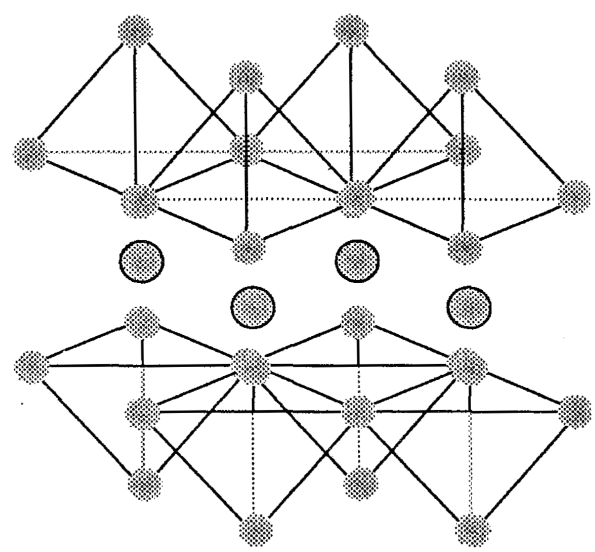
NOAA Technical Memorandum NOS OMA 59

National Status and Trends Program
for Marine Environmental Quality

Progress Report

Second Summary of Data on Chemical Contaminants in Sediments from the National Status and Trends Program



Rockville, Maryland
April, 1991

noaa NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

National Ocean Service

Office of Oceanography and Marine Assessment
National Ocean Service
National Oceanic and Atmospheric Administration
U.S. Department of Commerce

The Office of Oceanography and Marine Assessment (OMA) provides decisionmakers comprehensive, scientific information on characteristics of the oceans, coastal areas, and estuaries of the USA. The information ranges from strategic, national assessments of coastal and estuarine environmental quality to real-time information for navigation or hazardous materials spill response. For example, OMA monitors the rise and fall of water levels at about 200 coastal locations of the USA (including the Great Lakes); predicts the times and heights of high and low tides; and provides information critical to national defense, safe navigation, marine boundary determination, environmental management, and coastal engineering. Currently, OMA is installing the Next Generation Water Level Measurement System that will replace by 1992 existing water level measurement and data processing technologies.Through its National Status and Trends Program, OMA uses uniform techniques to monitor toxic chemical contamination of bottom-feeding fish, mussels and oysters, and sediments at 200 locations throughout the USA. A related OMA program of directed research examines the relationships between contaminant exposure and indicators of biological responses in fish and shellfish.

OMA uses computer-based circulation models and innovative measurement technologies to develop new information products, including real-time circulation data, circulation forecasts under various meteorological conditions, and circulation data atlases. OMA provides critical scientific support to the U.S. Coast Guard during spills of oil or hazardous materials into marine or estuarine environments. This support includes spill trajectory predictions, chemical hazard analyses, and assessments of the sensitivity of marine and estuarine environments to spills. The program provides similar support to the U.S. Environmental Protection Agency's Superfund Program during emergency responses at, and for thecleanup of, abandoned hazardous waste sites in coastal areas. To fulfill the responsibilities of the Secretary of Commerce as a trustee for living marine resources, OMA conducts comprehensive assessments of damages to coastal and marine resources from discharges of oil and hazardous materials.

OMA collects, synthesizes, and distributes information on the use of the coastal and oceanic resources of the USA to identify compatibilities and conflicts and to determine research needs and priorities. It conducts comprehensive, strategic assessments of multiple resource uses in coastal, estuarine, and oceanic areas for decisionmaking by NOAA, other Federal agencies, state agencies, Congress, industry, and public interest groups. It publishes a series of thematic data atlases on major regions of the U.S. Exclusive Economic Zone and on selected charactercs of major U.S. estuaries. It also manages, for the U.S. Department of the Interior, a program of environmental assessments of the effects of oil and gas development on the Alaskan outer continental shelf

OMA implements NOAA responsibilities under Title II of the Marine Protection, Research, and Sanctuaries Act of 1972; Section 6 of the National Ocean Pollution Planning Act of 1978; and other Federal laws. It has three major line organizations: The Physical Oceanography Division, the Ocean Assessments Division, and the Ocean Systems Division.

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SECOND SUMMARY OF DATA ON CHEMICAL CONCENTRATIONS IN SEDIMENTS FROM THE NATIONAL STATUS AND TRENDS PROGRAM

Rockville, Maryland
April, 1991

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National Oceanic and Atmospheric Administration
U.S. Department of Commerce
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National Marine Fisheries Service

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Battelle Ocean Science

Science Applications International Corporation

Texas A&M Research Foundation
Geochemical and Environmental Research Group

No authors are identified because this report summarizes the work of so many people that a list of authors would consume a page. Individuals to be acknowledged are Mr. Charles A. Parker for directly converting files of raw data into Appendices C and D, Mr Bernard W. Gottholm for creation of site maps, and Ms. Pamela H. Rubin for editing.

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Office of Oceanography and Marine Assessment
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ABSTRACT

The National Oceanic and Atmospheric Administration's (NOAA) National Status and Trends (NS&T) Program has analyzed samples of surface sediment collected at almost 300 coastal and estuarine sites throughout the United States since 1984. When the first NS&T report on sediments (NOAA, 1988) was written, only about 200 sites had been sampled. This second report is based on more data. Even with this larger data set, the original observation holds that most of the highest concentrations for any particular contaminant are found at sites near the urban areas of Boston, New York, San Diego, Los Angeles, and Seattle. The overall concentration distributions for each contaminant are approximately lognormal, allowing a definition of "high" concentrations as those exceeding the mean plus one standard deviation of the lognormal distribution. Those "high" concentrations are useful for comparisons within the NS&T data set and with other reports on sediment contamination. The "high" concentrations in units of µg/g of dry fine-grained sediment for each contaminant are (in parentheses): Ag (1.2), As (24), Cd (1.2), Cr (230), Cu (84), Hg (0.49), Pb (89), Sn (8.5), Zn (270), LMWPAH (1.0), HMWPAH (3.0), tDDT (0.037), and tPCB (0.20).

Introduction

Decisions on the use and allocation of resources in the nation's coastal and estuarine regions require reliable and continuous information on the status and trends of environmental quality in those areas. Beginning in 1984, NOAA undertook the task of providing this information through its NS&T Program for Marine Environmental Quality. The program's objectives include defining the geographic distribution of contaminant concentrations in tissues of marine organisms and in sediments, and documenting biological responses to contamination. Samples have been collected since 1984 under the NS&T Benthic Surveillance Project and since 1986 under the Mussel Watch Project. At Benthic Surveillance sites, benthic fishes are collected and their livers excised and stored for subsequent chemical analysis. At Mussel Watch sites, bivalve mollusks are collected for analysis. Surface sediment samples have been collected at all sites in both projects. A series of NS&T reports (NOAA, 1987a, 1987b, 1988, and 1989) present and discuss contaminant concentrations in mollusks, fish, and sediments.

The first NS&T report on sediments (NOAA, 1988) used data from 212 sites; 58 Benthic Surveillance sites occupied in 1984 and 1985 and 154 Mussel Watch sites occupied in 1986 and 1987. This report is based on data from 285 sites. New Benthic Surveillance data are from samples collected in 1986 at some of the original 58 sites and from 13 additional sites. New Mussel Watch data are from 62 sites occupied in 1988 or 1989 (no sediment was collected from sites previously sampled in 1986 or 1987). Two pairs of Benthic Surveillance sites from the earlier report have been combined into single sites.

Participating Organizations

The laboratories that have performed Benthic Surveillance sampling and analysis are NOAA National Marine Fisheries Service laboratories in: Gloucester, MA; Sandy Hook, NJ; Beaufort, NC; Charleston, SC; and Seattle, WA. The Mussel Watch work has been performed by the Battelle laboratories in Duxbury, MA, and Sequim, WA; the Texas A&M University Geochemical and Environmental Research Group in College Station TX; and the LaJolla, CA, laboratory of Scientific Applications International Corporation.

Site Locations

Information from the NS&T Program provides a basis for setting priorities for management action and for documenting changes that may occur as a result of such actions. The objective is to quantify contamination over general areas. Sites are selected so as not to be in close proximity to major point sources of contamination. Management action taken on any individual point source will probably not be seen in the NS&T data unless that source exerts a dominant influence on environmental quality over a relatively large area. On the other hand, the NS&T results reflect the combined influence of many point and non-point sources of contamination on an area.

Whenever a site was sampled, sediment was collected at three stations within that site. For the Mussel Watch Project, a station could be anywhere within 500 m of the center of the site where mollusks were collected. If only sand could be found near the mollusk site, the center of a sediment site could be as much as 2 km from that mollusk site. In the Benthic Surveillance project, the largest distance between sites was not always less than 1 km. For 10 sites in the Northeast and two in the Gulf of Mexico, data from some stations have been excluded from this analysis. Without exclusions, the largest distance between stations at those sites would be more than 10 km. With exclusions, the largest distances are considerably smaller, though in some cases they still exceed 10 km.

Conversely, two pairs of sites have been combined into single sites. In 1984, the Benthic Surveillance Project sampled a site called "Seal Beach." Since 1985, the sampled site has been "Long Beach." Because the site centers are within 1 km of each other, the "Seal Beach" site designation has been dropped and all three years of data are considered to have been from "Long Beach." Similarly, data from the 1984 site called "San Pedro Canyon" has been combined with 1985 and 1986 data from the "San Pedro Bay" site.

The sites and years of sampling by the Benthic Surveillance and Mussel Watch Projects are listed in tables and located on the series of maps in Appendix A. One table lists all the stations occupied at each Benthic Surveillance site, the largest distance between those stations, and indicates which stations were excluded from this analysis.

Chemicals Measured

The elements and organic compounds measured in NS&T sediment samples are listed in Table 1. Most of the organic chemical data have been aggregated for this report. The 2- and 3-ring polycyclic aromatic hydrocarbons (PAHs) have been combined into a group called the low molecular weight (LMWPAH) PAHs. The 4- and 5-ring compounds are grouped as high molecular weight (HMWPAH) PAHs. The group tDDT is the sum of the concentrations of DDT and its metabolites DDE and DDD. The PCB compounds have been quantified to the level of chlorination, and together these compounds comprise the group tPCB. Total chlordane, tCdane, is the sum of concentrations of cis-chlordane, trans-nonachlor, heptachlor, and heptachlorepoxide. Total dieldrin, tDield, is the sum of the concentrations of dieldrin and aldrin. Figure 1 conveys the distributions of individual compounds with the groups LMWPAH, HMWPAH, tDDT, tPCB, and tCdane. It should also be noted that, on average, the HMWPAH concentration is 3 times that of the LMWPAH component of the total PAH compounds and that dieldrin is 75% of the tDield concentration.

Concentrations of all of these elements and organic chemicals can serve as indicators of human activity. While the elements all have different uses, they can be categorized as chemicals whose discharge to the environment has been enhanced through industrialization. The groups of organic compounds cannot be categorized so generally. Two of those groups, total DDT (tDDT) and chlordane (tCdane), are chlorinated pesticides. Use of DDT in the United States was banned in 1970. The use of chlordane on crops and ornamental plants was first restricted in 1974. Its major use as a termiticide came under severe restriction in 1988.

Table 1. Chemicals and related parameters measured in sediment.

DDT and its metabolites

2,4'-DDD
4,4'-DDD
2,4'-DDE
4,4'-DDE
2,4'-DDT
4,4'-DDT

Chlorinated pesticides other than DDT

Aldrin
Cis-chlordane
Trans-nonachlor
Dieldrin
Heptachlor
Heptachlor epoxide
Hexachlorobenzene
Lindane (gamma-BHC)
Mirex

Polycyclic aromatic hydrocarbons[b]

2-ring
Biphenyl
Naphthalene
1-Methylnaphthalene
2-Methylnaphthalene
2,6-Dimethylnaphthalene
Acenaphthene

3-ring
Fluorene
Phenanthrene
1-Methylphenanthrene
Anthracene

4-ring
Fluoranthene
Pyrene
Benz(a)anthracene

5-ring
Chrysene
Benzo(a)pyrene
Benzo(e)pyrene
Perylene
Dibenz(a,h)anthracene

Major elements

Al	Aluminum
Fe	Iron
Mn	Manganese
Si	Silicon

Trace elements

Sb	Antimony
As	Arsenic
Cd	Cadmium
Cr	Chromium
Cu	Copper
Pb	Lead
Hg	Mercury
Ni	Nickel
Se	Selenium
Ag	Silver
Sn	Tin
Zn	Zinc

Polychlorinated biphenyls[a]
Dichlorobiphenyls
Trichlorobiphenyls
Tetrachlorobiphenyls
Pentachlorobiphenyls
Hexachlorobiphenyls
Heptachlorobiphenyls
Octachlorobiphenyls
Nonachlorobiphenyls

Related parameters
Grain Size
Total Organic Carbon

[a] PCBs quantified by level of chlorination in 1984 through 1987. Beginning with samples collected in 1988, 18 individual compounds (congeners) have been quantified

[b] Five PAH compounds added to the list of analytes in 1988; acenaphthylene, 1,6,7-trimethyl naphthalene,benzo(b) and benzo(k) fluoranthene, indeno(1,2,3-cd)pyrene, and benzo(ghi)perylene

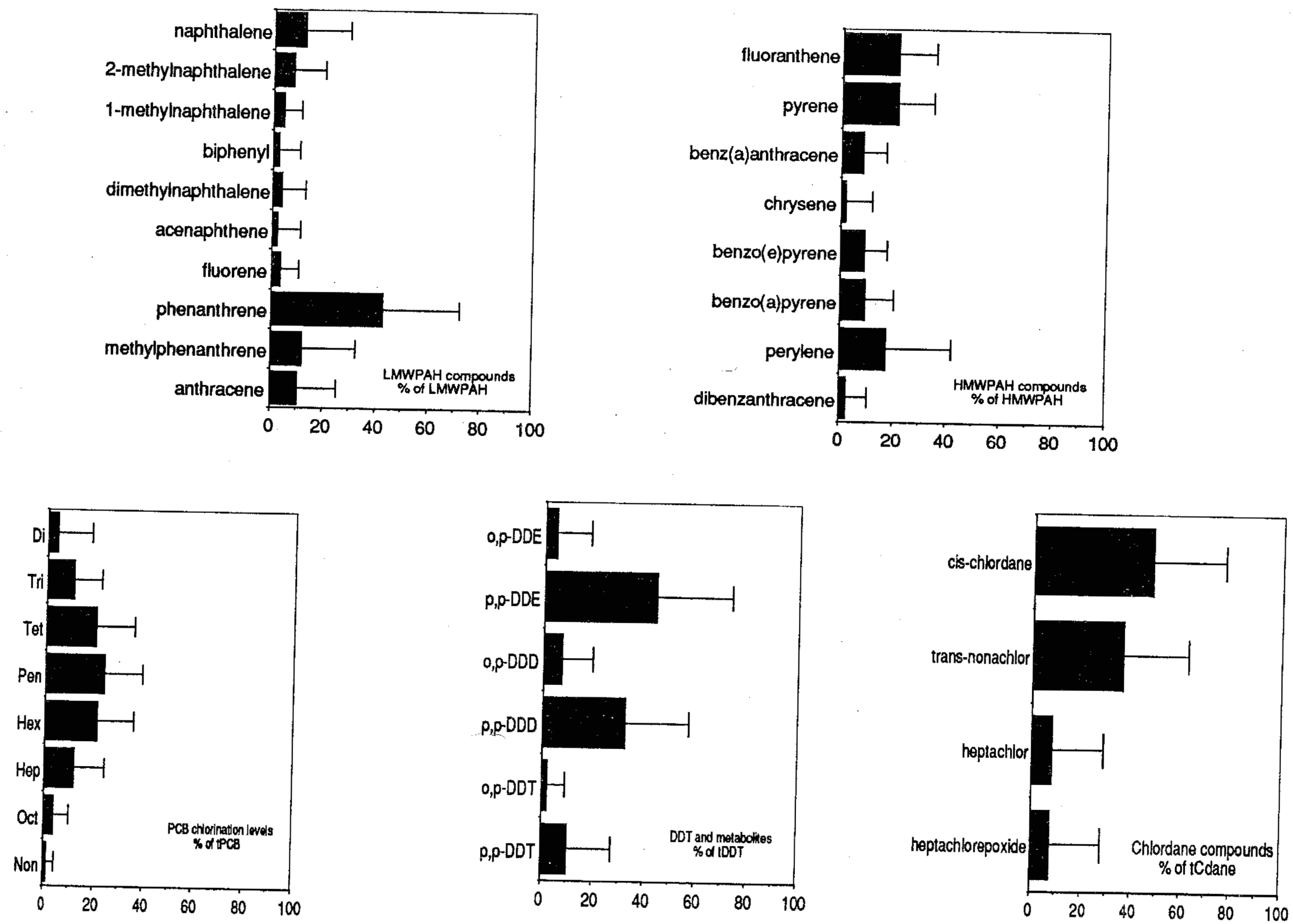

Figure 1. Distribution of individual organic compounds within major compound groups. Means and standard deviations of percent contributions of each compound.

Polychlorinated biphenyls (tPCB) are a mixture of compounds based on the biphenyl molecule chlorinated to various extents. It began to be used in 1929 for a number of industrial purposes. Its high heat capacity and low dielectric constant were exploited for its major use in electrical transformers and capacitors. Its use in the United States began being phased out in 1971, and new uses of the chemical were banned in 1976. All of these banned compounds; tDDT, tChlordane, and tPCB, still exist in the environment. Their use is not banned throughout the world. Within the United States, chlordane is still in the ground as a termiticide, PCB-containing devices are still in use, and DDT, while no longer serving any purpose, remains in the environment because (like chlordane and PCB) of its resistance to degradation. The pesticide DDT is metabolized to DDE and DDD, but the tDDT group of compounds resists further degradation.

Polycyclic aromatic hydrocarbons are like metals in that they are not synthetic but occur naturally. They are found in fossil fuels such as coal and oil. Their existence, though, is also attributable to humans because they are produced when organic matter is burned. There are a multitude of human activities, from burning coal and wood to incinerating wastes, that create PAH compounds in excess of what would naturally exist. The LMWPAH compounds are grouped separately from the HMWPAH compounds because the lower-weight compounds are generally associated with petroleum, and the higher-weight compounds with combustion products.

All of these trace metals and groups of organic compounds can be acutely or chronically toxic to marine life and to humans under some conditions. Those conditions include the total concentration of chemical that is biologically available and the ability of each species to accommodate increased chemical exposure. An important aspect of the NS&T Program is to determine the distribution of locations where contamination is of biological consequence. That important aspect of the program, however, is not a subject of this report.

As shown in Table 1, five additional PAH compounds have been quantified in sediments collected since 1988. Their concentrations have not been used, because most of the data analyzed in this report were generated before 1988. Table 1 also indicates that, starting in 1988, PCB began to be quantified as 18 individual congeners. Those data are used in this report after converting the sum of the congeners to a tPCB equivalent to that based on summing concentrations at each level of chlorination. The conversions are based on regressions of over 100 simultaneous measurements of chlorination levels and PCB congeners by Battelle and Texas A&M. The regressions were:
tPCB=2.01 x (sum of congeners)-1.55, and
tPCB=2.84 x (sum of congeners)-0.18
for Battelle and the Texas A&M Geochemical and Environmental Research Group, respectively.

Field and Analytical Methods

In the Benthic Surveillance Project, sediment samples were obtained with a specially constructed box corer or a standard Smith-MacIntyre bottom grab. In the Mussel Watch Project, the samples were obtained with a box corer or with a Kynar-coated Van Veen grab sampler. At Mussel Watch sites in the Gulf of Mexico where sediment was collected from depths of less than about 30 cm, sediment was taken directly by hand with a teflon scoop. Three grabs or cores were obtained at each of the three stations at a site. Composite samples were made from surface sediment in those three grabs or cores. Three separate composites were made per station: one for organic chemical analysis, one for inorganic analysis, and one for other sediment characteristics such as grain size and total organic carbon (TOC). Sediment analyses for a site consisted of organic analyses of three composites (one from each station), inorganic analyses of three composites, and grain-size and other measurements on a third set of three composites.

In the Benthic Surveillance Project, subsamples for organic analyses were composites of surface skims from the top 3 cm of each grab or core. A small corer was used to subsample the top 3 cm of each box core or grab sample for trace metal and other analyses. In the Mussel Watch Project, the subsamples for all composites were surface skims from the top 1 cm of each box core or grab.

Samples for analyses of organic components were stored in Teflon jars or glass jars with lids lined with aluminum foil. Those to be used for analyses of major and trace elements were stored in Teflon jars or ziplock bags. A more detailed presentation of the sampling protocols is included in Shigenaka and Lauenstein (1988).

The methods used for analysis of organic chemicals in sediments are described in a technical report prepared by NOAA's National Analytical Facility (MacLeod et al., 1985) and in papers on NS&T results in the Gulf of Mexico by Wade et al.(1988) and Sericano et al. (1990). For elemental analysis, sediments were digested in concentrated nitric and hydrochloric acids and in hydrofluoric acid for subsequent analysis by atomic absorption or, for some elements by the Battelle Laboratory, analysis was by X-ray fluorescence. Battelle (1987) and Texas A&M Geochemical and Environmental Research Group (1988) both provide details of analytical methods employed in the Mussel Watch Project

Quality Assurance

Quality assurance (QA) protocols are an integral part of the NS&T Program. QA efforts are designed to produce nationally uniform analytical results of known quality, thereby ensuring comparability among data sets. Attaining this goal involves four major activities: interlaboratory comparisons of analytical results; periodic QA workshops; development of Standard Reference Materials (SRMs) and Interim Reference Materials (IRMs) for marine sediments and tissues; and use of a standardized data base for QA data and information. Appendix B contains results of intercomparison exercises for analyses of sediments by NS&T laboratories. Those results will be discussed in the context of data resolution and limits to comparisons among mean concentrations.

Accounting for Sand

In the NS&T Program, sediments are used as integrators of contaminant loadings to individual sites. Bivalves and fish are also used for this purpose and have the advantage of being matrices whose contaminant concentrations can change relatively quickly in response to changes in their surroundings. Contaminant levels in sediments cannot be expected to quickly reflect changes in contaminant input. However, for determining spatial distributions on a national scale, they have the distinct advantage over bivalves and fish in that concentration differences among sites are not influenced by differences in species.

Nevertheless, contaminants are associated with particle surfaces and differences in contaminant concentrations among sites can be generated simply by differences in particle sizes of sediments. To compensate for this, sediment data have been adjusted by dividing the raw concentration in a composite by the fraction-by-weight of sediment particles which are less than 63μ in diameter (i.e., the fine-grained or silt and clay fraction). This is equivalent to assuming that no contaminants are associated with sand-sized particles, that the only effect of sand in a sample is to dilute its level of contamination, and that all adjusted concentrations would have been measured concentrations if all samples consisted entirely of fine-grained particles.

The lack of contamination in sandy sediment is so general an observation that sediments that are predominately sand are, if dredged, assumed acceptable for ocean disposal without further testing (EPA, 1977). This is in contrast to the extensive chemical and biological measurements required to demonstrate acceptability of fine-grained sediments. Nevertheless, to some extent contaminants can be associated with sand-sized particles and this method of adjustment can yield misleading results for sediments that are primarily sand. When such sediments contain detectable levels of contamination, that level, when adjusted, will appear to be very high because it will have been divided by a low number. The opposite will occur when sandy sediment has contaminant levels that are below detection. Adjusting such values still leaves them below detection, which, in this report, are treated as zero. Such zeroes, due primarily to the diluting effect of sand, would be misleading in the context of other samples from a site which were not so sandy. To avoid concluding that a mean sediment concentration is unusually high or low, when, in fact, it simply includes data from a sandy sample, no concentration data were used if they were from samples containing less than 20 percent fine-grained material. Therefore, the adjusting procedure increased a raw concentration by, at most, a factor of five.

Alternative Adjustment Methods

Alternative methods for accounting for natural variations among sediment samples are adjusting trace element concentrations on the basis of aluminum content, and adjusting trace organic concentrations on the basis of total organic carbon.

The aluminum adjustment (e.g., Windom et al., 1989) is based on the fact that there are natural ratios between trace element and aluminum concentrations (e.g., the Cu/Al ratio) that exist in the absence of any human influence on the trace element (since Al is a major component of silts and clays, its concentration is assumed always to be a natural concentration). The method is similar to the adjustment based on the fine-grained fraction because Al concentrations themselves follow the grain-size distribution. It extends that method, however, because once natural trace element to aluminum ratios are established, any higher ratio (e.g., a Cu/Al ratio higher than natural) is a measure of the extent of contamination.

The total organic carbon adjustment has a different rationale. All of the chlorinated organic compounds measured by NS&T are entirely man-made; merely detecting them is to identify a human influence. The polycyclic aromatic hydrocarbons do have natural sources such as oil and forest fires (the combustion of organic matter), but, for the most part, are due to human activities. In no case are there natural ratios of these compounds with any major component of sediments. It is well established, however, that organic matter on particle surfaces enhances the adsorption of trace organic compounds (e.g., Karickhoff, 1984). Adjusting trace organic concentrations on the basis of total organic carbon could, therefore, account for differences in the tendencies of sediment particles to accumulate organic contaminants.

Neither of these methods was deemed preferable to that based on sand content because: (1) correlations of trace chemical concentrations with fine-fractions were higher than they were with aluminum, and (2) total organic carbon covaried with trace contaminants indicating that it was acting as a contaminant itself. These points are quantified in Figure 2, which compares correlation coefficients of trace chemicals with fine-fractions, aluminum, and total organic carbon, and in Table 2, which summarizes a factor analysis (Wilkinson, 1989) of the correlation matrix among all chemicals. The correlations with fine-fraction and with aluminum are small but statistically significant. They are small because contaminant concentrations depend mostly on human influences, rather than natural factors. The correlations with fine-fraction are somewhat higher, probably because trace-element-to-aluminum ratios vary regionally (Windom et al., 1989). Correlations of total organic carbon with trace elements and with organic compounds are higher than those for fine-fraction and aluminum. However, factor analysis based on all correlations (Table 2) shows many of the trace chemicals to be correlated with one another and for total organic carbon to be in that same group. This occurs because total organic carbon is itself high around urban areas, as are the trace chemicals. Since concentrations of all of these chemicals are strongly influenced by human activity, total organic carbon concentrations cannot be assumed to be natural and be used to adjust other concentrations.

The factor analysis shows fine-fraction and aluminum to be together in a second group. Concentrations of both are determined by nature rather than by human activity, and either could be used to adjust the concentrations of other chemicals. The choice of fine-fraction has an advantage because all "adjusted" concentrations are on a "per gram of sediment " basis, though this should be read as "per gram of fine-grain sediment." In the scientific literature, sediment concentrations are most often reported on a per-weight basis, and, thus, there is a large body of data with which to compare NS&T data. Another advantage of the "fine-fraction" adjustment is its applicability to the organic compound concentrations.

Detection Limits

Table 3a contains quantification limits for each element or group of organic compounds analyzed in sediments in the Mussel Watch Project. Table 3b contains the same information for the Benthic Surveillance Project. In both projects, those limits were not constant across all years and among all laboratories, so each table lists

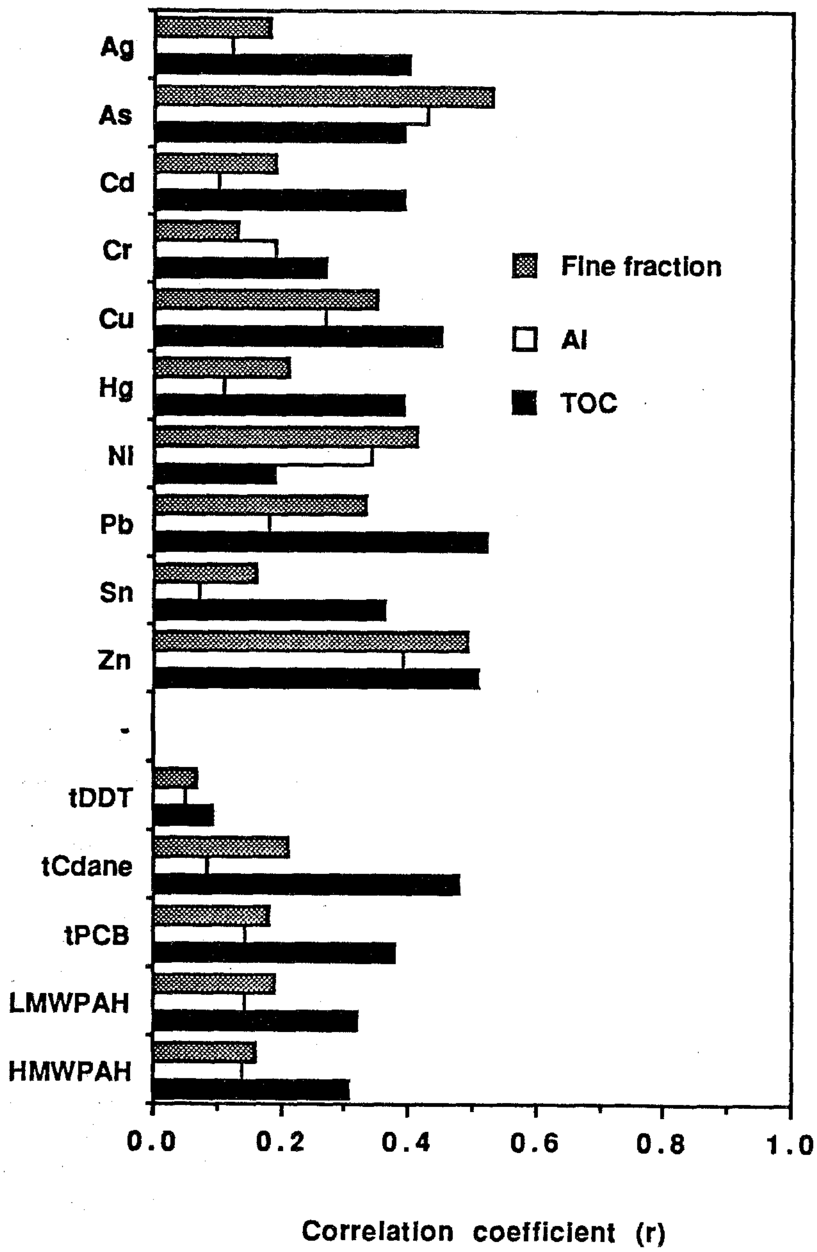

Figure 2. Correlation (Pearson) coefficients (r) between trace chemical concentrations in sediments and fine-fraction (fraction of total particle smaller than 63µm in diameter), aluminum concentration, and total organic carbon (TOC) content. In all cases n>1000 and r >0.06 and correlations are statistically significant at the 0.05 level.

Table 2. Results of factor analysis on correlation matrix among all sediment concentrations. Loadings on each factor by each chemical are indicated in parentheses. Only loadings >0.5 are shown and no chemical has a loading >0.5 on any factor beyond factor 6. The percentage of overall variation attributable to each factor is also indicated.

<u>Factor 1 (41% of overall variation)</u>
Pb (.90), Zn (.86), Cu (.85), Hg (.83), Ag (.75), HMW PAH(.72), Sn (.70), Cd (.67), LMWPAH (.67), As (.60), tPCB (.54), TOC (.51)

<u>Factor 2 (11 % of overall variation)</u>
Fine-fraction (.59), Ni (.56), Al (.55)

<u>Factor 3 (7.8% of overall variation)</u>
Cd (.61)

<u>Factor 4 (5.5% of overall variation)</u>
Cr (.68)

<u>Factor 5 (3.5 % of overall variation)</u>
tDDT (.56)

<u>Factor 6 (3.1 % of overall variation)</u>
TOC (.51)

minimum quantifiable concentrations for each laboratory in each year. In this document, all concentrations reported as being below a quantifiable concentration are treated as zero. That or any other convention for treating the "not detected" concentrations imparts some artificiality to the low end of the overall concentration distributions.

The Data Base

This summary report is derived from a database containing analytical results from 1426 composite samples from 266 sites. Mussel Watch sites visited in 1986 were generally revisited in 1987, so usually there are six samples for each of those sites. Sediment was collected at Mussel Watch sites in 1988 and 1989 only if the site had not been sampled previously. For these sites there are three composite samples. Sediment was collected at Benthic Surveillance sites in each year the site was occupied, so sites visited in 1986, 1987, and 1988 usually have nine samples in the data base. For some Benthic Surveillance sites there have been more than nine samples, because more than three composites were collected in a given year. The years of sampling at each site are listed in Appendix A along with site names and locations.

Table 4 lists the frequencies of non-quantifiable concentrations and missing values for each chemical within the data set. Data are missing when, for any reason, no analysis was made. Since this summary centers on fine-grained sediment samples, the frequencies of non-quantifiable and missing values are listed separately for the 1105 fine-grained samples and for the 233 sites where means concentrations are based on fine-grained samples.

At more than 10 percent of the sites, three trace elements and five groups of organic compounds were at less than quantifiable concentrations in all fine-grained samples. Concentrations of these chemicals are not used in this report when characterizing contaminant distributions. They were not used, for example, in the factor analysis discussed above. Thallium was so infrequently detected that it is no longer monitored. Thallium data are not included in Appendices C or D, which list mean concentrations of all chemicals

Table 3a. Sediment Detection Limits (limits below which signal could not be confidently related to a concentration) reported by each Mussel Watch laboratory for each year (μg/g-dry weight for elements, ng/g-dry weight for organic compounds). For aggregated groups of organic compounds the detection limit is the lowest limit among the individual compounds in the group.

	1986			1987			1988			1989		
Chem.	BATT[a]	GERG	SAIC	BATT	GERG	SAIC	BATT	GERG	SAIC	BATT	GERG	SAIC
Ag	0.02	0.001	0.01	0.02	-	0.017	0.01	-	0.026	0.01	0.02	0.07
As	1.7	-	2.9	0.09	-	0.24	2.1	-	0.52	2.1	0.09	0.78
Cd	0.08	-	0.08	0.08	-	0.01	0.02	-	0.025	0.01	0.002	0.09
Cr	6.0	-	1.2	6.0	-	0.77	6.0	-	2.8	6.0	1.0	0.35
Cu	3.0	-	0.77	3.0	-	0.77	2.4	-	0.22	2.4	0.04	0.09
Hg	0.01	0.01	0.008	0.01	0.01	0.004	0.008	-	0.004	0.009	0.01	0.006
Ni	4.0	-	0.42	4.0	-	0.46	2.1	-	1.9	2.1	0.07	0.65
Pb	3.0	-	0.28	3.0	-	0.26	2.2	-	0.61	2.2	0.2	0.61
Sb	0.8	0.2	6.2	0.8	-	0.07	c	c	c	c	c	c
Se	0.13	1.0	6.9	0.13	-	0.6	1.0	-	2.0	0.060	0.07	d
Sn	1.0	0.1	5.0	1.0	-	1.7	0.031	-	d	0.058	0.2	d
Tl	0.2	0.4	16.0	0.02	0.1	0.43	c	c	c	c	c	c
Zn	2.0	-	2.3	2.0	-	2.0	2.4	-	5.0	2.4	1.0	3.3
LMWPAH	0.81	5.0	0.30	5.4	5.0	0.30	5.4	5.0	2.2	0.28	0.5	0.8
HMWPAH	1.4	5.0	0.90	3.8	5.0	0.90	3.8	5.0	3.3	0.39	0.4	4.1
tPCB	0.14	0.2	0.05	0.046	0.2	0.05	0.017	0.2	0.012	0.06	0.08	0.01
tDDT	0.081	0.2	0.09	0.01	0.2	0.09	0.029	0.2	0.118	0.04	0.13	0.12
tDield	0.16	0.2	0.07	0.14	0.2	0.07	0.029	0.2	0.112	0.07	0.16	0.11
tCdane	0.081	0.2	0.05	0.077	0.2	0.05	0.028	0.2	0.028	0.04	0.10	0.03
Hexachb.	0.14	0.2	0.04	0.086	0.2	0.04	0.09	0.2	0.015	0.03	0.37	0.01
Lindane	0.14	0.2	0.08	0.027	0.2	0.08	0.047	0.2	0.031	0.02	0.22	0.03
Mirex	0.2	0.2	0.04	0.091	0.2	0.04	0.051	0.2	0.23	0.13	0.17	0.23

[a] BATT (Battelle) analyzed all East coast samples, GERG (Texas A&M Geochemical and Environmental Research Group) analyzed all Gulf coast samples, BATT performed all elemental analyses of samples from Oregon, Washington, and Alaska. SAIC (Scientific Applications International Corp.) made all analyses of samples from California and Hawaii.

[b] GERG did not report detection limits for trace elements in 1986 -1988. Concentrations shown were reported as "less than" values. No values are shown when concentration was quantifiable in every sample.

[c] Analyses for Sb and Tl ceased in 1988.

[d] BATT made all analyses for Sn in West coast sediments collected in 1988 and 1989 and all the Se analyses for 1989 samples.

Table 3b. Sediment Detection Limits (limits below which signal could not be confidently related to a concentration) reported by each Benthic Surveillance laboratory for each year. (µg/g-dry weight for elements, ng/g-dry weight for organic compounds). The Northeast Center (NEC) collected and analyzed samples from sites in and north of Chesapeake Bay. The Southeast Center collected and analyzed samples from sites south of Chesapeake Bay and in the Gulf of Mexico. The Northwest Center (NWC) Environmental Conservation Division collected and analyzed samples from the West Coast. For aggregated groups of organic compounds the detection limit is the lowest limit among the individual compounds in the group.

	1984			1985			1986		
	NEC	SEC	NWC	NEC	SEC	NWC	NEC	SEC	NWC
Ag	0.01	0.01	0.01	0.01	0.043	0.02	0.01	0.025	0.02
As	0.1	0.80	0.11	0.1	0.51	0.11	0.1	0.73	0.17
Cd	0.01	0.02	0.01	0.01	0.058	0.01	0.01	0.007	0.01
Cr	6	11	7	6	6.3	7	6	4.9	6
Cu	4	1.1	0.06	4	0.59	0.06	4	0.78	1.7
Hg	0.01	0.90	0.014	0.01	0.032	0.02	0.01	0.084	0.02
Ni	0.3	0.90	0.01	0.3	1.1	0.01	0.3	1.8	0.01
Pb	0.1	0.60	0.2	0.1	0.17	0.2	0.1	1.0	0.21
Sb	0.1	0.60	0.08	0.1	1.1	0.08	0.1	*	0.01
Se	0.1	0.40	0.01	0.1	0.16	0.01	0.1	0.18	0.01
Sn	0.1	0.20	0.05	0.1	0.56	0.25	0.1	0.64	0.05
Tl	0.1	0.12	0.15	0.1	0.43	0.15	0.1	*	0.14
Zn	4	2.9	0.06	4	1.5	0.06	4	7.9	0.06
LMW PAH	-[a]	0.8	5	3.3[a]	0.8	6	9.7[a]	1.0	8.0
HMWPAH	3.0	0.8	5	5.6	0.8	7	15	20	0.8
tPCB	-	0.1	0.2	-	0.10	.5	-	0.7	0.7
tDDT	0.2	0.2	0.1	0.2	0.2	0.3	0.2	0.7	1.0
tDield	0.6	0.2	0.1	0.06	0.2	0.3	0.02	1.3	0.7
tCdane	0.6	0.1	0.1	0.1	0.1	0.2	0.09	0.6	0.6
Hexachl	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.9	0.5
Lindane	0.3	0.1	0.1	0.1	0.1	0.3	0.1	1.5	0.6
Mirex	0.5	0.1	0.2	0.4	0.1	0.2	1.2	0.4	0.7

[a] Lowest reported values for NEC in each year for organic chemicals. A "dash" indicates that a quantifiable concentration was reported in all cases for that analyte in that year.

*not measured

at each site based on fine-grained and sandy samples, respectively. Concentrations for all other chemicals are listed.

Selenium and antimony are the two other elements not quantified at more than 10 percent of the sites. Selenium data are not being used because the non-quantified concentrations are all from the laboratory that collected and analyzed sediments from California. With so large a part of the U. S. coast being unrepresented, selenium data were not used for national assessments. Antimony has been frequently below quantification, and also was frequently not analyzed. The high proportion of "missing data" for antimony stems from the fact that it was

Table 4. Frequencies of non-detectable (nd) concentrations and missing data.

chemical	Percent of 1425 sediment records nd	missing	Percent of 1105 fine-grain sed. records nd	missing	Percent of 233 fine-grain sed. means nd	missing
Ag	5.9	3.5	2.3	1.4	0.9	0.0
As	3.5	3.5	0.7	1.4	0.0	0.0
Cd	1.9	3.5	0.3	1.4	0.0	0.0
Cr	3.9	12	1.7	9.0	0.0	2.6
Cu	0.6	3.5	0.1	1.4	0.0	0.0
Hg	11	3.5	6.9	1.4	1.3	0.0
Ni	1.6	3.5	0.6	1.4	0.0	0.0
Pb	0.7	3.5	0.1	1.4	0.4	0.0
Sb	17	24	17	19	15	19
Se	34	3.5	31	1.4	12	0.0
Sn	14	3.5	13	1.4	7.3	0.0
Tl	27	26	28	21	-	-
Zn	0.3	3.5	0.4	1.4	0.0	0.0
TOC	0.8	3.2	0.4	0.9	0.0	0.0
LMWPAH	21	4.7	17	3.5	3.8	2.1
HMWPAH	10	6.8	6.9	4.8	0.9	2.6
tDDT	15	10	12	7.3	3.4	4.2
tPCB	7.9	7.3	8.0	3.9	1.3	2.1
tDield	48	7.6	45	6.3	27	1.7
tCdane	37	4.7	35	3.0	20	1.7
Hexachl	47	6.2	45	4.3	23	1.7
Lindane	69	4.9	67	3.4	43	1.7
Mirex	73	6.1	72	4.8	53	1.7

usually not found in quantifiable concentrations in tissues of mollusks or fish and it was deleted from the list of analyses to be done on tissues. NS&T laboratories also stopped analyzing sediments for antimony.

The five groups of organic compounds frequently not quantified in sediments are tChlordane, tDieldrin, lindane, hexachlorobenzene and mirex. On the other hand, these compounds were usually detected in mollusk tissues. Mean concentrations for tChlordane, tDieldrin, lindane, hexachlorobenzene and mirex in tissues were, respectively, not quantifiable at only 0, 1,3, 29, and 28 percent of the 177 sites reported in NOAA (1989). The higher incidences of non-quantifiable concentrations in sediments over tissues reflects the tendency for chlorinated hydrocarbons to be more concentrated in tissues. (Wade et al., 1988, Sericano et al. 1990, and O'Connor, in press).

The major elements, aluminum, iron, manganese, and silicon were included in the analytical scheme, and data for their concentrations are carried in the NS&T data base. Because their concentrations in sediments are naturally high and beyond the influence of human activity, they might have served to adjust the trace chemical concentrations. However, data on their concentrations have not been used in this report.

Summary statistics (mean, coefficient of variation, and number of samples) for grain-size adjusted contaminant concentrations in fine-grained sediment in the NS&T data base are listed in Appendix C. Although they will not be used for comparisons with adjusted data, means based on raw data for the sand-sized sediments are listed in Appendix D.

Resolution of the Data

This summary does not emphasize differences among sites. Nevertheless, it is important to recognize variability in the data. Table 5 lists the average coefficients of variation for each chemical. These averages characterize the within-site variability inherent in collecting and analyzing three or more composite samples at each site. Also listed in Table 5 are the limits this variability imposes on between-site comparisons. It is evident that for organic chemicals, a more than twofold difference is usually needed for a statistically significant difference. In general, a 1.5-fold difference or less is required for trace elements.

These limits should be compared with the differences among laboratories on reported concentrations in intercomparison sediments. Those differences, listed in Appendix B, are less than 1.5-fold for elements and less than twofold for organic compounds. Therefore, within the limits imposed by within-site variability, laboratory differences can be disregarded when examining the NS&T data base.

Data Deletions and Revisions

This summary does emphasize mean concentrations of contaminants. Occasionally, one value for a contaminant concentration at a site is very much higher than all the other values. Whenever a grain-size adjusted mean is dominated by one value that is more than 10 times greater than the next highest (of at least three non-zero) values, that high value has been deliberately ignored. The 37 such deleted values are listed in Appendix C. One of these values is for Hg, four for LMWPAH, four for HMWPAH, four for tPCB, seven for tDDT, five for tCdane, three for tDield, eight for hexachlorobenzene, and one for mirex. These concentrations have not been excluded because they are analytically incorrect,— they may be accurate. Rather, they have been excluded because they reflect patches of extreme concentrations within an otherwise representative site.

There have been some changes to data listed in the initial NS&T report on sediment concentrations (NOAA, 1988). That report contained an errata sheet and those errors have been corrected. Beyond that, the largest changes have been a two- to tenfold decreases in Ag concentrations at some West Coast Benthic Surveillance Sites and a twofold decrease in tPAH (LMWPAH+HMWPAH) at the Benthic Surveillance site in Boston Harbor. Those and any other differences between this and the initial report are to be considered errors in the initial report.

National Distribution of Sediment Contamination

Figure 3 shows that the distribution among sites of mean Ag and tPCB concentrations are highly skewed toward low values, and that when plotted as logarithms the means are approximately normally distributed. This type of distribution is common to all the chemicals and provides a convenient method for defining a "high" concentration as the mean plus one standard deviation of the lognormal distribution. The "high" concentrations for Ag and tPCB are indicated in Figure 3. The legend to Figure 3 lists the results of a test (Lilliefors modification of Kolmogorov-Smirnov test, Wilkinson, 1989) of whether the distributions of the logarithms of the mean concentrations are normally distributed. Plots of silver data were chosen for Figure 3 to show that for that chemical as well as for Cr, Cu, Pb, and TOC, the distributions are only approximately normal. Nevertheless, this approximation allows identification of the geometric means and "high" concentrations for all chemicals in Table 6. This definition of "high" is the crux of a description of the national distribution of contamination. In Table 7, all the NS&T sites are listed in geographic sequence (clockwise from the northeast) and chemicals are indicated for each site where their mean concentration exceeds the "high" value.

The tendency for many chemicals to be high at the same site is reflected in a factor analysis of the mean concentrations (Table 8). In this case, the factor analysis includes data supplied by Dr. Robert Hamill of the Geography Division of the U.S. Census Bureau. Using 1980 census data, he provided numbers of people residing within various distances of NS&T sites. The data used are the numbers of people within 20 km, and demonstrate that most chemicals not only occur together but that their concentrations are related to human population levels.

Table 5. Resolution in sediment data

Chemical	Number of sites with more than two detectable values[a]	Overall coefficient of variation(%)[b]	Ratio to establish a significant difference[c]
HMWPAH	193	56	2.0
LMWPAH	187	74	2.3
tPCB	194	64	2.2
tDDT	179	65	2.2
tCdane	152	85	2.5
tDieldrin	131	93	2.7
Lindane	91	110	3.0
Mirex	71	114	3.1
Hexachl	135	101	2.8
TOC	207	32	1.6
Ag	206	35	1.6
As	206	30	1.5
Cd	206	29	1.5
Cr	197	26	1.5
Cu	206	22	1.4
Pb	206	24	1.4
Hg	205	42	1.8
Ni	205	24	1.4
Sb	135	46	1.8
Se	173	65	2.2
Sn	186	47	1.8
Zn	206	20	1.4

[a]A site will have fewer than 2 detectable values if an analyte is not detected or if only one or two samples contained less than 80% sand.

[b]The average coefficient of variation among those sites (individual c.v.s are in Appendix B).

[c] Ratios between two values to detect a significant difference have been calculated from the following relationship of Sokal and Rohlf (1981)

$n \geq 2 ((cv)^2/d^2) (t_{a(v)} + t_{2(1-P)(v)})^2$, where

n=number of samples per site
v =is degrees of freedom (number of sites)(n-1)
a=0.05 level of confidence
P=0.8 level of confidence
cv=the coefficient of variation (%) for that variable
d=the difference (%) between two means to be 80% confident of a real difference at the 95% level of significance.

Since the number of sites is large $v \geq 120$ regardless of n. With a large v the last term in the overall expression = 7.93, so $d \geq (cv)(3.98)/\sqrt{n}$)

The n's differ among the sites. On average n=5 so $d \geq 1.8(cv)$, and the ratio between means corresponding to that value of d is 1+(d/100)

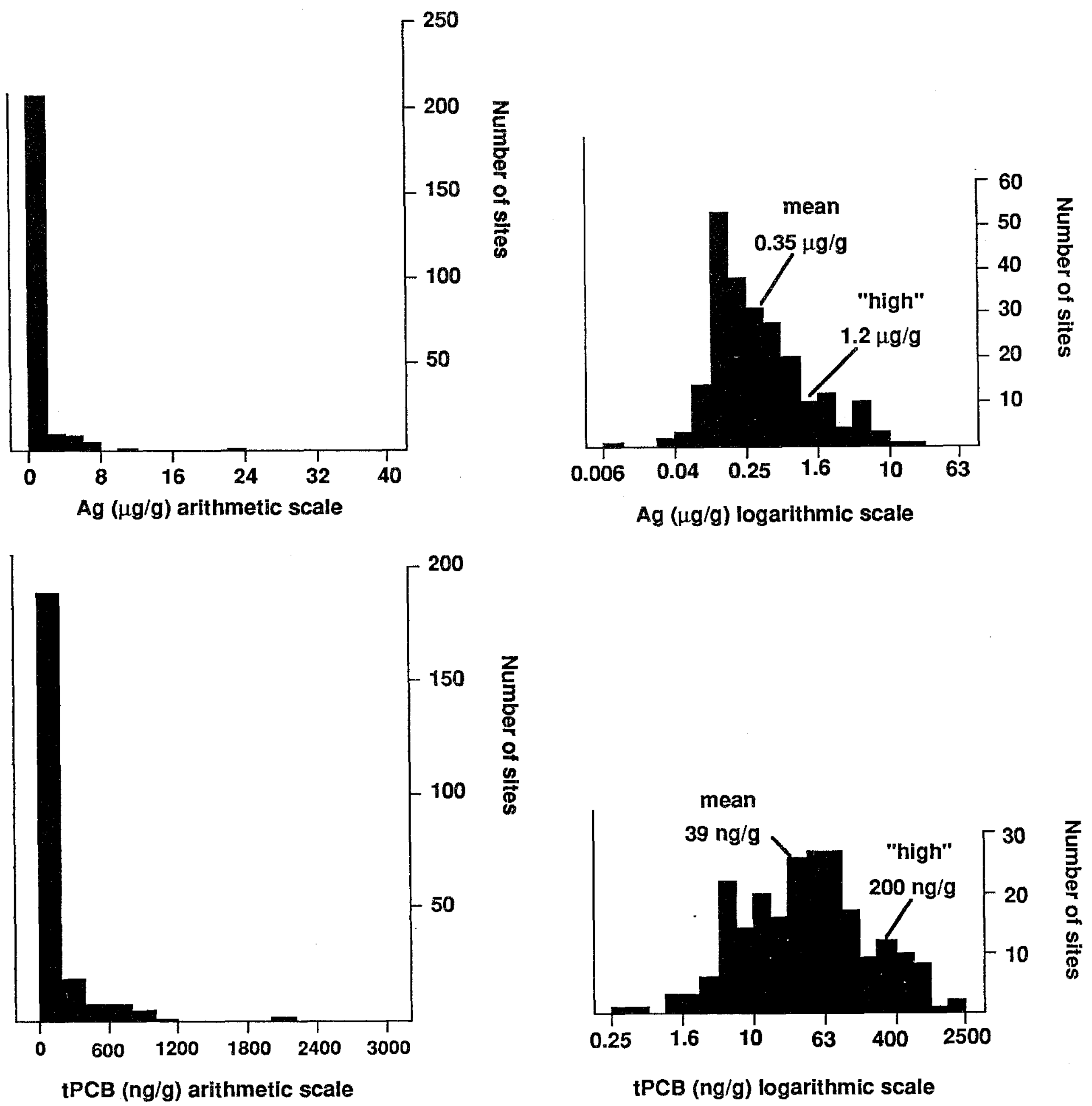

Figure 3. Arithmetic and logarithmic distributions of mean concentrations of Ag and tPCB. In the logarithmic distributions, mean and "high" concentrations are the mean of the logarithms (geometric mean) and that mean plus one standard deviation, respectively. Listed below are results of tests of normality of logarithmic distributions of all chemical concentrations.An asterisk (*) denotes that for the number of cases (233) the maximum difference between an idealized normal distribution and the actual distribution of the logs of the means is sufficiently large to allow the distribution to be considered non-normal.

Chem.	Maximum diff.	Chem.	Maximum diff.	Chem.	Maximum diff.	Chem.	Maximum diff.
Ag	0.090 *	Cu	0.086*	Sn	0.073	tDDT	0.044
As	0.052	Hg	0.068	Zn	0.055	tPCB	0.041
Cd	0.050	Ni	0.040			LMWPAH	0.030
Cr	0.092*	Pb	0.099*	TOC	0.135*	HMWPAH	0.036

Table 6. Mean and "high" concentrations (per g of dry fine-grained sediment) from logarithmic distribution of site means. The mean is the geometric mean of the overall distribution and "high" concentrations are the mean plus one standard deviation.

Chemical	Geometric mean	"high"
Ag	0.35 µg/g	1.2 µg/g
As	13	24
Cd	0.48	1.2
Cr	110	230
Cu	35	84
Hg	0.17	0.49
Ni	34	69
Pb	43	89
Sn	3.2	8.5
Zn	140	270
TOC	1.4 %	4.6 %
LMWPAH	170 ng/g	980 ng/g
HMWPAH	570	2900
tDDT	6.6	37
tPCB	39	200

The definition of "high" concentrations puts data into two categories. Concentrations are either "high" and listed in Table 7 or they are not "high" and are not listed. They also serve to screen data in the scientific literature into those same categories. Generally, data in the literature are not adjusted for grain size, so when concentrations are encountered that would be in the "high" range they would usually be well into that range if the diluting effect of sand were eliminated.

Biological effects of contamination are not a subject of this report. Nevertheless, while the definition of "high" concentrations serves to identify sediments heavily affected by human activity, it must be said that "high" concentrations are not necessarily of biological significance. The compilation by Long and Morgan (1990) of contaminant concentrations that are usually associated with some biological effect indicates that concentrations need to be higher than simply in the "high" range before biological consequences are likely.

Natural and "High" Concentrations

Some chemicals are entirely separated from the main group in the factor analysis; others have relatively high loadings on other factors as well on the first. High concentrations of Cr and Ni are found mainly on the West Coast north of Point Conception. Those elements are enriched in the rocks of that area (USGS, 1981), so their high concentrations in sediments of that region cannot be attributed to human activities and, in that sense, they are not contaminants. High As concentrations are found in the northwest in association with Cr and Ni. Arsenic also appears as the sole "high" level chemical at some sites in the southeast. A fourth element, cadmium, also appears to occur at natural but high levels at some sites. High values of total organic carbon are found in urban areas but are also found in marshy sediments well away from population centers. This dichotomy forces total organic carbon to be spread throughout the factor analysis and, while its highest factor loading is in the first group, it is a low loading. Total DDT is certainly a contaminant, but it is so highly associated with Southern California that, on a national scale, it falls out separately rather than in association with other contaminants or with population size.

Table 7. Names and geographic sequence (clockwise from Northeast) of NS&T sites, the mean fine fraction in fine-grained samples or an indication "sandy" meaning that all samples from the site contained >80% sand, and specific chemicals whose mean concentrations were at the "high" end of the overall, national lognormal distribution (i.e. greater than one standard deviation above the geometric mean).

