS-03	27.4	33.7	10.7	23.0	44.4	32.1	DEP	0.017	X			X
	20	EVCHEM	NG-01	26.4	33.7	10.7	23.0	44.4	32.1	DEP	0.236				X
	20	EVCHEM	NG-03	17.6	33.7	10.7	23.0	44.4	32.1	DEP	0.001	X		X	X
	20	SED18903	9	24.7	33.7	10.7	23.0	44.4	32.1	DEP	0.039	X			X
	20	SED19003	99	20.3	33.7	10.7	23.0	44.4	32.1	DEP	0.035	X		X	X

Appendix 3. Table of comparisons and test results by station.

Chemistry	Habitat	Survey	Station	Station Value	Ref Mean	STD	Reference Range		Ref Max	LCL	UCL	Relative to reference mean	t-test	t-test	2x Ref Mean	Low Ref Range	High Ref Range	95th LCL	95th UCL	Ref Max
>csl and bael	100	EBCHEM	KG-01	1138.4	82.7	43.3	39.4	126.0	188.0	73.4	92.0	ENH	0.002	X	X		X		X	X
	100	EBCHEM	SS-04	327.8	82.7	43.3	39.4	126.0	188.0	73.4	92.0	ENH	0.010	X	X		X		X	X
	100	SED16903	12	73.7	82.7	43.3	39.4	126.0	188.0	73.4	92.0	DEP	0.096							
	100	TPPS	1406	61.0	82.7	43.3	39.4	126.0	188.0	73.4	92.0	DEP	0.449					X		
	100	TPPS	1606	130.0	82.7	43.3	39.4	126.0	188.0	73.4	92.0	ENH	0.284				X		X	
	80	EBCHEM	EW-04	1446.2	148.3	57.0	91.3	205.3	243.0	134.5	162.1	ENH	0.002	X	X		X		X	X
	80	EBCHEM	EW-11	1774.4	148.3	57.0	91.3	205.3	243.0	134.5	162.1	ENH	0.002	X	X		X		X	X
	80	EBCHEM	NH-03	27.6	148.3	57.0	91.3	205.3	243.0	134.5	162.1	DEP	0.000			X		X		
	80	EBCHEM	NH-08	410.6	148.3	57.0	91.3	205.3	243.0	134.5	162.1	ENH	0.082		X		X		X	X
	80	EBCHEM	SS-11	223.0	148.3	57.0	91.3	205.3	243.0	134.5	162.1	ENH	0.017	X			X		X	
	80	EBCHEM	WW-09	522.0	148.3	57.0	91.3	205.3	243.0	134.5	162.1	ENH	0.003	X	X		X		X	X
	80	EBCHEM	WW-11	762.2	148.3	57.0	91.3	205.3	243.0	134.5	162.1	ENH	0.000	X	X		X		X	X
	80	EBCHEM	WW-14	2080.2	148.3	57.0	91.3	205.3	243.0	134.5	162.1	ENH	0.000	X	X		X		X	X
	80	EVCHCEM	EW-01	47.6	148.3	57.0	91.3	205.3	243.0	134.5	162.1	DEP	0.001			X		X		
	80	EVCHEM	EW-07	22.0	148.3	57.0	91.3	205.3	243.0	134.5	162.1	DEP	0.000			X		X		
	80	EVCHEM	EW-10	822.8	148.3	57.0	91.3	205.3	243.0	134.5	162.1	ENH	0.022	X	X		X		X	X
	80	TPPS	1512	119.0	148.3	57.0	91.3	205.3	243.0	134.5	162.1	DEP	0.561					X		
	50	EBCHEM	AB-01	411.0	220.9	81.3	139.6	302.2	382.0	199.8	242.1	ENH	0.014	X			X		X	X
	50	EBCHEM	EW-05	93.4	220.9	81.3	139.6	302.2	382.0	199.8	242.1	DEP	0.000			X		X		
	50	EBCHEM	NH-02	374.0	220.9	81.3	139.6	302.2	382.0	199.8	242.1	ENH	0.009	X			X		X	
	50	EBCHEM	NH-04	885.0	220.9	81.3	139.6	302.2	382.0	199.8	242.1	ENH	0.011	X	X		X		X	X
	50	EVCHEM	EW-14	157.8	220.9	81.3	139.6	302.2	382.0	199.8	242.1	DEP	0.164					X		
	50	TPPS	1603	96.7	220.9	81.3	139.6	302.2	382.0	199.8	242.1	DEP	0.164			X		X		
>csl but <bael	100	EBCHEM	PS-01	176.8	82.7	43.3	39.4	126.0	188.0	73.4	92.0	ENH	0.198		X		X		X	
	100	SED16903	04	272.0	82.7	43.3	39.4	126.0	188.0	73.4	92.0	ENH	0.030	X	X		X		X	X
	100	SED16903	48	74.7	82.7	43.3	39.4	126.0	188.0	73.4	92.0	DEP	0.563							
	100	SED19003	4	231.7	82.7	43.3	39.4	126.0	188.0	73.4	92.0	ENH	0.005	X	X		X		X	X
	100	SED19103	04	858.8	82.7	43.3	39.4	126.0	188.0	73.4	92.0	ENH	0.016	X	X		X		X	X
	100	SED19103	208R	127.0	82.7	43.3	39.4	126.0	188.0	73.4	92.0	ENH	0.003	X			X		X	
	100	SED19203	04	782.0	82.7	43.3	39.4	126.0	188.0	73.4	92.0	ENH	0.052		X		X		X	X
	100	SED19203	305R	95.0	82.7	43.3	39.4	126.0	188.0	73.4	92.0	ENH	0.594						X	
	50	SED19203	33	337.3	220.9	81.3	139.6	302.2	382.0	199.8	242.1	ENH	0.081				X		X	
	20	EBCHEM	NH-01	310.6	183.2	92.0	91.2	275.2	402.0	168.6	197.8	ENH	0.062				X		X	
	20	EBCHEM	PS-04	173.2	183.2	92.0	91.2	275.2	402.0	168.6	197.8	DEP	0.811							
