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A SUMMARY OF SELECTED DATA ON CHEMICAL CONTAMINANTS IN SEDIMENTS COLLECTED DURING 1984, 1985, 1986, AND 1987

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A Summary of Data on Chemical Contaminants in Sediments Collected During 1984, 1985, 1986, and 1987

Ocean Assessments Division
Office of Oceanography and Marine Assessment
National Ocean Service
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U.S. Department of Commerce
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ABSTRACT

Since 1984 NOAA's National Status and Trends Program has analyzed samples of surface sediment collected at about 200 coastal and estuarine sites throughout the United States. The chemical contaminants measured are chlorinated pesticides, polychlorinated biphenyls(PCBs), polyaromatic hydrocarbons (PAHs), and twelve trace elements. Sediment characteristics such as grain size, which affect contaminant concentrations, have also been quantified. With few exceptions, the higher levels of contamination have been found among the175 sites where the sediment is muddy rather than sandy. Most of the highest concentrations for any particular contaminant have been at the 20 sites near Boston, New York, San Diego, Los Angeles, or Seattle. Despite being sandy, sediments at two Long Island Sound sites showed high levels of polyaromatic hydrocarbons. Except for some sites near the Florida cities of Jacksonville, Tampa, Panama City, and Ft. Walton Beach, levels of contamination at sites in the Gulf of Mexico and in the southeastern United States were relatively low.

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 the National Oceanic and Atmospheric Administration (NOAA) undertook the task of providing this information through its National Status and Trends (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 at about fifty Benthic Surveillance sites and since 1986 at about 150 Mussel Watch sites. Sediment samples are collected at all sites. At Benthic Surveillance sites, benthic fishes are collected and their livers excised and stored for subsequent chemical analysis. At Mussel Watch sites bivalve molluscs are collected for analysis. The first NS&T report (NOAA, 1987a), based on data from analyses of sediments and fish livers collected in 1984, was issued in January 1987. The second report (NOAA, 1987b) was issued in December of 1987 and was a summary of tissue contaminant data for fish collected in 1984 and 1985 and bivalves collected in 1986.

This report includes an analysis of Benthic Surveillance sediment data for 1984 and 1985 samples, and of Mussel Watch sediment data from 1986 and 1987. All data from all years have been combined in this report. Differences, if they exist, between years at a given site have been ignored in order to focus on the geographical distribution of chemical contamination.

Information from the NS&T Program will provide a basis for setting priorities for management action and for documenting changes that may occur because of such actions. One objective of the program is to quantify general, depositional areas of contamination and not to define "hot spots". Sites are selected deliberately away from 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 program will identify the combined influence of many point and non-point sources of contamination to an area.

SITE LOCATIONS

The sites sampled by the Benthic Surveillance Project in 1984 and 1985 and by the Mussel Watch Project in 1986 and 1987 are located on the series of maps that comprise Appendix A. Each site carries the name of its general location. Because there is often more than one in a general area, the Mussel Watch sites also have a more specific designation. All sites are assigned a code -- four letters for Mussel Watch and three for Benthic Surveillance. The codes used throughout this report are intended to remain constant from year to year as the NS&T Program evolves.

FIELD AND ANALYTICAL METHODS

Sediment was collected at three stations within each site, a station being anywhere within 500 m of a site center. For the Mussel Watch Project, if only sand could be found at the bivalve site, the center of a sediment site could be as much as 2 km from that bivalve site. For Benthic Surveillance sampling in the Northeast, stations were up to about 5 km apart, so in effect a site was up to 100 times larger than that for other NS&T sites.

In the Benthic Surveillance Project, sediment samples were obtained with a specially constructed box corer or a standard Smith-MacIntryre bottom grab. In the Mussel Watch Project, the samples were obtained with the box corer or with a Kynar-coated Van Veen grab sampler. 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. Sediment analyses for a site consisted of organic analyses of three composites (one from each station), inorganic analyses of three separate 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 composite 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 chemical properties measured in NS&T sediment samples are listed in Table 1. The methods used for analysis of organic chemicals in sediments collected in the Benthic Surveillance Project are described in a technical report prepared by NOAA's National Analytical Facility (MacLeod et al., 1985). For elemental analysis sediments were digested in concentrated hydroflouric acid. The grain size distribution among sediment particles was measured and used in this report to account for differences among levels of contamination that are due to differing capacities for sediments to accumulate contaminants. Total organic carbon was also measured and might have been used, instead of grain size, to "normalize"

Table 1. Chemicals measured in the National Status and Trends Program.

DDT and its metabolites[a]

o,p'-DDD
p,p'-DDD
o,p'-DDE
p,p'-DDE
o,p'-DDT
p,p'-DDT

Chorinated Pesticides Other Than DDT[b]

Aldrin
Alpha-Chlordane
Trans-Nonachlor
Dieldrin
Heptachlor
Heptachlor epoxide
Hexachlorobenzene
Lindane (gamma-BHC)
Mirex

Polyaromatic Hydrocarbons[d]

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

3-ring
Flourene
Phenanthrene
1-Methylphenanthrene
Anthracene

4-ring
Flouranthene
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[c]

Dichlorobiphenyls
Trichlorobiphenyls
Tetrachlorobiphenyls
Pentachlorobiphenyls
Hexachlorobiphenyls
Heptachlorobiphenyls
Octachlorobiphenyls
Nonachlorobiphenyls

Other Parameters

Total organic carbon
Grain size
Coprostanol
Clostridium perfringens spores

[a] Combined and reported in this paper as total DDT (tDDT). The dominant compounds were generally p,p'DDE and p,p' DDD

[b] Combined and reported in this paper as total chlorinated pesticides other than DDT (tChlP). Generally this fraction was dominated by dieldrin and the chlordanes.

[c] Combined and reported in this paper as total polychlorinated biphenyls (tPCB).

[d] Combined and reported in this paper as total polyaromatic hydrocarbons (tPAH). In 70% of the samples, more than 75% of the tPAH was comprised of 4-and 5-ring compounds

sediments for their ability to accumulate organic contaminants. In this report, however, total organic carbon is treated as a contaminant. The major elements, Al, Fe, Mn, and Si, were included in the analytical scheme and might have served as normalizing factors but have not been used in this report. In addition, the sediments were analyzed for their concentrations of *Clostridium perfringens* spores (only in the Benthic Surveillance Project) and coprostanol, both of which can serve as indicators of the level of contamination with sewage. Battelle(1987) and Texas A&M (1988) both provide details of analytical methods employed in the Mussel Watch Project.

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 and accepted quality, thereby ensuring comparability among data sets. Attainment of this goal involves five major activities:

- Development and use of standardized field sampling procedures and analytical protocols;
- Conduct of interlaboratory comparisons of analytical methods;
- Conduct of periodic quality assurance workshops;
- Development of Standard Reference Materials (SRMs) and Interim Reference Materials (IRMs) for marine sediments and tissues; and
- Development and use of a standardized data base for QA data and information.

NORMALIZING CONCENTRATIONS

Sediments are used in the NS&T program as integrators of contaminant loadings to individual sites. Bivalves and fish are also used for this purpose and have the advantage of being substrates whose contaminant concentrations can change relatively quickly in response to changes in their surroundings. Contaminant levels in sediments will not quickly reflect changes in contaminant discharges. 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 normalized by dividing the raw concentration in a composite by the fraction by weight of sediment particles in the composite (from the same station) which are less than 64μ 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 and that the only effect of sand in a sample is to dilute its level of contamination.

To some extent contaminants can be associated with sand-sized particles and this method of normalizing can yield misleading results for sediments that are primarily sand. When such sediments contain detectable levels of contamination, that level, when normalized, 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. Normalizing 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 sediment composite has an unusually high or low level of contamination when, in fact, it is simply a sandy sample, no contaminant data were used if they were derived from sediments containing less than 20% fine-grained material. Therefore, at most, the normalizing procedure could increase a raw concentration by a factor of five.

THE DATA BASE

There are 212 sites throughout the coastal United States at which sediment was collected in 1984 or 1985 (Benthic Surveillance) or 1986 or 1987 (Mussel Watch). For 176 of those sites, contaminant data exist for at least one sufficiently fine-grained composite sample. Most sites were occupied in two years and most yielded fine-grained sediment in composites from all three stations in both

years, so for most sites there are six replicate sets of analytical results.

Chemicals in Table 1 considered as "contaminants" are all the trace elements whose naturally occurring concentrations can be elevated because of human activity: antimony, arsenic, cadmium, chromium, copper, lead, mercury, nickel, selenium, silver, tin, and zinc. Polyaromatic hydrocarbons are also naturally-occurring substances whose concentrations have been increased by human activities. In that same sense total organic carbon is considered a contaminant. Lastly, the chlorinated organic chemicals whose actual existence is due to humans are included among the contaminants.

The organic chemical data have been aggregated for this report. The concentrations of 18 individual polyaromatic hydrocarbons have been combined to create a single analytical result in terms of total polyaromatic hydrocarbons (tPAH). It should be noted, however, that more than 75% of the tPAH found in 70% of the samples consisted of 4-and 5-ring rather than 2- and 3-ring compounds. Individual PCB data have been combined into a tPCB value. Individual data on DDT and its metabolite compounds have been combined to a total value called tDDT, which is dominated by the metabolites p,p' DDE and p,p' DDD. While chlordanes and dieldrin generally prevail, all the non-DDT chlorinated pesticide data have been combined into a single value, tChlP.

Summary statistics (mean, coefficient of variation, and number of samples) for normalized contaminant concentrations in fine-grained sediment in the NS&T data base are listed in Appendix B. Although they will not be used for comparisons among sites, non-normalized data for the sand-sized sediments are listed in Appendix C.

DATA DELETIONS

In this summary we are emphasizing 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 mean is dominated by one value that is more than ten times greater than the next highest (of at least three) values that high value has been deliberately ignored. This has resulted in ignoring one Sn value, one Hg value, seven tDDT values, three tChlP values, three tPCB values, and one tPAH value. Appendix B contains a table listing those deliberately ignored values and shows the difference their exclusion has meant to the mean and variance used for that site. Four of those 16 deletions caused the site to not be considered among the most contaminated sites for that contaminant.

RESOLUTION OF THE DATA

Because this summary emphasizes means and rankings among them, it is important to recognize variability in the data and the limits that imposes on comparing concentrations. Table 2 lists ratios of low to high concentrations for each contaminant, and an estimate of how large the ratio must be between concentrations at any two sites to be 90% confident that the two sites really differ in their concentration for that contaminant.

Low to high ratios have been diminished to some extent by not including the four highest and four lowest values. It is, still, evident that the tChlP, tDDT, tPCB, tPAH, mercury, silver and tin span large concentration ranges and strongly indicate human influence. On the other hand, the sedimentary concentrations of arsenic, zinc, TOC, selenium, nickel, lead and chromium vary by less than a factor of 20 over the national network and are therefore not so greatly indicative of human activities. One contaminant, selenium, shows a very narrow range and so high a variability that almost all the sites must be considered equivalent in terms of their selenium concentration. For that reason, selenium concentrations are not used when, in the following section, the most contaminated sites are specified. A special consideration with regard to selenium is its apparent absence in sediments at Mussel Watch sites in California. The laboratory making those analyses reported detection limits of 6.0 and 0.6 ppm in 1986 and 1987, respectively. Only one sample yielded a quantifiable concentration. That concentration, 8.3 ppm at site SFEM in San Francisco Bay, was the highest concentration in the entire data base.

Table 2. Resolution in sediment data

Chemical	Number of sites with detectable conc.	Concentration range as the ratio of the 5th heighest to 5th lowest[a]	Number of sites with more than 2 detectable conc. values[b]	Overall coefficient of variation(%)[c]	Ratio required to establish a significant difference[d]
tChlP	161	160	140	75	11
tDDT	164	1500	142	66	9.8
tPCB	159	290	142	58	3.0
tPAH	167	470	156	58	4.7
TOC	141	16	160	34	1.6
Sb	139	26	123	45	4.0
As	175	7.6	160	31	1.8
Cd	175	32	160	30	1.5
Cr	169	16	153	27	2.4
Cu	175	22	160	23	1.3
Pb	174	17	160	24	1.3
Hg	136	88	151	45	2.9
Ni	175	13	159	22	1.3
Se	148	12	128	69	15
Ag	140	94	158	37	2.0
Sn	121	61	137	51	3.6
Zn	175	10	160	21	1.4

[a]The highest and lowest concentrations were not used to avoid having the ratio skewed by extremely high or low values.

[b]Number of sites at which there were at least three reported concentrations, two of which were above detection. The calculations required for the last two columns used only data that met these criteria.

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

[d] Ratios between two values to detect a significant difference at the 90% level of confidence. Calculated by first converting data to its logarithmic equivalent, then deriving the overall coefficient of variation for the geometric means, then applying that overall value to each geometric mean to calculate a pooled standard error, and finally calculating a Least Significant Difference (LSD) at the 90% confidence level (Snedecor and Cochran, 1980). Strictly speaking these ratios apply only to geometric means, not the arithmetic means that are used throughout this report.

Combined with five non-detected determinations the mean for that site became 1.4 ppm with a coefficient of variation of 245%. Although the data are not so variable, tin was also an element detected in only a single sediment sample from a Mussel Watch site in California, because of a laboratory's high limit of detection.

The overall ranges for all mean concentrations, including those for selenium, are shown graphically in Appendix D. To convey the differences among the highest mean values and their difference from the lowest values, the plots include the highest 25 and lowest 10 mean concentrations.

THE MOST CONTAMINATED SITES

All 212 sites are shown in Table 3 ordered from the Northeast to the Northwest in more-or-less clockwise fashion. To portray a sense of the extent to which normalizing has altered raw data, the average percentage of fines among the sufficiently fine-grained material is also listed. (Concentrations were normalized, however, on the basis of individual station data not on the basis of mean values.) For completeness, even though the data are not being used, 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 with other sites.

Table 3 indicates the number of times a contaminant concentration at a site is among the upper 20 of 176 concentrations, specifies the contaminant, and lists its ranking. The upper ten percent of the concentrations are emphasized because the differences among concentrations are larger than among lower-ranked values. Also, it is biological response to contamination that is of more concern than the contamination itself, and it is at these highest levels of contamination that one would most likely find a response. Table 3 may be read as a list of the most contaminated coastal areas in the United States. Because of limitations, listed in Table 2, imposed by concentration ranges and variability, little significance should be attached to a site having only one or two high concentrations unless those concentrations are very high.

If contaminant levels in sandy sediments had been normalized in the usual fashion, many sandy composites would have ranked among the more contaminated. It was to avoid such artifacts that sediment composites containing more than 80% sand have not been used. Nevertheless there are a few instances where even non-normalized contaminant concentrations in sandy sediments (Appendix C) would rank among the 20 highest normalized concentrations. Sandy samples from two sites in the Hudson/Raritan Estuary, NY (HRUB and HRLB) had tPAH concentrations in excess of 10,000 ng/g and would have placed those sites high in the rankings if they were not already there on the basis of tPAH in their fine-grained samples. Similarly, the tDDT concentrations in the sandy samples from San Pedro Canyon, CA (SPC) and Choctawatchee Bay, FL (CBSP), the Cr concentration in a Humboldt Bay, CA (HMB) sample and the Ag concentration in the sandy sediments at a Hudson/ Raritan Estuary, NY (HRLB) site would all have placed those sites among the highly contaminated if the fine-grained samples had not done so. In three cases sites with only sandy sediments were found to have non-normalized concentrations of a contaminant that would have been among the highest 20 normalized concentrations: Sb in Elliott Bay, WA (EBFR), and Cr at both San Francisco Bay,CA (SHS) and Bodega Bay, CA (BOD). While the concentrations were not quite as high as at the 20th ranking fine-grained site, it is worth noting that tPAH was about 5000 ng/g at two sites in Long Island Sound (LICR and LIHR) at which only sand was collected.

Table 3. NS&T sites with their CODES keyed to maps in Appendix A, mean percent fines (%f) in samples with >20% fine-grained sediments, total number (T) of contaminant concentrations (normalized to fines) ranking among the highest 20 concentrations, and symbol and ranking of specific contaminants in that category , (nfgs = no fine-grained sediments collected at the site)

SITE LOCATION	CODE	%f	T	CONTAMINANT (RANK IN UPPER 20)
Machias Bay ME	MAC	68	0	
Frenchmans Bay ME	FRB	93	0	
Penobscot Bay ME	PNB	97	0	
Penobscot Bay ME	PBSI	90	0	
Penobscot Bay ME	PBPI	54	1	tPAH(19)
Casco Bay ME	CAS	73	0	
Merrimack R. MA	MER	nfgs		
Salem Harbor MA	SAL	69	13	Ag(18),Cd(2),Cr(1),Hg(9),Pb(2),Sb(15), Sn(8),Zn(12),tChlP(10),tDDT(20), tPCB(14), tPAH(4),TOC(7)
Cape Ann MA	CASI	27	3	Pb(20), Sb(9), Sn(19)
Boston Harbor MA	BHDI	78	10	Ag(14),Cr(12),Cu(14),Hg(16),Pb(13), Sb(4),Sn(5),tChlP(19),tPCB(20) tPAH(20)
Boston Harbor MA	BHDB	85	12	Ag(16),Cd(19),Cr(14),Cu(12),Hg(15), Pb(12),Sb(5),Sn(6),TChlP(8),tDDT(16), tPCB(6),TPAH(11)
Boston Harbor MA	BHHB	27	7	Ag(10),Cr(16),Hg(17),Pb(14),Sb(1), Sn(10),tChlP(16)
Boston Harbor MA	BHBI	nfgs		
Boston Harbor MA	BOS	63	13	Ag(1),Cd(5),Cr(9),Cu(2),Hg(8),Pb(8), Sb(3),Sn(1),Zn(6),tChlP(4), tPCB(3),tPAH(1),TOC(9)
Buzzards Bay MA	BBRH	65	1	tPCB(18)
Buzzards Bay MA	BBAR	29	4	Ag(19),tChlp(14),tPCB(1),tPAH(9)
Buzzards Bay MA	BBGN	37	0	
Buzzards Bay MA	BUZ	73	0	
Narragansett Bay RI	NBMH	91	2	Hg(19),Sn(17)
Narragansett Bay RI	NBCI	60	0	
Narragansett Bay RI	NBDI	38	3	Sb(16),Sn(18),tPAH(16)
Narragansett Bay RI	NAR	69	2	Ag(7),Sn(16)
Block Is. RI	BIBI	71	0	
E. Long Is. Sound CT	ELI	nfgs		
Long Is. Sound CT	LICR	50	0	
Long Is. Sound CT	LINH	nfgs		
Long Is. Sound CT	LIHR	nfgs		
Long Is. Sound CT	LISI	63	2	Cu(15),tPAH(8)
W. Long Is. Sound NY	WLI	80	2	Cu(16),Sn(14)
Long Is. Sound NY	LIHU	46	0	
Long Is. Sound NY	LIPJ	nfgs		
Long Is. Sound NY	LIMR	74	3	Cd(16),Cu(19),Pb(19)
Long Is. Sound NY	LIHH	90	6	Ag(9),Cd(13),Cu(10),Pb(15),Zn(17), tChlP(9)
Long Is. Sound NY	LITH	74	11	Ag(11),Cd(18),Cu(9),Hg(11),Pb(10), Sn(20),Zn(20),tChlP(12),tDDT(13), tPCB(16),tPAH((7)

Table 3 (cont.)

SITE LOCATION	CODE	%f	T	CONTAMINANT (RANK IN UPPER 20)
Hudson/Raritan Est. NY	HRJB	64	14	Ag(8),As(18),Cd(14),Cr(19),Cu(11), Hg(6),Pb(7),Sb(8),Sn(3),Zn(16), tChlP(2),tDDT(10),tPCB(9),tPAH(18)
Hudson/Raritan Est.NY	HRUB	77	8	Ag(15),As(13),Cu(18),Hg(1),Pb(11), Sb(10),Sn(7),tPAH(2),
Hudson/Raritan Est. NY	HRLB	66	14	Ag(2),As(19),Cd(7),Cr(17),Cu(6),Hg(5), Pb(3),Sb(11),Sn(12),Zn(10), tChlP (6),tDDT(11),tPCB(13),tPAH(5)
Hudson/Raritan Est. NJ	HRRB	70	13	Ag(3),As(12),Cd(12),Cu(5),Hg(2),Pb(1), Sb(7),Sn(2),Zn(2),tChlP(11), tDDT(15),tPCB(15),tPAH(13)
Raritan Bay NJ	RAR	77	14	Ag(5),As(7),Cd(4),Cr(18),Cu(4),Hg(3), Pb(5),Sb(19),Sn(4),Zn(1), tChlP(15),tDDT(17),tPCB(8),tPAH(17),
N.Y. Bight NJ	NYSH	65	14	Ag(4),As(9),Cd(8),Cr(15),Cu(8),Hg(4), Pb(4),Sb(6),Sn(13),Zn(5), tChlP(7),tDDT(14),tPCB(12),tPAH(12),
N.Y. Bight NJ	NYLB	nfgs		
N.Y. Bight NJ	NYSR	nfgs		
Moriches Bay NY	MBTH	57	0	
Great Bay NJ	GRB	71	0	
Delaware Bay DE	DEL	46	2	tChlP(5),tPCB(19)
Delaware Bay DE	DBFE	41	0	
Delaware Bay DE	DBBD	56	0	
Delaware Bay DE	DBAP	75	0	
Delaware Bay DE	DBKI	58	0	
Upper Ches. Bay MD	UCB	73	2	Ni(17),Zn(14)
Chesapeake Bay MD	CBMP	98	1	Zn(9)
Chesapeake Bay MD	CBHP	98	0	
Chesapeake Bay MD	CBHG	nfgs		
Mid. Chesapeake Bay VA	MCB	48	0	
Chesapeake Bay VA	CBIB	77	0	
Chesapeake Bay VA	CBCC	71	0	
Chesapeake Bay VA	CBDP	46	0	
Lower Ches.Bay VA	LCB	50	0	
Chincoteague Bay VA	CBCI	nfgs		
Quinby Inlet VA	QIUB	38	0	
Roanoke Sound NC	RSJC	nfgs		
Pamlico Sound NC	PSWB	nfgs		
Pamlico Sound NC	PAM	78	1	TOC(17)
Cape Fear NC	CFBI	56	1	As(8)
Charleston Harbor SC	CHFJ	81	0	
Charleston Harbor SC	CHSF	51	0	
Charleston Harbor SC	CHS	80	0	
Savannah R. Estuary GA	SRTI	52	0	
Sapelo Sound GA	SSSI.	nfgs		
Sapelo Is. GA	SAP	49	0	
St. Johns R. FL	SJCB	76	0	
St. Johns R. FL	SJR	47	2	tPCB(17),TOC(13)
Matanzas R. FL	MRCB	nfgs		
Biscayne Bay FL	BBPC	85	1	TOC(19)
Everglades FL	EVFU	82	1	TOC(11)
Rookery Bay FL	RBHC	72	1	TOC(12)

Table 3 (cont.)

SITE LOCATION	CODE	%f	T	CONTAMINANT (RANK IN UPPER 20)
Naples Bay FL	NBNB	60	0	
Charlotte Harbor FL	CBBI	44	1	TOC(15)
Charlotte Harbor FL	LOT	26	1	TOC(10)
Tampa Bay FL	TAM	49	0	
Tampa Bay FL	TBMK	25	2	tChlP(3),TOC(1)
Tampa Bay FL	TBCB	nfgs		
Tampa Bay FL	TBHB	54	2	Pb(17),TOC(14)
Tampa Bay FL	TBPB	53	2	tPCB(10),TOC(3)
Cedar Key FL	CKBP	46	1	TOC(16)
Apalachicola Bay FL	APCP	59	0	
Apalachicola Bay FL	APDB	50	0	
Apalachicola Bay FL	APA	76	0	
St. Andrew Bay FL	SAWB	46	5	tChlP(19),tDDT(9),tPCB(2),tPAH(3), TOC(6)
Choctawhatchee Bay FL	CBSP	52	5	Pb(6),tChlP(1),tDDT(3),tPAH(6),TOC(2)
Choctawhatchee Bay FL	CBSR	66	1	As(4)
Pensacola Bay FL	PEN	81	0	
Pensacola Bay FL	PBIB	34	1	TOC(5)
Mobile Bay AL	MBCP	74	0	
Mobile Bay AL	MOB	93	0	
Round Is. MS	ROU	57	0	
Heron Bay MS	HER	58	0	
Miss. Sound MS	MSPB	60	0	
Miss. Sound MS	MSBB	74	1	tPAH(15)
Miss. Sound MS	MSPC	76	0	
Miss. Delta LA	MRD	77	1	tChlP(17)
Lake Borgne LA	LBMP	77	0	
Breton Sound LA	BSSI	88	0	
Breton Sound LA	BSBG	28	0	
Barataria Bay LA	BBSD	84	0	
Barataria Bay LA	BBMB	42	1	TOC(18)
Barataria Bay LA	BAR	49	0	
Terrebonne Bay LA	TBLF	77	1	TOC(4)
Terrebonne Bay LA	TBLB	86	1	TOC(8)
Caillou Lake LA	CLCL	67	0	
Atchafalaya Bay LA	ABOB	83	0	
Vermillion Bay LA	VBSP	82	0	
J. Harbor Bayou LA	JHJH	70	0	
Calcasieu Lake LA	CLSJ	84	0	
Sabine Lake LA	SLBB	57	0	
E. Cote Blanche LA	ECSP	nfgs		
Galveston Bay TX	GBHR	80	0	
Galveston Bay TX	GBYC	62	0	
Galveston Bay TX	GBTD	61	0	
Galveston Bay TX	GBCR	53	0	
Galveston Bay TX	GAL	56	0	
Matagorda Bay TX	MBEM	52	0	
Matagorda Bay TX	MBTP	60	0	
Matagorda Bay TX	MBGP	74	0	
Matagorda Bay TX	MBLR	63	0	
Espiritu Santo TX	ESSP	87	0	
Espiritu Santo TX	ESBD	24	0	
San Antonio Bay TX	SAMP	48	0	
San Antonio Bay TX	SAPP	46	0	

Table 3 (cont.)

SITE LOCATION	CODE	%f	T	CONTAMINANT (RANK IN UPPER 20)
San Antonio Bay TX	SAB	58	0	
Mesquite Bay TX	MBAR	91	0	
Aransas Bay TX	ABLR	45	0	
Corpus Christi TX	CCIC	47	0	
Corpus Christi TX	CCNB	56	0	
Corpus Christi Bay TX	CCB	74	0	
Lower Laguna Madre TX	LMSB	56	0	
Lower Laguna Madre TX	LLM	33	0	
Imperial Beach CA	IBIB	nfgs		
San Diego Bay CA	SDF	34	2	As(20),Cd(9)
San Diego Bay CA	SDHI	29	5	As(1),Cu(13),Hg(12),Pb(18),Zn(8)
San Diego Harbor CA	SDA	66	7	Cu(1),Hg(10),Pb(16),Sn(11),Zn(3), tPCB(7),tPAH(14)
Pt. Loma CA	PLLH	31	1	As(17)
Mission Bay CA	MBVB	nfgs		
La Jolla CA	LJLJ	57	0	
Oceanside CA	OSBJ	79	1	tDDT(18)
Dana Pt. CA	DAN	33	1	As(14)
Newport Beach CA	NBBC	51	0	tDDT(19)
Anaheim Bay CA	ABWJ	58	0	
Seal Beach CA	SEA	56	1	Hg(18)
Long Beach CA	LNB	63	5	Cd(15),Pb(9),Zn(15),tChlP(18),tDDT(8)
San Pedro Bay CA	SPB	91	1	tDDT(4)
San Pedro Canyon CA	SPC	26	10	Ag(12),Cd(3),Cr(7),Cu(17),Hg(7), Ni(9),Sn(9),Zn(4),tDDT(2),tPCB(11)
San Pedro Harbor CA	SPFP	92	3	Cd(11),Cu(7),tDDT(5)
Palos Verdes CA	PVRP	59	9	Ag(13),Cd(1),Cr(13),Cu(20),Sn(15), Zn(14),tChlP(13),tDDT(1),tPCB(4)
Santa Catalina Is. CA	SCBR	nfgs		
Santa Monica Bay CA	SMB	nfgs		
Marina Del Rey CA	MDSJ	40	3	Ag(20),As(10),tDDT(7)
Pt. Dume CA	PDPD	36	2	As(16),tDDT(6)
Santa Cruz Is. CA	SCFP	nfgs		
Pt. Santa Barbara CA	SBSB	40	3	As(2),Cd(17),tDDT(12)
Pt. Conception CA	PCPC	nfgs		
Luis Obispo Bay CA	PSLSL	nfgs		
San Simeon Pt. CA	SSSS	nfgs		
Pacific Grove CA	PGLP	nfgs		
Monterey Bay CA	MBSC	28	0	
Monterey Bay CA	MON	nfgs		
SouthamptonShoal CA	SHS	nfgs		
Oakland Estuary CA	OAK	91	1	Ni(12)
Hunters Pt. CA	HUN	74	2	Cr(4),Ni(6)
San Francisco Bay CA	SFDB	91	1	Ni(14)
San Francisco Bay CA	SFSM	91	1	Ni(10)
San Francisco Bay CA	SFEM	93	1	Ni(11)
San Pablo Bay CA	PAB	35	3	Cr(3),Ni(1),Zn(18)
San Pablo Bay CA	SPSM	68	3	As(5),Cr(10),Ni(3)
San Pablo Bay CA	SPSP	90	1	Ni(9)
Tomales Bay CA	TBSR	97	1	Ni(4)
Bodega Bay CA	BBBE	nfgs		
Bodega Bay CA	BOD	nfgs		
Pt. Arena CA	PAPA	nfgs		
Copano Bay TX	CBCR	96	0	

Table 3 (cont.)