CODE	General Location	Specific Location	State	%fine	Chemicals with "high" concentrations
MAC	Machias Bay		ME	66	
FRN	Frenchmans Bay		ME	93	
PNB	Penobscot Bay		ME	97	
PBSI	Penobscot Bay	Sears Island	ME	90	LMW
PBPI	Penobscot Bay	Pickering Island	ME	49	LMW,HMW
MSSP	Merriconeag Sound	Stover Point	ME	38	Sn
CSC	Casco Bay		ME	81	LMW
CAKP	Cape Arundel	Kennebunkport	ME	sandy	
MER	Merrimack River		MA	sandy	
CAGH	Cape Ann	Gap Head	MA	27	Pb,Sn,HMW
SHFP	Salem Harbor	Folger Point	MA	52	Ag,Cd,Cr,Cu,Hg,Pb,Sn,LMW,HMW,tDDT,TOC
SAL	Salem Harbor		MA	67	Ag,Cd,Cr,Cu,Hg,Pb,Sn,Zn,LMW,HMW,tPCB,tDDT,TOC
BHDI	Boston Harbor	Deer Island	MA	78	Ag,Cd,Cr,Cu,Hg,Pb,Sn,LMW,HMW,tPCB,tDDT
BHDB	Boston Harbor	Dorchester Bay	MA	85	Ag,Cd,Cr,Cu,Hg,Pb,Sn,LMW,HMW,tPCB,tDDT
BHHB	Boston Harbor	Hingham Bay	MA	27	Ag,Cd,Cr,Cu,Hg,Pb,Sn,HMW,tPCB
BHBI	Boston Harbor	Brewster Island	MA	sandy	
BOS	Boston Harbor		MA	59	Ag,Cd,Cr,Cu,Hg,Pb,Sn,Zn,LMW,HMW,tPCB,tDDT,TOC
QUI	Quincy Bay		MA	75	Ag,Cd,Cr,Cu,Hg,Pb,Sn,LMW,HMW,tPCB,tDDT,TOC
DBCI	Duxbury Bay	Clarks Island	MA	sandy	
CCNH	Cape Cod	Nauset Harbor	MA	68	Sn,TOC
BBCC	Buzzards Bay	Cape Cod Canal	MA	63	Cd
BBRH	Buzzards Bay	Round Hill	MA	65	tPCB
BBAR	Buzzards Bay	Angelica Rock	MA	29	Ag,Pb,LMW,HMW,tPCB
BBGN	Buzzards Bay	Goosebury Neck	MA	37	
BUZ	Buzzards Bay		MA	77	tPCB
NBMH	Narragansett Bay	Mount Hope Bay	RI	90	Ag,Cu,Hg,Pb,Sn
NBPI	Narragansett Bay	Patience Island	RI	sandy	
NBDI	Narragansett Bay	Dyer Island	RI	38	Ag,Pb,Sn,LMW,HMW
NBDU	Narragansett Bay	Dutch Island	RI	60	
NAR	Narragansett Bay		RI	66	Ag,Cu,Pb,Sn,LMW,tPCB
BIBI	Block Island	Block Island	RI	71	
LIGB	Long Island	Gardiners Bay	NY	sandy	
ELI	East Long Is. Sound		CT	sandy	
LICR	Long Island Sound	Connecticut River	CT	50	tPCB,HMW
LINH	Long Island Sound	New Haven	CT	sandy	
LIHR	Long Island Sound	Housatonic River	CT	sandy	
LISI	Long Island Sound	Sheffield Island	CT	63	Ag,Cd,Cu,Hg,Pb,Zn,LMW,HMW

Table 7. Continued

CODE	General Location	Specific Location	State	%fine	Chemicals with "high" concentrations
WLI	West Long Is. Sound		NY	81	Ag,Cd,Cu,Hg,Pb,Sn,Zn,LMW,HMW,tPCB,TOC
LIHU	Long Island Sound	Huntington Hrb.	NY	46	Ag,Cd,Cu,Pb,Zn
LIPJ	Long Island Sound	Port Jefferson	NY	sandy	
LIMR	Long Island Sound	Mamaroneck	NY	74	Ag,Cd,Cu,Hg,Pb,Zn,HMW,tCdane
LIHH	Long Island Sound	Hempstead Hrb.	NY	91	Ag,Cd,Cu,Hg,Pb,Zn,LMW,HMW,tPCBtDDT
LITN	Long Island Sound	Throgs Neck	NY	71	Ag,Cd,Cu,Hg,Pb,Sn,Zn,LMW,HMW,tPCB,tDDT
MBTH	Moriches Bay	Tuthill Point	NY	56	Ag,Hg,Pb,tDDT
HRJB	Hudson-Raritan Est.	Jamaica Bay	NY	64	Ag,As,Cd,Cr,Cu,Hg,Pb,Sn,Zn,LMW,HMW,tPCB,tDDT
HRUB	Hudson-Raritan Est.	Upper Bay	NY	67	Ag,As,Cd,Cu,Hg,Pb,Sn,Zn,LMW,HMW,tPCB
HRLB	Hudson-Raritan Est.	Lower Bay	NY	71	Ag,As,Cd,Cr,Cu,Hg,Pb,Sn,Zn,LMW,HMW,tPCB,tDDT
HRRB	Hudson-Raritan Est.	Raritan Bay	NJ	71	Ag,As,Cd,Cr,Cu,Hg,Pb,Sn,Zn,LMW,HMW,tPCB,tDDT
RAR	Raritan Bay		NJ	73	Ag,As,Cd,Cr,Cu,Hg,Pb,Sn,Zn,LMW,HMW,tPCB,tDDT,TOC
NYSH	New York Bight	Sandy Hook	NJ	64	Ag,As,Cd,Cr,Cu,Hg,Pb,Sn,Zn,LMW,HMW,tPCB,tDDT
NYLB	New York Bight	Long Branch	NJ	sandy	
NYSR	New York Bight	Shark River	NJ	sandy	
BIBL	Barnegat Inlet	Barnegat Light	NJ	sandy	
GRB	Great Bay		NJ	77	Hg
AIAC	Absecon Inlet	Atlantic City	NJ	sandy	
DBCM	Delaware Bay	Cape May	NJ	62	Ag,As,Zn,TOC
DEL	Delaware Bay		DE	48	tPCB
DBFE	Delaware Bay	False Egg Is. Pt.	NJ	47	Cd,tDDT,TOC
DBBD	Delaware Bay	Ben Davis Shoal	NJ	68	
DBAP	Delaware Bay	Arnolds Pt. Shoal	DE	76	
DBHC	Delaware Bay	Hope Creek	NJ	22	Ni,Sn,Zn
DBWB	Delaware Bay	Woodland Beach	DE	31	Zn
DBKI	Delaware Bay	Kelly Island	DE	58	
DBCH	Delaware Bay	Cape Henlopen	MD	77	
BAL	Baltimore Harbor		MD	93	Ag,As,Cd,Cr,Cu,Hg,Ni,Pb,Sn,Zn,LMW,HMW,tPCB
UCB	Upper Ches. Bay		MD	82	Ni,Zn,LMW,tPCB
CBBO	Chesapeake Bay	Bodkin Point	MD	99	Ni,Sn,Zn,LMW,tPCB
CBMP	Chesapeake Bay	Mountain Pt. Bar	MD	98	As,Zn,LMW,HMW
CBHP	Chesapeake Bay	Hackett Point Bar	MD	98	Zn,LMW
CBCP	Chesapeake Bay	Choptank River	MD	93	
CBHG	Chesapeake Bay	Hog Point	MD	sandy	
MCB	Middle Ches. Bay		VA	59	As,Zn
PRRP	Potomac River	Ragged Point	VA	96	
PRSP	Potomac River	Swan Point	MD	38	Cd,Zn
CBIB	Chesapeake Bay	Ingram Bay	VA	78	
RRRR	Rappahannock R.	Ross Rock	VA	94	

Table 7. Continued

CODE	General Location	Specific Location	State	%fine	Chemicals with "high" concentrations
CBCC	Chesapeake Bay	Cape Charles	VA	71	
CBDP	Chesapeake Bay	Dandy Point	VA	46	
CBJR	Chesapeake Bay	James River	VA	72	
LCB	Lower Ches. Bay		VA	51	
ELZ	Elizabeth River		VA	66	Cd,Cu,Hg,Pb,Sn,Zn,LMW,HMW,tPCB,TOC
CBCI	Chincoteague Bay	Chinco. Inlet	VA	sandy	
QIUB	Quinby Inlet	Upshur Bay	VA	38	
PSPR	Pamlico Sound	Pungo River	NC	99	
RSJC	Roanoke Sound	John Creek	VA	sandy	
PSWB	Pamlico Sound	Wysocking Bay	NC	sandy	
PAM	Pamlico Sound		NC	77	TOC
PSNR	Pamlico Sound	Neuse River	NC	96	
CFBI	Cape Fear	Battery Island	NC	54	As
WBLB	Winyah Bay	Lower Bay	SC	sandy	
SRNB	Santee River	North Bay	SC	78	As
CHFJ	Charleston Harbor	Fort Johnson	SC	96	As
CHSF	Charleston Harbor	Shutes Folly Is.	SC	51	As
CHS	Charleston Harbor		SC	77	HMW
SRTI	Savannah River Est.	Tybee Island	GA	52	
SSSI	Sapelo Sound	Sapelo Island	GA	sandy	
SSA	Sapelo Island		GA	51	
ARWI	Altamaha River	Wolfe Island	GA	sandy	
SJCB	St. Johns River	Chicopit Bay	FL	76	
SJD	St. Johns River		FL	63	HMW,TOC
MRCB	Matanzas River	Crescent Beach	FL	sandy	
IRSR	Indian River	Sebastian River	FL	34	
NMML	North Miami	Maule Lake	FL	69	
BBPC	Biscayne Bay	Princeton Canal	FL	86	TOC
EVFU	Everglades	Faka Union Bay	FL	82	
RBHC	Rookery Bay	Henderson Creek	FL	72	
NBNB	Naples Bay	Naples Bay	FL	60	
CBBI	Charlotte Harbor	Bird Island	FL	44	
CBFM	Charlotte Harbor	Fort Meyers	FL	sandy	
LOT	Charlotte Harbor		FL	24	TOC
TAM	Tampa Bay		FL	49	
TBMK	Tampa Bay	Mullet Key Bayou	FL	25	TOC
TBCB	Tampa Bay	Cockroach Bay	FL	sandy	
TBNP	Tampa Bay	Navarez Park	FL	58	Cd,tPCB,TOC
TBHB	Tampa Bay	Hillsborough Bay	FL	54	HMW,Cd,Pb,tPCB

Table 7. Continued

CODE	General Location	Specific Location	State	%fine	Chemicals with "high" concentrations
TBPB	Tampa Bay	Papys Bayou	FL	46	HMW,tPCB,tDDT
TBKA	Tampa Bay	O.Knight Airport	FL	21	Cd,Pb,tPCB,tDDT
TBOT	Tampa Bay	Old Tampa Bay	FL	27	
CKBP	Cedar Key	Black Point	FL	46	
SRWP	Suwanee River	West Pass	FL	63	TOC
AESP	Apalachee Bay	Spring Creek	FL	38	TOC
APCP	Apalachicola Bay	Cat Point Bar	FL	59	As
APDB	Apalachicola Bay	Dry Bar	FL	50	
APA	Apalachicola Bay		FL	80	As
PCLO	Panama City	Little Oyster Bar	FL	26	tDDT,TOC
PCMP	Panama City	Municipal Pier	FL	66	Zn,LMW,HMW,TOC
SAWB	St. Andrew Bay	Watson Bayou	FL	46	Hg,Pb,LMW,HMW,tPCB,tDDT
CBSR	Choctawhatchee B.	Off Santa Rosa	FL	66	As
CBPP	Choctawhatchee B.	Postil Point	FL	52	Ag,Pb,LMW,HMW,tPCB,tDDT
CBJB	Choctawhatchee B.	Joe's Bayou	FL	sandy	
PBPH	Pensacola Bay	Public Harbor	FL	sandy	
PEN	Pensacola Bay		Fl	90	As
PBIB	Pensacola Bay	Indian Bayou	FL	35	As
MBHI	Mobile Bay	Hollingers Is. Chn.	AL	46	
MBCP	Mobile Bay	Cedar Point Reef	AL	74	
MOB	Mobile Bay		AL	94	
ROU	Round Island		MS	58	
HER	Heron Bay		MS	66	
MSPB	Mississippi Sound	Pascagoula Bay	MS	60	
MSBB	Mississippi Sound	Biloxi Bay	MS	74	LMW,HMW
MSPC	Mississippi Sound	Pass Christian	MS	76	
MRD	Mississippi R. Delta		LA	78	
LBNO	Lake Borgne	New Orleans	LA	98	TOC
LBMP	Lake Borgne	Malheureux Point	LA	77	
BSBG	Breton Sound	Bay Gardene	LA	28	
BSSI	Breton Sound	Sable Island	LA	88	
MRTP	Mississippi River	Tiger Pass	LA	90	
MRPL	Mississippi River	Pass a Loutre	LA	99	
BBSD	Barataria Bay	Bayou St. Denis	LA	84	
BBTB	Barataria Bay	Turtle Bay	LA	84	TOC
BBMB	Barataria Bay	Middle Bank	LA	42	
BAR	Barataria Bay		LA	53	
TBLF	Terrebonne Bay	Lake Felicity	LA	77	
TBLB	Terrebonne Bay	Lake Barre	LA	86	

Table 7. Continued

CODE	General Location	Specific Location	State	%fine	Chemicals with "high" concentrations
CLCL	Caillou Lake	Caillou Lake	LA	67	
ABOB	Atchafalaya Bay	Oyster Bayou	LA	83	
VBSP	Vermillion Bay	Southwest Pass	LA	83	
JHJH	Joseph Hrb. Bayou	Joseph Hrb. Bay	LA	70	
CLLC	Calcasieu Lake	Lake Charles	LA	47	
CLSJ	Calcasieu Lake	St. Johns Island	LA	84	
SLBB	Sabine Lake	Blue Buck Point	TX	57	
ECSP	East Cote Blanche	South Point	LA	55	
GBHR	Galveston Bay	Hanna Reef	TX	80	
GBSC	Galveston Bay	Ship Channel	TX	91	
GBYC	Galveston Bay	Yacht Club	TX	62	
GBTD	Galveston Bay	Todd's Dump	TX	61	
GBCR	Galveston Bay	Confederate Reef	TX	53	
GBOB	Galveston Bay	Offatts Bayou	TX	34	Sn,Zn,tDDT
GAD	Galveston Bay		TX	51	
BRFS	Brazos River	Freeport Surfside	TX	84	
BRCL	Brazos River	Cedar Lakes	TX	75	
MBEM	Matagorda Bay	East Matagorda	TX	52	
MBDI	Matagorda Bay	Dog Island	TX	97	
MBCB	Matagorda Bay	Carancahua Bay	TX	69	
MBTP	Matagorda Bay	Tres Palacios Bay	TX	60	
MBGP	Matagorda Bay	Gallinipper Point	TX	74	
MBLR	Matagorda Bay	Lavaca R. Mouth	TX	63	
ESSP	Espiritu Santo	South Pass Reef	TX	87	
ESBD	Espiritu Santo	Bill Days Reef	TX	23	
SAMP	San Antonio Bay	Mosquito Point	TX	48	
SAPP	San Antonio Bay	Panther Pt.Reef	TX	46	
SAB	San Antonio Bay		TX	60	
MBAR	Mesquite Bay	Ayres Reef	TX	91	
CBCR	Copano Bay	Copano Reef	TX	96	
ABHI	Aransas Bay	Harbor Island	TX	50	
ABLR	Aransas Bay	Long Reef	TX	45	
CCBH	Corpus Christi Bay	Boat Harbor	TX	74	
CCIC	Corpus Christi Bay	Ingleside Cove	TX	47	
CCNB	Corpus Christi Bay	Neuces Bay	TX	56	
CCB	Corpus Christi Bay		TX	84	
LMSB	Laguna Madre	South Bay	TX	56	
LMPI	Laguna Madre	Port Isabel	TX	44	
LLM	Lower Laguna Madre		TX	34	

Table 7. Continued

CODE	General Location	Specific Location	State	%fine	Chemicals with "high" concentrations
IBNJ	Imperial Beach	North Jetty	CA	sandy	
SDF	Outside San Diego Bay		CA	34	As,Cd
SDCB	San Diego Bay	Coronado Bridge	CA	sandy	
SDHI	San Diego Bay	Harbor Island	CA	29	Ag,As,Cd,Cu,Hg,Pb,Zn,tPCB
SDA	South San Diego Bay		CA	62	Ag,Cd,Cu,Hg,Pb,Sn,Zn,LMW,HMW,tPCB
NSD	North San Diego Bay		CA	48	Ag,Cu,Hg,Pb,Sn,Zn,HMW,tPCB
PLLH	Point Loma	Lighthouse	CA	31	As,tDDT
MBVB	Mission Bay	Ventura Bridge	CA	sandy	
LJLJ	La Jolla	Point La Jolla	CA	55	As
OSBJ	Oceanside	Beach Jetty	CA	80	tDDT
DAN	Dana Point		CA	42	As
NBWJ	Newport Beach	Wedge Jetty	CA	51	tDDT
ABWJ	Anaheim Bay	West Jetty	CA	58	tDDT
LNB	Long Beach		CA	71	Pb,tPCB,tDDT
SPB	San Pedro Bay		CA	72	Cu,Cu,Hg,Zn,tPCB,tDDT
SPFP	San Pedro Harbor	Fishing Peir	CA	96	Cd,Cu,tPCB,tDDT
PVRP	Palos Verdes	Royal Palms Park	CA	60	Ag,Cd,Cr,Cu,Hg,Sn,Zn,tPCB,tDDT
SCBR	Santa Catalina Island	Bird Rock	CA	sandy	
SMW	West Santa Monica Bay		CA	25	Ag,As,Cd,Cr,Cu,Hg,Pb,Sn,Zn,tPCB,tDDT
SMB	East Santa Monica Bay		CA	sandy	
MDSJ	Marina Del Ray	South Jetty	CA	40	Ag,As,tDDT
PDPD	Point Dume	Point Dume	CA	36	Ag,As,Cd,Ni,tDDT
SCFP	Santa Cruz Island	Fraser Point	CA	sandy	
SANM	San Miguel Island	Tyler Bight	CA	sandy	
SBSB	Point Santa Barbara	Pt.Santa Barbara	CA	41	As,Cd,tDDT
PCPC	Point Conception	Point Conception	CA	sandy	
SLSL	San Luis Ob. Bay	Point San Luis	CA	sandy	
SSSS	San Simeon Point	San Simeon Pt.	CA	sandy	
MOS	Moss Landing		CA	45	Ag,Cr
PGLP	Pacific Grove	Lovers Point	CA	sandy	
MBSC	Monterey Bay	Point Santa Cruz	CA	28	As,Cr,Ni,tDDT
FIEL	Farallon Island	East Landing	CA	sandy	
MON	Monterey Bay		CA	sandy	
SHS	Southampton Shoal		CA	59	Cr
OAK	Oakland Estuary		CA	91	Hg,Ni
HUN	Hunters Point		CA	80	Cr,Ni,HMW
SFDB	San Francisco Bay	Dumbarton Brg.	CA	91	Ni
SFSM	San Francisco Bay	San Mateo Brg.	CA	90	HMW,Ni
SFEM	San Francisco Bay	Emeryville	CA	93	Ni

Table 7. Continued

CODE	General Location	Specific Location	State	%fine	Chemicals with "high" concentrations
PAB	San Pablo Bay		CA	44	Cr,Cu,Hg,Ni,Zn
SPSM	San Pablo Bay	Semple Point	CA	68	As,Cr,Cu,Ni,tDDT
SPSP	San Pablo Bay	Point St. Pedro	CA	90	Ni
TBSR	Tomales Bay	Spenger's	CA	97	Cr,Ni
BBBE	Bodega Bay	Bay Entrance	CA	sandy	
BOD	Bodega Bay		CA	sandy	
PALH	PointArena	Lighthouse	CA	sandy	
PDSC	Point Delgada	Shelter Cove	CA	sandy	
HMBJ	Humboldt Bay	Jetty	CA	sandy	
HMB	Humboldt Bay		CA	31	As,Cr,Ni
KRFR	Klamath River	Flint Rock Head	CA	sandy	
SGSG	Point St. George	Point St. George	OR	sandy	
COO	Coos Bay		OR	43	As,Cd,TOC
CBCH	Coos Bay	Coos Head	OR	23	As,Cd,Cr,Ni
CBRP	Coos Bay	Russell Point	OR	30	As,Cr,Ni
YBOP	Yaquina Bay	Oneatta Point	OR	51	As,Cr
YHSS	Yaquina Head	Sally's Slough	OR	34	Cd,Cr,Ni
TBHP	Tillamook Bay	Hobsonville Point	OR	30	As,Cr,Cu,Ni
CRYB	Columbia River	Youngs Bay	OR	31	Ni,Zn
YNB	Young's Bay		OR	68	
COL	Columbia River		OR	27	Cd,Hg,Ni,Zn
CRNJ	Columbia River	North Jetty	WA	sandy	
GHWJ	Gray's Harbor	Westport Jetty	WA	sandy	
JFNB	St. of Juan de Fuca	Neah Bay	WA	49	Cr
SSBI	South Puget Sound	Budd Inlet	WA	99	
NIS	Nisqually Reach		WA	sandy	
COM	Commencement Bay		WA	81	
CBBP	Commencement Bay	Brown's Point	WA	87	
PSSS	Puget Sound	South Seattle	WA	58	Cr,Ni
EBFR	Elliott Bay	Four-Mile Rock	WA	sandy	
ELL	Elliott Bay		WA	42	Cd,Cu,Hg,Ni,Pb,Zn,LMW,HMW,tPCB
SIWP	Sinclair Inlet	Waterman Point	WA	64	Ag,Cr,Cu,Hg,Ni,Pb,HMW
PSHC	Puget Sound	Hood Canal	WA	22	As,Cr,Ni,Zn
WIPP	Whidbey Island	Possession Point	WA	95	
PSEH	Puget Sound	Everett Harbor	WA	54	Cr,Ni,LMW
PSPA	Puget Sound	Port Angeles	WA	66	
BBSM	Bellingham Bay	Marina Jetty	WA	99	Ni
PRPR	Point Roberts	Point Roberts	WA	79	

Table 7. Continued

CODE	General Location	Specific Location	State	%fine	Chemicals with "high" concentrations
BDQ	Boca de Quadra		AK	57	
LUT	Lutak Inlet		AK	94	
SKA	Skagway		AK	63	Pb,Zn
NAH	Nahku Bay		AK	78	Cd
UISB	Unakwik Inlet	Siwash Bay	AK	82	
VAL	Valdez		AK	99	
PVMC	Port Valdez	Mineral Crk. Flats	AK	100	As
KAM	Kamishak Bay		AK	68	
PTM	Port Moller		AK	sandy	
DUT	Dutch Harbor		AK	71	
OLI	Oliktok Point		AK	61	
END	Prudhoe Bay		AK	48	
BPBP	Barber's Point	Barber's Pt. Basin	HI	48	Ni,HMW
HHKL	Honolulu Harbor	Keehi Lagoon	HI	47	Ag,As,HMW
KAUI	Kauai	Nawiliwili Harbor	HI	sandy	

Table 8. Results of factor analysis on correlation matrix among means of grain size adjusted concentrations at 233 sites. The variable "POP20" is the number of people living within 20km of the site center (R. Hamill , U.S. Census Bureau). Loadings on each factor by each chemical are indicated in parentheses. Only loadings >0.5 are shown and no chemical has a loading >0.5 on any factor beyond factor 6. The percentage of overall variation attributable to each factor is also indicated. As, Cr, and TOC did not have loadings >0.5 on any factor and are listed where loadings >0.4.

Factor 1 (45% of overall variation)
Pb (.89), Cu (.89), Hg (.88), Zn(.81), HMWPAH (.79), Sn(.78),LMW PAH(.74), POP20(.70), Cd(.68), Ag(.67), tPCB (.64), As(.45), TOC(.36), Cr(.41)

Factor 2 (8.9 % of overall variation)
Cd(.63), tDDT(.59), Cr(.42)

Factor 3 (7.2% of overall variation)
Ni(.68), As(0.40)

Factor 4 (4.6 % of overall variation)
Cr (.47)

While tDDT is always an indication of human influence, instances in Table 7 where sites are indicated as having high concentrations of As, Cd, Cr, Ni, or TOC should not be considered contaminated (i.e., influenced by human activity) unless concentrations of other elements or organic compounds are also high.

Sandy Sites

For completeness in Table 7, sites are listed at which no fine-grained material was collected. These are sites, like others, for which there are data on contaminant levels in bivalves and fish livers. The lack of fine-grained material does not necessarily mean that a site is not receiving contaminants. It means only that the sediment is too coarse to accumulate contaminants in a manner comparable to other sites. The issue of contaminant bioavailability is not addressed in this report but it is important to note that contaminants are released from sand, because of its low surface area, more readily than from fine-grained sediments (O'Connor, 1976). Notice should, therefore, be taken whenever "high" levels are found at sandy sites. In Table 9, all contaminants above "high" and above median levels at sandy sites are listed.

As explained above, high concentrations of Cr, Ni, As and Cd may not indicate contamination. Such concentrations in sand can reflect a natural source with the element tied into the matrix of sand-sized particles rather than being adsorbed on the surface. A few sandy sites are definitely contaminated. One, near the mouth of the Housatonic River in Long Island Sound, CT, has "high" concentrations of Cu and HMWPAH and above median concentrations of LMWPAH and tDDT. Above median concentrations of HMWPAH, LMWPAH, and tPCB were found at Four-Mile Rock in Elliott Bay, WA. The site in Port Moller, AK had such levels of Sn, tDDT, and tPCB. The sandy sites in Santa Monica Bay, CA and at the mouth of the Merrimack River, MA were above median levels for Ag and LMWPAH, respectively.

Representativeness

Increasing the NS&T inventory of fine-grained sediment sites from 175 to 233 has made little difference in terms of describing the national distribution of contamination. If mean and "high" concentrations had been calculated with the 175-site data set available in the first NS&T sediment report, they would have been very similar to the concentrations shown in Table 6.

Table 9. Sites with all sandy sediments but with 'high" or above median chemical concentrations.

Chem.	Site with concentration above "high" concentration
Cu	Long Island Sound, Housatonic River, CT (LIHR)
HMW	Long Island Sound, Housatonic River, CT (LIHR)
Cr	Bodega Bay, CA (BOD), Humboldt Bay, CA (HMB)
Ni	Humboldt Bay, Jetty, CA (HMBJ), Bodega Bay, Bay Entrance, CA (BBBE)

Chem.	Site with concentration above median concentration
Ag	Santa Monica Bay, CA (SMB)
Sn	Port Moeller, AK (PTM)
LMW	Long Island Sound, Housatonic River, CT (LIHR), Merrimack River, MA (MER), Elliott Bay, Four-Mile Rock, WA (EBFR)
HMW	Elliott Bay, Four-Mile Rock, WA (EBFR)
tDDT	Long Island Sound, Housatonic River, CT (LIHR), Port Moeller, AK (PTM)
tPCB	Elliott Bay, Four-Mile Rock, WA (EBFR), Port Moeller, AK (PTM)
As	Pacific Grove, Lover's Point, CA (PGLP)
Cd	Bodega Bay, CA (BOD), Nisqually Reach, WA (NIS), Long Island Sound, Gardner's Bay, NY (LIGB), Imperial Beach, North Jetty, CA (IBNJ), Port Moeller, AK, (PTM), Sapelo Sound, Sapelo Island, GA (SSSI)
Cr	Nisqually Reach, WA (NIS)
Ni	Humboldt Bay,CA (HMB), Bodega Bay,CA (BOD), Nisqually Reach (NIS)

The "highs" would have been higher for all chemicals save TOC, but only tDDT, Cr, and LMWPAH would have been more than 20% different from the listed values. On a national scale, then, the status of distribution has been defined. Adding more sites would not make a meaningful change in the mean and "high" values, nor would it change the fact that high levels are associated with population centers.
In a few cases (see Appendix C) very high concentrations have been excluded, because even at the scale of a single site concentrations in one sample were more than 10 times higher than in the others. Such high concentrations were considered not to represent the site but to be singularly contaminated spots. This occurred for HMWPAH in the Elizabeth River and for tPCB in Boston Harbor where, even with the exclusions, the mean concentrations for those contaminants were in the "high" range.

On a larger scale, some sites may be singularities that are not representative of their surroundings. It is the intention of the NS&T Program to sample sites that are representative. A test of a site's representativeness is approximate agreement in contaminant concentrations between adjacent sites. On that basis, the clustering in Table 7 of sites with high contaminant levels argues for the areas around Boston, New York, San Diego, and Los Angeles to have been representatively sampled.

There are sites with high concentrations of some contaminants that are not representative. The Elizabeth River, VA, site, for example, is the only site in the southern part of Chesapeake Bay with high concentrations of any chemical. While three sites in the northern end of Chesapeake Bay have high concentrations for some chemicals, the concentrations of those and most other chemicals are well exceeded at the site in Baltimore Harbor, MD. On the California coast, the anomalously highly contaminated sites are those off Palos Verdes (PVRP) and in Santa Monica Bay (SMW) where the concentrations for tDDT and Ag were 5900 ng/g and 25 µg/g, respectively. These singularly high values are probably a consequence of sediment samples having been collected within 1 to 2 km of major sewage outfalls. While tDDT and Ag are typically high in sediments of that region, the extreme concentrations at these two sites are atypical.

Nevertheless, there is no objective way to exclude what may be non-representative sites or mean concentrations. All data were incorporated into the calculated "high" and national geometric mean concentrations. The results of those calculations would not have changed if the four sites just discussed had been eliminated (except that elimination of the extreme concentration at PVRP would have decreased the "high" tDDT from 37 to 32 ng/g).

If the attempt to sample "representative" sites were abandoned, it would always be possible to find extreme concentrations. Some such sites were described in NOAA (1988) and include such spots as Fort Point Channel in Boston Harbor (Shiaris and Jambard-Sweet, 1986), New Bedford Harbor (Weaver, 1984), Black Rock Harbor near Bridgeport, CT (Rodgerson et al. 1985), Islais Waterway in San Francisco Bay (Chapman et al., 1987), and industrial waterways in Puget Sound (Malins et al., 1982). An all-inclusive list of such "hot spots" has not been made, but all would either be at the terminus of waste discharge pipes or within the interstices of industrialized zones where small bodies of poorly circulated water receive discharges from multiple sources. Such "hot spots" are not representative of their surroundings, but usually have chemical concentrations in sediment that greatly exceed the "high" concentrations calculated from the NS&T data set.

While the NS&T sediment data do represent the coastal United States and portray relative levels of contamination among various regions, it is likely that they generally overestimate the extent of contamination.

A test of how well the NS&T data represent the national distribution of contamination is being conducted. In close cooperation with NOAA, the United States Environmental Protection Agency has begun the Environmental Monitoring and Assessment Program (EMAP) which includes a coastal component that will collect and analyze sediments from estuarine and coastal waters. The EMAP strategy is to sample 150-200 randomly selected sites in large ecological provinces in a single year. In 1990, the Virginia Province (Chesapeake Bay to Cape Cod) was sampled. It will continue to be randomly sampled for four more years and, in succeeding years new provinces are to be added to the overall effort. In 1991 the Virginian and Louisianan (most of the Gulf of Mexico coast) Provinces are to be sampled.

The NS&T sites were not randomly selected. The Mussel Watch sites could not have been random because the first priority was to find sites that could be expected to yield mussels and oysters for the annual monitoring of chemical concentrations in tissues. Moreover, NS&T favors sampling near urban areas and, while "hot spots" were avoided, 45% of all NS&T sites are within 20 km of population centers with more than 100,000 people. This urban bias stems from the NS&T concern for biological effects of chemical contamination and the fact that such effects, if they are found, will more likely be in urban areas. It is expected that "high" and geometric mean concentrations calculated from EMAP data (adjusted for sand content) will be lower, on a province-by-province basis, than the NS&T values.

Conclusions

The NS&T Program is determining the status and trends of contamination in the coastal United States through analysis of bivalves, fish livers, and sediments. The status of contamination has now been assessed in both biological tissues (NOAA, 1987b, 1989) and in sediments with this update of NOAA (1988). Much remains to be done in comparing those two sets of data and in expanding the tissue data to begin to define temporal trends, but it is immediately evident that regardless of what is sampled, or when, the highest levels of contamination are associated with urban areas.

More important than the distribution of contamination itself is the distribution and spatial scale of locations within which marine organisms are responding to contamination. Within certain reservations, it is possible to extrapolate levels of sediment contamination to the presence of biological effects and conclude that concentrations at NS&T sites are usually below those expected to be of biological consequence.

However, the biological monitoring component to the NS&T Program is continuing to test for effects. Tests of sediment toxicity are also being conducted. There is ongoing work to test whether fish in contaminated areas are suffering reproductive damage or responding to contamination in other, less consequential, ways.

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Appendix A

NS&T Site Names, Locations, Years of Sediment Collection, and Site Maps

Appendix A

NS&T site names, locations, years of sediment collection, and maps of site locations.

Table A.1. Names for Benthic Surveillance (three letter codes) and Mussel Watch (four-letter codes) sites, locations of site centers, and years during which sediment was collected.

Table A.2. Benthic Surveillance sampling years, station locations, sample numbers (as they appear in NS&T data base) and largest distance between stations.

Figures. Maps of NS&T site locations.

Table A.1

Names for Benthic Surveillance (three-letter codes) and Mussel Watch (four-letter codes) sites, locations of site centers, and years during which sediment was collected. Mussel Watch sites carry a general and specific site name. Samples have been collected at Benthic Surveillance sites in 1987 and subsequent years but are not so indicated because data from those collections have not used in this report. Centers of sediment collection sites in the Mussel Watch Project can be up to 2 km from the listed centers (which apply to mollusk collections) while the three stations at each site are within 1 km of one another. In cases where a collection year is marked with an asterisk (e.g. 86*), the sample was sand and chemical concentrations were not determined.

Locations are listed in degrees (D), minutes (M), and seconds (S) of latitude (Lat) West and longitude (Long) North.

Table A.1 Site locations and years of sediment sample collections.

Site Code	Pgm	Main Location	Specific Location	State	Lat D	Lat M	Lat S	Long D	Long M	Long S	year1	year2	year3	year4	year5	year6
MAC	BS	Machias Bay	Machias Bay	ME	44	39		67	21		84	85	86			
FRN	BS	Frenchmans Bay	Frenchmans Bay	ME	44	25		68	10			85	86			
PNB	BS	Penobscot Bay	Penobscot Bay	ME	44	10		68	59			85	86			
PBSI	MW	Penobscot Bay	Sears Island	ME	44	27	8	68	53	22			86	87		
PBPI	MW	Penobscot Bay	Pickering Island	ME	44	15	53	68	44	3			86	87		
MSSP	MW	Merriconeag Sound	Stover Point	ME	43	45	29	69	59	43					88	
CSC	BS	Casco Bay	Casco Bay	ME	43	42		70	9		84	85	86			
CAKP	MW	Cape Arundel	Kennebunkport	ME	43	20	52	70	28	29						89*
MER	BS	Merrimack River	Merrimack River	MA	42	48		70	46		84	85				
CAGH	MW	Cape Ann	Gap Head	MA	42	40	2	70	36	18				87		
SHFP	MW	Salem Harbor	Folger Point	MA	42	31	8	70	52	1					88	
SAL	BS	Salem Harbor	Salem Harbor	MA	42	32		70	52		84	85	86			
BHDI	MW	Boston Harbor	Deer Island	MA	42	21	30	70	58	24			86	87		
BHDB	MW	Boston Harbor	Dorchester Bay	MA	42	18	15	71	2	18			86	87		
BHHB	MW	Boston Harbor	Hingham Bay	MA	42	16	38	70	53	51			86	87		
BHBI	MW	Boston Harbor	Brewster Island	MA	42	20	33	70	52	41			86*			
BOS	BS	Boston Harbor	Boston Harbor	MA	42	20		70	59		84	85	86			
QUI	BS	Quincy Bay	Quincy Bay	MA	42	17		70	58				86			
DBCI	MW	Duxbury Bay	Clarks Island	MA	42	0	53	70	38	10						89
CCNH	MW	Cape Cod	Nauset Harbor	MA	41	47	41	69	56	54						89
BBCC	MW	Buzzards Bay	Cape Cod Canal	MA	41	44	22	70	37	1						89
BBRH	MW	Buzzards Bay	Round Hill	MA	41	32	27	70	55	31			86	87		
BBAR	MW	Buzzards Bay	Angelica Rock	MA	41	34	38	70	51	47			86	87		
BBGN	MW	Buzzards Bay	Goosebury Neck	MA	41	28	50	71	1	20			86	87		
BUZ	BS	Buzzards Bay	Buzzards Bay	MA	41	33		70	50		84	85	86			
NBMH	MW	NarRiver Bay	Mount Hope Bay	RI	41	40	36	71	13	34			86			
NBPI	MW	NarRiver Bay	Patience Is.	RI	41	39	22	71	21	8						89
NBDI	MW	NarRiver Bay	Dyer Island	RI	41	36	12	71	17	22			86	87		
NBDU	MW	NarRiver Bay	Dutch Island	RI	41	30	5	71	23	34			86	87		
NAR	BS	NarRiver Bay	Narragansett Bay	RI	41	36		71	21		84	85	86			
BIBI	MW	Block Is.	Block Island	RI	41	11	24	71	35	8				87		
LIGB	MW	Long Island	Gardiners Bay	NY	40	59	54	72	6	41						89

Table A.1 Site locations and years of sediment sample collections.

Site Code	Pgm	Main Location	Specific Location	State	Lat D	Lat M	Lat S	Long D	Long M	Long S	year1	year2	year3	year4	year5	year6
ELI	BS	E. Long Is. Sound	East Long Island Snd.	CT	41	14		72	15		84	85	86			
LICR	MW	Long Is. Sound	Connecticut River	CT	41	15	50	72	20	30			86	87		
LINH	MW	Long Is. Sound	New Haven	CT	41	15	24	72	56	40			86	87*		
LIHR	MW	Long Is. Sound	Housatonic River	CT	41	10	4	73	6	35			86	87*		
LISI	MW	Long Is. Sound	Sheffield Island	CT	41	3	24	73	24	46			86	87		
WLI	BS	W. Long Is. Sound	West Long Island Snd.	NY	40	55		73	40		84	85	86			
LIHU	MW	Long Is. Sound	Huntington Harbor	NY	40	55	0	73	25	52			86	87		
LIPJ	MW	Long Is. Sound	Port Jefferson	NY	40	57	34	73	5	31			86	87*		
LIMR	MW	Long Is. Sound	Mamaroneck	NY	40	56	28	73	42	2			86	87		
LIHH	MW	Long Is. Sound	Hempstead Harbor	NY	40	51	8	73	40	8			86	87		
LITN	MW	Long Is. Sound	Throgs Neck	NY	40	49	10	73	48	4			86	87		
MBTH	MW	Moriches Bay	Tuthill Point	NY	40	46	39	72	45	22			86	87		
HRJB	MW	Hud./RaRiver Est	Jamaica Bay	NY	40	34	8	73	53	53			86	87		
HRUB	MW	Hud./RaRiver Estuar	Upper Bay	NY	40	41	23	74	2	33			86	87		
HRLB	MW	Hud./RaRiver Estuar	Lower Bay	NY	40	33	58	74	3		84		86	87		
HRRB	MW	Hud./RaRiver Estuar	Raritan Bay	NJ	40	30	23	74	9	26			86			
RAR	BS	Raritan Bay	Raritan Bay	NJ	40	29		74	3		84	85	86	87		
NYSH	MW	N.Y. Bight	Sandy Hook	NJ	40	29	16	74	2	42			86	87		
NYLB	MW	N.Y. Bight	Long Branch	NJ	40	17	41	73	58	34			86*	87*		
NYSR	MW	N.Y. Bight	Shark River	NJ	40	11	11	74	0	23			86*	87*		
BIBL	MW	Barnegat Inlet	Barnegat Light	NJ	39	45	31	74	5	56					88*	
GRB	BS	Great Bay	Great Bay	NJ	39	31		74	22			85	86			
AIAC	MW	Absecon Inlet	Atlantic City	NJ	39	22	9	74	24	29					88*	
DBCM	MW	Delaware Bay	Cape May	NJ	38	58	55	74	57	55						89
DEL	BS	Delaware Bay	Delaware Bay	DE	38	55		75	8		84	85	86			
DBFE	MW	Delaware Bay	False Egg Island Point	NJ	39	12	43	75	11	27			86*	87		
DBBD	MW	Delaware Bay	Ben Davis Point Shoal	NJ	39	16	25	75	16	13			86*	87		
DBAP	MW	Delaware Bay	Arnolds Point Shoal	DE	39	23	5	75	25	53			86	87		
DBHC	MW	Delaware Bay	Hope Creek	NJ	39	25	36	75	29	36						89
DBWB	MW	Delaware Bay	Woodland Beach	DE	39	19	55	75	27	25						89
DBKI	MW	Delaware Bay	Kelly Island	DE	39	12	10	75	21	18			86	87		

Table A.1 Site locations and years of sediment sample collections.

Site Code	Pgm	Main Location	Specific Location	State	Lat D	Lat M	Lat S	Long D	Long M	Long S	year1	year2	year3	year4	year5	year6
DBCH	MW	Delaware Bay	Cape Henlopen	MD	38	47	17	75	7	25						89
BAL	BS	Baltimore Harbor	Baltimore Harbor	MD	39	13		76	33				86			
UCB	BS	Up.Ches. Bay	Upper Chesapeake B.	MD	38	56		76	25			85	86	87		
CBBO	MW	Chesapeake Bay	Bodkin Point	MD	39	9	36	76	24	4						89
CBMP	MW	Chesapeake Bay	Mountain Point Bar	MD	39	4	25	76	24	44			86	87		
CBHP	MW	Chesapeake Bay	Hackett Point Bar	MD	38	58	22	76	25	0			86	87		
CBCP	MW	Chesapeake Bay	Choptank R.	MD	38	36	19	76	7	12						89
CBHG	MW	Chesapeake Bay	Hog Point	MD	38	18	44	76	23	52			86	87*		
MCB	BS	Mid. Ches. Bay	Middle Chesapeake B.	VA	37	58		76	11			85	86			
PRRP	MW	Potomac River	Ragged Point	VA	38	9	22	76	35	52						89
PRSP	MW	Potomac River	Swan Point	MD	38	16	54	76	56	1						89
CBIB	MW	Chesapeake Bay	Ingram Bay	VA	37	47	38	76	17	4			86	87		
RRRR	MW	Rappahannock R.	Ross Rock	VA	37	54	5	76	47	26						89
CBCC	MW	Chesapeake Bay	Cape Charles	VA	37	17	5	76	1	11			86	87		
CBDP	MW	Chesapeake Bay	Dandy Point	VA	37	6	0	76	17	44			86	87		
CBJR	MW	Chesapeake Bay	James River	VA	37	4	4	76	36	41						89
LCB	BS	Low. Ches.Bay	Lower Chesapeake B.	VA	37	14		76	8		84	85	86			
ELZ	BS	Elizabeth River	Elizabeth River	VA	36	50		76	15				86			
CBCI	MW	Chincoteague Bay	Chincoteague Inlet	VA	37	56	30	75	22	36			86	87*		
QIUB	MW	Quinby Inlet	Upshur Bay	VA	37	31	51	75	43	23			86	87		
RSJC	MW	Roanoke Sound	John Creek	VA	35	53	28	75	37	59			86	87*		
PSWB	MW	Pamlico Sound	Wysocking Bay	NC	35	24	40	76	2	27			86	87*		
PSPR	MW	Pamlico Sound	Pungo River	NC	35	19	29	76	26	57						89
PAM	BS	Pamlico Sound	Pamlico Sound	NC	35	14		76	31		84	85	86			
PSNR	MW	Pamlico Sound	Neuse River	NC	35	6	44	76	31	28						89
CFBI	MW	Cape Fear	Battery Island	NC	33	54	55	78	0	30			86	87		
WBLB	MW	Winyah Bay	Lower Bay	SC	33	14	36	79	11	47						89*
SRNB	MW	Santee River	North Bay	SC	33	10	22	79	14	55						89
CHFJ	MW	Charleston Harbor	Fort Johnson	SC	32	45	19	79	53	13			86*	87		
CHSF	MW	Charleston Harbor	Shutes Folly Island	SC	32	46	50	79	55	0			86	87		
CHS	BS	Charleston Harbor	Charleston Harbor	SC	32	45		79	55		84	85	86			
SRTI	MW	Savannah River Est.	Tybee Island	GA	32	1	12	80	52	15			86	87		

Table A.1 Site locations and years of sediment sample collections.

Site Code	Pgm	Main Location	Specific Location	State	Lat D	Lat M	Lat S	Long D	Long M	Long S	year1	year2	year3	year4	year5	year6
SSSI	MW	Sapelo Sound	Sapelo Island	GA	31	23	12	81	17	20			86	87		
SSA	BS	Sapelo Island	Sapelo Island	GA	31	32		81	14		84	85	86			
ARWI	MW	Altamaha River	Wolfe Island	GA	31	19	37	81	18	30						89
SJCB	MW	St. Johns River	Chicopit Bay	FL	30	22	37	81	26	38			86	87		
SJD	BS	St. Johns River	St. Johns River	FL	30	23		81	35		84	85	86			
MRCB	MW	Matanzas River	Crescent Beach	FL	29	46	0	81	15	23			86	87		
IRSR	MW	Indian River	Sebastian River	FL	27	51	4	80	28	42					88	
NMML	MW	North Miami	Maule Lake	FL	25	56	8	80	8	46					88	
BBPC	MW	Biscayne Bay	Princeton Canal	FL	25	31	8	80	19	45			86	87		
EVFU	MW	Everglades	Faka Union Bay	FL	25	54	5	81	30	47			86	87		
RBHC	MW	Rookery Bay	Henderson Creek	FL	26	1	30	81	44	12			86	87		
NBNB	MW	Naples Bay	Naples Bay	FL	26	6	51	81	47	12			86	87		
CBBI	MW	Charlotte Harbor	Bird Island	FL	26	31	0	82	2	11			86	87		
CBFM	MW	Charlotte Harbor	Fort Meyers	FL	26	33	30	81	55	22					88	
LOT	BS	Charlotte Harbor	Charlotte Harbor	FL	26	50		82	7		84	85	86			
TAM	BS	Tampa Bay	Tampa Bay	FL	27	47		82	35		84	85				
TBMK	MW	Tampa Bay	Mullet Key Bayou	FL	27	37	17	82	43	37			86	87		
TBCB	MW	Tampa Bay	Cockroach Bay	FL	27	40	33	82	30	34			86	87		
TBNP	MW	Tampa Bay	Navarez Park	FL	27	47	17	82	45	17						89
TBHB	MW	Tampa Bay	Hillsborough Bay	FL	27	51	17	82	23	45			86	87		
TBPB	MW	Tampa Bay	Papys Bayou	FL	27	50	32	82	36	37			86	87		
TBKA	MW	Tampa Bay	Peter O'Knight Airport	FL	27	54	28	82	27	17						89
TBOT	MW	Tampa Bay	Old Tampa Bay	FL	28	1	29	82	37	57					88	
CKBP	MW	Cedar Key	Black Point	FL	29	11	36	83	4	24			86	87		
SRWP	MW	Suwanee River	West Pass	FL	29	19	45	83	10	27					88	
AESP	MW	Apalachee Bay	Spring Creek	FL	30	3	54	84	19	16						89
APCP	MW	Apalachicola Bay	Cat Point Bar	FL	29	43	30	84	52	50			86	87		
APDB	MW	Apalachicola Bay	Dry Bar	FL	29	40	30	85	4	13			86	87		
APA	BS	Apalachicola Bay	Apalachicola Bay	FL	29	38		84	58		84	85	86			
PCLO	MW	Panama City	Little Oyster Bar	FL	30	15	0	85	40	52						89
PCMP	MW	Panama City	Municipal Pier	FL	30	9	0	85	39	48					88	
SAWB	MW	St. Andrew Bay	Watson Bayou	FL	30	8	32	85	37	55			86	87		

Table A.1 Site locations and years of sediment sample collections.

Site Code	Pgm	Main Location	Specific Location	State	Lat D	Lat M	Lat S	Long D	Long M	Long S	year1	year2	year3	year4	year5	year6
CBSR	MW	Choctawhatchee B.	Off Santa Rosa	FL	30	24	47	86	12	15			86	87		
CBPP	MW	Choctawhatchee B.	Postil Point	FL	30	28	51	86	28	44			86	87		
CBJB	MW	Choctawhatchee B.	Joe's Bayou	FL	30	24	37	86	29	27						89*
PBPH	MW	Pensacola Bay	Public Harbor	FL	30	24	38	87	11	25					88*	
PEN	BS	Pensacola Bay	Pensacola Bay	FL	30	24		87	12			85	86			
PBIB	MW	Pensacola Bay	Indian Bayou	FL	30	30	35	87	6	45			86	87		
MBHI	MW	Mobile Bay	Hollingers Island Chl.	AL	30	33	48	88	4	30					88	
MBCP	MW	Mobile Bay	Cedar Point Reef	AL	30	19	30	88	7	30			86	87		
MOB	BS	Mobile Bay	Mobile Bay	AL	30	18		88	5		84	85	86			
ROU	BS	Round Island	Round Island	MS	30	18		88	37		84	85				
HER	BS	Heron Bay	Heron Bay	MS	30	11		89	28			85	86			
MSPB	MW	Miss. Sound	Pascagoula Bay	MS	30	20	10	88	36	4			86	87		
MSBB	MW	Miss. Sound	Biloxi Bay	MS	30	23	33	88	51	27			86	87		
MSPC	MW	Miss. Sound	Pass Christian	MS	30	18	10	89	19	37			86	87		
MRD	BS	Miss. Delta	Mississippi River Delta	LA	29	6		89	4		84	85	86			
LPGO	MW	Lake Ponchartrain	Gulf Outlet	LA	30	2	12	90	3	0						
LBNO	MW	Lake Borgne	New Orleans	LA	29	56	36	89	50	6					88	
LBMP	MW	Lake Borgne	Malheureux Point	LA	29	52	15	89	40	37			86	87		
BSBG	MW	Breton Sound	Bay Gardene	LA	29	35	54	89	37	15			86	87		
BSSI	MW	Breton Sound	Sable Island	LA	29	24	42	89	28	42			86	87		
MRTP	MW	Miss. River	Tiger Pass	LA	29	8	41	89	25	40					88	
MRPL	MW	Miss. River	Pass a Loutre	LA	29	4	18	89	4	36					88	
BBSD	MW	Barataria Bay	Bayou Saint Denis	LA	29	24	18	89	59	30			86	87		
BBTB	MW	Barataria Bay	Turtle Bay	LA	29	30	40	90	5	0					88	
BBMB	MW	Barataria Bay	Middle Bank	LA	29	16	37	89	56	32			86	87		
BAR	BS	Barataria Bay	Barataria Bay	LA	29	19		89	56		84	85				
TBLF	MW	Terrebonne Bay	Lake Felicity	LA	29	16	12	90	24	24			86	87		
TBLB	MW	Terrebonne Bay	Lake Barre	LA	29	15	36	90	35	42			86	87		
CLCL	MW	Caillou Lake	Caillou Lake	LA	29	15	25	90	55	50			86	87		
ABOB	MW	Atchafalaya Bay	Oyster Bayou	LA	29	13	0	91	8	0			86	87		
VBSP	MW	Vermillion Bay	Southwest Pass	LA	29	34	30	92	2	30			86	87		
JHJH	MW	J. Harbor Bayou	Joseph Harbor Bay	LA	29	37	45	92	45	45			86	87		

Table A.1 Site locations and years of sediment sample collections.

Site Code	Pgm	Main Location	Specific Location	State	Lat D	Lat M	Lat S	Long D	Long M	Long S	year1	year2	year3	year4	year5	year6
CLLC	MW	Calcasieu Lake	Lake Charles	LA	30	3	25	93	18	25					88	
CLSJ	MW	Calcasieu Lake	St. Johns Island	LA	29	49	50	93	23	0			86	87		
SLBB	MW	Sabine Lake	Blue Buck Point	TX	29	47	30	93	54	25			86	87		
ECSP	MW	E. Cote Blanche	South Point	LA	29	28	30	91	48	0			86			
GBHR	MW	Galveston Bay	Hanna Reef	TX	29	28	50	94	43	40			86	87		
GBSC	MW	Galveston Bay	Ship Channel	TX	29	42	16	94	59	35					88	
GBYC	MW	Galveston Bay	Yacht Club	TX	29	36	18	94	59	43			86	87		
GBTD	MW	Galveston Bay	Todd's Dump	TX	29	30	4	94	53	55			86	87		
GBCR	MW	Galveston Bay	Confederate Reef	TX	29	15	45	94	54	53			86	87		
GBOB	MW	Galveston Bay	Offatts Bayou	TX	29	17	5	94	50	9					88	
GAD	BS	Galveston Bay	Galveston Bay	TX	29	29		94	54		84	85	86			
BRFS	MW	Brazos River	Freeport Surfside	TX	28	55	15	95	20	20					88	
BRCL	MW	Brazos River	Cedar Lakes	TX	28	51	30	95	27	50						89
MBEM	MW	Matagorda Bay	East Matagorda	TX	28	42	40	95	53	0			86	87		
MBDI	MW	Matagorda Bay	Dog Island	TX	28	38	17	96	0	9					88	
MBCB	MW	Matagorda Bay	Carancahua Bay	TX	28	39	48	96	23	11					88	
MBTP	MW	Matagorda Bay	Tres Palacios Bay	TX	28	39	30	96	13	27			86	87		
MBGP	MW	Matagorda Bay	Gallinipper Point	TX	28	35	15	96	34	10			86	87		
MBLR	MW	Matagorda Bay	Lavaca River Mouth	TX	28	39	11	96	34	50			86	87		
ESSP	MW	Espiritu Santo	South Pass Reef	TX	28	17	51	96	37	7			86	87		
ESBD	MW	Espiritu Santo	Bill Days Reef	TX	28	24	51	96	26	16			86	87	88	
SAMP	MW	San Antonio Bay	Mosquito Point	TX	28	20	48	96	42	30			86	87		
SAPP	MW	San Antonio Bay	Panther Point Reef	TX	28	14	13	96	42	34			86	87		
SAB	BS	San Antonio Bay	San Antonio Bay	TX	28	13		96	46		84	85	86			
MBAR	MW	Mesquite Bay	Ayres Reef	TX	28	10	6	96	49	54			86	87		
CBCR	MW	Copano Bay	Copano Reef	TX	28	8	28	97	7	40			86	87		
ABHI	MW	Aransas Bay	Harbor Island	TX	27	50	20	97	4	31					88	
ABLR	MW	Aransas Bay	Long Reef	TX	28	3	53	96	57	48			86	87		
CCBH	MW	Corpus Christi Bay	Boat Harbor	TX	27	50	10	97	22	43					88	
CCIC	MW	Corpus Christi Bay	Ingleside Cove	TX	27	50	17	97	14	17			86	87		
CCNB	MW	Corpus Christi Bay	Neuces Bay	TX	27	51	10	97	21	33			86	87		
CCB	BS	Corpus Christi Bay	Corpus Christi Bay	TX	27	50		97	17		84	85	86			

Table A.1 Site locations and years of sediment sample collections.

Site Code	Pgm	Main Location	Specific Location	State	Lat D	Lat M	Lat S	Long D	Long M	Long S	year1	year2	year3	year4	year5	year6
LMAC	MW	Laguna Madre	Arroyo Colorado	TX	26	16	48	97	17	18						
LMSB	MW	Laguna Madre	South Bay	TX	26	2	46	97	10	29						89*
LMPI	MW	Laguna Madre	Port Isabel	TX	26	4	37	97	12	3			86	87		
LLM	BS	Laguna Madre	Lower Laguna Madre	TX	26	6		97	15						88	
IBNJ	MW	Imperial Beach	North Jetty	CA	32	36	0	117	10	0	84	85	86			
SDF	BS	San Diego Bay	Outside San Diego Bay	CA	32	39		117	11				86	87*		
SDCB	MW	San Diego Bay	Coronado Bridge	CA	32	40	52	117	9	25	84	85				
SDHI	MW	San Diego Bay	Harbor Island	CA	32	43	8	117	11	34						89
SDA	BS	San Diego Bay	South S. D. Harbor	CA	32	41		117	8				86	87		
NSD	BS	San Diego Bay	North S.D. Harbor		32	43		117	11		84	85	86			
PLLH	MW	Point Loma	Lighthouse	CA	32	37	0	117	15	42			86			
MBVB	MW	Mission Bay	Ventura Bridge	CA	32	46	4	117	14	28			86	87		
LJLJ	MW	La Jolla	Point La Jolla	CA	32	48	45	117	19	43			86	87*		
OSBJ	MW	Oceanside	Beach Jetty	CA	33	12	48	117	28	0			86*	87		
DAN	BS	Dana Point	Dana Point	CA	33	27		117	42				86	87		
NBWJ	MW	Newport Bch.	Wedge Jetty	CA	33	35	7	117	53	40	84	85	86			
ABWJ	MW	Anaheim Bay	West Jetty	CA	33	44	16	118	7	49			86	87		
SEA	BS	Seal Beach	Seal Beach	CA	33	44		118	8				86	87		
LNB	BS	Long Beach	Long Beach	CA	33	45		118	11		84					
SPB	BS	San Pedro Bay	San Pedro Outer Hrb.	CA	33	43		118	15			85	86			
SPC	BS	San Pedro Canyon	San Pedro Canyon	CA	33	42		118	16			85	86			
SPFP	MW	San Pedro Harbor	Fishing Peir	CA	33	42	37	118	16	36	84					
PVRP	MW	Palos Verdes	Royal Palms State Park	CA	33	42	39	118	21	0			86	87		
SCBR	MW	S. Catalina Island	Bird Rock	CA	33	26	33	118	29	12			86	87		
SMW	BS	Santa Monica Bay	west S.M. Bay	CA	33	57		118	33				86*	87*		
SMB	BS	Santa Monica Bay	east S. M. Bay	CA	33	53		118	26				86			
MDSJ	MW	Marina Del Ray	South Jetty	CA	33	59	29	118	31	58	84	85				
PDPD	MW	Point Dume	Point Dume	CA	33	59	54	118	46	56			86	87		
SCFP	MW	Santa Cruz Island	Fraser Point	CA	34	3	35	119	55	15			86	87		
SANM	MW	San Miguel Island	Tyler Bight	CA	34	1	41	120	25	10			86*	87*		
SBSB	MW	Point S. Barbara	Point Santa Barbara	CA	34	23	9	119	43	13					88*	
PCPC	MW	Point Conception	Point Conception	CA	34	26	34	120	26	0			86	87		

Table A.1 Site locations and years of sediment sample collections.

Site Code	Pgm	Main Location	Specific Location	State	Lat D	Lat M	Lat S	Long D	Long M	Long S	year1	year2	year3	year4	year5	year6
SLSL	MW	San Luis Ob. Bay	Point San Luis	CA	35	9	59	120	44	31			86	87*		
SSSS	MW	San Simeon Point	San Simeon Point	CA	35	38	12	121	11	42			86	87		
MOS	BS	Moss Landing	Moss Landing	CA	36	48		121	48				86			
PGLP	MW	Pacific Grove	Lovers Point	CA	36	37	52	121	52	34			86	87*		
MBSC	MW	Monterey Bay	Point Santa Cruz	CA	36	57	12	122	1	27			86	87*		
FIEL	MW	Farallon Island	East Landing	CA	37	41	47	122	59	55					88*	
MON	BS	Monterey Bay	Monterey Bay	CA	36	38		121	52			85	86			
SHS	BS	Southampton Shl.	Southampton Shoal	CA	37	53		122	24		84	85	86			
OAK	BS	Oakland Estuary	Oakland Estuary	CA	37	47		122	20		84					
HUN	BS	Hunters Point	Hunters Point	CA	37	42		122	22		84	85	86			
SFDB	MW	San Francisco Bay	Dumbarton Bridge	CA	37	31	36	122	9	38			86	87		
SFSM	MW	San Francisco Bay	San Mateo Bridge	CA	37	35	30	122	13	32			86	87		
SFEM	MW	San Francisco Bay	Emeryville	CA	37	49	41	122	20	19			86	87		
PAB	BS	San Pablo Bay	San Pablo Bay	CA	38	3		122	18		84	85	86			
SPSM	MW	San Pablo Bay	Semple Point	CA	38	4	10	122	13	13			86	87		
SPSP	MW	San Pablo Bay	Point St. Pedro	CA	38	1	35	122	25	36			86	87		
TBSR	MW	Tomales Bay	Spenger's Residence	CA	38	9	2	122	54	0			86	87		
BBBE	MW	Bodega Bay	Bodega Bay Entrance	CA	38	17	30	123	2	53			86	87*		
BOD	BS	Bodega Bay	Bodega Bay	CA	38	18		123	2		84	85	86			
PALH	MW	Point Arena	Lighthouse	CA	38	57	11	123	44	18			86*	87*		
PDSC	MW	Point Delgada	Shelter Cove	CA	40	2	19	124	4	50			86*	87*		
HMBJ	MW	Humboldt Bay	Jetty	CA	40	46	9	124	14	15			86	87*		
HMB	BS	Humboldt Bay	Humboldt Bay	CA	40	48		124	10			85				
KRFR	MW	Klamath River	Flint Rock Head	CA	41	31	38	124	4	47						89*
SGSG	MW	Point St. George	Point St. George	OR	41	43	16	124	13	56			86*	87*		
COO	BS	Coos Bay	Coos Bay	OR	43	23		124	13		84	85	86			
CBCH	MW	Coos Bay	Coos Head	OR	43	22	10	124	18	48			86	87		
CBRP	MW	Coos Bay	Russell Point	OR	43	25	45	124	13	2			86	87		
YBOP	MW	Yaquina Bay	Oneatta Point	OR	44	34	47	124	0	47			86	87		
YHSS	MW	Yaquina Head	Sally's Slough	OR	44	36	50	124	0	57			86	87		
TBHP	MW	Tillamook Bay	Hobsonville Point	OR	45	30	58	123	55	35			86	87		

Table A.1 Site locations and years of sediment sample collections.

Site Code	Pgm	Main Location	Specific Location	State	Lat D	Lat M	Lat S	Long D	Long M	Long S	year1	year2	year3	year4	year5	year6
CRYB	MW	Columbia River	Young's Bay	OR	46	11	0	123	52	45			86	87		
YNB	BS	Young's Bay	Young's Bay	OR	46	10		123	50				86			
COL	BS	Columbia River	Columbia River Estuary	OR	46	13		123	55		84	85	86			
CRNJ	MW	Columbia River	North Jetty	WA	46	16	9	123	59	55						89
GHWJ	MW	Gray's Harbor	Westport Jetty	WA	46	52	33	124	4	52			86	87*		
JFNB	MW	S. Juan de Fuca	Neah Bay	WA	48	22	29	124	37	0			86	87		
SSBI	MW	South Puget Sound	Budd Inlet	WA	47	6	2	122	54	44			86	87		
NIS	BS	Nisqually Reach	Nisqually Reach	WA	47	7		122	41		84	85	86			
COM	BS	Commencement B.	Commencement Bay	WA	47	17		122	25		84	85	86			
CBBP	MW	Commencement B.	Brown's Point	WA	47	17	35	122	25	56			86	87		
PSSS	MW	Puget Sound	South Seattle	WA	47	31	33	122	24	16						89
EBFR	MW	Elliott Bay	Four-Mile Rock	WA	47	38	21	122	24	44			86	87*		
ELL	BS	Elliott Bay	Elliott Bay	WA	47	36		122	21		84	85	86			
SIWP	MW	Sinclair Inlet	Waterman Point	WA	47	33	3	122	37	37			86	87		
PSHC	MW	Puget Sound	Hood Canal	WA	47	50	19	122	38	54						89
WIPP	MW	Whidbey Island	Possession Point	WA	47	54	37	122	20	38			86	87		
PSEH	MW	Puget Sound	Everett Harbor	WA	47	58	26	122	14	13						89
PSPA	MW	Puget Sound	Port Angeles	WA	48	8	17	123	25	6						89
BBSM	MW	Bellingham Bay	Squalicum Marina Jetty	WA	48	44	46	122	30	43			86	87		
PRPR	MW	Point Roberts	Point Roberts	WA	48	56	28	123	0	22			86	87		
BDQ	BS	Boca de Quadra	Boca de Quadra	AK	55	17		130	33				86			
LUT	BS	Lutak Inlet	Lutak Inlet	AK	59	19		135	31		84		86			
SKA	BS	Skagway	Skagway	AK	59	27		135	20				86			
NAH	BS	Nahku Bay	Nahku Bay	AK	59	28		135	20		84					
UISB	MW	Unakwik Inlet	Siwash Bay	AK	60	57	21	147	39	27			86	87		
VAL	BS	Valdez	Valdez	AK	61	7		146	26				86			
PVMC	MW	Port Valdez	Mineral Creek Flats	AK	61	6	45	146	28	10			86	87		
KAM	BS	Kamishak Bay	Kamishak Bay	AK	59	12		153	38				86			
PTM	BS	Port Moller	Port Moller	AK	56	6		160	40				86			
DUT	BS	Dutch Harbor	Dutch Harbor	AK	53	54		166	30				86			
OLI	BS	Oliktok Point	Oliktok Point	AK	70	30		149	54			85	86			

Table A.1 Site locations and years of sediment sample collections.

Site Code	Pgm	Main Location	Specific Location	State	Lat D	Lat M	Lat S	Long D	Long M	Long S	year1	year2	year3	year4	year5	year6
END	BS	Prudhoe Bay	Prudhoe Bay	AK	70	21		147	58			85	86			
BPBP	MW	Barber's Point	Barber's Pt. Boat Basin	HI	21	19	30	158	7	27			86	87		
HHKL	MW	Honolulu Harbor	Keehi Lagoon	HI	21	18	9	157	53	18			86	87		
KAUI	MW	Kauai	Nawiliwili Harbor	HI	21	57	24	159	21	21					88*	

Table A.2.

Benthic Surveillance sampling years, station locations, sample numbers (as they appear in NS&T data base) and largest distance between stations. In cases where the largest distance was >10 km, stations have been excluded to diminish the effective site sizes. Data from those stations are in the NS&T data base but have not been used in this report.

Locations are listed in degrees (D), minutes (M) of latitude (Lat) West and longitude (Long) North. Excluded stations are so indicated. The column labeled "km" is the largest distance, to the nearest non-zero integer, between stations. If stations have been excluded, the distance in parentheses is the largest distance without exclusions.

Table A.2 Benthic Surveillance Sediment Stations.

SITE	Year	STATION	SAMPLEID	Lat D	Lat M	Long D	Long M	exclude	Km
APA	84	1	84APA1SED	29	37.8	84	58.1		4
APA	84	2	84APA2SED	29	38.3	84	58.5		
APA	84	3	84APA3SED	29	39.9	84	58.5		
APA	85	1	85APA1SED	29	37.8	84	58.1		
APA	85	2	85APA2SED	29	38.3	84	58.5		
APA	85	3	85APA3SED	29	39.9	84	58.5		
APA	86	1	86APA1SED	29	37.8	84	58.1		
APA	86	2	86APA2SED	29	38.3	84	58.5		
APA	86	3	86APA3SED	29	39.9	84	58.5		
BAL	86	BAH1	86BALBAH1SED	39	13.6	76	33		4
BAL	86	BAH2	86BALBAH2SED	39	14.7	76	33.8		
BAL	86	BAH3	86BALBAH3SED	39	15.5	76	34.7		
BAR	84	1	84BAR1SED	29	26.9	89	58.7	exclude	6(18)
BAR	84	2	84BAR2SED	29	20.5	89	56.7		
BAR	84	3	84BAR3SED	29	17.5	89	56		
BAR	85	1	85BAR1SED	29	26.9	89	58.7	exclude	
BAR	85	2	85BAR2SED	29	20.5	89	56.8		
BAR	85	3	85BAR3SED	29	17.2	89	56		
BDQ	86	A	86BDQASED	55	16.6	130	33		10
BDQ	86	B	86BDQBSED	55	18.4	130	31		
BDQ	86	C	86BDQCSED	55	13.5	130	35.4		
BOD	84	A	84BODASED	38	18.1	123	2.2		
BOD	84	B	84BODBSED	38	18.2	123	2.5		
BOD	84	C	84BODCSED	38	18.1	123	2.1		
BOD	85	A	85BODASED	38	18.2	123	2.1		
BOD	85	B	85BODBSED	38	18.3	123	1.8		
BOD	85	C	85BODCSED	38	18	123	2.4		
BOD	86	A	86BODASED	38	17.9	123	1.3		
BOD	86	B	86BODBSED	38	18.4	123	1.4		
BOD	86	C	86BODCSED	38	18.6	123	2.3		
BOS	84	BH1	84BOSBH1SED	42	20.9	70	58		4
BOS	84	BH2	84BOSBH2SED	42	19.8	70	58.2		
BOS	84	BH3	84BOSBH3SED	42	19.7	71	0.1		
BOS	85	BH2	85BOSBH2SED	42	19.8	70	58.2		
BOS	85	BH3	85BOSBH3SED	42	19.7	71	0.1		
BOS	85	BH4	85BOSBH4SED	42	20.7	70	58.9		
BOS	85	BH5	85BOSBH5SED	42	20.5	71	0.2		
BOS	86	BH1	86BOSBH1SED	42	20.9	70	58		
BOS	86	BH2	86BOSBH2SED	42	19.8	70	58.2		
BOS	86	BH3	86BOSBH3SED	42	19.7	71	0.1		

Table A.2 Benthic Surveillance Sediment Stations.

SITE	Year	STATION	SAMPLEID	LATD	LATM	LONGD	LONGM	exclude	km
BUZ	84	BB1	84BUZBB1SED	41	36.6	70	45.2	exclude	7(19)
BUZ	84	BB2	84BUZBB2SED	41	33.3	70	41.4	exclude	
BUZ	84	BB3	84BUZBB3SED	41	32.5	70	47.8		
BUZ	84	BB4	84BUZBB4SED	41	33.4	70	52.6		
BUZ	84	OP80	84BUZOP80SED	41	29.5	70	53.9	exclude	
BUZ	85	BB1	85BUZBB1SED	41	36.6	70	45.2	exclude	
BUZ	85	BB2	85BUZBB2SED	41	33.3	70	41.4	exclude	
BUZ	85	BB3	85BUZBB3SED	41	32.5	70	47.8		
BUZ	85	BB4	85BUZBB4SED	41	33.4	70	52.6		
BUZ	86	BB1	86BUZBB1SED	41	36.6	70	45.2	exclude	
BUZ	86	BB3	86BUZBB3SED	41	32.5	70	47.8		
BUZ	86	BB4	86BUZBB4SED	41	33.4	70	52.6		
CCB	84	1	84CCB1SED	27	49.4	97	16.5		3
CCB	84	2	84CCB2SED	27	49.6	97	17.42		
CCB	84	3	84CCB3SED	27	49.8	97	18.2		
CCB	85	1	85CCB1SED	27	49.4	97	16.5		
CCB	85	2	85CCB2SED	27	49.6	97	17.4		
CCB	85	3	85CCB3SED	27	49.8	97	18.2		
CCB	86	1	86CCB1SED	27	49.5	97	16.5		
CCB	86	2	86CCB2SED	27	49.7	97	17.4		
CCB	86	3	86CCB3SED	27	49.8	97	18.1		
CHS	84	1	84CHS1SED	32	45.4	79	55.1		1
CHS	84	2	84CHS2SED	32	45.4	79	54.5		
CHS	84	3	84CHS3SED	32	45.5	79	54.2		
CHS	85	1	85CHS1SED	32	45.4	79	55		
CHS	85	2	85CHS2SED	32	45.4	79	54.5		
CHS	85	3	85CHS3SED	32	45.4	79	54.3		
CHS	86	1	86CHS1SED	32	45.3	79	55		
CHS	86	2	86CHS2SED	32	45.4	79	54.5		
CHS	86	3	86CHS3SED	32	45.5	79	54.3		
COL	84	A	84COLASED	46	13.1	123	55.8		3
COL	84	B	84COLBSED	46	13	123	55.6		
COL	84	C	84COLCSED	46	12	123	55.2		
COL	85	A	85COLASED	46	14.4	123	54.1		
COL	85	B	85COLBSED	46	13.2	123	55.6		
COL	85	C	85COLCSED	46	14.2	123	54.8		
COL	86	A	86COLASED	46	13.1	123	55.6		
COL	86	B	86COLBSED	46	13.3	123	55.4		
COL	86	C	86COLCSED	46	14.4	123	54.2		

Table A.2 Benthic Surveillance Sediment Stations.