	20	EVCHEM	EW-12	87.6	183.2	92.0	91.2	275.2	402.0	168.6	197.8	DEP	0.000			X		X		
	20	EVCHEM	NG-04	39.0	183.2	92.0	91.2	275.2	402.0	168.6	197.8	DEP	0.000			X		X		
	20	EVCHEM	PS-02	100.2	183.2	92.0	91.2	275.2	402.0	168.6	197.8	DEP	0.000					X		
	20	SED16903	40	371.3	183.2	92.0	91.2	276.2	402.0	168.6	197.8	ENH	0.082		X		X		X	
	20	SED19003	22	53.7	183.2	92.0	91.2	275.2	402.0	168.6	197.8	DEP	0.000			X		X		
	20	SED19003	112R	117.0	183.2	92.0	91.2	275.2	402.0	168.6	197.8	DEP	0.135					X		
	20	SED19103	32	272.2	183.2	92.0	91.2	275.2	402.0	168.6	197.8	ENH	0.032	X					X	
>aqs but <csl >bael	100	SEA1	QM-1	618.0	82.7	43.3	39.4	126.0	188.0	73.4	92.0	ENH	0.051		X		X		X	X
>aqs, but <csl and bael	100	EBCHEM	NS-08	147.2	82.7	43.3	39.4	126.0	188.0	73.4	92.0	ENH	0.349				X		X	
	100	SED16903	48	74.7	82.7	43.3	39.4	126.0	188.0	73.4	92.0	DEP	0.563							
	100	SED19103	21	157.2	82.7	43.3	39.4	126.0	188.0	73.4	92.0	ENH	0.004	X			X		X	
	100	SED19103	49	79.6	82.7	43.3	39.4	126.0	188.0	73.4	92.0	DEP	0.771							
	80	SED16903	35	320.3	148.3	57.0	91.3	205.3	243.0	134.5	162.1	ENH	0.496		X		X		X	X
	80	SED19103	35	283.0	148.3	57.0	91.3	205.3	243.0	134.5	162.1	ENH	0.164				X		X	X
	50	EBCHEM	NS-03	147.8	220.9	81.3	139.6	302.2	382.0	199.8	242.1	DEP	0.000					X		
	50	EBCHEM	PS-02	311.8	220.9	81.3	139.6	302.2	382.0	199.8	242.1	ENH	0.067				X		X	
	50	SED9003	40	182.3	220.9	81.3	139.6	302.2	382.0	199.8	242.1	DEP	0.337					X		
	20	EBCHEM	PS-03	120.4	183.2	92.0	91.2	275.2	402.0	168.6	197.8	DEP	0.001					X		
	20	EVCHEM	NG-01	99.2	183.2	92.0	91.2	275.2	402.0	168.6	197.8	DEP	0.360					X		
	20	EVCHEM	NG-03	62.0	183.2	92.0	91.2	275.2	402.0	168.6	197.8	DEP	0.079			X		X		
	20	SED16903	9	105.3	183.2	92.0	91.2	275.2	402.0	168.6	197.8	DEP	0.001					X		
	20	SED19003	39	85.0	183.2	92.0	91.2	275.2	402.0	168.6	197.8	DEP	0.011			X		X		

Appendix 3. Table of comparisons and test results by station.

				AMPHIPOD RICHNESS											
Chemistry	Habitat	Survey	Station	Station Value	Ref Mean	STDEV	Reference Range		LCL	Relative to reference mean	t-test	t-test	1/2 Ref Mean	Ref Range	95th LCL
>csl and bsat	100	EBCHEM	KG-01	5.8	9.1	2.7	6.4	11.8	8.5	DEP	0.000	X		X	X
	100	EBCHEM	SS-04	7.8	9.1	2.7	6.4	11.8	8.5	DEP	0.486				X
	100	SED18903	12	17.0	9.1	2.7	6.4	11.8	8.5	ENH	0.016				
	100	TPPS	1406	9.0	9.1	2.7	6.4	11.8	8.5	DEP	0.276				
	100	TPPS	1606	11.0	9.1	2.7	6.4	11.8	8.5	ENH	0.204				
	80	EBCHEM	EW-04	2.4	13.2	3.7	9.5	16.9	12.3	DEP	0.000	X	X	X	X
	80	EBCHEM	EW-11	7.2	13.2	3.7	9.5	16.9	12.3	DEP	0.003	X		X	X
	80	EBCHEM	NH-03	1.4	13.2	3.7	9.5	16.9	12.3	DEP	0.000	X	X	X	X
	80	EBCHEM	NH-08	9.6	13.2	3.7	9.5	16.9	12.3	DEP	0.031	X			X
	80	EBCHEM	SS-11	12.6	13.2	3.7	9.5	16.9	12.3	DEP	0.540				
	80	EBCHEM	WW-09	7.6	13.2	3.7	9.5	16.9	12.3	DEP	0.000	X		X	X
	80	EBCHEM	WW-11	6.2	13.2	3.7	9.5	16.9	12.3	DEP	0.000	X	X	X	X
	80	EBCHEM	WW-14	7.8	13.2	3.7	9.5	16.9	12.3	DEP	0.000	X		X	X
	80	EVCHCEM	EW-01	0.4	13.2	3.7	9.5	16.9	12.3	DEP	0.000	X	X	X	X
	80	EVCHEM	EW-07	2.6	13.2	3.7	9.5	16.9	12.3	DEP	0.000	X	X	X	X
	80	EVCHEM	EW-10	4.0	13.2	3.7	9.5	16.9	12.3	DEP	0.000	X	X	X	X
	80	TPPS	1512	10.7	13.2	3.7	9.5	16.9	12.3	DEP	0.361				X
	50	EBCHEM	AB-01	14.2	12.7	2.6	10.1	15.3	12.0	ENH	0.346				
	50	EBCHEM	EW-05	1.4	12.7	2.6	10.1	15.3	12.0	DEP	0.000	X	X	X	X
	50	EBCHEM	NH-02	9.2	12.7	2.6	10.1	15.3	12.0	DEP	0.060			X	X
	50	EBCHEM	NH-04	3.6	12.7	2.6	10.1	15.3	12.0	DEP	0.000	X	X	X	X