SITE LOCATION	CODE	%f	T	CONTAMINANT (RANK IN UPPER 20)
Pt. Delgada CA	PDSC	nfgs		
Humboldt Bay CA	HMBJ	nfgs		
Humboldt Bay CA	HMB	31	4	As(3),Cr(2),Ni(2),Sb(12)
Pt. St. George OR	SGSG	nfgs		
Coos Bay OR	COO	46	3	As(11),Cd(20),TOC(20)
Coos Bay OR	CBCH	23	3	As(6),Cr(6),Ni(7)
Coos Bay OR	CBRP	33	2	Cr(11),Ni(15)
Yaquina Bay OR	YBOP	51	1	TOC(16)
Yaquina Head OR	YHYH	34	2	Cr(5),Sb(17)
Tillamook Bay OR	TBHP	30	3	As(15),Cr(8),Ni(8)
Columbia R. OR	CRYB	31	2	Sb(13),Zn(19)
Columbia R. OR	COL	27	4	Ag(6),Cd(6),Hg(20),Zn(11)
Gray's Harbor WA	GHWJ	nfgs		
Strait Juan de Fuca WA	JFNB	49	1	Cr(20)
South Puget Sound WA	SSBI	98	1	Sb(18)
Nisqually Reach WA	NIS	nfgs		
Commencement Bay WA	COM	81	1	Ag(17)
Commencement Bay WA	CBTP	87	1	Sb(14)
Elliott Bay WA	EBFR	nfgs		
Elliott Bay WA	ELL	46	8	Cd(10),Cu(3),Hg(14),Ni(16),Sb(20), Zn(7),tPCB(5),tPAH(10)
Sinclair Inlet WA	SIWP	63	3	Hg(13),Ni(20),Sb(2)
Whidbey Is. WA	WIPP	95	0	
Bellingham Bay WA	BBSM	98	1	Ni(5)
Pt. Roberts WA	PRPR	79	0	
Lutak Inlet AK	LUT	89	0	
Nahku Bay AK	NAH	nfgs		
Unakwit Inlet AK	UISB	82	0	
Port Valdez AK	PVMC	100	0	
Oliktok Pt. AK	OLI	nfgs		
Prudhoe Bay AK	END	34	1	Ni(18)
Barber's Pt. HI	BPBP	48	1	Ni(13)
Honolulu Harbor HI	HHKL	47	0	

REPRESENTATIVENESS

It is the intention of the NS&T Program to sample sites that are representative of areas rather than only the site itself. However, that is a qualitative concept until the size of the area being "represented" is defined. The straight-line distances between adjacent Mussel Watch sites vary considerably but average 20 km within estuaries or semi-enclosed areas and almost 100 km along open stretches of coast. A test of a site's representativeness is approximate agreement in contaminant concentrations between adjacent sites. On that basis, the obvious clustering in Table 3 of sites with high contaminant levels, argues for the areas around Boston, New York, San Diego, and Los Angeles to have been representatively sampled.

Even in those cases, there are irregular observations. The highest mean tPAH concentration in the entire data base was found near Boston, MA at site, BOS. That site was one of only five among all 212 sites where more than 75% of the tPAH consisted of low molecular weight (2- and 3-ring) compounds. Without those compounds the tPAH concentration would have been 10000 ng/g, still a high value but one closer to those at the other Boston Harbor sites. On the west coast, the most anomalous of the highly contaminated sites was that off Palos Verdes, CA, PVRP. As at most west coast sites along open coasts, it was necessary to move offshore to obtain fine-grained sediment. The sampling site in this case turned out to be within 2 km of the terminus of the Los Angeles County sewage effluent discharge pipe. The reported tDDT concentration of 6800 ng/g is similar to those reported by Swartz et al. (1986) who deliberately sampled near the discharge to test effects of uniquely high contaminant levels. That site can hardly be considered representative of the coastal area, but many of the contaminants found to be highly concentrated there, tDDT, tPCB, Cd and Ag, are also at high levels at other sites near Los Angeles. When viewed from a national perspective, the coastal waters around Los Angeles can be considered contaminated for at least those chemicals. When viewed from a local perspective, it becomes important to note differences between sites that are inside and outside the breakwater that creates Los Angeles and Long Beach Harbors, and inside the breakwater contaminant levels increase towards the inner harbors.

Sites around Boston, New York, San Diego, and Los Angeles tend to support one another in the sense that high contaminant levels at one are reflected at others. High contaminant levels at the ELL site near Seattle, WA, the SAWB site near Panama City, FL and the CBSP site near Ft. Walton Beach, FL may or may not be representative of their surroundings. In all three cases no fine-grained sediment was collected within 10 to 20 km. It will be necessary to do so in the future, to test whether high levels of contamination are typical of the areas.

Fifteen of the highest levels of total organic carbon (TOC), including the three extremely high values, were found between the southern tip of Florida and Terrebonne Bay in Louisiana. In general, these levels are not due to human activity but reflect the marshy nature of sites where sediments contain large amounts of decaying vegetation. All of the sites in San Francisco and San Pablo Bays are highly enriched in nickel. Nickel was also commonly found at high levels at sites north of San Francisco and into Alaska. Rather than being a manifestation of human activity, this could well be a natural condition signifying a tendency for minerals in the region to be relatively enriched in nickel.

HOT SPOTS

The low concentrations found within the NS&T network probably encompass the least contaminated sites in the coastal United States. Except for tDDT concentrations at the PVRP site, the highest concentrations do not include the most contaminated locations in the country. If "hot spots" were deliberately sought, sampled, and analyzed, it is probable that all sites, except PVRP, could be replaced on the current list of the 20 most contaminated. For example, sediments taken from Black Rock Harbor in Bridgeport, CT (Rogerson et al. 1985) show higher levels of tPAH, tPCB, Cd, Cu, Pb, and Zn than any of the NS&T sites. The tPAH, As, Hg, and Pb levels found in sediments of the Duwamish and Hylebos

Waterways in Seattle and Tacoma, WA, respectively, (Malins et al.1982) would rank above the highest NS&T values. Levels of tPCB well above those at any NS&T site have been found in sediments of New Bedford Harbor, MA (Weaver, 1984). Samples of sediment near a creosote facility on the Elizabeth River, VA have been found with higher tPAH concentrations than the highest concentration at an NS&T site (Huggett et al, 1987). The NS&T sites locations are intended to yield data that are "representative" of general areas rather than spots. The exact spatial scale that differentiates "areas" from "spots" has not been quantitatively prescribed but a "hot spot" would not qualify as "representative" when a sediment sample collected within about 10 km of it is found to be much less (ten times or more less) contaminated.

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) and in sediments with this report. 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. There are no reliable criteria with which to extrapolate levels of sediment contamination to the presence of biological effects and we cannot claim, *a priori*, that the areas found to be highly contaminated are necessarily places where biota have been affected. There is, however, a biological monitoring component to the NS&T Program. There is work ongoing to test whether fish in contaminated areas are suffering reproductive damage or responding to contamination in other, less consequential ways. Tests of sediment toxicity are also being done in a few areas. While such tests suffer to some extent from being artificial exposures to manipulated sediment they can serve the purpose of finding correlations between levels of contamination and biological response.

REFERENCES

Battelle Ocean Sciences. 1987. Phase 2, work/quality assurance project plan for Contract No. 50-DGNC-5-0263, collection of bivalve molluscs and surficial sediments and performance of analyses for organic chemicals and toxic trace elements. Report to National Oceanic and Atmospheric Administration from Battelle Ocean Sciences, Duxbury, MA. 111 pp. + Appendices A-0.

Huggett, R.J., M. E. Bender, and M. A. Unger. 1987. Polynuclear aromatic hydrocarbons in the Elizabeth River, Virginia. In: Fate and Effects of Sediment-Bound Chemicals in Aquatic Systems. K. L. Dixon, A. W. Maki, and W. A. Brungs (eds.) Pergamon Press, Oxford.

MacLeod, W.D., Jr., D.W. Brown, A.S. Friedman, D.G. Burrows, O. Maynes, R. Pearce, C.A. Wigren, and R.G. Bogar. 1985. Standard analytical procedures of the NOAA National Analytical Facility, 1985-1986: Extractable toxic organic compounds. 2nd edition. NOAA Technical Memorandum NMFS F/NWC-92. 121 pp.

Malins, D.C., B.B. McCain, D.W. Brown, A.K. Sparks, H.O. Hodgins, and S.-L. Chan. 1982. Chemical Contaminants and Abnormalities in Fish and Invertebrates from Puget Sound. NOAA Technical Memorandum OMPA-19, NOAA Office of Marine Pollution Assessment, Boulder, CO. 168 pp.

NOAA. 1987a. National Status and Trends Program - A Preliminary Assessment of Findings of the Benthic Surveillance Project-1984. NOAA Office of Oceanography and Marine Assessment, Rockville, MD. 81 pp.

NOAA. 1987b. National Status and Trends Program - A Summary of Selected Data on Chemical Contaminants in Tissues Collected During 1984, 1985, and 1986. NOAA Technical Memorandum NOS OMA 38. NOAA Office of Oceanography and Marine Assessment, Rockville, MD. 23 pp. + appendices

Rogerson, P.F., S.C. Schimmel, and G. Hoffman. 1985. Chemical and Biological Characterization of Black Rock Harbor Dredged Material. USEPA/US Army CoE Technical Report D-85-9. U.S. Army Corps of Engineers Waterways Experiment Station, Vicksburg, MS. 110 pp. + appendix

Shigenaka, G. and G.G. Lauenstein. 1988. National Status and Trends Program for Marine Environmental Quality: Benthic Surveillance and Mussel Watch Projects Sampling Protocols. NOAA Technical Memorandum NOS OMA 40. NOAA Office of Oceanography and Marine Assessment, Rockville, MD. 18 pp.

Snedecor, G.W. and W. G. Cochran. 1980. Statistical Methods. Seventh Edition. The Iowa State University Press. Ames, IA. 507 pp.

Swartz, R.C., F.A. Cole, D.W. Schults, and W.A. DeBen. 1986. Ecological changes in the Southern California Bight near a large sewage oufall: benthic conditions in 1980 and 1983. Mar. Ecol. Prog. Ser. 31:1-13

Texas A&M. 1988. The Geochemical and Environmental Research Group, Texas A&M University. Second annual report, analyses of bivalves and sediments for organic chemicals and trace elements. Report to National Oceanic and Atmospheric Administration from Texas A&M Research Foundation, College Station, TX.

Weaver, G. 1984. PCB contamination in and around New Bedford, MS. Environ. Sci. Technol. 18:22A-27A.

APPENDIX A.

Site Location Maps

APPENDIX A.

National Status and Trends Program

Site Location Maps, Site Names and Site Codes

Benthic Surveillance Project Sites Designated by Three-Letter Codes and Open Circles
Mussel Watch Project Sites Designated by Four-Letter Codes and Closed Circles

MAP SEQUENCE

Penobscot Bay to Narragansett Bay	A-1
Long Island Sound to New York Bight	A-2
Delaware Bay to Chesapeake Bay	A-3
Roanoke Sound to Biscayne Bay	A-4
South Florida	A-5
Tampa Bay	A-6
Middle Florida	A-7
Western Florida	A-8
Mississiippi to Alabama	A-9
Eastern Louisiana and Mississippi Delta	A-10
Western Louisiana	A-11
Galveston Bay	A-12
South Texas	A-13
Laguna Madre South Bay	A-14
Southern California and Hawaii	A-15
Point Conception to Point Arena	A-16
Point Delgada to Yaquina Head	A-17
Northwest Pacific	A-18
Alaska	A-19

Base maps for East and West Coast sites extracted from Phase 1 Final Report on the Mussel Watch Project by Battelle Ocean Sciences and Science Applications International Corporation, Inc.

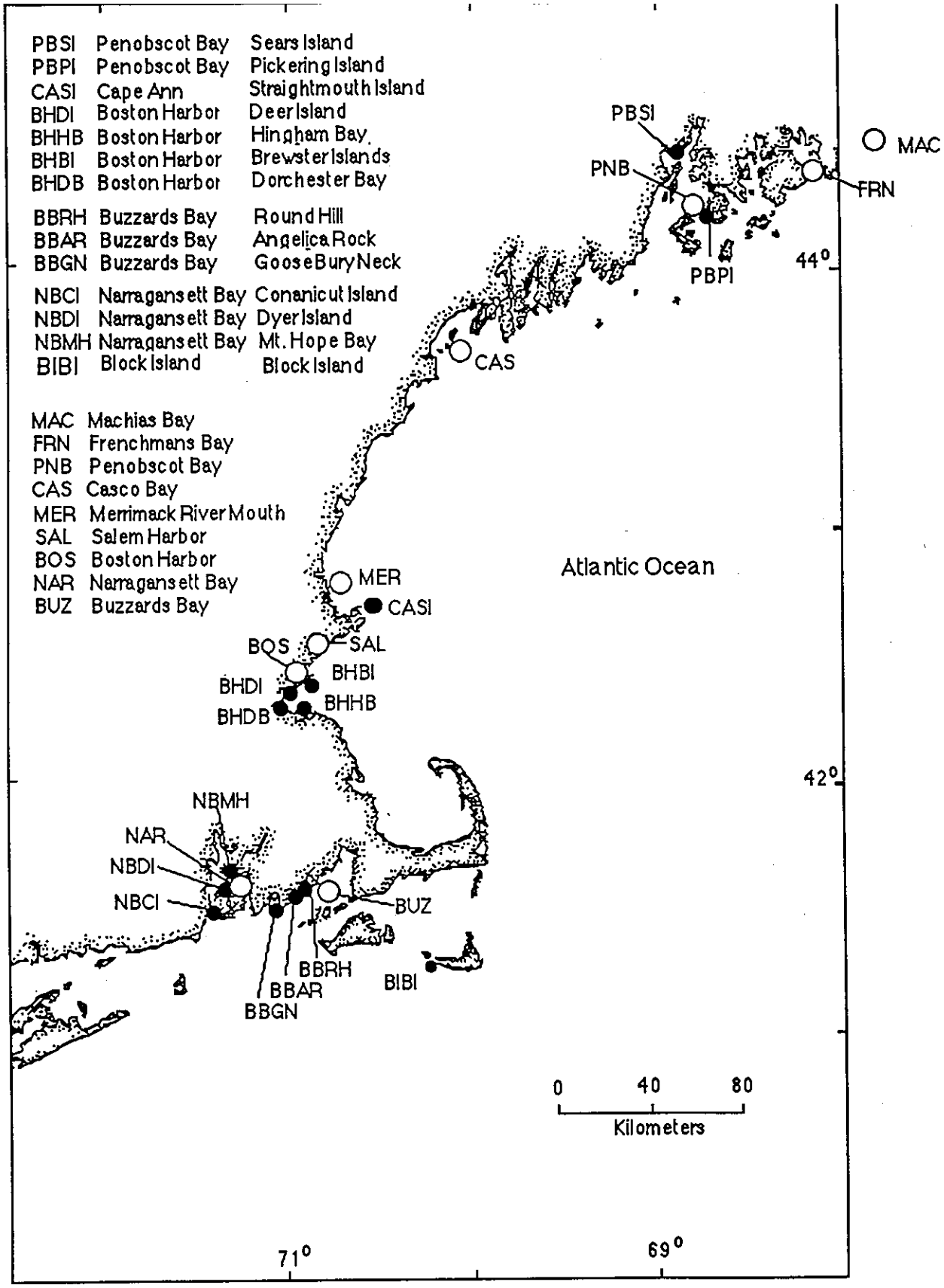
Base maps for Gulf of Mexico sites extracted from Phase 1 Final Report on the Mussel Watch Project by The Geochemical and Environmental Research Group of Texas A&M Research Foundation.

REVISIONS to APPENDIX B

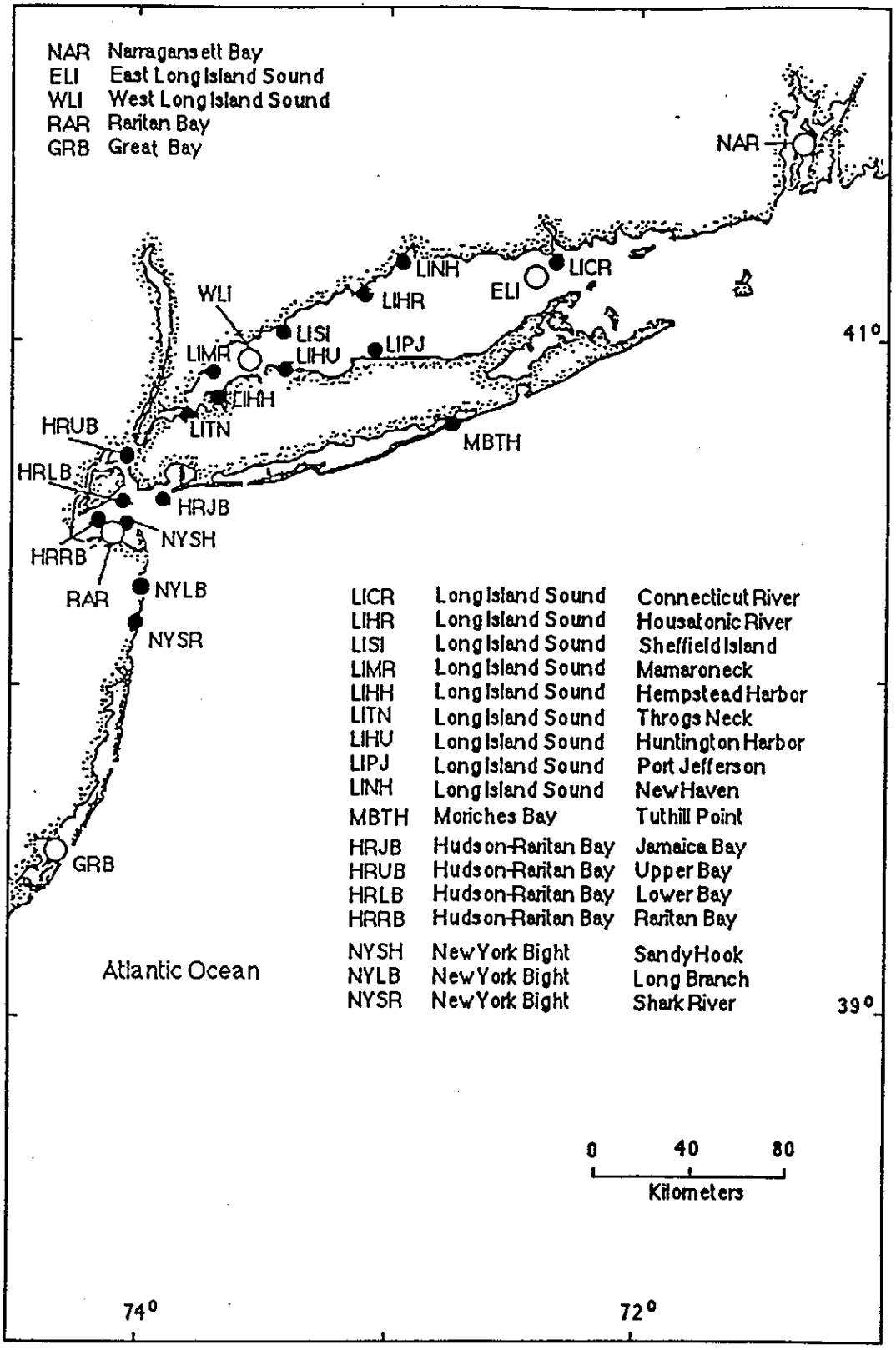
Since this report was compiled, some additions and changes have been made to the organic chemical data. None affect the discussion in the report. Listed here are cases where, because of additions or changes, the reported mean normalized concentration in **fine-grained sediment** has been altered by more than 10% and by at least 3 ng/g. As in APPENDIX B, a mean concentration of "nd" denotes "not detected" and a dash (-) denotes "no data". All concentrations are in units of ng/g-dry wt.

SITE	original mean	revised mean
tChlP in fine-grained sediment		
LITN	27	33
PAM	3.4	nd
SAP	2.6	nd
TAM	6.0	nd
TBPB	2.4	18
PEN	5.9	nd
ESBD	.6	5.2
SPFP	2.6	8.3
MBSC	-	3.4
SPSM	3.1	9.5
tDDT in fine-grained sediment		
SAP	3.3	7.6
LOT	3.8	nd
TAM	3.5	nd
SDHI	9.3	30
OSBJ	52	63
SPFP	310	780
PVRP	6900	5900
MBSC	-	43
SFDB	11	16
SIWP	13	9.3
tPCB in fine-grained sediment		
LITN	460	510
CHS	7.5	45
SJR	380	260
LOT	nd	14
TAM	-	7.4
TBPB	750	520
APA	26	13
PEN	-	21
MOB	nd	6.7
MRD	41	29
ESBD	5.8	17
SAB	nd	8.4
LLM	nd	5.8
SDA	790	870
SPFP	190	210

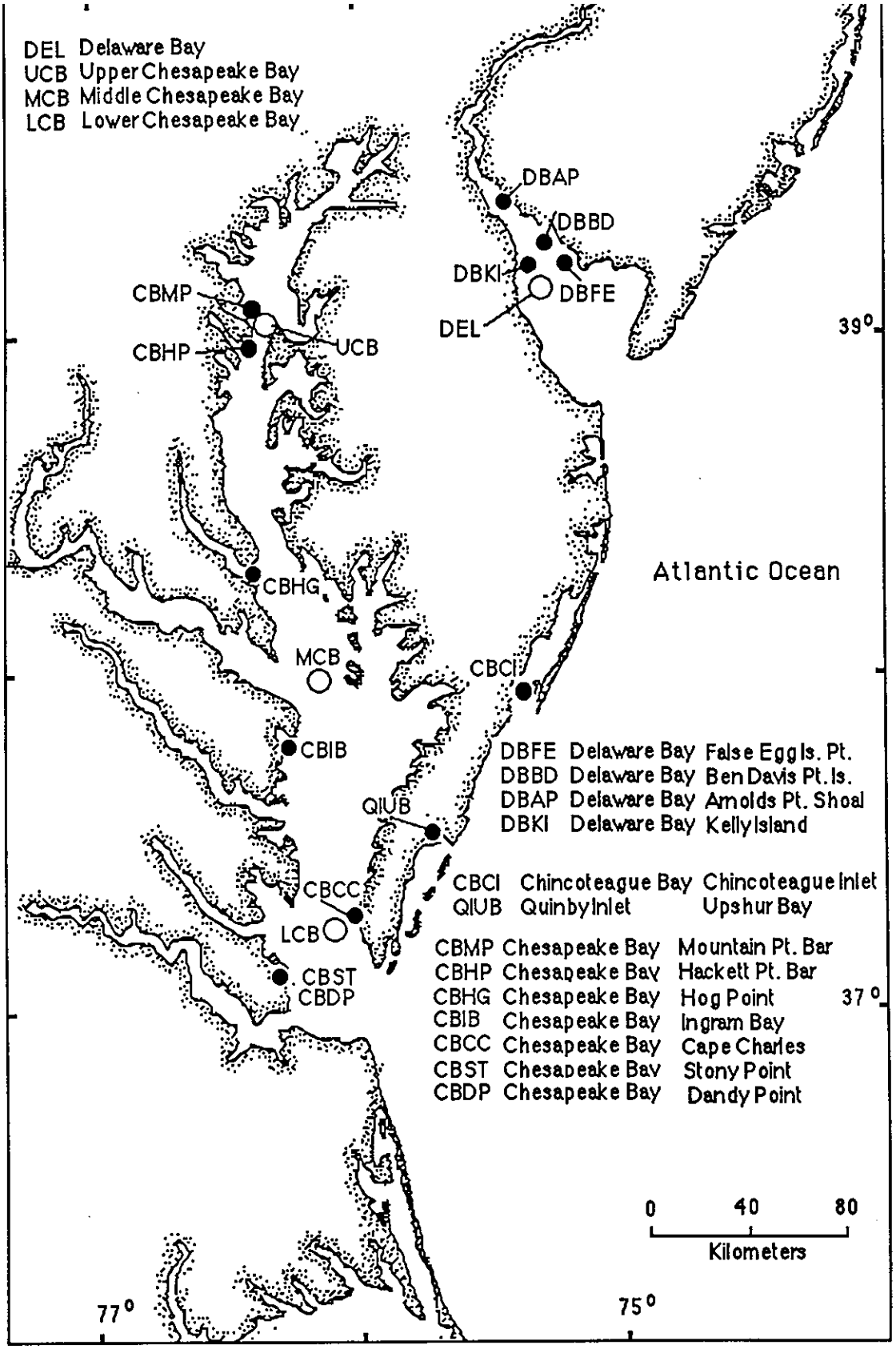
SITE	original mean	revised mean
tPAH in fine-grained sediment		
BBGN	1500	1100
DBFE	560	200
DBBD	590	400
DBAP	840	730
DBKI	970	870
CBCC	80	120
QIUB	620	460
CFBI	740	630
CHFJ	410	250
CHSF	730	640
SJR	4500	4100
BBPC	320	260
EVFU	110	90
RBHC	120	100
NBNB	340	600
CBBI	910	470
TAM	220	450
TBMK	1400	860
TBHB	4300	3200
APCP	390	250
APDB	1100	840
CBSP	14600	10300
MSBB	7900	6800
ECSP	320	430
GBYC	1600	1300
GBCR	520	440
MBGP	480	410
ESBD	nd	40
ABLR	130	100
CCIC	460	530
CCNB	650	490
LLM	110	80
SDF	110	330