SITE	Year	STATION	SAMPLEID	LATD	LATM	LONGD	LONGM	exclude	km
COM	84	A	84COMASED	47	16.7	122	25.7		1
COM	84	B	84COMBSED	47	16.8	122	25.3		
COM	84	C	84COMCSED	47	17.1	122	25.2		
COM	85	A	85COMASED	47	17.3	122	25.2		
COM	85	B	85COMBSED	47	17	122	25		
COM	85	C	85COMCSED	47	16.6	122	25.2		
COM	86	A	86COMASED	47	17	122	24.9		
COM	86	B	86COMBSED	47	16.7	122	25		
COM	86	C	86COMCSED	47	17.1	122	25		
COO	84	A	84COOASED	43	23.1	124	16.7		7
COO	84	B	84COOBSED	43	25.7	124	13.8		
COO	84	C	84COOCSED	43	21.9	124	12.5		
COO	85	A	85COOASED	43	25.6	124	13.7		
COO	85	B	85COOBSED	43	22.6	124	12.5		
COO	85	C	85COOCSED	43	22.2	124	12.5		
COO	86	A	86COOASED	43	21.9	124	12.5		
COO	86	B	86COOBSED	43	22.6	124	12.5		
COO	86	C	86COOCSED	43	25.6	124	13.6		
CSC	84	CB14	84CSCCB14SED	43	38	69	49.3	exclude	10(32)
CSC	84	CB15	84CSCCB15SED	43	41	69	56.7	exclude	
CSC	84	CB5	84CSCCB5SED	43	39.6	70	9.1		
CSC	85	CB1	85CSCCB1SED	43	47.1	70	3.4	exclude	
CSC	85	CB2	85CSCCB2SED	43	43.9	70	9		
CSC	85	CB3	85CSCCB3SED	43	42.8	70	5.9		
CSC	85	CB4	85CSCCB4SED	43	40.6	70	12.8		
CSC	85	CB5	85CSCCB5SED	43	39.6	70	9.1		
CSC	86	CB1	86CSCCB1SED	43	47.1	70	3.4	exclude	
CSC	86	CB2	86CSCCB2SED	43	43.9	70	9		
CSC	86	CB4	86CSCCB4SED	43	40.6	70	12.8		
DAN	84	A	84DANASED	33	26.9	117	42.5		2
DAN	84	B	84DANBSED	33	26.7	117	41.5		
DAN	84	C	84DANCSED	33	26.5	117	40.6		
DAN	85	A	85DANASED	33	27	117	42.4		
DAN	85	B	85DANBSED	33	27	117	42.6		
DAN	85	C	85DANCSED	33	27	117	42.2		
DAN	86	A	86DANASED	33	26.7	117	42.7		
DAN	86	B	86DANBSED	33	26.8	117	42.9		
DAN	86	C	86DANCSED	33	26.4	117	42		

Table A.2 Benthic Surveillance Sediment Stations.

SITE	Year	STATION	SAMPLEID	LATD	LATM	LONGD	LONGM	exclude	km
DEL	84	DB1	84DELDB1SED	39	3.9	75	13.3		23(59)
DEL	84	DB11	84DELDB11SED	38	50.9	75	4.5	exclude	
DEL	84	DB9	84DELDB9SED	38	57.6	75	4.5		
DEL	85	DB1	85DELDB1SED	39	3.9	75	13.3		
DEL	85	DB15	85DELDB15SED	38	52.8	75	10.3		
DEL	85	DB16	85DELDB16SED	38	55.1	75	2		
DEL	85	DB2	85DELDB2SED	39	19.6	75	23	exclude	
DEL	86	DB1	86DELDB1SED	39	3.9	75	13.3		
DEL	86	DB15	86DELDB15SED	38	52.8	75	10.3		
DEL	86	DB16	86DELDB16SED	38	55.1	75	2		
DUT	86	A	86DUTASED	53	53.6	166	29.1		2
DUT	86	B	86DUTBSED	53	54	166	29.9		
DUT	86	C	86DUTCSED	53	53.4	166	30.5		
ELI	84	ELI1	84ELIELI1SED	41	14.1	72	10.6		14(32)
ELI	84	ELI2	84ELIELI2SED	41	15.5	72	15.1		
ELI	84	ELI3	84ELIELI3SED	41	10.1	72	19.3		
ELI	85	ELI1	85ELIELI1SED	41	14.1	72	10.6		
ELI	85	ELI2	85ELIELI2SED	41	15.5	72	15.1		
ELI	85	ELI3	85ELIELI3SED	41	10.1	72	19.3		
ELI	85	ELI5	85ELIELI5SED	41	7.9	72	31.9	exclude	
ELI	86	ELI1	86ELIELI1SED	41	14.1	72	10.6		
ELI	86	ELI2	86ELIELI2SED	41	15.5	72	15.1		
ELI	86	ELI3	86ELIELI3SED	41	10.1	72	19.3		
ELL	84	A	84ELLASED	47	35.5	122	21.4		1
ELL	84	B	84ELLBSED	47	35.4	122	21.6		
ELL	84	C	84ELLCSED	47	35.5	122	20.8		
ELL	85	A	85ELLASED	47	35.5	122	21		
ELL	85	B	85ELLBSED	47	35.5	122	21.5		
ELL	85	C	85ELLCSED	47	35.7	122	21.1		
ELL	86	A	86ELLASED	47	35.4	122	21.8		
ELL	86	B	86ELLBSED	47	35.4	122	21.2		
ELL	86	C	86ELLCSED	47	35.5	122	20.8		
ELZ	86	ER1	86ELZER1SED	36	52.8	76	20.3		9
ELZ	86	ER2	86ELZER2SED	36	50.3	76	15.1		
ELZ	86	ER3	86ELZER3SED	36	48.6	76	17.4		
END	85	A	85ENDASED	70	21.3	147	58		1
END	85	B	85ENDBSED	70	21	147	58		
END	85	C	85ENDCSED	70	20.8	147	58.1		
END	86	A	86ENDASED	70	21.3	147	58		
END	86	B	86ENDBSED	70	21	147	58		
END	86	C	86ENDCSED	70	20.8	147	58.1		

Table A.2 Benthic Surveillance Sediment Stations.

SITE	Year	STATION	SAMPLEID	LATD	LATM	LONGD	LONGM	exclude	km
FRN	85	FB1	85FRNFB1SED	44	26.8	68	13.3		8(16)
FRN	85	FB2	85FRNFB2SED	44	26.5	68	10.4		
FRN	85	FB3	85FRNFB3SED	44	23	68	9.9		
FRN	85	FB4	85FRNFB4SED	44	19	68	8.1	exclude	
FRN	86	FB1	86FRNFB1SED	44	26.8	68	13.3		
FRN	86	FB2	86FRNFB2SED	44	26.5	68	10.4		
FRN	86	FB3	86FRNFB3SED	44	23	68	9.9		
GAD	84	1	84GAD1SED	29	28.3	94	56.2		5
GAD	84	2	84GAD2SED	29	29	94	54.3		
GAD	84	3	84GAD3SED	29	30.5	94	53.9		
GAD	85	1	85GAD1SED	29	28.3	94	56.3		
GAD	85	2	85GAD2SED	29	29	94	54.3		
GAD	85	3	85GAD3SED	29	30.7	94	54.7		
GAD	86	1	86GAD1SED	29	28.3	94	56.1		
GAD	86	2	86GAD2SED	29	29	94	54.4		
GAD	86	3	86GAD3SED	29	30.4	94	53.8		
GRB	85	GB1	85GRBGB1SED	39	31.7	74	21.7		4
GRB	85	GB2	85GRBGB2SED	39	31.6	74	23.5		
GRB	85	GB3	85GRBGB3SED	39	30.7	74	23.7		
GRB	85	GB4	85GRBGB4SED	39	32.7	74	24.3		
GRB	86	GB1	86GRBGB1SED	39	31.7	74	21.7		
GRB	86	GB2	86GRBGB2SED	39	31.6	74	23.5		
GRB	86	GB3	86GRBGB3SED	39	30.7	74	23.7		
HER	85	1	85HER1SED	30	11.1	89	27.9		2
HER	85	2	85HER2SED	30	11.2	89	28.9		
HER	85	3	85HER3SED	30	10.6	89	28.8		
HER	86	1	86HER1SED	30	11.1	89	27.9		
HER	86	2	86HER2SED	30	11.2	89	28.9		
HER	86	3	86HER3SED	30	10.6	89	28.8		
HMB	85	A	85HMBASED	40	46.8	124	11.8		9
HMB	85	B	85HMBBSED	40	48.7	124	9.8		
HMB	85	C	85HMBCSED	40	50.1	124	7.4		
HUN	84	A	84HUNASED	37	41.4	122	21.8		2
HUN	84	B	84HUNBSED	37	41.9	122	21.7		
HUN	84	C	84HUNCSED	37	43.1	122	21.4		
HUN	85	A	85HUNASED	37	41.7	122	21.6		
HUN	85	B	85HUNBSED	37	42.4	122	21.5		
HUN	85	C	85HUNCSED	37	41.6	122	21.4		
HUN	86	A	86HUNASED	37	41.3	122	21.9		
HUN	86	B	86HUNBSED	37	42	122	21.5		
HUN	86	C	86HUNCSED	37	41.7	122	21.4		
KAM	86	A	86KAMASED	59	12.4	153	42.2		9
KAM	86	B	86KAMBSED	59	11.7	153	39.5		
KAM	86	C	86KAMCSED	59	10.4	153	33.6		

Table A.2 Benthic Surveillance Sediment Stations.

SITE	Year	STATION	SAMPLEID	LATD	LATM	LONGD	LONGM	exclude	km
LCB	84	CL1	84LCBCL1SED	37	9.1	76	10.6		18
LCB	84	CL2	84LCBCL2SED	37	14.3	76	4.2		
LCB	84	CL3	84LCBCL3SED	37	19	76	11.1		
LCB	85	CL1	85LCBCL1SED	37	9.1	76	10.6		
LCB	85	CL2	85LCBCL2SED	37	14.3	76	4.2		
LCB	85	CL3	85LCBCL3SED	37	19	76	11.1		
LCB	86	CL1	86LCBCL1SED	37	9.1	76	10.6		
LCB	86	CL2	86LCBCL2SED	37	14.3	76	4.2		
LCB	86	CL3	86LCBCL3SED	37	19	76	11.1		
LLM	84	1	84LLM1SED	26	5.1	97	14.8		7
LLM	84	2	84LLM2SED	26	6.4	97	15.4		
LLM	84	3	84LLM3SED	26	8.5	97	15.9		
LLM	85	1	85LLM1SED	26	5.1	97	14.8		
LLM	85	2	85LLM2SED	26	6.4	97	15.4		
LLM	85	3	85LLM3SED	26	8.5	97	15.9		
LLM	86	1	86LLM1SED	26	5.1	97	14.8		
LLM	86	2	86LLM2SED	26	6.4	97	15.4		
LLM	86	3	86LLM3SED	26	8.5	97	15.9		
LNB	85	A	85LNBASED	33	44.8	118	10.5		1
LNB	85	B	85LNBBSED	33	44.5	118	10.7		
LNB	85	C	85LNBCSED	33	44.4	118	10.5		
LNB	86	A	86LNBASED	33	44.4	118	10.5		
LNB	86	B	86LNBBSED	33	44.6	118	10.6		
LNB	86	C	86LNBCSED	33	44.8	118	10.5		
LOT	84	1	84LOT1SED	26	45.7	82	9.3		13
LOT	84	2	84LOT2SED	26	49.8	82	6.3		
LOT	84	3	84LOT3SED	26	52.3	82	7.7		
LOT	85	1	85LOT1SED	26	45.7	82	9.3		
LOT	85	2	85LOT2SED	26	49.8	82	6.3		
LOT	85	3	85LOT3SED	26	52.3	82	7.7		
LOT	86	1	86LOT1SED	26	45.9	82	9.2		
LOT	86	2	86LOT2SED	26	49.9	82	6.2		
LOT	86	3	86LOT3SED	26	52.6	82	7.5		
LUT	84	A	84LUTASED	59	19.1	135	32.6		2
LUT	84	B	84LUTBSED	59	18.7	135	31.5		
LUT	84	C	84LUTCSED	59	18.4	135	30.9		
LUT	86	A	86LUTASED	59	18.9	135	31.8		
LUT	86	B	86LUTBSED	59	18.5	135	31.5		
LUT	86	C	86LUTCSED	59	18.3	135	31		
MAC	84	MB1	84MACMB1SED	44	38	67	20.1		5
MAC	85	MB1	85MACMB1SED	44	38	67	20.1		
MAC	85	MB2	85MACMB2SED	44	38.2	67	19.1		
MAC	85	MB3	85MACMB3SED	44	40.7	67	20.8		
MAC	85	MB4	85MACMB4SED	44	38.8	67	20.7		
MAC	86	MB1	86MACMB1SED	44	38	67	20.1		
MAC	86	MB3	86MACMB3SED	44	40.7	67	20.8		
MAC	86	MB4	86MACMB4SED	44	38.8	67	20.7		

Table A.2 Benthic Surveillance Sediment Stations.

SITE	Year	STATION	SAMPLEID	LATD	LATM	LONGD	LONGM	exclude	km
MCB	85	CM1	85MCBCM1SED	37	47.3	76	10.7	exclude	25(33)
MCB	85	CM2	85MCBCM2SED	37	52.2	76	7.8		
MCB	85	CM3	85MCBCM3SED	37	58.5	76	11.1		
MCB	85	CM4	85MCBCM4SED	38	5.1	76	13.1		
MCB	86	CM1	86MCBCM1SED	37	47.3	76	10.7	exclude	
MCB	86	CM2	86MCBCM2SED	37	52.2	76	7.8		
MCB	86	CM3	86MCBCM3SED	37	58.5	76	11.1		
MCB	86	CM4	86MCBCM4SED	38	5.1	76	13.1		
MER	84	MR2	84MERMR2SED	42	48.5	70	47.5		15
MER	84	MR3	84MERMR3SED	42	43.3	70	44		
MER	85	MR1	85MERMR1SED	42	50.9	70	47.7		
MER	85	MR2	85MERMR2SED	42	48.5	70	47.5		
MER	85	MR3	85MERMR3SED	42	43.3	70	44		
MOB	84	1	84MOB1SED	30	16.6	88	4.4		4
MOB	84	2	84MOB2SED	30	17.8	88	5.9		
MOB	84	3	84MOB3SED	30	19	88	4.4		
MOB	85	1	85MOB1SED	30	16.6	88	4.4		
MOB	85	2	85MOB2SED	30	17.9	88	5.9		
MOB	85	3	85MOB3SED	30	19	88	4.4		
MOB	86	1	86MOB1SED	30	16.5	88	4.4		
MOB	86	2	86MOB2SED	30	17.7	88	5.9		
MOB	86	3	86MOB3SED	30	19	88	4.4		
MON	85	A	85MONASED	36	37.9	121	52.1		1
MON	85	B	85MONBSED	36	37.6	121	52.3		
MON	85	C	85MONCSED	36	37.4	121	52.7		
MON	86	A	86MONASED	36	37.3	121	52.7		
MON	86	B	86MONBSED	36	37.3	121	52.3		
MON	86	C	86MONCSED	36	37.2	121	52.6		
MOS	86	A	86MOSASED	36	48.5	121	48		1
MOS	86	B	86MOSBSED	36	48.1	121	47.6		
MOS	86	C	86MOSCSED	36	48.4	121	48.4		
MRD	84	1	84MRD1SED	29	6.7	89	4.2		
MRD	84	2	84MRD2SED	29	4.8	89	3.6		
MRD	84	3	84MRD3SED	29	8.1	89	1.7		6
MRD	85	1	85MRD1SED	29	7.2	89	4.1		
MRD	85	2	85MRD2SED	29	5.5	89	4.1		
MRD	85	3	85MRD3SED	29	8.2	89	2.4		
MRD	86	1	86MRD1SED	29	7.2	89	4.2		
MRD	86	2	86MRD2SED	29	5.5	89	4.1		
MRD	86	3	86MRD3SED	29	8.2	89	2.4		

Table A.2 Benthic Surveillance Sediment Stations.

SITE	Year	STATION	SAMPLEID	LATD	LATM	LONGD	LONGM	exclude	km
NAH	84	A	84NAHASED	59	28.6	135	20.1		1
NAH	84	B	84NAHBSED	59	28.4	135	20.3		
NAH	84	C	84NAHCSED	59	28.2	135	20.4		
NAR	84	NB1	84NARNB1SED	41	39.5	71	19.3		13
NAR	84	NB2	84NARNB2SED	41	38.1	71	23.3		
NAR	84	NB3	84NARNB3SED	41	33.5	71	23.7		
NAR	84	NB4	84NARNB4SED	41	32.6	71	19.6		
NAR	85	NB1	85NARNB1SED	41	39.5	71	19.3		
NAR	85	NB2	85NARNB2SED	41	38.1	71	23.3		
NAR	85	NB3	85NARNB3SED	41	33.5	71	23.7		
NAR	85	NB4	85NARNB4SED	41	32.6	71	19.6		
NAR	86	NB1	86NARNB1SED	41	39.5	71	19.3		
NAR	86	NB2	86NARNB2SED	41	38.1	71	23.3		
NAR	86	NB3	86NARNB3SED	41	33.5	71	23.7		
NAR	86	NB4	86NARNB4SED	41	32.6	71	19.6		
NIS	84	A	84NISASED	47	7	122	41.7		1
NIS	84	B	84NISBSED	47	7.1	122	41.2		
NIS	84	C	84NISCSED	47	7.2	122	40.6		
NIS	85	A	85NISASED	47	6.9	122	40.9		
NIS	85	B	85NISBSED	47	6.8	122	41.6		
NIS	85	C	85NISCSED	47	6.5	122	42.2		
NIS	86	A	86NISASED	47	6.7	122	41.9		
NIS	86	B	86NISBSED	47	6.7	122	42.2		
NIS	86	C	86NISCSED	47	6.7	122	41.7		
NSD	86	A	86NSDASED	32	43.2	117	11.4		1
NSD	86	B	86NSDBSED	32	43.2	117	11.3		
NSD	86	C	86NSDCSED	32	43.2	117	11.4		
OAK	84	A	84OAKASED	37	47	122	20.2		1
OAK	84	B	84OAKBSED	37	47	122	20.3		
OAK	84	C	84OAKCSED	37	47	122	20.4		
OLI	85	A	85OLIASED	70	30.5	149	53.1		1
OLI	85	B	85OLIBSED	70	30.3	149	54.5		
OLI	85	C	85OLICSED	70	30.2	149	54.1		
OLI	86	A	86OLIASED	70	30.5	149	53.1		
OLI	86	B	86OLIBSED	70	30.3	149	54.5		
OLI	86	C	86OLICSED	70	30.2	149	54.1		

Table A.2 Benthic Surveillance Sediment Stations.

SITE	Year	STATION	SAMPLEID	LATD	LATM	LONGD	LONGM	exclude	km
PAB	84	A	84PABASED	38	3.1	122	16.8		3
PAB	84	B	84PABBSED	38	2.8	122	17.6		
PAB	84	C	84PABCSED	38	2.9	122	18.6		
PAB	85	A	85PABASED	38	3.2	122	16.8		
PAB	85	B	85PABBSED	38	3	122	17.5		
PAB	85	C	85PABCSED	38	2.8	122	18.4		
PAB	86	A	86PABASED	38	3.2	122	17		
PAB	86	B	86PABBSED	38	2.5	122	18.3		
PAB	86	C	86PABCSED	38	2.3	122	18.5		
PAM	84	1	84PAM1SED	35	13.9	76	33.6		5
PAM	84	2	84PAM2SED	35	13	76	30.8		
PAM	84	3	84PAM3SED	35	13.5	76	32.1		
PAM	85	1	85PAM1SED	35	13.9	76	33.6		
PAM	85	2	85PAM2SED	35	13	76	30.8		
PAM	85	3	85PAM3SED	35	13.5	76	32.1		
PAM	86	1	86PAM1SED	35	13.9	76	33.6		
PAM	86	2	86PAM2SED	35	13	76	31.5		
PAM	86	3	86PAM3SED	35	12.7	76	30.8		
PEN	85	1	85PEN1SED	30	22.4	87	14.6		10(21)
PEN	85	2	85PEN2SED	30	25.5	87	9.25		
PEN	85	3	85PEN3SED	30	33	87	9.5	exclude	
PEN	86	1	86PEN1SED	30	22.4	87	14.7		
PEN	86	2	86PEN2SED	30	25.4	87	9.29		
PEN	86	3	86PEN3SED	30	32.9	87	9.54	exclude	
PNB	85	PB1	85PNBPB1SED	44	24.4	68	53.3	exclude	10(32)
PNB	85	PB2	85PNBPB2SED	44	19.2	68	52	exclude	
PNB	85	PB3	85PNBPB3SED	44	12.7	69	0.7		
PNB	85	PB4	85PNBPB4SED	44	10	68	46.6	exclude	
PNB	85	PB5	85PNBPB5SED	44	7.7	68	58.4		
PNB	86	PB1	86PNBPB1SED	44	24.4	68	53.3	exclude	
PNB	86	PB3	86PNBPB3SED	44	12.7	69	0.7		
PNB	86	PB4	86PNBPB4SED	44	10	68	46.6	exclude	
PTM	86	A	86PTMASED	56	7.72	160	34.4		12
PTM	86	B	86PTMBSED	56	6.38	160	41		
PTM	86	C	86PTMCSED	56	5.71	160	45		
QUI	86	QB1	86QUIQB1SED	42	17.5	70	59.2		2
QUI	86	QB2	86QUIQB2SED	42	17.2	70	58		
QUI	86	QB3	86QUIQB3SED	42	18.4	70	58.4		

Table A.2 Benthic Surveillance Sediment Stations.

SITE	Year	STATION	SAMPLEID	LATD	LATM	LONGD	LONGM	exclude	km
RAR	84	RB1	84RARRB1SED	40	27.2	74	0.8		9(17)
RAR	84	RB2	84RARRB2SED	40	29.5	74	10.2	exclude	
RAR	84	RB3	84RARRB3SED	40	29	74	5.1		
RAR	84	RB5	84RARRB5SED	40	35.6	74	1.1	exclude	
RAR	85	RB1	85RARRB1SED	40	27.2	74	0.8		
RAR	85	RB2	85RARRB2SED	40	29.5	74	10.2	exclude	
RAR	85	RB3	85RARRB3SED	40	29	74	5.1		
RAR	85	RB4	85RARRB4SED	40	32.1	74	2.9		
RAR	85	RB5	85RARRB5SED	40	35.6	74	1.1	exclude	
RAR	86	RB1	86RARRB1SED	40	27.2	74	0.8		
RAR	86	RB2	86RARRB2SED	40	29.5	74	10.3	exclude	
RAR	86	RB3	86RARRB3SED	40	29	74	5.1		
RAR	86	RB4	86RARRB4SED	40	32.1	74	2.9		
ROU	84	1	84ROU1SED	30	17.7	88	35.8		3
ROU	84	2	84ROU2SED	30	18.3	88	36.8		
ROU	84	3	84ROU3SED	30	19.3	88	37		
ROU	85	1A	85ROU1ASED	30	17.7	88	35.8		
ROU	85	1B	85ROU1BSED	30	17.7	88	35.8		
ROU	85	2A	85ROU2ASED	30	18.3	88	36.8		
ROU	85	2B	85ROU2BSED	30	18.3	88	36.8		
ROU	85	3A	85ROU3ASED	30	19.3	88	37		
ROU	85	3B	85ROU3BSED	30	19.3	88	37		
SAB	84	1	84SAB1SED	28	14.2	96	46.2		3
SAB	84	2	84SAB2SED	28	13.2	96	46.7		
SAB	84	3	84SAB3SED	28	12.3	96	46.2		
SAB	85	1	85SAB1SED	28	14.2	96	46.2		
SAB	85	2	85SAB2SED	28	13.2	96	46.7		
SAB	85	3	85SAB3SED	28	12.3	96	46.2		
SAB	86	1	86SAB1SED	28	14.4	96	46.3		
SAB	86	2	86SAB2SED	28	13.2	96	46.6		
SAB	86	3	86SAB3SED	28	12.3	96	46.2		
SAL	84	SH1	84SALSH1SED	42	31	70	52.4		3
SAL	84	SH2	84SALSH2SED	42	31.5	70	51.6		
SAL	84	SH3	84SALSH3SED	42	32.3	70	51		
SAL	85	SH1	85SALSH1SED	42	31	70	52.4		
SAL	85	SH2	85SALSH2SED	42	31.5	70	51.6		
SAL	85	SH3	85SALSH3SED	42	32.3	70	51		
SAL	85	SH4	85SALSH4SED	42	31.3	70	52		
SAL	86	SH1	86SALSH1SED	42	31	70	52.4		
SAL	86	SH2	86SALSH2SED	42	31.5	70	51.6		
SAL	86	SH3	86SALSH3SED	42	32.3	70	51		

Table A.2 Benthic Surveillance Sediment Stations.

SITE	Year	STATION	SAMPLEID	LATD	LATM	LONGD	LONGM	exclude	km
SDA	84	A	84SDAASED	32	41	117	8.2		1
SDA	84	B	84SDABSED	32	41.1	117	8.3		
SDA	84	C	84SDACSED	32	41.3	117	8.4		
SDA	85	A	85SDAASED	32	41.3	117	8.5		
SDA	85	B	85SDABSED	32	41.2	117	8.3		
SDA	85	C	85SDACSED	32	41.3	117	8.3		
SDA	86	A	86SDAASED	32	41.1	117	8.4		
SDA	86	B	86SDABSED	32	41.1	117	8.2		
SDA	86	C	86SDACSED	32	40.9	117	8		
SDF	84	A	84SDFASED	32	38	117	12.2		1
SDF	84	B	84SDFBSED	32	39.2	117	11.5		
SDF	84	C	84SDFCSED	32	40.4	117	10.9		
SDF	85	A	85SDFASED	32	38.6	117	11.2		
SDF	85	B	85SDFBSED	32	37.8	117	11.9		
SDF	85	C	85SDFCSED	32	38.1	117	11.6		
SEA	84	A	84SEAASED	33	44.2	118	7.8	now LNB	1
SEA	84	B	84SEABSED	33	44.1	118	8	now LNB	
SEA	84	C	84SEACSED	33	44	118	8.1	now LNB	
SHS	84	A	84SHSASED	37	53.1	122	24.1		1
SHS	84	B	84SHSBSED	37	53.2	122	24.4		
SHS	84	C	84SHSCSED	37	53.5	122	24.8		
SHS	85	A	85SHSASED	37	53.2	122	23.8		
SHS	85	B	85SHSBSED	37	53.3	122	24.3		
SHS	85	C	85SHSCSED	37	53.6	122	24.8		
SHS	86	A	86SHSASED	37	53	122	24		
SHS	86	B	86SHSBSED	37	53.3	122	24		
SHS	86	C	86SHSCSED	37	53.3	122	24.7		
SJD	84	1	84SJD1SED	30	24	81	36.3		7
SJD	84	2	84SJD2SED	30	22.7	81	32.3		
SJD	84	3	84SJD3SED	30	22.5	81	37.2		
SJD	85	1	85SJD1SED	30	24	81	36.2		
SJD	85	2	85SJD2SED	30	22.6	81	32.5		
SJD	85	3	85SJD3SED	30	22	81	37		
SJD	86	1	86SJD1SED	30	24	81	36.3		
SJD	86	2	86SJD2SED	30	22.1	81	31.5		
SJD	86	3	86SJD3SED	30	23.4	81	38.2		
SKA	86	A	86SKAASED	59	26.6	135	19.7		2
SKA	86	B	86SKABSED	59	26.9	135	19.9		
SKA	86	C	86SKACSED	59	27.8	135	20.4		
SMB	84	A	84SMBASED	33	52.6	118	25.5		1
SMB	84	B	84SMBBSED	33	53.2	118	25.8		
SMB	84	C	84SMBCSED	33	53.6	118	26.2		
SMB	85	A	85SMBASED	33	53.3	118	25.8		
SMB	85	B	85SMBBSED	33	53.9	118	26.1		
SMB	85	C	85SMBCSED	33	53	118	25.5		

Table A.2 Benthic Surveillance Sediment Stations.

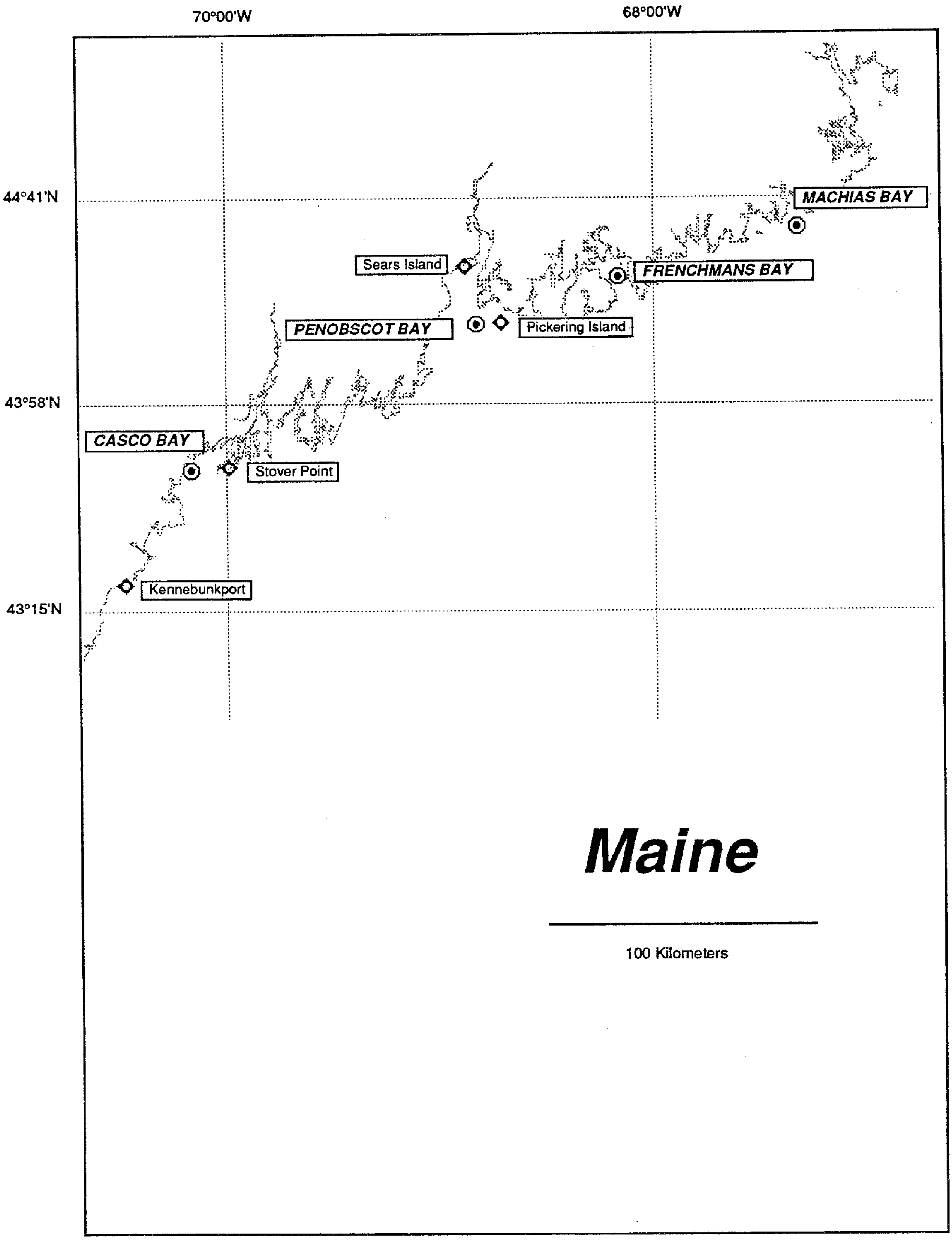
SITE	Year	STATION	SAMPLEID	LATD	LATM	LONGD	LONGM	exclude	km
SMW	86	A	86SMWASED	33	56.3	118	34.1		2
SMW	86	B	86SMWBSED	33	56.5	118	33.3		
SMW	86	C	86SMWCSED	33	57.1	118	32.9		
SMW	86	D	86SMWDSED	33	56.5	118	33.5		
SPB	85	A	85SPBASED	33	42.7	118	15		1
SPB	85	B	85SPBBSED	33	42.5	118	15.4		
SPB	85	C	85SPBCSED	33	42.8	118	15.4		
SPB	86	A	86SPBASED	33	42.5	118	15.5		
SPB	86	B	86SPBBSED	33	42.7	118	15.5		
SPB	86	C	86SPBCSED	33	42.7	118	15.8		
SPC	84	A	84SPCASED	33	42.1	118	15.4	now SPB	1
SPC	84	B	84SPCBSED	33	42	118	15.7	now SPB	
SPC	84	C	84SPCCSED	33	41.9	118	16	now SPB	
SSA	84	1	84SSA1SED	31	31.7	81	14.5		2
SSA	84	2	84SSA2SED	31	32.2	81	13.6		
SSA	84	3	84SSA3SED	31	32.7	81	14.8		
SSA	85	1	85SSA1SED	31	31.7	81	14.5		
SSA	85	2	85SSA2SED	31	32.2	81	13.7		
SSA	85	3	85SSA3SED	31	32.6	81	14.9		
SSA	86	1	86SSA1SED	31	31.7	81	14.5		
SSA	86	2	86SSA2SED	31	32.2	81	13.7		
SSA	86	3	86SSA3SED	31	32.6	81	14.9		
TAM	84	1	84TAM1SED	27	47	82	32.5		6
TAM	84	2	84TAM2SED	27	46.1	82	35.5		
TAM	84	3	84TAM3SED	27	47	82	35.9		
TAM	85	1	85TAM1SED	27	47	82	32.5		
TAM	85	2	85TAM2SED	27	46.1	82	35.5		
TAM	85	3	85TAM3SED	27	47	82	35.9		
UCB	85	CU11	85UCBCU11SED	38	51.6	76	26		19(40)
UCB	85	CU22	85UCBCU22SED	38	55.7	76	25		
UCB	85	CU33	85UCBCU33SED	39	1.4	76	22.4		
UCB	85	CU44	85UCBCU44SED	39	5.8	76	20	exclude	
UCB	85	CU55	85UCBCU55SED	39	12.2	76	16.6	exclude	
UCB	86	CU11	86UCBCU11SED	38	51.6	76	26		
UCB	86	CU22	86UCBCU22SED	38	55.7	76	25		
UCB	86	CU33	86UCBCU33SED	39	1.4	76	22.4		
UCB	86	CU44	86UCBCU44SED	39	6.1	76	20	exclude	
UCB	86	CU55	86UCBCU55SED	39	12.2	76	16.6	exclude	
VAL	86	A	86VALASED	61	6.7	146	16.2		20
VAL	86	B	86VALBSED	61	7.6	146	26.2		
VAL	86	C	86VALCSED	61	6.3	146	38.7		

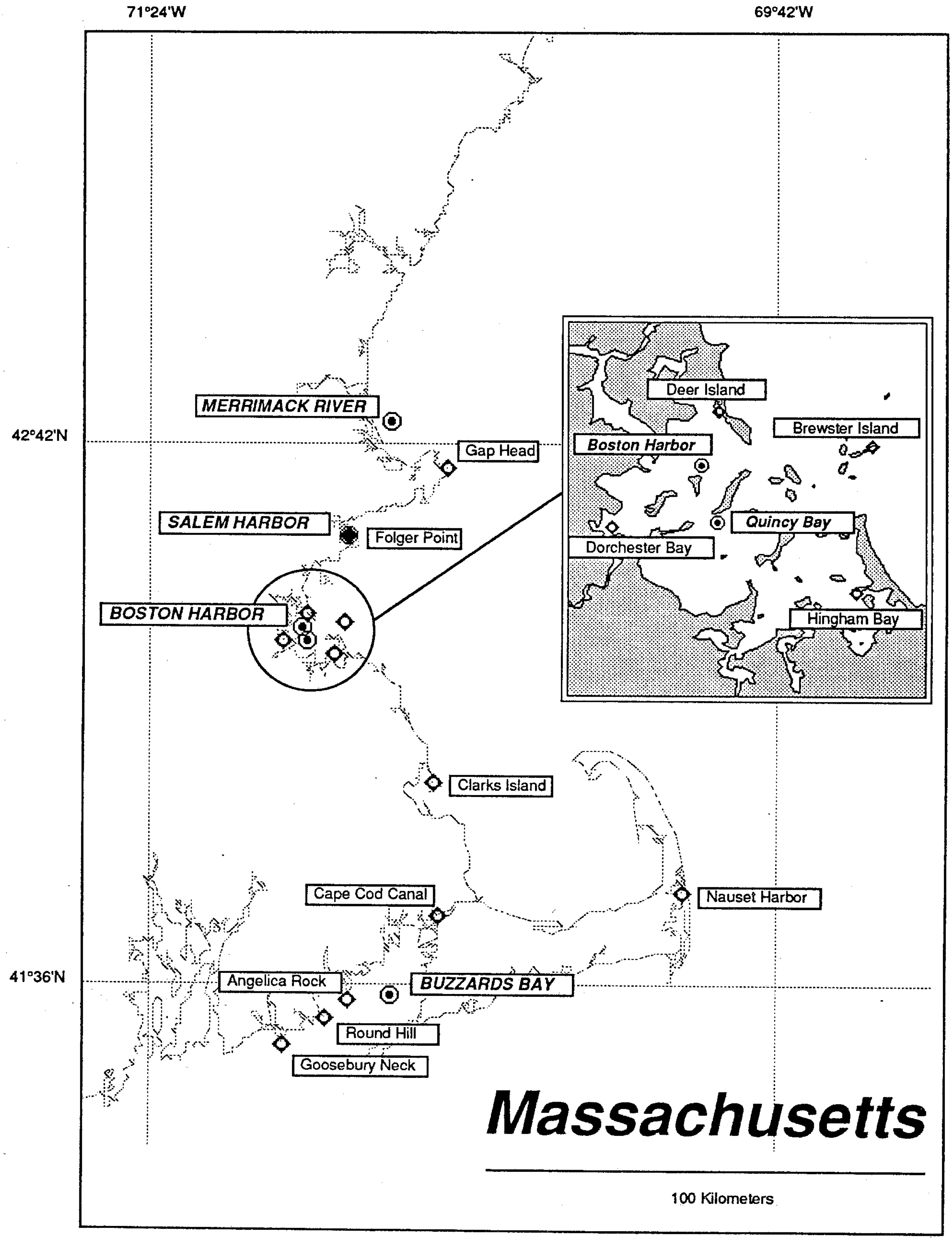
Table A.2 Benthic Surveillance Sediment Stations.

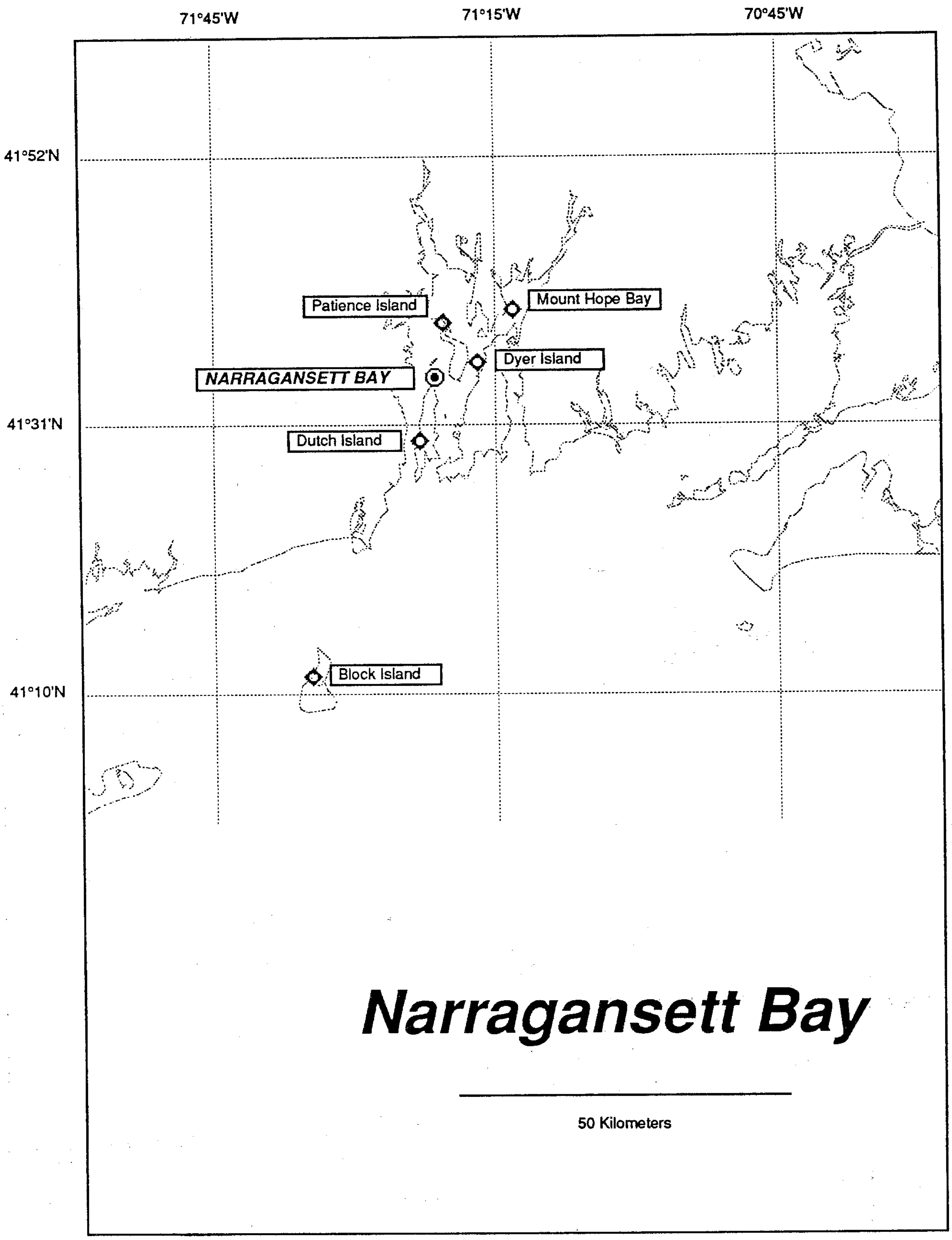
SITE	Year	STATION	SAMPLEID	LATD	LATM	LONGD	LONGM	exclude	km
WLI	84	WLI1	84WLIWLI1SED	41	0.7	73	28.1	exclude	14(35)
WLI	84	WLI2	84WLIWLI2SED	40	55.9	73	35.6		
WLI	85	WLI1	85WLIWLI1SED	41	0.7	73	22.1	exclude	
WLI	85	WLI2	85WLIWLI2SED	40	55.9	73	35.6		
WLI	85	WLI3	85WLIWLI3SED	40	55.1	73	41		
WLI	85	WLI4	85WLIWLI4SED	40	52.8	73	44.8		
WLI	86	WLI2	86WLIWLI2SED	40	55.9	73	35.6		
WLI	86	WLI4	86WLIWLI4SED	40	52.8	73	44.8		
WLI	86	WLI9	86WLIWLI9SED	41	0.7	73	22.1	exclude	
YNB	86	D	86YNBDSED	46	10.2	123	49.4		2
YNB	86	E	86YNBESED	46	10.2	123	50.1		
YNB	86	F	86YNBFSED	46	10.1	123	50.9		

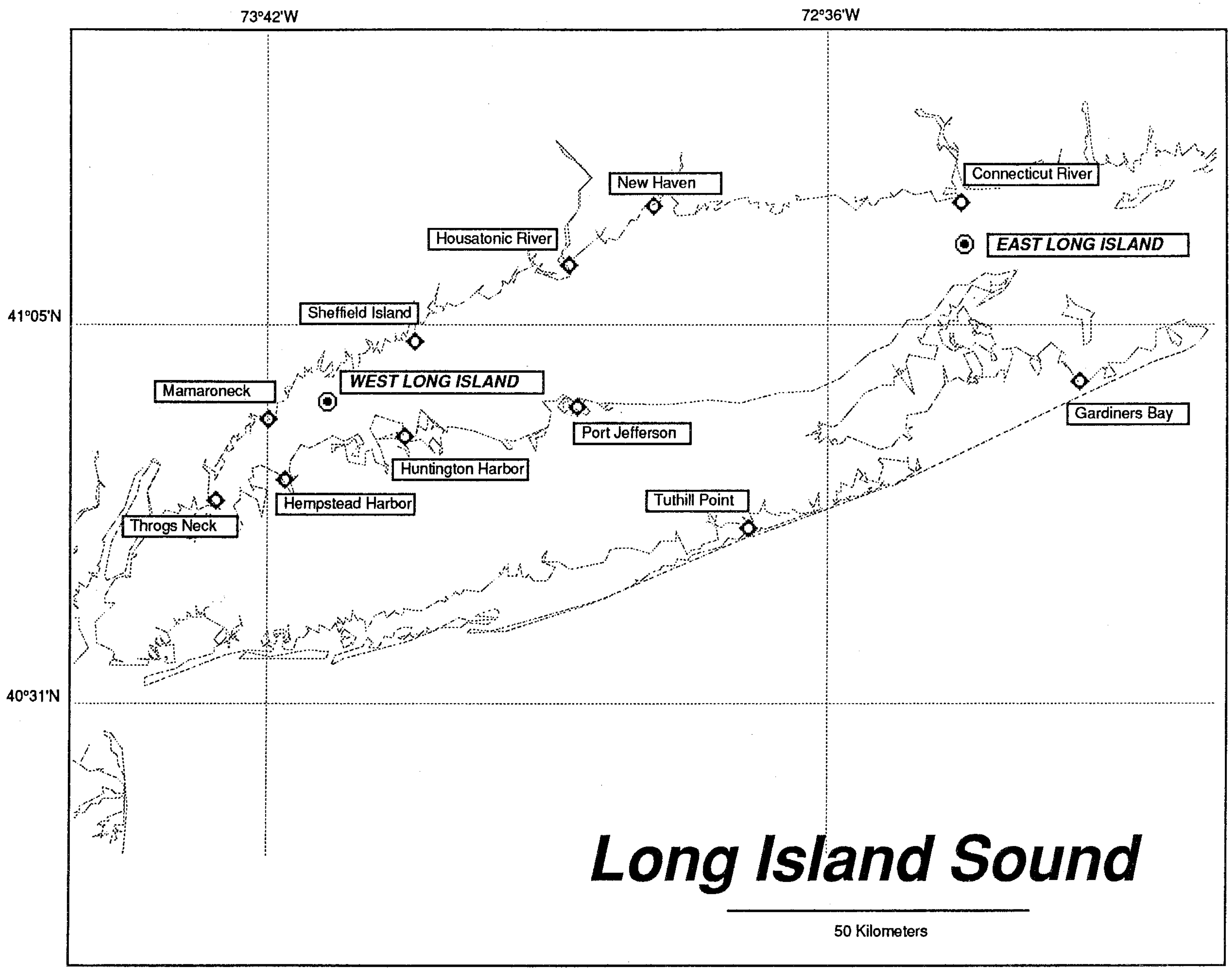
Figures.

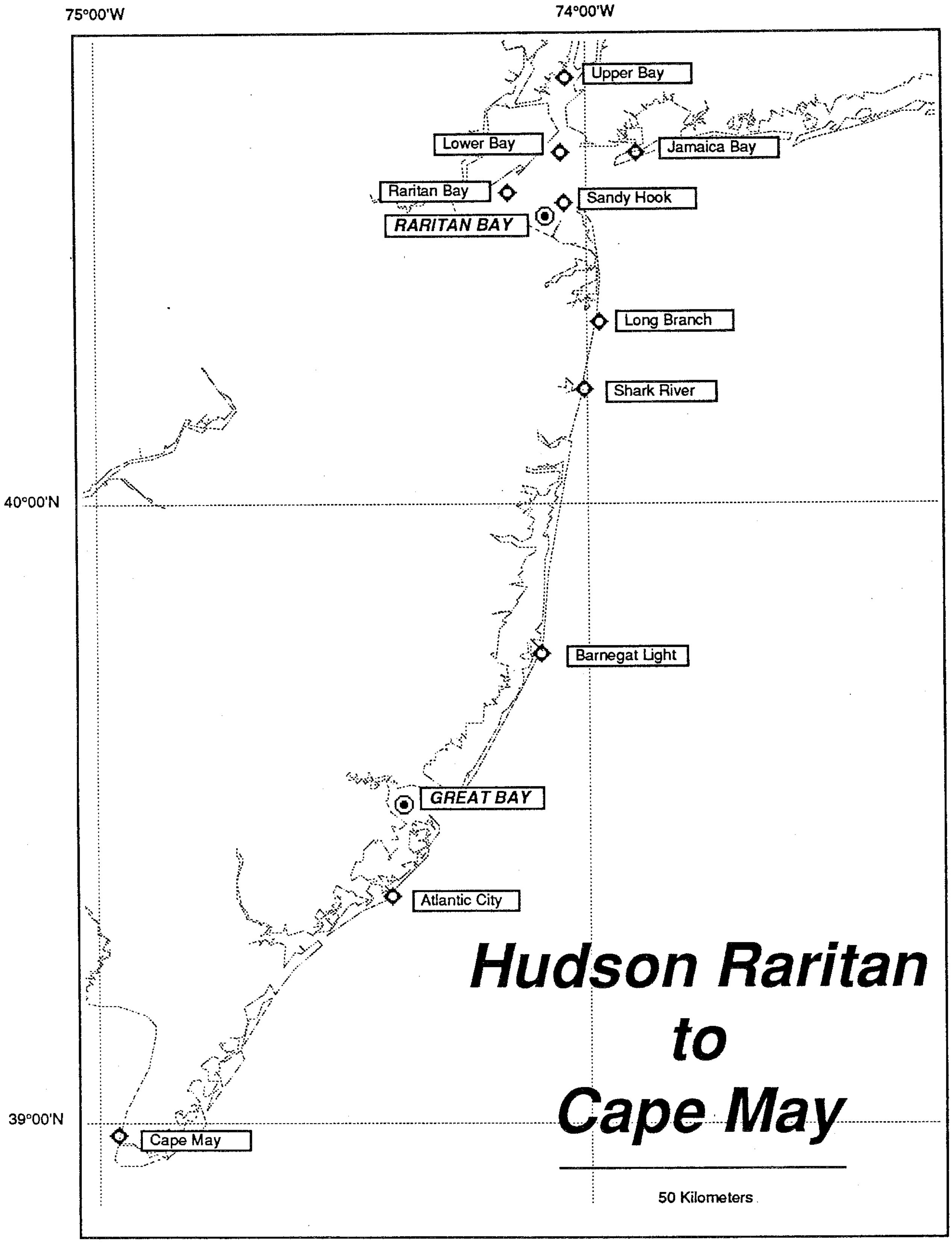
Maps of NS&T site locations. Benthic Surveillance Sites are shown in CAPITALIZED **BOLD** TYPE while the Mussel Watch sites are in plain type and designated by their specific location name.

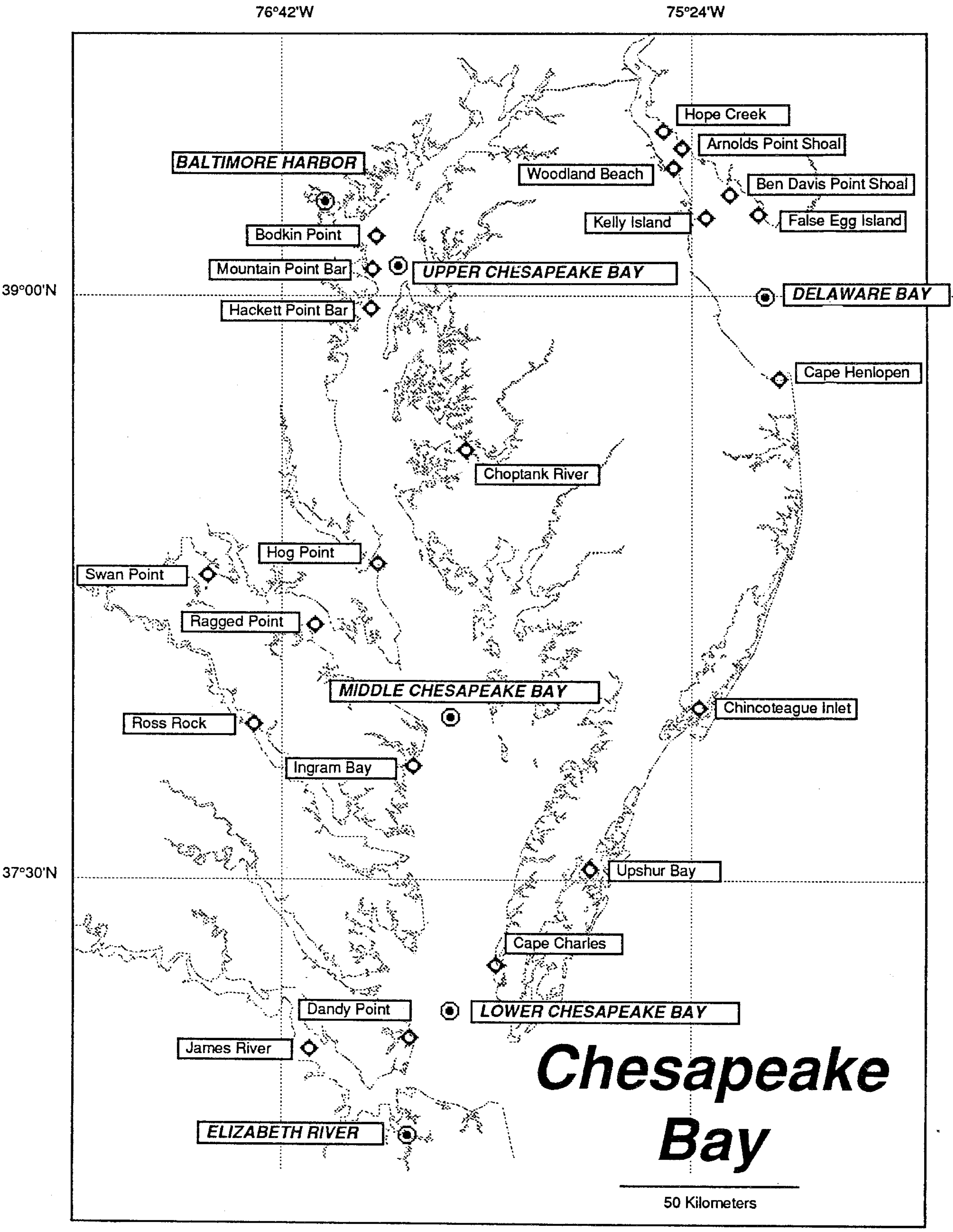

70°00'W
68°00'W
44°41'N
43°58'N
43°15'N
MACHIAS BAY
FRENCHMANS BAY
Sears Island
PENOBSCOT BAY
Pickering Island
CASCO BAY
Stover Point
Kennebunkport
Maine
100 Kilometers


71°24'W
69°42'W
42°42'N
41°36'N
MERRIMACK RIVER
Gap Head
SALEM HARBOR
Folger Point
BOSTON HARBOR
Deer Island
Brewster Island
Boston Harbor
Quincy Bay
Dorchester Bay
Hingham Bay
Clarks Island
Cape Cod Canal
Nauset Harbor
Angelica Rock
BUZZARDS BAY
Round Hill
Goosebury Neck
Massachusetts
100 Kilometers

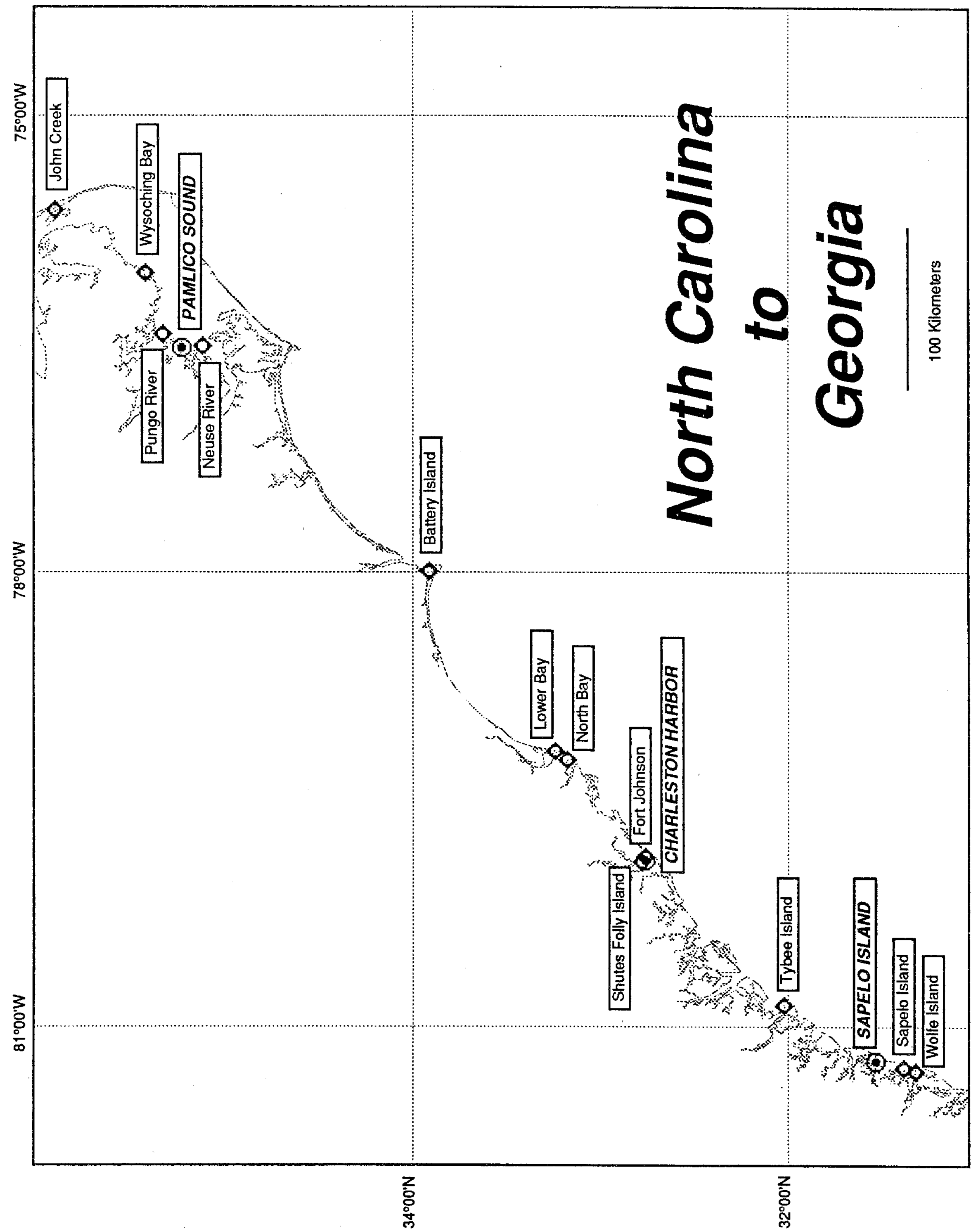

71°45'W
71°15'W
70°45'W
41°52'N
41°31'N
41°10'N
Patience Island
Mount Hope Bay
Dyer Island
NARRAGANSETT BAY
Dutch Island
Block Island
Narragansett Bay
50 Kilometers

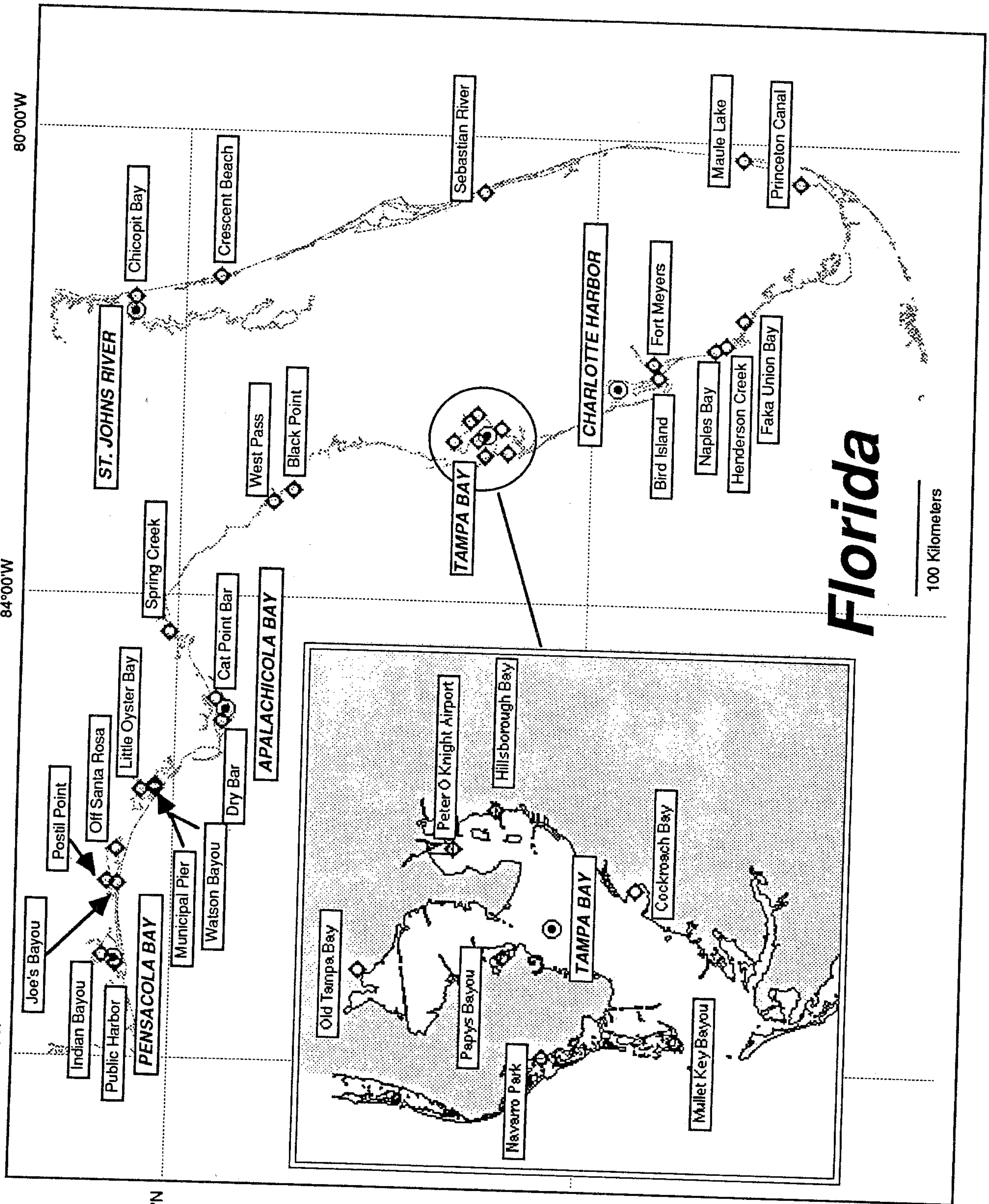

73°42'W
72°36'W
41°05'N
40°31'N
Connecticut River
New Haven
Housatonic River
EAST LONG ISLAND
Sheffield Island
WEST LONG ISLAND
Mamaroneck
Port Jefferson
Gardiners Bay
Huntington Harbor
Hempstead Harbor
Throgs Neck
Tuthill Point
Long Island Sound
50 Kilometers


75°00'W
74°00'W
Upper Bay
Lower Bay
Jamaica Bay
Raritan Bay
Sandy Hook
RARITAN BAY
Long Branch
Shark River
40°00'N
Barnegat Light
GREAT BAY
Atlantic City
Hudson Raritan
to
Cape May
39°00'N
Cape May
50 Kilometers