	50	EVCHEM	EW-14	10.6	12.7	2.6	10.1	15.3	12.0	DEP	0.019	X			X
	50	TPPS	1603	9.0	12.7	2.6	10.1	15.3	12.0	DEP	0.279			X	X
>csl but <bsat	100	EBCHEM	PS-01	12.2	9.1	2.7	6.4	11.8	8.5	ENH	0.018				
	100	SED18903	34	10.0	9.1	2.7	6.4	11.8	8.5	ENH	0.697				
	100	SED18903	48	7.0	9.1	2.7	6.4	11.8	8.5	DEP	0.047	X			X
	100	SED19003	4	13.3	9.1	2.7	6.4	11.8	8.5	ENH	0.093				
	100	SED19103	34	7.6	9.1	2.7	6.4	11.8	8.5	DEP	0.016	X			X
	100	SED19103	208R	0.0	9.1	2.7	6.4	11.8	8.5	DEP	0.000	X	X	X	X
	100	SED19203	34	10.5	9.1	2.7	6.4	11.8	8.5	ENH	0.425				
	100	SED19203	305R	0.8	9.1	2.7	6.4	11.8	8.5	DEP	0.000	X	X	X	X
	50	SED19203	33	17.0	12.7	2.6	10.1	15.3	12.0	ENH	0.172				
	20	EBCHEM	NH-01	7.4	16.2	3.5	12.7	19.7	15.6	DEP	0.000	X	X	X	X
	20	EBCHEM	PS-04	11.6	16.2	3.5	12.7	19.7	15.6	DEP	0.001	X		X	X
	20	EVCHEM	EW-12	11.6	16.2	3.5	12.7	19.7	15.6	DEP	0.002	X		X	X
	20	EVCHEM	NG-04	19.0	16.2	3.5	12.7	19.7	15.6	ENH	0.098				
	20	EVCHEM	PS-02	12.2	16.2	3.5	12.7	19.7	15.6	DEP	0.047	X		X	X
	20	SED18903	40	13.0	16.2	3.5	12.7	19.7	15.6	DEP	0.102				X
	20	SED19003	22	17.3	16.2	3.5	12.7	19.7	15.6	ENH	0.663				
	20	SED19003	112R	5.3	16.2	3.5	12.7	19.7	15.6	DEP	0.003	X	X	X	X
	20	SED19103	32	19.6	16.2	3.5	12.7	19.7	15.6	ENH	0.095				
>sqs but <csl, >bsat	100	SEA1	QM-1	5.5	9.1	2.7	6.4	11.8	8.5	DEP	0.494			X	X
>sqs, but	100	EBCHEM	NS-08	7.0	9.1	2.7	6.4	11.8	8.5	DEP	0.109				X
<csl and bsat	100	SED18903	48	7.0	9.1	2.7	6.4	11.8	8.5	DEP	0.047	X			X
	100	SED19103	21	13.2	9.1	2.7	6.4	11.8	8.5	ENH	0.021				
	100	SED19103	49	5.8	9.1	2.7	6.4	11.8	8.5	DEP	0.000	X		X	X
	80	SED18903	35	5.0	13.2	3.7	9.5	16.9	12.3	DEP	0.088		X	X	X
	80	SED19103	35	6.4	13.2	3.7	9.5	16.9	12.3	DEP	0.005	X	X	X	X
	50	EBCHEM	NS-03	15.0	12.7	2.6	10.1	15.3	12.0	ENH	0.124				
	50	EBCHEM	PS-02	11.4	12.7	2.6	10.1	15.3	12.0	DEP	0.064				X
	50	SED9003	40	14.3	12.7	2.6	10.1	15.3	12.0	ENH	0.303				
	20	EBCHEM	PS-03	13.6	16.2	3.5	12.7	19.7	15.6	DEP	0.046	X			X
	20	EVCHEM	NG-01	11.8	16.2	3.5	12.7	19.7	15.6	DEP	0.005	X		X	X
	20	EVCHEM	NG-03	15.4	16.2	3.5	12.7	19.7	15.6	DEP	0.322				X
	20	SED18903	9	14.3	16.2	3.5	12.7	19.7	15.6	DEP	0.327				X
	20	SED19003	39	10.7	16.2	3.5	12.7	19.7	15.6	DEP	0.048	X		X	X

Appendix 3. Table of comparisons and test results by station.

				Mollusc Abundance											
Chemistry	Habitat	Survey	Station	Station Value	Ref Mean	STDEV	Reference Range		LCL	Relative to reference mean	t-test	t-test	1/2 Ref Mean	Ref Range	95th LCL
>cal and bael	100	EBCHEM	KG-01	71.8	58.0	27.8	30.2	85.8	51.9	ENH	0.232				
	100	EBCHEM	SS-04	66.0	58.0	27.8	30.2	85.8	51.9	ENH	0.738				
	100	SED18903	12	84.0	58.0	27.8	30.2	85.8	51.9	ENH	0.190				
	100	TPPS	1406	156.0	58.0	27.8	30.2	85.8	51.9	ENH	0.278				
	100	TPPS	1606	327.0	58.0	27.8	30.2	85.8	51.9	ENH	0.169				
	80	EBCHEM	EW-04	3.8	98.6	89.6	9.0	188.2	77.1	DEP	0.000	X	X	X	X
	80	EBCHEM	EW-11	155.6	98.6	89.6	9.0	188.2	77.1	ENH	0.038				
	80	EBCHEM	NH-03	1.6	98.6	89.6	9.0	188.2	77.1	DEP	0.000	X	X	X	X
	80	EBCHEM	NH-09	65.0	98.6	89.6	9.0	188.2	77.1	DEP	0.226				X
	80	EBCHEM	SS-11	195.0	98.6	89.6	9.0	188.2	77.1	ENH	0.059				
	80	EBCHEM	WW-09	53.8	98.6	89.6	9.0	188.2	77.1	DEP	0.038	X			X
	80	EBCHEM	WW-11	66.8	98.6	89.6	9.0	188.2	77.1	DEP	0.124				X
	80	EBCHEM	WW-14	59.0	98.6	89.6	9.0	188.2	77.1	DEP	0.005	X			X
	80	EVCHCEM	EW-01	0.4	98.6	89.6	9.0	188.2	77.1	DEP	0.000	X	X	X	X
	80	EVCHEM	EW-07	5.8	98.6	89.6	9.0	188.2	77.1	DEP	0.000	X	X	X	X