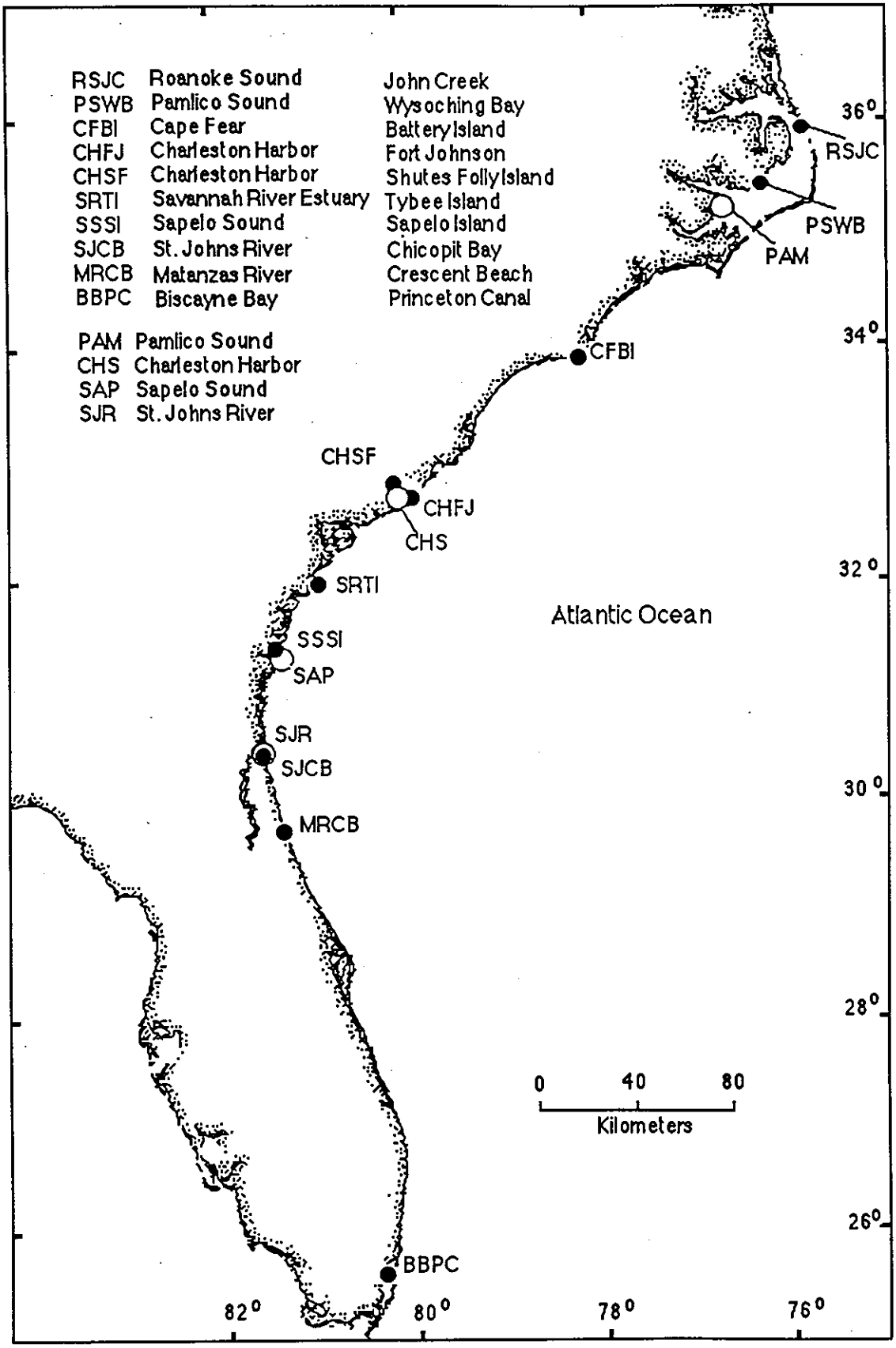
Penobscot Bay to Narragansett Bay



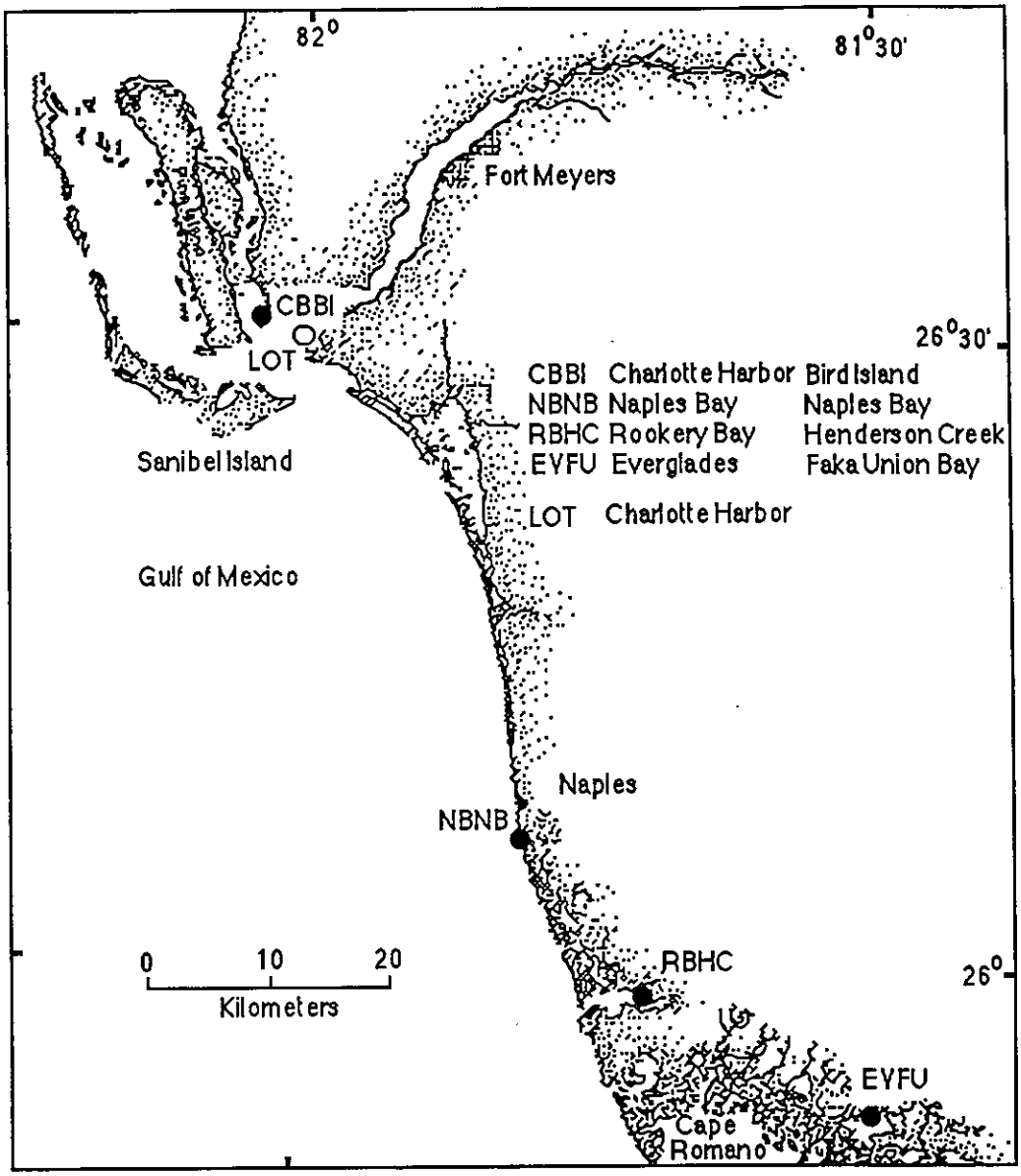
Long Island Sound to New York Bight



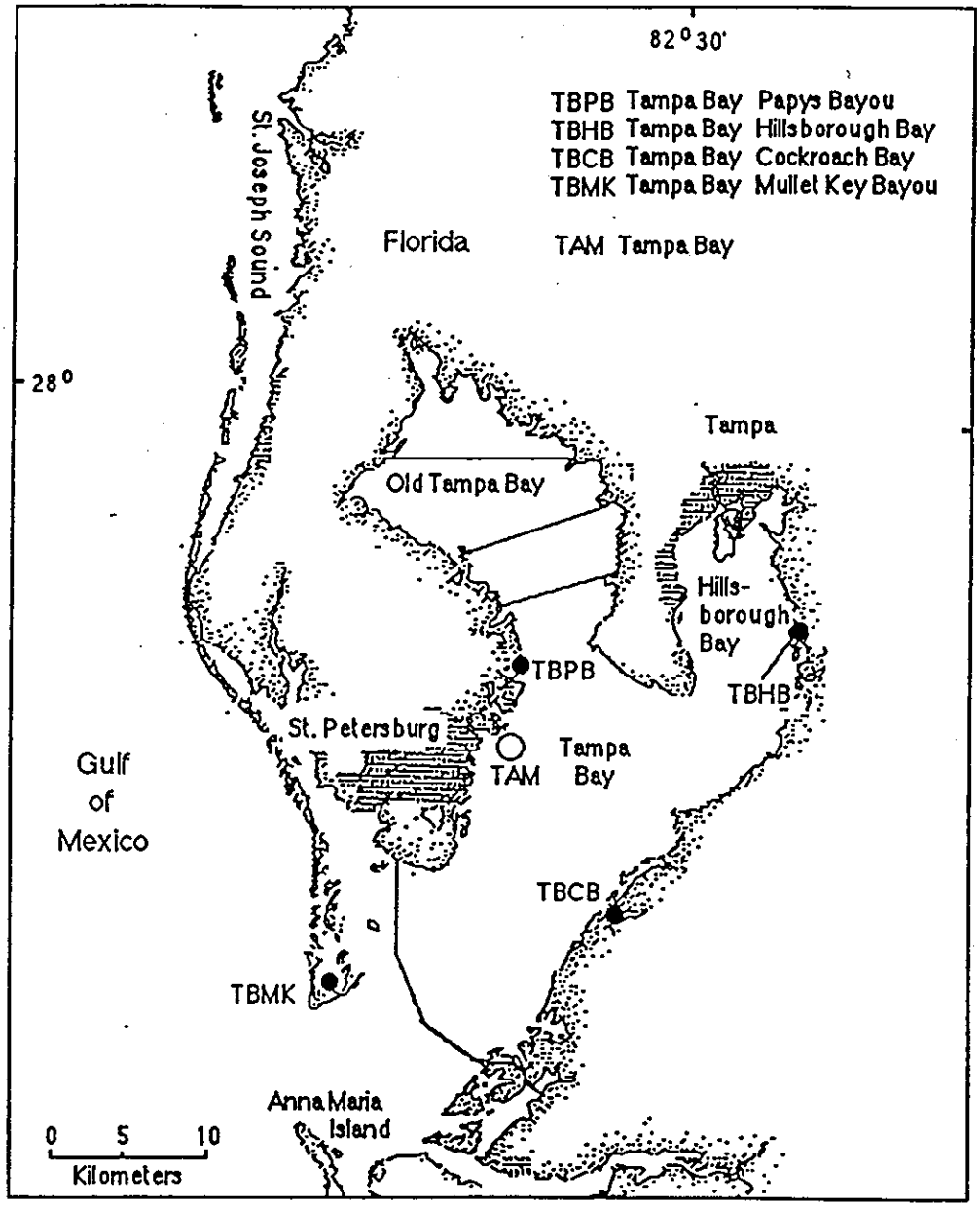
Delaware Bay to Chesapeake Bay



Roanoke Sound to Biscayne Bay



South Florida


82°30'
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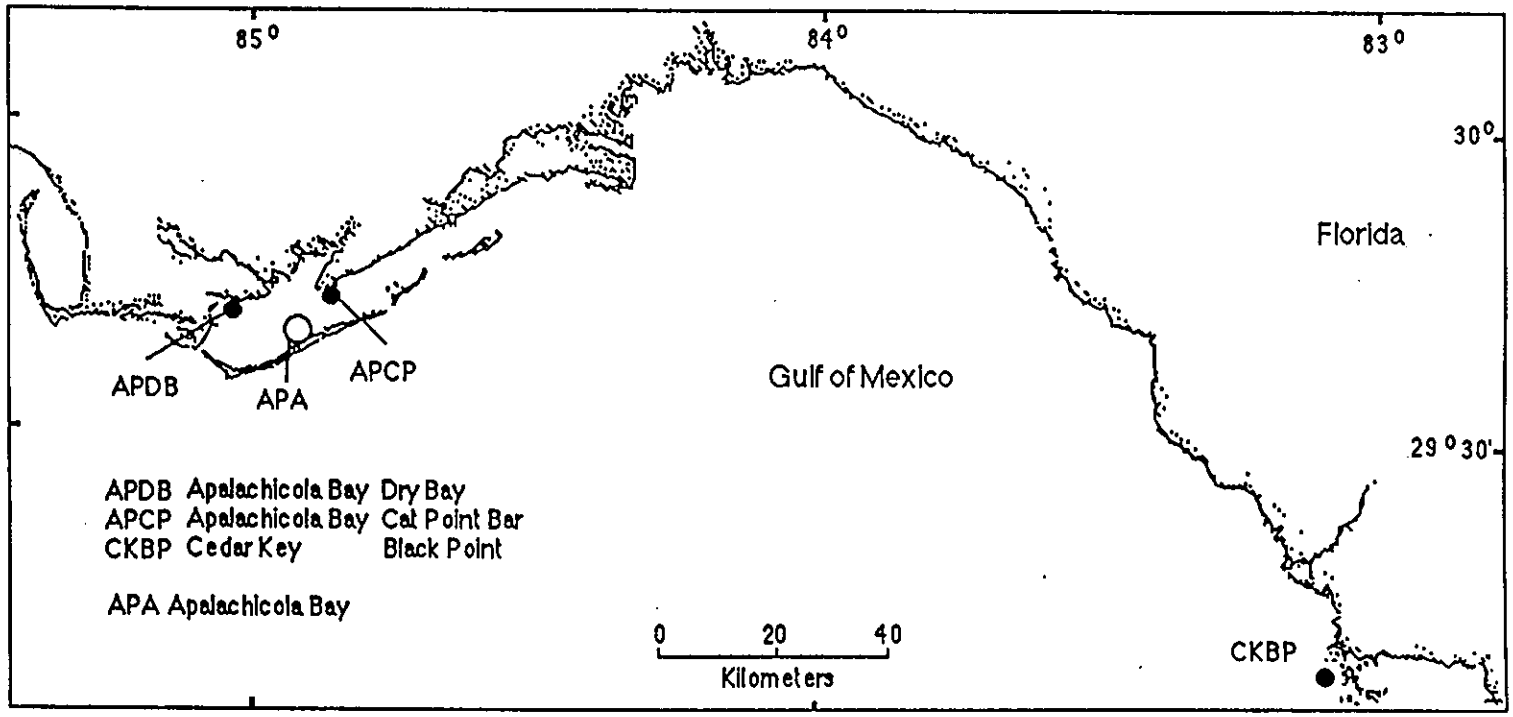
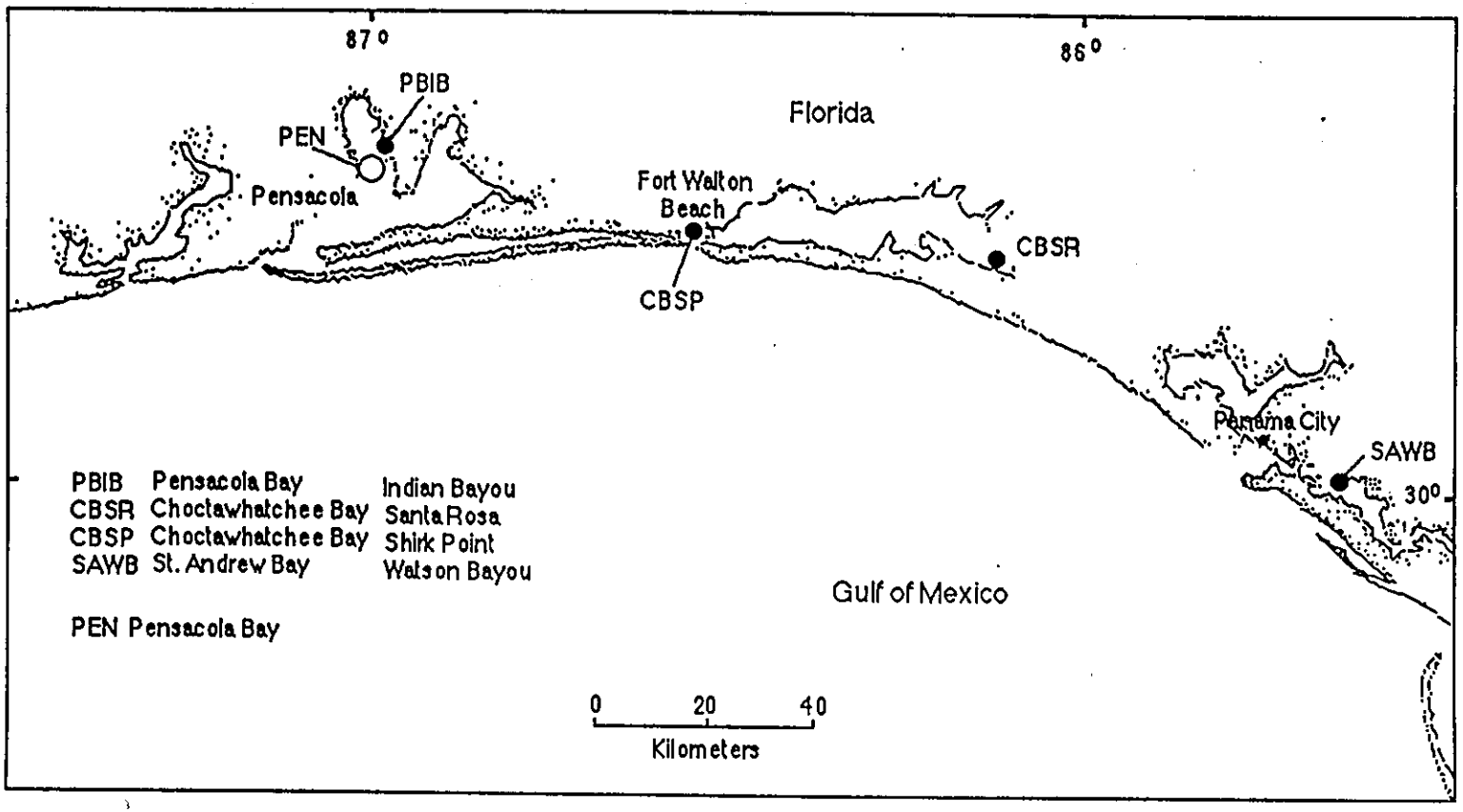
TBHB Tampa Bay Hillsborough Bay
TBCB Tampa Bay Cockroach Bay
TBMK Tampa Bay Mullet Key Bayou
TAM Tampa Bay
St. Joseph Sound
Florida
28°
Tampa
Old Tampa Bay
Hills-
borough
Bay
TBPB
TBHB
St. Petersburg
TAM
Tampa
Bay
Gulf
of
Mexico
TBCB
TBMK
Anna Maria
Island
0 5 10
Kilometers

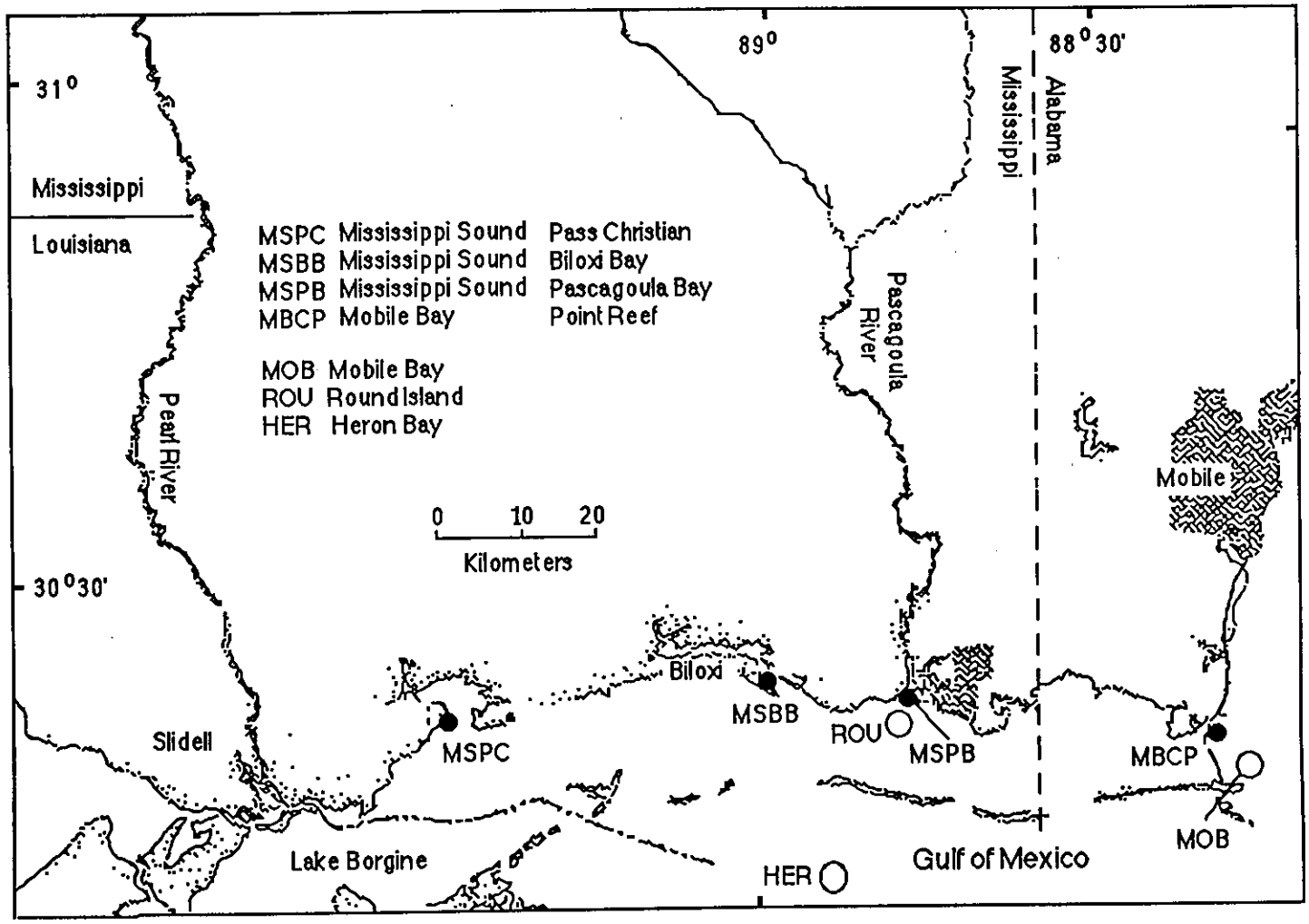
Tampa Bay



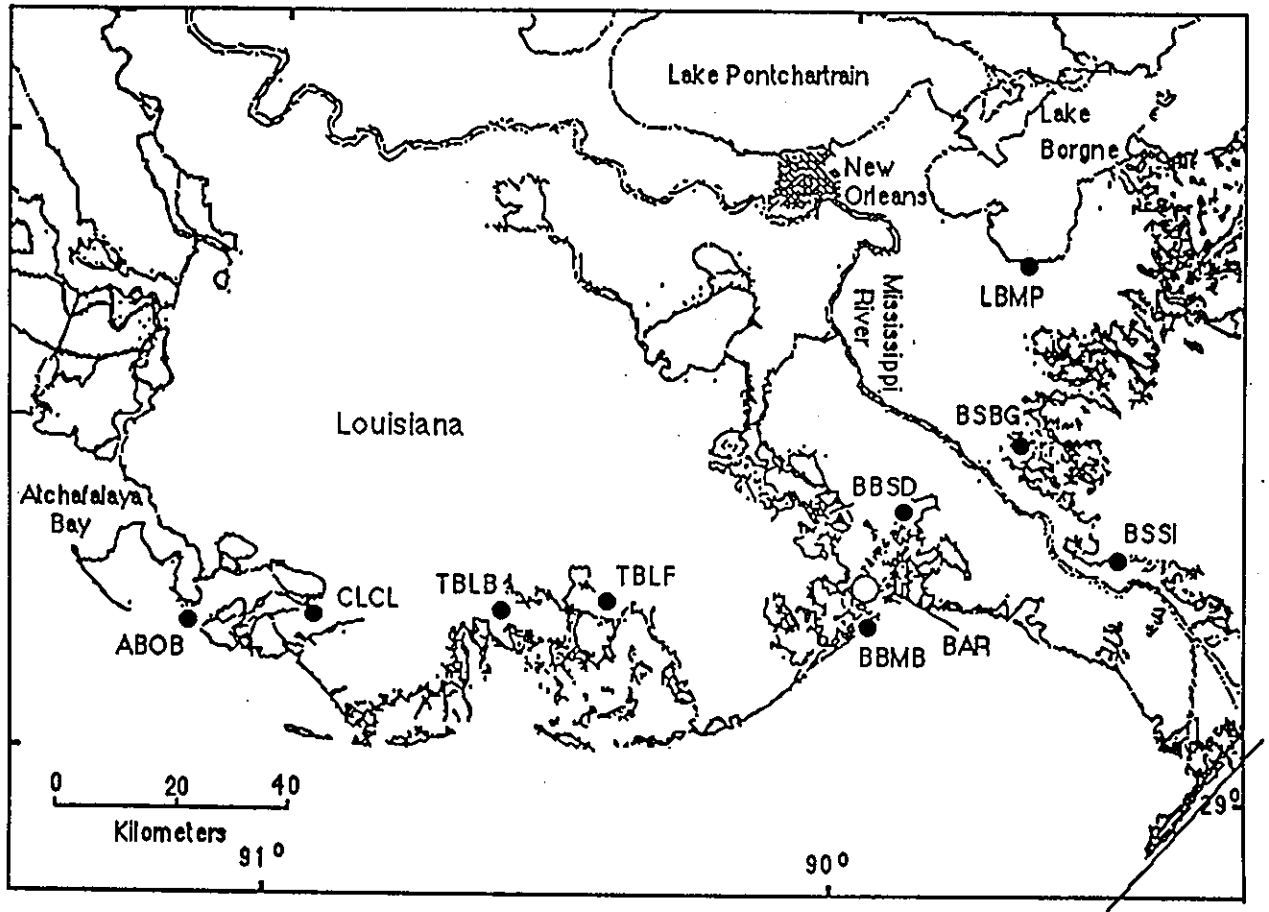
Middle Florida



Western Florida



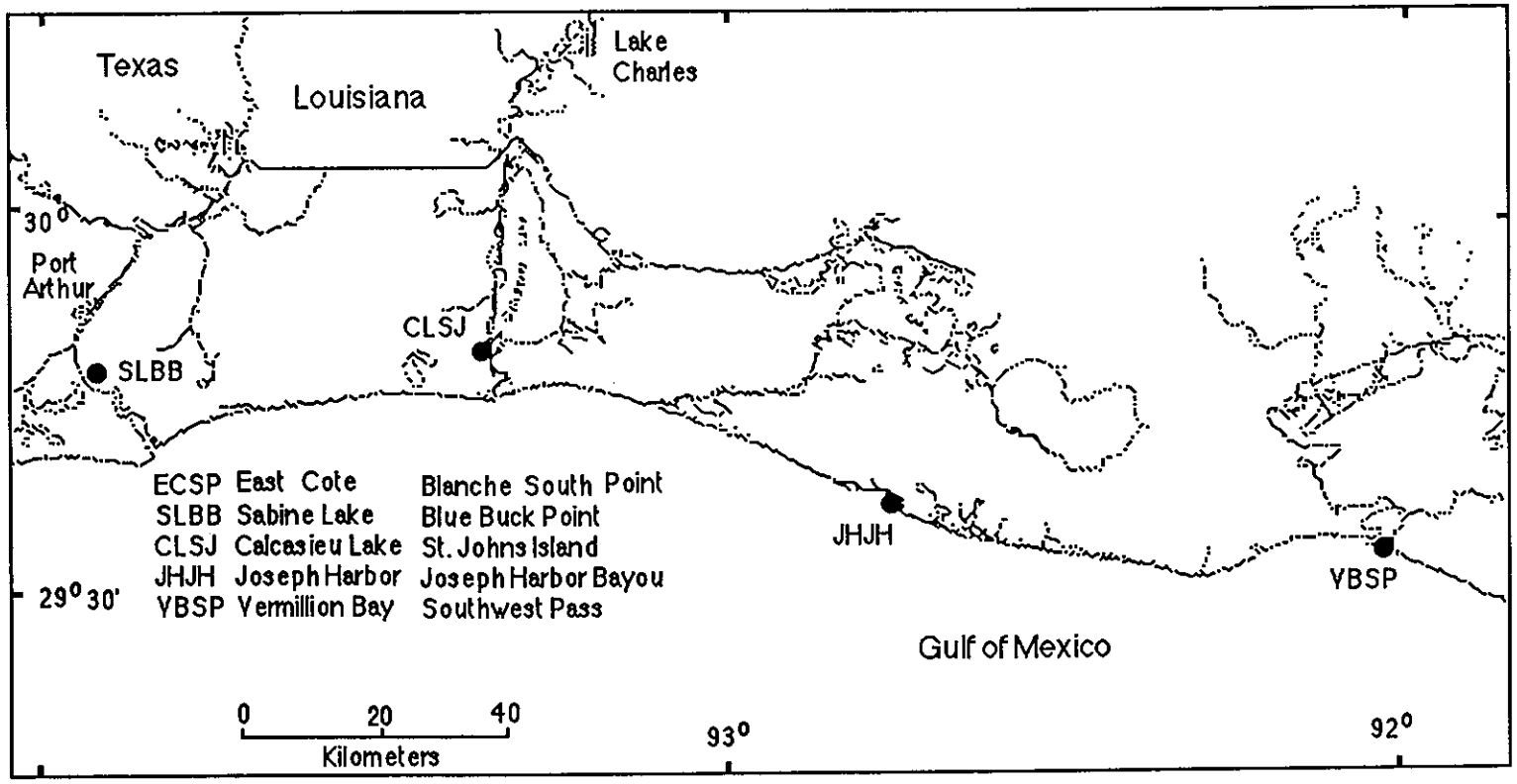
Mississippi - Alabama



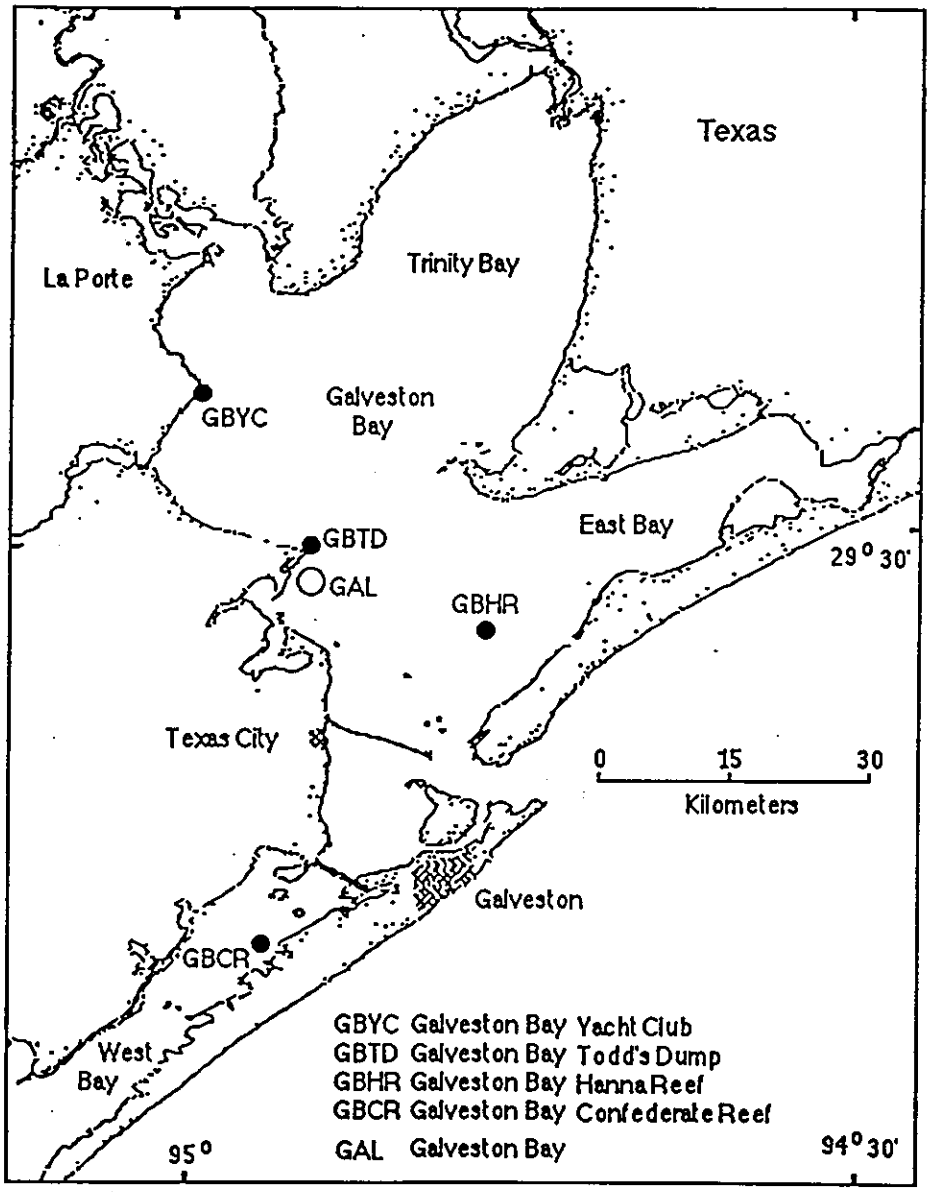
MRD Mississippi River Delta

ABOB	Atchafalaya Bay	Oyster Bayou
CLCL	Caillou Lake	Caillou Lake
TBLB	Terrebonne Bay	Lake Barre
TBLF	Terrebonne Bay	Lake Felicity
BBSD	Barataria Bay	Bayou St. Denis
BBMB	Barataria Bay	Middle Bank
BSBG	Breton Sound	Bay Gardeme
BSSI	Breton Sound	Sable Island
LBMP	Lake Borgne	Malheureux Point
BAR	Barataria Bay	