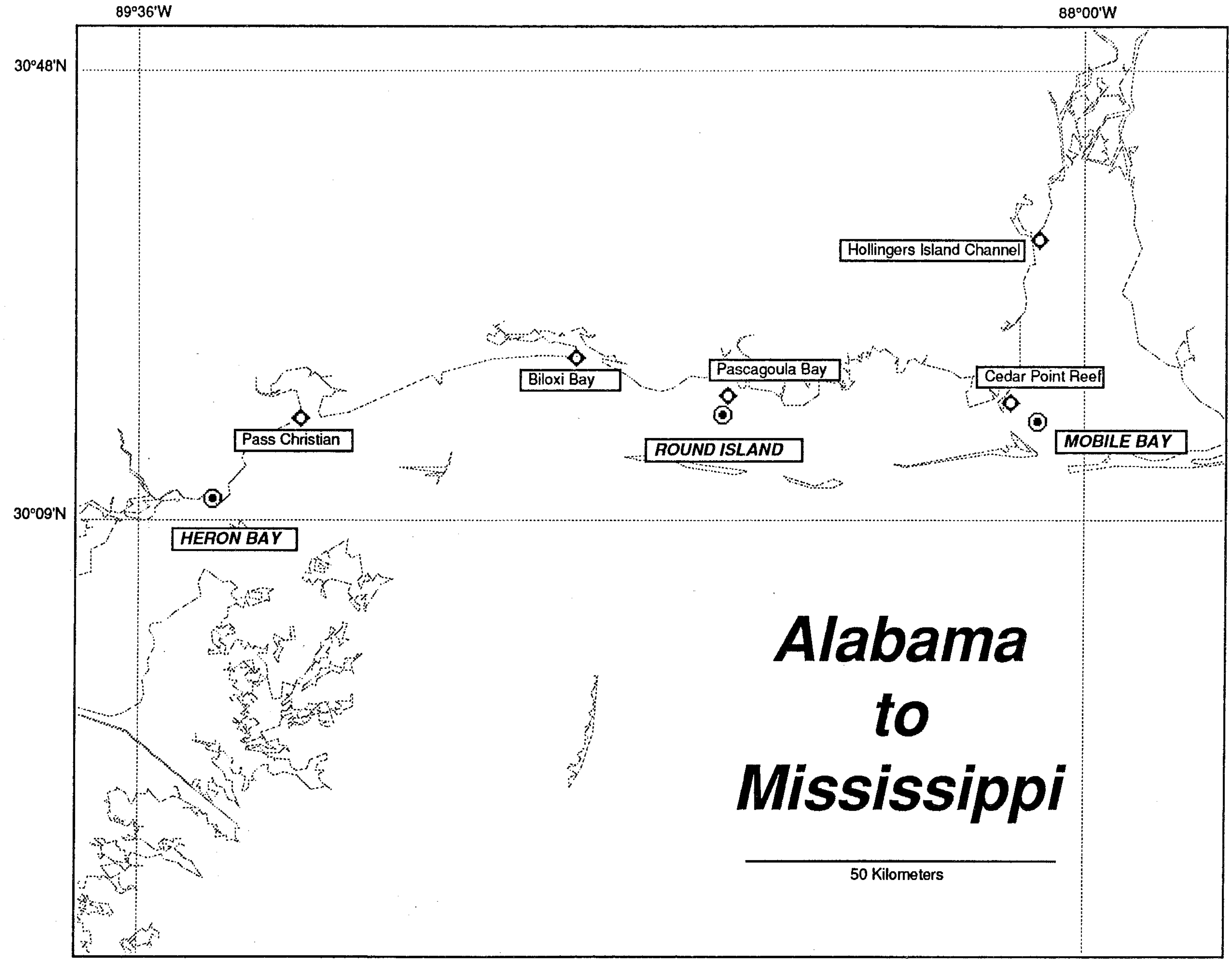


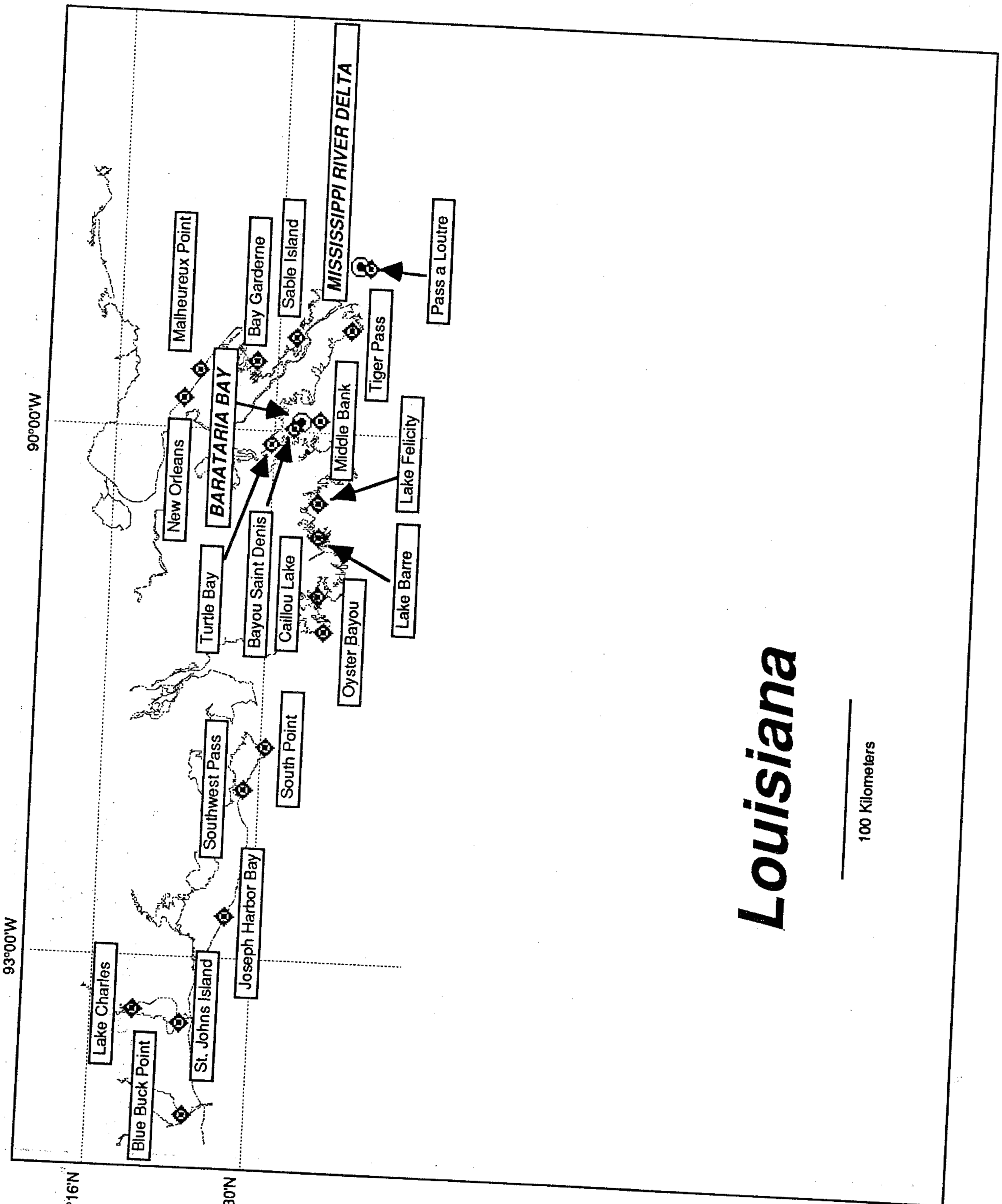
76°42'W
75°24'W
39°00'N
37°30'N
Hope Creek
Arnolds Point Shoal
BALTIMORE HARBOR
Woodland Beach
Ben Davis Point Shoal
Kelly Island
False Egg Island
Bodkin Point
Mountain Point Bar
UPPER CHESAPEAKE BAY
DELAWARE BAY
Hackett Point Bar
Cape Henlopen
Choptank River
Hog Point
Swan Point
Ragged Point
MIDDLE CHESAPEAKE BAY
Chincoteague Inlet
Ross Rock
Ingram Bay
Upshur Bay
Cape Charles
Dandy Point
LOWER CHESAPEAKE BAY
James River
Chesapeake Bay
ELIZABETH RIVER
50 Kilometers

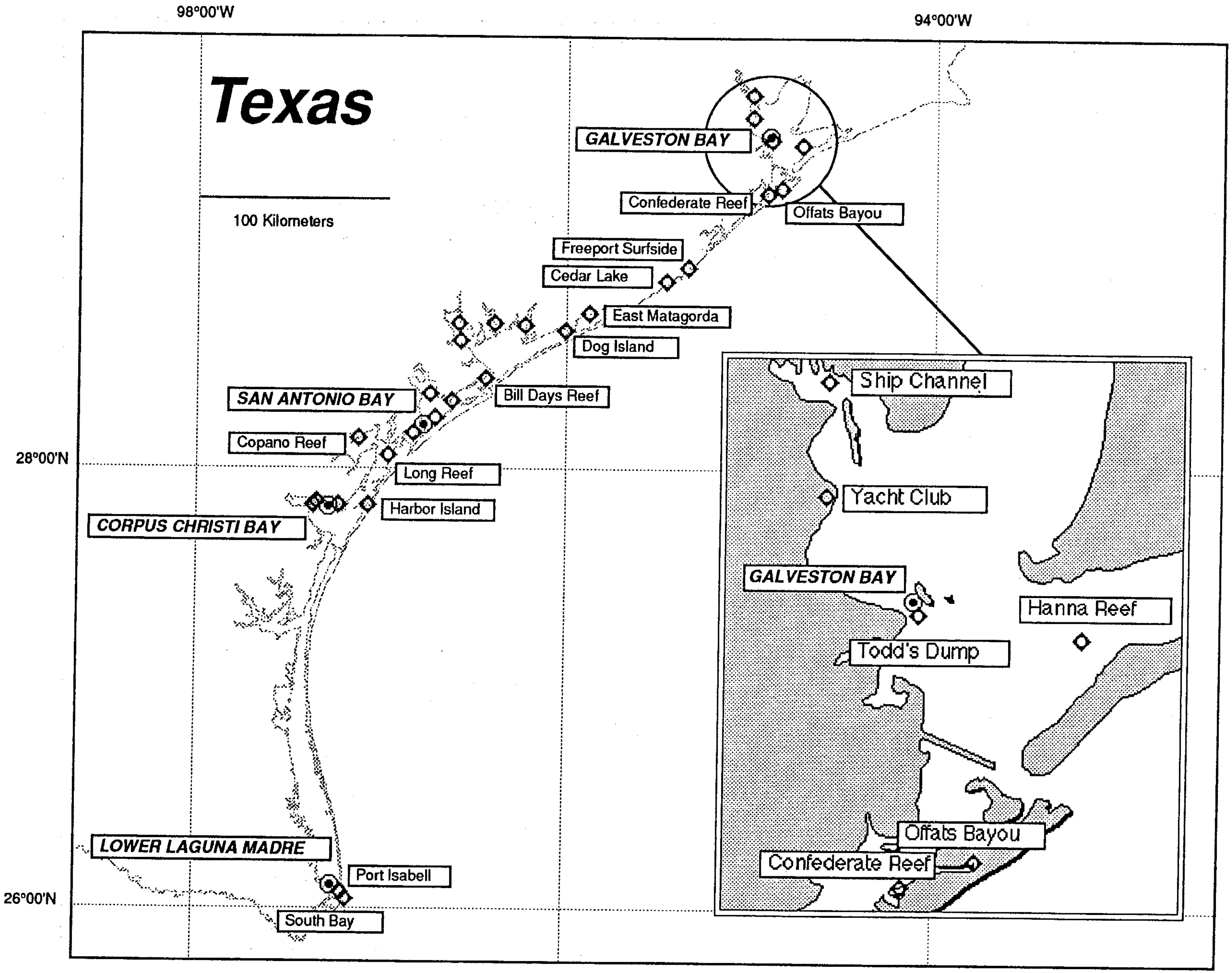

North Carolina
to
Georgia
100 Kilometers
75°00'W
78°00'W
81°00'W
34°00'N
32°00'N
John Creek
Wysoching Bay
PAMLICO SOUND
Pungo River
Neuse River
Battery Island
Lower Bay
North Bay
Fort Johnson
CHARLESTON HARBOR
Shutes Folly Island
Tybee Island
SAPELO ISLAND
Sapelo Island
Wolfe Island

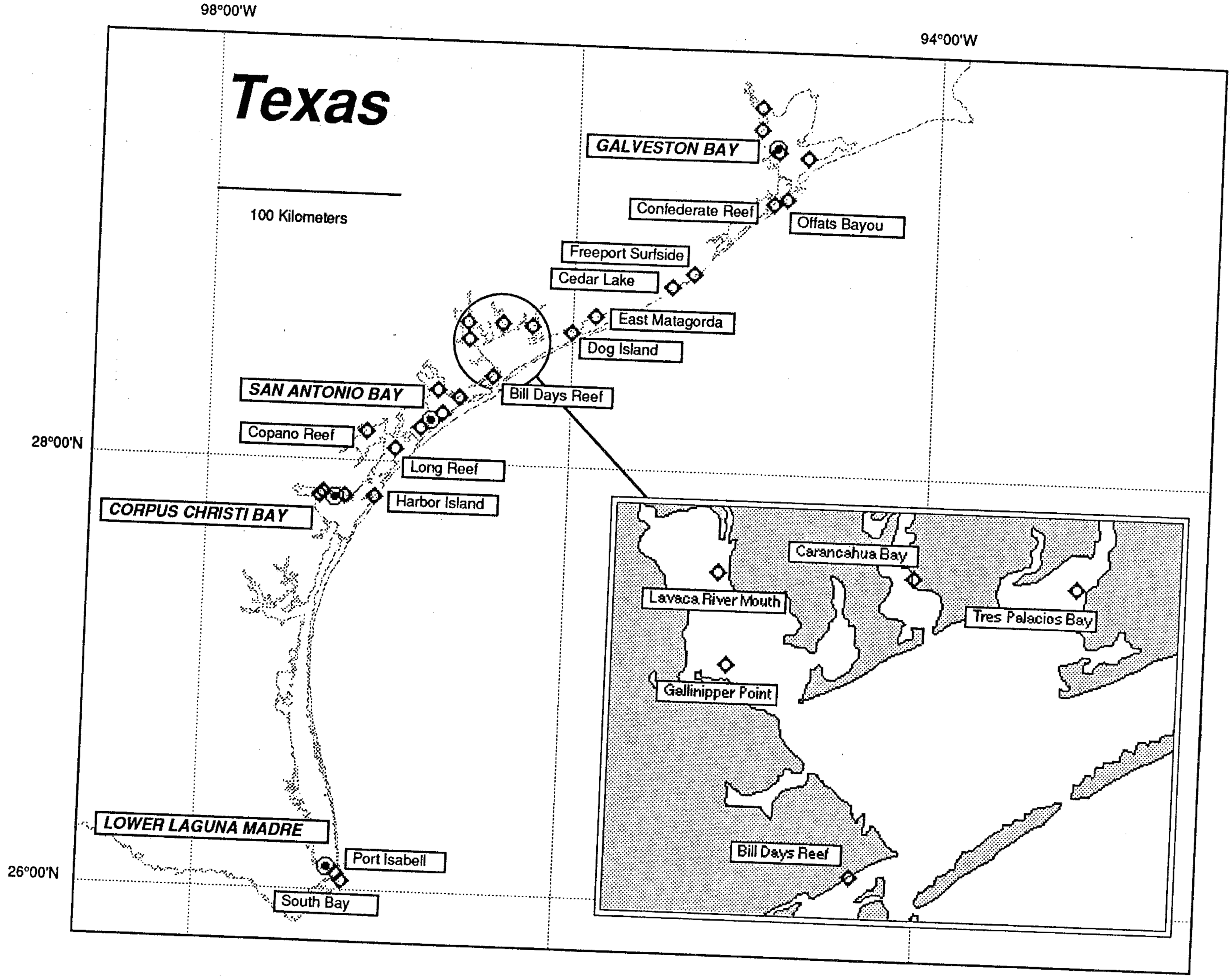


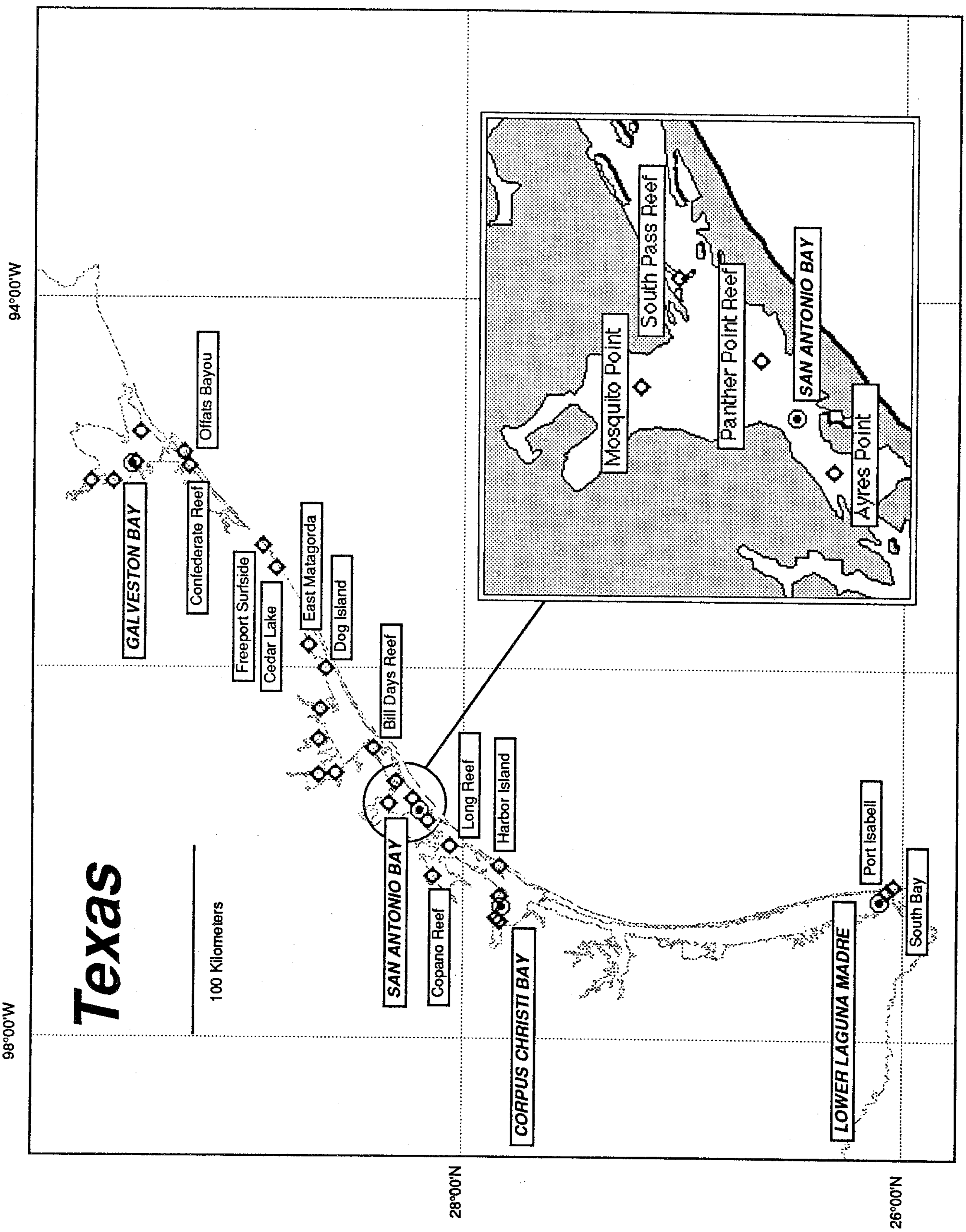
Florida
100 Kilometers
88°00'W
84°00'W
80°00'W
30°00'N
27°00'N
ST. JOHNS RIVER
Chicopit Bay
Crescent Beach
Sebastian River
Maule Lake
Princeton Canal
West Pass
Black Point
Spring Creek
Cat Point Bar
APALACHICOLA BAY
Dry Bar
Watson Bayou
Municipal Pier
Little Oyster Bay
Off Santa Rosa
Postil Point
Joe's Bayou
Indian Bayou
Public Harbor
PENSACOLA BAY
TAMPA BAY
CHARLOTTE HARBOR
Fort Meyers
Bird Island
Naples Bay
Henderson Creek
Faka Union Bay
Old Tampa Bay
Peter O Knight Airport
Hillsborough Bay
Papys Bayou
Cockroach Bay
Navarro Park
Mullet Key Bayou

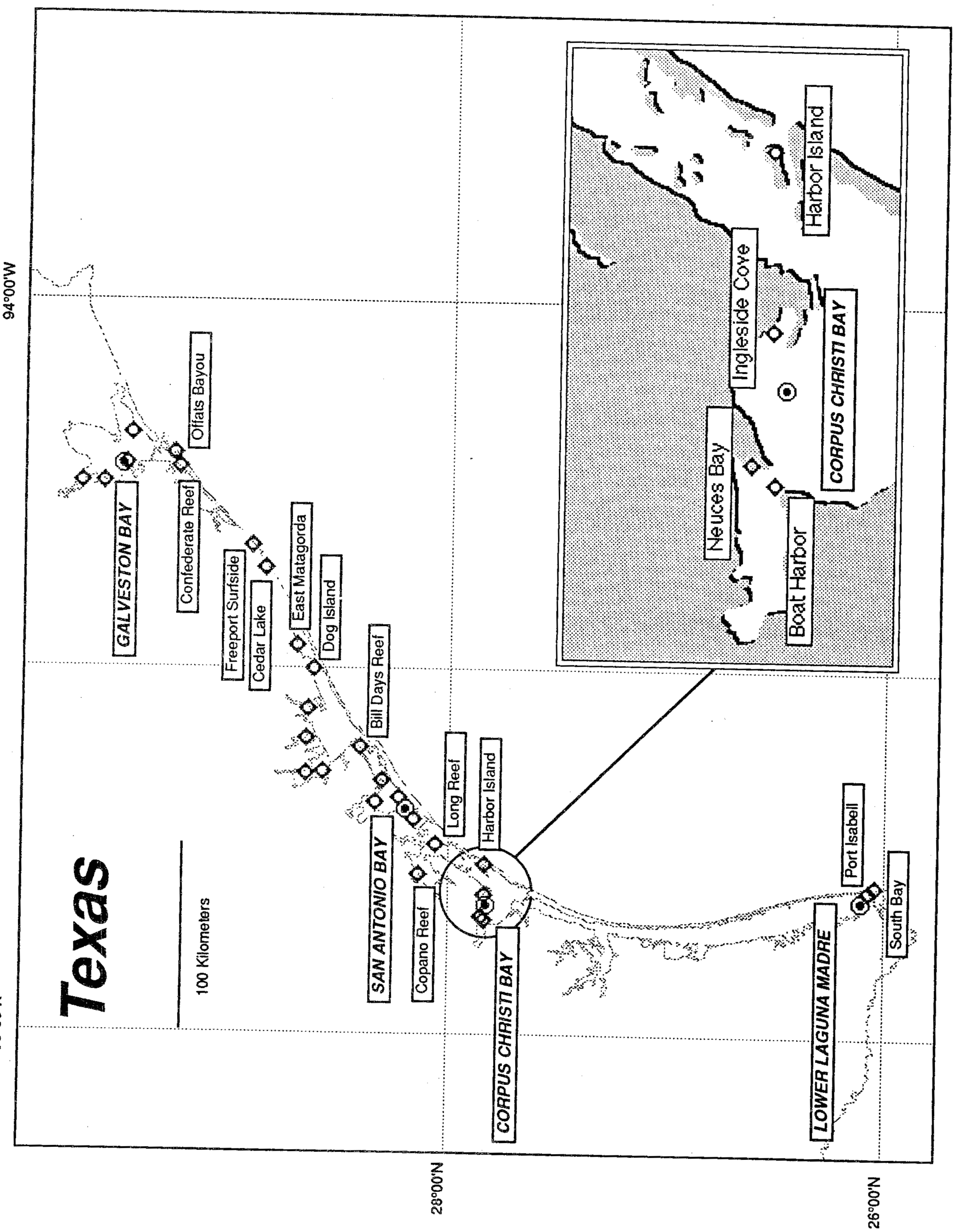

89°36'W
88°00'W
30°48'N
30°09'N
Hollingers Island Channel
Pascagoula Bay
Biloxi Bay
Cedar Point Reef
Pass Christian
ROUND ISLAND
MOBILE BAY
HERON BAY
Alabama to Mississippi
50 Kilometers


Louisiana
100 Kilometers
93°00'W
90°00'W
30°16'N
29°30'N
MISSISSIPPI RIVER DELTA
BARATARIA BAY
Malheureux Point
Bay Gardene
Sable Island
Pass a Loutre
Tiger Pass
Middle Bank
New Orleans
Lake Felicity
Turtle Bay
Bayou Saint Denis
Caillou Lake
Lake Barre
Oyster Bayou
South Point
Southwest Pass
Joseph Harbor Bay
St. Johns Island
Lake Charles
Blue Buck Point

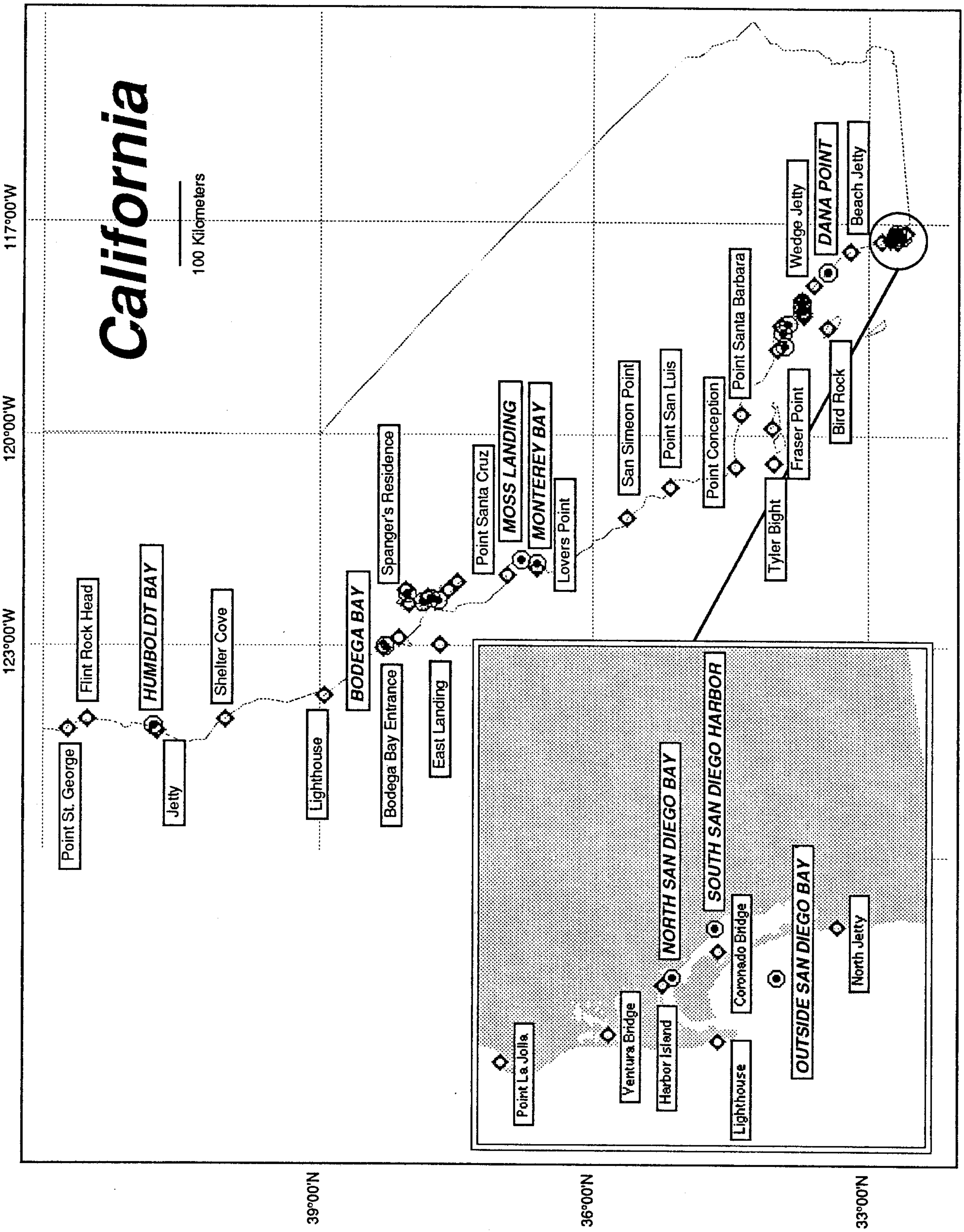

98°00'W
94°00'W
Texas
100 Kilometers
GALVESTON BAY
Confederate Reef
Offats Bayou
Freeport Surfside
Cedar Lake
East Matagorda
Dog Island
SAN ANTONIO BAY
Bill Days Reef
Copano Reef
28°00'N
Long Reef
Harbor Island
CORPUS CHRISTI BAY
LOWER LAGUNA MADRE
Port Isabell
26°00'N
South Bay
Ship Channel
Yacht Club
GALVESTON BAY
Hanna Reef
Todd's Dump
Offats Bayou
Confederate Reef

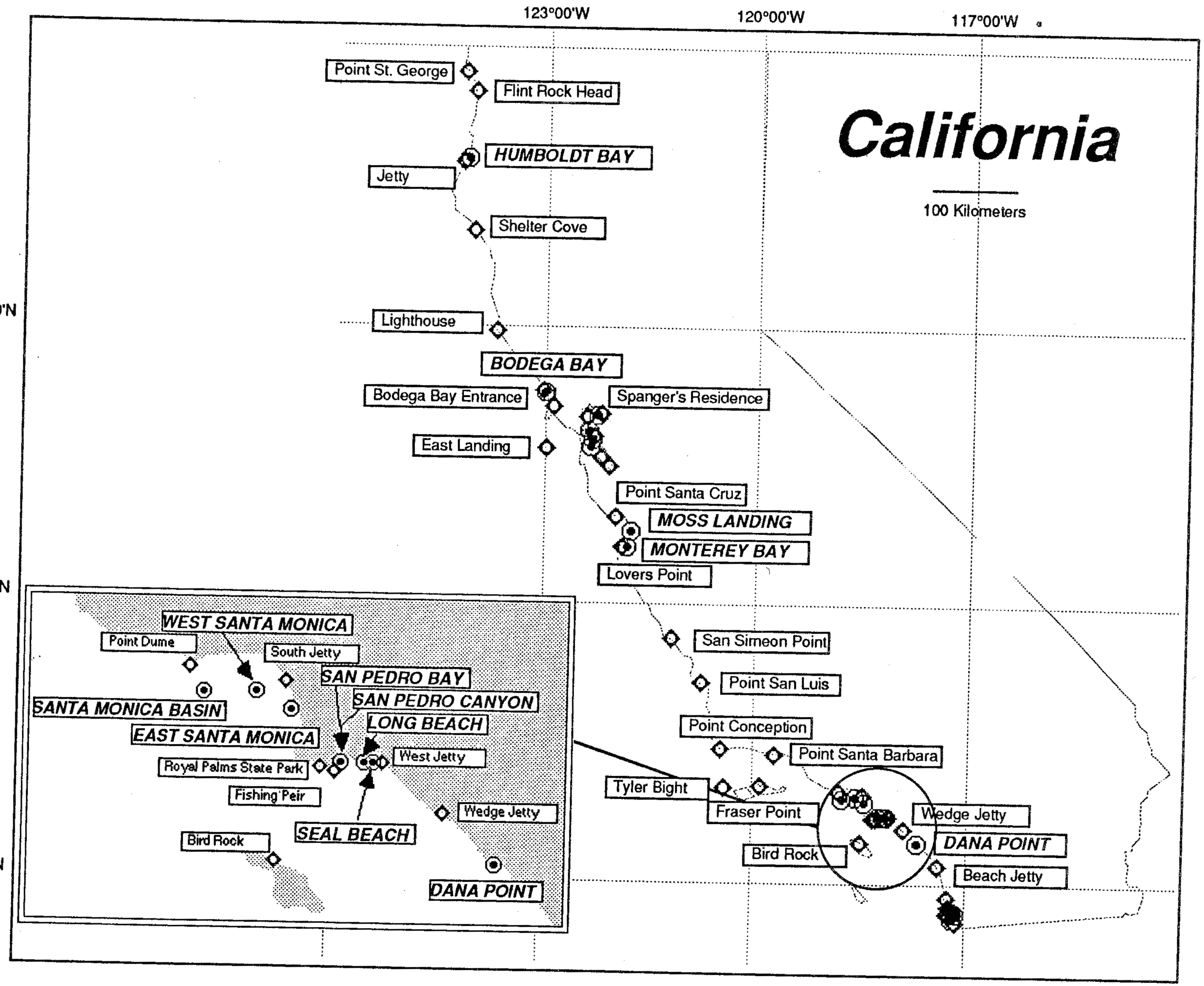

98°00'W
94°00'W
28°00'N
26°00'N
Texas
100 Kilometers
GALVESTON BAY
Confederate Reef
Offats Bayou
Freeport Surfside
Cedar Lake
East Matagorda
Dog Island
Bill Days Reef
SAN ANTONIO BAY
Copano Reef
Long Reef
CORPUS CHRISTI BAY
Harbor Island
LOWER LAGUNA MADRE
Port Isabell
South Bay
Carancahua Bay
Lavaca River Mouth
Tres Palacios Bay
Gallinipper Point
Bill Days Reef

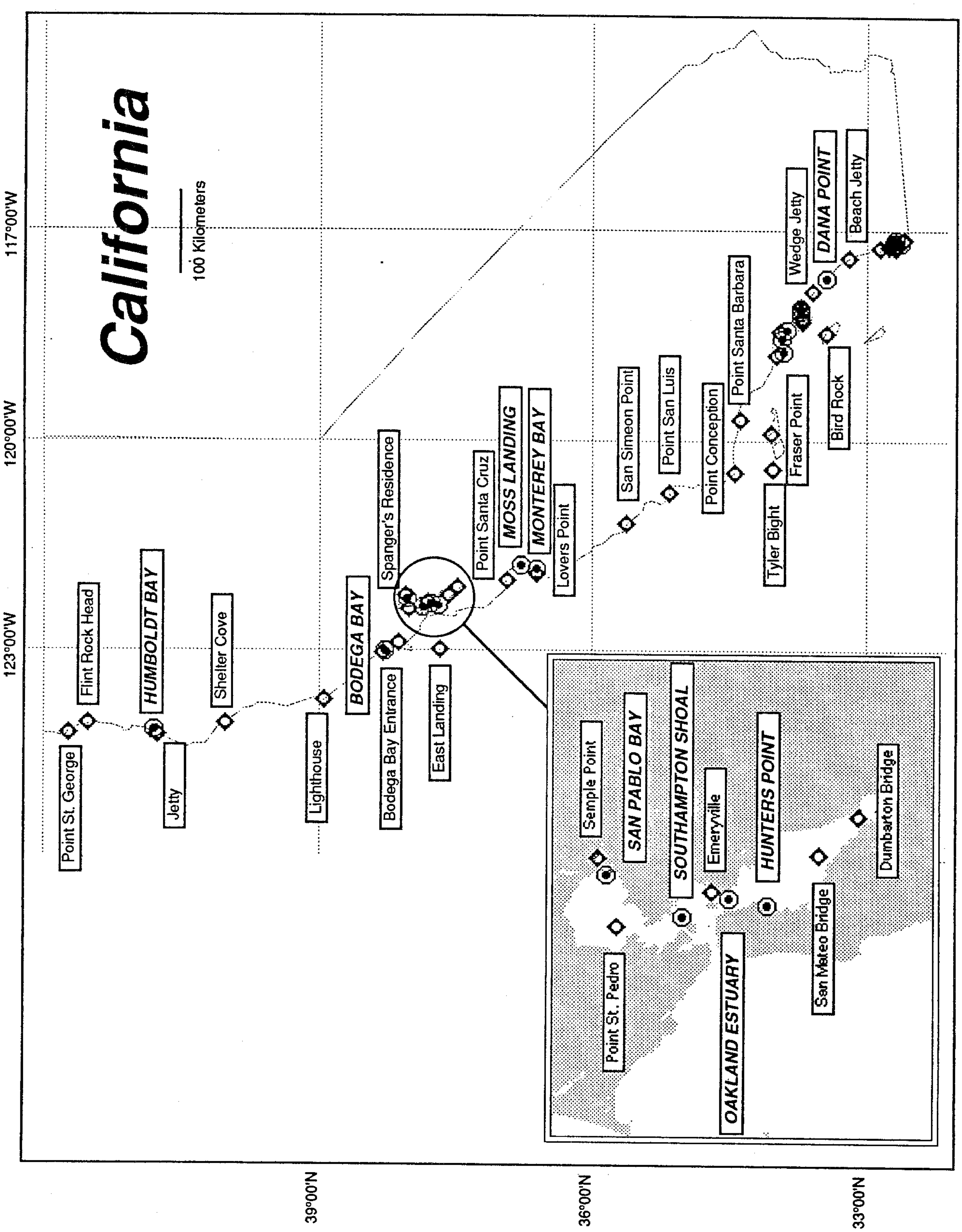

Texas
100 Kilometers
98°00'W
94°00'W
28°00'N
26°00'N
GALVESTON BAY
Offats Bayou
Confederate Reef
Freeport Surfside
Cedar Lake
East Matagorda
Dog Island
Bill Days Reef
SAN ANTONIO BAY
Long Reef
Harbor Island
Copano Reef
CORPUS CHRISTI BAY
Port Isabell
South Bay
LOWER LAGUNA MADRE
South Pass Reef
Mosquito Point
Panther Point Reef
SAN ANTONIO BAY
Ayres Point

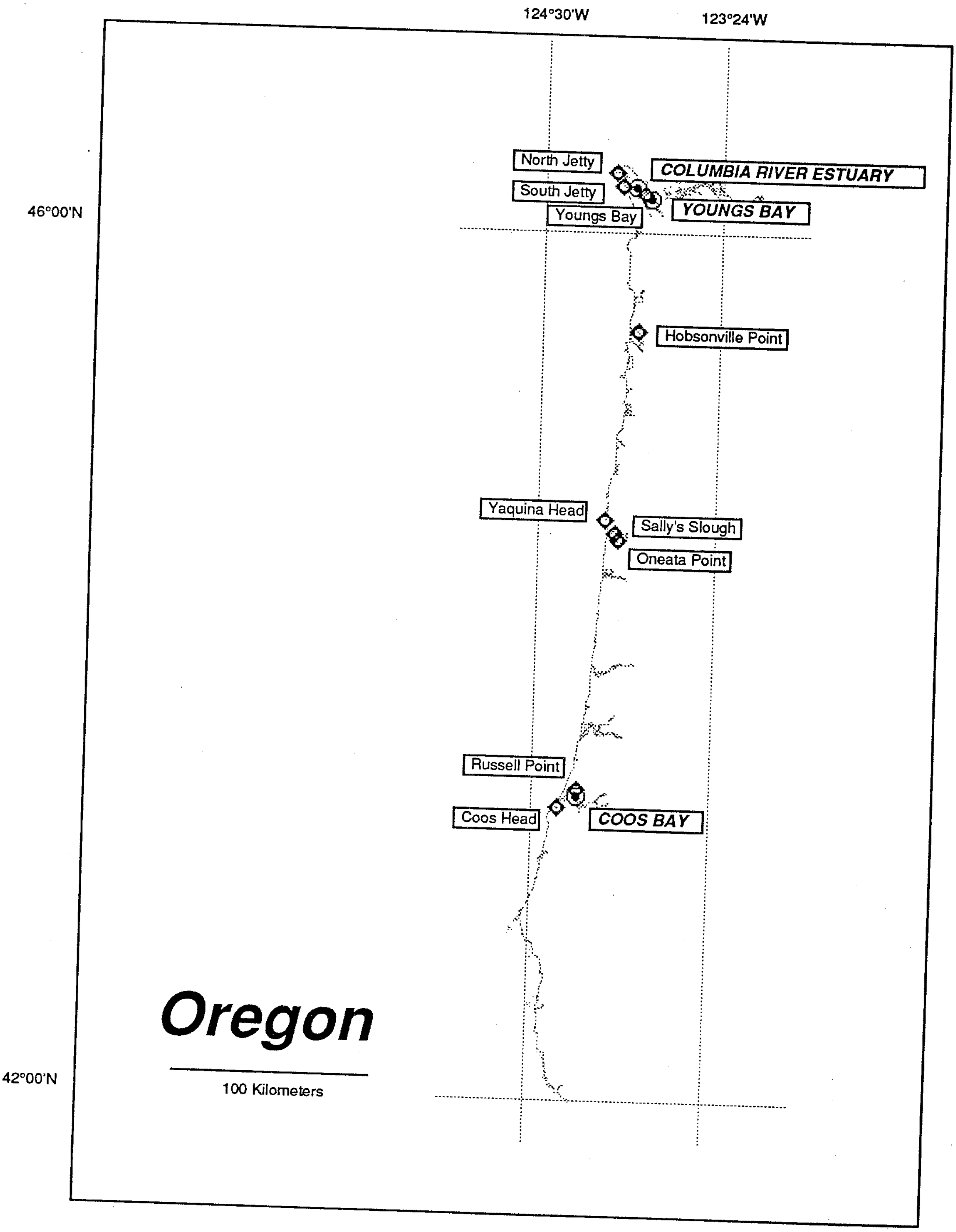


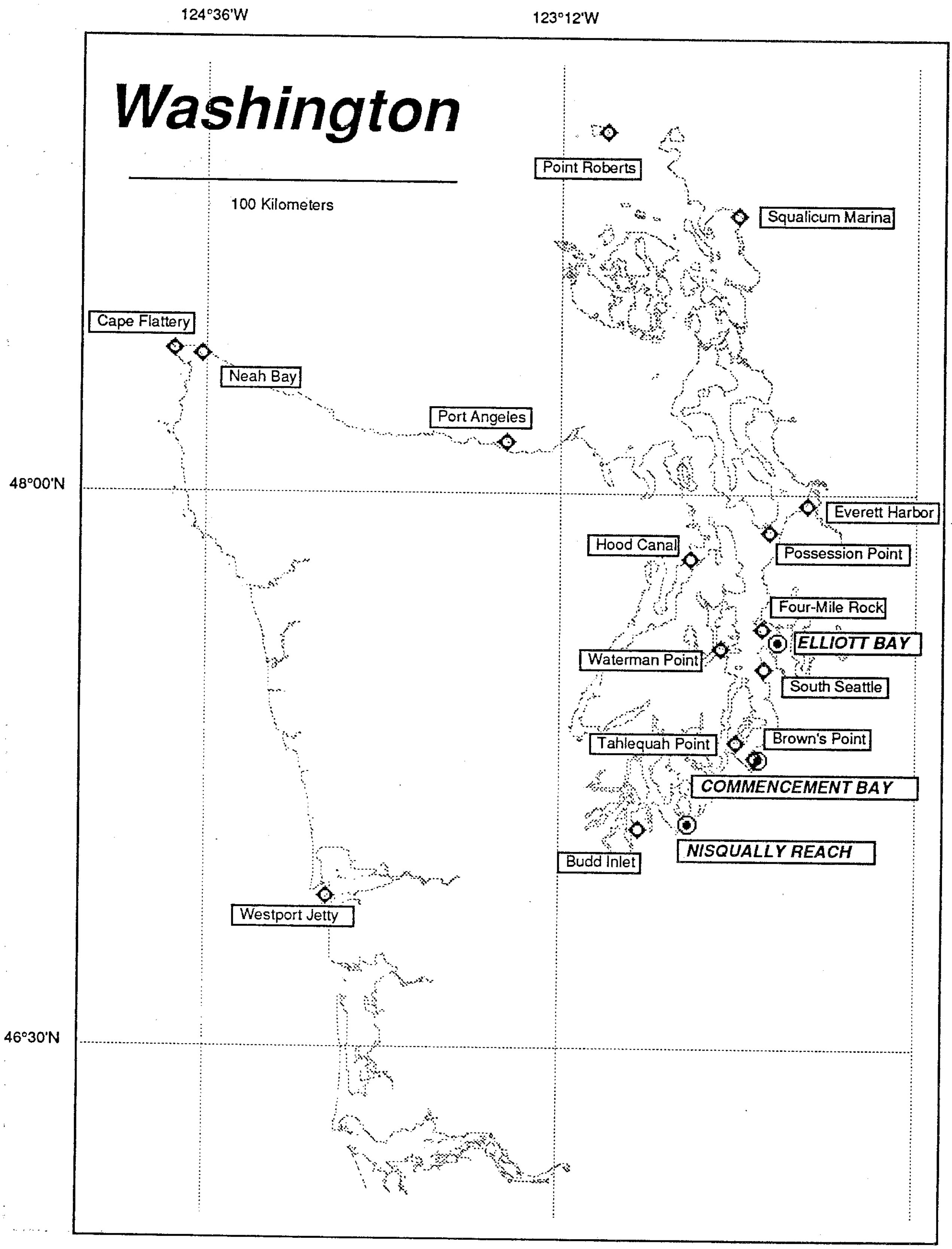
Texas
100 Kilometers
98°00'W
94°00'W
28°00'N
26°00'N
GALVESTON BAY
Offats Bayou
Confederate Reef
Freeport Surfside
Cedar Lake
East Matagorda
Dog Island
Bill Days Reef
SAN ANTONIO BAY
Long Reef
Harbor Island
Copano Reef
CORPUS CHRISTI BAY
LOWER LAGUNA MADRE
Port Isabell
South Bay
Harbor Island
Ingleside Cove
Neuces Bay
Boat Harbor
CORPUS CHRISTI BAY

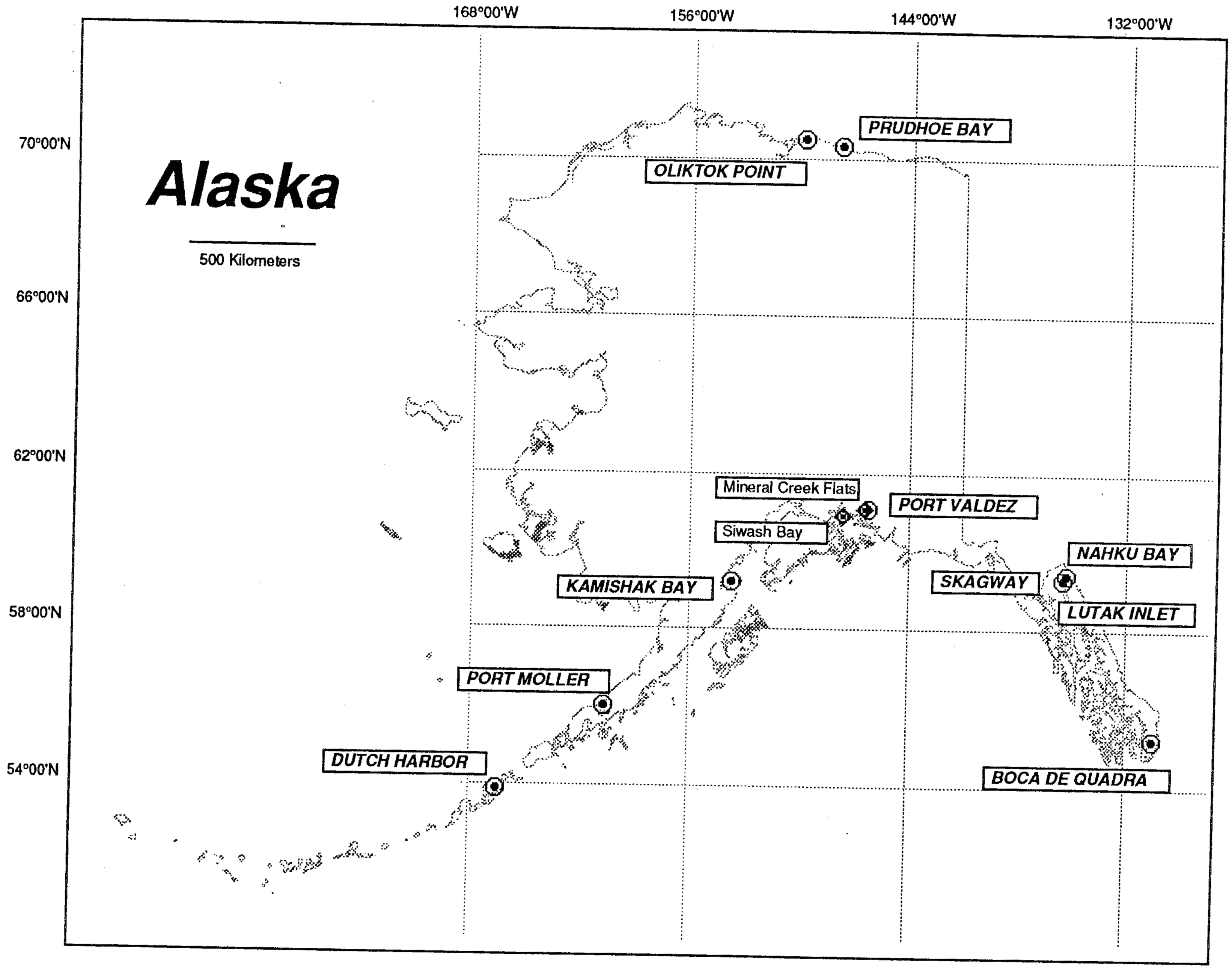

California
100 Kilometers
123°00'W
120°00'W
117°00'W
39°00'N
36°00'N
33°00'N
Point St. George
Flint Rock Head
HUMBOLDT BAY
Jetty
Shelter Cove
Lighthouse
BODEGA BAY
Bodega Bay Entrance
Spanger's Residence
East Landing
Point Santa Cruz
MOSS LANDING
MONTEREY BAY
Lovers Point
San Simeon Point
Point San Luis
Point Conception
Point Santa Barbara
Tyler Bight
Fraser Point
Bird Rock
Wedge Jetty
DANA POINT
Beach Jetty
Point La Jolla
Ventura Bridge
Harbor Island
NORTH SAN DIEGO BAY
Lighthouse
Coronado Bridge
SOUTH SAN DIEGO HARBOR
OUTSIDE SAN DIEGO BAY
North Jetty

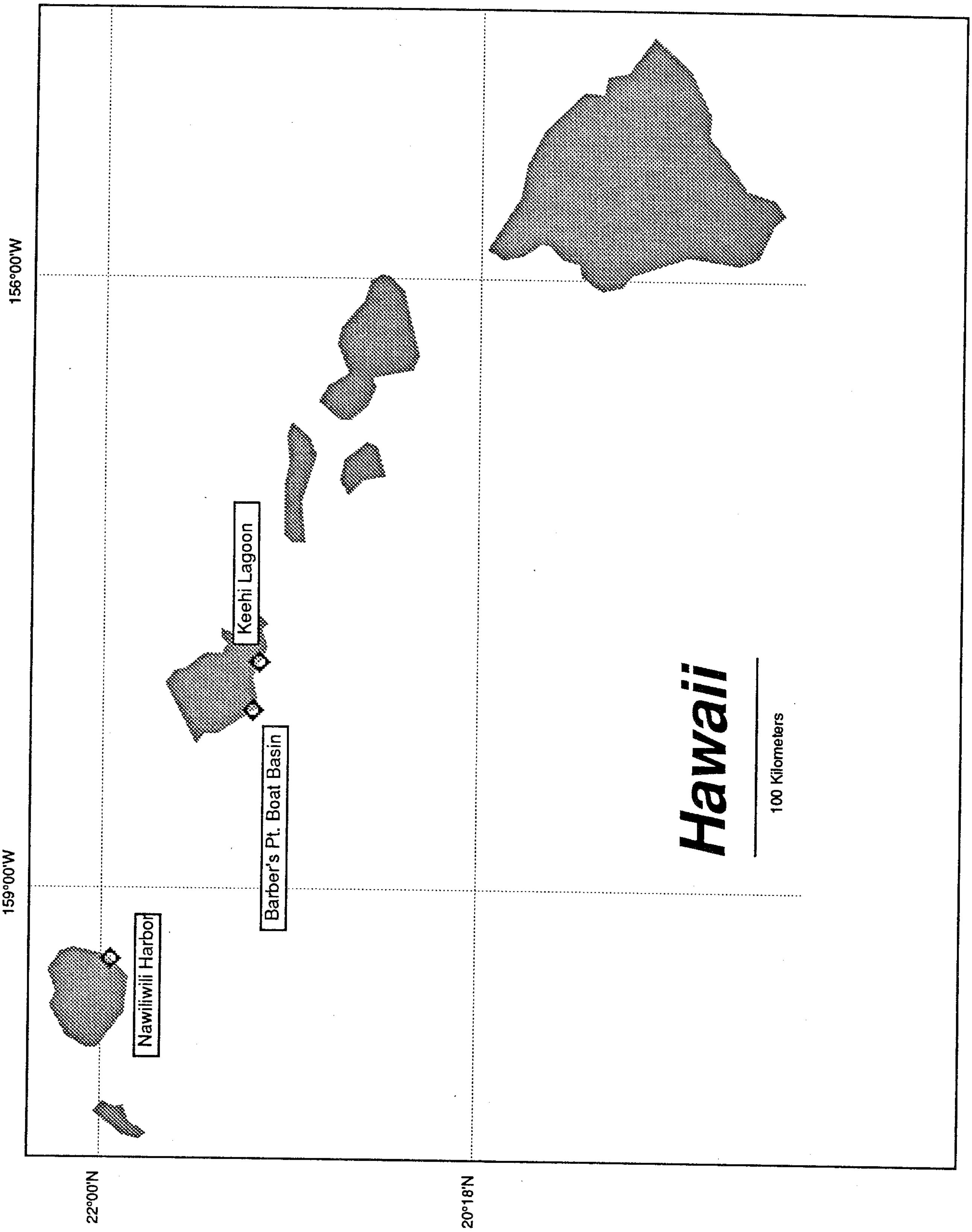

California
100 Kilometers
123°00'W
120°00'W
117°00'W
39°00'N
36°00'N
33°00'N
Point St. George
Flint Rock Head
HUMBOLDT BAY
Jetty
Shelter Cove
Lighthouse
BODEGA BAY
Bodega Bay Entrance
Spanger's Residence
East Landing
Point Santa Cruz
MOSS LANDING
MONTEREY BAY
Lovers Point
San Simeon Point
Point San Luis
Point Conception
Point Santa Barbara
Tyler Bight
Fraser Point
Bird Rock
Wedge Jetty
DANA POINT
Beach Jetty
WEST SANTA MONICA
Point Dume
South Jetty
SAN PEDRO BAY
SANTA MONICA BASIN
SAN PEDRO CANYON
LONG BEACH
EAST SANTA MONICA
West Jetty
Royal Palms State Park
Fishing Peir
SEAL BEACH
Wedge Jetty
Bird Rock
DANA POINT


California
100 Kilometers
123°00'W
120°00'W
117°00'W
39°00'N
36°00'N
33°00'N
Point St. George
Flint Rock Head
HUMBOLDT BAY
Jetty
Shelter Cove
Lighthouse
BODEGA BAY
Bodega Bay Entrance
East Landing
Spanger's Residence
Point Santa Cruz
MOSS LANDING
MONTEREY BAY
Lovers Point
San Simeon Point
Point San Luis
Point Conception
Point Santa Barbara
Tyler Bight
Fraser Point
Bird Rock
Wedge Jetty
DANA POINT
Beach Jetty
Semple Point
SAN PABLO BAY
SOUTHAMPTON SHOAL
Emeryville
HUNTERS POINT
Dumbarton Bridge
Point St. Pedro
OAKLAND ESTUARY
San Mateo Bridge


124°30'W
123°24'W
46°00'N
42°00'N
North Jetty
South Jetty
Youngs Bay
COLUMBIA RIVER ESTUARY
YOUNGS BAY
Hobsonville Point
Yaquina Head
Sally's Slough
Oneata Point
Russell Point
Coos Head
COOS BAY
Oregon
100 Kilometers


124°36'W
123°12'W
Washington
100 Kilometers
Point Roberts
Squalicum Marina
Cape Flattery
Neah Bay
Port Angeles
48°00'N
Everett Harbor
Hood Canal
Possession Point
Four-Mile Rock
ELLIOTT BAY
Waterman Point
South Seattle
Brown's Point
Tahlequah Point
COMMENCEMENT BAY
NISQUALLY REACH
Budd Inlet
Westport Jetty
46°30'N


Alaska
500 Kilometers
168°00'W
156°00'W
144°00'W
132°00'W
70°00'N
66°00'N
62°00'N
58°00'N
54°00'N
PRUDHOE BAY
OLIKTOK POINT
Mineral Creek Flats
PORT VALDEZ
Siwash Bay
NAHKU BAY
SKAGWAY
LUTAK INLET
KAMISHAK BAY
PORT MOLLER
DUTCH HARBOR
BOCA DE QUADRA


156°00'W
159°00'W
22°00'N
20°18'N
Nawiliwili Harbor
Barber's Pt. Boat Basin
Keehi Lagoon
Hawaii
100 Kilometers

Appendix B

Results of intercomparison exercises with sediment samples

Appendix B.Intercalibration of sediment analyses

Trace Element Results

Summary of results from intercalibrarion exercises for elemental analyses of sediments. The headings in the table refer to samples by letter or code, to acc. values which are "accepted values" defined in different ways, and the results of laboratories refered to by number. Concentrations are in units of µg/g-dry weight except for Al, Fe, and Si which are in percent-dry weight. The keys to the headings are as follows:

Sample Designation	Description
A	sediment sample from the East Coast of Canada analyzed in 1985
B	sediment sample from the East Coast of Canada analyzed in 1985
C	sediment sample from the East Coast of Canada analyzed in 1985
D	sediment sample from the East Coast of Canada analyzed in 1985
H	sediment sample from the Gulf of St. Lawrence analyzed in 1987
I	sediment from Nova Scotian harbor analyzed in 1987
MESS-1	Certified sediment refence material analyzed in 1987
K	Sediment from a core in Puget Sound analyzed in 1989
BCSS-1	Certified sediment Reference material analyzed in 1989

Accepted values are designated with one, two, or three asteriks:

- * mean of individual laboratory means
- ** mean used by National Research Council (NRC) of Canada based on several intercomparison exercises
- *** certified concentration for reference materials.

These concentrations, save the certified ones, are not necessarily more accurate than those of the participating laboratories. They serve as a base against which to gauge the comparability of the results from the participating labs. When only one laboratory reported a detectable concentration and there was no NRC, certified, or other independent value, no intercomparison was made.Results compared with "accepted values" are the means of replicate analyses. The number of replicates in years 1985, 1987, and 1989, were 4, 6, and 5, respectively.

Participating laboratories

- 1[a] NWC, Environmental Conservation Division, NMFS Northwest Center (Seattle, WA)
- 2[b] GERG, Geochemical and Environmental Research Group, Texas A&M University (College Station, TX)
- 3[b] BATT, Battelle (Sequim, WA)
- 4[a] NEC, NMFS Northeast Center (Sandy Hook, NJ)
- 5[a] SEC, NMFS Southeast Center (Beaufort, NC)
- 6[b] SAIC, Science Applications International Corp. (LaJolla, CA)

[a]Laboratories supplying data for the NS&T Benthic Surveillance Project
[b]Laboratories supplying data for the NS&T Mussel Watch Project

Table B-1. Results of intercomparisons of elemental analyses of sediment samples.

Element	Sample	accepted value (A.V.)	labs within 0-10% of A.V.	labs within 10-20% of A.V.	labs within 20-30% of A.V.	labs within 30-50% of A.V.	labs beyond 50% of A.V.	labs reporting "nd's"	labs reporting no data
Antimony	A	1.5*	2	4			1,3	6	5
	B	1.2*		2,4		3	1	6	5
	C	0.60*		3,4	2		1	6	5
	D	0.60*		2,3,4			1	6	5
	H	0.72*			1,4	2			3,5,6
	I	0.65*	1			2,4			3,5,6
	MESS-1	0.73***	1		4	2			3,5,6
	K	0.47*			1,4				2,3,5,6
	BCSS-1	0.59***	4	1					2,3,5,6
Arsenic	A	25*	1,2,4,6	3,5					
	B	21*	1,2,3,4	6		5			
	C	22*	1,2,4,6		3,5				
	D	20*	3,4	1,2,5	6				
	H	12**	3,5		2,4,6				1
	I	9.2**	6	3,5	2,4				1
	MESS-1	11***	1,3,5,6	4					2
	K	7.5*	1,2,4	3,6	5				
	BCSS-1	11***	1,3,4	5,6					2
Cadmium	A	1.6*	1,2	5	4	3			6
	B	1.3*	1,2,5	3	4				6
	C	0.87*	2,3,4	1,5					6
	D	0.7*	5	1,2,3,4					6
	H	0.19**	4,6	3,5	2	1			
	I	0.99**	4,5,6	2,3		1			
	MESS-1	0.59***	1,6	3,4,5					2
	K	0.5*	2,3,4,5,6	1					
	BCSS-1	0.25***	5,6	1,3,4					

Table B-1. Results of intercomparisons of elemental analyses of sediment samples (continued)

Element	Sample	accepted value (A.V.)	labs within 0-10% of A.V.	labs within 10-20% of A.V.	labs within 20-30% of A.V	labs within 30-50% of A.V.	labs beyond 50% of A.V.	labs reporting "nd's"	labs reporting no data
Chromium	A	63*	2,6	1,3,5			4		
	B	62*	6	1,2,5	3		4		
	C	60*	2,6	4	1,3,5				
	D	69*	6	2,4	1,3,5				
	H	69**	1,2,4,5,6	3					
	I	41**	1,2,3,4,5,6						
	MESS-1	71***	2,3	1,4,5,6					
	K	85**	2,3,4,6	1,5					
	BCSS-1	120***	1,3,4	6	5				2
Copper	A	98*	1,2,3,4,5,6						
	B	82*	1,2,3,4	5,6					
	C	44*	1,2,3,4,5,6						
	D	37*	1,2,4,5,6	3					
	H	33**	2,3,4,6	1,5					
	I	44**	1,2,3,4,5,6						
	MESS-1	25***	1,2,3,4,5,6						
	K	33**	1,2,5,6	3,4					
	BCSS-1	19***	1,3,5,6	4			2		
Lead	A	200*	1,2,3,4,5,6						
	B	163*	2,3,4,5,6		1				
	C	76*	2,3,5		1,4,6				
	D	63*	2,3,5,6		1,4				
	H	21**	3,4,5	6	2	1			
	I	106**	3,5,6	2,4		1			
	MESS-1	34***	2,3,4,5,6		1				
	K	9.8*	3,5,6	2,4	1				
	BCSS-1	23***	3,5,6	1,4					2

Table B-1. Results of intercomparisons of elemental analyses of sediment samples (continued)

Element	Sample	accepted value (A.V.)	labs within 0-10% of A.V.	labs within 10-20% of A.V.	labs within 20-30% of A.V	labs within 30-50% of A.V.	labs beyond 50% of A.V.	labs reporting "nd's"	labs reporting no data
Mercury	A	1.1*	3	2,4,5,6	1				
	B	0.84*	3,4	1,2,5,6					
	C	0.27*	2,3,5	1,4,6					
	D	0.26*	5	1,3,4	2,6				
	H	0.09**	2	3	5,6	4	1		
	I	0.16**	3,5,6	1	2,4				
	MESS-1	0.17***	1,3,6	5	4				2
	K	0.08*		4	3	2,6	1		5
	BCSS-1	0.13***	1,3,6				4		2,5
Nickel	A	39*	1,2,3	6	4,5				
	B	38*	1,2,3,5,6			4			
	C	31*	1,5,6	2,3,4					
	D	36*	1,2,5	3,4,6					
	H	36**	2,4,6	1,3	5				
	I	19**	3,6	1,2,4			5		
	MESS-1	30***	1,2,3	4,6	5				
	K	44**	1,2,3,4	5		6			
	BCSS-1	55***	1,3,4,6	5					2
Selenium	A	0.85*	4	1	3			2,6	5
	B	0.86*	1,3	4				2,6	5
	C	1.3*	4			1,3		2,6	5
	D	1.3*	1,3,4					2,6	5
	H	1.5**	3	1,2		4,5		6	
	I	1.0**	3	1	4,5	2		6	
	MESS-1	0.34***	1,5		3,4			6	2
	K	1.9*	2		3		4,6		1,5
	BCSS-1	0.43***				4		3	1,2,5,6

Table B-1. Results of intercomparisons of elemental analyses of sediment samples (continued)

Element	Sample	accepted value (A.V.)	labs within 0-10% of A.V.	labs within 10-20% of A.V.	labs within 20-30% of A.V	labs within 30-50% of A.V.	labs beyond 50% of A.V.	labs reporting "nd's"	labs reporting no data
Silver	A	0.42*	1,3	5	4,6			2	
	B	0.36*	3,5	1,6	4			2	
	C	0.54*	3,6	4,5	1			2	
	D	0.44*	3,5	1,6	4			2	
	H	0.09**	5,6	2,4	3		1		
	I	0.12**	5,6		2,3,4		1		
	MESS-1	0.16*		6	3,5	4	1		2
	K	0.09*	5	2,3	4			6	1
	BCSS-1	0.11*	5	4	3		1,2,6		
Tin	A	49*	3	1,6			2,4,5		
	B	39*	3	1,6			2,4,5		
	C	14*		6			1,2,3,5	4	
	D	15*	6	5			1,2,3	4	
	H	6.8**	2,4	6	3,5	1			
	I	13**	2,4,5,6	3			1		
	MESS-1	4***	1,4	3,5				6	2
	K	1.1*	3,4	2		5			1,6
	BCSS-1	1.9***	3,4,5						1,2,6
Zinc	A	360*	1,2,3,5,6	4					
	B	320*	1,2,3,4,5,6						
	C	120*	1,2,3,4,5,6						
	D	110*	1,2,3,4,5	6					
	H	95**	1,3,4,5		2,6				
	I	190**	3,4,5,6	1,2					
	MESS-1	190***	1,2,3,4,5	6					
	K	93**	1,2,3,5	6	4				
	BCSS-1	120***	1,3,5,6		4				

Table B-1. Results of intercomparisons of elemental analyses of sediment samples (continued)

Element	Sample	accepted value (A.V.)	labs within 0-10% of A.V.	labs within 10-20% of A.V.	labs within 20-30% of A.V.	labs within 30-50% of A.V.	labs beyond 50% of A.V.	labs reporting "nd's"	labs reporting no data
Aluminum	A	6.2*	2,4,5,6	1	3				
	B	6.1*	1,2,5,6	3,4					
	C	5.5*	1,2,5,6	4	3				
	D	5.6*	2,5,6	1,4	3				
	H	5.8**	3,5	2,4	1		6		
	I	5.0**	1,2,3,4,5	6					
	MESS-1	5.8***	1,3,4,5,6						2
	K	6.9**	1,2,3,4,5		6				
	BCSS-1	6.3***	1,3,4,5	6					2
Iron	A	4.2*	1,2,3,4,5,6						
	B	3.9*	1,2,3,4,5,6						
	C	3.8*	1,2,3,4,5,6						
	D	3.7*	1,2,3,4,5,6						
	H	3.4**	1,2,3,5	4,6					
	I	2.1**	1,2,3,4,5,6						
	MESS-1	3.1***	1,2,3,4,5,6						
	K	3.9**	1,2,3,4,5	6					
	BCSS-1	3.3***	1,3,4,5,6						2
Manganese	A	510*	1,2,3,4,6						5
	B	490*	1,3,4,6	2					5
	C	700*	1,2,3,4,6						5
	D	580*	1,2,3,4,6						5
	H	490**	1,3,4,5,6	2					
	I	450**	1,2,3,4,5,6						
	MESS-1	510***	1,2,3,4,5,6						
	K	540**	4,5	6		1			2,3
	BCSS-1	230***	1,4,5,6						2,3

Table B-1. Results of intercomparisons of elemental analyses of sediment samples (continued)

Element	Sample	accepted value (A.V.)	labs within 0-10% of A.V.	labs within 10-20% of A.V.	labs within 20-30% of A.V	labs within 30-50% of A.V.	labs beyond 50% of A.V.	labs reporting "nd's"	labs reporting no data
Silicon	A	26*	1,4,6	3,5					2
	B	27*	1,4,6	3,5					2
	C	25*	1,3,4,6	5					2
	D	26*	1,3,4,5,6						2
	H	21**	4	1,5,6					2,3
	I	29**	1,4,6	5					2,3
	MESS-1	32***	1,4,6	5					2,3
	K	31*		1,4					2,3,5,6
	BCSS-1	31***	1,4						2,3,5,6

Appendix B. Intercalibration of sediment analyses

Trace Organic Compounds

The results summarized in Table B.2 quantify the extent of agreement among laboratory results from analyses of two homogenous sediment samples. The 1986 sediment sample was collected in the Duwamish Waterway in Seattle WA. The 1987 sample was collected in the harbor of Baltimore, MD. In each case a laboratory's result has been compared with the accepted value (A.V.) derived from averaging the means from all (usually six) laboratories.