	80	EVCHEM	EW-10	38.4	98.6	89.6	9.0	188.2	77.1	DEP	0.001	X	X		X
	80	TPPS	1512	241.7	98.6	89.6	9.0	188.2	77.1	ENH	0.000				
	50	EBCHEM	AB-01	259.0	89.6	49.3	40.3	138.9	76.0	ENH	0.019				
	50	EBCHEM	EW-05	7.2	89.6	49.3	40.3	138.9	76.0	DEP	0.000	X	X	X	X
	50	EBCHEM	NH-02	59.4	89.6	49.3	40.3	138.9	76.0	DEP	0.012	X			X
	50	EBCHEM	NH-04	12.0	89.6	49.3	40.3	138.9	76.0	DEP	0.000	X	X	X	X
	50	EVCHEM	EW-14	69.6	89.6	49.3	40.3	138.9	76.0	DEP	0.295				X
	50	TPPS	1603	111.3	89.6	49.3	40.3	138.9	76.0	ENH	0.818				
>cal but <bael	100	EBCHEM	PS-01	154.2	58.0	27.8	30.2	85.8	51.9	ENH	0.001				
	100	SED18903	34	53.7	58.0	27.8	30.2	85.8	51.9	DEP	0.001	X			
	100	SED18903	46	34.7	58.0	27.8	30.2	85.8	51.9	DEP	0.000	X			X
	100	SED19003	4	124.7	58.0	27.8	30.2	85.8	51.9	ENH	0.197				
	100	SED19103	34	34.4	58.0	27.8	30.2	85.8	51.9	DEP	0.478				X
	100	SED19103	208R	0.0	58.0	27.8	30.2	85.8	51.9	DEP	0.000	X	X	X	X
	100	SED19203	34	41.3	58.0	27.8	30.2	85.8	51.9	DEP	0.275				X
	100	SED19203	305R	1.0	58.0	27.8	30.2	85.8	51.9	DEP	0.000	X	X	X	X
	50	SED19203	33	100.0	89.6	49.3	40.3	138.9	76.0	ENH	0.683				
	20	EBCHEM	NH-01	27.8	80.6	43.8	36.8	124.4	73.8	DEP	0.000	X	X	X	X
	20	EBCHEM	PS-04	221.8	80.6	43.8	36.8	124.4	73.8	ENH	0.016				
	20	EVCHEM	EW-12	140.0	80.6	43.8	36.8	124.4	73.8	ENH	0.165				
	20	EVCHEM	NG-04	314.4	80.6	43.8	36.8	124.4	73.8	ENH	0.001				
	20	EVCHEM	PS-02	272.6	80.6	43.8	36.8	124.4	73.8	ENH	0.002				
	20	SED18903	40	198.0	80.6	43.8	36.8	124.4	73.8	ENH	0.166				
	20	SED19003	22	158.3	80.6	43.8	36.8	124.4	73.8	ENH	0.223				
	20	SED19003	112R	27.3	80.6	43.8	36.8	124.4	73.8	DEP	0.000	X	X	X	X
	20	SED19103	92	71.2	80.6	43.8	36.8	124.4	73.8	DEP	0.459				X
>aqs but <cal, >bael	100	SEA1	QM-1	20.6	58.0	27.8	30.2	85.8	51.9	DEP	0.000	X	X	X	X
>aqs, but	100	EBCHEM	NS-08	28.2	58.0	27.8	30.2	85.8	51.9	DEP	0.002	X	X	X	X
<cal and bael	100	SED18903	48	34.7	58.0	27.8	30.2	85.8	51.9	DEP	0.000	X			X
	100	SED19103	21	306.6	58.0	27.8	30.2	85.8	51.9	ENH	0.001				
	100	SED19103	49	22.4	58.0	27.8	30.2	85.8	51.9	DEP	0.000	X	X	X	X
	80	SED18903	35	8.3	98.6	89.6	9.0	188.2	77.1	DEP	0.000	X	X	X	X
	80	SED19103	35	35.6	98.6	89.6	9.0	188.2	77.1	DEP	0.000	X	X		X
	50	EBCHEM	NS-03	425.2	89.6	49.3	40.3	138.9	76.0	ENH	0.001				
	50	EBCHEM	PS-02	326.0	89.6	49.3	40.3	138.9	76.0	ENH	0.000				
	50	SED9003	40	61.0	89.6	49.3	40.3	138.9	76.0	DEP	0.000	X			X
	20	EBCHEM	PS-03	278.6	80.6	43.8	36.8	124.4	73.8	ENH	0.000				
	20	EVCHEM	NG-01	172.6	80.6	43.8	36.8	124.4	73.8	ENH	0.006				
	20	EVCHEM	NG-03	585.2	80.6	43.8	36.8	124.4	73.8	ENH	0.000				
	20	SED18903	9	103.7	80.6	43.8	36.8	124.4	73.8	ENH	0.000				
	20	SED19003	39	55.3	80.6	43.8	36.8	124.4	73.8	DEP	0.063				X

Appendix 3. Table of comparisons and test results by station.

Chemistry	Habitat	Survey	Station	Station Value	Ref Mean	STD	Reference Range	LCL	Relative to reference mean	t-test	t-test	1/2 Ref Mean	Ref Range	95th LCL
>cal and baet	100	EBCHEM	KG-01	3.8	4.9	1.4	3.5	6.3	4.6	DEP	0.089				X
	100	EBCHEM	SS-04	10.6	4.9	1.4	3.5	6.3	4.6	ENH	0.000				
	100	SED18903	12	5.0	4.9	1.4	3.5	6.3	4.6	ENH	0.869				
	100	TPPS	1406	5.0	4.9	1.4	3.5	6.3	4.6	ENH	0.197				
	100	TPPS	1606	4.0	4.9	1.4	3.5	6.3	4.6	DEP	0.444				X
	80	EBCHEM	EW-04	4.8	7.0	2.4	4.6	9.4	6.4	DEP	0.026	X			X
	80	EBCHEM	EW-11	7.6	7.0	2.4	4.6	9.4	6.4	ENH	0.777				
	80	EBCHEM	NH-03	2.2	7.0	2.4	4.6	9.4	6.4	DEP	0.001	X	X	X	X