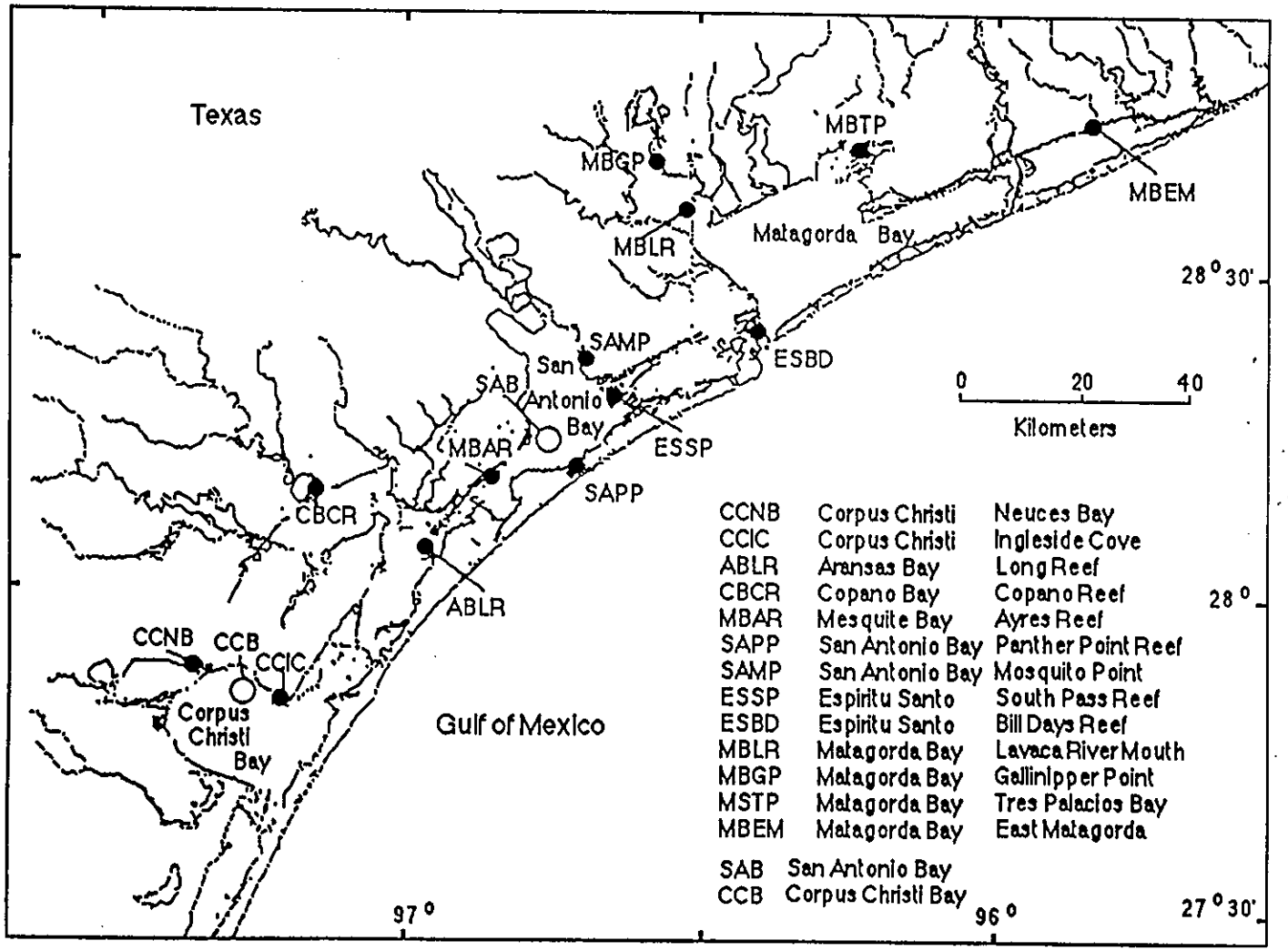
Eastern Louisiana and Mississippi Delta



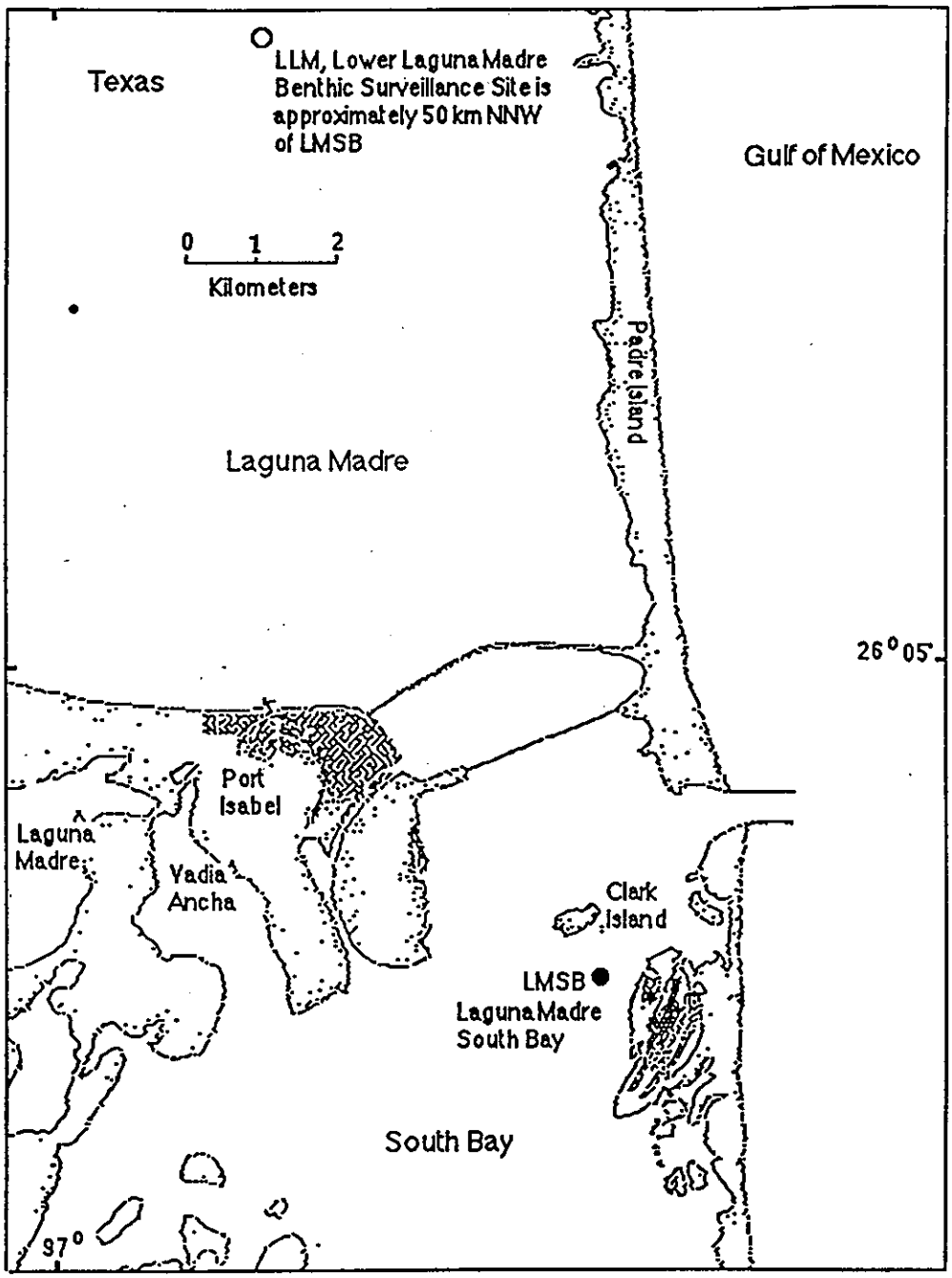
Western Louisiana



Galveston Bay


Texas
MBTP
MBGP
MBEM
MBLR
Matagorda Bay
28° 30'
SAMP
San
Antonio
Bay
SAB
ESBD
0 20 40
Kilometers
MBAR
ESSP
SAPP
CBCR
ABLR
CCNB
CCB
CCIC
Corpus
Christi
Bay
Gulf of Mexico
28°
97°
96°
27° 30'
CCNB Corpus Christi Neuces Bay
CCIC Corpus Christi Ingleside Cove
ABLR Aransas Bay Long Reef
CBCR Copano Bay Copano Reef
MBAR Mesquite Bay Ayres Reef
SAPP San Antonio Bay Panther Point Reef
SAMP San Antonio Bay Mosquito Point
ESSP Espiritu Santo South Pass Reef
ESBD Espiritu Santo Bill Days Reef
MBLR Matagorda Bay Lavaca River Mouth
MBGP Matagorda Bay Gallinipper Point
MSTP Matagorda Bay Tres Palacios Bay
MBEM Matagorda Bay East Matagorda
SAB San Antonio Bay
CCB Corpus Christi Bay

South Texas



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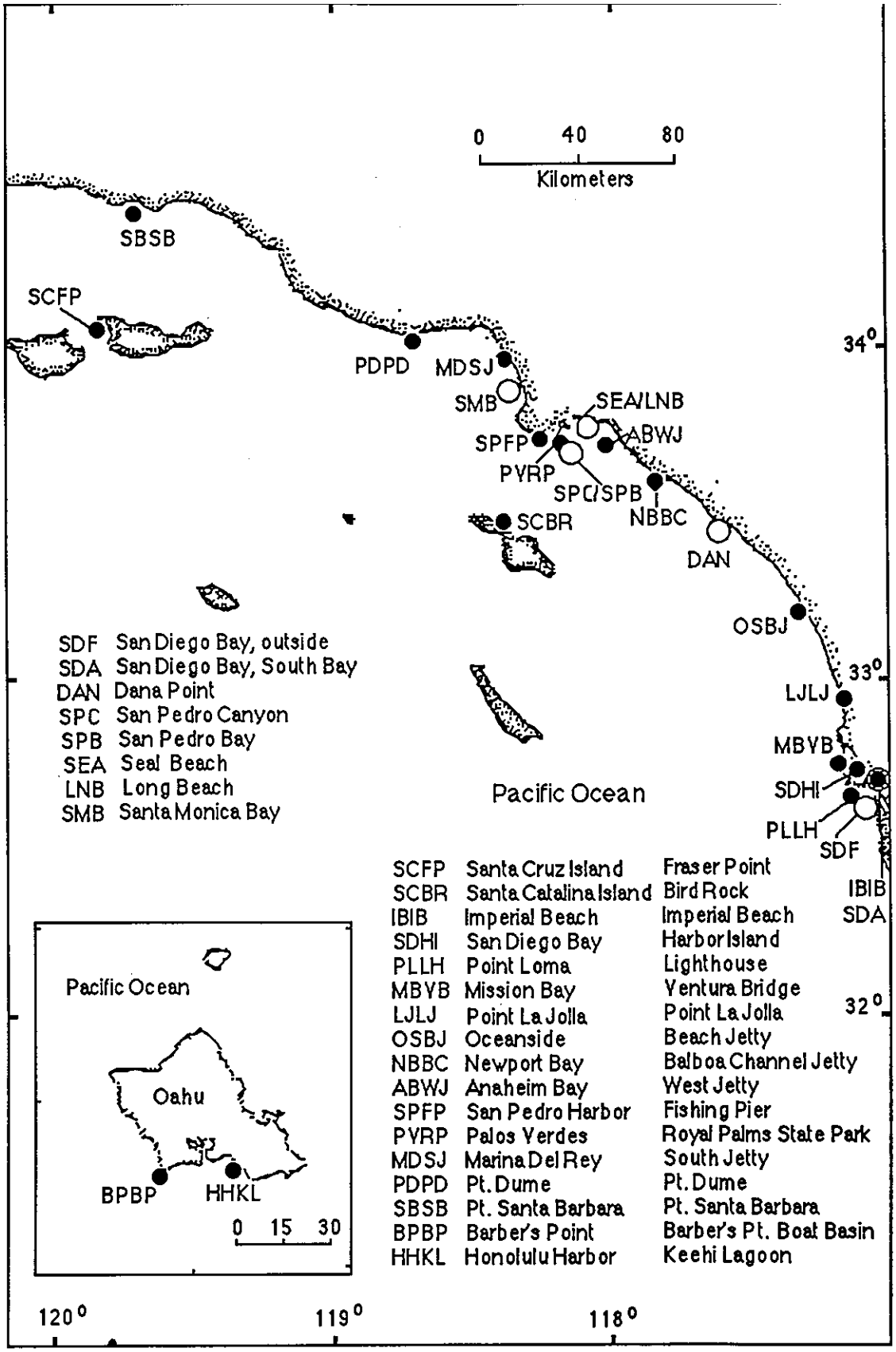
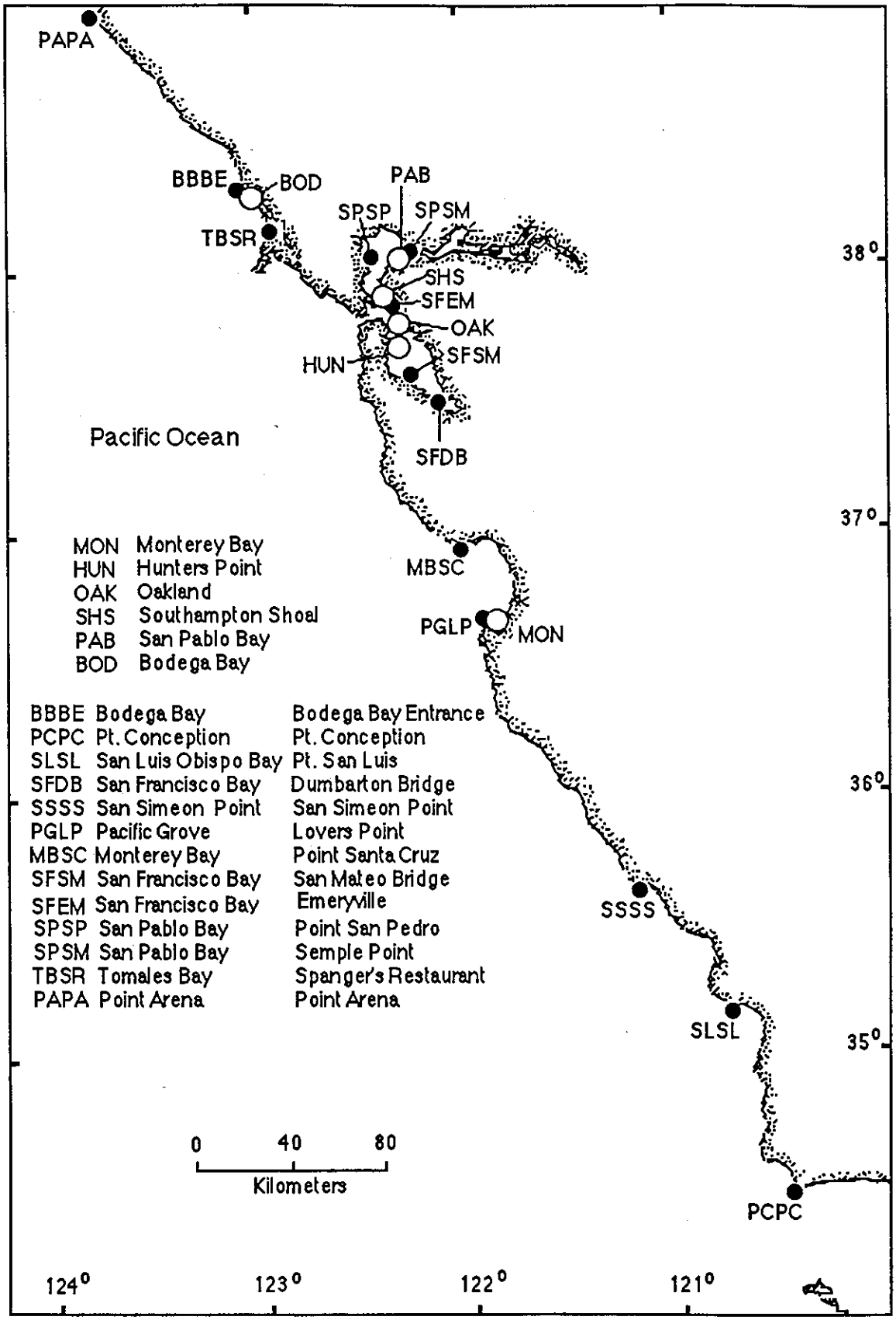
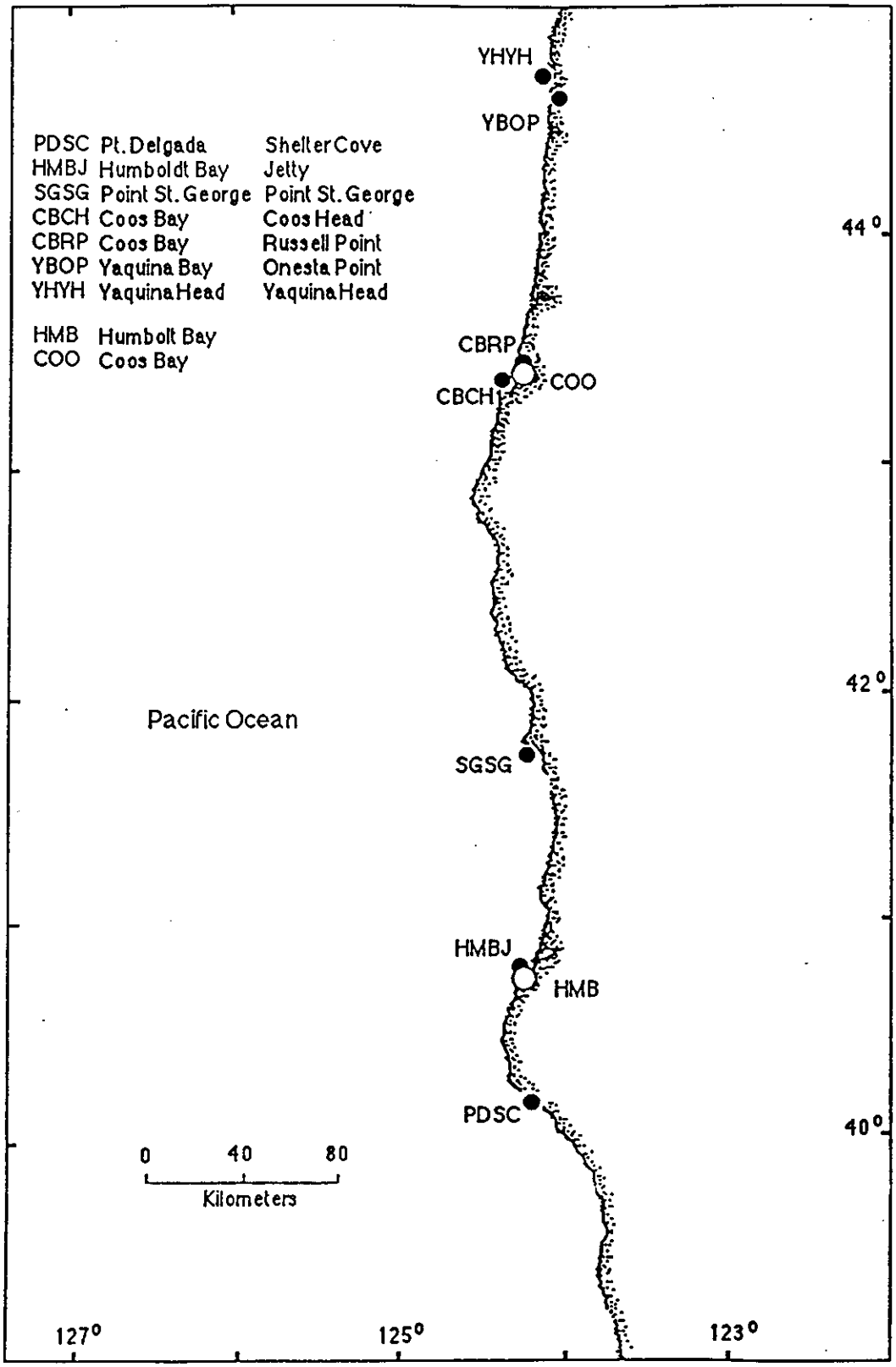


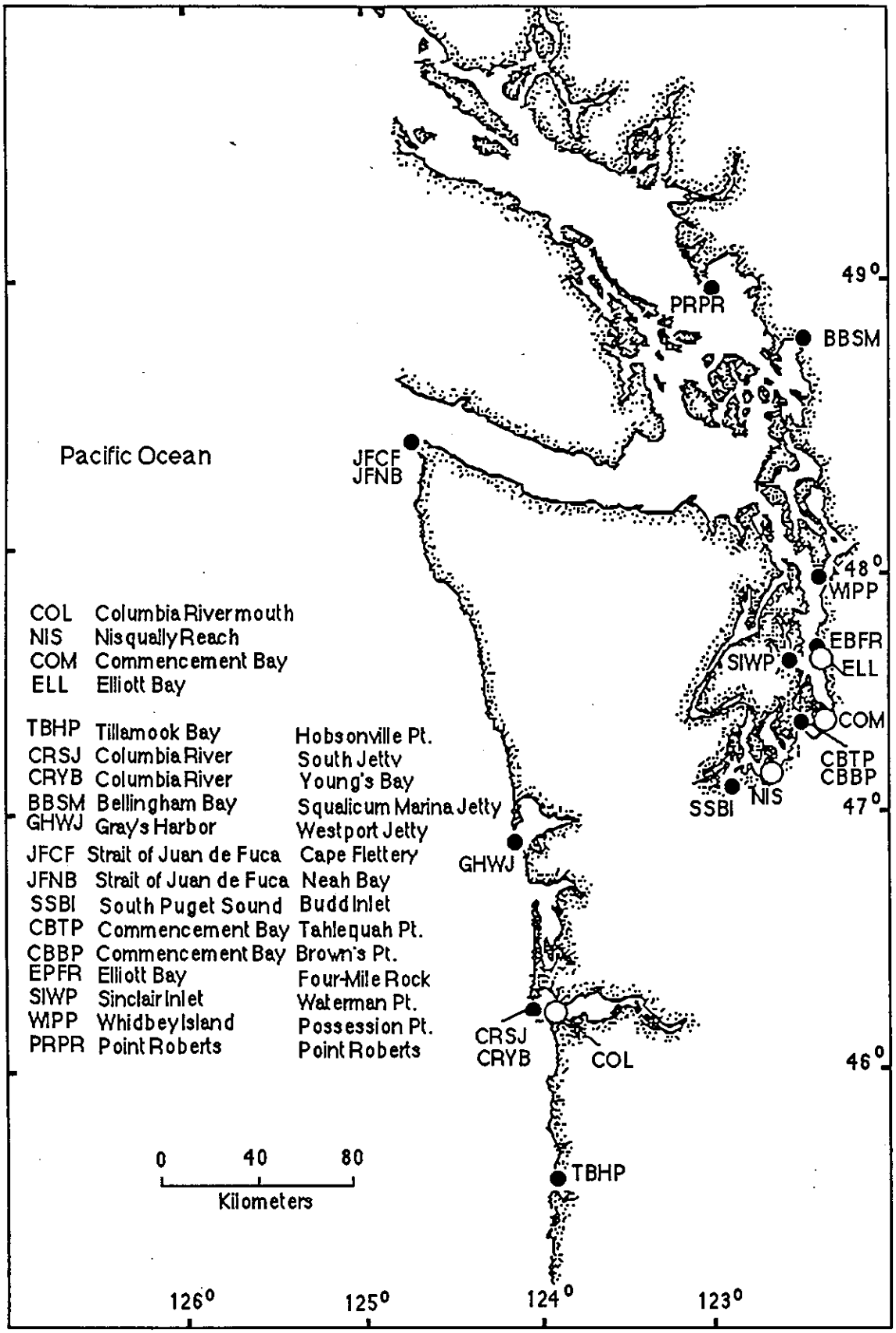
Southern California and Hawaii



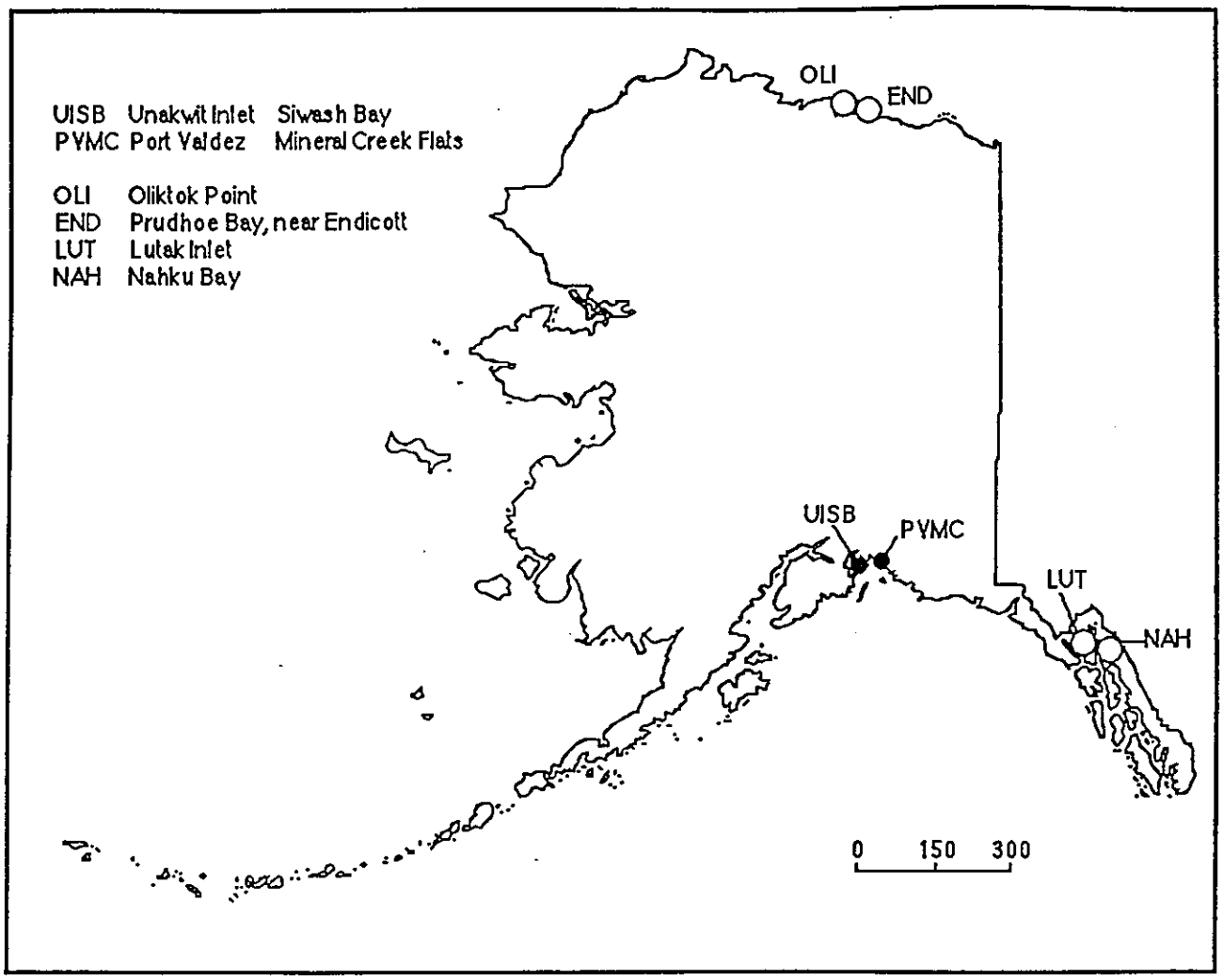
Point Conception to Point Arena



Point Delgada to Yaquina Head



Northwest Pacific Coast


UISB Unakwit Inlet Siwash Bay
PVMC Port Valdez Mineral Creek Flats
OLI Oliktok Point
END Prudhoe Bay, near Endicott
LUT Lutak Inlet
NAH Nahku Bay
OLI
END
UISB
PVMC
LUT
NAH
0 150 300

Alaska

APPENDIX B.

Summary Statistics for Contaminant Concentrations in Fine-Grained Sediments

APPENDIX B.

National Status and Trends Program

Summary Statistics for Contaminant Concentrations in Fine-Grained Sediments Collected in 1984 through 1987

All the concentrations in this appendix are normalized values. Raw concentrations from composite samples at a station (three stations per site per year) have been divided by the fraction of the total sediment in composites from that station which was fine-grained (<64 μ). Whenever that fraction was <0.2 the data were not used, but data from those sandy sediments are reported in Appendix C.

The first page in this appendix lists the values that have been considered to be outliers and have not been incorporated into the summary statistics.

Explanation of tables:

The column labeled "CODE" indicates site location more specifically than does the column labeled "SITE" and is keyed to the maps in Appendix A showing site location.

The next nine columns are three values for each of three analytes: the mean concentration, the coefficient of variation (c.v.%, standard deviation divided by mean), and the number (n) of composites whose normalized concentrations are part of the mean.

A mean is listed as "nd" when the contaminant was not detected in any of the samples for the site. When at least one analysis yielded a quantifiable signal the "nd's" have been treated as zeros when calculating the summary statistics. When no analyses was made for a contaminant, its mean is listed as a triple dash (---). A single dash (-) appears for a c.v% whenever n ≤1 and for n whenever n=0.