Participating laboratories are designated by number:

1 NWC, NMFS Northwest Center
Environmental Conservation Division (Seattle, WA)
2 GERG, Texas A&M University
Geochemical/Environmental Research Group (College Station, TX)
3 BATT, Battelle (Duxbury, MA)
4 NEC, NMFS Northeast Center (Gloucester, MA)
5 SEC, NMFS Southeast Center (Charleston, NC)
6 SAIC, Science Applications International Corp. (LaJolla, CA)

Table B.2 Results of intercomparison exercises from analyses of common sediment samples in 1986 (first group, Duwamish sediment) and 1987 (second group Baltimore Harbor sediment). Results based on triplicate analyses for each laboratory with consensus value (ng/g-dry wt) being the overall mean (excluding non-detected values).

Compound	Accepted Value (A.V.)	Labs within 25% of A.V.	Labs within 25%- 50% of A.V.	Labs within 50%-75% of A.V.	Labs within 75%-100% of A.V.	Labs within 100%-150% of A.V.	Labs not detecting	Labs not reporting
LMWPAH	5233	1,2,3,5,6						4
HMWPAH	20105	1,2,3,5,6						4
tPCB	1354	1,2,3,5,6						4
tDDT	65	2,6	1,5		3			4
tCdane	2.3	1,2,5		3		6		4
dieldrin							1	2,3,4,5,6
aldrin							1	2,3,4,5,6
hexachl	0.4	1,6	3			2	5	4
lindane	0.54				2,6		1,5	3,4
mirex	0.8	(2)*						1,3,4,5,6
LMWPAH	3801	1,2,3,4,5,6						
HMWPAH	6631	1,2,3,4,5,6						
tPCB	556	2,3	4,6	1				5
tDDT	29.2	1,2,4,6	5	3				
tCdane	4.3	2,4,5,6	1,3					
dieldrin	4.9	6	1,2	4		3	5	
aldrin	2.2			4,6			1,2,3,5	
hexachl	26.1	1,2,4,5	3	6				
lindane	1.06	4	6	1,5	2		3	
mirex	2		3,6	1,2			4,5	

* only lab 2 reported a value for mirex concentration in 1986 intercomparison exercise

Appendix C

Means and coefficients of variation for chemical concentrations in fine-grained sediment

APPENDIX C

Mean Concentrations, n's, and coefficients of variation for chemical concentrations in fine-grained sediments. Sediments with ≥80% particles of diameter ≥63 μ in diameter excluded. All means based on raw concentrations divided by the fraction of sediment particles in the ≤ 63μ size-range.

Chemical/Site combinations where the high concentration (shown) was >10x higher than the next highest (out of 3 or more detectable concentrations) and was thus excluded from the mean value.

Chem.	Site	Excluded Conc.
Hg		
	PAB	6.9 μg/g
LMW		
	LISI	16000 ng/g
	MRD	4500
	CCB	3500
	PDPD	1100
HMW		
	MCB	1200
	ELZ	50000
	CCIC	1400
	PDPD	5300
tDDT		
	SHFP	350
	BOS	1260
	APDB	70
	PBIB	240
	MBEM	11
	MBTP	100
	MBLR	50
tPCB		
	BOS	110000
	TBPB	1400
	MBLR	210
	MBAR	69

Chem.	Site	Excluded Conc.
tCdane		
	MAC	6.8 ng/g
	CLLC	1.5
	MBLR	3.9
	LMPI	0.68
	SSBI	2.1
tDield		
	TBPB	5
	APDB	4.2
	YHSS	21
Hexachl		
	BBCC	23
	BBRH	7.8
	APDB	1.2
	MRD	85
	TBLF	5.3
	SLBB	1
	SAMP	8.1
	LMSB	5.1

Table C.1: Average and coefficients of variation, percent, for **Grain Size** (as % fines) and grain-size adjusted concentrations of total organic carbon (**TOC** as % dry-wt) and total polychloronated biphenyls (**tPCB** as ng/g dry-wt) in fine-grain sediments at NS&T sites.

		Grain Size			TOC			tPCB		
Location	SITE	mean	c.v.%	n	mean	c.v.%	n	mean	c.v.%	n
Machias Bay ME	MAC	66	29	7	.97	22	7	44	108	6
Frenchmans Bay ME	FRN	92	11	6	2.4	21	6	31	89	6
Penobscot Bay ME	PNB	98	1	2	2.4	6	2	48	45	2
Penobscot Bay ME	PBSI	90	9	6	2.7	22	6	22	43	6
Penobscot Bay ME	PBPI	49	17	3	3.7	18	3	36	47	3
Merriconeag Snd. ME	MSSP	38	40	3	3.6	14	3	30	8	3
Casco Bay ME	CSC	88	11	5	3.4	14	5	120	6	4
Cape Ann MA	CAGH	27	24	3	2.4	6	3	71	8	3
Salem Harbor MA	SHFP	51	21	3	8.2	18	3	160	16	3
Salem Hrb. MA	SAL	67	32	9	6.6	24	9	540	57	9
Boston Hrb. MA	BHDI	78	11	5	3.1	32	5	360	46	5
Boston Hrb. MA	BHDB	85	19	5	3	24	5	880	18	5
Boston Hrb. MA	BHHB	27	23	3	2.9	44	3	330	16	3
Boston Hrb. MA	BOS	59	23	10	6.6	38	10	630	32	9
Quincy Bay MA	QUI	75	6	3	4.7	7	3	520	30	3
Cape Cod MA	CCNH	68	53	3	5.7	77	3	96	44	3
Buzzards Bay MA	BBCC	62	44	3	2.9	7	3	110	10	3
Buzzards Bay MA	BBRH	65	29	6	1.6	16	6	360	16	6
Buzzards Bay MA	BBAR	29	20	5	2.8	24	5	2100	26	5
Buzzards Bay MA	BBGN	37	60	5	1.8	12	5	150	45	5
Buzzards Bay MA	BUZ	80	7	7	2.8	11	7	330	75	7
Narr. Bay RI	NBMH	90	11	3	1.9	7	3	110	10	3
Narr. Bay RI	NBDI	38	29	5	2.8	27	5	110	31	5
Narr. Bay RI	NBDU	60	12	6	2.8	16	6	62	48	6
Narr. Bay RI	NAR	66	23	11	3.6	30	11	430	73	10
Block Is. RI	BIBI	71	18	3	3	6	3	34	41	3
Long Is. Snd. CT	LICR	50	29	5	1.7	26	5	200	88	5
Long Is. Snd. CT	LISI	63	24	5	2.6	35	5	120	37	5
W. Long Is. Snd. NY	WLI	82	16	5	5.1	26	5	240	39	5
Long Is. Snd. NY	LIHU	46	22	6	3.5	12	6	140	21	6
Long Is. Snd. NY	LIMR	74	25	6	2.9	18	6	170	33	6
Long Is. Snd. NY	LIHH	90	5	6	3.5	13	6	260	24	6
Long Is. Snd. NY	LITN	71	41	7	4.1	56	6	610	66	7
Moriches Bay NY	MBTH	56	43	5	3.1	15	5	160	39	5
Hud./Rar. Est NY	HRJB	64	8	2	3.4	18	2	750	4	2
Hud./Rar. Est. NY	HRUB	67	27	5	4.2	54	5	320	86	5
Hud./Rar. Est. NY	HRLB	71	18	8	3.8	36	8	600	24	8
Hud./Rar. Est. NJ	HRRB	71	6	3	2.1	6	3	560	6	3
Raritan Bay NJ	RAR	68	34	7	5.5	27	7	990	26	7
N.Y. Bight NJ	NYSH	64	33	6	3.6	31	6	720	37	6
Great Bay NJ	GRB	77	22	6	4.1	25	6	120	43	6
Delaware Bay NJ	DBCM	62	63	2	6.5	37	2	110	37	2
Delaware Bay DE	DEL	48	33	6	2.9	29	6	250	98	6
Delaware Bay NJ	DBFE	47	40	3	5.4	25	3	82	12	3
Delaware Bay NJ	DBBD	67	25	3	2.7	25	3	35	36	3
Delaware Bay DE	DBAP	76	33	6	2.8	72	6	69	87	6
Delaware Bay NJ	DBHC	22	-	1	2.5	-	1	46	-	1
Delaware Bay DE	DBWB	31	50	3	2.5	2	3	38	55	3
Delaware Bay DE	DBKI	58	25	6	1.7	27	6	63	32	6
Delaware Bay MD	DBCH	77	3	3	1.6	22	3	5.6	63	3
Baltimore Hrb. MD	BAL	93	10	3	4.1	13	3	680	34	3
Up. Ches. Bay MD	UCB	75	44	5	4	20	5	270	114	5
Ches. Bay MD	CBBO	99	1	3	2.5	14	3	370	20	3
Ches. Bay MD	CBMP	98	2	6	2.9	24	6	92	37	6
Ches. Bay MD	CBHP	98	1	6	2.6	20	6	110	73	6
Ches. Bay MD	CBCP	93	2	3	1.6	8	3	8	10	3

Table C.1: (Continued)

Location	SITE	Grain Size mean	Grain Size c.v.%	Grain Size n	TOC mean	TOC c.v.%	TOC n	tPCB mean	tPCB c.v.%	tPCB n
Mid. Ches. Bay VA	MCB	42	77	3	3.4	48	3	13	62	3
Potomac River VA	PRRP	96	0	3	2.7	4	3	81	-	1
Potomac River MD	PRSP	38	22	3	2.8	9	3	13	102	3
Ches. Bay VA	CBIB	78	27	5	2.6	13	5	6.3	19	5
Rappahannock R. VA	RRRR	94	4	2	2	60	2	31	7	2
Ches. Bay VA	CBCC	70	39	2	1.8	5	2	1.3	141	2
Ches. Bay VA	CBDP	46	26	4	1.6	20	4	20	73	4
Ches. Bay VA	CBJR	72	9	3	1.6	15	3	60	35	3
Low. Ches.Bay VA	LCB	51	40	8	1.5	13	8	54	72	7
Elizabeth R. VA	ELZ	66	48	3	6.5	66	3	340	97	3
Quinby Inlet VA	QIUB	38	27	6	1.6	41	6	33	94	5
Pamlico Sound NC	PSPR	99	1	3	3	7	3	3	21	3
Pamlico Snd. NC	PAM	77	32	8	5.1	32	8	nd	-	8
Pamlico Sound NC	PSNR	96	2	3	3.4	3	3	4.8	60	3
Cape Fear NC	CFBI	54	47	5	3.2	31	5	5.6	121	5
Santee River SC	SRNB	78	43	3	3	6	3	33	17	3
Charleston Hrb. SC	CHFJ	96	3	3	2.6	5	3	.5	173	3
Charleston Hrb. SC	CHSF	51	48	5	2.2	46	5	2	178	5
Charleston Hrb. SC	CHS	77	29	9	3.2	14	9	30	166	9
Savannah R. Est. GA	SRTI	52	81	2	1.9	4	2	23	69	2
Sapelo Is. GA	SSA	51	41	9	3.1	15	9	nd	-	9
St. Johns R. FL	SJCB	76	31	5	4	40	5	89	70	5
St. Johns R. FL	SJD	63	41	7	6.8	21	7	160	98	7
Indian River FL	IRSR	34	-	1	9.5	-	1	51	-	1
North Miami FL	NMML	69	16	3	4.1	5	3	120	19	3
Biscayne Bay FL	BBPC	86	11	6	5.2	36	6	35	65	6
Everglades FL	EVFU	82	21	4	.66	12	3	8.1	92	4
Rookery Bay FL	RBHC	72	21	6	.65	41	6	13	84	6
Naples Bay FL	NBNB	60	26	4	.25	61	4	28	99	4
Charlotte Hrb. FL	CBBI	44	54	2	.59	85	2	5	26	2
Charlotte Hrb. FL	LOT	24	20	5	6	55	5	8.6	224	5
Tampa Bay FL	TAM	49	-	1	4.3	-	1	7.4	-	1
Tampa Bay FL	TBMK	25	15	2	5.4	1	2	110	34	2
Tampa Bay FL	TBNP	58	24	3	10	24	3	200	16	3
Tampa Bay FL	TBHB	54	-	1	.6	-	1	230	-	1
Tampa Bay FL	TBPB	46	27	3	2.4	60	3	48	27	2
Tampa Bay FL	TBKA	21	-	1	1.6	-	1	470	-	1
Tampa Bay FL	TBOT	27	-	1	3.3	-	1	74	-	1
Cedar Key FL	CKBP	46	49	5	.59	30	5	15	89	5
Suwanee River FL	SRWP	63	17	3	8.5	36	3	65	111	3
Apalachee Bay FL	AESP	38	30	3	6.9	59	3	110	16	3
Apalachicola Bay FL	APCP	59	13	3	.19	47	3	14	125	3
Apalachicola Bay FL	APDB	50	39	6	.25	16	6	35	148	6
Apalachicola Bay FL	APA	80	29	9	2.8	15	9	8.6	194	9
Panama City FL	PCLO	26	23	2	6.4	30	2	78	18	2
Panama City FL	PCMP	66	-	1	13	-	1	81	-	1
St. Andrew Bay FL	SAWB	46	47	6	.72	25	6	2100	133	6
Choctawhat. Bay FL	CBSR	66	33	6	.45	36	6	66	193	6
Choctawhat. Bay FL	CBPP	52	31	4	3.2	66	4	290	63	4
Pensacola Bay Fl	PEN	89	14	4	4.2	16	4	17	54	4
Pensacola Bay FL	PBIB	34	44	6	.9	114	6	59	77	6
Mobile Bay AL	MBHI	45	10	3	2.8	14	3	49	20	3
Mobile Bay AL	MBCP	74	23	4	.23	33	4	13	47	4
Mobile Bay AL	MOB	94	4	9	2	9	9	4.5	150	9
Round Is. MS	ROU	58	49	9	1.7	25	9	2.3	186	9
Heron Bay MS	HER	66	13	6	2.4	22	6	1.6	174	6

Table C.1: (Continued)

Location	SITE	Grain Size mean	c.v.%	n	TOC mean	c.v.%	n	tPCB mean	c.v.%	n
Miss. Snd. MS	MSPB	60	45	6	.17	32	6	15	34	6
Miss. Snd. MS	MSBB	74	35	2	.26	4	2	52	23	2
Miss. Snd. MS	MSPC	76	13	3	.18	19	3	5.6	9	3
Miss. Delta LA	MRD	78	24	9	1.7	36	9	20	133	9
Lake Borgne LA	LBNO	98	0	3	6.8	13	3	48	117	3
Lake Borgne LA	LBMP	77	17	6	.25	47	6	10	66	6
Breton Snd. LA	BSBG	28	39	3	.2	39	3	60	133	3
Breton Snd. LA	BSSI	88	10	6	.3	52	6	5.5	96	6
Miss.River LA	MRTP	90	12	3	1.6	25	3	28	94	3
Miss.River LA	MRPL	99	2	3	2.3	22	3	74	16	3
Barataria Bay LA	BBSD	84	4	6	.34	65	6	12	47	6
Barataria Bay LA	BBTB	84	14	3	8.1	10	3	8.4	84	3
Barataria Bay LA	BBMB	42	45	6	.54	87	6	42	97	6
Barataria Bay LA	BAR	42	30	3	2.7	26	3	1.4	173	3
Terrebonne Bay LA	TBLF	77	12	6	1.1	67	6	17	54	6
Terrebonne Bay LA	TBLB	86	4	3	.7	35	3	27	20	3
Caillou Lake LA	CLCL	67	26	6	.36	51	6	10	78	6
Atchafalaya Bay LA	ABOB	83	20	6	.2	28	6	14	41	6
Vermillion Bay LA	VBSP	82	12	3	.16	23	3	9.2	14	3
J. Hrb. Bayou LA	JHJH	70	24	5	.24	33	5	17	57	5
Calcasieu Lake LA	CLLC	47	15	3	.85	22	3	6.7	33	3
Calcasieu Lake LA	CLSJ	84	8	6	.13	27	6	7.5	30	6
Sabine Lake TX	SLBB	57	34	6	.082	52	6	4.5	58	6
E. Cote Blanche LA	ECSP	55	20	3	.28	17	3	29	36	3
Galveston Bay TX	GBHR	80	16	6	.11	7	6	5.5	62	6
Galveston Bay TX	GBSC	91	12	3	1.6	7	3	71	36	3
Galveston Bay TX	GBYC	62	32	6	.058	33	6	53	166	6
Galveston Bay TX	GBTD	61	34	6	.08	23	6	7.4	38	6
Galveston Bay TX	GBCR	53	22	6	.11	104	6	5.1	45	6
Galveston Bay TX	GBOB	34	34	3	.77	54	3	72	78	3
Galveston Bay TX	GAD	51	47	6	1	35	6	.34	245	6
Brazos River TX	BRFS	84	21	3	1.1	40	3	14	71	3
Brazos River TX	BRCL	75	16	3	.61	38	3	60	10	3
Matagorda Bay TX	MBEM	52	37	5	.11	25	5	6.5	98	5
Matagorda Bay TX	MBDI	97	1	3	1.2	10	3	7.7	128	3
Matagorda Bay TX	MBCB	69	17	3	1.2	23	3	3.3	58	3
Matagorda Bay TX	MBTP	60	37	6	.069	10	3	5.1	70	6
Matagorda Bay TX	MBGP	74	25	6	.097	25	6	6	70	6
Matagorda Bay TX	MBLR	63	44	6	.093	20	6	5	46	5
Espiritu Santo TX	ESSP	87	7	6	.098	27	6	3.6	21	6
Espiritu Santo TX	ESBD	23	6	2	.13	63	2	17	94	2
San Antonio Bay TX	SAMP	48	54	6	.087	32	3	3.9	80	6
San Antonio Bay TX	SAPP	46	18	5	.11	49	3	5.9	163	5
San Antonio Bay TX	SAB	60	36	9	.78	13	9	5.6	182	9
Mesquite Bay TX	MBAR	91	5	6	.095	28	6	3	63	5
Copano Bay TX	CBCR	96	7	6	.098	11	6	4.8	106	6
Aransas Bay TX	ABHI	50	22	3	1	61	3	14	25	3
Aransas Bay TX	ABLR	45	37	6	.2	54	6	4.7	69	6
Corpus Christi TX	CCBH	74	12	3	1	42	3	49	94	3
Corpus Christi TX	CCIC	47	36	4	.064	18	4	8.2	97	4
Corpus Christi TX	CCNB	56	35	6	.07	15	6	18	69	6
Corpus Christi Bay TX	CCB	84	32	8	.91	21	8	1.3	172	8
L. LagunaMadre TX	LMSB	56	23	6	.093	9	6	3.1	47	6
Laguna Madre TX	LMPI	44	58	3	1.4	104	3	55	73	3
L. Laguna Madre TX	LLM	34	32	7	.84	20	7	5	150	7
San Diego Bay CA	SDF	34	55	2	.41	54	2	17	75	2

Table C.1: (Continued)

Location	SITE	Grain Size mean	c.v.%	n	TOC mean	c.v.%	n	tPCB mean	c.v.%	n
San Diego Bay CA	SDHI	29	16	6	1.4	29	6	330	83	6
San Diego Hrb. CA	SDA	62	16	9	2.2	16	9	840	32	9
San Diego Bay	NSD	48	18	3	2	11	3	500	11	3
Pt. Loma CA	PLLH	31	13	6	1.1	28	6	73	69	6
La Jolla CA	LJLJ	55	17	3	1	14	3	26	34	3
Oceanside CA	OSBJ	80	5	6	1	47	6	22	79	6
Dana Pt. CA	DAN	42	47	9	.85	57	9	22	65	9
Newport Bch. CA	NBWJ	51	8	5	1	32	5	54	34	5
Anaheim Bay CA	ABWJ	58	23	6	.49	67	6	48	41	6
Long Beach CA	LNB	71	26	9	1.7	25	9	230	58	9
San Pedro Bay CA	SPB	72	40	8	2.6	39	8	450	52	8
San Pedro Hrb. CA	SPFP	96	5	6	2	51	6	210	30	6
Palos Verdes CA	PVRP	60	18	6	2.3	47	6	980	49	6
Santa Monica Bay CA	SMW	25	23	2	3.8	41	2	720	69	2
Marina Del Ray CA	MDSJ	40	18	6	1.4	26	6	110	43	6
Pt. Dume CA	PDPD	36	20	6	1.4	38	6	100	31	6
Pt. S. Barbara CA	SBSB	41	9	6	1.8	67	6	43	73	6
Moss Landing CA	MOS	45	-	1	1.7	-	1	-	-	0
Monterey Bay CA	MBSC	28	-	1	.96	-	1	-	-	0
Southamp. Shl. CA	SHS	59	9	2	1.1	1	2	67	21	2
Oakland Est. CA	OAK	91	1	3	1.4	2	3	68	20	3
Hunters Pt. CA	HUN	80	27	9	1.6	24	9	82	37	9
San Fran. Bay CA	SFDB	91	15	6	1.1	39	6	77	48	6
San Fran. Bay CA	SFSM	90	2	3	.59	77	3	83	42	3
San Fran. Bay CA	SFEM	93	1	6	.91	39	6	80	52	6
San Pablo Bay CA	PAB	44	31	9	1.4	37	9	36	32	8
San Pablo Bay CA	SPSM	68	34	6	1.4	78	6	62	140	6
San Pablo Bay CA	SPSP	90	5	6	1	33	6	32	26	6
Tomales Bay CA	TBSR	97	3	6	1.4	46	6	4.8	73	6
Humboldt Bay CA	HMB	31	-	1	.57	-	1	-	-	0
Coos Bay OR	COO	43	66	4	5.6	39	4	32	47	4
Coos Bay OR	CBCH	23	10	2	1.8	2	2	-	-	0
Coos Bay OR	CBRP	30	36	5	2.6	64	5	24	37	5
Yaquina Bay OR	YBOP	51	36	6	3	52	6	15	55	3
Yaquina Head OR	YHSS	34	17	6	2.8	59	6	15	104	6
Tillamook Bay OR	TBHP	30	20	5	3	57	5	12	6	2
Columbia R. OR	CRYB	31	25	4	1.4	32	4	44	58	4
Young's Bay OR	YNB	68	0	3	2.1	0	3	-	-	0
Columbia R. OR	COL	27	18	3	1.3	87	3	18	97	3
S. Juan de Fuca WA	JFNB	49	28	6	2.9	21	6	51	15	3
South Puget Snd. WA	SSBI	99	1	6	1.8	70	6	39	50	6
Comm. Bay WA	COM	81	4	9	1.7	4	9	37	65	9
Comm. Bay WA	CBBP	86	9	6	1.2	65	6	53	23	6
Puget Sound WA	PSSS	58	34	3	2.4	27	3	13	66	3
Elliott Bay WA	ELL	42	35	9	3	20	9	1100	54	9
Sinclair Inlet WA	SIWP	64	30	6	2.6	26	6	89	47	3
Puget Sound WA	PSHC	22	4	3	2.3	12	3	nd	-	3
Whidbey Is. WA	WIPP	95	9	6	1.9	9	6	82	65	3
Puget Sound WA	PSEH	54	17	2	3.6	41	2	26	22	2
Puget Sound WA	PSPA	66	7	3	2.9	16	3	4.3	119	3
Bellingham Bay WA	BBSM	99	1	6	1.3	55	6	10	80	6
Pt. Roberts WA	PRPR	79	5	6	1.4	34	6	20	23	6
Boca de Quadra AK	BDQ	57	28	3	6.4	29	3	33	28	3
Lutak Inlet AK	LUT	94	10	6	.72	52	6	11	95	6
Skagway AK	SKA	63	55	3	.74	61	3	29	81	3
Nahku Bay AK	NAH	78	24	3	2	124	3	11	103	3

Table C.1: (Continued)

Location	SITE	Grain Size mean	Grain Size c.v.%	Grain Size n	TOC mean	TOC c.v.%	TOC n	tPCB mean	tPCB c.v.%	tPCB n
Unakwit Inlet AK	UISB	82	8	6	.88	48	6	4.5	94	3
Valdez AK	VAL	99	1	3	.54	7	3	16	63	2
Port Valdez AK	PVMC	100	0	6	.48	29	6	3.3	35	3
Kamishak Bay AK	KAM	68	7	3	.8	10	3	35	66	2
Dutch Hrb. AK	DUT	71	9	3	3.5	37	3	82	44	3
Oliktok Pt. AK	OLI	61	38	6	4	35	6	78	35	6
Prudhoe Bay AK	END	48	41	6	1.8	25	6	46	59	6
Barber's Pt. HI	BPBP	48	39	6	2.2	81	6	110	89	6
Honolulu Hrb. HI	HHKL	47	39	6	1.4	64	6	64	33	6

Table C.2: Average grain-size adjusted concentrations, ng/g dry-wt, and coefficients of variation, percent, for low molecular weigh PAHs (**LMWPAH**), high molecular weigh PAHs (**HMWPAH**) and total poly cyclic aromatic hydrocarbons (**tPAH**) in fine-grain sediments at NS&T sites.

		LMWpah			HMWpah			tPAH		
Location	SITE	mean	c.v.%	n	mean	c.v.%	n	mean	c.v.%	n
Machias Bay ME	MAC	210	104	6	96	59	6	300	76	6
Frenchmans Bay ME	FRN	65	83	6	190	75	6	260	60	6
Penobscot Bay ME	PNB	260	58	2	530	32	2	800	2	2
Penobscot Bay ME	PBSI	1200	47	6	2100	20	6	3300	28	6
Penobscot Bay ME	PBPI	1100	78	3	5500	78	3	6600	78	3
Merriconeag Snd. ME	MSSP	310	14	3	1300	10	3	1600	11	3
Casco Bay ME	CSC	1700	146	4	1700	86	4	3400	115	4
Cape Ann MA	CAGH	890	31	3	4900	5	3	5800	9	3
Salem Harbor MA	SHFP	2200	21	3	7000	25	3	9200	24	3
Salem Hrb. MA	SAL	6300	79	9	7000	39	9	13000	52	9
Boston Hrb. MA	BHDI	1200	22	5	5200	22	5	6400	21	5
Boston Hrb. MA	BHDB	1600	39	5	7200	48	5	8800	45	5
Boston Hrb. MA	BHHB	440	63	3	3300	8	3	3700	14	3
Boston Hrb. MA	BOS	18000	174	10	9700	94	10	28000	145	10
Quincy Bay MA	QUI	1500	22	3	4500	18	3	6000	19	3
Cape Cod MA	CCNH	360	73	3	1000	68	3	1400	69	3
Buzzards Bay MA	BBCC	320	33	3	1000	19	3	1300	22	3
Buzzards Bay MA	BBRH	830	53	6	2500	44	6	3400	45	6
Buzzards Bay MA	BBAR	2700	87	5	10000	63	5	13000	63	5
Buzzards Bay MA	BBGN	210	80	5	910	56	5	1100	60	5
Buzzards Bay MA	BUZ	540	97	7	460	81	7	1000	79	7
Narr. Bay RI	NBMH	630	18	3	2100	13	3	2800	14	3
Narr. Bay RI	NBDI	1700	90	5	5600	68	5	7200	72	5
Narr. Bay RI	NBDU	440	88	6	1300	6	6	1800	22	6
Narr. Bay RI	NAR	1300	53	10	1800	42	10	3000	42	10
Block Is. RI	BIBI	310	65	3	2100	31	3	2400	35	3
Long Is. Snd. CT	LICR	710	29	5	4500	38	5	5200	35	5
Long Is. Snd. CT	LISI	700	88	4	9800	110	5	14000	128	5
W. Long Is. Snd. NY	WLI	2600	98	5	5300	91	5	8000	89	5
Long Is. Snd. NY	LIHU	280	13	6	2400	20	6	2700	19	6
Long Is. Snd. NY	LIMR	760	31	6	4700	31	6	5500	31	6
Long Is. Snd. NY	LIHH	1200	59	6	4100	33	6	5300	36	6
Long Is. Snd. NY	LITN	2900	28	7	11000	23	7	14000	23	7
Moriches Bay NY	MBTH	360	54	5	1800	37	5	2100	40	5
Hud./Rar. Est NY	HRJB	2100	24	2	5000	11	2	7000	15	2
Hud./Rar. Est. NY	HRUB	19000	136	5	38000	112	5	57000	120	5
Hud./Rar. Est. NY	HRLB	3400	40	8	9600	44	8	13000	40	8
Hud./Rar. Est. NJ	HRRB	2000	10	3	6800	15	3	8700	14	3
Raritan Bay NJ	RAR	2600	46	7	7300	72	7	9900	65	7
N.Y. Bight NJ	NYSH	2500	24	6	6400	20	6	8900	20	6
Great Bay NJ	GRB	510	64	6	680	14	6	1200	32	6
Delaware Bay NJ	DBCM	270	55	2	610	54	2	890	54	2
Delaware Bay DE	DEL	860	106	6	400	17	6	1300	76	6
Delaware Bay NJ	DBFE	35	101	3	170	50	3	210	51	3
Delaware Bay NJ	DBBD	32	41	3	370	24	3	400	24	3
Delaware Bay DE	DBAP	160	109	6	560	77	6	730	78	6
Delaware Bay NJ	DBHC	280	-	1	680	-	1	950	-	1
Delaware Bay DE	DBWB	310	11	3	680	6	3	980	7	3
Delaware Bay DE	DBKI	170	39	6	700	46	6	870	44	6
Delaware Bay MD	DBCH	110	10	3	340	17	3	460	15	3
Baltimore Hrb. MD	BAL	4000	45	3	6900	39	3	11000	41	3
Up. Ches. Bay MD	UCB	2000	35	5	1800	24	5	3800	21	5
Ches. Bay MD	CBBO	2600	20	3	2200	24	3	4800	22	3
Ches. Bay MD	CBMP	2200	11	6	4200	17	6	6400	10	6
Ches. Bay MD	CBHP	1800	24	6	2400	35	6	4300	30	6
Ches. Bay MD	CBCP	110	10	3	230	27	3	330	17	3

Table C.2: (Continued)

Location	SITE	LMWpah mean	LMWpah c.v.%	LMWpah n	HMWpah mean	HMWpah c.v.%	HMWpah n	tPAH mean	tPAH c.v.%	tPAH n
Mid. Ches. Bay VA	MCB	120	32	3	110	3	2	610	102	3
Potomac River VA	PRRP	180	26	3	490	16	3	670	18	3
Potomac River MD	PRSP	220	5	3	810	27	3	1000	22	3
Ches. Bay VA	CBIB	15	224	5	730	44	5	740	47	5
Rappahannock R. VA	RRRR	39	63	2	1100	30	2	1200	27	2
Ches. Bay VA	CBCC	nd	-	2	120	141	2	120	141	2
Ches. Bay VA	CBDP	nd	-	4	680	18	4	680	18	4
Ches. Bay VA	CBJR	230	8	3	690	3	3	910	4	3
Low. Ches.Bay VA	LCB	430	96	7	110	47	7	530	77	7
Elizabeth R. VA	ELZ	4600	127	3	3300	63	2	24000	140	3
Quinby Inlet VA	QIUB	64	160	6	400	143	6	460	144	6
Pamlico Sound NC	PSPR	36	7	3	120	10	3	160	8	3
Pamlico Snd. NC	PAM	78	115	8	630	170	8	700	154	8
Pamlico Sound NC	PSNR	35	14	3	180	15	3	210	15	3
Cape Fear NC	CFBI	55	137	5	580	126	5	630	125	5
Santee River SC	SRNB	63	4	3	260	5	3	320	5	3
Charleston Hrb. SC	CHFJ	29	89	3	220	24	3	250	26	3
Charleston Hrb. SC	CHSF	87	95	5	550	70	5	640	72	5
Charleston Hrb. SC	CHS	390	71	9	3900	125	9	4300	117	9
Savannah R. Est. GA	SRTI	87	40	2	350	11	2	430	1	2
Sapelo Is. GA	SSA	270	177	9	77	143	9	340	140	9
St. Johns R. FL	SJCB	95	65	5	850	17	5	940	22	5
St. Johns R. FL	SJD	970	99	7	2900	45	7	3900	53	7
Indian River FL	IRSR	180	-	1	550	-	1	730	-	1
North Miami FL	NMML	460	13	3	2300	10	3	2800	10	3
Biscayne Bay FL	BBPC	120	141	6	140	67	6	260	77	6
Everglades FL	EVFU	23	99	4	65	55	4	88	28	4
Rookery Bay FL	RBHC	27	66	6	72	71	6	100	51	6
Naples Bay FL	NBNB	110	91	4	490	44	4	600	45	4
Charlotte Hrb. FL	CBBI	370	141	2	100	97	2	470	132	2
Charlotte Hrb. FL	LOT	48	215	5	72	93	5	120	121	5
Tampa Bay FL	TAM	190	-	1	270	-	1	450	-	1
Tampa Bay FL	TBMK	110	52	2	750	15	2	860	20	2
Tampa Bay FL	TBNP	480	37	3	2300	41	3	2800	40	3
Tampa Bay FL	TBHB	290	-	1	2900	-	1	3200	-	1
Tampa Bay FL	TBPB	360	38	3	2800	31	3	3200	31	3
Tampa Bay FL	TBKA	740	-	1	2700	-	1	3400	-	1
Tampa Bay FL	TBOT	130	-	1	280	-	1	410	-	1
Cedar Key FL	CKBP	32	82	5	82	53	5	110	43	5
Suwanee River FL	SRWP	210	20	3	140	31	3	350	5	3
Apalachee Bay FL	AESP	150	25	3	80	33	3	230	28	3
Apalachicola Bay FL	APCP	19	87	3	230	63	3	250	65	3
Apalachicola Bay FL	APDB	55	68	6	790	107	6	840	103	6
Apalachicola Bay FL	APA	8.5	217	9	210	143	9	220	139	9
Panama City FL	PCLO	120	21	2	120	16	2	240	18	2
Panama City FL	PCMP	2800	-	1	17000	-	1	19000	-	1
St. Andrew Bay FL	SAWB	5400	95	6	12000	125	6	18000	114	6
Choctawhat. Bay FL	CBSR	75	92	6	400	62	6	480	67	6
Choctawhat. Bay FL	CBPP	1200	44	4	9100	39	4	10000	39	4
Pensacola Bay Fl	PEN	250	67	4	1500	66	4	1700	65	4
Pensacola Bay FL	PBIB	160	70	6	880	87	6	1000	81	6
Mobile Bay AL	MBHI	240	35	3	790	39	3	1000	27	3
Mobile Bay AL	MBCP	120	45	4	360	28	4	480	32	4
Mobile Bay AL	MOB	22	91	9	90	102	9	110	99	9
Round Is. MS	ROU	38	97	9	100	80	9	140	66	9
Heron Bay MS	HER	53	103	6	160	88	6	220	84	6

Table C.2: (Continued)

Location	SITE	LMWpah mean	LMWpah c.v.%	LMWpah n	HMWpah mean	HMWpah c.v.%	HMWpah n	tPAH mean	tPAH c.v.%	tPAH n
Miss. Snd. MS	MSPB	44	86	6	440	42	6	480	46	6
Miss. Snd. MS	MSBB	3000	110	2	3800	38	2	6800	69	2
Miss. Snd. MS	MSPC	43	62	3	260	10	3	300	17	3
Miss. Delta LA	MRD	120	77	8	510	85	9	1100	122	9
Lake Borgne LA	LBNO	110	14	3	340	16	3	450	11	3
Lake Borgne LA	LBMP	39	105	6	270	33	6	310	40	6
Breton Snd. LA	BSBG	nd	-	3	24	87	3	24	87	3
Breton Snd. LA	BSSI	9.7	171	6	230	76	6	240	74	6
Miss.River LA	MRTP	120	10	3	390	49	3	510	39	3
Miss.River LA	MRPL	540	35	3	1400	38	3	1900	37	3
Barataria Bay LA	BBSD	74	52	6	480	41	6	550	42	6
Barataria Bay LA	BBTB	180	48	3	600	31	3	780	34	3
Barataria Bay LA	BBMB	130	75	6	2800	86	6	3000	86	6
Barataria Bay LA	BAR	33	113	3	170	85	3	200	89	3
Terrebonne Bay LA	TBLF	68	79	6	330	45	6	400	43	6
Terrebonne Bay LA	TBLB	29	108	3	490	87	3	520	88	3
Caillou Lake LA	CLCL	56	62	6	430	18	6	490	18	6
Atchafalaya Bay LA	ABOB	91	54	6	350	53	6	440	53	6
Vermillion Bay LA	VBSP	98	81	3	210	64	3	310	35	3
J. Hrb. Bayou LA	JHJH	35	48	5	760	63	5	790	59	5
Calcasieu Lake LA	CLLC	110	58	3	320	54	3	430	55	3
Calcasieu Lake LA	CLSJ	34	30	6	290	13	6	320	14	6
Sabine Lake TX	SLBB	6.2	245	6	70	113	6	76	99	6
E. Cote Blanche LA	ECSP	110	45	3	320	6	3	430	15	3
Galveston Bay TX	GBHR	33	141	6	180	49	6	210	62	6
Galveston Bay TX	GBSC	170	10	3	980	5	3	1100	4	3
Galveston Bay TX	GBYC	230	213	6	1100	189	6	1300	193	6
Galveston Bay TX	GBTD	33	122	6	190	29	6	220	39	6
Galveston Bay TX	GBCR	67	115	6	370	55	6	440	59	6
Galveston Bay TX	GBOB	370	31	3	1700	43	3	2000	41	3
Galveston Bay TX	GAD	14	148	6	73	105	6	88	98	6
Brazos River TX	BRFS	65	22	3	420	46	3	480	43	3
Brazos River TX	BRCL	91	22	3	210	42	3	300	36	3
Matagorda Bay TX	MBEM	24	148	5	84	76	5	110	75	5
Matagorda Bay TX	MBDI	64	28	3	150	49	3	220	27	3
Matagorda Bay TX	MBCB	71	48	3	130	73	3	200	62	3
Matagorda Bay TX	MBTP	29	226	6	54	147	6	83	173	6
Matagorda Bay TX	MBGP	26	131	6	390	12	6	410	11	6
Matagorda Bay TX	MBLR	28	107	6	350	63	6	380	59	6
Espiritu Santo TX	ESSP	15	115	6	100	28	6	120	36	6
Espiritu Santo TX	ESBD	11	141	2	31	141	2	43	141	2
San Antonio Bay TX	SAMP	12	245	6	80	41	6	92	52	6
San Antonio Bay TX	SAPP	12	224	5	61	47	5	73	76	5
San Antonio Bay TX	SAB	100	216	9	5.9	215	9	110	203	9
Mesquite Bay TX	MBAR	22	129	6	88	34	6	110	39	6
Copano Bay TX	CBCR	3.4	164	6	71	54	6	74	58	6
Aransas Bay TX	ABHI	84	10	3	180	85	3	260	57	3
Aransas Bay TX	ABLR	5.6	117	6	97	62	6	100	62	6
Corpus Christi TX	CCBH	150	21	3	1000	6	3	1200	8	3
Corpus Christi TX	CCIC	100	200	4	98	50	3	98	50	3
Corpus Christi TX	CCNB	49	145	6	440	93	6	490	97	6
Corpus Christi Bay TX	CCB	5.4	181	7	140	123	8	600	204	8
L. LagunaMadre TX	LMSB	1.5	245	6	34	93	6	36	88	6
Laguna Madre TX	LMPI	110	75	3	1100	85	3	1200	84	3
L. Laguna Madre TX	LLM	120	128	7	11	172	7	130	120	7
San Diego Bay CA	SDF	92	61	2	230	36	2	330	43	2

Table C.2: (Continued)

Location	SITE	LMWpah mean	LMWpah c.v.%	LMWpah n	HMWpah mean	HMWpah c.v.%	HMWpah n	tPAH mean	tPAH c.v.%	tPAH n
San Diego Bay CA	SDHI	280	51	6	2500	53	6	2800	52	6
San Diego Hrb. CA	SDA	1600	190	9	5700	80	9	7300	75	9
San Diego Bay	NSD	650	91	3	5400	51	3	6000	55	3
Pt. Loma CA	PLLH	nd	-	5	26	200	4	26	200	4
La Jolla CA	LJLJ	nd	-	3	nd	-	2	nd	-	2
Oceanside CA	OSBJ	.75	245	6	4.6	141	2	6.9	49	2
Dana Pt. CA	DAN	18	197	9	42	188	8	63	185	8
Newport Bch. CA	NBWJ	29	119	5	160	70	5	190	75	5
Anaheim Bay CA	ABWJ	7.4	112	6	110	85	6	120	86	6
Long Beach CA	LNB	120	97	9	660	55	9	780	60	9
San Pedro Bay CA	SPB	230	78	8	1800	47	8	2000	47	8
San Pedro Hrb. CA	SPFP	440	67	6	1900	73	6	2400	60	6
Palos Verdes CA	PVRP	260	68	6	880	97	6	1100	82	6
Santa Monica Bay CA	SMW	920	122	2	400	125	2	1300	123	2
Marina Del Ray CA	MDSJ	53	117	6	260	63	6	320	71	6
Pt. Dume CA	PDPD	12	115	4	67	92	5	77	91	5
Pt. S. Barbara CA	SBSB	87	89	6	410	87	6	490	85	6
Moss Landing CA	MOS	-	-	0	-	-	0	-	-	0
Monterey Bay CA	MBSC	120	-	1	120	-	1	240	-	1
Southamp. Shl. CA	SHS	130	38	2	700	38	2	830	38	2
Oakland Est. CA	OAK	320	30	3	1600	24	3	1900	24	3
Hunters Pt. CA	HUN	830	60	9	3900	41	9	4700	44	9
San Fran. Bay CA	SFDB	250	25	6	2200	27	6	2500	25	6
San Fran. Bay CA	SFSM	220	29	3	2900	11	3	3100	11	3
San Fran. Bay CA	SFEM	280	14	6	1700	57	6	2000	50	6
San Pablo Bay CA	PAB	37	116	9	430	48	8	480	51	8
San Pablo Bay CA	SPSM	230	105	6	1000	36	6	1300	31	6
San Pablo Bay CA	SPSP	180	28	6	1300	10	6	1500	11	6
Tomales Bay CA	TBSR	260	18	6	160	31	6	420	13	6
Humboldt Bay CA	HMB	-	-	0	-	-	0	-	-	0
Coos Bay OR	COO	550	72	4	960	59	4	1500	63	4
Coos Bay OR	CBCH	-	-	0	-	-	0	-	-	0
Coos Bay OR	CBRP	48	144	5	250	31	5	300	43	5
Yaquina Bay OR	YBOP	120	55	3	290	50	3	410	51	3
Yaquina Head OR	YHSS	15	224	5	29	200	4	38	143	5
Tillamook Bay OR	TBHP	100	73	2	170	41	2	270	53	2
Columbia R. OR	CRYB	74	142	4	99	68	4	170	86	4
Young's Bay OR	YNB	-	-	0	-	-	0	-	-	0
Columbia R. OR	COL	81	56	3	290	88	3	370	80	3
S. Juan de Fuca WA	JFNB	290	14	3	1400	23	3	1600	20	3
South Puget Snd. WA	SSBI	290	114	6	460	52	6	740	76	6
Comm. Bay WA	COM	640	23	9	660	41	9	1300	32	9
Comm. Bay WA	CBBP	610	46	6	1000	42	6	1600	43	6
Puget Sound WA	PSSS	460	4	3	1100	7	3	1600	6	3
Elliott Bay WA	ELL	3300	56	9	11000	69	9	14000	66	9
Sinclair Inlet WA	SIWP	890	34	3	3800	39	3	4600	38	3
Puget Sound WA	PSHC	560	40	3	410	13	3	970	29	3
Whidbey Is. WA	WIPP	200	71	3	770	21	3	970	18	3
Puget Sound WA	PSEH	1400	43	2	2100	37	2	3600	40	2
Puget Sound WA	PSPA	810	7	3	570	6	3	1400	5	3
Bellingham Bay WA	BBSM	670	35	6	990	48	6	1700	41	6
Pt. Roberts WA	PRPR	310	54	6	370	42	6	680	47	6
Boca de Quadra AK	BDQ	nd	-	3	230	63	3	230	63	3
Lutak Inlet AK	LUT	1.2	245	6	1.5	200	4	3.3	200	4
Skagway AK	SKA	280	112	3	910	76	2	1300	73	2
Nahku Bay AK	NAH	nd	-	3	160	137	3	160	137	3

Table C.2: (Continued)

Location	SITE	LMWpah			HMWpah			tPAH		
		mean	c.v.%	n	mean	c.v.%	n	mean	c.v.%	n
Unakwit Inlet AK	UISB	nd	-	3	nd	-	3	nd	-	3
Valdez AK	VAL	nd	-	3	-	-	0	-	-	0
Port Valdez AK	PVMC	-	-	0	-	-	0	-	-	0
Kamishak Bay AK	KAM	18	89	3	10	34	2	37	4	2
Dutch Hrb. AK	DUT	180	72	3	640	34	3	820	42	3
Oliktok Pt. AK	OLI	790	35	6	370	60	6	1200	43	6
Prudhoe Bay AK	END	440	88	6	320	77	6	760	83	6
Barber's Pt. HI	BPBP	320	61	6	4500	83	6	4800	81	6
Honolulu Hrb. HI	HHKL	430	95	6	4600	100	6	5100	92	6

Table C.3: Average grain-size adjusted concentrations, ng/g dry-wt, and coefficients of variation, percent, for total DDT (**tDDT**), total chlordane (**tCdane**) and total dieldrin (**tDiel**) in fine-grain sediments at NS&T sites.

		tDDT			tCdane			tDiel		
Location	SITE	mean	c.v.%	n	mean	c.v.%	n	mean	c.v.%	n
Machias Bay ME	MAC	.97	125	6	.18	147	5	.36	110	6
Frenchmans Bay ME	FRN	1.2	131	6	.94	169	6	2	135	6
Penobscot Bay ME	PNB	3.2	141	2	.85	74	2	nd	-	1
Penobscot Bay ME	PBSI	4.8	86	6	.9	84	6	.65	86	6
Penobscot Bay ME	PBPI	7.1	110	3	3.6	37	3	.39	173	3
Merriconeag Snd. ME	MSSP	6.4	35	3	5.9	24	3	2.0	19	3
Casco Bay ME	CSC	9.5	96	4	2.7	81	4	2.6	121	4
Cape Ann MA	CAGH	12	29	3	3.5	43	3	nd	-	3
Salem Harbor MA	SHFP	26	10	2	12	15	3	nd	-	3
Salem Hrb. MA	SAL	53	49	9	11	72	9	2.6	173	9
Boston Hrb. MA	BHDI	37	17	5	8.6	28	5	6.3	96	5
Boston Hrb. MA	BHDB	62	25	5	10	52	5	18	18	5
Boston Hrb. MA	BHHB	34	24	3	8.3	31	3	8	26	3
Boston Hrb. MA	BOS	37	56	9	12	33	10	2.3	152	10
Quincy Bay MA	QUI	41	28	3	10	29	3	.43	93	3
Cape Cod MA	CCNH	15	49	3	5.4	50	3	nd	-	3
Buzzards Bay MA	BBCC	16	33	3	2.9	40	3	.72	87	3
Buzzards Bay MA	BBRH	4.7	54	6	1	155	6	5.2	29	6
Buzzards Bay MA	BBAR	31	120	5	1.5	94	5	19	138	5
Buzzards Bay MA	BBGN	3.1	23	5	1.1	139	5	4	86	5
Buzzards Bay MA	BUZ	4	111	7	.59	137	7	.2	265	7
Narr. Bay RI	NBMH	11	11	3	1.9	13	3	3.1	12	3
Narr. Bay RI	NBDI	11	10	5	2.9	77	5	2.4	79	5
Narr. Bay RI	NBDU	9	113	6	1.6	82	6	1	116	6
Narr. Bay RI	NAR	12	70	10	6.1	48	10	8.9	61	10
Block Is. RI	BIBI	3.1	97	3	nd	-	3	.72	173	3
Long Is. Snd. CT	LICR	29	21	5	4.1	103	5	3.7	25	5
Long Is. Snd. CT	LISI	14	68	5	3.2	37	5	2.2	71	5
W. Long Is. Snd. NY	WLI	14	62	5	5.2	36	5	1.1	70	5
Long Is. Snd. NY	LIHU	33	51	6	3.3	110	6	.18	245	6
Long Is. Snd. NY	LIMR	33	86	6	7.2	38	6	4.2	45	6
Long Is. Snd. NY	LIHH	46	37	6	15	55	6	8	46	6
Long Is. Snd. NY	LITN	83	29	7	16	37	7	2.1	161	7
Moriches Bay NY	MBTH	47	87	5	4.1	22	5	.95	152	5
Hud./Rar. Est NY	HRJB	88	4	2	25	10	2	14	0	2
Hud./Rar. Est. NY	HRUB	33	101	5	11	90	5	6.8	77	5
Hud./Rar. Est. NY	HRLB	82	60	8	17	44	8	8.7	36	8
Hud./Rar. Est. NJ	HRRB	65	4	3	13	6	3	11	1	3
Raritan Bay NJ	RAR	60	21	7	12	27	7	4.6	110	7
N.Y. Bight NJ	NYSH	71	50	6	15	44	6	12	45	6
Great Bay NJ	GRB	11	45	6	3.5	43	6	1.1	112	6
Delaware Bay NJ	DBCM	13	34	2	nd	-	2	7.5	53	2
Delaware Bay DE	DEL	11	35	6	17	130	6	1.5	155	6
Delaware Bay NJ	DBFE	42	53	3	3.3	13	3	4.7	28	3
Delaware Bay NJ	DBBD	9.1	37	3	.42	97	3	1	35	3
Delaware Bay DE	DBAP	21	95	6	2.1	101	6	1.8	88	6
Delaware Bay NJ	DBHC	18	-	1	2.3	-	1	3.7	-	1
Delaware Bay DE	DBWB	27	48	3	.16	173	3	2.7	105	3
Delaware Bay DE	DBKI	13	46	6	1.6	79	6	1.4	69	6
Delaware Bay MD	DBCH	5.7	18	3	nd	-	3	nd	-	3
Baltimore Hrb. MD	BAL	33	7	3	9.5	20	3	2.5	96	3
Up. Ches. Bay MD	UCB	14	52	5	3.4	56	5	.81	97	5
Ches. Bay MD	CBBO	18	21	3	nd	-	3	nd	-	3
Ches. Bay MD	CBMP	14	22	6	2	90	6	1.1	129	6
Ches. Bay MD	CBHP	14	85	6	3.1	57	6	3.9	94	6
Ches. Bay MD	CBCP	1	87	3	nd	-	3	2.8	9	3

Table C.3: (Continued)

Location	SITE	tDDT mean	tDDT c.v.%	tDDT n	tCdane mean	tCdane c.v.%	tCdane n	tDiel mean	tDiel c.v.%	tDiel n
Mid. Ches. Bay VA	MCB	1.2	57	3	.25	173	3	nd	-	3
Potomac River VA	PRRP	4.5	173	3	nd	-	3	nd	-	3
Potomac River MD	PRSP	3.5	64	3	nd	-	3	nd	-	3
Ches. Bay VA	CBIB	2.6	93	5	1.1	121	5	1.2	224	5
Rappahannock R. VA	RRRR	7.3	30	2	nd	-	2	nd	-	2
Ches. Bay VA	CBCC	2.4	141	2	.79	141	2	nd	-	2
Ches. Bay VA	CBDP	7.1	49	4	1.4	92	4	.47	200	4
Ches. Bay VA	CBJR	8.6	22	3	nd	-	3	nd	-	3
Low. Ches.Bay VA	LCB	2.7	75	7	1.4	64	7	.45	112	7
Elizabeth R. VA	ELZ	33	87	3	5.8	56	3	.55	173	3
Quinby Inlet VA	QIUB	2.9	123	6	1.5	76	6	1.3	127	6
Pamlico Sound NC	PSPR	1.6	173	3	nd	-	3	2.2	17	3
Pamlico Snd. NC	PAM	1.5	143	8	nd	-	8	nd	-	5
Pamlico Sound NC	PSNR	1.7	11	2	nd	-	2	1.9	10	2
Cape Fear NC	CFBI	2.8	120	5	nd	-	5	nd	-	5
Santee River SC	SRNB	2.9	26	3	1.8	62	3	nd	-	3
Charleston Hrb. SC	CHFJ	.65	173	3	.5	173	3	nd	-	3
Charleston Hrb. SC	CHSF	.43	224	5	nd	-	5	nd	-	5
Charleston Hrb. SC	CHS	2.9	176	9	.055	300	9	nd	-	6
Savannah R. Est. GA	SRTI	8.8	19	2	4.1	50	2	2	45	2
Sapelo Is. GA	SSA	5.1	222	9	nd	-	9	nd	-	6
St. Johns R. FL	SJCB	11	58	5	3.1	73	5	1.9	74	5
St. Johns R. FL	SJD	8.7	50	7	1.4	176	7	nd	-	4
Indian River FL	IRSR	9.8	-	1	nd	-	1	nd	-	1
North Miami FL	NMML	7.7	16	3	2.9	9	3	2.5	10	3
Biscayne Bay FL	BBPC	9.6	94	6	2.9	95	6	1.9	138	6
Everglades FL	EVFU	.81	73	4	.26	97	4	.22	164	4
Rookery Bay FL	RBHC	1.6	63	6	1.6	73	6	.093	137	6
Naples Bay FL	NBNB	4.4	52	4	3.8	118	4	.93	96	4
Charlotte Hrb. FL	CBBI	2.2	29	2	1.1	63	2	.51	90	2
Charlotte Hrb. FL	LOT	nd	-	5	nd	-	5	nd	-	3
Tampa Bay FL	TAM	nd	-	1	nd	-	1	nd	-	1
Tampa Bay FL	TBMK	8.5	25	2	26	77	2	1.8	91	2
Tampa Bay FL	TBNP	22	15	3	19	19	3	6.1	22	3
Tampa Bay FL	TBHB	36	-	1	5.4	-	1	1.1	-	1
Tampa Bay FL	TBPB	45	56	3	16	87	3	.22	59	2
Tampa Bay FL	TBKA	68	-	1	15	-	1	23	-	1
Tampa Bay FL	TBOT	5.1	-	1	1.3	-	1	1.1	-	1
Cedar Key FL	CKBP	1.4	76	5	1.4	86	5	.31	131	5
Suwanee River FL	SRWP	5.2	52	3	1.6	66	3	3.1	97	3
Apalachee Bay FL	AESP	7.5	16	3	1.5	45	3	2.2	71	3
Apalachicola Bay FL	APCP	2.4	40	3	.32	115	3	.046	173	3
Apalachicola Bay FL	APDB	3.1	63	5	2.1	200	6	.11	137	5
Apalachicola Bay FL	APA	2.8	114	9	nd	-	9	nd	-	6
Panama City FL	PCLO	41	18	2	1.2	29	2	.7	39	2
Panama City FL	PCMP	14	-	1	10	-	1	.25	-	1
St. Andrew Bay FL	SAWB	100	79	6	14	102	6	3.1	153	6
Choctawhat. Bay FL	CBSR	20	86	6	.84	103	6	1.1	137	6
Choctawhat. Bay FL	CBPP	2200	96	4	93	42	4	13	58	4
Pensacola Bay Fl	PEN	nd	-	4	nd	-	4	nd	-	2
Pensacola Bay FL	PBIB	6.4	36	5	1.3	72	6	.4	126	6
Mobile Bay AL	MBHI	28	14	3	2.7	36	3	3.4	17	3
Mobile Bay AL	MBCP	15	42	4	.4	79	4	.74	89	4
Mobile Bay AL	MOB	2.2	95	9	nd	-	9	.24	245	6
Round Is. MS	ROU	.97	229	9	.35	201	9	nd	-	9
Heron Bay MS	HER	nd	-	6	nd	-	6	nd	-	3

Table C.3: (Continued)

Location	SITE	tDDT mean	tDDT c.v.%	tDDT n	tCdane mean	tCdane c.v.%	tCdane n	tDiel mean	tDiel c.v.%	tDiel n
Miss. Snd. MS	MSPB	2.4	45	6	.91	123	6	.35	40	6
Miss. Snd. MS	MSBB	8.5	45	2	2.5	5	2	2	101	2
Miss. Snd. MS	MSPC	1	31	3	.3	40	3	.46	6	3
Miss. Delta LA	MRD	3.9	131	9	.63	212	9	1.4	146	6
Lake Borgne LA	LBNO	3.8	30	3	2.3	76	3	1.4	25	3
Lake Borgne LA	LBMP	.74	50	6	.24	58	6	.17	60	6
Breton Snd. LA	BSBG	.53	38	3	.049	100	3	.033	173	3
Breton Snd. LA	BSSI	.59	65	6	.16	86	6	.1	66	6
Miss.River LA	MRTP	3.2	38	3	.6	96	3	1.3	78	3
Miss.River LA	MRPL	19	28	3	2.9	44	3	2.6	48	3
Barataria Bay LA	BBSD	1.8	30	6	.6	47	6	.4	72	6
Barataria Bay LA	BBTB	2	80	3	.3	94	3	.035	87	3
Barataria Bay LA	BBMB	2.4	65	6	1.2	31	6	.4	146	6
Barataria Bay LA	BAR	nd	-	3	nd	-	3	nd	-	3
Terrebonne Bay LA	TBLF	1.7	95	6	.56	52	6	.17	114	6
Terrebonne Bay LA	TBLB	1.7	41	3	.88	37	3	.13	173	3
Caillou Lake LA	CLCL	1.2	45	6	.24	122	6	.14	160	6
Atchafalaya Bay LA	ABOB	5	50	6	.57	45	6	.85	55	6
Vermillion Bay LA	VBSP	1.7	125	3	.3	75	3	.28	93	3
J. Hrb. Bayou LA	JHJH	2.5	48	5	.67	118	5	.52	58	5
Calcasieu Lake LA	CLLC	.53	37	3	.1	36	2	.63	117	3
Calcasieu Lake LA	CLSJ	1.2	39	6	.29	23	6	.45	36	6
Sabine Lake TX	SLBB	.28	163	6	.079	131	6	.086	139	6
E. Cote Blanche LA	ECSP	5.8	30	3	.77	18	3	.67	51	3
Galveston Bay TX	GBHR	.44	72	6	.13	157	6	.19	122	6
Galveston Bay TX	GBSC	6.7	43	3	2.2	23	3	2.2	52	3
Galveston Bay TX	GBYC	4	80	6	2.4	112	6	.71	50	6
Galveston Bay TX	GBTD	1.6	59	6	.78	51	6	.53	29	6
Galveston Bay TX	GBCR	.42	101	6	.15	163	6	.1	183	6
Galveston Bay TX	GBOB	100	95	3	4	64	3	8.5	67	3
Galveston Bay TX	GAD	nd	-	6	nd	-	6	nd	-	5
Brazos River TX	BRFS	6.1	46	3	.73	123	3	.2	37	3
Brazos River TX	BRCL	3.5	8	3	4.5	45	3	2.4	7	3
Matagorda Bay TX	MBEM	.24	130	4	.26	124	5	.081	224	5
Matagorda Bay TX	MBDI	1.8	10	3	.15	75	3	.21	83	3
Matagorda Bay TX	MBCB	1.3	51	3	.062	173	3	.039	173	3
Matagorda Bay TX	MBTP	3.9	48	5	.089	73	6	.062	119	6
Matagorda Bay TX	MBGP	2.6	49	6	.19	98	6	.13	120	6
Matagorda Bay TX	MBLR	.74	70	5	.11	64	5	.36	230	6
Espiritu Santo TX	ESSP	.31	73	6	.14	61	6	.17	133	6
Espiritu Santo TX	ESBD	1.4	121	2	.29	141	2	.13	141	2
San Antonio Bay TX	SAMP	.48	54	6	.29	168	6	.059	135	6
San Antonio Bay TX	SAPP	.095	146	5	.21	183	5	nd	-	5
San Antonio Bay TX	SAB	nd	-	9	nd	-	9	nd	-	6
Mesquite Bay TX	MBAR	1	140	6	.44	156	6	.076	138	6
Copano Bay TX	CBCR	1.1	48	6	.15	245	6	.081	245	6
Aransas Bay TX	ABHI	1.5	38	3	.11	105	3	.66	60	3
Aransas Bay TX	ABLR	.24	82	6	.22	174	6	.016	245	6
Corpus Christi TX	CCBH	2.7	76	3	.83	119	3	2.4	103	3
Corpus Christi TX	CCIC	.044	200	4	.044	200	4	nd	-	4
Corpus Christi TX	CCNB	.9	66	6	.11	93	6	.009	245	6
Corpus Christi Bay TX	CCB	.32	283	8	nd	-	8	nd	-	5
L. LagunaMadre TX	LMSB	.36	125	6	.09	130	6	.1	152	6
Laguna Madre TX	LMPI	3.4	38	3	.037	65	2	.43	66	3
L. Laguna Madre TX	LLM	nd	-	7	nd	-	7	nd	-	6
San Diego Bay CA	SDF	6.2	4	2	nd	-	2	nd	-	2

Table C.3: (Continued)

Location	SITE	tDDT mean	tDDT c.v.%	tDDT n	tCdane mean	tCdane c.v.%	tCdane n	tDiel mean	tDiel c.v.%	tDiel n
San Diego Bay CA	SDHI	30	89	6	3.1	75	6	9.1	94	6
San Diego Hrb. CA	SDA	24	67	8	12	38	9	nd	-	9
San Diego Bay	NSD	13	82	3	3.4	98	3	nd	-	3
Pt. Loma CA	PLLH	54	63	6	.74	130	6	2.3	60	6
La Jolla CA	LJLJ	16	62	3	.36	42	3	.92	46	3
Oceanside CA	OSBJ	63	62	6	1.3	88	6	.88	128	6
Dana Pt. CA	DAN	4.2	76	8	nd	-	9	nd	-	9
Newport Bch. CA	NBWJ	50	45	5	1.2	66	5	.6	224	5
Anaheim Bay CA	ABWJ	43	22	6	3.1	34	6	.6	158	6
Long Beach CA	LNB	120	66	9	12	84	9	1.2	150	9
San Pedro Bay CA	SPB	1200	89	8	nd	-	8	nd	-	8
San Pedro Hrb. CA	SPFP	780	110	6	5.3	118	6	2.4	157	6
Palos Verdes CA	PVRP	5900	76	6	12	39	6	11	167	6
Santa Monica Bay CA	SMW	300	44	2	8.1	100	2	nd	-	2
Marina Del Ray CA	MDSJ	190	72	6	5.3	122	6	1.3	132	6
Pt. Dume CA	PDPD	270	43	6	4.9	65	6	3.5	35	6
Pt. S. Barbara CA	SBSB	80	34	6	3.7	80	6	1.7	129	6
Moss Landing CA	MOS	-	-	0	-	-	0	-	-	0
Monterey Bay CA	MBSC	43	-	1	1.6	-	1	1.7	-	1
Southamp. Shl. CA	SHS	10	33	2	1.5	55	2	2.5	39	2
Oakland Est. CA	OAK	5.9	41	3	nd	-	3	nd	-	3
Hunters Pt. CA	HUN	6.8	46	8	.11	150	9	.23	150	9
San Fran. Bay CA	SFDB	16	46	6	1.9	82	6	3.7	18	6
San Fran. Bay CA	SFSM	9.5	38	3	.94	15	3	1.8	9	3
San Fran. Bay CA	SFEM	30	38	6	.84	42	6	2	54	6
San Pablo Bay CA	PAB	6	111	8	.28	235	9	.34	166	9
San Pablo Bay CA	SPSM	45	62	6	3.1	133	6	4.9	131	6
San Pablo Bay CA	SPSP	14	18	6	.99	21	6	1.2	48	6
Tomales Bay CA	TBSR	1.9	52	6	.32	205	6	.17	122	6
Humboldt Bay CA	HMB	-	-	0	-	-	0	-	-	0
Coos Bay OR	COO	3.3	121	2	nd	-	4	nd	-	4
Coos Bay OR	CBCH	-	-	0	-	-	0	-	-	0
Coos Bay OR	CBRP	2.1	66	5	.45	158	5	1.1	137	5
Yaquina Bay OR	YBOP	2.1	80	3	.32	93	3	nd	-	3
Yaquina Head OR	YHSS	5.3	131	6	1.2	104	6	1.2	92	5
Tillamook Bay OR	TBHP	2.5	21	2	nd	-	2	.54	141	2
Columbia R. OR	CRYB	22	54	4	2.9	92	4	2.1	90	4
Young's Bay OR	YNB	-	-	0	-	-	0	-	-	0
Columbia R. OR	COL	-	-	0	nd	-	3	nd	-	3
S. Juan de Fuca WA	JFNB	4	26	3	nd	-	3	4.7	89	3
South Puget Snd. WA	SSBI	9.4	128	6	.08	137	5	1.2	119	6
Comm. Bay WA	COM	5.9	113	5	.54	160	9	.84	150	9
Comm. Bay WA	CBBP	3.5	66	6	.34	113	6	.77	111	6
Puget Sound WA	PSSS	2.4	38	3	nd	-	3	nd	-	3
Elliott Bay WA	ELL	33	125	9	2.6	156	9	1.4	300	9
Sinclair Inlet WA	SIWP	9.3	85	3	.25	102	3	nd	-	3
Puget Sound WA	PSHC	1.4	35	3	nd	-	3	nd	-	3
Whidbey Is. WA	WIPP	9.7	97	3	.47	121	3	nd	-	3
Puget Sound WA	PSEH	2.6	14	2	nd	-	2	nd	-	2
Puget Sound WA	PSPA	1.4	42	3	nd	-	3	nd	-	3
Bellingham Bay WA	BBSM	4.6	95	6	.76	82	6	.71	245	6
Pt. Roberts WA	PRPR	2.4	30	6	.51	85	6	.79	125	6
Boca de Quadra AK	BDQ	-	-	0	nd	-	3	nd	-	3
Lutak Inlet AK	LUT	6.6	54	2	nd	-	6	nd	-	6
Skagway AK	SKA	4.8	109	2	nd	-	3	nd	-	3
Nahku Bay AK	NAH	-	-	0	nd	-	3	nd	-	3

Table C.3: (Continued)

Location	SITE	tDDT mean	tDDT c.v.%	tDDT n	tCdane mean	tCdane c.v.%	tCdane n	tDiel mean	tDiel c.v.%	tDiel n
Unakwit Inlet AK	UISB	.88	48	3	nd	-	3	nd	-	3
Valdez AK	VAL	-	-	0	.34	173	3	nd	-	3
Port Valdez AK	PVMC	.87	66	3	.067	173	3	nd	-	3
Kamishak Bay AK	KAM	-	-	0	nd	-	3	nd	-	3
Dutch Hrb. AK	DUT	3.8	70	2	nd	-	3	nd	-	3
Oliktok Pt. AK	OLI	-	-	0	nd	-	6	nd	-	6
Prudhoe Bay AK	END	1.3	-	1	.098	245	6	nd	-	6
Barber's Pt. HI	BPBP	5	107	6	.85	128	6	.095	186	6
Honolulu Hrb. HI	HHKL	2.4	79	6	.56	245	6	.72	155	6

Table C.4: Average grain-size adjusted concentrations, ng/g dry-wt, and coefficients of variation, percent, for Hexachlorobenzene (**HxChlB**), **Lindane** and **Mirex** in fine-grain sediments at NS&T sites.