	80	EBCHEM	NH-08	5.4	7.0	2.4	4.6	9.4	6.4	DEP	0.360				X
	80	EBCHEM	SS-11	15.8	7.0	2.4	4.6	9.4	6.4	ENH	0.000				
	80	EBCHEM	WW-09	10.6	7.0	2.4	4.6	9.4	6.4	ENH	0.171				
	80	EBCHEM	WW-11	10.0	7.0	2.4	4.6	9.4	6.4	ENH	0.025				
	80	EBCHEM	WW-14	8.6	7.0	2.4	4.6	9.4	6.4	ENH	0.163				
	80	EVCHCEM	EW-01	1.4	7.0	2.4	4.6	9.4	6.4	DEP	0.000	X	X	X	X
	80	EVCHEM	EW-07	8.6	7.0	2.4	4.6	9.4	6.4	DEP	0.652				
	80	EVCHEM	EW-10	14.8	7.0	2.4	4.6	9.4	6.4	ENH	0.006				
	80	TPPS	1512	9.0	7.0	2.4	4.6	9.4	6.4	ENH	0.438				
	60	EBCHEM	AB-01	16.4	10.4	3.0	7.4	13.4	9.6	ENH	0.022				
	50	EBCHEM	EW-05	2.2	10.4	3.0	7.4	13.4	9.6	DEP	0.000	X	X	X	X
	50	EBCHEM	NH-02	11.2	10.4	3.0	7.4	13.4	9.6	ENH	0.667				
	50	EBCHEM	NH-04	11.0	10.4	3.0	7.4	13.4	9.6	ENH	0.721				
	50	EVCHEM	EW-14	17.8	10.4	3.0	7.4	13.4	9.6	ENH	0.008				
	50	TPPS	1603	5.0	10.4	3.0	7.4	13.4	9.6	DEP	0.140		X	X	X
>cal but <baet	100	EBCHEM	PS-01	9.0	4.9	1.4	3.5	6.3	4.6	ENH	0.009				
	100	SED18903	34	8.7	4.9	1.4	3.5	6.3	4.6	ENH	0.111				
	100	SED18903	48	4.7	4.9	1.4	3.5	6.3	4.6	DEP	0.584				
	100	SED19003	4	7.0	4.9	1.4	3.5	6.3	4.6	ENH	0.167				
	100	SED19103	34	8.4	4.9	1.4	3.5	6.3	4.6	ENH	0.002				
	100	SED19103	208R	0.8	4.9	1.4	3.5	6.3	4.6	DEP	0.000	X	X	X	X
	100	SED19203	34	6.5	4.9	1.4	3.5	6.3	4.6	ENH	0.191				
	100	SED19203	305R	0.3	4.9	1.4	3.5	6.3	4.6	DEP	0.000	X	X	X	X
	50	SED19203	33	12.0	10.4	3.0	7.4	13.4	9.6	ENH	0.017				
	20	EBCHEM	NH-01	8.6	12.1	3.6	8.5	15.7	11.5	DEP	0.000	X			X
	20	EBCHEM	PS-04	11.6	12.1	3.6	8.5	15.7	11.5	DEP	0.702				
	20	EVCHEM	EW-12	20.6	12.1	3.6	8.5	15.7	11.5	ENH	0.004				
	20	EVCHEM	NG-04	10.6	12.1	3.6	8.5	15.7	11.5	DEP	0.343				X
	20	EVCHEM	PS-02	9.0	12.1	3.6	8.5	15.7	11.5	DEP	0.039	X			X
	20	SED18903	40	6.7	12.1	3.6	8.5	15.7	11.5	DEP	0.000	X		X	X
	20	SED19003	22	7.7	12.1	3.6	8.5	15.7	11.5	DEP	0.125			X	X
	20	SED19003	112R	8.3	12.1	3.6	8.5	15.7	11.5	DEP	0.225			X	X
	20	SED19103	32	12.8	12.1	3.6	8.5	15.7	11.5	ENH	0.525				
>sqs but <cal, >baet	100	SEA1	QM-1	6.5	4.9	1.4	3.5	6.3	4.6	ENH	0.728				
>sqs, but	100	EBCHEM	NS-08	5.0	4.9	1.4	3.5	6.3	4.6	ENH	0.918				
<cal and baet	100	SED18903	48	4.7	4.9	1.4	3.5	6.3	4.6	DEP	0.584				
	100	SED19103	21	3.8	4.9	1.4	3.5	6.3	4.6	DEP	0.002	X			X
	100	SED19103	49	4.0	4.9	1.4	3.5	6.3	4.6	DEP	0.350				X
	80	SED18903	35	5.3	7.0	2.4	4.6	9.4	6.4	DEP	0.191				X
	80	SED19103	35	6.2	7.0	2.4	4.6	9.4	6.4	DEP	0.467				X
	50	EBCHEM	NS-03	12.8	10.4	3.0	7.4	13.4	9.6	ENH	0.180				
	50	EBCHEM	PS-02	11.6	10.4	3.0	7.4	13.4	9.6	ENH	0.518				
	50	SED9003	40	6.3	10.4	3.0	7.4	13.4	9.6	DEP	0.027	X		X	X
	20	EBCHEM	PS-03	8.4	12.1	3.6	8.5	15.7	11.4	DEP	0.047	X		X	X
	20	EVCHEM	NG-01	8.4	12.1	3.6	8.5	15.7	11.4	DEP	0.060			X	X
	20	EVCHEM	NG-03	10.0	12.1	3.6	8.5	15.7	11.4	DEP	0.388				X
	20	SED18903	9	7.0	12.1	3.6	8.5	15.7	11.4	DEP	0.028	X		X	X
	20	SED19003	59	10.3	12.1	3.6	8.5	15.7	11.4	DEP	0.313				X

Appendix 3. Table of comparisons and test results by station.

				CRUSTACEAN ABUNDANCE											
Chemistry	Habitat	Survey	Station	Station Value	Ref Mean	STD	Reference Range		LCL	Relative to reference mean	t-test	t-test	1/2 Ref Mean	Ref Range	95th LCL
>cst and bsat	100	EBCHEM	KG-01	10.2	52.9	40.9	12.0	93.8	43.7	DEP	0.000	X	X	X	X
	100	EBCHEM	SS-04	705.8	52.9	40.9	12.0	93.8	43.7	ENH	0.206				
	100	SED18903	12	61.3	52.9	40.9	12.0	93.8	43.7	ENH	0.384				
	100	TPPS	1406	116.0	52.9	40.9	12.0	93.8	43.7	ENH	0.393				
	100	TPPS	1606	182.0	52.9	40.9	12.0	93.8	43.7	ENH	0.131				