DATA DELETIONS

This report emphasizes mean concentrations of contaminants and, occasionally one value for a contaminant concentration at a site is very much higher than all the other values. Whenever a mean is dominated by one value that is more than ten times greater than the next highest (of at least three) values that high value has been deliberately ignored. This table lists those deliberately ignored values and shows the difference their exclusion has made in the summary statistics for that site.

		Outlying	Unmodified summary			Summary as used		
Site	Contaminant	Conc.	mean	cv	(n)	mean	cv	(n)
PAB	Hg	7.1	1.2*	239%	(6)	0.03	142%	(5)
SAP	Sn	78	15*	195%	(6)	3.3	19%	(5)
APDB	tDDT	71	14	202%	(6)	2.5	105%	(5)
BOS	tDDT	1300	210*	222%	(7)	34	30%	(6)
CBSR	tDDT	1100	200*	231%	(6)	11	98%	(5)
MBEM	tDDT	11	2.5	202%	(5)	0.24	130%	(4)
MBLR	tDDT	51	9.0	225%	(6)	0.74	70%	(5)
MBTP	tDDT	100	20	198%	(6)	3.9	48%	(5)
PBIB	tDDT	240	46	211%	(6)	6.4	37%	(5)
APDB	tChlP	27	5.0	218%	(6)	0.56	100%	(5)
MBLR	tChlP	6.2	1.2	198%	(6)	0.24	43%	(5)
SAPP	tChlP	6.7	1.7	188%	(4)	0.11	173%	(3)
BOS	tPCB	107000	16000*	246%	(7)	1100*	41%	(6)
MBLR	tPCB	210	39	213%	(6)	5.2	42%	(5)
LUT	tPCB	21	7.6	157%	(3)	0.73	59%	(2)
DAN	tPAH	330	58	233%	(6)	2.9	223%	(5)

* Mean concentrations that would have been or are amoung the upper 10% of the means on a national scale

Percentages of fine-grained material ,%-dry wt , (**fine**) and normalized concentrations of total organic carbon ,%-dry wt., (**TOC**) and total polyaromatic hydrocarbons, ng/g dry wt., (**tPAH**) in fine-grained sediments from NS&T Sites from **Maine** through **Virginia.**

SITE	CODE	fine	c.v.%	n	TOC	c.v.%	n	tPAH	c.v.%	n
Machias Bay ME	MAC	68	23	4	1.09	13	4	478	35	3
Frenchmans Bay ME	FRN	93	9	3	2.35	17	3	362	34	3
Penobscot Bay ME	PNB	97	3	3	2.67	26	3	797	63	3
Penobscot Bay ME	PBSI	90	9	6	2.68	21	6	3384	26	6
Penobscot Bay ME	PBPI	54	26	5	3.31	21	5	6690	75	3
Casco Bay ME	CSC	73	27	6	3.2	15	6	3190	129	4
Salem Hrb. MA	SAL	69	25	6	7.12	23	6	15607	36	6
Cape Ann MA	CASI	27	23	3	2.35	5	3	6178	6	3
Boston Hrb. MA	BHDI	78	11	5	3.06	32	5	6546	20	5
Boston Hrb. MA	BHDB	85	19	5	3.04	23	5	8901	44	5
Boston Hrb. MA	BHHB	27	23	3	2.91	43	3	4142	11	3
Boston Hrb. MA	BOS	63	15	7	6.98	36	7	57778	75	7
Buzzards Bay MA	BBRH	65	29	6	1.59	15	6	3500	44	6
Buzzards Bay MA	BBAR	29	20	5	2.88	24	5	13158	60	5
Buzzards Bay MA	BBGN	37	61	5	1.83	11	5	1471	35	5
Buzzards Bay MA	BUZ	73	16	8	3.08	30	8	1521	99	8
Narr. Bay RI	NBMH	91	12	3	1.92	8	3	2748	14	3
Narr. Bay RI	NBCI	60	12	6	2.81	16	6	1821	19	6
Narr. Bay RI	NBDI	38	29	5	2.83	27	5	7547	71	5
Narr. Bay RI	NAR	69	21	7	3.69	35	7	3439	38	7
Block Is. RI	BIBI	71	18	3	3.01	5	3	2537	32	3
Long Is. Snd. CT	LICR	50	29	5	1.67	25	5	5311	34	5
Long Is. Snd. CT	LISI	63	23	5	2.55	35	5	13552	127	5
W.Long Is. Snd. NY	WLI	80	10	5	3.8	15	5	6070	75	5
Long Is. Snd. NY	LIHU	46	22	6	3.55	12	6	2637	26	6
Long Is. Snd. NY	LIMR	74	25	6	2.87	17	6	5566	30	6
Long Is. Snd. NY	LIHH	90	5	6	3.53	13	6	5366	35	6
Long Is. Snd. NY	LITN	74	41	6	4.09	56	6	13749	24	6
Hud./Rar. Est NY	HRJB	64	7	2	3.43	19	2	7065	14	2
Hud./Rar. Est. NY	HRUB	77	14	3	2.82	36	3	33627	82	3
Hud./Rar. Est. NY	HRLB	66	21	5	3.45	48	5	15386	35	5
Hud./Rar. Est. NJ	HRRB	70	5	3	2.13	5	3	8772	13	3
Raritan Bay NJ	RAR	77	16	8	4.51	25	8	7239	24	8
N.Y. Bight NJ	NYSH	65	33	6	3.56	31	6	8868	21	6
Moriches Bay NY	MBTH	57	43	5	3.13	14	5	2152	39	5
Great Bay NJ	GRB	71	19	3	4.48	29	3	1517	6	3
Delaware Bay DE	DEL	46	44	3	2.28	10	3	1942	49	3
Delaware Bay DE	DBFE	41	41	5	4.11	50	5	558	50	3
Delaware Bay DE	DBBD	56	41	5	2.21	38	5	591	27	3
Delaware Bay DE	DBAP	75	33	6	2.82	72	6	838	63	6
Delaware Bay DE	DBKI	58	25	6	1.72	27	6	969	29	6
Up. Ches. Bay MD	UCB	73	55	3	4.39	18	3	3896	31	3
Ches. Bay MD	CBMP	98	2	6	2.96	24	6	6461	10	6
Ches. Bay MD	CBHP	98	1	6	2.57	19	6	4280	29	6
Mid. Ches. Bay VA	MCB	48	63	2	2.91	49	2	794	-	1
Ches. Bay VA	CBIB	77	27	5	2.58	13	5	827	47	5
Ches. Bay VA	CBCC	70	40	2	1.84	5	2	79	141	2
Ches. Bay VA	CBDP	46	25	4	1.62	19	4	752	31	4
Low. Ches.Bay VA	LCB	50	39	6	1.59	13	6	663	63	5
Quinby Inlet VA	QIUB	38	27	6	1.59	42	6	623	96	6

Percentages of fine-grained material ,%-dry wt , (**fine**) and normalized concentrations of total organic carbon ,%-dry wt., (**TOC**) and total polyaromatic hydrocarbons, ng/g dry wt., (**tPAH**) in fine-grained sediments from NS&T Sites from **North Carolina** through **Louisiana.**

SITE	CODE	fine	c.v.%	n	TOC	c.v.%	n	tPAH	c.v.%	n
Pamlico Snd. NC	PAM	78	32	5	5.74	32	5	438	73	5
Cape Fear NC	CFBI	56	47	5	3.1	27	5	736	98	5
Charleston Hrb. SC	CHFJ	81	37	4	2.16	43	4	415	7	3
Charleston Hrb. SC	CHSF	51	48	5	2.17	46	5	725	78	5
Charleston Hrb. SC	CHS	81	9	6	3.38	8	6	1961	60	6
Savannah R. Est. GA	SRTI	52	83	2	1.92	2	2	437	3	2
Sapelo Is. GA	SAP	52	41	6	3.04	15	6	304	128	6
St. Johns R. FL	SJCB	76	32	5	3.94	40	5	986	19	5
St. Johns R. FL	SJR	47	40	4	6.02	24	4	4511	65	4
Biscayne Bay FL	BBPC	85	11	6	5.18	36	6	318	61	6
Everglades FL	EVFU	82	21	4	6.64	12	3	113	63	4
Rookery Bay FL	RBHC	72	21	6	6.46	41	6	121	72	6
Naples Bay FL	NBNB	60	26	4	2.51	61	4	340	88	4
Charlotte Hrb. FL	CBBI	44	54	2	5.94	85	2	906	64	2
Charlotte Hrb. FL	LOT	26	23	3	6.83	59	3	197	74	3
Tampa Bay FL	TAM	49	-	1	4.26	-	1	220	-	1
Tampa Bay FL	TBMK	25	15	2	53.99	1	2	1403	5	2
Tampa Bay FL	TBHB	54	-	1	5.95	-	1	4322	-	1
Tampa Bay FL	TBPB	53	2	2	23.04	87	2	3538	19	2
Cedar Key FL	CKBP	46	49	5	5.92	30	5	117	68	5
Apalachicola Bay FL	APCP	59	13	3	1.85	47	3	386	59	3
Apalachicola Bay FL	APDB	50	39	6	2.46	16	6	1137	135	6
Apalachicola Bay FL	APA	76	36	6	2.73	13	6	173	84	6
St. Andrew Bay FL	SAWB	46	47	6	7.17	25	6	16737	93	6
Choctawhat. Bay FL	CBSP	52	31	4	32.48	66	4	14579	41	4
Choctawhat. Bay FL	CBSR	66	33	6	4.51	36	6	462	46	6
Pensacola Bay FL	PEN	81	9	3	4.58	9	3	1517	24	3
Pensacola Bay FL	PBIB	34	44	6	8.99	114	6	1042	68	6
Mobile Bay AL	MBCP	74	23	4	2.33	33	4	495	36	4
Mobile Bay AL	MOB	93	5	6	2.01	10	6	146	60	6
Round Is. MS	ROU	57	51	6	1.89	22	6	140	81	6
Heron Bay MS	HER	58	6	3	2.31	28	3	253	26	3
Miss. Snd. MS	MSPB	60	45	6	1.74	32	6	566	59	6
Miss. Snd. MS	MSBB	74	35	2	2.58	4	2	7868	63	2
Miss. Snd. MS	MSPC	76	13	3	1.77	19	3	259	10	3
Miss. Delta LA	MRD	77	28	6	1.68	42	6	918	34	6
Lake Borgne LA	LBMP	77	17	6	2.47	47	6	330	47	6
Breton Snd. LA	BSSI	88	10	6	2.95	52	6	260	72	6
Breton Snd. LA	BSBG	28	39	3	1.98	39	3	23	87	3
Barataria Bay LA	BBSD	84	4	6	4.04	82	3	574	34	6
Barataria Bay LA	BBMB	42	45	6	5.39	87	6	2926	81	6
Barataria Bay LA	BAR	53	35	5	3	28	5	358	116	5
Terrebonne Bay LA	TBLF	77	12	6	11.16	67	6	410	44	6
Terrebonne Bay LA	TBLB	86	4	3	7.03	35	3	488	87	3
Caillou Lake LA	CLCL	67	26	6	3.61	51	6	484	19	6
Atchafalaya Bay LA	ABOB	83	20	6	1.98	28	6	432	49	6
Vermillion Bay LA	VBSP	82	12	3	1.64	23	3	213	64	3
J. Hrb. Bayou LA	JHJH	70	24	5	2.4	33	5	802	56	5
Calcasieu Lake LA	CLSJ	84	8	6	1.62	10	3	344	13	3
Sabine Lake LA	SLBB	57	34	6	.81	52	6	85	85	6
E. Cote Blanche LA	ECSP	55	20	3	2.83	17	3	318	6	3

Percentages of fine-grained material ,%-dry wt , (**fine**) and normalized concentrations of total organic carbon ,%-dry wt., (**TOC**) and total polyaromatic hydrocarbons, ng/g dry wt., (**tPAH**) in fine-grained sediments from NS&T Sites from **Texas** through **California.**

SITE	CODE	fine	c.v.%	n	TOC	c.v.%	n	tPAH	c.v.%	n
Galveston Bay TX	GBHR	80	16	6	1.09	7	6	253	82	6
Galveston Bay TX	GBYC	62	32	6	.57	33	6	1595	189	6
Galveston Bay TX	GBTD	61	31	6	.88	17	3	269	43	6
Galveston Bay TX	GBCR	53	22	6	1.12	104	6	521	68	6
Galveston Bay TX	GAL	56	39	5	.96	39	5	113	76	5
Matagorda Bay TX	MBEM	52	37	5	1.12	25	5	125	83	5
Matagorda Bay TX	MBTP	60	37	6	.68	10	3	97	174	6
Matagorda Bay TX	MBGP	74	25	6	.96	25	6	476	22	6
Matagorda Bay TX	MBLR	63	44	6	.92	20	6	410	57	6
Espiritu Santo TX	ESSP	87	7	6	.97	27	6	130	49	6
Espiritu Santo TX	ESBD	24	-	1	.7	-	1	nd	-	1
San Antonio Bay TX	SAMP	48	54	6	.86	32	3	96	59	6
San Antonio Bay TX	SAPP	46	18	5	1.06	49	3	78	85	5
San Antonio Bay TX	SAB	55	34	6	.75	15	6	52	115	6
Mesquite Bay TX	MBAR	91	5	6	.94	28	6	119	49	6
Copano Bay TX	CBCR	96	7	6	.97	11	6	88	61	6
Aransas Bay TX	ABLR	45	37	6	1.95	54	6	127	74	6
Corpus Christi TX	CCIC	47	36	4	.64	18	4	464	137	4
Corpus Christi TX	CCNB	56	35	6	.69	15	6	653	102	6
Corpus Christi Bay TX	CCB	74	42	5	.96	23	5	241	76	5
L. Laguna Madre TX	LMSB	56	23	6	.92	9	6	45	62	5
L. Laguna Madre TX	LLM	33	35	6	.83	22	6	111	110	6
San Diego Bay CA	SDF	34	55	2	.4	53	2	113	141	2
San Diego Bay CA	SDHI	29	15	6	1.4	29	6	2797	52	6
San Diego Hrb. CA	SDA	66	12	6	2.27	20	6	8626	74	6
Pt. Loma CA	PLLH	31	13	6	1.06	27	6	nd	-	6
La Jolla CA	LJLJ	57	14	6	.87	32	6	nd	-	3
Oceanside CA	OSBJ	79	5	6	1	47	6	2	154	6
Dana Pt. CA	DAN	33	47	6	.89	66	6	3	223	5
Newport Bch. CA	NBBC	51	8	5	1	32	5	188	75	5
Anaheim Bay CA	ABWJ	58	23	6	.49	62	6	133	61	6
Seal Beach CA	SEA	62	36	3	1.29	1	3	357	70	3
Long Beach CA	LNB	63	23	3	2.21	11	3	1226	31	3
San Pedro Bay CA	SPB	91	1	3	1.48	4	3	1188	71	3
San Pedro Cyn. CA	SPC	26	8	2	3.71	3	2	2490	1	2
San Pedro Hrb. CA	SPFP	92	1	3	2.89	5	3	1895	32	3
Palos Verdes CA	PVRP	59	18	6	2.33	48	6	1156	73	6
Marina Del Rey CA	MDSJ	40	18	6	1.34	26	6	335	65	6
Pt. Dume CA	PDPD	36	20	6	1.41	38	6	1168	208	6
Pt. S. Barbara CA	SBSB	40	9	6	1.82	67	6	492	78	6
Monterey Bay CA	MBSC	28	-	1	.95	-	1	—	-	-
Oakland Est. CA	OAK	91	1	3	1.44	2	3	1879	24	3
Hunters Pt. CA	HUN	74	33	6	1.73	22	6	5230	44	6
San Fran. Bay CA	SFDB	91	15	6	1.06	40	6	2456	22	6
San Fran. Bay CA	SFSM	91	2	6	.58	77	3	2533	12	6
San Fran. Bay CA	SFEM	93	1	6	.9	39	6	1977	50	6
San Pablo Bay CA	PAB	38	32	6	1.39	29	6	491	53	6
San Pablo Bay CA	SPSM	68	34	6	1.44	77	6	1269	29	6
San Pablo Bay CA	SPSP	90	5	6	1.03	34	6	1497	10	6
Tomales Bay CA	TBSR	97	3	6	1.42	45	6	429	13	6
Humboldt Bay CA	HMB	31	-	1	.57	-	1	—	-	-

Percentages of fine-grained material ,%-dry wt , (**fine**) and normalized concentrations of total organic carbon ,%-dry wt., (**TOC**) and total polyaromatic hydrocarbons, ng/g dry wt., (**tPAH**) in fine-grained sediments from NS&T Sites from **Oregon** through **Hawaii.**

SITE	CODE	fine	c.v.%	n	TOC	c.v.%	n	tPAH	c.v.%	n
Coos Bay OR	COO	46	73	3	5.15	47	3	1897	36	3
Coos Bay OR	CBCH	23	10	2	1.84	1	2	—	-	-
Coos Bay OR	CBRP	33	32	4	2.17	73	4	258	36	4
Yaquina Bay OR	YBOP	51	37	6	3	54	6	405	42	3
Yaquina Head OR	YHYH	34	17	6	2.76	57	6	31	147	6
Tillamook Bay OR	TBHP	30	20	5	3.01	57	5	269	37	3
Columbia R. OR	CRYB	31	25	4	1.43	32	4	173	74	4
Columbia R. OR	COL	27	18	3	1.25	87	3	367	80	3
S. Juan de Fuca WA	JFNB	49	28	6	2.91	20	6	1641	16	3
South Puget Snd. WA	SSBI	98	1	6	1.88	69	6	779	61	6
Comm. Bay WA	COM	81	5	6	1.76	4	6	1498	21	6
Comm. Bay WA	CBTP	87	9	6	1.19	61	6	1381	48	6
Elliott Bay WA	ELL	46	34	6	3.21	20	6	10954	35	6
Sinclair Inlet WA	SIWP	63	30	6	2.56	26	6	4647	31	3
Whidbey Is. WA	WIPP	95	8	6	1.9	8	6	972	15	3
Bellingham Bay WA	BBSM	98	1	6	1.3	52	6	1644	36	6
Pt. Roberts WA	PRPR	79	5	6	1.43	35	6	687	43	6
Lutak Inlet AK	LUT	89	14	3	.84	64	3	nd	-	3
Nahku Bay AK	NAH	78	24	3	2.02	124	3	165	131	3
Unakwit Inlet AK	UISB	82	8	6	.88	48	6	nd	-	3
Port Valdez AK	PVMC	100	-	6	.48	29	6	nd	-	3
Prudhoe Bay AK	END	34	40	3	2.11	19	3	1203	52	3
Barber's Pt. HI	BPBP	48	39	6	2.23	81	6	4773	74	6
Honolulu Hrb. HI	HHKL	47	39	6	1.41	66	6	5069	84	6

Normalized concentrations, ng/g dry-wt., of non-DDT chlorinated pesticides (**tChlP**), total DDT (**tDDT**), and total polychlorinated biphenyls (**tPCB**) in fine-grained sediments from NS&T Sites from **Maine** through **Virginia.**

SITE	CODE	tCHIP	c.v.%	n	tDDT	c.v.%	n	tPCB	c.v.%	n
Machias Bay ME	MAC	2.25	48	3	1.31	125	3	23.01	68	3
Frenchmans Bay ME	FRN	1.99	42	3	-	-	3	9.87	44	3
Penobscot Bay ME	PNB	2.12	21	3	1.22	90	3	34.5	13	3
Penobscot Bay ME	PBSI	4.22	55	6	4.76	86	6	21.72	43	6
Penobscot Bay ME	PBPI	3.96	28	3	7.19	110	3	36.3	47	3
Casco Bay ME	CSC	4.46	101	4	4.25	102	4	99.02	39	4
Salem Hrb. MA	SAL	28.5	57	6	48.19	67	6	590.6	47	6
Cape Ann MA	CASI	3.93	40	3	12.12	29	3	70.93	7	3
Boston Hrb. MA	BHDI	17.88	42	5	36.59	17	5	357.24	46	5
Boston Hrb. MA	BHDB	31.06	26	5	62.39	25	5	876.67	18	5
Boston Hrb. MA	BHHB	20.35	24	3	34.22	22	3	329.11	15	3
Boston Hrb. MA	BOS	47.87	63	7	34	30	6	1128.76	41	6
Buzzards Bay MA	BBRH	7.9	47	6	4.73	54	6	363.35	16	6
Buzzards Bay MA	BBAR	21.69	114	5	30.9	120	5	2069.63	26	5
Buzzards Bay MA	BBGN	6.31	64	5	3.09	23	5	145.92	45	5
Buzzards Bay MA	BUZ	2.78	154	8	4.07	100	8	277.01	95	8
Narr. Bay RI	NBMH	5.54	14	3	11.23	11	3	108.23	11	3
Narr. Bay RI	NBCI	3.46	75	6	9.07	113	6	62.65	48	6
Narr. Bay RI	NBDI	6.73	82	5	11.41	10	5	113.89	32	5
Narr. Bay RI	NAR	14.89	59	7	7.97	81	7	319.1	66	7
Block Is. RI	BIBI	2.61	110	3	3.08	97	3	34.37	40	3
Long Is. Snd. CT	LICR	10.42	84	5	28.61	21	5	204.45	88	5
Long Is. Snd. CT	LISI	7.41	16	5	13.64	67	5	122.86	37	5
W.Long Is. Snd. NY	WLI	7.27	47	5	7.41	58	5	227.99	38	5
Long Is. Snd. NY	LIHU	4.91	111	6	31.49	52	6	143.92	21	6
Long Is. Snd. NY	LIMR	15.61	26	6	33.27	87	6	170.44	34	6
Long Is. Snd. NY	LIHH	28.94	45	6	46.08	37	6	255.51	23	6
Long Is. Snd. NY	LITN	27.25	47	6	76.83	25	6	460.65	20	6
Hud./Rar. Est NY	HRJB	53.05	14	2	87.74	4	2	749.28	5	2
Hud./Rar. Est. NY	HRUB	10.94	108	3	12.58	50	3	204.35	103	3
Hud./Rar. Est. NY	HRLB	34.3	35	5	82.09	79	5	643.44	25	5
Hud./Rar. Est. NJ	HRRB	27.82	3	3	64.74	4	3	559.97	6	3
Raritan Bay NJ	RAR	21.51	62	8	52.06	28	8	755.17	33	8
N.Y. Bight NJ	NYSH	31.07	44	6	71.15	50	6	714.82	37	6
Moriches Bay NY	MBTH	11.74	44	5	47.19	87	5	160.96	40	5
Great Bay NJ	GRB	8.41	6	3	9.76	31	3	120.17	31	3
Delaware Bay DE	DEL	39.42	64	3	7.94	20	3	362.12	89	3
Delaware Bay DE	DBFE	10.63	23	3	42.24	54	3	82.13	13	3
Delaware Bay DE	DBBD	1.6	58	3	9.09	37	3	34.63	37	3
Delaware Bay DE	DBAP	5.09	80	6	21.1	95	6	69.4	87	6
Delaware Bay DE	DBKI	3.34	66	6	12.94	47	6	62.87	32	6
Up. Ches. Bay MD	UCB	4.96	25	3	6.82	25	3	124.49	11	3
Ches. Bay MD	CBMP	6.4	91	6	13.78	22	6	91.74	37	6
Ches. Bay MD	CBHP	9.63	87	6	14.11	85	6	113.4	73	6
Mid. Ches. Bay VA	MCB	.71	-	1	1.43	-	1	13.79	-	1
Ches. Bay VA	CBIB	2.68	149	5	2.64	93	5	6.29	19	5
Ches. Bay VA	CBCC	1.83	141	2	5.21	141	2	-	-	2
Ches. Bay VA	CBDP	3.49	80	4	7.11	48	4	19.79	73	4
Low. Ches.Bay VA	LCB	5.4	26	5	3.19	71	5	68.16	56	5
Quinby Inlet VA	QIUB	3.25	72	6	2.87	124	6	33.52	94	5

Normalized concentrations, ng/g dry-wt., of non-DDT chlorinated pesticides (**tChlP**), total DDT (**tDDT**), and total polychlorinated biphenyls (**tPCB**) in fine-grained sediments from NS&T Sites from **North Carolina** through **Louisiana.**

SITE	CODE	tCHIP	c.v.%	n	tDDT	c.v.%	n	tPCB	c.v.%	n
Pamlico Snd. NC	PAM	3.42	143	5	1.52	94	5	nd	-	3
Cape Fear NC	CFBI	nd	-	5	2.65	123	5	5.65	123	5
Charleston Hrb. SC	CHFJ	.5	173	3	.65	173	3	.5	173	3
Charleston Hrb. SC	CHSF	.25	224	5	.43	224	5	2.02	177	5
Charleston Hrb. SC	CHS	3.18	111	6	5.47	129	6	7.52	90	3
Savannah R. Est. GA	SRTI	8.38	24	2	8.85	21	2	23.85	70	2
Sapelo Is. GA	SAP	2.64	139	6	3.32	182	6	nd	-	3
St. Johns R. FL	SJCB	5.01	74	5	11.26	58	5	89.41	70	5
St. Johns R. FL	SJR	3.77	71	4	8.97	59	4	383.81	19	2
Biscayne Bay FL	BBPC	4.83	112	6	9.58	94	6	35.42	65	6
Everglades FL	EVFU	.84	96	3	.81	73	4	8.29	94	4
Rookery Bay FL	RBHC	2.1	74	6	1.62	63	6	13.6	83	6
Naples Bay FL	NBNB	4.81	110	4	4.45	53	4	28.32	99	4
Charlotte Hrb. FL	CBBI	2.18	48	2	2.2	30	2	5	26	2
Charlotte Hrb. FL	LOT	1.94	173	3	3.79	173	3	nd	-	2
Tampa Bay FL	TAM	6.04	-	1	3.49	-	1	—	-	-
Tampa Bay FL	TBMK	52.93	2	2	8.48	25	2	107.17	34	2
Tampa Bay FL	TBHB	10.36	-	1	35.66	-	1	227.3	-	1
Tampa Bay FL	TBPB	2.43	-	1	45.34	78	2	747.5	134	2
Cedar Key FL	CKBP	1.97	68	5	1.4	76	5	17.38	102	5
Apalachicola Bay FL	APCP	.42	89	3	2.35	40	3	14.44	125	3
Apalachicola Bay FL	APDB	.56	100	5	2.5	105	5	36.53	151	6
Apalachicola Bay FL	APA	nd	-	6	2.82	76	6	25.62	82	3
St. Andrew Bay FL	SAWB	18.93	111	6	108.17	79	6	2028.46	144	6
Choctawhat. Bay FL	CBSP	95.45	45	3	2225.47	97	4	291.7	63	4
Choctawhat. Bay FL	CBSR	2.72	121	6	11	98	5	66.35	193	6
Pensacola Bay FL	PEN	5.91	26	3	1.16	43	3	—	-	-
Pensacola Bay FL	PBIB	2.1	76	6	6.4	37	5	58.98	76	6
Mobile Bay AL	MBCP	1.45	21	4	15.32	42	4	12.76	46	4
Mobile Bay AL	MOB	.18	218	6	4.06	58	6	nd	-	3
Round Is. MS	ROU	3.51	101	6	1.15	99	6	nd	-	3
Heron Bay MS	HER	1.54	10	3	nd	-	3	—	-	-
Miss. Snd. MS	MSPB	1.7	74	6	2.41	45	6	14.98	33	6
Miss. Snd. MS	MSBB	3.17	-	1	8.47	45	2	52.57	24	2
Miss. Snd. MS	MSPC	.78	25	3	1.04	31	3	5.62	10	3
Miss. Delta LA	MRD	20.09	163	6	7.32	68	6	41.19	80	3
Lake Borgne LA	LBMP	.6	48	6	.73	50	6	9.99	66	6
Breton Snd. LA	BSSI	.48	50	6	.59	65	6	5.46	98	6
Breton Snd. LA	BSBG	.18	18	3	.51	39	3	60.48	133	3
Barataria Bay LA	BBSD	1.38	39	6	1.81	28	6	12.14	43	6
Barataria Bay LA	BBMB	2.01	40	6	2.38	65	6	42.35	97	6
Barataria Bay LA	BAR	1.03	153	5	nd	-	5	nd	-	3
Terrebonne Bay LA	TBLF	2.17	129	5	1.69	95	6	17.4	54	6
Terrebonne Bay LA	TBLB	1.52	55	3	1.72	41	3	27.3	20	3
Caillou Lake LA	CLCL	.78	79	6	1.24	45	6	10.33	79	6
Atchafalaya Bay LA	ABOB	1.86	47	6	4.98	50	6	14.02	41	6
Vermillion Bay LA	VBSP	.67	52	3	1.69	125	3	9.17	14	3
J. Hrb. Bayou LA	JHJH	1.67	28	5	2.52	48	5	16.88	56	5
Calcasieu Lake LA	CLSJ	1.52	68	5	1.15	39	6	7.5	30	6
Sabine Lake LA	SLBB	.32	111	6	.23	127	6	4.5	59	6
E. Cote Blanche LA	ECSP	1.91	13	3	5.81	30	3	29.16	36	3

Normalized concentrations, ng/g dry-wt., of non-DDT chlorinated pesticides (**tChlP**), total DDT (**tDDT**), and total polychlorinated biphenyls (**tPCB**) in fine-grained sediments from NS&T Sites from **Texas** through **California.**