		HxChlB			Lindane			Mirex		
Location	SITE	mean	c.v.%	n	mean	c.v.%	n	mean	c.v.%	n
Machias Bay ME	MAC	.53	112	6	.87	69	6	nd	-	6
Frenchmans Bay ME	FRN	.91	92	6	.27	162	6	nd	-	6
Penobscot Bay ME	PNB	1.6	35	2	.9	141	2	nd	-	2
Penobscot Bay ME	PBSI	2	51	6	.35	158	6	.36	113	6
Penobscot Bay ME	PBPI	nd	-	3	nd	-	3	nd	-	3
Merriconeag Snd. ME	MSSP	1.5	26	3	nd	-	3	nd	-	3
Casco Bay ME	CSC	1.9	53	4	nd	-	4	nd	-	4
Cape Ann MA	CAGH	nd	-	3	nd	-	3	.44	173	3
Salem Harbor MA	SHFP	2.8	34	3	nd	-	3	nd	-	3
Salem Hrb. MA	SAL	3.4	94	9	5.7	146	9	1.1	154	9
Boston Hrb. MA	BHDI	1	56	5	.52	224	5	1.5	77	5
Boston Hrb. MA	BHDB	.62	137	5	nd	-	5	2.8	41	5
Boston Hrb. MA	BHHB	nd	-	3	nd	-	3	3.9	25	3
Boston Hrb. MA	BOS	1.9	77	10	.82	157	10	2	102	10
Quincy Bay MA	QUI	.89	63	3	1.2	46	3	3.7	46	3
Cape Cod MA	CCNH	4.1	82	3	nd	-	3	nd	-	3
Buzzards Bay MA	BBCC	1.9	21	2	1.2	87	3	.58	87	3
Buzzards Bay MA	BBRH	.14	92	5	.23	245	6	nd	-	6
Buzzards Bay MA	BBAR	nd	-	5	.13	224	5	1.3	97	5
Buzzards Bay MA	BBGN	.58	106	5	nd	-	5	.68	148	5
Buzzards Bay MA	BUZ	.38	209	7	1.1	220	7	.093	265	7
Narr. Bay RI	NBMH	nd	-	3	.29	103	3	.29	90	3
Narr. Bay RI	NBDI	.14	224	5	.56	224	5	.7	137	5
Narr. Bay RI	NBDU	nd	-	6	.15	245	6	.67	134	6
Narr. Bay RI	NAR	1.7	91	10	3.9	159	10	.71	166	10
Block Is. RI	BIBI	1.9	173	3	nd	-	3	nd	-	3
Long Is. Snd. CT	LICR	.81	224	5	1	122	5	.81	124	5
Long Is. Snd. CT	LISI	.055	224	5	1.5	79	5	.46	111	5
W. Long Is. Snd. NY	WLI	.59	94	5	2	88	5	2.2	93	5
Long Is. Snd. NY	LIHU	.7	143	6	.64	126	6	.39	245	6
Long Is. Snd. NY	LIMR	1.4	103	6	1.2	130	6	1.5	15	6
Long Is. Snd. NY	LIHH	.58	91	6	2.6	30	6	2.8	33	6
Long Is. Snd. NY	LITN	1.9	107	7	1.2	152	7	5.8	65	7
Moriches Bay NY	MBTH	1	110	5	3.2	126	5	2.5	84	5
Hud./Rar. Est NY	HRJB	2.4	11	2	4.4	35	2	7	40	2
Hud./Rar. Est. NY	HRUB	1.1	97	5	1.4	127	5	4.5	140	5
Hud./Rar. Est. NY	HRLB	1.9	36	8	.37	143	8	1.6	88	8
Hud./Rar. Est. NJ	HRRB	1.4	13	3	.73	14	3	1.5	11	3
Raritan Bay NJ	RAR	3.8	87	7	2.9	96	7	3.1	102	7
N.Y. Bight NJ	NYSH	1.5	36	6	.46	189	6	2.1	52	6
Great Bay NJ	GRB	.62	58	6	.28	118	6	.51	245	6
Delaware Bay NJ	DBCM	5.4	82	2	1.1	141	2	nd	-	2
Delaware Bay DE	DEL	1.6	53	6	2.2	69	6	nd	-	6
Delaware Bay NJ	DBFE	nd	-	3	.26	173	3	2.4	88	3
Delaware Bay NJ	DBBD	nd	-	3	.18	119	3	nd	-	3
Delaware Bay DE	DBAP	.15	245	6	.82	112	6	.21	245	6
Delaware Bay NJ	DBHC	nd	-	1	nd	-	1	nd	-	1
Delaware Bay DE	DBWB	4.3	53	3	2	51	3	nd	-	3
Delaware Bay DE	DBKI	nd	-	6	.27	112	6	nd	-	6
Delaware Bay MD	DBCH	11	37	3	.57	34	3	nd	-	3
Baltimore Hrb. MD	BAL	6.4	82	3	nd	-	3	.42	173	3
Up. Ches. Bay MD	UCB	1.4	46	5	.96	106	5	nd	-	5
Ches. Bay MD	CBBO	1.7	21	3	nd	-	3	nd	-	3
Ches. Bay MD	CBMP	.81	110	6	1.6	112	6	.98	131	6
Ches. Bay MD	CBHP	.33	110	6	1.1	119	6	1.2	156	6

Table C.4: (Continued)

Location	SITE	HxChlB mean	HxChlB c.v.%	HxChlB n	Lindane mean	Lindane c.v.%	Lindane n	Mirex mean	Mirex c.v.%	Mirex n
Ches. Bay MD	CBCP	2.8	26	3	nd	-	3	nd	-	3
Mid. Ches. Bay VA	MCB	nd	-	3	.35	103	3	nd	-	3
Potomac River VA	PRRP	nd	-	3	nd	-	3	nd	-	3
Potomac River MD	PRSP	17	120	3	1.2	22	3	nd	-	3
Ches. Bay VA	CBIB	.18	137	5	.25	141	5	nd	-	5
Rappahannock R. VA	RRRR	nd	-	2	nd	-	2	nd	-	2
Ches. Bay VA	CBCC	nd	-	2	nd	-	2	nd	-	2
Ches. Bay VA	CBDP	.19	200	4	1.4	137	4	nd	-	4
Ches. Bay VA	CBJR	1.3	36	3	.72	18	3	nd	-	3
Low. Ches.Bay VA	LCB	.89	93	7	1.3	74	7	nd	-	7
Elizabeth R. VA	ELZ	1	83	3	.15	173	3	nd	-	3
Quinby Inlet VA	QIUB	.39	159	6	nd	-	6	nd	-	6
Pamlico Sound NC	PSPR	3.3	33	3	nd	-	3	nd	-	3
Pamlico Snd. NC	PAM	nd	-	8	nd	-	8	nd	-	8
Pamlico Sound NC	PSNR	5.2	43	2	nd	-	2	nd	-	2
Cape Fear NC	CFBI	nd	-	5	nd	-	5	nd	-	5
Santee River SC	SRNB	1.1	30	3	2.2	25	3	.57	89	3
Charleston Hrb. SC	CHFJ	nd	-	3	nd	-	3	nd	-	3
Charleston Hrb. SC	CHSF	nd	-	5	nd	-	5	.26	224	5
Charleston Hrb. SC	CHS	nd	-	9	nd	-	9	.3	204	9
Savannah R. Est. GA	SRTI	1	57	2	.34	141	2	.85	141	2
Sapelo Is. GA	SSA	nd	-	9	nd	-	9	nd	-	9
St. Johns R. FL	SJCB	nd	-	5	nd	-	5	nd	-	5
St. Johns R. FL	SJD	nd	-	7	nd	-	7	nd	-	7
Indian River FL	IRSR	nd	-	1	nd	-	1	nd	-	1
North Miami FL	NMML	1	15	3	.55	173	3	nd	-	3
Biscayne Bay FL	BBPC	nd	-	6	nd	-	6	nd	-	6
Everglades FL	EVFU	.069	141	2	.11	157	4	nd	-	4
Rookery Bay FL	RBHC	.16	138	6	.16	229	6	.1	210	6
Naples Bay FL	NBNB	.086	130	4	.005	200	4	nd	-	4
Charlotte Hrb. FL	CBBI	.49	41	2	.058	141	2	nd	-	2
Charlotte Hrb. FL	LOT	nd	-	5	nd	-	5	nd	-	5
Tampa Bay FL	TAM	nd	-	1	nd	-	1	nd	-	1
Tampa Bay FL	TBMK	15	133	2	1.2	141	2	8.5	5	2
Tampa Bay FL	TBNP	.71	87	3	1.3	6	3	2.2	30	3
Tampa Bay FL	TBHB	.9	-	1	nd	-	1	2.9	-	1
Tampa Bay FL	TBPB	.83	125	2	nd	-	3	.14	173	3
Tampa Bay FL	TBKA	4.1	-	1	nd	-	1	.23	-	1
Tampa Bay FL	TBOT	nd	-	1	.91	-	1	nd	-	1
Cedar Key FL	CKBP	.059	127	4	.13	224	5	.075	163	5
Suwanee River FL	SRWP	.18	118	3	1.1	10	2	.067	97	3
Apalachee Bay FL	AESP	1.3	50	3	.8	20	3	nd	-	3
Apalachicola Bay FL	APCP	.04	173	3	.017	173	3	nd	-	3
Apalachicola Bay FL	APDB	.031	170	5	.18	229	6	1.7	244	6
Apalachicola Bay FL	APA	nd	-	9	nd	-	9	nd	-	9
Panama City FL	PCLO	.71	18	2	nd	-	2	nd	-	2
Panama City FL	PCMP	nd	-	1	1.8	-	1	3.7	-	1
St. Andrew Bay FL	SAWB	.3	90	6	1.7	200	6	.24	167	6
Choctawhat. Bay FL	CBSR	.21	93	6	.39	167	6	.16	172	6
Choctawhat. Bay FL	CBPP	1.5	107	3	nd	-	4	1.1	87	4
Pensacola Bay Fl	PEN	nd	-	4	nd	-	4	nd	-	4
Pensacola Bay FL	PBIB	.081	119	6	.16	113	6	.14	170	6
Mobile Bay AL	MBHI	.68	107	3	.86	21	3	.34	29	3
Mobile Bay AL	MBCP	.15	200	4	nd	-	4	.16	145	4
Mobile Bay AL	MOB	nd	-	9	nd	-	9	nd	-	9
Round Is. MS	ROU	nd	-	9	nd	-	9	nd	-	9

Table C.4: (Continued)

Location	SITE	HxChlB mean	HxChlB c.v.%	HxChlB n	Lindane mean	Lindane c.v.%	Lindane n	Mirex mean	Mirex c.v.%	Mirex n
Heron Bay MS	HER	nd	-	6	nd	-	6	nd	-	6
Miss. Snd. MS	MSPB	.093	193	6	.057	150	6	.27	44	6
Miss. Snd. MS	MSBB	.091	-	1	nd	-	2	.17	34	2
Miss. Snd. MS	MSPC	.01	173	3	nd	-	3	.021	173	3
Miss. Delta LA	MRD	2	98	8	nd	-	9	nd	-	9
Lake Borgne LA	LBNO	.24	127	3	.65	17	2	.077	133	3
Lake Borgne LA	LBMP	.12	173	6	.043	159	6	.032	245	6
Breton Snd. LA	BSBG	.061	33	3	.042	173	3	nd	-	3
Breton Snd. LA	BSSI	.19	112	6	.019	111	6	.016	115	6
Miss.River LA	MRTP	.26	122	3	.36	70	3	.001	173	3
Miss.River LA	MRPL	4	127	3	.78	16	2	nd	-	3
Barataria Bay LA	BBSD	.33	151	5	nd	-	6	.1	115	6
Barataria Bay LA	BBTB	.11	112	3	.33	125	3	nd	-	3
Barataria Bay LA	BBMB	.13	124	6	nd	-	6	.24	162	6
Barataria Bay LA	BAR	nd	-	3	nd	-	3	nd	-	3
Terrebonne Bay LA	TBLF	.22	78	4	.053	172	6	.15	145	6
Terrebonne Bay LA	TBLB	.096	106	3	nd	-	3	.21	81	3
Caillou Lake LA	CLCL	.29	97	6	nd	-	6	.12	245	6
Atchafalaya Bay LA	ABOB	.17	38	6	.013	245	6	.27	139	6
Vermillion Bay LA	VBSP	.068	88	3	.026	173	3	nd	-	3
J. Hrb. Bayou LA	JHJH	.27	141	5	.059	155	5	.15	85	5
Calcasieu Lake LA	CLLC	.51	68	3	.15	93	3	nd	-	3
Calcasieu Lake LA	CLSJ	.65	148	5	nd	-	6	.093	136	6
Sabine Lake TX	SLBB	.05	88	5	.022	185	6	.011	245	6
E. Cote Blanche LA	ECSP	.26	51	3	.11	94	3	.11	88	3
Galveston Bay TX	GBHR	.31	121	6	.086	245	6	nd	-	6
Galveston Bay TX	GBSC	1.4	97	3	.83	57	3	.11	63	3
Galveston Bay TX	GBYC	.86	72	6	.084	95	6	.13	129	6
Galveston Bay TX	GBTD	.66	84	6	.23	92	6	.035	179	6
Galveston Bay TX	GBCR	.92	149	6	.29	167	6	nd	-	6
Galveston Bay TX	GBOB	.41	102	3	nd	-	3	.27	173	3
Galveston Bay TX	GAD	nd	-	6	nd	-	6	nd	-	6
Brazos River TX	BRFS	12	133	3	.12	77	3	.15	83	3
Brazos River TX	BRCL	12	43	3	.62	18	3	.1	19	3
Matagorda Bay TX	MBEM	.19	91	3	.75	204	5	.27	224	5
Matagorda Bay TX	MBDI	.23	75	3	.13	173	3	nd	-	3
Matagorda Bay TX	MBCB	nd	-	3	nd	-	3	nd	-	3
Matagorda Bay TX	MBTP	.18	69	5	nd	-	6	.064	148	6
Matagorda Bay TX	MBGP	.31	112	5	nd	-	6	nd	-	6
Matagorda Bay TX	MBLR	.11	61	6	nd	-	6	.008	156	6
Espiritu Santo TX	ESSP	1.1	159	6	nd	-	6	.011	155	6
Espiritu Santo TX	ESBD	4.8	123	2	nd	-	2	nd	-	2
San Antonio Bay TX	SAMP	.11	46	5	.016	245	6	.012	195	6
San Antonio Bay TX	SAPP	1.5	195	4	nd	-	5	.011	224	5
San Antonio Bay TX	SAB	nd	-	9	nd	-	9	nd	-	9
Mesquite Bay TX	MBAR	.067	97	6	nd	-	6	.051	76	6
Copano Bay TX	CBCR	.35	194	6	nd	-	6	.15	216	6
Aransas Bay TX	ABHI	.037	109	3	nd	-	3	.006	173	3
Aransas Bay TX	ABLR	.15	64	6	nd	-	6	.25	245	6
Corpus Christi TX	CCBH	.11	173	3	nd	-	3	.062	123	3
Corpus Christi TX	CCIC	.33	112	4	nd	-	4	.67	125	4
Corpus Christi TX	CCNB	.22	155	6	nd	-	6	.078	97	5
Corpus Christi Bay TX	CCB	nd	-	8	nd	-	8	nd	-	8
L. LagunaMadre TX	LMSB	.094	108	5	nd	-	6	.002	245	6
Laguna Madre TX	LMPI	nd	-	3	.13	101	3	nd	-	3
L. Laguna Madre TX	LLM	nd	-	7	.31	265	7	nd	-	7

Table C.4: (Continued)

Location	SITE	HxChlB mean	HxChlB c.v.%	HxChlB n	Lindane mean	Lindane c.v.%	Lindane n	Mirex mean	Mirex c.v.%	Mirex n
San Diego Bay CA	SDF	nd	-	2	nd	-	2	nd	-	2
San Diego Bay CA	SDHI	.4	163	6	.29	245	6	nd	-	6
San Diego Hrb. CA	SDA	.016	300	9	nd	-	9	.36	300	9
San Diego Bay	NSD	nd	-	3	nd	-	3	.6	173	3
Pt. Loma CA	PLLH	.27	149	6	.31	127	6	nd	-	6
La Jolla CA	LJLJ	.062	173	3	.23	88	3	nd	-	3
Oceanside CA	OSBJ	nd	-	6	.23	114	6	.043	245	6
Dana Pt. CA	DAN	.32	199	9	.19	300	9	nd	-	9
Newport Bch. CA	NBWJ	nd	-	5	.21	176	5	.071	200	4
Anaheim Bay CA	ABWJ	.009	245	6	nd	-	6	.089	224	5
Long Beach CA	LNB	.16	204	9	nd	-	9	.37	163	9
San Pedro Bay CA	SPB	nd	-	8	nd	-	8	nd	-	8
San Pedro Hrb. CA	SPFP	.18	245	6	.092	245	6	.38	224	5
Palos Verdes CA	PVRP	.37	122	6	.45	189	6	.1	245	6
Santa Monica Bay CA	SMW	1.7	141	2	nd	-	2	nd	-	2
Marina Del Ray CA	MDSJ	.041	245	6	.37	210	6	.13	172	6
Pt. Dume CA	PDPD	.57	123	6	.56	89	6	nd	-	4
Pt. S. Barbara CA	SBSB	.043	245	6	.48	94	6	nd	-	5
Moss Landing CA	MOS	-	-	0	-	-	0	-	-	0
Monterey Bay CA	MBSC	.11	-	1	nd	-	1	nd	-	1
Southamp. Shl. CA	SHS	.94	3	2	nd	-	2	nd	-	2
Oakland Est. CA	OAK	.63	28	3	nd	-	3	nd	-	3
Hunters Pt. CA	HUN	.28	244	9	.1	152	9	.25	300	9
San Fran. Bay CA	SFDB	.37	132	6	1.1	74	6	nd	-	6
San Fran. Bay CA	SFSM	nd	-	3	.1	173	3	nd	-	3
San Fran. Bay CA	SFEM	.23	58	6	.27	95	6	nd	-	3
San Pablo Bay CA	PAB	.45	129	9	.09	300	9	nd	-	9
San Pablo Bay CA	SPSM	1.4	171	6	.093	156	6	nd	-	3
San Pablo Bay CA	SPSP	.19	63	6	.35	140	6	nd	-	3
Tomales Bay CA	TBSR	.064	114	6	1.1	32	6	nd	-	5
Humboldt Bay CA	HMB	-	-	0	-	-	0	-	-	0
Coos Bay OR	COO	nd	-	4	nd	-	4	nd	-	4
Coos Bay OR	CBCH	-	-	0	-	-	0	-	-	0
Coos Bay OR	CBRP	.2	224	5	nd	-	5	nd	-	5
Yaquina Bay OR	YBOP	.092	88	3	nd	-	3	nd	-	3
Yaquina Head OR	YHSS	.13	159	6	nd	-	6	nd	-	6
Tillamook Bay OR	TBHP	.36	141	2	nd	-	2	nd	-	2
Columbia R. OR	CRYB	nd	-	4	nd	-	4	nd	-	4
Young's Bay OR	YNB	-	-	0	-	-	0	-	-	0
Columbia R. OR	COL	nd	-	3	nd	-	3	nd	-	3
S. Juan de Fuca WA	JFNB	nd	-	3	nd	-	3	nd	-	3
South Puget Snd. WA	SSBI	.2	158	6	nd	-	6	.12	113	6
Comm. Bay WA	COM	3.8	99	9	.065	300	9	.3	300	9
Comm. Bay WA	CBBP	.6	114	6	.15	175	6	nd	-	6
Puget Sound WA	PSSS	21	51	3	1.5	14	3	nd	-	3
Elliott Bay WA	ELL	.69	164	9	.038	300	9	nd	-	9
Sinclair Inlet WA	SIWP	.44	107	3	.21	173	3	nd	-	1
Puget Sound WA	PSHC	4.4	55	3	1.8	21	3	nd	-	3
Whidbey Is. WA	WIPP	.17	173	3	nd	-	3	nd	-	1
Puget Sound WA	PSEH	1.4	12	2	1.5	7	2	nd	-	2
Puget Sound WA	PSPA	30	11	3	1	6	3	nd	-	3
Bellingham Bay WA	BBSM	.28	114	6	nd	-	6	nd	-	6
Pt. Roberts WA	PRPR	.085	78	6	.25	155	6	nd	-	6
Boca de Quadra AK	BDQ	1.2	173	3	nd	-	3	nd	-	3
Lutak Inlet AK	LUT	.3	156	6	nd	-	6	nd	-	6
Skagway AK	SKA	.94	92	3	1.3	114	3	nd	-	3

Table C.4: (Continued)

Location	SITE	HxChlB mean	HxChlB c.v.%	HxChlB n	Lindane mean	Lindane c.v.%	Lindane n	Mirex mean	Mirex c.v.%	Mirex n
Nahku Bay AK	NAH	nd	-	3	nd	-	3	nd	-	3
Unakwit Inlet AK	UISB	.039	173	3	nd	-	3	nd	-	3
Valdez AK	VAL	.3	88	3	.98	7	3	nd	-	3
Port Valdez AK	PVMC	nd	-	3	.4	141	2	nd	-	3
Kamishak Bay AK	KAM	1.1	19	3	1	32	3	nd	-	3
Dutch Hrb. AK	DUT	.19	173	3	nd	-	3	nd	-	3
Oliktok Pt. AK	OLI	.55	155	6	nd	-	6	nd	-	6
Prudhoe Bay AK	END	.39	176	6	.37	157	6	.076	245	6
Barber's Pt. HI	BPBP	.14	161	6	nd	-	6	nd	-	6
Honolulu Hrb. HI	HHKL	nd	-	6	nd	-	6	nd	-	6

Table C.5: Average grain-size adjusted concentrations, µg/g dry-wt, and coefficients of variation, percent, for arsenic (**As**), antimony (**Sb**) and cadmium (**Cd**) in fine grain sediments at NS&T sites.

		As			Sb			Cd		
Location	**SITE**	**mean**	**c.v.%**	**n**	**mean**	**c.v.%**	**n**	**mean**	**c.v.%**	**n**
Machias Bay ME	MAC	12	19	7	.71	30	7	.11	30	7
Frenchmans Bay ME	FRN	11	7	6	.72	28	6	.19	26	6
Penobscot Bay ME	PNB	10	22	2	.71	46	2	.097	26	2
Penobscot Bay ME	PBSI	20	14	6	2.2	37	6	.21	22	6
Penobscot Bay ME	PBPI	19	22	3	3.9	23	3	.56	13	3
Merriconeag Snd. ME	MSSP	23	16	3	-	-	0	.39	24	3
Casco Bay ME	CSC	14	18	5	.61	27	5	.48	35	5
Cape Ann MA	CAGH	21	20	3	7.1	36	3	.52	23	3
Salem Harbor MA	SHFP	21	18	3	-	-	0	3.4	78	3
Salem Hrb. MA	SAL	20	24	9	4.1	57	9	9.3	54	9
Boston Hrb. MA	BHDI	12	58	5	10	19	5	1.7	13	5
Boston Hrb. MA	BHDB	17	25	5	9.4	22	5	1.9	7	5
Boston Hrb. MA	BHHB	7.7	95	3	20	31	3	1.3	16	3
Boston Hrb. MA	BOS	18	17	10	14	84	10	3.2	41	10
Quincy Bay MA	QUI	16	6	3	8.4	28	3	1.2	23	3
Cape Cod MA	CCNH	16	68	3	-	-	0	.93	73	3
Buzzards Bay MA	BBCC	9.7	18	3	-	-	0	1.3	35	3
Buzzards Bay MA	BBRH	10	19	6	1.4	111	6	.3	32	6
Buzzards Bay MA	BBAR	12	69	5	1.9	134	5	1	15	5
Buzzards Bay MA	BBGN	13	31	5	2.5	82	5	.34	28	5
Buzzards Bay MA	BUZ	15	20	7	1.1	39	7	.27	13	7
Narr. Bay RI	NBMH	13	1	3	2.7	15	3	.83	67	3
Narr. Bay RI	NBDI	22	26	5	4.7	33	5	.53	20	5
Narr. Bay RI	NBDU	15	12	6	2.3	24	6	.31	30	6
Narr. Bay RI	NAR	13	24	11	1.1	66	11	.63	63	11
Block Is. RI	BIBI	16	15	3	1.4	90	3	.79	18	3
Long Is. Snd. CT	LICR	10	44	5	1.5	105	5	.94	16	5
Long Is. Snd. CT	LISI	14	22	5	3.1	87	5	1.3	22	5
W. Long Is. Snd. NY	WLI	11	21	5	1.3	44	5	1.4	19	5
Long Is. Snd. NY	LIHU	12	28	6	1.9	106	6	1.5	15	6
Long Is. Snd. NY	LIMR	11	21	6	2.5	42	6	2	42	6
Long Is. Snd. NY	LIHH	14	11	6	3.5	27	6	2.3	21	6
Long Is. Snd. NY	LITN	9.8	58	7	3.3	66	6	2.1	34	7
Moriches Bay NY	MBTH	21	17	5	2.5	70	5	.67	31	5
Hud./Rar. Est NY	HRJB	28	0	2	7.7	10	2	2.2	8	2
Hud./Rar. Est. NY	HRUB	35	56	5	6.6	48	3	2.3	70	5
Hud./Rar. Est. NY	HRLB	26	24	8	6.3	45	5	2.8	24	8
Hud./Rar. Est. NJ	HRRB	30	20	3	8.5	6	3	2.4	17	3
Raritan Bay NJ	RAR	39	37	7	4.9	59	7	4.3	35	7
N.Y. Bight NJ	NYSH	32	20	6	9.3	39	6	2.6	20	6
Great Bay NJ	GRB	15	7	6	.74	34	6	.69	14	6
Delaware Bay NJ	DBCM	33	46	2	-	-	0	.77	42	2
Delaware Bay DE	DEL	19	33	6	.93	108	6	.95	68	6
Delaware Bay NJ	DBFE	12	98	3	3.4	33	3	1.2	57	3
Delaware Bay NJ	DBBD	18	25	3	2.7	41	3	.46	40	3
Delaware Bay DE	DBAP	16	28	6	2.8	66	6	.46	55	6
Delaware Bay NJ	DBHC	20	-	1	-	-	0	.59	-	1
Delaware Bay DE	DBWB	18	14	3	-	-	0	.59	10	3
Delaware Bay DE	DBKI	13	20	6	2.2	22	6	.74	22	6
Delaware Bay MD	DBCH	10	19	3	-	-	0	.56	4	3
Baltimore Hrb. MD	BAL	34	35	3	60	132	3	3.4	41	3
Up. Ches. Bay MD	UCB	18	11	4	1.3	4	4	.87	19	4
Ches. Bay MD	CBBO	22	15	3	-	-	0	.45	3	3
Ches. Bay MD	CBMP	23	22	6	4	27	6	.6	34	6
Ches. Bay MD	CBHP	17	13	6	2.9	32	6	.59	49	6
Ches. Bay MD	CBCP	7.9	11	3	-	-	0	.22	1	3

Table C.5: (Continued)

Location	SITE	As mean	As c.v.%	As n	Sb mean	Sb c.v.%	Sb n	Cd mean	Cd c.v.%	Cd n
Mid. Ches. Bay VA	MCB	32	26	2	2	63	2	1	13	2
Potomac River VA	PRRP	11	9	3	-	-	0	.72	3	3
Potomac River MD	PRSP	18	8	3	-	-	0	1.2	22	3
Ches. Bay VA	CBIB	16	17	5	2	55	5	.51	38	5
Rappahannock R. VA	RRRR	12	9	2	-	-	0	.29	35	2
Ches. Bay VA	CBCC	13	1	2	nd	-	2	.47	13	2
Ches. Bay VA	CBDP	13	16	4	1.1	200	4	.47	35	4
Ches. Bay VA	CBJR	8.1	23	3	-	-	0	.22	9	3
Low. Ches.Bay VA	LCB	12	28	8	.98	49	8	.5	80	8
Elizabeth R. VA	ELZ	18	29	3	2.5	57	3	2	31	3
Quinby Inlet VA	QIUB	20	23	6	2.4	70	6	.25	32	6
Pamlico Sound NC	PSPR	11	15	3	-	-	0	.11	44	3
Pamlico Snd. NC	PAM	13	41	8	nd	-	2	.35	35	8
Pamlico Sound NC	PSNR	11	7	3	-	-	0	.29	9	3
Cape Fear NC	CFBI	33	33	5	3.6	56	5	.17	25	5
Santee River SC	SRNB	34	26	3	-	-	0	.06	25	3
Charleston Hrb. SC	CHFJ	26	14	3	1.5	13	3	.13	39	3
Charleston Hrb. SC	CHSF	26	37	5	2.5	35	5	.24	30	5
Charleston Hrb. SC	CHS	21	22	9	nd	-	3	.23	24	9
Savannah R. Est. GA	SRTI	19	5	2	.58	141	2	.21	26	2
Sapelo Is. GA	SSA	17	25	9	nd	-	3	.28	65	9
St. Johns R. FL	SJCB	11	23	5	1.2	63	5	.36	22	5
St. Johns R. FL	SJD	8.4	30	7	nd	-	2	.62	27	7
Indian River FL	IRSR	34	-	1	-	-	0	.44	-	1
North Miami FL	NMML	12	15	3	-	-	0	.29	34	3
Biscayne Bay FL	BBPC	3.6	80	6	.67	73	6	.23	21	6
Everglades FL	EVFU	5.6	28	4	.4	36	4	.22	37	4
Rookery Bay FL	RBHC	7.8	64	6	.25	62	6	.23	42	6
Naples Bay FL	NBNB	9.3	38	4	.24	95	4	.26	54	4
Charlotte Hrb. FL	CBBI	14	6	2	.36	26	2	.52	27	2
Charlotte Hrb. FL	LOT	6.3	35	5	nd	-	1	.43	38	5
Tampa Bay FL	TAM	4.6	-	1	nd	-	1	1	-	1
Tampa Bay FL	TBMK	13	47	2	1.3	41	2	.6	33	2
Tampa Bay FL	TBNP	7.5	8	3	-	-	0	1.3	15	3
Tampa Bay FL	TBHB	5.2	-	1	1.5	-	1	4.4	-	1
Tampa Bay FL	TBPB	8.5	44	3	.85	40	3	.53	44	3
Tampa Bay FL	TBKA	3.5	-	1	-	-	0	1.2	-	1
Tampa Bay FL	TBOT	5.2	-	1	-	-	0	.41	-	1
Cedar Key FL	CKBP	19	37	5	.56	37	5	.47	38	5
Suwanee River FL	SRWP	5.3	21	3	-	-	0	.45	14	3
Apalachee Bay FL	AESP	8.2	18	3	-	-	0	.64	26	3
Apalachicola Bay FL	APCP	23	5	3	.66	20	3	.084	32	3
Apalachicola Bay FL	APDB	20	25	6	.71	30	6	.22	50	6
Apalachicola Bay FL	APA	23	19	9	nd	-	3	.086	34	9
Panama City FL	PCLO	6	25	2	-	-	0	.34	2	2
Panama City FL	PCMP	21	-	1	-	-	0	.77	-	1
St. Andrew Bay FL	SAWB	21	52	6	1	35	6	1	45	6
Choctawhat. Bay FL	CBSR	36	29	6	1.8	55	6	.26	45	6
Choctawhat. Bay FL	CBPP	16	28	4	1.3	54	4	.85	17	4
Pensacola Bay Fl	PEN	23	24	4	nd	-	2	.17	26	4
Pensacola Bay FL	PBIB	23	59	6	.97	141	6	.13	20	6
Mobile Bay AL	MBHI	13	17	3	-	-	0	.34	11	3
Mobile Bay AL	MBCP	20	33	4	.92	23	4	.15	29	4
Mobile Bay AL	MOB	18	24	9	.6	173	3	.12	27	9
Round Is. MS	ROU	14	29	3	-	-	0	.13	24	3
Heron Bay MS	HER	9.4	29	6	nd	-	3	.27	29	6

Table C.5: (Continued)

Location	SITE	As mean	As c.v.%	As n	Sb mean	Sb c.v.%	Sb n	Cd mean	Cd c.v.%	Cd n
Miss. Snd. MS	MSPB	12	19	6	.76	71	6	.28	56	6
Miss. Snd. MS	MSBB	15	23	2	.64	11	2	.46	27	2
Miss. Snd. MS	MSPC	14	7	3	.71	89	3	.17	12	3
Miss. Delta LA	MRD	12	23	9	.46	173	3	.58	31	9
Lake Borgne LA	LBNO	4.2	16	3	-	-	0	.2	12	3
Lake Borgne LA	LBMP	7.2	39	6	.79	22	6	.22	28	6
Breton Snd. LA	BSBG	12	33	3	1.9	33	3	.29	32	3
Breton Snd. LA	BSSI	7.8	57	6	.93	30	6	.32	37	6
Miss.River LA	MRTP	11	15	3	-	-	0	.41	31	3
Miss.River LA	MRPL	11	18	3	-	-	0	.55	11	3
Barataria Bay LA	BBSD	8.8	12	6	.8	11	6	.32	11	6
Barataria Bay LA	BBTB	8.3	15	3	-	-	0	.34	11	3
Barataria Bay LA	BBMB	12	29	6	1.3	40	6	.39	28	6
Barataria Bay LA	BAR	15	25	3	nd	-	1	.42	35	3
Terrebonne Bay LA	TBLF	8.6	18	6	.89	19	6	.35	25	6
Terrebonne Bay LA	TBLB	9.1	12	3	1.1	15	3	.34	24	3
Caillou Lake LA	CLCL	13	29	6	1.2	39	6	.41	32	6
Atchafalaya Bay LA	ABOB	12	65	6	.89	18	6	.27	32	6
Vermillion Bay LA	VBSP	16	20	3	1.1	18	3	.31	41	3
J. Hrb. Bayou LA	JHJH	21	41	5	1	32	5	.23	37	5
Calcasieu Lake LA	CLLC	4.9	17	3	-	-	0	.13	15	3
Calcasieu Lake LA	CLSJ	10	22	6	.67	23	6	.15	8	6
Sabine Lake TX	SLBB	16	68	6	1.2	46	6	.11	26	6
E. Cote Blanche LA	ECSP	19	34	3	1.3	15	3	.33	26	3
Galveston Bay TX	GBHR	9.2	15	6	.83	12	6	.14	8	6
Galveston Bay TX	GBSC	4.8	10	3	-	-	0	.28	12	3
Galveston Bay TX	GBYC	9.6	38	6	.94	27	6	.2	39	6
Galveston Bay TX	GBTD	8.3	16	6	.92	19	6	.13	11	6
Galveston Bay TX	GBCR	8.1	18	6	.91	31	6	.12	33	6
Galveston Bay TX	GBOB	12	65	3	-	-	0	.5	65	3
Galveston Bay TX	GAD	8.6	57	6	nd	-	3	.12	69	6
Brazos River TX	BRFS	6.1	26	3	-	-	0	.16	16	3
Brazos River TX	BRCL	4.8	22	3	-	-	0	.14	19	3
Matagorda Bay TX	MBEM	9.4	48	5	.96	51	5	.17	40	5
Matagorda Bay TX	MBDI	6.3	24	3	-	-	0	.18	1	3
Matagorda Bay TX	MBCB	4	22	3	-	-	0	.18	16	3
Matagorda Bay TX	MBTP	11	36	6	.83	57	6	.14	22	6
Matagorda Bay TX	MBGP	6.2	52	6	.99	26	6	.2	13	6
Matagorda Bay TX	MBLR	6.4	20	6	1.1	57	6	.22	46	6
Espiritu Santo TX	ESSP	5.9	20	6	.53	52	6	.12	11	6
Espiritu Santo TX	ESBD	9.5	-	1	1.5	-	1	.095	-	1
San Antonio Bay TX	SAMP	6.7	22	6	1.3	36	6	.23	8	6
San Antonio Bay TX	SAPP	8	38	5	.89	34	5	.17	20	5
San Antonio Bay TX	SAB	7.3	36	9	nd	-	3	.16	55	9
Mesquite Bay TX	MBAR	6.1	12	6	.42	52	6	.15	14	6
Copano Bay TX	CBCR	5.6	23	6	.85	19	6	.23	13	6
Aransas Bay TX	ABHI	9.4	25	3	-	-	0	.2	35	3
Aransas Bay TX	ABLR	8.2	58	6	.9	38	6	.18	30	6
Corpus Christi TX	CCBH	4.4	16	3	-	-	0	.67	20	3
Corpus Christi TX	CCIC	8.9	85	4	.6	74	4	.35	26	4
Corpus Christi TX	CCNB	8.5	45	6	.7	86	6	.82	14	6
Corpus Christi Bay TX	CCB	8.3	33	8	nd	-	3	.48	22	8
L. LagunaMadre TX	LMSB	10	7	6	1	12	6	.23	8	6
Laguna Madre TX	LMPI	7.8	47	3	-	-	0	.37	19	3
L. Laguna Madre TX	LLM	21	25	7	nd	-	3	.22	45	7
San Diego Bay CA	SDF	28	42	2	2.8	23	2	2.5	37	2

Table C.5: (Continued)

Location	SITE	As mean	As c.v.%	As n	Sb mean	Sb c.v.%	Sb n	Cd mean	Cd c.v.%	Cd n
San Diego Bay CA	SDHI	41	19	6	nd	-	6	1.3	36	6
San Diego Hrb. CA	SDA	15	33	9	1.3	38	9	1.3	48	9
San Diego Bay	NSD	20	18	3	1.2	16	3	.76	6	3
Pt. Loma CA	PLLH	28	16	6	nd	-	6	.64	33	6
La Jolla CA	LJLJ	24	25	3	nd	-	3	.45	11	3
Oceanside CA	OSBJ	11	26	6	nd	-	6	.27	31	6
Dana Pt. CA	DAN	24	49	9	2.6	67	9	1.1	91	9
Newport Bch. CA	NBWJ	17	21	5	nd	-	5	.94	19	5
Anaheim Bay CA	ABWJ	17	30	6	nd	-	6	.47	30	6
Long Beach CA	LNB	12	31	9	1.1	49	9	.94	88	9
San Pedro Bay CA	SPB	9.7	41	8	1	47	8	2.1	109	8
San Pedro Hrb. CA	SPFP	17	11	6	nd	-	6	2.2	35	6
Palos Verdes CA	PVRP	18	43	6	nd	-	6	11	11	6
Santa Monica Bay CA	SMW	26	23	2	2.1	7	2	3	55	2
Marina Del Ray CA	MDSJ	31	33	6	nd	-	6	.9	14	6
Pt. Dume CA	PDPD	29	32	6	nd	-	6	1.7	16	6
Pt. S. Barbara CA	SBSB	37	21	6	nd	-	6	1.9	16	6
Moss Landing CA	MOS	8.9	-	1	1.1	-	1	.35	-	1
Monterey Bay CA	MBSC	60	-	1	-	-	0	.31	-	1
Southamp. Shl. CA	SHS	14	1	2	1.1	4	2	.56	2	2
Oakland Est. CA	OAK	14	2	3	.91	11	3	.18	2	3
Hunters Pt. CA	HUN	11	25	9	1.5	90	9	.44	47	9
San Fran. Bay CA	SFDB	18	14	6	nd	-	6	.24	49	6
San Fran. Bay CA	SFSM	13	9	3	nd	-	3	.33	12	3
San Fran. Bay CA	SFEM	16	21	6	nd	-	6	.25	8	6
San Pablo Bay CA	PAB	18	58	9	2	55	9	.79	68	9
San Pablo Bay CA	SPSM	35	50	6	nd	-	6	.77	42	6
San Pablo Bay CA	SPSP	21	20	6	nd	-	6	.33	10	6
Tomales Bay CA	TBSR	18	15	6	nd	-	6	.41	14	6
Humboldt Bay CA	HMB	37	-	1	5.9	-	1	1.1	-	1
Coos Bay OR	COO	24	77	4	2.7	47	4	1.5	53	4
Coos Bay OR	CBCH	33	25	2	nd	-	2	1.4	53	2
Coos Bay OR	CBRP	26	27	5	3.5	138	5	.62	12	5
Yaquina Bay OR	YBOP	26	37	6	2.5	89	6	.52	27	6
Yaquina Head OR	YHSS	21	14	6	4.4	113	6	1.3	15	6
Tillamook Bay OR	TBHP	29	30	5	3.3	142	5	.52	30	5
Columbia R. OR	CRYB	21	26	4	5.6	35	4	.95	24	4
Young's Bay OR	YNB	4.5	8	3	.93	21	3	.19	17	3
Columbia R. OR	COL	11	121	3	3.4	19	3	2.9	16	3
S. Juan de Fuca WA	JFNB	16	33	6	4.1	23	6	.48	30	6
South Puget Snd. WA	SSBI	14	12	6	4.4	24	6	.89	10	6
Comm. Bay WA	COM	4.7	71	9	1.3	33	9	.79	46	9
Comm. Bay WA	CBBP	12	24	6	5.4	25	6	.27	22	6
Puget Sound WA	PSSS	22	32	3	-	-	0	.46	22	3
Elliott Bay WA	ELL	16	71	9	4.1	64	9	1.9	60	9
Sinclair Inlet WA	SIWP	18	26	6	15	22	6	.98	25	6
Puget Sound WA	PSHC	28	8	3	-	-	0	.69	7	3
Whidbey Is. WA	WIPP	12	18	6	3.6	9	6	.29	9	6
Puget Sound WA	PSEH	17	12	2	-	-	0	.81	3	2
Puget Sound WA	PSPA	15	10	3	-	-	0	.56	11	3
Bellingham Bay WA	BBSM	15	8	6	3.6	32	6	.45	16	6
Pt. Roberts WA	PRPR	11	11	6	2.2	27	6	.41	32	6
Boca de Quadra AK	BDQ	3.4	17	3	1.8	46	3	.81	27	3
Lutak Inlet AK	LUT	1.6	18	6	1.1	18	6	.71	71	6
Skagway AK	SKA	8.1	86	3	2.1	69	3	.85	69	3
Nahku Bay AK	NAH	1.7	143	3	1.2	24	3	1.5	50	3

Table C.5: (Continued)

Location	SITE	As mean	As c.v.%	As n	Sb mean	Sb c.v.%	Sb n	Cd mean	Cd c.v.%	Cd n
Unakwit Inlet AK	UISB	14	18	6	3.1	41	6	.12	22	6
Valdez AK	VAL	9.9	14	3	1.4	6	3	.21	14	3
Port Valdez AK	PVMC	26	9	6	2.9	36	6	.12	22	6
Kamishak Bay AK	KAM	2.6	46	3	.63	10	3	.28	18	3
Dutch Hrb. AK	DUT	3.2	69	3	1	10	3	1	14	3
Oliktok Pt. AK	OLI	5.4	145	6	.86	19	6	.52	13	6
Prudhoe Bay AK	END	3.2	45	6	1.6	47	6	.58	29	6
Barber's Pt. HI	BPBP	8.6	20	3	nd	-	3	.38	45	3
Honolulu Hrb. HI	HHKL	24	22	3	nd	-	3	.34	48	3

Table C.6: Average grain-size adjusted concentrations, µg/g dry-wt, and coefficients of variation, percent, for chromium (**Cr**), copper (**Cu**) and lead (**Pb**) in fine grain sediments at NS&T sites.

		Cr			Cu			Pb		
Location	**SITE**	**mean**	**c.v.%**	**n**	**mean**	**c.v.%**	**n**	**mean**	**c.v.%**	**n**
Machias Bay ME	MAC	100	30	7	17	27	7	31	18	7
Frenchmans Bay ME	FRN	90	9	6	19	7	6	31	18	6
Penobscot Bay ME	PNB	100	7	2	22	1	2	29	27	2
Penobscot Bay ME	PBSI	110	18	6	23	9	6	35	10	6
Penobscot Bay ME	PBPI	150	23	3	22	1	3	54	14	3
Merriconeag Snd. ME	MSSP	170	14	3	37	3	3	88	36	3
Casco Bay ME	CSC	100	6	5	30	22	5	49	21	5
Cape Ann MA	CAGH	100	87	3	33	18	3	110	22	3
Salem Harbor MA	SHFP	1900	32	3	110	26	3	260	9	3
Salem Hrb. MA	SAL	2800	53	9	110	33	9	230	39	9
Boston Hrb. MA	BHDI	290	17	5	160	7	5	170	63	5
Boston Hrb. MA	BHDB	270	6	5	160	7	5	180	12	5
Boston Hrb. MA	BHHB	260	25	3	120	18	3	160	12	3
Boston Hrb. MA	BOS	390	17	10	250	23	10	190	26	10
Quincy Bay MA	QUI	300	8	3	180	5	3	130	11	3
Cape Cod MA	CCNH	100	63	3	51	79	3	66	78	3
Buzzards Bay MA	BBCC	84	17	3	29	13	3	63	17	3
Buzzards Bay MA	BBRH	60	82	6	26	15	6	46	18	6
Buzzards Bay MA	BBAR	190	31	5	83	20	5	91	13	5
Buzzards Bay MA	BBGN	49	155	5	22	32	5	56	27	5
Buzzards Bay MA	BUZ	110	23	7	35	17	7	45	15	7
Narr. Bay RI	NBMH	160	13	3	92	6	3	100	10	3
Narr. Bay RI	NBDI	160	41	5	76	18	5	91	22	5
Narr. Bay RI	NBDU	120	18	6	55	6	6	68	7	6
Narr. Bay RI	NAR	140	35	11	120	57	11	97	26	11
Block Is. RI	BIBI	35	87	3	35	12	3	46	17	3
Long Is. Snd. CT	LICR	110	19	5	59	11	5	62	28	5
Long Is. Snd. CT	LISI	150	16	5	150	10	5	96	19	5
W. Long Is. Snd. NY	WLI	160	5	5	170	31	5	120	26	5
Long Is. Snd. NY	LIHU	130	28	6	120	14	6	100	16	6
Long Is. Snd. NY	LIMR	150	20	6	130	10	6	110	15	6
Long Is. Snd. NY	LIHH	150	6	6	180	6	6	150	7	6
Long Is. Snd. NY	LITN	210	19	7	200	21	7	200	19	7
Moriches Bay NY	MBTH	100	14	5	48	15	5	90	10	5
Hud./Rar. Est NY	HRJB	250	10	2	170	12	2	210	8	2
Hud./Rar. Est. NY	HRUB	190	57	5	220	67	5	260	61	5
Hud./Rar. Est. NY	HRLB	240	20	8	200	13	8	240	16	8
Hud./Rar. Est. NJ	HRRB	240	10	3	210	6	3	280	6	3
Raritan Bay NJ	RAR	290	18	7	260	22	7	250	26	7
N.Y. Bight NJ	NYSH	260	15	6	200	16	6	240	11	6
Great Bay NJ	GRB	140	19	6	39	18	6	57	15	6
Delaware Bay NJ	DBCM	150	24	2	48	51	2	80	42	2
Delaware Bay DE	DEL	130	27	6	27	35	6	55	25	6
Delaware Bay NJ	DBFE	81	87	3	28	21	3	41	20	3
Delaware Bay NJ	DBBD	130	23	3	24	31	3	37	27	3
Delaware Bay DE	DBAP	120	24	6	26	46	6	42	50	6
Delaware Bay NJ	DBHC	160	-	1	32	-	1	87	-	1
Delaware Bay DE	DBWB	140	15	3	36	10	3	76	16	3
Delaware Bay DE	DBKI	85	14	6	26	26	6	48	17	6
Delaware Bay MD	DBCH	89	16	3	18	5	3	42	6	3
Baltimore Hrb. MD	BAL	560	16	3	270	22	3	190	36	3
Up. Ches. Bay MD	UCB	180	39	4	65	16	4	70	14	4
Ches. Bay MD	CBBO	110	11	3	56	9	3	84	2	3
Ches. Bay MD	CBMP	130	21	6	53	12	6	74	11	6
Ches. Bay MD	CBHP	110	13	6	49	14	6	68	7	6
Ches. Bay MD	CBCP	58	17	3	20	16	3	36	10	3

Table C.6: (Continued)

Location	SITE	Cr mean	Cr c.v.%	Cr n	Cu mean	Cu c.v.%	Cu n	Pb mean	Pb c.v.%	Pb n
Mid. Ches. Bay VA	MCB	170	37	2	42	3	2	85	65	2
Potomac River VA	PRRP	79	2	3	43	1	3	43	2	3
Potomac River MD	PRSP	100	22	3	53	8	3	58	14	3
Ches. Bay VA	CBIB	63	70	5	29	8	5	28	8	5
Rappahannock R. VA	RRRR	69	15	2	52	46	2	35	44	2
Ches. Bay VA	CBCC	86	39	2	25	11	2	36	14	2
Ches. Bay VA	CBDP	54	70	4	22	17	4	36	16	4
Ches. Bay VA	CBJR	81	19	3	33	5	3	55	18	3
Low. Ches.Bay VA	LCB	130	22	8	24	24	8	33	25	8
Elizabeth R. VA	ELZ	110	13	3	180	63	3	170	47	3
Quinby Inlet VA	QIUB	93	64	6	22	20	6	43	31	6
Pamlico Sound NC	PSPR	82	11	3	16	4	3	34	8	3
Pamlico Snd. NC	PAM	88	35	8	16	27	8	36	30	8
Pamlico Sound NC	PSNR	80	8	3	19	11	3	36	10	3
Cape Fear NC	CFBI	150	39	5	27	22	5	44	42	5
Santee River SC	SRNB	90	5	3	27	19	3	32	18	3
Charleston Hrb. SC	CHFJ	83	22	3	23	21	3	27	3	3
Charleston Hrb. SC	CHSF	96	61	5	27	30	5	39	36	5
Charleston Hrb. SC	CHS	110	12	9	23	21	9	35	11	9
Savannah R. Est. GA	SRTI	58	141	2	20	12	2	34	26	2
Sapelo Is. GA	SSA	100	34	9	14	36	9	36	44	9
St. Johns R. FL	SJCB	81	56	5	21	58	5	37	22	5
St. Johns R. FL	SJD	88	19	7	28	26	7	70	18	7
Indian River FL	IRSR	200	-	1	55	-	1	84	-	1
North Miami FL	NMML	67	29	3	54	19	3	82	34	3
Biscayne Bay FL	BBPC	5.2	245	6	30	24	6	16	24	6
Everglades FL	EVFU	82	7	3	4.6	22	4	7	44	4
Rookery Bay FL	RBHC	78	3	3	6.3	40	6	5.9	78	6
Naples Bay FL	NBNB	67	21	3	19	53	4	8.7	47	4
Charlotte Hrb. FL	CBBI	87	15	2	6.8	8	2	8.7	88	2
Charlotte Hrb. FL	LOT	98	31	5	6.9	46	5	21	10	5
Tampa Bay FL	TAM	66	-	1	16	-	1	27	-	1
Tampa Bay FL	TBMK	35	23	2	15	26	2	29	36	2
Tampa Bay FL	TBNP	68	11	3	35	13	3	65	35	3
Tampa Bay FL	TBHB	140	-	1	31	-	1	120	-	1
Tampa Bay FL	TBPB	39	50	3	16	36	3	85	85	3
Tampa Bay FL	TBKA	98	-	1	28	-	1	130	-	1
Tampa Bay FL	TBOT	56	-	1	6.1	-	1	14	-	1
Cedar Key FL	CKBP	82	24	3	9.6	64	5	14	46	5
Suwanee River FL	SRWP	52	22	3	4.2	21	3	10	19	3
Apalachee Bay FL	AESP	63	14	3	7.1	15	3	19	32	3
Apalachicola Bay FL	APCP	87	14	3	30	87	3	29	20	3
Apalachicola Bay FL	APDB	100	19	3	33	53	6	44	15	6
Apalachicola Bay FL	APA	100	13	9	23	9	9	38	15	9
Panama City FL	PCLO	64	1	2	11	5	2	24	26	2
Panama City FL	PCMP	110	-	1	73	-	1	80	-	1
St. Andrew Bay FL	SAWB	170	62	3	84	94	6	100	56	6
Choctawhat. Bay FL	CBSR	77	70	3	25	36	6	61	42	6
Choctawhat. Bay FL	CBPP	48	28	3	43	23	4	240	28	4
Pensacola Bay Fl	PEN	120	14	4	25	27	4	52	11	4
Pensacola Bay FL	PBIB	81	19	3	11	30	6	26	44	6
Mobile Bay AL	MBHI	100	11	3	26	7	3	37	6	3
Mobile Bay AL	MBCP	140	28	2	22	21	4	42	13	4
Mobile Bay AL	MOB	110	13	9	20	12	9	35	10	9
Round Is. MS	ROU	100	30	3	14	8	3	35	14	3
Heron Bay MS	HER	64	26	6	16	16	6	24	10	6

Table C.6: (Continued)

Location	SITE	Cr mean	Cr c.v.%	Cr n	Cu mean	Cu c.v.%	Cu n	Pb mean	Pb c.v.%	Pb n
Miss. Snd. MS	MSPB	64	6	3	14	35	6	30	10	6
Miss. Snd. MS	MSBB	86	23	2	37	36	2	47	29	2
Miss. Snd. MS	MSPC	-	-	0	15	4	3	29	8	3
Miss. Delta LA	MRD	79	25	9	24	27	9	28	16	9
Lake Borgne LA	LBNO	55	6	3	14	5	3	14	9	3
Lake Borgne LA	LBMP	66	28	3	13	21	6	19	20	6
Breton Snd. LA	BSBG	-	-	0	14	34	3	45	30	3
Breton Snd. LA	BSSI	80	5	3	24	20	6	16	44	6
Miss.River LA	MRTP	68	6	3	25	23	3	29	19	3
Miss.River LA	MRPL	81	11	3	32	15	3	28	15	3
Barataria Bay LA	BBSD	75	8	3	17	8	6	22	10	6
Barataria Bay LA	BBTB	69	19	3	22	17	3	21	6	3
Barataria Bay LA	BBMB	84	26	3	25	25	6	39	29	6
Barataria Bay LA	BAR	100	27	3	20	7	3	35	17	3
Terrebonne Bay LA	TBLF	59	19	3	22	17	6	22	13	6
Terrebonne Bay LA	TBLB	-	-	0	29	25	3	26	44	3
Caillou Lake LA	CLCL	74	15	3	24	25	6	33	71	6
Atchafalaya Bay LA	ABOB	96	41	3	19	25	6	19	54	6
Vermillion Bay LA	VBSP	-	-	0	28	24	3	21	22	3
J. Hrb. Bayou LA	JHJH	83	13	3	29	23	5	35	16	5
Calcasieu Lake LA	CLLC	110	17	3	12	7	3	20	7	3
Calcasieu Lake LA	CLSJ	78	18	6	17	11	6	27	16	6
Sabine Lake TX	SLBB	77	11	3	19	43	6	30	31	6
E. Cote Blanche LA	ECSP	-	-	0	34	23	3	36	21	3
Galveston Bay TX	GBHR	96	25	6	16	22	6	24	13	6
Galveston Bay TX	GBSC	69	0	3	19	4	3	28	3	3
Galveston Bay TX	GBYC	58	21	6	16	20	6	36	41	6
Galveston Bay TX	GBTD	70	15	6	15	9	6	36	34	6
Galveston Bay TX	GBCR	63	25	6	12	23	6	42	18	6
Galveston Bay TX	GBOB	66	48	3	24	54	3	82	41	3
Galveston Bay TX	GAD	65	40	6	16	24	6	27	32	6
Brazos River TX	BRFS	69	8	3	18	30	3	18	11	3
Brazos River TX	BRCL	61	6	3	16	10	3	18	14	3
Matagorda Bay TX	MBEM	67	48	5	15	40	5	25	41	5
Matagorda Bay TX	MBDI	56	10	3	16	12	3	18	7	3
Matagorda Bay TX	MBCB	53	6	3	15	10	3	18	24	3
Matagorda Bay TX	MBTP	73	20	6	18	18	6	23	31	6
Matagorda Bay TX	MBGP	73	5	3	18	15	6	24	19	6
Matagorda Bay TX	MBLR	53	20	3	17	43	6	25	30	6
Espiritu Santo TX	ESSP	52	8	3	13	14	6	20	14	6
Espiritu Santo TX	ESBD	-	-	0	12	-	1	33	-	1
San Antonio Bay TX	SAMP	57	35	6	14	32	6	28	49	6
San Antonio Bay TX	SAPP	61	20	5	9.5	37	5	21	16	5
San Antonio Bay TX	SAB	59	33	9	11	15	9	21	26	9
Mesquite Bay TX	MBAR	26	14	3	9.8	14	6	16	5	6
Copano Bay TX	CBCR	47	14	6	9.9	19	6	19	7	6
Aransas Bay TX	ABHI	85	20	3	19	10	3	34	28	3
Aransas Bay TX	ABLR	57	21	3	13	30	6	27	27	6
Corpus Christi TX	CCBH	46	3	3	16	13	3	31	21	3
Corpus Christi TX	CCIC	59	51	4	15	26	4	22	24	4
Corpus Christi TX	CCNB	55	37	6	14	39	6	28	27	6
Corpus Christi Bay TX	CCB	65	22	8	17	20	8	29	23	8
L. LagunaMadre TX	LMSB	25	6	3	12	9	6	20	8	6
Laguna Madre TX	LMPI	56	21	3	25	35	3	30	37	3
L. Laguna Madre TX	LLM	64	36	7	18	12	7	40	21	7
San Diego Bay CA	SDF	130	50	2	28	24	2	39	39	2

Table C.6: (Continued)

Location	SITE	Cr mean	Cr c.v.%	Cr n	Cu mean	Cu c.v.%	Cu n	Pb mean	Pb c.v.%	Pb n
San Diego Bay CA	SDHI	180	13	6	150	42	6	120	29	6
San Diego Hrb. CA	SDA	170	57	9	310	20	9	130	37	9
San Diego Bay	NSD	120	33	3	220	10	3	120	16	3
Pt. Loma CA	PLLH	130	18	6	27	15	6	46	9	6
La Jolla CA	LJLJ	85	24	3	19	13	3	30	20	3
Oceanside CA	OSBJ	84	4	6	27	5	6	21	11	6
Dana Pt. CA	DAN	110	60	9	27	57	9	47	45	9
Newport Bch. CA	NBWJ	97	5	5	33	7	5	49	9	5
Anaheim Bay CA	ABWJ	87	18	6	35	12	6	64	17	6
Long Beach CA	LNB	120	52	9	81	40	9	120	59	9
San Pedro Bay CA	SPB	180	95	8	110	27	8	51	29	8
San Pedro Hrb. CA	SPFP	130	13	6	190	20	6	51	9	6
Palos Verdes CA	PVRP	260	20	6	130	25	6	84	22	6
Santa Monica Bay CA	SMW	380	6	2	240	48	2	91	12	2
Marina Del Ray CA	MDSJ	180	18	6	40	6	6	75	10	6
Pt. Dume CA	PDPD	200	15	6	41	15	6	61	18	6
Pt. S. Barbara CA	SBSB	120	9	6	27	18	6	46	9	6
Moss Landing CA	MOS	390	-	1	49	-	1	35	-	1
Monterey Bay CA	MBSC	250	-	1	35	-	1	39	-	1
Southamp. Shl. CA	SHS	360	9	2	83	2	2	35	16	2
Oakland Est. CA	OAK	220	3	3	79	8	3	48	5	3
Hunters Pt. CA	HUN	410	90	9	64	9	9	27	38	9
San Fran. Bay CA	SFDB	190	13	6	55	24	6	43	13	6
San Fran. Bay CA	SFSM	190	2	3	59	7	3	34	2	3
San Fran. Bay CA	SFEM	190	5	6	57	11	6	37	12	6
San Pablo Bay CA	PAB	1200	76	9	86	26	9	28	43	9
San Pablo Bay CA	SPSM	320	47	6	86	41	6	85	124	6
San Pablo Bay CA	SPSP	200	6	6	69	12	6	32	7	6
Tomales Bay CA	TBSR	220	16	6	45	26	6	24	36	6
Humboldt Bay CA	HMB	2300	-	1	35	-	1	nd	-	1
Coos Bay OR	COO	170	85	4	27	35	4	27	88	4
Coos Bay OR	CBCH	460	27	2	54	16	2	45	9	2
Coos Bay OR	CBRP	310	19	5	36	13	5	42	36	5
Yaquina Bay OR	YBOP	230	32	6	38	21	6	32	29	6
Yaquina Head OR	YHSS	540	37	6	62	75	6	37	28	6
Tillamook Bay OR	TBHP	450	9	5	100	20	5	24	23	5
Columbia R. OR	CRYB	150	46	4	82	15	4	48	29	4
Young's Bay OR	YNB	74	6	3	53	24	3	26	8	3
Columbia R. OR	COL	110	15	3	62	40	3	39	67	3
S. Juan de Fuca WA	JFNB	250	27	6	68	20	6	35	9	6
South Puget Snd. WA	SSBI	79	22	6	62	9	6	36	7	6
Comm. Bay WA	COM	75	16	9	60	14	9	33	41	9
Comm. Bay WA	CBBP	58	22	6	66	16	6	29	10	6
Puget Sound WA	PSSS	230	64	3	75	21	3	57	23	3
Elliott Bay WA	ELL	220	35	9	310	75	9	130	90	9
Sinclair Inlet WA	SIWP	240	46	6	110	6	6	97	6	6
Puget Sound WA	PSHC	730	6	3	70	8	3	43	31	3
Whidbey Is. WA	WIPP	110	15	6	48	13	6	32	12	6
Puget Sound WA	PSEH	240	12	2	80	3	2	38	24	2
Puget Sound WA	PSPA	110	41	3	45	1	3	20	6	3
Bellingham Bay WA	BBSM	210	8	6	59	9	6	13	19	6
Pt. Roberts WA	PRPR	110	10	6	36	5	6	18	10	6
Boca de Quadra AK	BDQ	94	29	3	39	17	3	32	14	3
Lutak Inlet AK	LUT	78	33	6	31	23	6	19	15	6
Skagway AK	SKA	87	58	3	31	32	3	110	68	3
Nahku Bay AK	NAH	31	18	3	13	30	3	56	19	3

Table C.6: (Continued)

Location	SITE	Cr mean	Cr c.v.%	Cr n	Cu mean	Cu c.v.%	Cu n	Pb mean	Pb c.v.%	Pb n
Unakwit Inlet AK	UISB	160	9	6	53	7	6	18	14	6
Valdez AK	VAL	150	12	3	61	9	3	23	20	3
Port Valdez AK	PVMC	160	9	6	66	6	6	17	5	6
Kamishak Bay AK	KAM	120	14	3	40	19	3	22	10	3
Dutch Hrb. AK	DUT	44	9	3	71	16	3	18	8	3
Oliktok Pt. AK	OLI	120	22	6	30	13	6	25	27	6
Prudhoe Bay AK	END	140	50	6	26	34	6	16	21	6
Barber's Pt. HI	BPBP	90	61	3	66	65	3	14	90	3
Honolulu Hrb. HI	HHKL	55	39	3	70	19	3	58	20	3

Table C.7: Average grain-size adjusted concentrations, µg/g dry-wt, and coefficients of variation, percent, for mercury (**Hg**), nickel (**Ni**) and selenium (**Se**) in fine grain sediments at NS&T sites.