	80	EBCHEM	EW-04	156.4	39.3	29.7	9.6	69.0	32.0	ENH	0.188				
	80	EBCHEM	EW-11	49.4	39.3	29.7	9.6	69.0	32.0	ENH	0.529				
	80	EBCHEM	NH-03	2.6	39.3	29.7	9.6	69.0	32.0	DEP	0.000	X	X	X	X
	80	EBCHEM	NH-08	15.4	39.3	29.7	9.6	69.0	32.0	DEP	0.000	X	X		X
	80	EBCHEM	SS-11	227.8	39.3	29.7	9.6	69.0	32.0	ENH	0.045				
	80	EBCHEM	WW-09	181.2	39.3	29.7	9.6	69.0	32.0	ENH	0.075				
	80	EBCHEM	WW-11	761.8	39.3	29.7	9.6	69.0	32.0	ENH	0.011				
	80	EBCHEM	WW-14	93.2	39.3	29.7	9.6	69.0	32.0	ENH	0.051				
	80	EVCHCEM	EW-01	6.2	39.3	29.7	9.6	69.0	32.0	DEP	0.000	X	X	X	X
	80	EVCHEM	EW-07	26.0	39.3	29.7	9.6	69.0	32.0	DEP	0.315				X
	80	EVCHEM	EW-10	345.0	39.3	29.7	9.6	69.0	32.0	ENH	0.040				
	80	TPPS	1512	59.3	39.3	29.7	9.6	69.0	32.0	ENH	0.304				
	50	EBCHEM	AB-01	170.2	102.6	56.0	46.6	158.6	88.2	ENH	0.299				
	50	EBCHEM	EW-05	2.6	102.6	56.0	46.6	158.6	88.2	DEP	0.000	X	X	X	X
	50	EBCHEM	NH-02	111.6	102.6	56.0	46.6	158.6	88.2	ENH	0.752				
	50	EBCHEM	NH-04	18.6	102.6	56.0	46.6	158.6	88.2	DEP	0.000	X	X	X	X
	50	EVCHEM	EW-14	249.8	102.6	56.0	46.6	158.6	88.2	ENH	0.070				
	50	TPPS	1603	176.7	102.6	56.0	46.6	158.6	88.2	ENH	0.561				
>cst but <bsat	100	EBCHEM	PS-01	183.6	52.9	40.9	12.0	93.8	43.7	ENH	0.002				
	100	SED18903	34	160.3	52.9	40.9	12.0	93.8	43.7	ENH	0.053				
	100	SED18903	48	161.7	52.9	40.9	12.0	93.8	43.7	ENH	0.076				
	100	SED19003	4	107.0	52.9	40.9	12.0	93.8	43.7	ENH	0.092				
	100	SED19103	34	116.4	52.9	40.9	12.0	93.8	43.7	ENH	0.015				
	100	SED19103	208R	0.8	52.9	40.9	12.0	93.8	43.7	DEP	0.000	X	X	X	X
	100	SED19203	34	92.5	52.9	40.9	12.0	93.8	43.7	ENH	0.015				
	100	SED19203	305R	0.3	52.9	40.9	12.0	93.8	43.7	DEP	0.000	X	X	X	X
	50	SED19203	33	154.8	102.6	56.0	46.6	158.6	88.2	ENH	0.004				
	20	EBCHEM	NH-01	183.2	118.1	66.9	51.2	185.0	107.7	ENH	0.268				
	20	EBCHEM	PS-04	175.6	118.1	66.9	51.2	185.0	107.7	ENH	0.000				
	20	EVCHEM	EW-12	1064.4	118.1	66.9	51.2	185.0	107.7	ENH	0.008				
	20	EVCHEM	NG-04	181.4	118.1	66.9	51.2	185.0	107.7	ENH	0.016				
	20	EVCHEM	PS-02	65.0	118.1	66.9	51.2	185.0	107.7	DEP	0.000	X			X
	20	SED18903	40	69.7	118.1	66.9	51.2	185.0	107.7	DEP	0.166				X
	20	SED19003	22	192.7	118.1	66.9	51.2	185.0	107.7	ENH	0.078				
	20	SED19003	112R	40.0	118.1	66.9	51.2	185.0	107.7	DEP	0.000	X	X	X	X
	20	SED19103	32	120.2	118.1	66.9	51.2	185.0	107.7	ENH	0.813				
>sqs but <cst, >bsat	100	SEA1	QM-1	68.5	52.9	40.9	12.0	93.8	43.7	ENH	0.100				
>sqs, but	100	EBCHEM	NS-08	8.8	52.9	40.9	12.0	93.8	43.7	DEP	0.000	X	X	X	X
<cst and bsat	100	SED18903	48	161.7	52.9	40.9	12.0	93.8	43.7	ENH	0.076				
	100	SED19103	21	105.6	52.9	40.9	12.0	93.8	43.7	ENH	0.000				
	100	SED19103	49	29.2	52.9	40.9	12.0	93.8	43.7	DEP	0.001	X			X
	80	SED18903	35	270.0	39.3	29.7	9.6	69.0	32.0	ENH	0.107				
	80	SED19103	35	181.2	39.3	29.7	9.6	69.0	32.0	ENH	0.000				
	50	EBCHEM	NS-03	271.8	102.6	56.0	46.6	158.6	88.2	ENH	0.003				
	50	EBCHEM	PS-02	80.4	102.6	56.0	46.6	158.6	88.2	DEP	0.040	X			X
	50	SED9003	40	102.7	102.6	56.0	46.6	158.6	88.2	ENH	0.998				
	20	EBCHEM	PS-03	99.6	118.1	66.9	51.2	185.0	107.7	DEP	0.173				X
	20	EVCHEM	NG-01	192.0	118.1	66.9	51.2	185.0	107.7	ENH	0.000				
	20	EVCHEM	NG-03	263.4	118.1	66.9	51.2	185.0	107.7	ENH	0.000				
	20	SED18903	9	263.0	118.1	66.9	51.2	185.0	107.7	ENH	0.016				
	20	SED19003	39	85.3	118.1	66.9	51.2	185.0	107.7	DEP	0.173				X

Appendix 3. Table of comparisons and test results by station.