SITE	CODE	tCHIP	c.v.%	n	tDDT	c.v.%	n	tPCB	c.v.%	n
Galveston Bay TX	GBHR	.71	122	6	.44	72	6	5.58	63	6
Galveston Bay TX	GBYC	4.18	71	6	3.95	80	6	53.32	165	6
Galveston Bay TX	GBTD	2.23	30	6	1.59	53	6	7.36	35	6
Galveston Bay TX	GBCR	1.46	96	6	.42	100	6	5.11	46	6
Galveston Bay TX	GAL	.56	184	5	nd	-	5	nd	-	2
Matagorda Bay TX	MBEM	1.75	131	4	.24	130	4	6.55	98	5
Matagorda Bay TX	MBTP	.4	40	5	3.9	48	5	5.33	66	6
Matagorda Bay TX	MBGP	.65	91	5	2.55	49	6	5.96	70	6
Matagorda Bay TX	MBLR	.24	43	5	.74	70	5	5.2	42	5
Espiritu Santo TX	ESSP	1.42	142	6	.31	73	6	3.64	20	6
Espiritu Santo TX	ESBD	.61	-	1	.2	-	1	5.76	-	1
San Antonio Bay TX	SAMP	1.89	173	6	.47	54	6	3.89	79	6
San Antonio Bay TX	SAPP	.11	173	3	.09	146	5	6.21	160	5
San Antonio Bay TX	SAB	1.64	114	6	.15	209	6	nd	-	3
Mesquite Bay TX	MBAR	.63	108	6	.38	108	6	3.11	62	5
Copano Bay TX	CBCR	1.44	77	3	.94	48	3	6.83	105	3
Aransas Bay TX	ABLR	.64	150	6	.23	82	6	4.6	72	6
Corpus Christi TX	CCIC	1.03	54	4	.04	200	4	8.2	99	4
Corpus Christi TX	CCNB	.82	116	6	.88	67	6	17.68	69	6
Corpus Christi Bay TX	CCB	1.11	115	5	.42	132	5	nd	-	2
L. Laguna Madre TX	LMSB	1.13	185	6	.35	125	6	3.12	48	6
L. Laguna Madre TX	LLM	2.23	113	6	nd	-	6	nd	-	3
San Diego Bay CA	SDF	nd	-	2	4.6	53	2	18.34	81	2
San Diego Bay CA	SDHI	13.01	83	6	9.28	65	3	332.02	83	6
San Diego Hrb. CA	SDA	10.14	39	6	14.18	64	6	788.55	38	6
Pt. Loma CA	PLLH	3.7	82	6	45.38	51	3	73.21	69	6
La Jolla CA	LJLJ	1.57	38	3	15.65	62	3	26.25	33	3
Oceanside CA	OSBJ	2.5	83	6	51.77	60	5	22.14	80	6
Dana Pt. CA	DAN	nd	-	6	1.77	59	6	20.27	67	6
Newport Bch. CA	NBBC	1.24	22	4	49.66	45	5	53.95	33	5
Anaheim Bay CA	ABWJ	3.44	43	5	43.17	25	5	48.55	41	6
Seal Beach CA	SEA	1.83	97	3	38	73	3	72.11	25	3
Long Beach CA	LNB	19.76	33	3	185.37	47	3	327.63	17	3
San Pedro Bay CA	SPB	nd	-	3	534	33	3	213	22	3
San Pedro Cyn. CA	SPC	nd	-	2	2926.8	31	2	723.22	27	2
San Pedro Hrb. CA	SPFP	2.58	51	2	311.62	11	3	186.05	25	3
Palos Verdes CA	PVRP	23.45	85	6	6891.2	66	5	983.11	49	6
Marina Del Rey CA	MDSJ	7.18	94	6	194.24	73	6	114.54	44	6
Pt. Dume CA	PDPD	11.94	22	4	266.8	43	6	104.21	31	6
Pt. S. Barbara CA	SBSB	5.56	99	5	81.05	35	6	42.98	74	6
Monterey Bay CA	MBSC	—	-	-	—	-	-	—	-	-
Oakland Est. CA	OAK	.62	28	3	5.86	41	3	67.89	20	3
Hunters Pt. CA	HUN	.74	110	6	5.28	31	6	65.59	18	6
San Fran. Bay CA	SFDB	7.12	44	6	11.18	45	3	77	48	6
San Fran. Bay CA	SFSM	1.64	74	6	9.08	37	6	82.84	31	6
San Fran. Bay CA	SFEM	2.5	46	3	32.94	41	4	80.66	52	6
San Pablo Bay CA	PAB	0.58	159	6	3.04	42	6	33.3	31	6
San Pablo Bay CA	SPSM	3.07	19	3	44.86	61	6	61.72	138	6
San Pablo Bay CA	SPSP	1.84	15	3	14.03	18	6	31.95	26	6
Tomales Bay CA	TBSR	1.55	75	4	1.9	53	6	4.76	73	6
Humboldt Bay CA	HMB	—	-	-	—	-	-	—	-	-

Normalized concentrations, ng/g dry-wt., of non-DDT chlorinated pesticides (**tChIP**), total DDT (**tDDT**), and total polychlorinated biphenyls (**tPCB**) in fine-grained sediments from NS&T Sites from **Oregon** through **Hawaii.**

SITE	CODE	tCHIP	c.v.%	n	tDDT	c.v.%	n	tPCB	c.v.%	n
Coos Bay OR	COO	nd	-	3	.15	173	3	24.55	9	3
Coos Bay OR	CBCH	—	-	-	—	-	-	—	-	-
Coos Bay OR	CBRP	1.91	81	4	1.82	99	3	25.6	33	4
Yaquina Bay OR	YBOP	.41	57	3	2.1	80	3	14.96	56	3
Yaquina Head OR	YHYH	6.01	121	6	5.27	119	6	15.06	94	6
Tillamook Bay OR	TBHP	.9	141	2	2.52	20	2	12.06	7	2
Columbia R. OR	CRYB	5.05	75	4	22.16	54	4	44.51	58	4
Columbia R. OR	COL	nd	-	3	nd	-	3	17.51	97	3
S. Juan de Fuca WA	JFNB	4.68	88	3	3.94	26	3	50.9	15	3
South Puget Snd. WA	SSBI	1.94	112	6	9.4	128	6	39.32	49	6
Comm. Bay WA	COM	5.3	108	6	4.38	156	6	25.82	85	6
Comm. Bay WA	CBTP	1.86	68	6	3.5	66	6	53.22	23	6
Elliott Bay WA	ELL	1.11	120	6	19	40	6	902.34	21	6
Sinclair Inlet WA	SIWP	.23	-	1	12.97	54	2	89.15	47	3
Whidbey Is. WA	WIPP	nd	-	1	9.72	97	3	82.36	65	3
Bellingham Bay WA	BBSM	1.75	126	6	4.61	96	6	10.04	80	6
Pt. Roberts WA	PRPR	1.64	64	6	2.37	30	6	19.92	23	6
Lutak Inlet AK	LUT	nd	-	3	nd	-	3	.73	59	2
Nahku Bay AK	NAH	nd	-	3	nd	-	3	10.27	114	3
Unakwit Inlet AK	UISB	.03	173	3	.88	48	3	4.52	94	3
Port Valdez AK	PVMC	.5	141	2	.86	66	3	3.25	35	3
Prudhoe Bay AK	END	nd	-	3	nd	-	3	59.83	53	3
Barber's Pt. HI	BPBP	1.07	102	6	5.01	107	6	111.04	89	6
Honolulu Hrb. HI	HHKL	1.29	174	6	2.45	79	6	64.18	33	6

Normalized concentrations, µg/g dry-wt., of antimony (**Sb**), arsenic (**As**), and cadmium (**Cd**) in fine-grained sediments from **NS&T** Sites from **Maine** through **Virginia.**

SITE	CODE	Sb	c.v.%	n	As	c.v.%	n	Cd	c.v.%	n
Machias Bay ME	MAC	.59	32	4	12.18	21	4	.09	8	4
Frenchmans Bay ME	FRN	.59	12	3	10.75	7	3	.17	21	3
Penobscot Bay ME	PNB	.49	21	3	11.64	26	3	.11	26	3
Penobscot Bay ME	PBSI	2.16	37	6	19.78	14	6	.2	22	6
Penobscot Bay ME	PBPI	3.87	23	3	19.23	21	3	.55	13	3
Casco Bay ME	CSC	.75	70	6	15.56	32	6	.31	34	6
Salem Hrb. MA	SAL	5	50	6	19.24	27	6	9.79	59	6
Cape Ann MA	CASI	7.03	36	3	20.91	20	3	.51	22	3
Boston Hrb. MA	BHDI	10.01	18	5	11.62	58	5	1.68	13	5
Boston Hrb. MA	BHDB	9.43	22	5	16.71	26	5	1.87	7	5
Boston Hrb. MA	BHHB	19.74	30	3	7.77	95	3	1.29	15	3
Boston Hrb. MA	BOS	12.32	93	7	16.98	19	7	3.24	39	7
Buzzards Bay MA	BBRH	1.36	112	6	10.41	19	6	.3	32	6
Buzzards Bay MA	BBAR	1.9	134	5	12.3	69	5	1.01	15	5
Buzzards Bay MA	BBGN	2.5	82	5	12.81	31	5	.34	29	5
Buzzards Bay MA	BUZ	1.17	32	8	16.41	23	8	.33	34	8
Narr. Bay RI	NBMH	2.71	16	3	12.52	2	3	.82	66	3
Narr. Bay RI	NBCI	2.3	24	6	14.85	11	6	.31	30	6
Narr. Bay RI	NBDI	4.74	33	5	21.83	26	5	.53	21	5
Narr. Bay RI	NAR	.86	57	7	12.87	26	7	.6	68	7
Block Is. RI	BIBI	1.36	90	3	16.27	15	3	.79	18	3
Long Is. Snd. CT	LICR	1.51	105	5	10.21	45	5	.94	16	5
Long Is. Snd. CT	LISI	3.06	86	5	14.26	21	5	1.29	21	5
W.Long Is. Snd. NY	WLI	1.03	12	5	9.67	14	5	.99	30	5
Long Is. Snd. NY	LIHU	1.92	105	6	12.49	28	6	1.52	15	6
Long Is. Snd. NY	LIMR	2.46	41	6	11.05	21	6	1.96	43	6
Long Is. Snd. NY	LIHH	3.51	27	6	13.85	11	6	2.33	21	6
Long Is. Snd. NY	LITN	3.32	66	6	9.43	64	6	1.88	31	6
Hud./Rar. Est NY	HRJB	7.66	10	2	28.26	1	2	2.2	7	2
Hud./Rar. Est. NY	HRUB	6.61	48	3	30.19	55	3	1.23	74	3
Hud./Rar. Est. NY	HRLB	6.3	45	5	28.16	22	5	2.63	31	5
Hud./Rar. Est. NJ	HRRB	8.57	5	3	30.37	20	3	2.42	17	3
Raritan Bay NJ	RAR	4.38	68	8	33.13	51	8	3.77	31	8
N.Y. Bight NJ	NYSH	9.31	40	6	31.59	20	6	2.56	19	6
Moriches Bay NY	MBTH	2.49	70	5	20.84	17	5	.66	31	5
Great Bay NJ	GRB	.6	53	3	15.3	7	3	.71	17	3
Delaware Bay DE	DEL	1.01	148	3	17.89	51	3	1.16	77	3
Delaware Bay DE	DBFE	3.43	33	3	11.98	98	3	1.17	58	3
Delaware Bay DE	DBBD	2.73	42	3	17.52	26	3	.45	41	3
Delaware Bay DE	DBAP	2.8	66	6	15.52	28	6	.46	54	6
Delaware Bay DE	DBKI	2.18	22	6	12.99	20	6	.74	22	6
Up. Ches. Bay MD	UCB	2.45	85	3	19.12	14	3	.92	6	3
Ches. Bay MD	CBMP	3.97	27	6	23.15	22	6	.59	34	6
Ches. Bay MD	CBHP	2.91	31	6	17.45	13	6	.59	49	6
Mid. Ches. Bay VA	MCB	.74	73	2	19.78	44	2	.82	46	2
Ches. Bay VA	CBIB	1.96	55	5	16.48	17	5	.51	37	5
Ches. Bay VA	CBCC	nd	-	2	13.44	2	2	.46	14	2
Ches. Bay VA	CBDP	1.08	200	4	12.88	17	4	.47	35	4
Low. Ches.Bay VA	LCB	1.16	34	6	12.3	26	6	.58	75	6
Quinby Inlet VA	QIUB	2.66	66	6	19.43	25	6	.24	34	6

Normalized concentrations, µg/g dry-wt., of antimony (**Sb**), arsenic (**As**), and cadmium (**Cd**) in fine-grained sediments from NS&T Sites from **North Carolina** through **Louisiana.**

SITE	CODE	Sb	c.v.%	n	As	c.v.%	n	Cd	c.v.%	n
Pamlico Snd. NC	PAM	nd	-	5	13.06	25	5	.38	24	5
Cape Fear NC	CFBI	3.49	58	5	31.73	36	5	.16	26	5
Charleston Hrb. SC	CHFJ	1.52	14	3	26.28	14	3	.13	38	3
Charleston Hrb. SC	CHSF	2.5	36	5	25.62	37	5	.23	30	5
Charleston Hrb. SC	CHS	nd	-	6	18.99	13	6	.21	11	6
Savannah R. Est. GA	SRTI	.57	141	2	18.97	4	2	.21	28	2
Sapelo Is. GA	SAP	nd	-	6	15.11	23	6	.19	46	6
St. Johns R. FL	SJCB	1.2	63	5	11.32	22	5	.36	22	5
St. Johns R. FL	SJR	nd	-	4	7.15	29	4	.49	6	4
Biscayne Bay FL	BBPC	.67	73	6	3.59	80	6	.23	21	6
Everglades FL	EVFU	.4	36	4	5.62	28	4	.21	37	4
Rookery Bay FL	RBHC	.25	62	6	7.76	64	6	.22	42	6
Naples Bay FL	NBNB	.24	95	4	9.3	38	4	.26	54	4
Charlotte Hrb. FL	CBBI	.36	26	2	13.91	6	2	.51	27	2
Charlotte Hrb. FL	LOT	nd	-	3	5.3	43	3	.41	48	3
Tampa Bay FL	TAM	nd	-	1	4.57	-	1	1.02	-	1
Tampa Bay FL	TBMK	1.33	41	2	13.21	47	2	.59	33	2
Tampa Bay FL	TBHB	1.53	-	1	5.16	-	1	.44	-	1
Tampa Bay FL	TBPB	.66	28	2	6.92	51	2	.4	35	2
Cedar Key FL	CKBP	.55	37	5	18.86	38	5	.46	39	5
Apalachicola Bay FL	APCP	.66	20	3	23.11	5	3	.08	32	3
Apalachicola Bay FL	APDB	.7	30	6	20.43	25	6	.22	50	6
Apalachicola Bay FL	APA	nd	-	6	23.32	19	6	.08	41	6
St. Andrew Bay FL	SAWB	.99	35	6	21.03	52	6	1.03	45	6
Choctawhat. Bay FL	CBSP	1.32	54	4	15.57	28	4	.84	17	4
Choctawhat. Bay FL	CBSR	1.8	55	6	36.31	29	6	.25	45	6
Pensacola Bay FL	PEN	nd	-	3	23.09	29	3	.23	53	3
Pensacola Bay FL	PBIB	.96	141	6	22.63	59	6	.13	20	6
Mobile Bay AL	MBCP	.91	23	4	20.16	33	4	.14	29	4
Mobile Bay AL	MOB	.29	245	6	18.14	30	6	.1	15	6
Round Is. MS	ROU	nd	-	6	12.29	27	6	.21	89	6
Heron Bay MS	HER	nd	-	3	7.33	22	3	.26	46	3
Miss. Snd. MS	MSPB	.76	71	6	11.78	19	6	.27	56	6
Miss. Snd. MS	MSBB	.63	11	2	15.1	23	2	.46	27	2
Miss. Snd. MS	MSPC	.71	89	3	14.48	7	3	.17	12	3
Miss. Delta LA	MRD	.22	245	6	11.23	28	6	.52	37	6
Lake Borgne LA	LBMP	.78	22	6	7.18	39	6	.21	28	6
Breton Snd. LA	BSSI	.93	30	6	7.79	57	6	.32	37	6
Breton Snd. LA	BSBG	1.86	33	3	12.36	33	3	.29	32	3
Barataria Bay LA	BBSD	.80	10	6	8.78	11	6	.32	10	6
Barataria Bay LA	BBMB	1.32	40	6	12.28	29	6	.39	28	6
Barataria Bay LA	BAR	nd	-	5	12.66	30	5	.37	35	5
Terrebonne Bay LA	TBLF	.89	19	6	8.63	18	6	.35	25	6
Terrebonne Bay LA	TBLB	1.06	15	3	9.14	12	3	.33	24	3
Caillou Lake LA	CLCL	1.18	39	6	12.65	29	6	.41	32	6
Atchafalaya Bay LA	ABOB	.89	18	6	12.16	65	6	.27	32	6
Vermillion Bay LA	VBSP	1.06	18	3	15.62	20	3	.31	41	3
J. Hrb. Bayou LA	JHJH	.99	32	5	20.9	41	5	.23	37	5
Calcasieu Lake LA	CLSJ	.66	23	6	10.03	22	6	.15	8	6
Sabine Lake LA	SLBB	1.16	46	6	15.65	68	6	.11	26	6
E. Cote Blanche LA	ECSP	1.32	15	3	18.76	34	3	.33	26	3

Normalized concentrations, µg/g drt-wt., of antimony (**Sb**), arsenic (**As**), and cadmium (**Cd**) in fine-grained sediments from NS&T Sites from **Texas** through **California.**

SITE	CODE	Sb	c.v.%	n	As	c.v.%	n	Cd	c.v.%	n
Galveston Bay TX	GBHR	.83	12	6	9.18	15	6	.14	8	6
Galveston Bay TX	GBYC	.94	27	6	9.61	38	6	.19	39	6
Galveston Bay TX	GBTD	.92	17	6	8.30	15	6	.13	10	6
Galveston Bay TX	GBCR	.91	31	6	8.06	18	6	.11	33	6
Galveston Bay TX	GAL	nd	-	5	7.02	49	5	.09	65	5
Matagorda Bay TX	MBEM	.96	51	5	9.4	48	5	.17	40	5
Matagorda Bay TX	MBTP	.83	57	6	10.8	36	6	.14	22	6
Matagorda Bay TX	MBGP	.99	26	6	6.22	52	6	.2	13	6
Matagorda Bay TX	MBLR	1.07	57	6	6.41	20	6	.22	46	6
Espiritu Santo TX	ESSP	.52	52	6	5.86	20	6	.12	11	6
Espiritu Santo TX	ESBD	1.48	-	1	9.47	-	1	.09	-	1
San Antonio Bay TX	SAMP	1.25	36	6	6.68	22	6	.22	8	6
San Antonio Bay TX	SAPP	.88	34	5	7.95	38	5	.17	20	5
San Antonio Bay TX	SAB	nd	-	6	6.83	33	6	.15	70	6
Mesquite Bay TX	MBAR	.42	52	6	6.1	12	6	.15	14	6
Copano Bay TX	CBCR	.85	19	6	5.63	23	6	.22	13	6
Aransas Bay TX	ABLR	.89	38	6	8.23	58	6	.17	30	6
Corpus Christi TX	CCIC	.59	74	4	8.93	85	4	.34	26	4
Corpus Christi TX	CCNB	.69	86	6	8.49	45	6	.82	14	6
Corpus Christi Bay TX	CCB	nd	-	5	9.09	34	5	.46	30	5
L. Laguna Madre TX	LMSB	1.04	12	6	10.13	7	6	.22	8	6
L. Laguna Madre TX	LLM	nd	-	6	20.51	28	6	.21	50	6
San Diego Bay CA	SDF	2.77	23	2	28.08	42	2	2.48	37	2
San Diego Bay CA	SDHI	nd	-	6	41.42	19	6	1.27	36	6
San Diego Hrb. CA	SDA	1.63	15	6	14.77	41	6	1.66	27	6
Pt. Loma CA	PLLH	nd	-	6	28.59	15	6	.64	32	6
La Jolla CA	LJLJ	nd	-	3	24.36	25	3	.44	12	3
Oceanside CA	OSBJ	nd	-	6	11.45	26	6	.26	31	6
Dana Pt. CA	DAN	3.36	48	6	29.75	37	6	1.37	76	6
Newport Bch. CA	NBBC	nd	-	5	17.44	21	5	.94	19	5
Anaheim Bay CA	ABWJ	nd	-	6	16.93	29	6	.46	30	6
Seal Beach CA	SEA	1.02	40	3	11.13	31	3	.26	21	3
Long Beach CA	LNB	1.61	33	3	14.99	33	3	2	18	3
San Pedro Bay CA	SPB	1.12	25	3	6.55	69	3	1.29	15	3
San Pedro Cyn. CA	SPC	1.64	2	2	12.83	29	2	5.66	1	2
San Pedro Hrb. CA	SPFP	nd	-	3	16	12	3	2.43	23	3
Palos Verdes CA	PVRP	nd	-	6	17.73	43	6	11.34	11	6
Marina Del Rey CA	MDSJ	nd	-	6	31.21	34	6	.89	15	6
Pt. Dume CA	PDPD	nd	-	6	28.68	32	6	1.65	16	6
Pt. S. Barbara CA	SBSB	nd	-	6	37.4	22	6	1.89	16	6
Monterey Bay CA	MBSC	—	-	-	—	-	-	—	-	-
Oakland Est. CA	OAK	.9	11	3	14.34	2	3	.18	2	3
Hunters Pt. CA	HUN	1.87	79	6	10.4	32	6	.45	56	6
San Fran. Bay CA	SFDB	nd	-	6	18.15	13	6	.23	49	6
San Fran. Bay CA	SFSM	nd	-	6	15.15	16	6	.31	12	6
San Fran. Bay CA	SFEM	nd	-	6	15.55	21	6	.25	8	6
San Pablo Bay CA	PAB	2.49	39	6	22.68	43	6	.81	84	6
San Pablo Bay CA	SPSM	nd	-	6	34.51	49	6	.76	41	6
San Pablo Bay CA	SPSP	nd	-	6	20.86	20	6	.33	11	6
Tomales Bay CA	TBSR	nd	-	6	18.32	15	6	.41	13	6
Humboldt Bay CA	HMB	5.86	-	1	37.13	-	1	1.07	-	1

Normalized concentrations, µg/g dry-wt., of antimony (**Sb**), arsenic (**As**), and cadmium (**Cd**) in fine-grained sediments from NS&T Sites from **Oregon** through **Hawaii.**

SITE	CODE	Sb	c.v.%	n	As	c.v.%	n	Cd	c.v.%	n
Coos Bay OR	COO	2.8	53	3	30.52	49	3	1.81	41	3
Coos Bay OR	CBCH	nd	-	2	33.48	25	2	1.43	53	2
Coos Bay OR	CBRP	2.09	200	4	23.13	20	4	.63	11	4
Yaquina Bay OR	YBOP	2.52	89	6	26.39	37	6	.52	27	6
Yaquina Head OR	YHYH	4.47	102	6	21.60	12	6	1.31	13	6
Tillamook Bay OR	TBHP	3.29	141	5	28.74	29	5	.51	29	5
Columbia R. OR	CRYB	5.65	35	4	21.58	26	4	.95	23	4
Columbia R. OR	COL	3.4	19	3	11.46	121	3	2.9	16	3
S. Juan de Fuca WA	JFNB	4.12	22	6	15.65	34	6	.47	31	6
South Puget Snd. WA	SSBI	4.43	25	6	14.39	12	6	.89	10	6
Comm. Bay WA	COM	1.47	21	6	6.24	48	6	1.03	8	6
Comm. Bay WA	CBTP	5.39	25	6	11.95	24	6	.27	22	6
Elliott Bay WA	ELL	4.35	73	6	21.89	41	6	2.47	34	6
Sinclair Inlet WA	SIWP	15.38	22	6	18.05	26	6	.98	25	6
Whidbey Is. WA	WIPP	3.74	12	6	11.53	18	6	.29	10	6
Bellingham Bay WA	BBSM	3.66	31	6	15.23	8	6	.44	16	6
Pt. Roberts WA	PRPR	2.19	27	6	11.52	11	6	.41	32	6
Lutak Inlet AK	LUT	1.08	26	3	1.51	20	3	1.1	36	3
Nahku Bay AK	NAH	1.18	24	3	1.66	143	3	1.51	50	3
Unakwit Inlet AK	UISB	3.07	40	6	13.98	17	6	.11	22	6
Port Valdez AK	PVMC	3.42	19	4	26.25	10	4	.11	9	4
Prudhoe Bay AK	END	1.9	57	3	3.79	52	3	.66	31	3
Barber's Pt. HI	BPBP	nd	-	3	8.65	19	3	.38	45	3
Honolulu Hrb. HI	HHKL	nd	-	3	23.52	22	3	.33	48	3

Normalized concentrations, µg/g dry-wt., of chromium (**Cr**), copper (**Cu**), and lead (**Pb**) in fine-grained sediments from NS&T Sites from **Maine** through **Virginia.**

SITE	CODE	Cr	c.v.%	n	Cu	c.v.%	n	Pb	c.v.%	n
Machias Bay ME	MAC	111.26	27	4	16.29	22	4	30.07	14	4
Frenchmans Bay ME	FRN	96.35	3	3	17.7	4	3	28.16	15	3
Penobscot Bay ME	PNB	109.26	10	3	19.78	15	3	29.46	20	3
Penobscot Bay ME	PBSI	105.06	18	6	22.63	10	6	35.38	10	6
Penobscot Bay ME	PBPI	147.04	24	3	22.34	1	3	53.99	14	3
Casco Bay ME	CSC	137.12	38	6	29.36	25	6	45.79	29	6
Salem Hrb. MA	SAL	3373.98	47	6	125.67	33	6	260.1	35	6
Cape Ann MA	CASI	103.42	87	3	33.38	19	3	108.9	21	3
Boston Hrb. MA	BHDI	284.99	16	5	155.27	7	5	166.44	63	5
Boston Hrb. MA	BHDB	265.25	6	5	157.39	6	5	175.8	12	5
Boston Hrb. MA	BHHB	260.87	24	3	119.61	17	3	162.23	12	3
Boston Hrb. MA	BOS	419.32	13	7	256.13	21	7	207.37	25	7
Buzzards Bay MA	BBRH	59.65	82	6	26.44	15	6	46.23	19	6
Buzzards Bay MA	BBAR	188.6	30	5	83.67	20	5	91.35	12	5
Buzzards Bay MA	BBGN	48.78	155	5	22.26	32	5	56.18	27	5
Buzzards Bay MA	BUZ	121.34	39	8	36.25	26	8	46	30	8
Narr. Bay RI	NBMH	156.03	14	3	91.32	7	3	102.02	11	3
Narr. Bay RI	NBCI	122.07	18	6	55.59	6	6	67.87	7	6
Narr. Bay RI	NBDI	165.47	41	5	76.13	18	5	91.14	23	5
Narr. Bay RI	NAR	149.34	41	7	125.51	62	7	91.88	29	7
Block Is. RI	BIBI	34.73	87	3	35.33	12	3	46.12	17	3
Long Is. Snd. CT	LICR	113.34	19	5	58.87	11	5	62.6	28	5
Long Is. Snd. CT	LISI	150.53	15	5	152.04	10	5	95.64	18	5
W.Long Is. Snd. NY	WLI	166.81	4	5	135.95	10	5	88.43	17	5
Long Is. Snd. NY	LIHU	131.75	28	6	124.34	14	6	100.74	16	6
Long Is. Snd. NY	LIMR	154.37	20	6	131.54	11	6	114.42	16	6
Long Is. Snd. NY	LIHH	145.75	6	6	177.03	6	6	155.11	8	6
Long Is. Snd. NY	LITN	204.73	21	6	189.62	22	6	194.43	19	6
Hud./Rar. Est NY	HRJB	250.36	10	2	164.97	12	2	211.39	9	2
Hud./Rar. Est. NY	HRUB	119.5	52	3	132.26	77	3	180.07	74	3
Hud./Rar. Est. NY	HRLB	252.71	24	5	204.09	17	5	250.64	18	5
Hud./Rar. Est. NJ	HRRB	241.99	9	3	213.36	5	3	279.69	6	3
Raritan Bay NJ	RAR	251.02	25	8	238.27	32	8	242.41	25	8
N.Y. Bight NJ	NYSH	263.87	15	6	200.6	16	6	243.93	11	6
Moriches Bay NY	MBTH	104.64	13	5	47.6	15	5	89.38	10	5
Great Bay NJ	GRB	163.7	10	3	43.52	15	3	52.05	13	3
Delaware Bay DE	DEL	134.75	38	3	30.08	38	3	52.43	40	3
Delaware Bay DE	DBFE	80.54	87	3	27.67	21	3	40.7	20	3
Delaware Bay DE	DBBD	132.99	24	3	23.81	32	3	37.11	28	3
Delaware Bay DE	DBAP	123.13	24	6	25.59	46	6	41.97	50	6
Delaware Bay DE	DBKI	84.52	14	6	25.71	26	6	47.67	17	6
Up. Ches. Bay MD	UCB	197.38	36	3	64.51	20	3	69.72	19	3
Ches. Bay MD	CBMP	134.29	21	6	53.52	12	6	73.9	12	6
Ches. Bay MD	CBHP	114.85	13	6	48.6	14	6	68.12	7	6
Mid. Ches. Bay VA	MCB	117.57	9	2	36.46	19	2	38.46	26	2
Ches. Bay VA	CBIB	62.77	70	5	28.61	7	5	27.78	8	5
Ches. Bay VA	CBCC	86.17	40	2	25.42	12	2	35.76	14	2
Ches. Bay VA	CBDP	53.19	69	4	21.61	17	4	36.15	15	4
Low. Ches.Bay VA	LCB	125.74	18	6	26.17	17	6	31.97	28	6
Quinby Inlet VA	QIUB	99.77	59	6	22.23	21	6	43.41	32	6