		Hg			Ni			Se		
Location	**SITE**	**mean**	**c.v.%**	**n**	**mean**	**c.v.%**	**n**	**mean**	**c.v.%**	**n**
Machias Bay ME	MAC	.023	127	7	33	19	7	.03	265	7
Frenchmans Bay ME	FRN	.051	106	6	43	37	6	.22	113	6
Penobscot Bay ME	PNB	.16	40	2	35	37	2	.23	141	2
Penobscot Bay ME	PBSI	.24	66	6	36	6	6	.95	70	6
Penobscot Bay ME	PBPI	.15	10	3	45	7	3	.15	173	3
Merriconeag Snd. ME	MSSP	.14	19	3	66	12	3	1.5	14	3
Casco Bay ME	CSC	.26	39	5	36	12	5	.16	206	5
Cape Ann MA	CAGH	.26	29	3	42	18	3	nd	-	3
Salem Harbor MA	SHFP	1.3	18	3	61	11	3	2.4	11	3
Salem Hrb. MA	SAL	1.6	37	9	45	25	9	1.2	45	9
Boston Hrb. MA	BHDI	1.1	8	5	41	9	5	.87	25	5
Boston Hrb. MA	BHDB	1.1	5	5	40	13	5	.7	39	5
Boston Hrb. MA	BHHB	.92	12	3	65	15	3	.96	39	3
Boston Hrb. MA	BOS	1.7	33	10	53	17	10	1.1	32	10
Quincy Bay MA	QUI	1.8	7	3	40	1	3	.45	29	3
Cape Cod MA	CCNH	.07	91	3	47	71	3	1.8	82	3
Buzzards Bay MA	BBCC	.15	22	3	27	25	3	.98	9	3
Buzzards Bay MA	BBRH	.11	28	6	23	24	6	.087	245	6
Buzzards Bay MA	BBAR	.37	14	5	30	27	5	.41	95	5
Buzzards Bay MA	BBGN	.18	50	5	25	21	5	.24	141	5
Buzzards Bay MA	BUZ	.18	33	7	33	29	7	.15	138	7
Narr. Bay RI	NBMH	.9	17	3	32	11	3	.67	15	3
Narr. Bay RI	NBDI	.4	17	5	51	33	5	.38	139	5
Narr. Bay RI	NBDU	.26	25	6	38	11	6	.48	62	6
Narr. Bay RI	NAR	.47	58	11	36	26	11	.53	41	11
Block Is. RI	BIBI	.18	20	3	19	7	3	.26	89	3
Long Is. Snd. CT	LICR	.21	22	5	56	14	5	.13	145	5
Long Is. Snd. CT	LISI	.59	24	5	50	24	5	.67	38	5
W. Long Is. Snd. NY	WLI	.79	48	5	45	9	5	.54	34	5
Long Is. Snd. NY	LIHU	.43	16	6	47	24	6	.71	54	6
Long Is. Snd. NY	LIMR	.51	12	6	55	27	6	.67	29	6
Long Is. Snd. NY	LIHH	.66	9	6	46	6	6	.76	20	6
Long Is. Snd. NY	LITN	1.2	25	7	57	30	7	.76	51	7
Moriches Bay NY	MBTH	.56	11	5	29	9	5	1.1	47	5
Hud./Rar. Est NY	HRJB	2.3	7	2	50	1	2	1.5	2	2
Hud./Rar. Est. NY	HRUB	4.6	66	5	60	36	5	2	84	5
Hud./Rar. Est. NY	HRLB	2.8	11	8	58	21	8	1.6	28	8
Hud./Rar. Est. NJ	HRRB	3.4	6	3	57	16	3	1.5	4	3
Raritan Bay NJ	RAR	3.8	19	7	64	24	7	1.4	85	7
N.Y. Bight NJ	NYSH	2.8	25	6	55	20	6	1.6	21	6
Great Bay NJ	GRB	.52	25	6	39	15	6	.3	119	6
Delaware Bay NJ	DBCM	.47	34	2	66	42	2	.46	141	2
Delaware Bay DE	DEL	.24	40	6	39	26	6	nd	-	6
Delaware Bay NJ	DBFE	.26	42	3	44	31	3	.7	55	3
Delaware Bay NJ	DBBD	.24	60	3	49	25	3	.41	39	3
Delaware Bay DE	DBAP	.18	77	6	41	19	6	.72	84	6
Delaware Bay NJ	DBHC	.16	-	1	73	-	1	1	-	1
Delaware Bay DE	DBWB	.2	24	3	51	16	3	1.1	23	3
Delaware Bay DE	DBKI	.19	25	6	34	14	6	1	78	6
Delaware Bay MD	DBCH	.18	12	3	33	22	3	.43	16	3
Baltimore Hrb. MD	BAL	.8	20	3	75	8	3	1.7	23	3
Up. Ches. Bay MD	UCB	.29	33	4	75	19	4	.78	40	4
Ches. Bay MD	CBBO	.23	3	3	77	14	3	2	3	3
Ches. Bay MD	CBMP	.23	15	6	66	16	6	.92	7	6
Ches. Bay MD	CBHP	.21	8	6	56	12	6	1.3	24	6
Ches. Bay MD	CBCP	.044	13	3	31	4	3	1	3	3

Table C.7: (Continued)

Location	SITE	Hg mean	Hg c.v.%	Hg n	Ni mean	Ni c.v.%	Ni n	Se mean	Se c.v.%	Se n
Mid. Ches. Bay VA	MCB	.1	141	2	67	24	2	nd	-	2
Potomac River VA	PRRP	.12	0	3	44	6	3	1.6	4	3
Potomac River MD	PRSP	.23	12	3	61	7	3	1.6	4	3
Ches. Bay VA	CBIB	.12	48	5	36	26	5	.82	11	5
Rappahannock R. VA	RRRR	.054	69	2	39	10	2	1.1	24	2
Ches. Bay VA	CBCC	.082	27	2	35	8	2	.78	1	2
Ches. Bay VA	CBDP	.13	77	4	33	26	4	.19	117	4
Ches. Bay VA	CBJR	.13	11	3	40	17	3	1	16	3
Low. Ches.Bay VA	LCB	.086	71	8	33	16	8	.085	181	8
Elizabeth R. VA	ELZ	1.3	89	3	36	15	3	.24	90	3
Quinby Inlet VA	QIUB	.13	66	6	43	27	6	.78	116	6
Pamlico Sound NC	PSPR	.044	11	3	26	3	3	.96	5	3
Pamlico Snd. NC	PAM	.12	51	8	25	29	8	.82	52	8
Pamlico Sound NC	PSNR	.056	26	3	25	9	3	1.3	14	3
Cape Fear NC	CFBI	.13	16	5	32	29	5	.89	46	5
Santee River SC	SRNB	.042	30	3	34	19	3	1.3	10	3
Charleston Hrb. SC	CHFJ	.11	12	3	34	6	3	.49	5	3
Charleston Hrb. SC	CHSF	.1	59	5	34	43	5	.81	17	5
Charleston Hrb. SC	CHS	.1	50	9	24	39	9	.77	23	9
Savannah R. Est. GA	SRTI	.47	119	2	22	10	2	.29	141	2
Sapelo Is. GA	SSA	.051	81	9	23	33	9	.61	50	9
St. Johns R. FL	SJCB	.14	26	5	21	29	5	.71	19	5
St. Johns R. FL	SJD	.25	29	7	21	11	7	.93	56	7
Indian River FL	IRSR	.17	-	1	67	-	1	4.1	-	1
North Miami FL	NMML	.23	8	3	18	42	3	.99	15	3
Biscayne Bay FL	BBPC	.081	35	6	1	245	6	.89	29	6
Everglades FL	EVFU	.066	15	4	14	21	4	.1	70	4
Rookery Bay FL	RBHC	.079	37	6	13	32	6	.33	148	6
Naples Bay FL	NBNB	.07	32	4	9.7	40	4	.91	80	4
Charlotte Hrb. FL	CBBI	.065	29	2	20	6	2	1.2	14	2
Charlotte Hrb. FL	LOT	.076	119	5	11	63	5	1.2	46	5
Tampa Bay FL	TAM	.34	-	1	18	-	1	1.4	-	1
Tampa Bay FL	TBMK	.27	27	2	21	38	2	2.2	43	2
Tampa Bay FL	TBNP	.15	17	3	8.4	13	3	1	20	3
Tampa Bay FL	TBHB	.45	-	1	30	-	1	1.6	-	1
Tampa Bay FL	TBPB	.28	33	3	30	38	3	2.8	96	3
Tampa Bay FL	TBKA	.18	-	1	11	-	1	nd	-	1
Tampa Bay FL	TBOT	.059	-	1	9.2	-	1	.6	-	1
Cedar Key FL	CKBP	.13	24	5	13	55	5	1.6	144	5
Suwanee River FL	SRWP	.05	7	3	6.5	28	3	1.1	11	3
Apalachee Bay FL	AESP	.097	10	3	7.3	19	3	1.2	20	3
Apalachicola Bay FL	APCP	.097	17	3	35	16	3	.94	35	3
Apalachicola Bay FL	APDB	.13	22	6	32	19	6	.48	118	6
Apalachicola Bay FL	APA	.088	73	9	32	11	9	.7	23	9
Panama City FL	PCLO	.11	15	2	10	5	2	.95	72	2
Panama City FL	PCMP	.44	-	1	22	-	1	1.4	-	1
St. Andrew Bay FL	SAWB	.65	59	6	23	54	6	1.1	101	6
Choctawhat. Bay FL	CBSR	.2	56	6	44	16	6	1.2	126	6
Choctawhat. Bay FL	CBPP	.32	11	4	20	19	4	1.6	77	4
Pensacola Bay Fl	PEN	.22	45	4	34	14	4	1	35	4
Pensacola Bay FL	PBIB	.088	129	6	16	46	6	1.2	111	6
Mobile Bay AL	MBHI	.12	5	3	23	13	3	.92	20	3
Mobile Bay AL	MBCP	.2	42	4	38	16	4	.25	131	4
Mobile Bay AL	MOB	.12	21	9	37	8	9	.57	23	9
Round Is. MS	ROU	.11	11	3	27	35	3	.52	52	3
Heron Bay MS	HER	.073	116	6	22	17	6	.37	22	6

Table C.7: (Continued)

Location	SITE	Hg mean	Hg c.v.%	Hg n	Ni mean	Ni c.v.%	Ni n	Se mean	Se c.v.%	Se n
Miss. Snd. MS	MSPB	.16	89	6	18	35	6	.32	117	6
Miss. Snd. MS	MSBB	.17	39	2	25	12	2	.42	56	2
Miss. Snd. MS	MSPC	.11	55	3	23	14	3	nd	-	3
Miss. Delta LA	MRD	.049	82	9	36	19	9	.45	68	9
Lake Borgne LA	LBNO	.062	14	3	14	9	3	.67	20	3
Lake Borgne LA	LBMP	.061	28	6	18	20	6	.24	116	6
Breton Snd. LA	BSBG	.098	46	3	30	33	3	nd	-	3
Breton Snd. LA	BSSI	.053	34	6	32	65	6	.6	113	6
Miss.River LA	MRTP	.089	26	3	29	32	3	.58	30	3
Miss.River LA	MRPL	.23	8	3	35	13	3	.64	17	3
Barataria Bay LA	BBSD	.062	6	6	22	9	6	.5	110	6
Barataria Bay LA	BBTB	.081	27	3	24	13	3	.86	12	3
Barataria Bay LA	BBMB	.079	31	6	36	25	6	1.5	110	6
Barataria Bay LA	BAR	.11	30	3	41	26	3	.51	27	3
Terrebonne Bay LA	TBLF	.062	18	6	25	7	6	.67	112	6
Terrebonne Bay LA	TBLB	.064	5	3	19	12	3	nd	-	3
Caillou Lake LA	CLCL	.076	34	6	36	33	6	.64	111	6
Atchafalaya Bay LA	ABOB	.063	32	6	32	33	6	.67	128	6
Vermillion Bay LA	VBSP	.063	12	3	28	10	3	nd	-	3
J. Hrb. Bayou LA	JHJH	.081	43	5	38	22	5	.64	99	5
Calcasieu Lake LA	CLLC	.043	22	3	12	22	3	.32	89	3
Calcasieu Lake LA	CLSJ	.061	26	6	30	25	6	.66	125	6
Sabine Lake TX	SLBB	.091	45	6	34	51	6	.43	110	6
E. Cote Blanche LA	ECSP	.091	26	3	27	22	3	nd	-	3
Galveston Bay TX	GBHR	.061	27	6	34	25	6	.6	120	6
Galveston Bay TX	GBSC	.1	5	3	18	5	3	.49	28	3
Galveston Bay TX	GBYC	.059	62	6	23	22	6	1.4	112	6
Galveston Bay TX	GBTD	.11	99	6	23	12	6	1.1	114	6
Galveston Bay TX	GBCR	.09	47	6	19	29	6	.82	110	6
Galveston Bay TX	GBOB	.11	48	3	17	63	3	.41	98	3
Galveston Bay TX	GAD	.037	81	6	19	21	6	.12	159	6
Brazos River TX	BRFS	.021	27	3	19	17	3	.36	39	3
Brazos River TX	BRCL	.043	23	3	19	11	3	.21	100	3
Matagorda Bay TX	MBEM	.024	92	5	25	28	5	.83	96	5
Matagorda Bay TX	MBDI	.027	7	3	17	21	3	.36	32	3
Matagorda Bay TX	MBCB	.042	26	3	17	20	3	.3	64	3
Matagorda Bay TX	MBTP	.04	30	6	27	32	6	.38	114	6
Matagorda Bay TX	MBGP	.29	14	6	22	31	6	.41	111	6
Matagorda Bay TX	MBLR	.18	55	6	24	57	6	.71	134	6
Espiritu Santo TX	ESSP	.033	20	6	16	51	6	.31	110	6
Espiritu Santo TX	ESBD	nd	-	1	12	-	1	nd	-	1
San Antonio Bay TX	SAMP	.077	92	6	17	21	6	.9	116	6
San Antonio Bay TX	SAPP	.051	23	5	19	13	5	.5	145	5
San Antonio Bay TX	SAB	.064	156	9	18	14	9	.18	78	9
Mesquite Bay TX	MBAR	.033	22	6	15	47	6	.33	113	6
Copano Bay TX	CBCR	.044	24	6	17	21	6	.5	130	6
Aransas Bay TX	ABHI	.031	3	3	18	30	3	.45	100	3
Aransas Bay TX	ABLR	.056	60	6	14	19	6	.69	122	6
Corpus Christi TX	CCBH	.09	3	3	10	24	3	.28	4	3
Corpus Christi TX	CCIC	.037	68	4	15	29	4	.47	74	4
Corpus Christi TX	CCNB	.13	17	6	10	30	6	.29	173	6
Corpus Christi Bay TX	CCB	.073	64	8	20	8	8	.3	92	8
L. LagunaMadre TX	LMSB	.068	33	6	13	18	6	.89	114	6
Laguna Madre TX	LMPI	.1	19	3	20	14	3	.11	173	3
L. Laguna Madre TX	LLM	.057	100	7	20	13	7	.23	140	7
San Diego Bay CA	SDF	nd	-	2	32	27	2	.35	55	2

Table C.7: (Continued)

Location	SITE	Hg mean	Hg c.v.%	Hg n	Ni mean	Ni c.v.%	Ni n	Se mean	Se c.v.%	Se n
San Diego Bay CA	SDHI	1.2	47	6	36	45	6	nd	-	6
San Diego Hrb. CA	SDA	1.4	69	9	24	49	9	.028	300	9
San Diego Bay	NSD	1.1	65	3	12	16	3	.17	87	3
Pt. Loma CA	PLLH	.14	32	6	28	43	6	nd	-	6
La Jolla CA	LJLJ	.084	23	3	14	14	3	nd	-	3
Oceanside CA	OSBJ	.028	11	6	27	10	6	nd	-	6
Dana Pt. CA	DAN	.42	199	9	19	69	9	.49	59	9
Newport Bch. CA	NBWJ	.14	8	5	37	6	5	nd	-	5
Anaheim Bay CA	ABWJ	.11	23	6	42	19	6	nd	-	6
Long Beach CA	LNB	.42	108	9	42	65	9	.53	67	9
San Pedro Bay CA	SPB	.56	136	8	43	65	8	1.6	54	8
San Pedro Hrb. CA	SPFP	.48	20	6	58	11	6	nd	-	6
Palos Verdes CA	PVRP	.69	60	6	52	11	6	nd	-	6
Santa Monica Bay CA	SMW	.57	82	2	26	15	2	.66	29	2
Marina Del Ray CA	MDSJ	.34	13	6	52	3	6	nd	-	6
Pt. Dume CA	PDPD	.21	19	6	74	16	6	nd	-	6
Pt. S. Barbara CA	SBSB	.077	67	6	51	30	6	nd	-	6
Moss Landing CA	MOS	nd	-	1	44	-	1	.33	-	1
Monterey Bay CA	MBSC	.078	-	1	140	-	1	23	-	1
Southamp. Shl. CA	SHS	.44	23	2	55	0	2	.35	20	2
Oakland Est. CA	OAK	.55	124	3	110	5	3	.41	23	3
Hunters Pt. CA	HUN	.33	87	9	120	96	9	.5	31	9
San Fran. Bay CA	SFDB	.31	22	6	100	27	6	nd	-	6
San Fran. Bay CA	SFSM	.37	19	3	120	8	3	nd	-	3
San Fran. Bay CA	SFEM	.34	11	6	120	8	6	1.4	245	6
San Pablo Bay CA	PAB	.15	139	8	180	64	9	.6	48	9
San Pablo Bay CA	SPSM	.42	78	6	200	39	6	nd	-	6
San Pablo Bay CA	SPSP	.34	24	6	130	6	6	nd	-	6
Tomales Bay CA	TBSR	.38	26	6	170	20	6	nd	-	6
Humboldt Bay CA	HMB	.33	-	1	250	-	1	.26	-	1
Coos Bay OR	COO	.29	181	4	68	30	4	.59	45	4
Coos Bay OR	CBCH	.051	78	2	160	19	2	1.3	30	2
Coos Bay OR	CBRP	.18	39	5	95	14	5	.17	224	5
Yaquina Bay OR	YBOP	.059	58	6	63	13	6	.42	92	6
Yaquina Head OR	YHSS	.2	66	6	81	21	6	.29	159	6
Tillamook Bay OR	TBHP	.034	138	5	150	14	5	.89	96	5
Columbia R. OR	CRYB	.026	200	4	77	35	4	.18	200	4
Young's Bay OR	YNB	.029	100	3	26	22	3	.22	10	3
Columbia R. OR	COL	.77	75	3	76	13	3	1.3	68	3
S. Juan de Fuca WA	JFNB	.12	46	6	64	24	6	.47	81	6
South Puget Snd. WA	SSBI	.21	18	6	50	17	6	.59	13	6
Comm. Bay WA	COM	.17	91	9	35	7	9	.42	40	9
Comm. Bay WA	CBBP	.1	48	6	33	13	6	.1	123	6
Puget Sound WA	PSSS	.27	6	3	86	34	3	1.4	27	3
Elliott Bay WA	ELL	1.4	90	9	96	31	9	.93	64	9
Sinclair Inlet WA	SIWP	1.2	62	6	80	36	6	.63	23	6
Puget Sound WA	PSHC	.12	16	3	190	13	3	1.4	24	3
Whidbey Is. WA	WIPP	.14	24	6	60	13	6	.59	14	6
Puget Sound WA	PSEH	.17	23	2	96	25	2	1	4	2
Puget Sound WA	PSPA	.12	1	3	48	11	3	1.1	6	3
Bellingham Bay WA	BBSM	.24	22	6	170	4	6	.52	43	6
Pt. Roberts WA	PRPR	.086	43	6	50	13	6	.51	28	6
Boca de Quadra AK	BDQ	.083	48	3	14	42	3	1.4	42	3
Lutak Inlet AK	LUT	.17	166	6	19	48	6	.46	57	6
Skagway AK	SKA	.15	46	3	7.8	34	3	.33	80	3
Nahku Bay AK	NAH	.34	95	3	15	26	3	1.3	74	3

Table C.7: (Continued)

Location	SITE	Hg mean	Hg c.v.%	Hg n	Ni mean	Ni c.v.%	Ni n	Se mean	Se c.v.%	Se n
Unakwit Inlet AK	UISB	.07	9	6	64	9	6	.39	28	6
Valdez AK	VAL	.084	46	3	17	2	3	.42	9	3
Port Valdez AK	PVMC	.03	81	6	66	11	6	.27	85	6
Kamishak Bay AK	KAM	.084	29	3	14	11	3	.28	12	3
Dutch Hrb. AK	DUT	.35	26	3	7.3	11	3	1	33	3
Oliktok Pt. AK	OLI	.37	59	6	37	60	6	.66	27	6
Prudhoe Bay AK	END	.21	55	6	50	93	6	.79	58	6
Barber's Pt. HI	BPBP	.057	25	3	110	55	3	nd	-	3
Honolulu Hrb. HI	HHKL	.47	8	3	51	16	3	nd	-	3

Table C.8: Average grain-size adjusted concentrations, µg/g dry-wt, and coefficients of variation, percent, for silver (**Ag**), tin (**Sn**) and zinc (**Zn**) in fine grain sediments at NS&T sites.

		Ag			**Sn**			**Zn**		
Location	**SITE**	**mean**	**c.v.%**	**n**	**mean**	**c.v.%**	**n**	**mean**	**c.v.%**	**n**
Machias Bay ME	MAC	.064	10	7	3.1	26	7	85	14	7
Frenchmans Bay ME	FRN	.1	9	6	4.1	9	6	110	4	6
Penobscot Bay ME	PNB	.11	5	2	4	1	2	120	3	2
Penobscot Bay ME	PBSI	.17	11	6	1.8	85	6	92	8	6
Penobscot Bay ME	PBPI	.13	57	3	4.4	16	3	120	14	3
Merriconeag Snd. ME	MSSP	.31	48	3	8.5	40	3	190	13	3
Casco Bay ME	CSC	.31	53	5	6.5	31	5	130	13	5
Cape Ann MA	CAGH	.33	56	3	8.7	23	3	160	18	3
Salem Harbor MA	SHFP	2	29	3	24	9	3	290	13	3
Salem Hrb. MA	SAL	2.3	51	9	20	45	9	310	36	9
Boston Hrb. MA	BHDI	4.7	46	5	23	40	5	210	9	5
Boston Hrb. MA	BHDB	4.3	43	5	21	31	5	240	8	5
Boston Hrb. MA	BHHB	5.3	22	3	16	29	3	260	11	3
Boston Hrb. MA	BOS	10	31	10	42	26	10	420	58	10
Quincy Bay MA	QUI	7.5	8	3	36	4	3	260	5	3
Cape Cod MA	CCNH	.43	88	3	9.3	82	3	150	64	3
Buzzards Bay MA	BBCC	.43	42	3	7	13	3	130	17	3
Buzzards Bay MA	BBRH	.73	17	6	2.4	100	6	95	8	6
Buzzards Bay MA	BBAR	2.8	16	5	7.3	26	5	160	23	5
Buzzards Bay MA	BBGN	.76	134	5	3.9	33	5	110	24	5
Buzzards Bay MA	BUZ	1.1	107	7	4.4	41	7	130	9	7
Narr. Bay RI	NBMH	2.4	5	3	9.4	14	3	210	7	3
Narr. Bay RI	NBDI	1.3	37	5	9.2	27	5	230	26	5
Narr. Bay RI	NBDU	1	5	6	7.5	154	6	160	10	6
Narr. Bay RI	NAR	1.8	68	11	12	45	11	230	30	11
Block Is. RI	BIBI	.29	48	3	5.2	35	3	110	3	3
Long Is. Snd. CT	LICR	.83	21	5	3.5	31	5	200	16	5
Long Is. Snd. CT	LISI	1.5	11	5	4.8	51	5	300	13	5
W. Long Is. Snd. NY	WLI	2.3	16	5	14	23	5	330	14	5
Long Is. Snd. NY	LIHU	1.4	29	6	3.2	41	6	310	13	6
Long Is. Snd. NY	LIMR	1.8	31	6	3.8	52	6	300	19	6
Long Is. Snd. NY	LIHH	5.3	15	6	7.2	56	6	310	8	6
Long Is. Snd. NY	LITN	5.2	40	7	10	62	7	320	23	7
Moriches Bay NY	MBTH	1.4	10	5	2.1	98	5	160	5	5
Hud./Rar. Est NY	HRJB	5.6	2	2	28	4	2	320	1	2
Hud./Rar. Est. NY	HRUB	5	69	5	72	155	5	410	56	5
Hud./Rar. Est. NY	HRLB	6	44	8	19	74	8	380	15	8
Hud./Rar. Est. NJ	HRRB	6.8	7	3	43	14	3	520	8	3
Raritan Bay NJ	RAR	7.2	19	7	29	34	7	660	27	7
N.Y. Bight NJ	NYSH	6.3	17	6	12	110	6	450	16	6
Great Bay NJ	GRB	.88	11	6	6.8	16	6	200	11	6
Delaware Bay NJ	DBCM	1.2	13	2	6.6	53	2	310	45	2
Delaware Bay DE	DEL	.51	27	6	6.1	34	6	220	22	6
Delaware Bay NJ	DBFE	.41	44	3	1.7	72	3	190	24	3
Delaware Bay NJ	DBBD	.25	56	3	1.7	10	3	180	29	3
Delaware Bay DE	DBAP	.37	98	6	1.3	103	6	190	43	6
Delaware Bay NJ	DBHC	.32	-	1	12	-	1	500	-	1
Delaware Bay DE	DBWB	.77	60	3	7.5	21	3	320	23	3
Delaware Bay DE	DBKI	.36	4	6	1.4	72	6	190	14	6
Delaware Bay MD	DBCH	.34	18	3	3.6	19	3	150	5	3
Baltimore Hrb. MD	BAL	2.1	45	3	85	89	3	690	27	3
Up. Ches. Bay MD	UCB	.48	41	4	6.9	26	4	320	17	4
Ches. Bay MD	CBBO	.61	8	3	11	6	3	440	7	3
Ches. Bay MD	CBMP	.64	9	6	3.9	52	6	390	19	6
Ches. Bay MD	CBHP	.59	16	6	3.2	45	6	300	14	6

Table C.8: (Continued)

Location	SITE	Ag mean	Ag c.v.%	Ag n	Sn mean	Sn c.v.%	Sn n	Zn mean	Zn c.v.%	Zn n
Ches. Bay MD	CBCP	.11	14	3	3.7	13	3	110	2	3
Mid. Ches. Bay VA	MCB	.33	27	2	4.9	5	2	320	23	2
Potomac River VA	PRRP	.45	5	3	4.2	4	3	190	6	3
Potomac River MD	PRSP	.65	24	3	5.9	2	3	320	13	3
Ches. Bay VA	CBIB	.14	29	5	1.2	64	5	120	11	5
Rappahannock R. VA	RRRR	.1	2	2	3	29	2	130	13	2
Ches. Bay VA	CBCC	.084	9	2	.86	41	2	120	6	2
Ches. Bay VA	CBDP	.31	31	4	1.6	81	4	80	69	4
Ches. Bay VA	CBJR	.29	8	3	4.3	11	3	220	12	3
Low. Ches.Bay VA	LCB	.17	32	8	4	39	8	140	20	8
Elizabeth R. VA	ELZ	.84	26	3	15	88	3	660	24	3
Quinby Inlet VA	QIUB	.12	59	6	1.7	116	6	140	21	6
Pamlico Sound NC	PSPR	.37	70	3	2.9	5	3	96	2	3
Pamlico Snd. NC	PAM	.068	63	8	3	56	8	100	36	8
Pamlico Sound NC	PSNR	.09	7	3	3.8	1	3	96	3	3
Cape Fear NC	CFBI	.2	21	5	1.1	85	5	130	23	5
Santee River SC	SRNB	1	102	3	4.5	37	3	97	19	3
Charleston Hrb. SC	CHFJ	.17	29	3	1.1	37	3	85	11	3
Charleston Hrb. SC	CHSF	.11	65	5	.34	129	5	100	32	5
Charleston Hrb. SC	CHS	.17	26	9	4.1	35	9	100	13	9
Savannah R. Est. GA	SRTI	.079	20	2	1.5	17	2	86	7	2
Sapelo Is. GA	SSA	.05	108	9	3.6	29	8	92	30	9
St. Johns R. FL	SJCB	.18	43	5	1.6	51	5	100	32	5
St. Johns R. FL	SJD	.42	40	7	4.9	38	7	180	14	7
Indian River FL	IRSR	.32	-	1	5.2	-	1	200	-	1
North Miami FL	NMML	.38	9	3	3.2	18	3	120	14	3
Biscayne Bay FL	BBPC	.13	61	6	.38	121	6	45	14	6
Everglades FL	EVFU	.038	41	4	.49	29	4	20	10	4
Rookery Bay FL	RBHC	.043	25	6	.85	73	6	27	32	6
Naples Bay FL	NBNB	.12	56	4	.59	44	4	50	49	4
Charlotte Hrb. FL	CBBI	.083	9	2	2.5	116	2	52	48	2
Charlotte Hrb. FL	LOT	.007	147	5	3.6	26	5	22	104	5
Tampa Bay FL	TAM	.29	-	1	3	-	1	71	-	1
Tampa Bay FL	TBMK	.18	30	2	.58	54	2	82	46	2
Tampa Bay FL	TBNP	.36	18	3	1.9	14	3	120	7	3
Tampa Bay FL	TBHB	.72	-	1	4.7	-	1	260	-	1
Tampa Bay FL	TBPB	.13	46	3	1.5	27	3	74	32	3
Tampa Bay FL	TBKA	.62	-	1	7.8	-	1	180	-	1
Tampa Bay FL	TBOT	.086	-	1	1.8	-	1	35	-	1
Cedar Key FL	CKBP	.085	26	5	.96	84	5	44	34	5
Suwanee River FL	SRWP	.057	45	3	1.7	66	3	27	22	3
Apalachee Bay FL	AESP	.033	90	3	1.2	41	3	42	8	3
Apalachicola Bay FL	APCP	.075	42	3	3.9	13	3	93	10	3
Apalachicola Bay FL	APDB	.11	22	6	4	19	6	130	18	6
Apalachicola Bay FL	APA	.077	21	9	4.5	23	9	120	41	9
Panama City FL	PCLO	nd	-	2	2	18	2	59	7	2
Panama City FL	PCMP	.54	-	1	4.9	-	1	340	-	1
St. Andrew Bay FL	SAWB	.95	48	6	4	49	6	240	53	6
Choctawhat. Bay FL	CBSR	.11	42	6	4.8	24	6	160	41	6
Choctawhat. Bay FL	CBPP	2.5	29	4	2.8	49	4	130	11	4
Pensacola Bay Fl	PEN	.21	30	4	4.6	44	4	160	23	4
Pensacola Bay FL	PBIB	.082	37	6	1.6	53	6	76	42	6
Mobile Bay AL	MBHI	.2	6	3	2.9	14	3	180	8	3
Mobile Bay AL	MBCP	.13	42	4	2.9	70	4	160	17	4
Mobile Bay AL	MOB	.11	13	9	3.8	40	9	160	9	9
Round Is. MS	ROU	.18	45	3	3.7	23	3	110	18	3

Table C.8: (Continued)

Location	SITE	Ag mean	Ag c.v.%	Ag n	Sn mean	Sn c.v.%	Sn n	Zn mean	Zn c.v.%	Zn n
Heron Bay MS	HER	.14	10	6	2.2	26	6	81	16	6
Miss. Snd. MS	MSPB	.26	95	6	2.6	22	6	93	20	6
Miss. Snd. MS	MSBB	.23	11	2	5.2	64	2	170	27	2
Miss. Snd. MS	MSPC	.13	14	3	3.6	3	3	120	12	3
Miss. Delta LA	MRD	.2	18	9	2.9	31	9	110	14	9
Lake Borgne LA	LBNO	.1	21	3	1.3	13	3	61	9	3
Lake Borgne LA	LBMP	.12	14	6	1.1	96	6	69	17	6
Breton Snd. LA	BSBG	.32	33	3	6.1	82	3	99	31	3
Breton Snd. LA	BSSI	.12	23	6	1.9	47	6	92	19	6
Miss.River LA	MRTP	.2	40	3	2.2	17	3	140	21	3
Miss.River LA	MRPL	.26	13	3	3.3	5	3	150	15	3
Barataria Bay LA	BBSD	.12	15	6	1.2	43	6	86	4	6
Barataria Bay LA	BBTB	.15	13	3	2	27	3	96	17	3
Barataria Bay LA	BBMB	.2	30	6	1.2	66	6	140	22	6
Barataria Bay LA	BAR	.16	28	3	7.2	97	3	120	7	3
Terrebonne Bay LA	TBLF	.11	21	6	.69	98	6	91	20	6
Terrebonne Bay LA	TBLB	.14	16	3	.39	14	3	160	72	3
Caillou Lake LA	CLCL	.14	34	6	1.5	88	6	120	23	6
Atchafalaya Bay LA	ABOB	.14	22	6	1.9	57	6	83	29	6
Vermillion Bay LA	VBSP	.14	16	3	.38	173	3	130	14	3
J. Hrb. Bayou LA	JHJH	.17	32	5	1.9	82	5	160	16	5
Calcasieu Lake LA	CLLC	.13	19	3	1.4	9	3	51	15	3
Calcasieu Lake LA	CLSJ	.12	11	6	1.9	27	6	120	13	6
Sabine Lake TX	SLBB	.16	31	6	2	23	6	120	27	6
E. Cote Blanche LA	ECSP	.23	23	3	2.6	42	3	140	23	3
Galveston Bay TX	GBHR	.13	23	6	2.2	36	6	110	13	6
Galveston Bay TX	GBSC	.21	5	3	2.2	15	3	110	7	3
Galveston Bay TX	GBYC	.15	30	6	1.9	34	6	82	20	6
Galveston Bay TX	GBTD	.17	30	6	2	24	6	87	10	6
Galveston Bay TX	GBCR	.23	32	6	3.1	52	6	87	21	6
Galveston Bay TX	GBOB	.29	46	3	9.1	69	3	280	84	3
Galveston Bay TX	GAD	.16	97	6	4.2	40	6	120	107	6
Brazos River TX	BRFS	.1	25	3	1.9	22	3	92	23	3
Brazos River TX	BRCL	.16	19	3	1.7	11	3	75	14	3
Matagorda Bay TX	MBEM	.14	51	5	2.7	37	5	100	27	5
Matagorda Bay TX	MBDI	.1	11	3	1.6	28	3	82	6	3
Matagorda Bay TX	MBCB	.14	16	3	1.5	7	3	57	20	3
Matagorda Bay TX	MBTP	.14	24	6	1.5	99	6	70	14	6
Matagorda Bay TX	MBGP	.12	36	6	2	45	6	87	15	6
Matagorda Bay TX	MBLR	.17	57	6	1.6	82	6	80	34	6
Espiritu Santo TX	ESSP	.086	7	6	1.4	55	6	63	17	6
Espiritu Santo TX	ESBD	.25	-	1	2.1	-	1	37	-	1
San Antonio Bay TX	SAMP	.22	45	6	1.2	75	6	66	17	6
San Antonio Bay TX	SAPP	.15	16	5	1.7	73	5	71	25	5
San Antonio Bay TX	SAB	.11	55	9	1.9	45	9	61	17	9
Mesquite Bay TX	MBAR	.084	9	6	1.1	47	6	56	13	6
Copano Bay TX	CBCR	.089	9	6	1.7	21	6	78	11	6
Aransas Bay TX	ABHI	.15	17	3	2	8	3	95	7	3
Aransas Bay TX	ABLR	.14	46	6	.84	96	6	94	23	6
Corpus Christi TX	CCBH	.19	14	3	1.7	20	3	120	16	3
Corpus Christi TX	CCIC	.19	33	4	1.9	52	4	85	22	4
Corpus Christi TX	CCNB	.27	26	6	5.2	175	6	140	19	6
Corpus Christi Bay TX	CCB	.12	54	8	3.4	50	8	140	14	8
L. LagunaMadre TX	LMSB	.16	21	6	1.3	45	6	78	12	6
Laguna Madre TX	LMPI	.28	55	3	2.4	22	3	120	19	3
L. Laguna Madre TX	LLM	.19	58	7	6.1	115	7	100	10	7

Table C.8: (Continued)

Location	SITE	Ag mean	Ag c.v.%	Ag n	Sn mean	Sn c.v.%	Sn n	Zn mean	Zn c.v.%	Zn n
San Diego Bay CA	SDF	.37	43	2	4.1	25	2	180	34	2
San Diego Bay CA	SDHI	2.3	37	6	4.9	176	6	430	29	6
San Diego Hrb. CA	SDA	1.7	86	9	11	40	9	490	23	9
San Diego Bay	NSD	2.8	11	3	9.5	32	3	500	10	3
Pt. Loma CA	PLLH	.57	39	6	nd	-	6	160	6	6
La Jolla CA	LJLJ	.57	11	3	nd	-	3	110	25	3
Oceanside CA	OSBJ	.25	34	6	nd	-	6	120	3	6
Dana Pt. CA	DAN	.64	109	9	3.4	46	9	150	44	9
Newport Bch. CA	NBWJ	.53	33	5	nd	-	5	110	57	5
Anaheim Bay CA	ABWJ	.4	46	6	nd	-	6	150	10	6
Long Beach CA	LNB	.49	42	9	4.6	48	9	250	25	9
San Pedro Bay CA	SPB	.92	39	8	7.2	88	8	270	48	8
San Pedro Hrb. CA	SPFP	1	20	6	nd	-	6	230	8	6
Palos Verdes CA	PVRP	4.8	51	6	10	113	6	330	21	6
Santa Monica Bay CA	SMW	23	52	2	14	15	2	400	34	2
Marina Del Ray CA	MDSJ	2.5	25	6	nd	-	6	140	8	6
Pt. Dume CA	PDPD	2	23	6	nd	-	6	150	17	6
Pt. S. Barbara CA	SBSB	.6	41	6	1.5	245	6	120	17	6
Moss Landing CA	MOS	3.5	-	1	4.4	-	1	170	-	1
Monterey Bay CA	MBSC	nd	-	1	4.3	-	1	210	-	1
Southamp. Shl. CA	SHS	.74	31	2	3.8	14	2	210	11	2
Oakland Est. CA	OAK	.38	16	3	2.1	6	3	190	6	3
Hunters Pt. CA	HUN	.5	84	9	3.4	76	9	180	22	9
San Fran. Bay CA	SFDB	.73	28	6	.61	245	6	150	12	6
San Fran. Bay CA	SFSM	.48	8	3	nd	-	3	140	8	3
San Fran. Bay CA	SFEM	.56	23	6	nd	-	6	150	7	6
San Pablo Bay CA	PAB	.48	84	9	2	108	9	280	38	9
San Pablo Bay CA	SPSM	.51	71	6	nd	-	6	230	70	6
San Pablo Bay CA	SPSP	.5	44	6	nd	-	6	150	8	6
Tomales Bay CA	TBSR	.23	70	6	nd	-	6	120	9	6
Humboldt Bay CA	HMB	.4	-	1	nd	-	1	180	-	1
Coos Bay OR	COO	.22	99	4	1.8	147	4	200	30	4
Coos Bay OR	CBCH	.17	10	2	1.5	12	2	170	15	2
Coos Bay OR	CBRP	.17	23	5	2.4	42	5	140	12	5
Yaquina Bay OR	YBOP	.15	23	6	2.5	24	6	160	24	6
Yaquina Head OR	YHSS	.16	13	6	2.7	33	6	160	11	6
Tillamook Bay OR	TBHP	.16	22	5	2.6	50	5	230	9	5
Columbia R. OR	CRYB	.25	24	4	3.2	18	4	310	21	4
Young's Bay OR	YNB	.91	44	3	4	13	3	190	12	3
Columbia R. OR	COL	.52	90	3	nd	-	3	370	25	3
S. Juan de Fuca WA	JFNB	.19	13	6	5.3	29	6	190	16	6
South Puget Snd. WA	SSBI	.59	7	6	2.2	14	6	120	7	6
Comm. Bay WA	COM	.36	45	9	.8	150	9	110	11	9
Comm. Bay WA	CBBP	.47	11	6	2.1	15	6	100	10	6
Puget Sound WA	PSSS	.82	31	3	4.5	16	3	190	22	3
Elliott Bay WA	ELL	.66	86	9	5.5	98	9	520	51	9
Sinclair Inlet WA	SIWP	1.2	10	6	7.4	16	6	210	13	6
Puget Sound WA	PSHC	.74	35	3	5.2	19	3	290	9	3
Whidbey Is. WA	WIPP	.46	3	6	2.4	14	6	120	9	6
Puget Sound WA	PSEH	.63	37	2	4.9	18	2	96	118	2
Puget Sound WA	PSPA	.24	46	3	3.3	12	3	150	8	3
Bellingham Bay WA	BBSM	.2	11	6	1.3	20	6	130	9	6
Pt. Roberts WA	PRPR	.16	6	6	1.5	22	6	120	6	6
Boca de Quadra AK	BDQ	.51	30	3	6.1	42	3	190	22	3
Lutak Inlet AK	LUT	.26	72	6	1.6	97	6	190	7	6
Skagway AK	SKA	.8	47	3	5.6	60	3	340	56	3

Table C.8: (Continued)

Location	SITE	Ag mean	Ag c.v.%	Ag n	Sn mean	Sn c.v.%	Sn n	Zn mean	Zn c.v.%	Zn n
Nahku Bay AK	NAH	.38	22	3	.081	173	3	250	22	3
Unakwit Inlet AK	UISB	.13	11	6	1.1	38	6	130	7	6
Valdez AK	VAL	.37	12	3	2.8	4	3	150	4	3
Port Valdez AK	PVMC	.13	8	6	1.2	22	6	150	7	6
Kamishak Bay AK	KAM	.39	32	3	4	13	3	130	9	3
Dutch Hrb. AK	DUT	.15	36	3	3.9	11	3	120	12	3
Oliktok Pt. AK	OLI	.23	44	6	1.9	97	6	140	11	6
Prudhoe Bay AK	END	.39	37	6	1.9	111	6	170	41	6
Barber's Pt. HI	BPBP	.22	31	3	nd	-	3	88	63	3
Honolulu Hrb. HI	HHKL	1.7	18	3	nd	-	3	140	21	3

Appendix D

Means and coefficients of variation for chemical concentrations in sandy sediment

APPENDIX D

Mean Concentrations, n's, and coefficients of variation for chemical concentrations in sandy sediments. Sediments with ≥80% particles of diameter ≥63 μm in diameter. Sites appear here and in Appendix C for fine-grained sediment when both sandy and fine-grained sediment samples were collected.

There are 19 sites at which only sand was collected and for which no chemical analyses were made. Those sites are listed as "sandy" in Table 7 in the text but are not included in Appendix D.

Table D.1: Average concentrations and coefficients of variation, percent, for **Grain Size** (as % fines), total organic carbon (**TOC** as % dry-wt) and total polychloronated biphenyls (**tPCB** as ng/g dry-wt) in coarse-grain sediments at NS&T sites.

		Grain Size			TOC			tPCB		
Location	SITE	mean	c.v.%	n	mean	c.v.%	n	mean	c.v.%	n
Merrimack R. MA	MER	6	9	5	.11	29	5	29	103	5
Boston Hrb. MA	BHDI	5.2	-	1	.14	-	1	12	-	1
Boston Hrb. MA	BHDB	19	-	1	.69	-	1	210	-	1
Boston Hrb. MA	BHHB	13	21	4	.59	35	3	41	24	3
Duxbury Bay MA	DBCI	6.7	25	3	.1	46	3	12	33	3
Buzzards Bay MA	BBAR	11	-	1	.25	-	1	240	-	1
Buzzards Bay MA	BBGN	15	32	2	.41	-	1	47	-	1
Narr. Bay RI	NBPI	5.5	22	3	.35	27	3	32	63	3
Narr. Bay RI	NBDI	14	-	1	.4	-	1	36	-	1
Long Island NY	LIGB	5.6	5	3	.1	26	3	-	-	0
E. Long Is. Snd. CT	ELI	8	33	8	.23	62	8	7.6	103	8
Long Is. Snd. CT	LICR	11	-	1	.47	-	1	36	-	1
Long Is. Snd. CT	LINH	3.2	21	3	.093	25	3	1.1	116	3
Long Is. Snd. CT	LIHR	9.6	53	3	.37	115	3	190	111	3
Long Is. Snd. CT	LISI	7.3	-	1	.36	-	1	4.2	-	1
Long Is. Snd. NY	LIPJ	11	35	3	.29	9	3	13	89	2
Long Is. Snd. NY	LITN	8.8	59	2	.28	66	2	120	59	2
Moriches Bay NY	MBTH	17	-	1	.37	-	1	8.2	-	1
Hud./Rar. Est NY	HRJB	4.1	-	1	.62	-	1	27	-	1
Hud./Rar. Est. NY	HRUB	15	17	4	.42	36	4	170	40	4
Hud./Rar. Est. NY	HRLB	19	-	1	1.2	-	1	190	-	1
Delaware Bay NJ	DBCM	5.4	54	2	.1	-	1	-	-	0
Delaware Bay DE	DEL	16	30	2	.57	63	2	55	128	2
Delaware Bay NJ	DBHC	13	34	2	.48	9	2	15	73	2
Ches. Bay MD	CBHG	6.1	7	3	.22	38	3	nd	-	3
Mid. Ches. Bay VA	MCB	8.4	21	2	.63	104	2	3.9	42	2
Ches. Bay VA	CBIB	16	-	1	.74	-	1	.82	-	1
Rappahannock R. VA	RRRR	17	-	1	.4	-	1	17	-	1
Ches. Bay VA	CBCC	7.1	42	4	.2	40	4	nd	-	4
Ches. Bay VA	CBDP	14	43	2	.36	45	2	1.3	5	2
Low. Ches.Bay VA	LCB	19	-	1	.22	-	1	1.6	-	1
Chincoteague Bay VA	CBCI	8.5	105	3	.21	157	3	5.1	-	1
Roanoke Snd. VA	RSJC	11	30	3	.27	46	3	.88	-	1
Pamlico Snd. NC	PSWB	8.4	28	3	.18	41	3	.28	-	1
Pamlico Snd. NC	PAM	7	-	1	.12	-	1	nd	-	1
Cape Fear NC	CFBI	3.9	-	1	.09	-	1	nd	-	1
Charleston Hrb. SC	CHSF	15	-	1	.62	-	1	nd	-	1
Savannah R. Est. GA	SRTI	14	33	4	.38	63	4	.32	200	4
Sapelo Snd. GA	SSSI	18	15	3	.44	6	3	1.3	58	3
Altamaha River GA	ARWI	7.4	94	3	.34	76	3	10	46	3
St. Johns R. FL	SJCB	6.8	-	1	.25	-	1	2.3	-	1
St. Johns R. FL	SJD	15	36	2	.73	57	2	50	25	2
Matanzas R. FL	MRCB	12	47	3	.32	36	3	6.2	102	3
Indian River FL	IRSR	12	28	2	.42	37	2	3.9	91	2
Everglades FL	EVFU	8.8	2	2	.022	3	2	2	69	2
Naples Bay FL	NBNB	17	18	2	.24	75	2	13	34	2
Charlotte Hrb. FL	CBBI	14	25	4	.037	62	4	2.6	132	4
Charlotte Hrb. FL	CBFM	14	32	3	.87	44	3	9.5	41	3
Charlotte Hrb. FL	LOT	15	15	4	.5	12	4	5.8	135	4
Tampa Bay FL	TAM	13	29	5	.59	31	5	.84	133	4
Tampa Bay FL	TBMK	8.5	76	4	.27	147	4	6.4	68	4
Tampa Bay FL	TBCB	7.2	24	6	.037	46	6	1.9	68	6
Tampa Bay FL	TBHB	11	35	5	.066	19	5	27	57	5
Tampa Bay FL	TBPB	8.4	40	3	.02	44	3	.7	25	3
Tampa Bay FL	TBKA	15	31	2	.27	1	2	44	2	2
Tampa Bay FL	TBOT	15	8	2	.4	0	2	15	22	2

Table D.1: (Continued)

Location	SITE	Grain Size mean	Grain Size c.v.%	Grain Size n	TOC mean	TOC c.v.%	TOC n	tPCB mean	tPCB c.v.%	tPCB n
Cedar Key FL	CKBP	16	-	1	.034	-	1	.5	-	1
Apalachicola Bay FL	APCP	5	20	3	.017	7	3	4.8	82	3
Panama City FL	PCLO	18	-	1	.98	-	1	12	-	1
Choctawhat. Bay FL	CBPP	5.6	32	2	.073	103	2	18	91	2
Mobile Bay AL	MBCP	8.2	29	2	.048	121	2	47	139	2
Miss. Snd. MS	MSBB	5.2	30	3	.02	112	3	6.8	21	3
Barataria Bay LA	BAR	12	-	1	.82	-	1	2	-	1
J. Hrb. Bayou LA	JHJH	2	-	1	.005	-	1	6.9	-	1
Galveston Bay TX	GAD	13	36	3	.15	49	3	nd	-	3
Matagorda Bay TX	MBEM	14	-	1	.013	-	1	4	-	1
Espiritu Santo TX	ESBD	13	60	2	.014	5	2	2.9	98	2
Corpus Christi TX	CCIC	7.6	6	2	.008	53	2	1.2	40	2
Corpus Christi Bay TX	CCB	16	-	1	.19	-	1	nd	-	1
L. Laguna Madre TX	LLM	16	35	2	.22	2	2	nd	-	2
Imperial Beach CA	IBNJ	17	12	3	.076	23	3	-	-	0
San Diego Bay CA	SDF	9.2	58	4	.27	40	4	13	102	4
San Diego Bay CA	SDCB	12	37	3	.19	40	3	18	68	3
Mission Bay CA	MBVB	7.4	65	3	.19	50	3	5	77	2
San Pedro Bay CA	SPB	18	-	1	.47	-	1	100	-	1
Santa Monica Bay CA	SMW	16	15	2	.54	36	2	96	30	2
Santa Monica Bay CA	SMB	8.5	14	6	.18	86	6	14	21	6
Pt. Conception CA	PCPC	12	33	3	1.3	23	3	3.4	36	3
San Luis Ob. Bay CA	SLSL	9.9	78	3	.97	25	3	2.8	51	3
Moss Landing CA	MOS	8.4	4	2	.15	17	2	-	-	0
Pacific Grove CA	PGLP	8	23	3	.11	27	3	.66	-	1
Monterey Bay CA	MBSC	12	2	2	.05	141	2	-	-	0
Monterey Bay CA	MON	8.4	58	6	.29	89	6	7.7	51	6
Southamp. Shl. CA	SHS	14	27	7	.25	33	7	15	68	7
Bodega Bay CA	BBBE	1.3	-	1	.092	-	1	.44	-	1
Bodega Bay CA	BOD	6.1	41	9	.36	99	9	4.9	41	7
Humboldt Bay CA	HMBJ	2.8	63	3	nd	-	3	-	-	0
Humboldt Bay CA	HMB	7	50	2	.21	44	2	-	-	0
Coos Bay OR	COO	7	85	5	.11	39	4	1.7	24	4
Coos Bay OR	CBCH	12	24	5	.7	30	4	4.8	4	3
Coos Bay OR	CBRP	20	-	1	.66	-	1	2.5	-	1
Tillamook Bay OR	TBHP	19	-	1	.77	-	1	3.4	-	1
Columbia R. OR	CRYB	11	53	2	.28	45	2	2.1	114	2
Columbia R. OR	COL	7.2	58	6	.22	73	6	8.6	68	4
Columbia River WA	CRNJ	3.2	14	3	.04	25	3	-	-	0
Gray's Hrb. WA	GHWJ	15	24	3	.38	15	3	1.8	117	2
Nisqually Rch. WA	NIS	4.3	36	9	.11	109	9	6.7	93	7
Elliott Bay WA	EBFR	14	31	3	.24	27	3	46	69	3
Puget Sound WA	PSEH	8.3	-	1	.44	-	1	nd	-	1
Port Moller AK	PTM	7.8	37	3	.22	24	3	43	69	3

Table D.2: Average concentrations, ng/g dry-wt, and coefficients of variation, percent, for low molecular weigh PAHs (**LMWPAH**), high molecular weigh PAHs (**HMWPAH**) and total polycyclic aromatic hydrocarbons (**tPAH**) in coarse-grain sediments at NS&T sites.