				BENTHIC INFAUNAL TROPHIC INDEX											
Chemistry	Habitat	Survey	Station	Station Value	Ref Mean	STD	Reference Range		LCL	Relative to reference mean	t-test	t-test	1/2 Ref Mean	Ref Range	95th LCL
>csl and bsel	100	EBCHEM	KG-01	67.6	77.2	9.9	67.3	87.1	75.2	DEP	0.000	X			X
	100	EBCHEM	SS-04	64.0	77.2	9.9	67.3	87.1	75.2	DEP	0.000	X		X	X
	100	SED18903	12	82.7	77.2	9.9	67.3	87.1	75.2	ENH	0.135				
	100	TPPS	1406	60.0	77.2	9.9	67.3	87.1	75.2	DEP	0.000	X		X	X
	100	TPPS	1606	66.0	77.2	9.9	67.3	87.1	75.2	DEP	0.466			X	X
	80	EBCHEM	EW-04	0.0	70.2	7.0	63.2	77.2	68.7	DEP	0.000	X	X	X	X
	80	EBCHEM	EW-11	65.8	70.2	7.0	63.2	77.2	68.7	DEP	0.000	X			X
	80	EBCHEM	NH-03	9.0	70.2	7.0	63.2	77.2	68.7	DEP	0.000	X		X	X
	80	EBCHEM	NH-08	68.2	70.2	7.0	63.2	77.2	68.7	DEP	0.021	X			X
	80	EBCHEM	SS-11	67.8	70.2	7.0	63.2	77.2	68.7	DEP	0.006	X			X
	80	EBCHEM	WW-09	68.0	70.2	7.0	63.2	77.2	68.7	DEP	0.000	X			X
	80	EBCHEM	WW-11	65.4	70.2	7.0	63.2	77.2	68.7	DEP	0.000	X			X
	80	EBCHEM	WW-14	66.2	70.2	7.0	63.2	77.2	68.7	DEP	0.000	X			X
	80	EVCHCEM	EW-01	0.0	70.2	7.0	63.2	77.2	68.7	DEP	0.000	X	X	X	X
	80	EVCHEM	EW-07	13.4	70.2	7.0	63.2	77.2	68.7	DEP	0.000	X		X	X
	80	EVCHEM	EW-10	4.4	70.2	7.0	63.2	77.2	68.7	DEP	0.000	X		X	X
	80	TPPS	1512	61.7	70.2	7.0	63.2	77.2	68.7	DEP	0.242			X	X
	50	EBCHEM	AB-01	66.0	71.6	5.7	65.9	77.3	70.2	DEP	0.005	X			X
	50	EBCHEM	EW-05	26.6	71.6	5.7	65.9	77.3	70.2	DEP	0.005	X		X	X
	50	EBCHEM	NH-02	61.4	71.6	5.7	65.9	77.3	70.2	DEP	0.000	X		X	X
	50	EBCHEM	NH-04	62.8	71.6	5.7	65.9	77.3	70.2	DEP	0.000	X		X	X
	50	EVCHEM	EW-14	64.2	71.6	5.7	65.9	77.3	70.2	DEP	0.000	X		X	X
	50	TPPS	1603	68.3	71.6	5.7	65.9	77.3	70.2	DEP	0.807				X
>csl but <bsel	100	EBCHEM	PS-01	71.0	77.2	9.9	67.3	87.1	75.2	DEP	0.001	X			X
	100	SED18903	34	72.3	77.2	9.9	67.3	87.1	75.2	DEP	0.167				X
	100	SED18903	48	64.7	77.2	9.9	67.3	87.1	75.2	DEP	0.000	X		X	X
	100	SED19003	4	76.0	77.2	9.9	67.3	87.1	75.2	DEP	0.000	X			
	100	SED19103	34	89.6	77.2	9.9	67.3	87.1	75.2	ENH	0.018				
	100	SED19103	208R	67.0	77.2	9.9	67.3	87.1	75.2	DEP	0.000	X		X	X
	100	SED19203	34	83.8	77.2	9.9	67.3	87.1	75.2	ENH	0.282				
	100	SED19203	305R	66.5	77.2	9.9	67.3	87.1	75.2	DEP	0.000	X		X	X
	50	SED19203	33	68.3	71.6	5.7	65.9	77.3	70.2	DEP	0.003	X			X
	20	EBCHEM	NH-01	61.8	74.4	6.7	67.7	81.1	73.4	DEP	0.002	X		X	X
	20	EBCHEM	PS-04	73.6	74.4	6.7	67.7	81.1	73.4	DEP	0.749				
	20	EVCHEM	EW-12	68.4	74.4	6.7	67.7	81.1	73.4	DEP	0.000	X			X
	20	EVCHEM	NG-04	67.6	74.4	6.7	67.7	81.1	73.4	DEP	0.000	X		X	X
	20	EVCHEM	PS-02	66.6	74.4	6.7	67.7	81.1	73.4	DEP	0.000	X		X	X
	20	SED18903	40	67.3	74.4	6.7	67.7	81.1	73.4	DEP	0.000	X		X	X
	20	SED19003	22	64.3	74.4	6.7	67.7	81.1	73.4	DEP	0.084			X	X
	20	SED19003	112R	71.0	74.4	6.7	67.7	81.1	73.4	DEP	0.229				X
	20	SED19103	32	67.6	74.4	6.7	67.7	81.1	73.4	DEP	0.002	X		X	X
>sqs but <csl, >bsel	100	SEA1	QM-1	66.0	77.2	9.9	67.3	87.1	75.2	DEP	0.002	X		X	X
>sqs, but	100	EBCHEM	NS-08	34.2	77.2	9.9	67.3	87.1	75.2	DEP	0.006	X		X	X
<csl and bsel	100	SED18903	46	64.7	77.2	9.9	67.3	87.1	75.2	DEP	0.000	X		X	X
	100	SED19103	21	63.6	77.2	9.9	67.3	87.1	75.2	DEP	0.000	X		X	X
	100	SED19103	49	68.6	77.2	9.9	67.3	87.1	75.2	DEP	0.000	X			X
	80	SED18903	35	82.0	70.2	7.0	63.2	77.2	68.7	ENH	0.141				
	80	SED19103	35	82.6	70.2	7.0	63.2	77.2	68.7	ENH	0.032				
	50	EBCHEM	NS-03	62.2	71.6	5.7	65.9	77.3	70.2	DEP	0.000	X		X	X
	50	EBCHEM	PS-02	70.8	71.6	5.7	65.9	77.3	70.2	DEP	0.669				
	50	SED9003	40	71.3	71.6	5.7	65.9	77.3	70.2	DEP	0.802				
	20	EBCHEM	PS-03	71.2	74.4	6.7	67.7	81.1	73.4	DEP	0.000	X			X
	20	EVCHEM	NG-01	68.0	74.4	6.7	67.7	81.1	73.4	DEP	0.000	X			X
	20	EVCHEM	NG-03	72.4	74.4	6.7	67.7	81.1	73.4	DEP	0.089				X
	20	SED18903	9	90.0	74.4	6.7	67.7	81.1	73.4	ENH	0.000				
	20	SED19003	99	67.7	74.4	6.7	67.7	81.1	73.4	DEP	0.118			X	X

Appendix 3. Table of comparisons and test results by station.