Normalized concentrations, µg/g dry-wt., of chromium (**Cr**), copper (**Cu**), and lead (**Pb**) in fine-grained sediments from NS&T Sites from **North Carolina** through **Louisiana.**

SITE	CODE	Cr	c.v.%	n	Cu	c.v.%	n	Pb	c.v.%	n
Pamlico Snd. NC	PAM	82.24	13	5	16.8	22	5	39.18	26	5
Cape Fear NC	CFBI	144.55	41	5	26.45	22	5	42.79	45	5
Charleston Hrb. SC	CHFJ	82.8	23	3	22.79	21	3	27.4	3	3
Charleston Hrb. SC	CHSF	95.13	61	5	27.32	30	5	38.95	35	5
Charleston Hrb. SC	CHS	100.24	9	6	22.95	21	6	34.72	11	6
Savannah R. Est. GA	SRTI	57.75	141	2	20.41	10	2	34.78	28	2
Sapelo Is. GA	SAP	93.07	26	6	11.72	14	6	32.02	22	6
St. Johns R. FL	SJCB	80.96	56	5	20.7	58	5	37.46	21	5
St. Johns R. FL	SJR	76.8	16	4	23.6	18	4	64.16	7	4
Biscayne Bay FL	BBPC	5.22	245	6	30.21	25	6	16.49	25	6
Everglades FL	EVFU	82.48	7	3	4.55	22	4	6.99	44	4
Rookery Bay FL	RBHC	77.7	3	3	6.29	40	6	5.87	78	6
Naples Bay FL	NBNB	67.2	21	3	19.2	53	4	8.7	47	4
Charlotte Hrb. FL	CBBI	86.66	15	2	6.75	8	2	8.76	86	2
Charlotte Hrb. FL	LOT	107.68	34	3	6.93	60	3	19.98	13	3
Tampa Bay FL	TAM	66.27	-	1	16.33	-	1	26.79	-	1
Tampa Bay FL	TBMK	35.01	23	2	15.1	26	2	28.58	36	2
Tampa Bay FL	TBHB	142.06	-	1	30.6	-	1	121.21	-	1
Tampa Bay FL	TBPB	29.05	39	2	13.4	32	2	44.24	56	2
Cedar Key FL	CKBP	81.96	24	3	9.6	64	5	14.38	46	5
Apalachicola Bay FL	APCP	86.86	14	3	29.68	87	3	29.1	20	3
Apalachicola Bay FL	APDB	104.94	19	3	33.22	53	6	44.3	15	6
Apalachicola Bay FL	APA	97.64	15	6	23.38	7	6	41.77	22	6
St. Andrew Bay FL	SAWB	169.6	62	3	83.83	94	6	100.08	56	6
Choctawhat. Bay FL	CBSP	47.8	28	3	43.22	23	4	241.75	28	4
Choctawhat. Bay FL	CBSR	76.51	70	3	25.13	36	6	60.61	42	6
Pensacola Bay FL	PEN	126.66	16	3	27.26	22	3	51.61	18	3
Pensacola Bay FL	PBIB	80.71	19	3	10.73	30	6	25.55	44	6
Mobile Bay AL	MBCP	135.1	28	2	22.01	21	4	42	13	4
Mobile Bay AL	MOB	98.45	7	6	19.22	10	6	32.69	10	6
Round Is. MS	ROU	88.76	31	6	13.86	14	6	32.02	10	6
Heron Bay MS	HER	52.34	24	3	14.76	15	3	25.41	10	3
Miss. Snd. MS	MSPB	64.26	6	3	13.55	35	6	29.86	10	6
Miss. Snd. MS	MSBB	85.77	23	2	36.6	36	2	47.33	29	2
Miss. Snd. MS	MSPC	—	-	-	15.03	4	3	29.3	8	3
Miss. Delta LA	MRD	72.25	30	6	21.35	25	6	27.62	16	6
Lake Borgne LA	LBMP	65.99	28	3	12.58	21	6	18.82	20	6
Breton Snd. LA	BSSI	79.75	5	3	23.89	20	6	15.95	44	6
Breton Snd. LA	BSBG	—	-	-	13.62	34	3	44.85	30	3
Barataria Bay LA	BBSD	74.98	8	6	16.97	7	6	21.78	9	6
Barataria Bay LA	BBMB	84.39	26	3	24.61	25	6	38.75	29	6
Barataria Bay LA	BAR	90.46	32	5	19.03	14	5	33.65	29	5
Terrebonne Bay LA	TBLF	58.88	19	3	22.42	17	6	22.27	13	6
Terrebonne Bay LA	TBLB	—	-	-	28.52	25	3	25.93	44	3
Caillou Lake LA	CLCL	73.79	15	3	24.06	25	6	33.44	71	6
Atchafalaya Bay LA	ABOB	96.38	41	3	19.28	25	6	18.94	54	6
Vermillion Bay LA	VBSP	—	-	-	28.06	24	3	21.45	22	3
J. Hrb. Bayou LA	JHJH	83.49	13	3	28.76	23	5	34.6	16	5
Calcasieu Lake LA	CLSJ	78.45	18	6	17.21	11	6	26.51	16	6
Sabine Lake LA	SLBB	76.66	11	3	18.52	43	6	29.89	31	6
E. Cote Blanche LA	ECSP	—	-	-	-	33.81		23	3	36.23
	21	3								

Normalized concentrations, µg/g dry-wt., of chromium (**Cr**), copper (**Cu**), and lead (**Pb**) in fine-grained sediments from NS&T Sites from **Texas** through **California.**

SITE	CODE	Cr	c.v.%	n	Cu	c.v.%	n	Pb	c.v.%	n
Galveston Bay TX	GBHR	95.84	25	6	16.51	22	6	23.73	13	6
Galveston Bay TX	GBYC	58.12	21	6	15.55	20	6	36.4	41	6
Galveston Bay TX	GBTD	72.67	17	6	15.46	8	6	35.86	31	6
Galveston Bay TX	GBCR	62.86	25	6	11.94	23	6	41.52	18	6
Galveston Bay TX	GAL	55.59	23	5	15.08	16	5	23.99	19	5
Matagorda Bay TX	MBEM	66.85	48	5	14.77	40	5	24.85	41	5
Matagorda Bay TX	MBTP	73.29	20	6	17.58	18	6	23.09	31	6
Matagorda Bay TX	MBGP	72.79	5	3	17.8	15	6	23.72	19	6
Matagorda Bay TX	MBLR	52.89	20	3	16.62	43	6	24.82	30	6
Espiritu Santo TX	ESSP	51.79	8	3	12.9	14	6	19.98	14	6
Espiritu Santo TX	ESBD	—	-	-	12.36	-	1	32.96	-	1
San Antonio Bay TX	SAMP	57.16	35	6	13.98	32	6	28.41	49	6
San Antonio Bay TX	SAPP	61.23	20	5	9.52	37	5	21.21	16	5
San Antonio Bay TX	SAB	62.85	28	6	11.01	16	6	21.5	12	6
Mesquite Bay TX	MBAR	25.6	14	3	9.84	14	6	15.74	5	6
Copano Bay TX	CBCR	46.8	14	6	9.9	19	6	19.42	7	6
Aransas Bay TX	ABLR	57.33	21	3	12.76	30	6	26.86	27	6
Corpus Christi TX	CCIC	58.77	51	4	14.58	26	4	22.36	24	4
Corpus Christi TX	CCNB	55.37	37	6	13.81	39	6	28.22	27	6
Corpus Christi Bay TX	CCB	67.33	26	5	16.27	23	5	30.62	25	5
L. Laguna Madre TX	LMSB	24.69	6	3	12.37	9	6	19.76	8	6
L. Laguna Madre TX	LLM	62.75	38	6	17.21	9	6	36.83	24	6
San Diego Bay CA	SDF	131.03	50	2	28.45	24	2	38.56	39	2
San Diego Bay CA	SDHI	177.29	13	6	155.47	42	6	120.5	29	6
San Diego Hrb. CA	SDA	205	51	6	318.53	22	6	127.57	44	6
Pt. Loma CA	PLLH	127.75	18	6	26.94	15	6	45.91	8	6
La Jolla CA	LJLJ	84.81	25	3	19.07	14	3	29.81	21	3
Oceanside CA	OSBJ	83.74	4	6	26.69	5	6	21.52	11	6
Dana Pt. CA	DAN	141.09	46	6	30.23	60	6	51.42	48	6
Newport Bch. CA	NBBC	97.06	5	5	32.68	7	5	49.63	8	5
Anaheim Bay CA	ABWJ	87.2	17	6	35.27	12	6	64.36	16	6
Seal Beach CA	SEA	187.21	29	3	41.78	4	3	45.46	12	3
Long Beach CA	LNB	129.88	21	3	107.01	23	3	203.24	18	3
San Pedro Bay CA	SPB	102.03	6	3	87.99	34	3	51.63	25	3
San Pedro Cyn. CA	SPC	458.32	14	2	133.2	13	2	70.31	9	2
San Pedro Hrb. CA	SPFP	134.58	11	3	203.76	17	3	48.69	4	3
Palos Verdes CA	PVRP	266.54	20	6	126.63	26	6	84.53	22	6
Marina Del Rey CA	MDSJ	181.58	18	6	39.68	6	6	74.56	11	6
Pt. Dume CA	PDPD	202.1	15	6	40.8	15	6	60.88	18	6
Pt. S. Barbara CA	SBSB	118.59	9	6	27.14	18	6	46.51	9	6
Monterey Bay CA	MBSC	—	-	-	—	-	-	—	-	-
Oakland Est. CA	OAK	216.33	3	3	79.13	8	3	48.01	5	3
Hunters Pt. CA	HUN	512.97	84	6	66.1	7	6	22.39	42	6
San Fran. Bay CA	SFDB	190.08	13	6	54.55	23	6	43.1	13	6
San Fran. Bay CA	SFSM	184.70	3	6	49.92	19	6	37.50	14	6
San Fran. Bay CA	SFEM	191.32	5	6	57.17	11	6	37.55	12	6
San Pablo Bay CA	PAB	1586.56	55	6	93.68	13	6	21.37	23	6
San Pablo Bay CA	SPSM	316.66	46	6	85.72	40	6	84.88	122	6
San Pablo Bay CA	SPSP	202.27	6	6	68.58	12	6	31.54	7	6
Tomales Bay CA	TBSR	225.17	16	6	45.31	26	6	24.37	36	6
Humboldt Bay CA	HMB	2293.15	-	1	34.85	-	1	-	-	1

Normalized concentrations, µg/g dry-wt., of chromium (**Cr**), copper (**Cu**), and lead (**Pb**) in fine-grained sediments from NS&T Sites from **Oregon** through **Hawaii.**

SITE	CODE	Cr	c.v.%	n	Cu	c.v.%	n	Pb	c.v.%	n
Coos Bay OR	COO	210.66	69	3	22.82	25	3	15.54	51	3
Coos Bay OR	CBCH	471.97	27	2	54.8	16	2	45.88	8	2
Coos Bay OR	CBRP	313.29	22	4	36.38	13	4	37.45	35	4
Yaquina Bay OR	YBOP	229.99	32	6	38.52	21	6	31.98	29	6
Yaquina Head OR	YHYH	547.47	34	6	62.49	68	6	37.26	25	6
Tillamook Bay OR	TBHP	452.11	8	5	103.26	19	5	24.03	23	5
Columbia R. OR	CRYB	152.1	46	4	82.52	15	4	48.01	29	4
Columbia R. OR	COL	107.19	15	3	62.32	41	3	39.03	67	3
S. Juan de Fuca WA	JFNB	247.25	27	6	68.58	21	6	34.75	9	6
South Puget Snd. WA	SSBI	79.5	22	6	62.28	9	6	35.71	7	6
Comm. Bay WA	COM	80.37	14	6	64.79	4	6	31.95	45	6
Comm. Bay WA	CBTP	57.45	22	6	65.62	16	6	29.2	10	6
Elliott Bay WA	ELL	214.02	45	6	242.9	60	6	70.3	59	6
Sinclair Inlet WA	SIWP	236.69	46	6	114.86	6	6	97.45	6	6
Whidbey Is. WA	WIPP	114.92	17	6	48.27	13	6	31.39	11	6
Bellingham Bay WA	BBSM	206.59	8	6	58.9	9	6	13.54	19	6
Pt. Roberts WA	PRPR	113.64	10	6	36.46	5	6	17.65	10	6
Lutak Inlet AK	LUT	68.59	53	3	30.84	34	3	17.58	18	3
Nahku Bay AK	NAH	30.56	18	3	13.13	30	3	56.43	19	3
Unakwit Inlet AK	UISB	157.14	9	6	53.12	7	6	18.24	14	6
Port Valdez AK	PVMC	160	10	4	65.25	8	4	17.5	3	4
Prudhoe Bay AK	END	161.61	62	3	28.16	47	3	13.61	12	3
Barber's Pt. HI	BPBP	90.12	60	3	65.94	64	3	14.45	90	3
Honolulu Hrb. HI	HHKL	54.98	39	3	69.72	19	3	57.85	20	3

Normalized concentrations, µg/g dry-wt., of mercury (Hg), nickel (Ni), and selenium (Se) in fine-grained sediments from NS&T Sites from **Maine** through **Virginia.**

SITE	CODE	Hg	c.v.%	n	Ni	c.v.%	n	Se	c.v.%	n
Machias Bay ME	MAC	nd	-	4	30.82	16	4	.05	200	4
Frenchmans Bay ME	FRN	.007	173	3	34.11	12	3	.44	22	3
Penobscot Bay ME	PNB	.16	92	3	33.68	21	3	.32	87	3
Penobscot Bay ME	PBSI	.24	66	6	35.95	6	6	.94	71	6
Penobscot Bay ME	PBPI	.15	10	3	44.91	7	3	.14	173	3
Casco Bay ME	CSC	.2	45	6	39.23	29	6	.36	106	6
Salem Hrb. MA	SAL	1.68	40	6	46.03	30	6	1.48	32	6
Cape Ann MA	CASI	.25	28	3	41.79	16	3	nd	-	3
Boston Hrb. MA	BHDI	1.05	8	5	41.23	8	5	.87	25	5
Boston Hrb. MA	BHDB	1.09	6	5	40.28	13	5	.7	40	5
Boston Hrb. MA	BHHB	.92	11	3	65.28	15	3	.96	38	3
Boston Hrb. MA	BOS	1.7	34	7	53.9	19	7	1.29	18	7
Buzzards Bay MA	BBRH	.11	29	6	22.66	24	6	.08	245	6
Buzzards Bay MA	BBAR	.36	14	5	29.99	26	5	.4	94	5
Buzzards Bay MA	BBGN	.18	50	5	24.63	22	5	.24	141	5
Buzzards Bay MA	BUZ	.16	41	8	34.7	36	8	.3	88	8
Narr. Bay RI	NBMH	.9	18	3	31.54	12	3	.67	15	3
Narr. Bay RI	NBCI	.26	24	6	37.93	11	6	.48	62	6
Narr. Bay RI	NBDI	.4	17	5	51.21	33	5	.38	139	5
Narr. Bay RI	NAR	.44	69	7	37.59	28	7	.63	32	7
Block Is. RI	BIBI	.18	19	3	18.75	7	3	.25	89	3
Long Is. Snd. CT	LICR	.21	22	5	55.73	14	5	.13	145	5
Long Is. Snd. CT	LISI	.58	23	5	49.68	23	5	.66	37	5
W.Long Is. Snd. NY	WLI	.55	19	5	41.56	9	5	.62	17	5
Long Is. Snd. NY	LIHU	.42	16	6	47.34	24	6	.71	55	6
Long Is. Snd. NY	LIMR	.51	13	6	55.22	28	6	.67	29	6
Long Is. Snd. NY	LIHH	.65	10	6	45.59	6	6	.76	20	6
Long Is. Snd. NY	LITN	1.22	27	6	55.73	33	6	.68	53	6
Hud./Rar. Est NY	HRJB	2.27	7	2	49.48	1	2	1.46	3	2
Hud./Rar. Est. NY	HRUB	4.31	86	3	46.42	26	3	1.07	77	3
Hud./Rar. Est. NY	HRLB	2.77	13	5	61.01	25	5	1.47	37	5
Hud./Rar. Est. NJ	HRRB	3.41	5	3	57.57	16	3	1.51	4	3
Raritan Bay NJ	RAR	2.99	32	8	52.46	27	8	1.69	56	8
N.Y. Bight NJ	NYSH	2.83	25	6	54.8	20	6	1.63	21	6
Moriches Bay NY	MBTH	.56	11	5	29.33	8	5	1.08	48	5
Great Bay NJ	GRB	.57	27	3	36.83	15	3	.47	88	3
Delaware Bay DE	DEL	.2	53	3	37.25	41	3	nd	-	3
Delaware Bay DE	DBFE	.26	44	3	44.36	30	3	.7	57	3
Delaware Bay DE	DBBD	.23	61	3	49.26	26	3	.41	40	3
Delaware Bay DE	DBAP	.17	77	6	41.36	19	6	.71	84	6
Delaware Bay DE	DBKI	.19	25	6	33.94	15	6	1.01	78	6
Up. Ches. Bay MD	UCB	.3	10	3	87.28	10	3	1	22	3
Ches. Bay MD	CBMP	.22	15	6	66.11	16	6	.92	8	6
Ches. Bay MD	CBHP	.21	8	6	55.9	12	6	1.26	24	6
Mid. Ches. Bay VA	MCB	.04	141	2	48.4	20	2	.3	141	2
Ches. Bay VA	CBIB	.11	47	5	35.73	26	5	.82	11	5
Ches. Bay VA	CBCC	.08	27	2	35.33	8	2	.78	1	2
Ches. Bay VA	CBDP	.12	76	4	33.08	27	4	.18	117	4
Low. Ches.Bay VA	LCB	.08	78	6	32.24	13	6	.12	125	6
Quinby Inlet VA	QIUB	.13	65	6	43.43	28	6	.85	121	6

Normalized concentrations, µg/g dry-wt., of mercury (Hg), nickel (Ni), and selenium (Se) in fine-grained sediments from NS&T Sites from **North Carolina** through **Louisiana.**

SITE	CODE	Hg	c.v.%	n	Ni	c.v.%	n	Se	c.v.%	n
Pamlico Snd. NC	PAM	.09	33	5	27.85	26	5	1.03	29	5
Cape Fear NC	CFBI	.13	21	5	30.83	29	5	.85	46	5
Charleston Hrb. SC	CHFJ	.1	12	3	34.27	6	3	.48	6	3
Charleston Hrb. SC	CHSF	.1	58	5	33.82	42	5	.8	16	5
Charleston Hrb. SC	CHS	.03	112	6	26.9	13	6	.79	26	6
Savannah R. Est. GA	SRTI	.47	119	2	22.58	12	2	.28	141	2
Sapelo Is. GA	SAP	.03	110	6	20.76	26	6	.56	33	6
St. Johns R. FL	SJCB	.13	26	5	21.1	28	5	.71	18	5
St. Johns R. FL	SJR	.08	116	4	19.69	11	4	.61	54	4
Biscayne Bay FL	BBPC	.08	36	6	1	245	6	.89	29	6
Everglades FL	EVFU	.06	15	4	13.78	21	4	.1	70	4
Rookery Bay FL	RBHC	.07	37	6	12.88	32	6	.33	148	6
Naples Bay FL	NBNB	.06	32	4	9.72	40	4	.9	80	4
Charlotte Hrb. FL	CBBI	.06	29	2	20.09	6	2	1.18	14	2
Charlotte Hrb. FL	LOT	.12	59	3	14.44	28	3	.94	64	3
Tampa Bay FL	TAM	.24	-	1	18.43	-	1	1.43	-	1
Tampa Bay FL	TBMK	.27	27	2	21.45	38	2	2.15	43	2
Tampa Bay FL	TBHB	.44	-	1	29.7	-	1	1.6	-	1
Tampa Bay FL	TBPB	.23	29	2	24.46	36	2	1.27	8	2
Cedar Key FL	CKBP	.12	24	5	12.7	55	5	1.59	144	5
Apalachicola Bay FL	APCP	.09	17	3	34.96	16	3	.94	35	3
Apalachicola Bay FL	APDB	.12	22	6	32.27	19	6	.47	118	6
Apalachicola Bay FL	APA	.05	89	6	32.31	10	6	.76	21	6
St. Andrew Bay FL	SAWB	.64	59	6	23.27	54	6	1.14	101	6
Choctawhat. Bay FL	CBSP	.32	11	4	19.55	19	4	1.59	77	4
Choctawhat. Bay FL	CBSR	.2	56	6	43.5	16	6	1.2	126	6
Pensacola Bay FL	PEN	.14	173	3	33.92	19	3	1.47	14	3
Pensacola Bay FL	PBIB	.08	129	6	15.88	46	6	1.18	111	6
Mobile Bay AL	MBCP	.19	42	4	37.57	16	4	.24	131	4
Mobile Bay AL	MOB	.09	80	6	37.75	8	6	.63	17	6
Round Is. MS	ROU	.05	110	6	25.39	26	6	.51	34	6
Heron Bay MS	HER	.02	173	3	24.44	12	3	.4	25	3
Miss. Snd. MS	MSPB	.16	89	6	17.51	35	6	.31	117	6
Miss. Snd. MS	MSBB	.16	39	2	25.13	12	2	.41	56	2
Miss. Snd. MS	MSPC	.11	55	3	23.24	14	3	nd	-	3
Miss. Delta LA	MRD	.05	79	6	36.33	20	6	.48	65	6
Lake Borgne LA	LBMP	.06	28	6	18.27	20	6	.24	116	6
Breton Snd. LA	BSSI	.05	34	6	31.68	65	6	.59	113	6
Breton Snd. LA	BSBG	.09	46	3	29.59	33	3	nd	-	3
Barataria Bay LA	BBSD	.06	5	6	22.33	8	6	.50	100	6
Barataria Bay LA	BBMB	.07	31	6	36.42	25	6	1.48	110	6
Barataria Bay LA	BAR	.1	28	5	35.65	28	5	.51	33	5
Terrebonne Bay LA	TBLF	.06	18	6	24.97	7	6	.66	112	6
Terrebonne Bay LA	TBLB	.06	5	3	19.46	12	3	nd	-	3
Caillou Lake LA	CLCL	.07	34	6	36.45	33	6	.64	111	6
Atchafalaya Bay LA	ABOB	.06	32	6	31.52	33	6	.67	128	6
Vermillion Bay LA	VBSP	.06	11	3	28.19	9	3	nd	-	3
J. Hrb. Bayou LA	JHJH	.08	43	5	37.55	22	5	.63	99	5
Calcasieu Lake LA	CLSJ	.06	26	6	29.64	25	6	.65	125	6
Sabine Lake LA	SLBB	.09	45	6	33.87	51	6	.43	110	6
E. Cote Blanche LA	ECSP	.09	26	3	26.84	22	3	nd	-	3

Normalized concentrations, µg/g dry-wt., of mercury (Hg), nickel (Ni), and selenium (Se) in fine-grained sediments from NS&T Sites from **Texas** through **California.**

SITE	CODE	Hg	c.v.%	n	Ni	c.v.%	n	Se	c.v.%	n
Galveston Bay TX	GBHR	.06	27	6	33.96	25	6	.6	120	6
Galveston Bay TX	GBYC	.05	62	6	22.8	22	6	1.35	112	6
Galveston Bay TX	GBTD	.11	91	6	23.34	11	6	1.06	104	6
Galveston Bay TX	GBCR	.09	47	6	18.84	29	6	.81	110	6
Galveston Bay TX	GAL	.02	139	5	19.24	23	5	.24	50	5
Matagorda Bay TX	MBEM	.02	92	5	24.52	28	5	.82	96	5
Matagorda Bay TX	MBTP	.04	30	6	27.26	32	6	.38	114	6
Matagorda Bay TX	MBGP	.29	14	6	21.93	31	6	.41	111	6
Matagorda Bay TX	MBLR	.17	55	6	23.58	57	6	.71	134	6
Espiritu Santo TX	ESSP	.03	20	6	15.92	51	6	.31	110	6
Espiritu Santo TX	ESBD	nd	-	1	12.36	-	1	nd	-	1
San Antonio Bay TX	SAMP	.07	92	6	17.38	21	6	.9	116	6
San Antonio Bay TX	SAPP	.05	23	5	18.81	13	5	.5	145	5
San Antonio Bay TX	SAB	.04	115	6	18.48	14	6	.27	17	6
Mesquite Bay TX	MBAR	.03	22	6	15.34	47	6	.33	113	6
Copano Bay TX	CBCR	.04	24	6	17.14	21	6	.5	130	6
Aransas Bay TX	ABLR	.05	60	6	14.36	19	6	.69	122	6
Corpus Christi TX	CCIC	.03	68	4	14.71	29	4	.47	74	4
Corpus Christi TX	CCNB	.13	17	6	10.38	30	6	.29	173	6
Corpus Christi Bay TX	CCB	.06	92	5	21.19	6	5	.4	69	5
L. Laguna Madre TX	LMSB	.06	33	6	12.85	18	6	.89	114	6
L. Laguna Madre TX	LLM	.04	117	6	20.09	14	6	.42	54	6
San Diego Bay CA	SDF	nd	-	2	32.24	27	2	.34	55	2
San Diego Bay CA	SDHI	1.17	47	6	36.33	45	6	nd	-	6
San Diego Hrb. CA	SDA	1.65	54	6	31.1	23	6	nd	-	6
Pt. Loma CA	PLLH	.14	32	6	28.4	43	6	nd	-	6
La Jolla CA	LJLJ	.08	24	3	14.33	15	3	nd	-	3
Oceanside CA	OSBJ	.02	11	6	27.55	10	6	nd	-	6
Dana Pt. CA	DAN	.63	155	6	25.45	44	6	.62	43	6
Newport Bch. CA	NBBC	.13	8	5	37.52	6	5	nd	-	5
Anaheim Bay CA	ABWJ	.1	22	6	42.02	19	6	nd	-	6
Seal Beach CA	SEA	.92	47	3	45.67	20	3	.34	10	3
Long Beach CA	LNB	.04	173	3	68.8	26	3	.93	22	3
San Pedro Bay CA	SPB	nd	-	3	42.82	10	3	1.2	30	3
San Pedro Cyn. CA	SPC	1.77	22	2	83.53	7	2	2.88	7	2
San Pedro Hrb. CA	SPFP	.54	3	3	61.46	11	3	nd	-	3
Palos Verdes CA	PVRP	.69	60	6	52	11	6	nd	-	6
Marina Del Rey CA	MDSJ	.33	13	6	51.49	3	6	nd	-	6
Pt. Dume CA	PDPD	.21	19	6	74.07	16	6	nd	-	6
Pt. S. Barbara CA	SBSB	.07	68	6	51.24	30	6	nd	-	6
Monterey Bay CA	MBSC	—	-	-	—	-	-	—	-	-
Oakland Est. CA	OAK	.54	124	3	114.8	5	3	.4	23	3
Hunters Pt. CA	HUN	.24	128	6	165.82	73	6	.57	20	6
San Fran. Bay CA	SFDB	.31	22	6	103.42	27	6	nd	-	6
San Fran. Bay CA	SFSM	.34	14	6	122.50	9	6	nd	-	6
San Fran. Bay CA	SFEM	.34	11	6	117.97	7	6	1.39	245	6
San Pablo Bay CA	PAB	.03	142	5	252.09	29	6	.73	31	6
San Pablo Bay CA	SPSM	.42	77	6	202.35	38	6	nd	-	6
San Pablo Bay CA	SPSP	.33	25	6	133.5	6	6	nd	-	6
Tomales Bay CA	TBSR	.38	26	6	171.65	20	6	nd	-	6
Humboldt Bay CA	HMB	.32	-	1	246.25	-	1	.26	-	1

Normalized concentrations, µg/g dry-wt., of mercury (**Hg**), nickel (**Ni**), and selenium (**Se**) in fine-grained sediments from NS&T Sites from **Oregon** through **Hawaii.**

SITE	CODE	Hg	c.v.%	n	Ni	c.v.%	n	Se	c.v.%	n
Coos Bay OR	COO	.02	173	3	59.08	20	3	.53	56	3
Coos Bay OR	CBCH	.05	78	2	164.74	20	2	1.34	31	2
Coos Bay OR	CBRP	.18	42	4	92.63	15	4	.21	200	4
Yaquina Bay OR	YBOP	.05	58	6	63.38	13	6	.41	92	6
Yaquina Head OR	YHYH	.20	60	6	81.06	18	6	.19	223	6
Tillamook Bay OR	TBHP	.03	138	5	150.56	14	5	.89	96	5
Columbia R. OR	CRYB	.02	200	4	77.15	35	4	.17	200	4
Columbia R. OR	COL	.76	75	3	76.51	13	3	1.26	68	3
S. Juan de Fuca WA	JFNB	.12	45	6	64.52	25	6	.46	81	6
South Puget Snd. WA	SSBI	.2	17	6	49.73	17	6	.59	13	6
Comm. Bay WA	COM	.07	113	6	33.7	5	6	.46	43	6
Comm. Bay WA	CBTP	.1	48	6	33.01	14	6	.1	123	6
Elliott Bay WA	ELL	1.09	100	6	88.5	38	6	1.22	39	6
Sinclair Inlet WA	SIWP	1.15	62	6	80.61	36	6	.62	23	6
Whidbey Is. WA	WIPP	.13	25	6	59.72	12	6	.58	13	6
Bellingham Bay WA	BBSM	.23	22	6	170.97	4	6	.51	43	6
Pt. Roberts WA	PRPR	.08	43	6	50.74	13	6	.51	28	6
Lutak Inlet AK	LUT	.3	130	3	26.77	5	3	.6	55	3
Nahku Bay AK	NAH	.34	95	3	15.29	26	3	1.26	74	3
Unakwit Inlet AK	UISB	.06	9	6	64.19	9	6	.39	28	6
Port Valdez AK	PVMC	.04	54	4	68.25	11	4	.16	124	4
Prudhoe Bay AK	END	.26	57	3	86.77	44	3	1	60	3
Barber's Pt. HI	BPBP	.05	25	3	106.5	55	3	nd	-	3
Honolulu Hrb HI	HHKL	.47	8	3	51.11	16	3	nd	-	3