		LMWpah			**HMWpah**			**tPAH**		
Location	**SITE**	**mean**	**c.v.%**	**n**	**mean**	**c.v.%**	**n**	**mean**	**c.v.%**	**n**
Merrimack R. MA	MER	87	33	4	56	35	4	140	31	4
Boston Hrb. MA	BHDI	nd	-	1	nd	-	1	nd	-	1
Boston Hrb. MA	BHDB	640	-	1	3800	-	1	4400	-	1
Boston Hrb. MA	BHHB	18	173	3	210	74	3	230	80	3
Duxbury Bay MA	DBCI	23	25	3	83	18	3	110	19	3
Buzzards Bay MA	BBAR	29	-	1	330	-	1	360	-	1
Buzzards Bay MA	BBGN	74	-	1	290	-	1	360	-	1
Narr. Bay RI	NBPI	13	57	3	63	45	3	76	47	3
Narr. Bay RI	NBDI	40	-	1	200	-	1	240	-	1
Long Island NY	LIGB	9.5	37	3	64	35	3	73	33	3
E. Long Is. Snd. CT	ELI	19	91	8	85	155	8	100	141	8
Long Is. Snd. CT	LICR	510	-	1	5600	-	1	6100	-	1
Long Is. Snd. CT	LINH	16	117	3	58	127	3	74	122	3
Long Is. Snd. CT	LIHR	980	50	3	4600	58	3	5600	57	3
Long Is. Snd. CT	LISI	nd	-	1	460	-	1	460	-	1
Long Is. Snd. NY	LIPJ	93	69	3	300	55	3	390	58	3
Long Is. Snd. NY	LITN	460	109	2	1200	97	2	1700	100	2
Moriches Bay NY	MBTH	nd	-	1	nd	-	1	nd	-	1
Hud./Rar. Est NY	HRJB	57	-	1	160	-	1	220	-	1
Hud./Rar. Est. NY	HRUB	7000	76	4	20000	76	4	27000	76	4
Hud./Rar. Est. NY	HRLB	2700	-	1	11000	-	1	14000	-	1
Delaware Bay NJ	DBCM	nd	-	1	2.6	-	1	2.6	-	1
Delaware Bay DE	DEL	380	58	2	90	26	2	470	52	2
Delaware Bay NJ	DBHC	61	41	2	150	39	2	210	39	2
Ches. Bay MD	CBHG	4.3	173	3	44	77	3	48	85	3
Mid. Ches. Bay VA	MCB	11	99	2	43	92	2	54	53	2
Ches. Bay VA	CBIB	nd	-	1	180	-	1	180	-	1
Rappahannock R. VA	RRRR	nd	-	1	100	-	1	100	-	1
Ches. Bay VA	CBCC	nd	-	4	nd	-	4	nd	-	4
Ches. Bay VA	CBDP	nd	-	2	46	141	2	46	141	2
Low. Ches.Bay VA	LCB	9.2	-	1	19	-	1	28	-	1
Chincoteague Bay VA	CBCI	nd	-	3	23	173	3	23	173	3
Roanoke Snd. VA	RSJC	4.6	88	3	66	39	3	71	40	3
Pamlico Snd. NC	PSWB	nd	-	3	nd	-	3	nd	-	3
Pamlico Snd. NC	PAM	nd	-	1	nd	-	1	nd	-	1
Cape Fear NC	CFBI	nd	-	1	35	-	1	35	-	1
Charleston Hrb. SC	CHSF	nd	-	1	92	-	1	92	-	1
Savannah R. Est. GA	SRTI	.2	200	4	9.3	147	4	9.5	143	4
Sapelo Snd. GA	SSSI	6.1	91	3	47	105	3	53	103	3
Altamaha River GA	ARWI	3.5	10	3	6.6	42	3	10	31	3
St. Johns R. FL	SJCB	3.3	-	1	28	-	1	32	-	1
St. Johns R. FL	SJD	31	13	2	320	42	2	350	40	2
Matanzas R. FL	MRCB	14	91	3	100	95	3	120	94	3
Indian River FL	IRSR	nd	-	2	29	34	2	29	34	2
Everglades FL	EVFU	nd	-	2	nd	-	2	nd	-	2
Naples Bay FL	NBNB	14	44	2	130	121	2	150	105	2
Charlotte Hrb. FL	CBBI	nd	-	4	3.3	117	4	3.3	117	4
Charlotte Hrb. FL	CBFM	65	9	3	210	23	3	270	19	3
Charlotte Hrb. FL	LOT	7.7	119	4	8.3	82	4	16	77	4
Tampa Bay FL	TAM	27	137	5	35	41	5	62	79	5
Tampa Bay FL	TBMK	8.2	121	4	92	100	4	100	101	4
Tampa Bay FL	TBCB	1.3	245	6	12	110	6	13	111	6
Tampa Bay FL	TBHB	120	83	5	710	68	5	840	70	5
Tampa Bay FL	TBPB	6	173	3	32	78	3	38	89	3
Tampa Bay FL	TBKA	480	104	2	2000	89	2	2500	91	2
Tampa Bay FL	TBOT	31	23	2	79	31	2	110	16	2

Table D.2: (Continued)

Location	SITE	LMWpah mean	LMWpah c.v.%	LMWpah n	HMWpah mean	HMWpah c.v.%	HMWpah n	tPAH mean	tPAH c.v.%	tPAH n
Cedar Key FL	CKBP	nd	-	1	nd	-	1	nd	-	1
Apalachicola Bay FL	APCP	3.7	88	3	68	16	3	71	18	3
Panama City FL	PCLO	17	-	1	19	-	1	36	-	1
Choctawhat. Bay FL	CBPP	96	100	2	520	74	2	610	78	2
Mobile Bay AL	MBCP	9	141	2	49	141	2	58	141	2
Miss. Snd. MS	MSBB	81	66	3	400	55	3	480	56	3
Barataria Bay LA	BAR	5.8	-	1	89	-	1	94	-	1
J. Hrb. Bayou LA	JHJH	nd	-	1	9	-	1	9	-	1
Galveston Bay TX	GAD	nd	-	3	nd	-	3	nd	-	3
Matagorda Bay TX	MBEM	nd	-	1	5	-	1	5	-	1
Espiritu Santo TX	ESBD	nd	-	2	nd	-	2	nd	-	2
Corpus Christi TX	CCIC	nd	-	2	6.5	33	2	6.5	33	2
Corpus Christi Bay TX	CCB	nd	-	1	nd	-	1	nd	-	1
L. Laguna Madre TX	LLM	350	141	2	nd	-	2	350	141	2
Imperial Beach CA	IBNJ	.19	173	3	4.4	173	3	4.6	173	3
San Diego Bay CA	SDF	42	200	4	69	200	4	110	200	4
San Diego Bay CA	SDCB	.93	173	3	79	104	3	80	104	3
Mission Bay CA	MBVB	7.8	86	3	110	108	3	120	106	3
San Pedro Bay CA	SPB	21	-	1	260	-	1	280	-	1
Santa Monica Bay CA	SMW	90	141	2	7	-	1	190	-	1
Santa Monica Bay CA	SMB	13	224	6	15	171	6	28	193	6
Pt. Conception CA	PCPC	.5	173	3	4.4	102	3	4.9	108	3
San Luis Ob. Bay CA	SLSL	16	24	3	36	42	3	52	35	3
Moss Landing CA	MOS	-	-	0	-	-	0	-	-	0
Pacific Grove CA	PGLP	3	46	3	23	61	3	26	59	3
Monterey Bay CA	MBSC	7.1	31	2	8.2	9	2	15	10	2
Monterey Bay CA	MON	6.8	85	6	20	127	4	24	100	5
Southamp. Shl. CA	SHS	180	171	7	510	148	7	690	153	7
Bodega Bay CA	BBBE	19	-	1	25	-	1	44	-	1
Bodega Bay CA	BOD	27	108	9	16	245	6	42	134	8
Humboldt Bay CA	HMBJ	67	13	3	17	15	3	84	13	3
Humboldt Bay CA	HMB	-	-	0	-	-	0	-	-	0
Coos Bay OR	COO	120	205	5	270	221	5	390	216	5
Coos Bay OR	CBCH	nd	-	3	nd	-	3	nd	-	3
Coos Bay OR	CBRP	14	-	1	69	-	1	83	-	1
Tillamook Bay OR	TBHP	nd	-	1	13	-	1	13	-	1
Columbia R. OR	CRYB	27	42	2	13	-	1	33	61	2
Columbia R. OR	COL	11	196	6	41	115	3	63	120	3
Columbia River WA	CRNJ	nd	-	3	nd	-	3	nd	-	3
Gray's Hrb. WA	GHWJ	22	2	3	47	24	3	69	17	3
Nisqually Rch. WA	NIS	5.3	123	9	.86	265	7	7.7	98	7
Elliott Bay WA	EBFR	350	100	3	1200	101	3	1500	101	3
Puget Sound WA	PSEH	57	-	1	110	-	1	170	-	1
Port Moller AK	PTM	nd	-	3	-	-	0	-	-	0

Table D.3: Average concentrations, ng/g dry-wt, and coefficients of variation, percent, for total DDT (**tDDT**), total chlordane (**tCdane**) and total dieldrin (**tDiel**) in coarse-grain sediments at NS&T sites.

		tDDT			tCdane			tDiel		
Location	SITE	mean	c.v.%	n	mean	c.v.%	n	mean	c.v.%	n
Merrimack R. MA	MER	nd	-	5	.72	138	5	.2	94	5
Boston Hrb. MA	BHDI	.38	-	1	.34	-	1	nd	-	1
Boston Hrb. MA	BHDB	9.6	-	1	1.2	-	1	4.1	-	1
Boston Hrb. MA	BHHB	2.8	44	3	.34	173	3	.33	173	3
Duxbury Bay MA	DBCI	2.1	83	3	.24	173	3	nd	-	3
Buzzards Bay MA	BBAR	5.7	-	1	nd	-	1	4	-	1
Buzzards Bay MA	BBGN	.6	-	1	nd	-	1	1.8	-	1
Narr. Bay RI	NBPI	1.4	55	3	.6	53	3	nd	-	3
Narr. Bay RI	NBDI	2	-	1	1.1	-	1	1.7	-	1
Long Island NY	LIGB	nd	-	3	nd	-	3	.25	87	3
E. Long Is. Snd. CT	ELI	.094	186	8	.049	153	8	.02	193	8
Long Is. Snd. CT	LICR	13	-	1	.43	-	1	.83	-	1
Long Is. Snd. CT	LINH	.16	173	3	nd	-	3	nd	-	3
Long Is. Snd. CT	LIHR	29	110	3	4.1	115	3	4.4	131	3
Long Is. Snd. CT	LISI	nd	-	1	nd	-	1	nd	-	1
Long Is. Snd. NY	LIPJ	.33	141	2	.19	141	2	nd	-	2
Long Is. Snd. NY	LITN	8.6	67	2	2.9	52	2	nd	-	2
Moriches Bay NY	MBTH	.56	-	1	.4	-	1	.5	-	1
Hud./Rar. Est NY	HRJB	3	-	1	1.2	-	1	.58	-	1
Hud./Rar. Est. NY	HRUB	32	70	4	3.4	36	4	3.5	40	4
Hud./Rar. Est. NY	HRLB	35	-	1	4.2	-	1	3.3	-	1
Delaware Bay NJ	DBCM	nd	-	1	nd	-	1	nd	-	1
Delaware Bay DE	DEL	1.4	101	2	1.8	38	2	.89	17	2
Delaware Bay NJ	DBHC	6.6	48	2	.41	17	2	.94	2	2
Ches. Bay MD	CBHG	nd	-	3	nd	-	3	nd	-	3
Mid. Ches. Bay VA	MCB	.45	47	2	nd	-	2	nd	-	2
Ches. Bay VA	CBIB	nd	-	1	nd	-	1	nd	-	1
Rappahannock R. VA	RRRR	2.8	-	1	nd	-	1	nd	-	1
Ches. Bay VA	CBCC	nd	-	4	nd	-	4	nd	-	4
Ches. Bay VA	CBDP	1	6	2	nd	-	2	nd	-	2
Low. Ches.Bay VA	LCB	.24	-	1	nd	-	1	nd	-	1
Chincoteague Bay VA	CBCI	.43	99	3	.24	173	3	.14	173	3
Roanoke Snd. VA	RSJC	.14	173	3	.077	173	3	nd	-	3
Pamlico Snd. NC	PSWB	nd	-	3	.46	46	3	nd	-	3
Pamlico Snd. NC	PAM	nd	-	1	nd	-	1	nd	-	1
Cape Fear NC	CFBI	nd	-	1	nd	-	1	nd	-	1
Charleston Hrb. SC	CHSF	nd	-	1	nd	-	1	nd	-	1
Savannah R. Est. GA	SRTI	nd	-	4	nd	-	4	nd	-	4
Sapelo Snd. GA	SSSI	.72	87	3	.28	89	3	.14	173	3
Altamaha River GA	ARWI	.56	14	3	.1	173	3	nd	-	3
St. Johns R. FL	SJCB	.38	-	1	.32	-	1	.64	-	1
St. Johns R. FL	SJD	nd	-	2	nd	-	2	nd	-	2
Matanzas R. FL	MRCB	nd	-	3	nd	-	3	nd	-	3
Indian River FL	IRSR	1.2	29	2	nd	-	2	nd	-	2
Everglades FL	EVFU	.08	71	2	nd	-	2	nd	-	2
Naples Bay FL	NBNB	3.5	88	2	4.1	78	2	.66	46	2
Charlotte Hrb. FL	CBBI	.58	79	4	.17	47	4	.088	70	4
Charlotte Hrb. FL	CBFM	3.2	44	3	1.1	46	3	1.5	28	3
Charlotte Hrb. FL	LOT	nd	-	4	.19	200	4	nd	-	3
Tampa Bay FL	TAM	.22	200	4	nd	-	4	nd	-	4
Tampa Bay FL	TBMK	2.1	125	4	1.1	100	4	.14	90	4
Tampa Bay FL	TBCB	2.3	134	6	.89	37	6	.05	98	6
Tampa Bay FL	TBHB	1.4	16	4	.35	58	5	.046	176	5
Tampa Bay FL	TBPB	.13	46	3	.24	64	3	.043	87	3
Tampa Bay FL	TBKA	11	26	2	1.1	14	2	6.8	85	2
Tampa Bay FL	TBOT	1.2	56	2	.34	21	2	.59	2	2

Table D.3: (Continued)

Location	SITE	tDDT mean	tDDT c.v.%	tDDT n	tCdane mean	tCdane c.v.%	tCdane n	tDiel mean	tDiel c.v.%	tDiel n
Cedar Key FL	CKBP	.05	-	1	.07	-	1	.15	-	1
Apalachicola Bay FL	APCP	1.2	55	3	.15	27	3	.31	119	3
Panama City FL	PCLO	3.7	-	1	.16	-	1	.41	-	1
Choctawhat. Bay FL	CBPP	36	115	2	1	89	2	1.4	41	2
Mobile Bay AL	MBCP	4.3	109	2	1.9	141	2	.12	106	2
Miss. Snd. MS	MSBB	1.6	39	3	.2	42	2	.23	7	3
Barataria Bay LA	BAR	nd	-	1	nd	-	1	nd	-	1
J. Hrb. Bayou LA	JHJH	.68	-	1	.06	-	1	nd	-	1
Galveston Bay TX	GAD	nd	-	3	nd	-	3	nd	-	1
Matagorda Bay TX	MBEM	1.3	-	1	-	-	0	nd	-	1
Espiritu Santo TX	ESBD	.38	26	2	.1	42	2	.045	141	2
Corpus Christi TX	CCIC	.14	141	2	.075	85	2	.035	141	2
Corpus Christi Bay TX	CCB	nd	-	1	nd	-	1	nd	-	1
L. Laguna Madre TX	LLM	nd	-	2	nd	-	2	-	-	0
Imperial Beach CA	IBNJ	.99	24	3	.057	87	3	nd	-	3
San Diego Bay CA	SDF	84	-	1	nd	-	4	nd	-	4
San Diego Bay CA	SDCB	1.4	88	3	nd	-	3	nd	-	3
Mission Bay CA	MBVB	.86	72	2	.3	79	3	.12	41	3
San Pedro Bay CA	SPB	350	-	1	nd	-	1	nd	-	1
Santa Monica Bay CA	SMW	29	15	2	.45	141	2	nd	-	2
Santa Monica Bay CA	SMB	2.5	66	6	.31	114	6	nd	-	6
Pt. Conception CA	PCPC	5.3	13	3	.12	39	3	.017	173	3
San Luis Ob. Bay CA	SLSL	2.2	43	3	.11	9	3	.07	29	3
Moss Landing CA	MOS	-	-	0	-	-	0	-	-	0
Pacific Grove CA	PGLP	1	54	3	.087	7	3	.22	24	3
Monterey Bay CA	MBSC	5.1	14	2	.2	28	2	.24	88	2
Monterey Bay CA	MON	1.9	146	3	nd	-	6	nd	-	6
Southamp. Shl. CA	SHS	.94	108	5	nd	-	7	nd	-	7
Bodega Bay CA	BBBE	.64	-	1	.05	-	1	.05	-	1
Bodega Bay CA	BOD	1.1	150	3	nd	-	9	.11	300	9
Humboldt Bay CA	HMBJ	.22	46	3	.05	111	3	.26	29	3
Humboldt Bay CA	HMB	-	-	0	-	-	0	-	-	0
Coos Bay OR	COO	6	-	1	nd	-	5	nd	-	5
Coos Bay OR	CBCH	.53	157	3	.067	173	3	nd	-	3
Coos Bay OR	CBRP	.4	-	1	nd	-	1	.2	-	1
Tillamook Bay OR	TBHP	.1	-	1	nd	-	1	nd	-	1
Columbia R. OR	CRYB	1.8	28	2	.05	141	2	.6	47	2
Columbia R. OR	COL	.9	94	2	.083	245	6	.17	245	6
Columbia River WA	CRNJ	nd	-	3	nd	-	3	nd	-	3
Gray's Hrb. WA	GHWJ	.39	87	3	.15	92	3	.053	173	3
Nisqually Rch. WA	NIS	-	-	0	nd	-	9	nd	-	9
Elliott Bay WA	EBFR	nd	-	2	.023	173	3	nd	-	3
Puget Sound WA	PSEH	nd	-	1	nd	-	1	nd	-	1
Port Moller AK	PTM	14	-	1	nd	-	3	nd	-	3

Table D.4: Average concentrations, ng/g dry-wt, and coefficients of variation, percent, for Hexachlorobenzene (**HxChlB**), **Lindane** and **Mirex** in coarse-grain sediments at NS&T sites.

		HxChlB			Lindane			Mirex		
Location	SITE	mean	c.v.%	n	mean	c.v.%	n	mean	c.v.%	n
Merrimack R. MA	MER	.65	82	5	.21	83	5	nd	-	5
Boston Hrb. MA	BHDI	nd	-	1	nd	-	1	nd	-	1
Boston Hrb. MA	BHDB	.3	-	1	nd	-	1	.52	-	1
Boston Hrb. MA	BHHB	nd	-	3	nd	-	3	.4	173	3
Duxbury Bay MA	DBCI	.56	25	3	.18	173	3	nd	-	3
Buzzards Bay MA	BBAR	nd	-	1	nd	-	1	nd	-	1
Buzzards Bay MA	BBGN	.37	-	1	nd	-	1	.34	-	1
Narr. Bay RI	NBPI	.48	11	3	nd	-	3	nd	-	3
Narr. Bay RI	NBDI	nd	-	1	.14	-	1	.79	-	1
Long Island NY	LIGB	nd	-	3	nd	-	3	nd	-	3
E. Long Is. Snd. CT	ELI	.025	185	8	.05	214	8	nd	-	8
Long Is. Snd. CT	LICR	nd	-	1	.39	-	1	nd	-	1
Long Is. Snd. CT	LINH	nd	-	3	nd	-	3	nd	-	3
Long Is. Snd. CT	LIHR	nd	-	3	nd	-	3	2.7	118	3
Long Is. Snd. CT	LISI	nd	-	1	nd	-	1	nd	-	1
Long Is. Snd. NY	LIPJ	.5	141	2	nd	-	2	nd	-	2
Long Is. Snd. NY	LITN	.6	92	2	nd	-	2	nd	-	2
Moriches Bay NY	MBTH	nd	-	1	nd	-	1	nd	-	1
Hud./Rar. Est NY	HRJB	nd	-	1	.49	-	1	nd	-	1
Hud./Rar. Est. NY	HRUB	.3	88	4	nd	-	4	2	68	4
Hud./Rar. Est. NY	HRLB	.5	-	1	nd	-	1	.9	-	1
Delaware Bay NJ	DBCM	.41	-	1	nd	-	1	nd	-	1
Delaware Bay DE	DEL	2.1	141	2	.96	141	2	nd	-	2
Delaware Bay NJ	DBHC	nd	-	2	.26	141	2	nd	-	2
Ches. Bay MD	CBHG	nd	-	3	nd	-	3	nd	-	3
Mid. Ches. Bay VA	MCB	nd	-	2	nd	-	2	nd	-	2
Ches. Bay VA	CBIB	nd	-	1	nd	-	1	nd	-	1
Rappahannock R. VA	RRRR	nd	-	1	nd	-	1	nd	-	1
Ches. Bay VA	CBCC	nd	-	4	nd	-	4	nd	-	4
Ches. Bay VA	CBDP	nd	-	2	nd	-	2	nd	-	2
Low. Ches.Bay VA	LCB	nd	-	1	.15	-	1	nd	-	1
Chincoteague Bay VA	CBCI	.53	173	3	.07	173	3	nd	-	3
Roanoke Snd. VA	RSJC	.018	173	3	nd	-	3	nd	-	3
Pamlico Snd. NC	PSWB	.056	60	3	.037	101	3	nd	-	3
Pamlico Snd. NC	PAM	nd	-	1	nd	-	1	nd	-	1
Cape Fear NC	CFBI	nd	-	1	nd	-	1	nd	-	1
Charleston Hrb. SC	CHSF	nd	-	1	nd	-	1	nd	-	1
Savannah R. Est. GA	SRTI	nd	-	4	nd	-	4	nd	-	4
Sapelo Snd. GA	SSSI	.045	95	3	nd	-	3	nd	-	3
Altamaha River GA	ARWI	.44	9	3	.69	16	3	nd	-	3
St. Johns R. FL	SJCB	nd	-	1	nd	-	1	nd	-	1
St. Johns R. FL	SJD	nd	-	2	nd	-	2	nd	-	2
Matanzas R. FL	MRCB	.014	173	3	nd	-	3	nd	-	3
Indian River FL	IRSR	nd	-	2	nd	-	2	nd	-	2
Everglades FL	EVFU	nd	-	2	nd	-	2	nd	-	2
Naples Bay FL	NBNB	.015	141	2	.03	141	2	nd	-	2
Charlotte Hrb. FL	CBBI	.013	173	3	.032	180	4	.01	200	4
Charlotte Hrb. FL	CBFM	.042	140	3	.27	54	3	nd	-	3
Charlotte Hrb. FL	LOT	nd	-	4	nd	-	4	nd	-	4
Tampa Bay FL	TAM	.02	200	4	nd	-	4	nd	-	4
Tampa Bay FL	TBMK	.015	86	4	.008	200	4	.075	70	4
Tampa Bay FL	TBCB	.04	143	5	nd	-	6	.32	69	6
Tampa Bay FL	TBHB	.01	100	3	nd	-	5	.19	57	5
Tampa Bay FL	TBPB	.11	87	3	nd	-	3	.16	90	3
Tampa Bay FL	TBKA	.29	75	2	nd	-	2	nd	-	2
Tampa Bay FL	TBOT	.018	141	2	.1	141	2	.015	141	2

Table D.4: (Continued)

Location	SITE	HxChlB mean	HxChlB c.v.%	HxChlB n	Lindane mean	Lindane c.v.%	Lindane n	Mirex mean	Mirex c.v.%	Mirex n
Cedar Key FL	CKBP	.04	-	1	nd	-	1	.01	-	1
Apalachicola Bay FL	APCP	.06	120	3	.04	132	3	.053	92	3
Panama City FL	PCLO	.076	-	1	nd	-	1	nd	-	1
Choctawhat. Bay FL	CBPP	.065	76	2	.1	141	2	.03	141	2
Mobile Bay AL	MBCP	.05	141	2	.09	141	2	.015	141	2
Miss. Snd. MS	MSBB	.02	173	3	nd	-	3	.047	173	3
Barataria Bay LA	BAR	nd	-	1	nd	-	1	nd	-	1
J. Hrb. Bayou LA	JHJH	nd	-	1	nd	-	1	nd	-	1
Galveston Bay TX	GAD	nd	-	3	nd	-	3	nd	-	3
Matagorda Bay TX	MBEM	-	-	0	nd	-	1	nd	-	1
Espiritu Santo TX	ESBD	.22	-	1	nd	-	2	.02	141	2
Corpus Christi TX	CCIC	.1	-	1	.01	141	2	.04	141	2
Corpus Christi Bay TX	CCB	nd	-	1	nd	-	1	nd	-	1
L. Laguna Madre TX	LLM	nd	-	2	nd	-	2	nd	-	2
Imperial Beach CA	IBNJ	.007	173	3	nd	-	3	nd	-	3
San Diego Bay CA	SDF	nd	-	4	nd	-	4	nd	-	4
San Diego Bay CA	SDCB	.043	173	3	3.2	69	3	nd	-	3
Mission Bay CA	MBVB	.017	69	3	nd	-	3	nd	-	3
San Pedro Bay CA	SPB	nd	-	1	nd	-	1	nd	-	1
Santa Monica Bay CA	SMW	.4	141	2	nd	-	2	nd	-	2
Santa Monica Bay CA	SMB	nd	-	6	.008	245	6	nd	-	6
Pt. Conception CA	PCPC	.02	87	3	.013	173	3	nd	-	3
San Luis Ob. Bay CA	SLSL	nd	-	3	nd	-	3	nd	-	3
Moss Landing CA	MOS	-	-	0	-	-	0	-	-	0
Pacific Grove CA	PGLP	nd	-	3	.057	97	3	nd	-	3
Monterey Bay CA	MBSC	.005	141	2	nd	-	2	nd	-	2
Monterey Bay CA	MON	nd	-	6	nd	-	6	nd	-	6
Southamp. Shl. CA	SHS	nd	-	7	nd	-	7	nd	-	7
Bodega Bay CA	BBBE	nd	-	1	nd	-	1	nd	-	1
Bodega Bay CA	BOD	nd	-	9	nd	-	9	.1	300	9
Humboldt Bay CA	HMBJ	nd	-	3	nd	-	3	nd	-	3
Humboldt Bay CA	HMB	-	-	0	-	-	0	-	-	0
Coos Bay OR	COO	nd	-	5	nd	-	5	nd	-	5
Coos Bay OR	CBCH	nd	-	3	.067	173	3	nd	-	3
Coos Bay OR	CBRP	nd	-	1	nd	-	1	nd	-	1
Tillamook Bay OR	TBHP	.1	-	1	nd	-	1	nd	-	1
Columbia R. OR	CRYB	nd	-	2	nd	-	2	nd	-	2
Columbia R. OR	COL	.05	245	6	nd	-	6	.075	245	6
Columbia River WA	CRNJ	nd	-	3	nd	-	3	nd	-	3
Gray's Hrb. WA	GHWJ	.02	173	3	nd	-	3	nd	-	3
Nisqually Rch. WA	NIS	nd	-	9	nd	-	9	nd	-	9
Elliott Bay WA	EBFR	nd	-	3	nd	-	3	nd	-	2
Puget Sound WA	PSEH	1.2	-	1	.3	-	1	nd	-	1
Port Moller AK	PTM	nd	-	3	1	173	3	nd	-	3

Table D.5: Average concentrations, µg/g dry-wt, and coefficients of variation, percent, for arsenic (**As**), antimony (**Sb**) and cadmium (**Cd**) in coarse-grain sediments at NS&T sites.

		As			Sb			Cd		
Location	SITE	mean	c.v.%	n	mean	c.v.%	n	mean	c.v.%	n
Merrimack R. MA	MER	4.2	47	5	nd	-	5	.022	224	5
Boston Hrb. MA	BHDI	2.6	-	1	nd	-	1	.15	-	1
Boston Hrb. MA	BHDB	9.1	-	1	3.4	-	1	.6	-	1
Boston Hrb. MA	BHHB	3.7	23	3	2.7	18	3	.2	21	3
Duxbury Bay MA	DBCI	nd	-	3	-	-	0	.037	42	3
Buzzards Bay MA	BBAR	nd	-	1	nd	-	1	.17	-	1
Buzzards Bay MA	BBGN	3.9	-	1	nd	-	1	.09	-	1
Narr. Bay RI	NBPI	nd	-	3	-	-	0	.1	10	3
Narr. Bay RI	NBDI	6.9	-	1	.62	-	1	.075	-	1
Long Island NY	LIGB	nd	-	3	-	-	0	.057	10	3
E. Long Is. Snd. CT	ELI	3.9	35	8	.27	79	8	.1	44	8
Long Is. Snd. CT	LICR	4.7	-	1	nd	-	1	.29	-	1
Long Is. Snd. CT	LINH	1.7	54	3	nd	-	3	.037	16	3
Long Is. Snd. CT	LIHR	2	106	3	.63	173	3	.42	121	3
Long Is. Snd. CT	LISI	2.6	-	1	nd	-	1	.12	-	1
Long Is. Snd. NY	LIPJ	1.3	98	3	nd	-	3	.077	20	3
Long Is. Snd. NY	LITN	1.2	141	2	-	-	0	.29	78	2
Moriches Bay NY	MBTH	3.2	-	1	.36	-	1	.16	-	1
Hud./Rar. Est NY	HRJB	2.5	-	1	nd	-	1	.16	-	1
Hud./Rar. Est. NY	HRUB	5.3	-	1	-	-	0	.25	-	1
Hud./Rar. Est. NY	HRLB	6.7	-	1	1.8	-	1	.91	-	1
Delaware Bay NJ	DBCM	4.9	-	1	-	-	0	.05	-	1
Delaware Bay DE	DEL	6.9	32	2	nd	-	2	.12	62	2
Delaware Bay NJ	DBHC	5.1	14	2	-	-	0	.14	40	2
Ches. Bay MD	CBHG	1.4	89	3	nd	-	3	.077	64	3
Mid. Ches. Bay VA	MCB	6.6	31	2	.18	141	2	.11	24	2
Ches. Bay VA	CBIB	3	-	1	1.1	-	1	.094	-	1
Rappahannock R. VA	RRRR	3.6	-	1	-	-	0	.24	-	1
Ches. Bay VA	CBCC	nd	-	4	.78	82	4	.046	20	4
Ches. Bay VA	CBDP	2.6	36	2	.84	27	2	.11	43	2
Low. Ches.Bay VA	LCB	3.4	-	1	.12	-	1	.088	-	1
Chincoteague Bay VA	CBCI	4	28	3	-	-	0	.01	173	3
Roanoke Snd. VA	RSJC	nd	-	3	-	-	0	nd	-	3
Pamlico Snd. NC	PSWB	nd	-	3	-	-	0	nd	-	3
Pamlico Snd. NC	PAM	1.3	-	1	nd	-	1	nd	-	1
Cape Fear NC	CFBI	3.5	-	1	1.2	-	1	.039	-	1
Charleston Hrb. SC	CHSF	5.6	-	1	.18	-	1	.068	-	1
Savannah R. Est. GA	SRTI	5	41	4	.34	71	4	.065	67	4
Sapelo Snd. GA	SSSI	5	6	3	-	-	0	.013	173	3
Altamaha River GA	ARWI	2.2	173	3	-	-	0	.05	87	3
St. Johns R. FL	SJCB	2	-	1	1.7	-	1	.068	-	1
St. Johns R. FL	SJD	1	61	2	nd	-	1	.096	13	2
Matanzas R. FL	MRCB	1.7	88	3	-	-	0	nd	-	3
Indian River FL	IRSR	1.5	140	2	-	-	0	.03	94	2
Everglades FL	EVFU	.45	16	2	.1	28	2	.026	3	2
Naples Bay FL	NBNB	4.4	21	2	.18	0	2	.1	47	2
Charlotte Hrb. FL	CBBI	1.6	86	4	.21	67	4	.12	91	4
Charlotte Hrb. FL	CBFM	.81	49	3	-	-	0	.11	19	3
Charlotte Hrb. FL	LOT	1	73	4	nd	-	2	.057	67	4
Tampa Bay FL	TAM	.7	60	5	nd	-	2	.12	66	5
Tampa Bay FL	TBMK	1.6	62	4	.16	75	4	.08	60	4
Tampa Bay FL	TBCB	1.2	48	6	.03	126	6	.066	59	6
Tampa Bay FL	TBHB	1.3	47	5	.23	46	5	.61	16	5
Tampa Bay FL	TBPB	.8	33	3	.12	13	3	.08	23	3
Tampa Bay FL	TBKA	.71	46	2	-	-	0	.15	30	2
Tampa Bay FL	TBOT	nd	-	2	-	-	0	.062	42	2

Table D.5: (Continues)

Location	SITE	As mean	As c.v.%	As n	Sb mean	Sb c.v.%	Sb n	Cd mean	Cd c.v.%	Cd n
Cedar Key FL	CKBP	4	-	1	nd	-	1	.12	-	1
Apalachicola Bay FL	APCP	1.9	19	3	nd	-	3	.02	11	3
Panama City FL	PCLO	.57	-	1	-	-	0	.057	-	1
Choctawhat. Bay FL	CBPP	1.3	65	2	.3	39	2	.048	50	2
Mobile Bay AL	MBCP	2.4	6	2	.06	141	2	.013	0	2
Miss. Snd. MS	MSBB	1.9	48	3	.08	173	3	.048	50	3
Barataria Bay LA	BAR	1.8	-	1	nd	-	1	nd	-	1
J. Hrb. Bayou LA	JHJH	14	-	1	.55	-	1	.033	-	1
Galveston Bay TX	GAD	1.6	53	3	-	-	0	.042	61	3
Matagorda Bay TX	MBEM	3.1	-	1	.35	-	1	.06	-	1
Espiritu Santo TX	ESBD	1.9	7	2	.32	0	2	.022	10	2
Corpus Christi TX	CCIC	1.7	8	2	.35	8	2	.052	7	2
Corpus Christi Bay TX	CCB	1.7	-	1	-	-	0	.093	-	1
L. Laguna Madre TX	LLM	7.1	31	2	-	-	0	.078	24	2
Imperial Beach CA	IBNJ	11	9	3	-	-	0	.15	35	3
San Diego Bay CA	SDF	3.4	128	4	.85	22	4	.17	156	4
San Diego Bay CA	SDCB	4.9	8	3	-	-	0	.099	11	3
Mission Bay CA	MBVB	3.1	173	3	-	-	0	.095	36	3
San Pedro Bay CA	SPB	1.7	-	1	.32	-	1	.55	-	1
Santa Monica Bay CA	SMW	4.4	-	1	.58	-	1	.91	-	1
Santa Monica Bay CA	SMB	9	8	6	.69	36	6	.29	41	6
Pt. Conception CA	PCPC	nd	-	3	-	-	0	.21	16	3
San Luis Ob. Bay CA	SLSL	11	16	3	-	-	0	.24	25	3
Moss Landing CA	MOS	4.6	36	2	.46	3	2	.13	53	2
Pacific Grove CA	PGLP	13	20	3	-	-	0	.46	45	3
Monterey Bay CA	MBSC	15	9	2	-	-	0	.084	61	2
Monterey Bay CA	MON	7.7	7	6	.41	14	6	.25	18	6
Southamp. Shl. CA	SHS	7.7	56	7	.83	19	7	.29	57	7
Bodega Bay CA	BBBE	12	-	1	-	-	0	.039	-	1
Bodega Bay CA	BOD	3.8	85	9	.72	35	9	.25	67	9
Humboldt Bay CA	HMBJ	11	10	3	-	-	0	.022	173	3
Humboldt Bay CA	HMB	7.1	3	2	.7	1	2	.18	8	2
Coos Bay OR	COO	4.7	74	5	.63	38	5	.44	53	5
Coos Bay OR	CBCH	6.5	5	5	2.1	58	5	.22	27	5
Coos Bay OR	CBRP	5.5	-	1	2	-	1	.11	-	1
Tillamook Bay OR	TBHP	7.1	-	1	1.5	-	1	.097	-	1
Columbia R. OR	CRYB	4.7	9	2	1.8	8	2	.13	33	2
Columbia R. OR	COL	3.7	135	6	.76	37	6	.48	64	6
Columbia River WA	CRNJ	4.6	14	3	-	-	0	.04	50	3
Gray's Hrb. WA	GHWJ	7.3	14	3	.33	173	3	.077	8	3
Nisqually Rch. WA	NIS	.62	115	9	.87	38	9	.57	27	9
Elliott Bay WA	EBFR	9.6	7	3	6.4	27	3	.19	58	3
Puget Sound WA	PSEH	4.9	-	1	-	-	0	.14	-	1
Port Moller AK	PTM	1.7	17	3	.84	5	3	.43	26	3

Table D.6: Average concentrations, µg/g dry-wt, and coefficients of variation, percent, for chromium (**Cr**), copper (**Cu**) and lead (**Pb**) in coarse-grain sediments at NS&T sites.

		Cr			Cu			Pb		
Location	**SITE**	**mean**	**c.v.%**	**n**	**mean**	**c.v.%**	**n**	**mean**	**c.v.%**	**n**
Merrimack R. MA	MER	25	62	5	4.7	39	5	21	11	5
Boston Hrb. MA	BHDI	34	-	1	11	-	1	20	-	1
Boston Hrb. MA	BHDB	nd	-	1	36	-	1	54	-	1
Boston Hrb. MA	BHHB	37	96	3	18	24	3	28	17	3
Duxbury Bay MA	DBCI	19	45	3	4.8	19	3	11	15	3
Buzzards Bay MA	BBAR	nd	-	1	12	-	1	160	-	1
Buzzards Bay MA	BBGN	nd	-	1	6.3	-	1	12	-	1
Narr. Bay RI	NBPI	25	6	3	13	15	3	20	8	3
Narr. Bay RI	NBDI	53	-	1	19	-	1	31	-	1
Long Island NY	LIGB	13	16	3	5.9	7	3	13	4	3
E. Long Is. Snd. CT	ELI	42	43	8	8.5	39	8	19	22	8
Long Is. Snd. CT	LICR	38	-	1	18	-	1	26	-	1
Long Is. Snd. CT	LINH	12	89	3	14	9	3	13	14	3
Long Is. Snd. CT	LIHR	56	67	3	170	64	3	33	70	3
Long Is. Snd. CT	LISI	26	-	1	29	-	1	31	-	1
Long Is. Snd. NY	LIPJ	nd	-	3	13	16	3	9.1	20	3
Long Is. Snd. NY	LITN	52	49	2	21	54	2	30	55	2
Moriches Bay NY	MBTH	34	-	1	7.8	-	1	13	-	1
Hud./Rar. Est NY	HRJB	21	-	1	9.8	-	1	16	-	1
Hud./Rar. Est. NY	HRUB	75	-	1	30	-	1	59	-	1
Hud./Rar. Est. NY	HRLB	83	-	1	42	-	1	62	-	1
Delaware Bay NJ	DBCM	17	-	1	5.8	-	1	7.8	-	1
Delaware Bay DE	DEL	33	34	2	8.1	15	2	18	7	2
Delaware Bay NJ	DBHC	45	25	2	7	11	2	20	14	2
Ches. Bay MD	CBHG	nd	-	3	5.7	16	3	4	16	3
Mid. Ches. Bay VA	MCB	42	17	2	6.3	20	2	8.5	1	2
Ches. Bay VA	CBIB	26	-	1	8.4	-	1	6.7	-	1
Rappahannock R. VA	RRRR	39	-	1	6.2	-	1	15	-	1
Ches. Bay VA	CBCC	14	200	4	4.5	21	4	8.3	26	4
Ches. Bay VA	CBDP	31	27	2	6.2	31	2	10	7	2
Low. Ches.Bay VA	LCB	44	-	1	5.5	-	1	12	-	1
Chincoteague Bay VA	CBCI	15	92	3	6.1	29	3	11	28	3
Roanoke Snd. VA	RSJC	nd	-	3	3.8	32	3	3.9	105	3
Pamlico Snd. NC	PSWB	15	91	3	3.3	28	3	5.9	46	3
Pamlico Snd. NC	PAM	nd	-	1	1	-	1	5.5	-	1
Cape Fear NC	CFBI	nd	-	1	4.4	-	1	6.5	-	1
Charleston Hrb. SC	CHSF	32	-	1	6.6	-	1	14	-	1
Savannah R. Est. GA	SRTI	14	116	4	6.2	42	4	8.3	39	4
Sapelo Snd. GA	SSSI	7.7	173	3	4.5	18	3	12	13	3
Altamaha River GA	ARWI	19	91	3	4.1	3	3	9.3	31	3
St. Johns R. FL	SJCB	90	-	1	6.3	-	1	11	-	1
St. Johns R. FL	SJD	18	84	2	2.8	40	2	8.5	60	2
Matanzas R. FL	MRCB	nd	-	3	3.4	88	3	7.9	34	3
Indian River FL	IRSR	nd	-	2	5.2	12	2	7.4	2	2
Everglades FL	EVFU	-	-	0	.55	13	2	.9	0	2
Naples Bay FL	NBNB	-	-	0	9.2	42	2	3.3	73	2
Charlotte Hrb. FL	CBBI	25	-	1	2.6	39	4	2.8	9	4
Charlotte Hrb. FL	CBFM	14	16	3	4.5	9	3	5.5	16	3
Charlotte Hrb. FL	LOT	18	39	4	.97	83	4	3.1	34	4
Tampa Bay FL	TAM	15	76	5	3.6	107	5	4.6	36	5
Tampa Bay FL	TBMK	11	-	1	4.5	67	4	9.6	59	4
Tampa Bay FL	TBCB	5.3	54	3	2.3	38	6	1.8	51	6
Tampa Bay FL	TBHB	50	85	2	6.1	36	5	62	39	5
Tampa Bay FL	TBPB	-	-	0	1.3	8	3	2.7	10	3
Tampa Bay FL	TBKA	12	3	2	4	8	2	5.9	1	2
Tampa Bay FL	TBOT	9	8	2	.72	55	2	1.6	71	2

Table D.6: (Continued)

Location	SITE	Cr mean	Cr c.v.%	Cr n	Cu mean	Cu c.v.%	Cu n	Pb mean	Pb c.v.%	Pb n
Cedar Key FL	CKBP	-	-	0	1.8	-	1	5	-	1
Apalachicola Bay FL	APCP	-	-	0	1.9	8	3	2.8	34	3
Panama City FL	PCLO	7.5	-	1	1.4	-	1	2.2	-	1
Choctawhat. Bay FL	CBPP	-	-	0	2.4	49	2	23	90	2
Mobile Bay AL	MBCP	20	-	1	2.1	26	2	5.1	11	2
Miss. Snd. MS	MSBB	-	-	0	4.1	38	3	27	120	3
Barataria Bay LA	BAR	16	-	1	2.4	-	1	7.5	-	1
J. Hrb. Bayou LA	JHJH	-	-	0	3	-	1	17	-	1
Galveston Bay TX	GAD	28	45	3	3.1	47	3	13	87	3
Matagorda Bay TX	MBEM	20	-	1	4.5	-	1	9	-	1
Espiritu Santo TX	ESBD	-	-	0	2.6	31	2	6.2	17	2
Corpus Christi TX	CCIC	8	0	2	6.7	91	2	4.4	17	2
Corpus Christi Bay TX	CCB	15	-	1	2.3	-	1	3.5	-	1
L. Laguna Madre TX	LLM	15	27	2	4.4	14	2	10	18	2
Imperial Beach CA	IBNJ	36	9	3	2.1	8	3	9.3	5	3
San Diego Bay CA	SDF	46	24	4	7.7	4	4	11	15	4
San Diego Bay CA	SDCB	35	10	3	22	33	3	23	13	3
Mission Bay CA	MBVB	26	35	3	5.2	63	3	13	23	3
San Pedro Bay CA	SPB	78	-	1	24	-	1	15	-	1
Santa Monica Bay CA	SMW	95	-	1	53	-	1	20	-	1
Santa Monica Bay CA	SMB	60	15	6	10	40	6	26	33	6
Pt. Conception CA	PCPC	26	23	3	5.5	27	3	5.2	36	3
San Luis Ob. Bay CA	SLSL	63	27	3	4.9	21	3	6.2	15	3
Moss Landing CA	MOS	260	25	2	7.3	2	2	14	0	2
Pacific Grove CA	PGLP	30	24	3	3.4	12	3	13	8	3
Monterey Bay CA	MBSC	66	3	2	6	14	2	9.3	2	2
Monterey Bay CA	MON	59	38	6	3.7	57	6	14	17	6
Southamp. Shl. CA	SHS	240	28	7	15	33	7	7.5	82	7
Bodega Bay CA	BBBE	69	-	1	5.3	-	1	6	-	1
Bodega Bay CA	BOD	390	44	9	6.7	90	9	4.9	121	9
Humboldt Bay CA	HMBJ	98	2	3	9.1	10	3	4.8	4	3
Humboldt Bay CA	HMB	330	54	2	5.1	4	2	nd	-	2
Coos Bay OR	COO	82	102	5	5.8	179	5	11	96	5
Coos Bay OR	CBCH	62	25	5	8.1	31	5	11	16	5
Coos Bay OR	CBRP	55	-	1	11	-	1	12	-	1
Tillamook Bay OR	TBHP	140	-	1	20	-	1	8.2	-	1
Columbia R. OR	CRYB	52	4	2	16	30	2	14	30	2
Columbia R. OR	COL	45	26	6	17	17	6	9.3	65	6
Columbia River WA	CRNJ	30	6	3	13	12	3	9.9	28	3
Gray's Hrb. WA	GHWJ	51	23	3	18	8	3	6.7	12	3
Nisqually Rch. WA	NIS	110	52	9	15	15	9	11	99	9
Elliott Bay WA	EBFR	90	10	3	26	25	3	25	12	3
Puget Sound WA	PSEH	72	-	1	19	-	1	9.8	-	1
Port Moller AK	PTM	63	28	3	13	9	3	9.8	9	3

Table D.7: Average concentrations, µg/g dry-wt, and coefficients of variation, percent, for mercury (Hg), nickel (Ni) and selenium (Se) in coarse-grain sediments at NS&T sites.

		Hg			Ni			Se		
Location	SITE	mean	c.v.%	n	mean	c.v.%	n	mean	c.v.%	n
Merrimack R. MA	MER	.012	224	5	4.7	40	5	.016	137	5
Boston Hrb. MA	BHDI	.03	-	1	14	-	1	nd	-	1
Boston Hrb. MA	BHDB	.33	-	1	17	-	1	.29	-	1
Boston Hrb. MA	BHHB	.17	24	3	12	14	3	.037	173	3
Duxbury Bay MA	DBCI	.004	173	3	6.5	8	3	.037	173	3
Buzzards Bay MA	BBAR	.038	-	1	7.8	-	1	nd	-	1
Buzzards Bay MA	BBGN	.031	-	1	5.7	-	1	.11	-	1
Narr. Bay RI	NBPI	.027	14	3	7.7	12	3	.077	87	3
Narr. Bay RI	NBDI	.1	-	1	14	-	1	nd	-	1
Long Island NY	LIGB	.012	92	3	4.7	27	3	.037	173	3
E. Long Is. Snd. CT	ELI	.01	283	8	10	49	8	.01	185	8
Long Is. Snd. CT	LICR	.08	-	1	20	-	1	nd	-	1
Long Is. Snd. CT	LINH	.028	15	3	20	28	3	nd	-	3
Long Is. Snd. CT	LIHR	.09	106	3	24	44	3	.067	173	3
Long Is. Snd. CT	LISI	.09	-	1	13	-	1	nd	-	1
Long Is. Snd. NY	LIPJ	.04	43	3	13	29	3	nd	-	3
Long Is. Snd. NY	LITN	.1	71	2	12	26	2	nd	-	2
Moriches Bay NY	MBTH	.1	-	1	3.7	-	1	nd	-	1
Hud./Rar. Est NY	HRJB	.088	-	1	7.6	-	1	nd	-	1
Hud./Rar. Est. NY	HRUB	.45	-	1	46	-	1	.34	-	1
Hud./Rar. Est. NY	HRLB	.75	-	1	21	-	1	.25	-	1
Delaware Bay NJ	DBCM	.007	-	1	10	-	1	nd	-	1
Delaware Bay DE	DEL	.058	102	2	8.3	31	2	.06	141	2
Delaware Bay NJ	DBHC	.04	39	2	16	23	2	.23	37	2
Ches. Bay MD	CBHG	.008	42	3	16	26	3	.067	173	3
Mid. Ches. Bay VA	MCB	.014	141	2	8.9	4	2	nd	-	2
Ches. Bay VA	CBIB	.056	-	1	6.7	-	1	nd	-	1
Rappahannock R. VA	RRRR	nd	-	1	9.9	-	1	.17	-	1
Ches. Bay VA	CBCC	.022	89	4	11	122	4	nd	-	4
Ches. Bay VA	CBDP	.054	12	2	7.3	12	2	nd	-	2
Low. Ches.Bay VA	LCB	nd	-	1	8.8	-	1	.28	-	1
Chincoteague Bay VA	CBCI	.016	63	3	7.6	30	3	nd	-	3
Roanoke Snd. VA	RSJC	.01	110	3	1.5	173	3	nd	-	3
Pamlico Snd. NC	PSWB	.014	29	3	1.7	87	3	nd	-	3
Pamlico Snd. NC	PAM	nd	-	1	nd	-	1	nd	-	1
Cape Fear NC	CFBI	.006	-	1	4.7	-	1	nd	-	1
Charleston Hrb. SC	CHSF	.004	-	1	7.5	-	1	.29	-	1
Savannah R. Est. GA	SRTI	.046	54	4	6.1	68	4	nd	-	4
Sapelo Snd. GA	SSSI	.012	5	3	5.7	26	3	nd	-	3
Altamaha River GA	ARWI	nd	-	3	5.5	87	3	.097	173	3
St. Johns R. FL	SJCB	.15	-	1	3.5	-	1	nd	-	1
St. Johns R. FL	SJD	.038	9	2	2.4	60	2	.34	141	2
Matanzas R. FL	MRCB	.007	92	3	1.5	173	3	nd	-	3
Indian River FL	IRSR	nd	-	2	5.8	45	2	.23	35	2
Everglades FL	EVFU	nd	-	2	1.5	47	2	nd	-	2
Naples Bay FL	NBNB	.032	33	2	2.5	28	2	nd	-	2
Charlotte Hrb. FL	CBBI	.004	200	4	2.9	62	4	.058	200	4
Charlotte Hrb. FL	CBFM	.073	18	3	2.1	24	3	.15	20	3
Charlotte Hrb. FL	LOT	.023	150	4	1.9	76	4	.18	117	4
Tampa Bay FL	TAM	.024	72	5	2.4	25	5	.16	68	5
Tampa Bay FL	TBMK	.016	200	4	2.4	64	4	.1	200	4
Tampa Bay FL	TBCB	.004	158	6	1.4	53	6	.065	117	6
Tampa Bay FL	TBHB	.083	89	5	3.1	54	5	.15	144	5
Tampa Bay FL	TBPB	nd	-	3	2	0	3	nd	-	3
Tampa Bay FL	TBKA	.022	35	2	1.2	6	2	.099	141	2
Tampa Bay FL	TBOT	.013	65	2	1.2	43	2	.052	141	2

Table D.7: (Continued)

Location	SITE	Hg mean	Hg c.v.%	Hg n	Ni mean	Ni c.v.%	Ni n	Se mean	Se c.v.%	Se n
Cedar Key FL	CKBP	.05	-	1	1	-	1	nd	-	1
Apalachicola Bay FL	APCP	nd	-	3	2.7	22	3	nd	-	3
Panama City FL	PCLO	.016	-	1	1.1	-	1	nd	-	1
Choctawhat. Bay FL	CBPP	.02	141	2	2.5	85	2	nd	-	2
Mobile Bay AL	MBCP	.063	49	2	15	122	2	.2	141	2
Miss. Snd. MS	MSBB	.04	87	3	2.7	57	3	nd	-	3
Barataria Bay LA	BAR	.032	-	1	4.7	-	1	nd	-	1
J. Hrb. Bayou LA	JHJH	.015	-	1	11	-	1	nd	-	1
Galveston Bay TX	GAD	.005	173	3	2.8	19	3	.04	173	3
Matagorda Bay TX	MBEM	nd	-	1	12	-	1	nd	-	1
Espiritu Santo TX	ESBD	.008	141	2	2.5	28	2	nd	-	2
Corpus Christi TX	CCIC	.01	0	2	1	0	2	nd	-	2
Corpus Christi Bay TX	CCB	.03	-	1	2	-	1	.16	-	1
L. Laguna Madre TX	LLM	nd	-	2	2.5	28	2	nd	-	2
Imperial Beach CA	IBNJ	.003	58	3	nd	-	3	1.8	173	3
San Diego Bay CA	SDF	.024	132	4	4	46	4	.12	50	4
San Diego Bay CA	SDCB	.14	26	3	6.7	20	3	.17	7	3
Mission Bay CA	MBVB	.019	42	3	1.3	173	3	nd	-	3
San Pedro Bay CA	SPB	nd	-	1	25	-	1	.4	-	1
Santa Monica Bay CA	SMW	.074	-	1	5.5	-	1	.16	-	1
Santa Monica Bay CA	SMB	nd	-	6	13	21	6	.15	25	6
Pt. Conception CA	PCPC	.016	59	3	18	18	3	nd	-	3
San Luis Ob. Bay CA	SLSL	.031	49	3	23	36	3	nd	-	3
Moss Landing CA	MOS	nd	-	2	14	2	2	nd	-	2
Pacific Grove CA	PGLP	.022	24	3	8.9	43	3	9.4	20	3
Monterey Bay CA	MBSC	.015	19	2	26	0	2	8.4	21	2
Monterey Bay CA	MON	.033	151	6	6.7	67	6	.075	51	6
Southamp. Shl. CA	SHS	.067	96	7	67	23	7	.11	46	7
Bodega Bay CA	BBBE	.03	-	1	71	-	1	nd	-	1
Bodega Bay CA	BOD	.13	50	9	42	61	9	.077	45	9
Humboldt Bay CA	HMBJ	.03	65	3	83	2	3	4	28	3
Humboldt Bay CA	HMB	.047	72	2	52	0	2	.082	19	2
Coos Bay OR	COO	.22	84	5	15	152	5	.16	138	5
Coos Bay OR	CBCH	.034	62	5	25	25	5	.034	224	5
Coos Bay OR	CBRP	.034	-	1	22	-	1	nd	-	1
Tillamook Bay OR	TBHP	.019	-	1	35	-	1	nd	-	1
Columbia R. OR	CRYB	.02	66	2	20	24	2	nd	-	2
Columbia R. OR	COL	.06	113	6	24	24	6	.13	113	6
Columbia River WA	CRNJ	.018	0	3	19	19	3	.29	21	3
Gray's Hrb. WA	GHWJ	nd	-	3	21	16	3	nd	-	3
Nisqually Rch. WA	NIS	.16	190	9	34	16	9	.086	31	9
Elliott Bay WA	EBFR	.08	13	3	25	5	3	.31	4	3
Puget Sound WA	PSEH	nd	-	1	37	-	1	.23	-	1
Port Moller AK	PTM	.061	12	3	5.8	22	3	.064	6	3

Table D.8: Average concentrations, µg/g dry-wt, and coefficients of variation, percent, for silver (**Ag**), tin (**Sn**) and zinc (**Zn**) in coarse-grain sediments at NS&T sites.

		Ag			Sn			Zn		
Location	**SITE**	**mean**	**c.v.%**	**n**	**mean**	**c.v.%**	**n**	**mean**	**c.v.%**	**n**
Merrimack R. MA	MER	.025	91	5	3.1	93	5	27	31	5
Boston Hrb. MA	BHDI	.27	-	1	1.4	-	1	41	-	1
Boston Hrb. MA	BHDB	1.2	-	1	5.2	-	1	77	-	1
Boston Hrb. MA	BHHB	.85	26	3	2.5	8	3	46	20	3
Duxbury Bay MA	DBCI	.28	81	3	.98	28	3	20	16	3
Buzzards Bay MA	BBAR	.29	-	1	1	-	1	26	-	1
Buzzards Bay MA	BBGN	.059	-	1	.71	-	1	28	-	1
Narr. Bay RI	NBPI	.16	9	3	2.7	7	3	39	12	3
Narr. Bay RI	NBDI	.24	-	1	2.6	-	1	98	-	1
Long Island NY	LIGB	.041	81	3	nd	-	3	23	11	3
E. Long Is. Snd. CT	ELI	.085	114	8	2.3	59	8	59	23	8
Long Is. Snd. CT	LICR	.25	-	1	.49	-	1	78	-	1
Long Is. Snd. CT	LINH	.043	35	3	.27	50	3	22	2	3
Long Is. Snd. CT	LIHR	.39	94	3	.64	23	3	120	63	3
Long Is. Snd. CT	LISI	.21	-	1	.76	-	1	59	-	1
Long Is. Snd. NY	LIPJ	.063	33	3	.25	13	3	28	18	3
Long Is. Snd. NY	LITN	.5	63	2	2.2	58	2	52	54	2
Moriches Bay NY	MBTH	.15	-	1	.72	-	1	32	-	1
Hud./Rar. Est NY	HRJB	.22	-	1	.69	-	1	31	-	1
Hud./Rar. Est. NY	HRUB	.64	-	1	6.8	-	1	63	-	1
Hud./Rar. Est. NY	HRLB	2.7	-	1	7.6	-	1	110	-	1
Delaware Bay NJ	DBCM	.31	-	1	1.3	-	1	43	-	1
Delaware Bay DE	DEL	.09	31	2	2	11	2	55	3	2
Delaware Bay NJ	DBHC	.075	28	2	1.8	16	2	92	10	2
Ches. Bay MD	CBHG	.006	91	3	.067	9	3	29	12	3
Mid. Ches. Bay VA	MCB	.038	41	2	1.1	30	2	57	1	2
Ches. Bay VA	CBIB	.07	-	1	.54	-	1	24	-	1
Rappahannock R. VA	RRRR	.25	-	1	1.1	-	1	41	-	1
Ches. Bay VA	CBCC	.028	86	4	.26	113	4	11	27	4
Ches. Bay VA	CBDP	.048	50	2	.88	12	2	24	24	2
Low. Ches.Bay VA	LCB	.042	-	1	1.2	-	1	42	-	1
Chincoteague Bay VA	CBCI	.01	173	3	.93	56	3	28	45	3
Roanoke Snd. VA	RSJC	nd	-	3	.2	173	3	8.9	52	3
Pamlico Snd. NC	PSWB	nd	-	3	.53	92	3	36	118	3
Pamlico Snd. NC	PAM	nd	-	1	nd	-	1	7.6	-	1
Cape Fear NC	CFBI	nd	-	1	nd	-	1	14	-	1
Charleston Hrb. SC	CHSF	nd	-	1	.92	-	1	27	-	1
Savannah R. Est. GA	SRTI	.021	86	4	.17	49	4	24	57	4
Sapelo Snd. GA	SSSI	nd	-	3	.66	14	3	24	5	3
Altamaha River GA	ARWI	.018	42	3	.33	173	3	20	60	3
St. Johns R. FL	SJCB	.044	-	1	.15	-	1	17	-	1
St. Johns R. FL	SJD	.024	141	2	1	21	2	54	71	2
Matanzas R. FL	MRCB	nd	-	3	.43	173	3	13	27	3
Indian River FL	IRSR	.037	10	2	.65	141	2	15	28	2
Everglades FL	EVFU	nd	-	2	nd	-	2	3	47	2
Naples Bay FL	NBNB	.048	52	2	.8	0	2	24	35	2
Charlotte Hrb. FL	CBBI	.014	61	4	.58	77	4	9.2	56	4
Charlotte Hrb. FL	CBFM	.058	21	3	.33	22	3	15	23	3
Charlotte Hrb. FL	LOT	.004	200	4	.55	70	4	4.2	79	4
Tampa Bay FL	TAM	.058	87	5	.86	40	5	7.9	33	5
Tampa Bay FL	TBMK	.028	57	4	1.1	87	4	13	65	4
Tampa Bay FL	TBCB	.013	68	6	.46	31	6	5	36	6
Tampa Bay FL	TBHB	.081	18	5	1.2	64	5	52	37	5
Tampa Bay FL	TBPB	.029	3	3	.7	62	3	1.7	35	3
Tampa Bay FL	TBKA	.066	12	2	.44	5	2	21	24	2
Tampa Bay FL	TBOT	.024	141	2	.2	55	2	6.5	57	2

Table D.8: (Continued)

Location	SITE	Ag mean	Ag c.v.%	Ag n	Sn mean	Sn c.v.%	Sn n	Zn mean	Zn c.v.%	Zn n
Cedar Key FL	CKBP	.025	-	1	.3	-	1	7	-	1
Apalachicola Bay FL	APCP	.008	46	3	.2	132	3	8	12	3
Panama City FL	PCLO	.25	-	1	.63	-	1	9.9	-	1
Choctawhat. Bay FL	CBPP	.14	87	2	.3	0	2	8.5	75	2
Mobile Bay AL	MBCP	.044	86	2	.54	12	2	22	6	2
Miss. Snd. MS	MSBB	.041	53	3	1.3	64	3	29	49	3
Barataria Bay LA	BAR	nd	-	1	.95	-	1	24	-	1
J. Hrb. Bayou LA	JHJH	.045	-	1	nd	-	1	85	-	1
Galveston Bay TX	GAD	.065	21	3	.81	17	3	10	38	3
Matagorda Bay TX	MBEM	.055	-	1	.6	-	1	24	-	1
Espiritu Santo TX	ESBD	.058	6	2	.35	20	2	5.5	39	2
Corpus Christi TX	CCIC	.07	10	2	.6	24	2	13	11	2
Corpus Christi Bay TX	CCB	.042	-	1	.7	-	1	20	-	1
L. Laguna Madre TX	LLM	.058	0	2	1.5	16	2	22	19	2
Imperial Beach CA	IBNJ	nd	-	3	1.6	38	3	49	12	3
San Diego Bay CA	SDF	.22	62	4	1.8	67	4	54	16	4
San Diego Bay CA	SDCB	.24	36	3	2.1	20	3	88	23	3
Mission Bay CA	MBVB	nd	-	3	1.4	21	3	46	39	3
San Pedro Bay CA	SPB	.32	-	1	4.5	-	1	110	-	1
Santa Monica Bay CA	SMW	4.5	-	1	2.6	-	1	96	-	1
Santa Monica Bay CA	SMB	.36	18	6	.98	60	6	35	26	6
Pt. Conception CA	PCPC	nd	-	3	nd	-	3	32	16	3
San Luis Ob. Bay CA	SLSL	nd	-	3	nd	-	3	31	17	3
Moss Landing CA	MOS	1.8	11	2	1.7	14	2	44	8	2
Pacific Grove CA	PGLP	nd	-	3	1.2	23	3	22	16	3
Monterey Bay CA	MBSC	nd	-	2	1.4	26	2	48	0	2
Monterey Bay CA	MON	.17	45	6	.72	112	6	15	32	6
Southamp. Shl. CA	SHS	.12	118	7	1.4	63	7	87	9	7
Bodega Bay CA	BBBE	nd	-	1	.67	-	1	34	-	1
Bodega Bay CA	BOD	.12	100	9	.74	163	9	42	16	9
Humboldt Bay CA	HMBJ	nd	-	3	nd	-	3	49	9	3
Humboldt Bay CA	HMB	.056	9	2	nd	-	2	41	1	2
Coos Bay OR	COO	.07	72	5	.73	144	5	39	112	5
Coos Bay OR	CBCH	.036	37	5	.55	23	5	28	16	5
Coos Bay OR	CBRP	.057	-	1	.59	-	1	30	-	1
Tillamook Bay OR	TBHP	.024	-	1	.6	-	1	48	-	1
Columbia R. OR	CRYB	.044	29	2	1.2	34	2	76	7	2
Columbia R. OR	COL	.091	76	6	1.1	110	6	86	9	6
Columbia River WA	CRNJ	.036	15	3	.87	22	3	57	11	3
Gray's Hrb. WA	GHWJ	.037	16	3	.74	5	3	55	9	3
Nisqually Rch. WA	NIS	.23	62	9	.85	150	9	99	13	9
Elliott Bay WA	EBFR	.19	16	3	1.7	18	3	69	19	3
Puget Sound WA	PSEH	.12	-	1	2.5	-	1	48	-	1
Port Moller AK	PTM	.064	63	3	3.4	9	3	100	11	3

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Within the files the following conventions have been used:

In all cases a positive concentration other than zero ("0") is a real quantified value. A zero ("0") has been inserted whenever the measured value was less than detectable or less than quantifiable (LOQ). Any value, therefore, less than the LOQ has been converted to "0". It is important to differentiate zeros from missing data. Since some computer applications will equate a missing entry with a zero, all missings have been given the value -0.001. This means that no attempt was made to measure that chemical, in that sample, in that year (usually because the chemical was not among the target analytes for that year).

Some variable names that might need explanation so here is a list of them

Site	Site Code of 3 letters or 4 letters, uses NS&T Site Names and Locations file for full names and locations
Sampyear	Year of Sample collection
Station	Station within a site, for Benthic Surveillance sites station locations are listed in Benthic Surveillance LOCATIONS file. For Mussel Watch, Stations are within 500m of site center listed in NS&T sites file (except that sediment site center can be up to 2 km from mussel collection center).
Sampleid	A unique identifier for each sample
Lat D	Latitude DEGREES
Lat M	Latitude MINUTES
LatS	Latitude SECONDS
LongD	Longitude DEGREES
LongM	Longitude MINUTES
LongS	Longitude SECONDS
Species	ME, MC, CV, or OS designating *Mytilus edulis*, *Mytilus californianus*, *Crassostrea virginica*, or *Ostrea sandvicensis*, respectively. The last species being the oyster collected at the the Hawaiian sites
Grnsize	Fraction (dry weight) of sediment in the <63 μ size class (the silt +clay)
Gravel	Percent (dry weight) of sediment in the >2mm size fraction
Sand	Percent (dry weight) of sediment in the >63 μ and < 2 mm size fraction
Silt	Percent (dry weight) of sediment in the > 4μ and <63 μ size fraction

Clay	Percent (dry weight) of sediment in the < 4 μ size fraction
TOC	Total Organic Carbon in μg/g (dry weight) divide by 10000 to derive concentration on a % basis
TIC	Total Inorganic Carbon in μg/g (dry)

All organic chemical concentrations are in units of ng/g(dry weight)

All elemental concentrations are in units of μg/g (dry weight)

<u>Chemical codes(chemicals name entirely in variable name are not listed here)</u>

Elements	All elements listed in conventional manner
PCB8-PCB209	specific PCB congeners (PCB77110 is a concentration that can be PCB77 or PCB110 since they cannot be separated by the technique used in this program)
DI through OCT	Concentrations of PCBs at each level of chlorination
alphachl	cis-chlordane
tnonchl	trans-nonachlor
heptachl	heptachlor
heptaepo	heptachlorepoxide
hexachl	hexachlorobenzene
naph	naphthalene
menap2	2-methyl naphthalene
menap1	1-methyl naphthalene
biphenyl	biphenyl
dimeth	2,6--dimethyl naphthalene
acenthy	acenaphthylene
acenthe	acenaphthene
trimeth	1,6,7-trimethylnaphthalene
fluorene	fluorene
phenanth	phenanthrene
anthra	anthracene
mephen1	1-methylphenanthrene
fluorant	fluoranthene
pyrene	pyrene
benanth	benz(a)anthracene
chrysene	chrysene
benzobfl	benzo(b)fluoranthene
benzokfl	benzo(k)fluoranthene
benzofl	benzo(b)fluoranthene + benzo(k)flouranthene (the two compounds reported as a single entity)
benepy	benzo(e)pyrene

benapy	benzo(a)pyrene
perylene	perylene
indeno	indeno(1,2,3-cd)pyrene
dibenz	dibenz(a,h)anthracene
benzop	benzo(ghi)perylene

U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE
OFFICE OF OCEANOGRAPHY AND MARINE ASSESSMENT
OCEAN ASSESSMENTS DIVISION
ROCKVILLE, MARYLAND 20852

Dear User of NOAA NS&T Data,

Enclosed are one or both of the following 3.5" floppy discs in either MacIntosh (800K) or DOS (1.44KK) formats:

NOAA
National Status & Trends
Program
Mollusk Chemistry Data

Two Tab-delimited ASCII text files:
Mussel Watch 86-88
NS&T Site Names & Locations

Date of Issue

NOAA
National Status & Trends
Program
Sediment Chemistry Data

Four Tab-delimited ASCII text files:
Benthic Surveillance 84-86
Mussel Watch 86-89
NS&T Site Names & Locations
Benthic Surv. Station Locations

Date of Issue

The **Mollusk Chemistry Data** are the electronic version of the microfiche containing the raw data used to create and attached to:

NOAA. 1989. A Summary of Data on Tissue Contamination from the First Three Years of the Mussel Watch Project. NOAA Technical Memorandum NOS OMA 49. NOAA Office of Oceanography and Marine Assessment, Rockville, MD. 22 pp. + appendices.

The **Sediment Chemistry Data** are the electronic version of the microfiche containing the raw data used to create and attached to:

NOAA. 1991. Second Summary of Data on Chemical Contaminants in Sediments from the National Status and Trends Program. NOAA Technical Memorandum NOS OMA 59. NOAA Office of Oceanography and Marine Assessment, Rockville, MD. 29 pp. + appendices.

You should consult those Technical Memoranda to see how the NS&T Program has been organized, how the samples have been collected and chemically analyzed, and how the data have been used. (The electronic version of the microfiche in Tech Memo 59 has been corrected for the 10x too low values for TOC in 1986 and 1987 Mussel Watch data for the Gulf of Mexico.)

We have written the date of issue on each disc. Since these data have been used to create reports, errors in the datasets have probably all been found and fixed by now. If you return the disc(s) in about a year we will update them if changes have been made. Moreover, there are more recent data that have not yet been examined but which will eventually be incorporated into these publicly distributed files. If data have been added, those additions will be made to your disc(s).

Finally, while it must seem trivial to receivers of these files, we, the senders, would appreciate your replenishing our supply of fresh discs by sending us as many empty discs as we send full-discs to you.

Sincerely,

Charlie

Charles A. Parker
Data Manager
NS&T Program