				SWARTZ'S DOMINANCE INDEX												
Chemistry	Habitat	Survey	Station	Station Value	Ref Mean	STDEV	Reference Range		LCL	Relative to reference mean	t-test	t-test	1/2 Ref Mean	SDI <5.0	Ref Range	95th LCL
>csl and baet	100	EBCHEM	KG-01	1.6	8.5	1.9	6.6	10.4	8.1	DEP	0.000	X	X	X	X	X
	100	EBCHEM	SS-04	4.2	8.5	1.9	6.6	10.4	8.1	DEP	0.010	X	X	X	X	X
	100	SED18903	12	10.3	8.5	1.9	6.6	10.4	8.1	ENH	0.108					
	100	TPPS	1406	5.0	8.5	1.9	6.6	10.4	8.1	DEP	0.000	X			X	X
	100	TPPS	1606	4.0	8.5	1.9	6.6	10.4	8.1	DEP	0.335		X	X	X	X
	80	EBCHEM	EW-04	1.6	12.2	5.3	6.9	17.5	10.9	DEP	0.000	X	X	X	X	X
	80	EBCHEM	EW-11	1.6	12.2	5.3	6.9	17.5	10.9	DEP	0.000	X	X	X	X	X
	80	EBCHEM	NH-03	1.6	12.2	5.3	6.9	17.5	10.9	DEP	0.000	X	X	X	X	X
	80	EBCHEM	NH-08	6.6	12.2	5.3	6.9	17.5	10.9	DEP	0.000	X			X	X
	80	EBCHEM	SS-11	9.2	12.2	5.3	6.9	17.5	10.9	DEP	0.020	X				X
	80	EBCHEM	WW-09	6.0	12.2	5.3	6.9	17.5	10.9	DEP	0.000	X	X		X	X
	80	EBCHEM	WW-11	3.0	12.2	5.3	6.9	17.5	10.9	DEP	0.000	X	X	X	X	X
	80	EBCHEM	WW-14	1.8	12.2	5.3	6.9	17.5	10.9	DEP	0.000	X	X	X	X	X
	80	EVCHCEM	EW-01	2.0	12.2	5.3	6.9	17.5	10.9	DEP	0.000	X	X	X	X	X
	80	EVCHEM	EW-07	5.2	12.2	5.3	6.9	17.5	10.9	DEP	0.001	X	X		X	X
	80	EVCHEM	EW-10	2.2	12.2	5.3	6.9	17.5	10.9	DEP	0.000	X	X	X	X	X
	80	TPPS	1512	9.0	12.2	5.3	6.9	17.5	10.9	DEP	0.158					X
	50	EBCHEM	AB-01	11.6	15.1	4.2	10.9	19.3	14.0	DEP	0.006	X				X
	50	EBCHEM	EW-05	1.8	15.1	4.2	10.9	19.3	14.0	DEP	0.000	X	X	X	X	X
	50	EBCHEM	NH-02	12.8	15.1	4.2	10.9	19.3	14.0	DEP	0.118					X
	50	EBCHEM	NH-04	1.0	15.1	4.2	10.9	19.3	14.0	DEP	0.000	X	X	X	X	X
	50	EVCHEM	EW-14	12.4	15.1	4.2	10.9	19.3	14.0	DEP	0.016	X				X
	50	TPPS	1603	4.0	15.1	4.2	10.9	19.3	14.0	DEP	0.016	X	X	X	X	X
>csl but <baet	100	EBCHEM	PS-01	7.6	8.5	1.9	6.6	10.4	8.1	DEP	0.017	X				X
	100	SED18903	84	9.0	8.5	1.9	6.6	10.4	8.1	ENH	0.499					
	100	SED18903	48	4.0	8.5	1.9	6.6	10.4	8.1	DEP	0.008	X	X	X	X	X
	100	SED19003	4	9.0	8.5	1.9	6.6	10.4	8.1	ENH	0.499					
	100	SED19103	84	5.8	8.5	1.9	6.6	10.4	8.1	DEP	0.164				X	X
	100	SED19103	208R	1.0	8.5	1.9	6.6	10.4	8.1	DEP	0.000	X	X	X	X	X
	100	SED19203	84	5.5	8.5	1.9	6.6	10.4	8.1	DEP	0.035	X			X	X
	100	SED19203	305R	2.0	8.5	1.9	6.6	10.4	8.1	DEP	0.001	X	X	X	X	X
	50	SED19203	83	19.0	15.1	4.2	10.9	19.3	14.0	ENH	0.101					
	20	EBCHEM	NH-01	9.6	15.3	6.4	8.9	21.7	14.3	DEP	0.002	X				X
	20	EBCHEM	PS-04	9.6	15.3	6.4	8.9	21.7	14.3	DEP	0.051					X
	20	EVCHEM	EW-12	6.2	15.3	6.4	8.9	21.7	14.3	DEP	0.000	X	X		X	X
	20	EVCHEM	NG-04	5.4	15.3	6.4	8.9	21.7	14.3	DEP	0.000	X	X		X	X
	20	EVCHEM	PS-02	7.6	15.3	6.4	8.9	21.7	14.3	DEP	0.001	X	X		X	X
	20	SED18903	40	8.0	15.3	6.4	8.9	21.7	14.3	DEP	0.000	X			X	X
	20	SED19003	22	5.3	15.3	6.4	8.9	21.7	14.3	DEP	0.000	X	X		X	X
	20	SED19003	112R	8.3	15.3	6.4	8.9	21.7	14.3	DEP	0.091				X	X
	20	SED19103	82	24.6	15.3	6.4	8.9	21.7	14.3	ENH	0.001					
>sqs but <csl, >baet	100	SEA1	QM-1	1.0	8.5	1.9	6.6	10.4	8.1	DEP	0.000	X	X	X	X	X
>sqs, but	100	EBCHEM	NS-08	3.2	8.5	1.9	6.6	10.4	8.1	DEP	0.000	X	X	X	X	X
<csl and baet	100	SED18903	48	4.0	8.5	1.9	6.6	10.4	8.1	DEP	0.008	X	X	X	X	X
	100	SED19103	21	6.6	8.5	1.9	6.6	10.4	8.1	DEP	0.004	X				X
	100	SED19103	49	6.6	8.5	1.9	6.6	10.4	8.1	DEP	0.137					X
	80	SED18903	85	6.0	12.2	5.3	6.9	17.5	10.9	DEP	0.039	X	X		X	X
	80	SED19103	85	6.6	12.2	5.3	6.9	17.5	10.9	DEP	0.000	X			X	X
	50	EBCHEM	NS-03	8.2	15.1	4.2	10.9	19.3	14.0	DEP	0.000	X			X	X
	50	EBCHEM	PS-02	8.8	15.1	4.2	10.9	19.3	14.0	DEP	0.000	X			X	X
	50	SED9003	40	12.3	15.1	4.2	10.9	19.3	14.0	DEP	0.228					X
	20	EBCHEM	PS-03	7.2	15.3	6.4	8.9	21.7	14.3	DEP	0.000	X	X		X	X
	20	EVCHEM	NG-01	4.8	15.3	6.4	8.9	21.7	14.3	DEP	0.000	X	X	X	X	X
	20	EVCHEM	NG-03	3.4	15.3	6.4	8.9	21.7	14.3	DEP	0.000	X	X	X	X	X
	20	SED18903	9	7.3	15.3	6.4	8.9	21.7	14.3	DEP	0.002	X	X		X	X
	20	SED19003	89	8.0	15.3	6.4	8.9	21.7	14.3	DEP	0.000	X			X	X