Normalized concentrations, µg/g dry-wt., of silver (**Ag**), tin (**Sn**), and zinc (**Zn**) in fine-grained sediments from NS&T Sites from **Maine** through **Virginia.**

SITE	CODE	Ag	c.v.%	n	Sn	c.v.%	n	Zn	c.v.%	n
Machias Bay ME	MAC	.06	12	4	3.53	22	4	84	13	4
Frenchmans Bay ME	FRN	.1	8	3	4.3	2	3	110	5	3
Penobscot Bay ME	PNB	.11	2	3	3.98	11	3	117	2	3
Penobscot Bay ME	PBSI	.17	12	6	1.76	85	6	92	8	6
Penobscot Bay ME	PBPI	.13	57	3	4.38	16	3	115	14	3
Casco Bay ME	CSC	.2	55	6	6.13	31	6	133	24	6
Salem Hrb. MA	SAL	2.83	44	6	19.14	55	6	342	38	6
Cape Ann MA	CASI	.32	56	3	8.61	22	3	155	17	3
Boston Hrb. MA	BHDI	4.64	46	5	22.56	40	5	213	9	5
Boston Hrb. MA	BHDB	4.34	43	5	20.67	31	5	242	8	5
Boston Hrb. MA	BHHB	5.28	21	3	16.29	29	3	265	11	3
Boston Hrb. MA	BOS	11.65	22	7	42.86	27	7	452	63	7
Buzzards Bay MA	BBRH	.72	17	6	2.36	100	6	95	7	6
Buzzards Bay MA	BBAR	2.8	16	5	7.3	26	5	159	22	5
Buzzards Bay MA	BBGN	.75	134	5	3.92	33	5	112	24	5
Buzzards Bay MA	BUZ	1.16	110	8	4.22	68	8	139	27	8
Narr. Bay RI	NBMH	2.44	9	3	9.42	15	3	211	8	3
Narr. Bay RI	NBCI	1.04	5	6	7.51	154	6	165	10	6
Narr. Bay RI	NBDI	1.28	38	5	9.37	27	5	235	26	5
Narr. Bay RI	NAR	1.88	73	7	9.8	44	7	225	37	7
Block Is. RI	BIBI	.28	48	3	5.2	35	3	108	2	3
Long Is. Snd. CT	LICR	.83	21	5	3.49	31	5	200	17	5
Long Is. Snd. CT	LISI	1.46	11	5	4.74	52	5	295	12	5
W.Long Is. Snd. NY	WLI	2.03	24	5	11.59	17	5	293	15	5
Long Is. Snd. NY	LIHU	1.43	29	6	3.16	40	6	308	14	6
Long Is. Snd. NY	LIMR	1.76	31	6	3.86	52	6	300	20	6
Long Is. Snd. NY	LIHH	5.35	15	6	7.26	56	6	314	8	6
Long Is. Snd. NY	LITN	5.17	44	6	8.28	52	6	308	22	6
Hud./Rar. Est NY	HRJB	5.57	3	2	27.43	5	2	314	-	2
Hud./Rar. Est. NY	HRUB	4.59	96	3	19.7	61	3	269	61	3
Hud./Rar. Est. NY	HRLB	7.85	16	5	12	113	5	381	20	5
Hud./Rar. Est. NJ	HRRB	6.82	6	3	42.75	13	3	522	8	3
Raritan Bay NJ	RAR	6.24	32	8	23.11	27	8	566	39	8
N.Y. Bight NJ	NYSH	6.26	17	6	11.97	110	6	453	16	6
Moriches Bay NY	MBTH	1.35	10	5	2.08	98	5	155	5	5
Great Bay NJ	GRB	.82	8	3	7.59	7	3	221	8	3
Delaware Bay DE	DEL	.43	29	3	7.1	36	3	229	33	3
Delaware Bay DE	DBFE	.4	45	3	1.67	71	3	186	23	3
Delaware Bay DE	DBBD	.24	58	3	1.65	11	3	181	31	3
Delaware Bay DE	DBAP	.36	98	6	1.3	103	6	192	43	6
Delaware Bay DE	DBKI	.35	4	6	1.43	72	6	187	13	6
Up. Ches. Bay MD	UCB	.67	33	3	7.86	14	3	335	11	3
Ches. Bay MD	CBMP	.64	10	6	3.91	52	6	395	20	6
Ches. Bay MD	CBHP	.59	16	6	3.15	44	6	305	14	6
Mid. Ches. Bay VA	MCB	.21	30	2	4.28	15	2	216	33	2
Ches. Bay VA	CBIB	.14	28	5	1.18	63	5	118	11	5
Ches. Bay VA	CBCC	.08	8	2	.85	41	2	116	7	2
Ches. Bay VA	CBDP	.3	30	4	1.56	80	4	80	69	4
Low. Ches.Bay VA	LCB	.17	33	6	3.97	40	6	141	17	6
Quinby Inlet VA	QIUB	.12	60	6	1.73	118	6	139	22	6

Normalized concentrations, µg/g dry-wt., of silver (**Ag**), tin (**Sn**), and zinc (**Zn**) in fine-grained sediments from NS&T Sites from **North Carolina** through **Louisiana.**

SITE	CODE	Ag	c.v.%	n	Sn	c.v.%	n	Zn	c.v.%	n
Pamlico Snd. NC	PAM	.07	58	5	3.43	43	5	125	25	5
Cape Fear NC	CFBI	.19	23	5	1.06	84	5	126	25	5
Charleston Hrb. SC	CHFJ	.17	30	3	1.08	38	3	85	11	3
Charleston Hrb. SC	CHSF	.11	65	5	.34	129	5	101	31	5
Charleston Hrb. SC	CHS	.15	34	6	3.93	37	6	99	13	6
Savannah R. Est. GA	SRTI	.07	18	2	1.54	19	2	87	6	2
Sapelo Is. GA	SAP	.01	146	6	3.3	19	5	84	14	6
St. Johns R. FL	SJCB	.17	43	5	1.55	50	5	102	31	5
St. Johns R. FL	SJR	.31	21	4	3.88	26	4	169	15	4
Biscayne Bay FL	BBPC	.12	62	6	.37	121	6	45	15	6
Everglades FL	EVFU	.03	41	4	.49	29	4	20	10	4
Rookery Bay FL	RBHC	.04	25	6	.84	73	6	27	32	6
Naples Bay FL	NBNB	.12	56	4	.58	44	4	50	49	4
Charlotte Hrb. FL	CBBI	.08	9	2	2.54	116	2	52	48	2
Charlotte Hrb. FL	LOT	.01	91	3	3.48	31	3	34	27	3
Tampa Bay FL	TAM	.29	-	1	2.98	-	1	61	-	1
Tampa Bay FL	TBMK	.17	30	2	.58	54	2	82	46	2
Tampa Bay FL	TBHB	.71	-	1	4.7	-	1	258	-	1
Tampa Bay FL	TBPB	.09	25	2	1.25	1	2	62	23	2
Cedar Key FL	CKBP	.08	26	5	.96	84	5	44	34	5
Apalachicola Bay FL	APCP	.07	42	3	3.92	13	3	93	10	3
Apalachicola Bay FL	APDB	.11	22	6	3.98	19	6	131	18	6
Apalachicola Bay FL	APA	.07	25	6	4.91	16	6	128	44	6
St. Andrew Bay FL	SAWB	.94	48	6	4.01	49	6	239	53	6
Choctawhat. Bay FL	CBSP	.63	112	4	2.84	49	4	134	11	4
Choctawhat. Bay FL	CBSR	.1	42	6	4.8	24	6	160	41	6
Pensacola Bay FL	PEN	.18	35	3	3.86	50	3	170	4	3
Pensacola Bay FL	PBIB	.08	37	6	1.58	53	6	76	42	6
Mobile Bay AL	MBCP	.13	42	4	2.91	70	4	163	17	4
Mobile Bay AL	MOB	.1	16	6	3.62	46	6	171	5	6
Round Is. MS	ROU	.15	43	6	3.5	34	6	111	12	6
Heron Bay MS	HER	.13	8	3	2.26	30	3	85	24	3
Miss. Snd. MS	MSPB	.25	94	6	2.63	22	6	93	20	6
Miss. Snd. MS	MSBB	.22	11	2	5.17	64	2	166	27	2
Miss. Snd. MS	MSPC	.13	14	3	3.63	3	3	118	12	3
Miss. Delta LA	MRD	.19	20	6	2.72	25	6	109	10	6
Lake Borgne LA	LBMP	.12	14	6	1.12	96	6	69	17	6
Breton Snd. LA	BSSI	.11	23	6	1.87	47	6	92	19	6
Breton Snd. LA	BSBG	.31	33	3	6.09	82	3	99	31	3
Barataria Bay LA	BBSD	.12	13	6	1.24	40	6	86	4	6
Barataria Bay LA	BBMB	.2	30	6	1.23	66	6	141	22	6
Barataria Bay LA	BAR	.15	22	5	5.16	109	5	117	13	5
Terrebonne Bay LA	TBLF	.11	21	6	.69	98	6	91	20	6
Terrebonne Bay LA	TBLB	.14	16	3	.38	14	3	160	72	3
Caillou Lake LA	CLCL	.14	34	6	1.47	89	6	118	23	6
Atchafalaya Bay LA	ABOB	.14	22	6	1.9	57	6	83	29	6
Vermillion Bay LA	VBSP	.14	16	3	.37	173	3	126	14	3
J. Hrb. Bayou LA	JHJH	.17	32	5	1.91	82	5	157	16	5
Calcasieu Lake LA	CLSJ	.12	11	6	1.9	27	6	116	12	6
Sabine Lake LA	SLBB	.16	31	6	2.04	23	6	122	27	6
E. Cote Blanche LA	ECSP	.22	23	3	2.56	42	3	141	23	3

Normalized concentrations, µg/g dry-wt., of silver (**Ag**), tin (**Sn**), and zinc (**Zn**) in fine-grained sediments from NS&T Sites from **Texas** through **California.**

SITE	CODE	Ag	c.v.%	n	Sn	c.v.%	n	Zn	c.v.%	n
Galveston Bay TX	GBHR	.13	23	6	2.18	36	6	112	13	6
Galveston Bay TX	GBYC	.15	30	6	1.92	34	6	82	20	6
Galveston Bay TX	GBTD	.17	27	6	2.03	22	6	87	9	6
Galveston Bay TX	GBCR	.23	32	6	3.08	51	6	87	21	6
Galveston Bay TX	GAL	.1	59	5	3.67	34	5	90	78	5
Matagorda Bay TX	MBEM	.14	51	5	2.72	37	5	102	27	5
Matagorda Bay TX	MBTP	.13	24	6	1.53	99	6	70	14	6
Matagorda Bay TX	MBGP	.11	36	6	2	45	6	87	15	6
Matagorda Bay TX	MBLR	.17	57	6	1.54	82	6	80	34	6
Espiritu Santo TX	ESSP	.08	7	6	1.41	55	6	63	17	6
Espiritu Santo TX	ESBD	.24	-	1	2.06	-	1	37	-	1
San Antonio Bay TX	SAMP	.22	45	6	1.15	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	62	6	2.03	27	6	64	17	6
Mesquite Bay TX	MBAR	.08	9	6	1.09	47	6	56	13	6
Copano Bay TX	CBCR	.08	9	6	1.65	21	6	78	11	6
Aransas Bay TX	ABLR	.14	46	6	.84	97	6	94	23	6
Corpus Christi TX	CCIC	.18	34	4	1.87	53	4	85	22	4
Corpus Christi TX	CCNB	.26	26	6	5.15	175	6	135	19	6
Corpus Christi Bay TX	CCB	.11	74	5	3.76	58	5	152	8	5
L. Laguna Madre TX	LMSB	.15	21	6	1.28	45	6	78	12	6
L. Laguna Madre TX	LLM	.18	64	6	6.56	117	6	97	6	6
San Diego Bay CA	SDF	.37	43	2	4.09	25	2	179	34	2
San Diego Bay CA	SDHI	2.29	37	6	4.94	176	6	433	29	6
San Diego Hrb. CA	SDA	1.23	63	6	13.11	31	6	493	21	6
Pt. Loma CA	PLLH	.56	38	6	nd	-	6	161	6	6
La Jolla CA	LJLJ	.57	12	3	nd	-	3	115	25	3
Oceanside CA	OSBJ	.24	34	6	nd	-	6	121	3	6
Dana Pt. CA	DAN	1.87	126	6	3.69	51	6	169	42	6
Newport Bch. CA	NBBC	.53	32	5	nd	-	5	110	57	5
Anaheim Bay CA	ABWJ	.39	46	6	nd	-	6	154	10	6
Seal Beach CA	SEA	2.24	39	3	3.26	14	3	208	14	3
Long Beach CA	LNB	.58	2	3	7.25	24	3	319	19	3
San Pedro Bay CA	SPB	.53	11	3	5.44	31	3	170	22	3
San Pedro Cyn. CA	SPC	4.91	9	2	17.11	15	2	475	2	2
San Pedro Hrb. CA	SPFP	1.2	10	3	nd	-	3	240	6	3
Palos Verdes CA	PVRP	4.84	51	6	10.28	113	6	328	22	6
Marina Del Rey CA	MDSJ	2.45	25	6	nd	-	6	143	9	6
Pt. Dume CA	PDPD	1.97	23	6	nd	-	6	148	16	6
Pt. S. Barbara CA	SBSB	.59	41	6	1.46	245	6	119	17	6
Monterey Bay CA	MBSC	—	-	-	—	-	-	—	-	-
Oakland Est. CA	OAK	.08	173	3	2.06	6	3	190	6	3
Hunters Pt. CA	HUN	.35	106	6	3.61	91	6	181	26	6
San Fran. Bay CA	SFDB	.72	28	6	.6	245	6	153	12	6
San Fran. Bay CA	SFSM	.56	17	6	nd	-	6	141	6	6
San Fran. Bay CA	SFEM	.55	23	6	nd	-	6	147	7	6
San Pablo Bay CA	PAB	.87	146	6	.69	157	6	309	37	6
San Pablo Bay CA	SPSM	.5	71	6	nd	-	6	233	69	6
San Pablo Bay CA	SPSP	.49	43	6	nd	-	6	150	9	6
Tomales Bay CA	TBSR	.23	70	6	nd	-	6	124	8	6
Humboldt Bay CA	HMB	.4	-	1	nd	-	1	179	-	1

Normalized concentrations, µg/g dry-wt., of silver (**Ag**), tin (**Sn**), and zinc (**Zn**) in fine-grained sediments from NS&T Sites from **Oregon** through **Hawaii.**

SITE	CODE	Ag	c.v.%	n	Sn	c.v.%	n	Zn	c.v.%	n
Coos Bay OR	COO	.88	137	3	.48	96	3	189	36	3
Coos Bay OR	CBCH	.17	10	2	1.53	12	2	173	16	2
Coos Bay OR	CBRP	.15	16	4	2	29	4	142	12	4
Yaquina Bay OR	YBOP	.15	23	6	2.52	24	6	164	24	6
Yaquina Head OR	YHYH	.16	11	6	2.72	30	6	163	9	6
Tillamook Bay OR	TBHP	.15	22	5	2.57	49	5	232	8	5
Columbia R. OR	CRYB	.24	24	4	3.27	18	4	309	21	4
Columbia R. OR	COL	6.1	102	3	nd	-	3	372	25	3
S. Juan de Fuca WA	JFNB	.19	13	6	5.37	29	6	190	17	6
South Puget Snd. WA	SSBI	.59	7	6	2.25	13	6	125	7	6
Comm. Bay WA	COM	3.88	109	6	nd	-	6	118	12	6
Comm. Bay WA	CBTP	.47	11	6	2.06	15	6	100	10	6
Elliott Bay WA	ELL	1.98	128	6	2.3	80	6	447	52	6
Sinclair Inlet WA	SIWP	1.21	10	6	7.4	16	6	214	13	6
Whidbey Is. WA	WIPP	.45	3	6	2.41	13	6	121	10	6
Bellingham Bay WA	BBSM	.2	11	6	1.3	20	6	130	9	6
Pt. Roberts WA	PRPR	.15	6	6	1.47	22	6	125	6	6
Lutak Inlet AK	LUT	.08	173	3	.19	91	3	204	6	3
Nahku Bay AK	NAH	5.6	26	3	.08	173	3	253	22	3
Unakwit Inlet AK	UISB	.13	11	6	1.12	38	6	135	7	6
Port Valdez AK	PVMC	.13	4	4	1.29	6	4	150	9	4
Prudhoe Bay AK	END	.4	45	3	nd	-	3	208	41	3
Barber's Pt. HI	BPBP	.21	31	3	nd	-	3	89	62	3
Honolulu Hrb HI	HHKL	1.67	18	3	nd	-	3	144	21	3

APPENDIX C.

Summary Statistics for Contaminant Concentrations in Sandy Sediments

APPENDIX C.

National Status and Trends Program

Summary Statistics for Contaminant Concentrations in Sandy Sediments Collected in 1984 through 1987

Unlike the data for fine-grained sediments (%fine >20%),where contaminant concentrations were normalized for the fraction of fine-grained sediment in the sample, these data for sandy sediments (%fine ≤20%) have been derived directly from the raw concentration data.

Explanation of tables:

The column labeled "CODE" indicates site location more specifically than does the column labeled "SITE" and is keyed to the maps in Appendix A showing site location.

The next nine columns are three values for each of three analytes: the mean concentration, the coefficient of variation (c.v.%, standard deviation divided by mean), and the number (n) of composites whose normalized concentrations are part of the mean.

A mean is listed as "nd" when the contaminant was not detected in any of the samples for the site. When at least one analysis yielded a quantifiable signal the "nd's" have been treated as zeros when calculating the summary statistics. When no analyses was made for a contaminant, its mean is listed as a triple dash (---). A single dash (-) appears for a c.v% whenever n ≤1 and for n whenever n=0.

Sites appear in both this and in Appendix B, for fine-grained sediments, whenever individual composites from stations at a site fall into separate categories.

Sediments at these five sites were too coarse to even be collected by a grab sampler or box-corer:

BHBI	Boston Harbor MA , Brewster Islands
SCFP	Santa Cruz CA, Fraser Point
SSSS	San Simeon Point CA, San Simeon Point
PAPA	Point Arena CA, Point Arena
PDSC	Point Delgada CA, Shelter Cove

Percentages of fine-grained material ,% dry-wt., (**fine**) and concentrations, %dry-wt., of total organic carbon (**TOC**) and polyaromatic hydrocarbons, ng/g dry-wt., (**tPAH**) in sandy sediments from NS&T Sites from **Maine** through **Mississippi.**

SITE	CODE	fine	c.v.%	n	TOC	c.v.%	n	tPAH	c.v.%	n
Penobscot Bay ME	PBPI	11	-	1	1.7	-	1	—	-	-
Merrimac R. MA	MER	6	9	5	.1	29	5	767	182	5
Boston Hrb. MA	BHDI	5	-	1	.14	-	1	68	-	1
Boston Hrb. MA	BHDB	19	-	1	.69	-	1	4572	-	1
Boston Hrb. MA	BHHB	14	18	3	.58	35	3	345	42	3
Buzzards Bay MA	BBAR	11	-	1	.25	-	1	518	-	1
Buzzards Bay MA	BBGN	18	-	1	.41	-	1	414	-	1
Narr. Bay RI	NBDI	14	-	1	.4	-	1	384	-	1
E. Long Is. Snd. CT	ELI	8	30	6	.28	39	6	119	137	6
Long Is. Snd. CT	LICR	11	-	1	.47	-	1	6140	-	1
Long Is. Snd. CT	LINH	3	20	3	.09	25	3	67	117	3
Long Is. Snd. CT	LIHR	10	54	3	.37	115	3	5626	57	3
Long Is. Snd. CT	LISI	7	-	1	.36	-	1	460	-	1
Long Is. Snd. NY	LIPJ	11	36	3	.29	9	3	391	58	3
Hud./Rar. Est NY	HRJB	4	-	1	.62	-	1	354	-	1
Hud./Rar. Est. NY	HRUB	16	19	3	.35	20	3	35669	41	3
Hud./Rar. Est. NY	HRLB	19	-	1	1.16	-	1	13742	-	1
N.Y. Bight NJ	NYLB	5	9	3	.05	43	3	—	-	-
N.Y. Bight NJ	NYSR	6	14	3	.06	17	3	—	-	-
Moriches Bay NY	MBTH	17	-	1	.36	-	1	95	-	1
Delaware Bay DE	DEL	12	66	3	.4	92	3	339	83	3
Delaware Bay DE	DBFE	6	-	1	.13	-	1	—	-	-
Delaware Bay DE	DBBD	7	-	1	.13	-	1	—	-	-
Ches. Bay MD	CBHG	6	7	3	.22	38	3	48	85	3
Mid. Ches. Bay VA	MCB	10	-	1	1.1	-	1	73	-	1
Ches. Bay VA	CBIB	16	-	1	.74	-	1	309	-	1
Ches. Bay VA	CBCC	7	41	4	.19	40	4	15	91	4
Ches. Bay VA	CBDP	14	42	2	.36	44	2	138	84	2
Roanoke Snd. NC	RSJC	11	30	3	.27	46	3	—	-	-
Pamlico Snd. NC	PSWB	8	28	3	.17	37	3	—	-	-
Pamlico Snd. NC	PAM	7	-	1	.12	-	1	nd	-	1
Cape Fear NC	CFBI	4	-	1	.09	-	1	35	-	1
Charleston Hrb. SC	CHFJ	7	42	2	.22	39	2	—	-	-
Charleston Hrb. SC	CHSF	15	-	1	.62	-	1	221	-	1
Savannah R. Est. GA	SRTI	14	33	4	.37	63	4	77	89	4
Sapelo Snd. GA	SSSI	18	14	3	.44	6	3	—	-	-
St. Johns R. FL	SJCB	7	-	1	.25	-	1	31	-	1
St. Johns R. FL	SJR	15	35	2	.73	57	2	367	33	2
Matanzas R. FL	MRCB	12	46	3	.32	36	3	—	-	-
Everglades FL	EVFU	9	3	2	.22	3	2	nd	-	2
Naples Bay FL	NBNB	17	17	2	2.38	75	2	132	121	2
Charlotte Hrb. FL	CBBI	14	25	4	.37	62	4	242	198	4
Charlotte Hrb. FL	LOT	15	16	3	.46	3	3	21	43	3
Tampa Bay FL	TAM	13	29	5	.59	31	5	82	84	4
Tampa Bay FL	TBMK	8	76	4	2.66	147	4	107	94	4
Tampa Bay FL	TBCB	7	24	6	.37	46	6	11	114	6
Tampa Bay FL	TBHB	11	35	5	.65	19	5	866	87	5
Tampa Bay FL	TBPB	8	40	3	.2	44	3	32	78	3
Cedar Key FL	CKBP	16	-	1	.34	-	1	nd	-	1
Apalachicola Bay FL	APCP	5	20	3	.17	7	3	67	18	3
Choctawhat. Bay FL	CBSP	6	32	2	.73	103	2	516	74	2
Mobile Bay AL	MBCP	8	30	2	.47	121	2	74	141	2
Miss. Snd. MS	MSBB	5	30	3	.19	112	3	398	55	3

Percentages of fine-grained material ,% dry-wt., (**fine**) and concentrations, %dry-wt., of total organic carbon (**TOC**) and polyaromatic hydrocarbons, ng/g dry-wt., (**tPAH**) in sandy sediments from NS&T Sites from **Louisianna** through **Alaska.**

SITE	CODE	fine	c.v.%	n	TOC	c.v.%	n	tPAH	c.v.%	n
Barataria Bay LA	BAR	12	-	1	.82	-	1	101	-	1
J. Hrb. Bayou LA	JHJH	2	-	1	.05	-	1	9	-	1
Galveston Bay TX	GAL	11	-	1	.1	-	1	nd	-	1
Matagorda Bay TX	MBEM	14	-	1	.13	-	1	5	-	1
Espiritu Santo TX	ESBD	13	60	2	.14	5	2	nd	-	2
Corpus Christi TX	CCIC	8	7	2	.08	53	2	6	33	2
Corpus Christi Bay TX	CCB	16	-	1	.18	-	1	nd	-	1
Imperial Beach CA	IBIB	17	12	3	.07	23	3	—	-	-
San Diego Bay CA	SDF	9	58	4	.26	40	4	111	200	4
Mission Bay CA	MBVB	7	65	3	.19	50	3	—	-	-
San Pedro Cyn. CA	SPC	18	-	1	.46	-	1	279	-	1
S. Catalina Is. CA	SCBR	9	32	3	.18	27	3	—	-	-
Santa Monica Bay CA	SMB	8	14	6	.18	86	6	28	203	6
Pt. Conception CA	PCPC	12	33	3	1.26	23	3	—	-	-
San Luis Ob. Bay CA	SLSL	10	78	3	.97	25	3	—	-	-
Pacific Grove CA	PGLP	8	23	3	.11	27	3	—	-	-
Monterey Bay CA	MBSC	12	2	2	.06	81	2	—	-	-
Monterey Bay CA	MON	10	51	3	.41	83	3	33	84	3
Southamp. Shl. CA	SHS	13	29	6	.25	36	6	799	141	6
Bodega Bay CA	BOD	6	46	6	.41	103	6	51	125	6
Bodega Bay CA	BBBE	1	-	1	—	-	-	—	-	-
Humboldt Bay CA	HMBJ	3	63	3	.02	-	3	—	-	-
Humboldt Bay CA	HMB	7	50	2	.2	44	2	—	-	-
Pt. St. George OR	SGSG	7	33	3	.12	24	3	—	-	-
Coos Bay OR	COO	3	42	3	.11	43	3	nd	-	3
Coos Bay OR	CBCH	13	26	4	.7	30	4	nd	-	3
Coos Bay OR	CBRP	20	-	2	.76	20	2	87	6	2
Tillamook Bay OR	TBHP	20	-	1	.77	-	1	13	-	1
Columbia R. OR	CRYB	11	52	2	.28	45	2	34	61	2
Columbia R. OR	COL	10	40	3	.32	57	3	62	120	3
Gray's Hrb. WA	GHWJ	15	24	3	.38	15	3	—	-	-
Nisqually Rch. WA	NIS	4	30	6	.08	97	6	6	114	6
Elliott Bay WA	EBFR	14	29	3	.24	27	3	—	-	-
Oliktok Pt. AK	OLI	-	-	3	-	-	3	—	-	-

Concentrations, ng/g dry-wt., of total non-DDT chlorinated pesticides (**tChlP**) , total DDT (**tDDT**) and total polychlorinated biphenyls (**tPCB**) in sandy sediments from NS&T Sites from **Maine** through **Mississippi.**

SITE	CODE	tChlP	c.v.%	n	tDDT	c.v.%	n	tPCB	c.v.%	n
Penobscot Bay ME	PBPI	—	-	-	—	-	-	—	-	-
Merrimac R. MA	MER	1.7	62	5	nd	-	5	29.22	103	5
Boston Hrb. MA	BHDI	.34	-	1	.38	-	1	12.39	-	1
Boston Hrb. MA	BHDB	6.11	-	1	9.6	-	1	207.89	-	1
Boston Hrb. MA	BHHB	1.07	95	3	2.76	44	3	41.03	24	3
Buzzards Bay MA	BBAR	4	-	1	5.69	-	1	242.89	-	1
Buzzards Bay MA	BBGN	2.54	-	1	.6	-	1	46.59	-	1
Narr. Bay RI	NBDI	3.79	-	1	1.99	-	1	36.09	-	1
E. Long Is. Snd. CT	ELI	.17	126	6	.06	245	6	8.66	89	6
Long Is. Snd. CT	LICR	1.65	-	1	12.85	-	1	36.2	-	1
Long Is. Snd. CT	LINH	nd	-	3	.46	173	3	1.13	116	3
Long Is. Snd. CT	LIHR	11.24	122	3	29.39	110	3	190.52	111	3
Long Is. Snd. CT	LISI	nd	-	1	nd	-	1	4.23	-	1
Long Is. Snd. NY	LIPJ	.69	141	2	.33	141	2	13.14	89	2
Hud./Rar. Est NY	HRJB	2.28	-	1	3	-	1	27.27	-	1
Hud./Rar. Est. NY	HRUB	11.09	9	3	41.33	42	3	209.06	6	3
Hud./Rar. Est. NY	HRLB	8.89	-	1	34.7	-	1	193.1	-	1
N.Y. Bight NJ	NYLB	—	-	-	—	-	-	—	-	-
N.Y. Bight NJ	NYSR	—	-	-	—	-	-	—	-	-
Moriches Bay NY	MBTH	.9	-	1	.56	-	1	8.18	-	1
Delaware Bay DE	DEL	4.04	110	3	.94	138	3	36.51	161	3
Delaware Bay DE	DBFE	—	-	-	—	-	-	—	-	-
Delaware Bay DE	DBBD	—	-	-	—	-	-	—	-	-
Ches. Bay MD	CBHG	nd	-	3	nd	-	3	nd	-	3
Mid. Ches. Bay VA	MCB	nd	-	1	.6	-	1	5	-	1
Ches. Bay VA	CBIB	nd	-	1	nd	-	1	.82	-	1
Ches. Bay VA	CBCC	nd	-	4	nd	-	4	nd	-	4
Ches. Bay VA	CBDP	nd	-	2	1	6	2	1.26	5	2
Roanoke Snd. NC	RSJC	—	-	-	—	-	-	—	-	-
Pamlico Snd. NC	PSWB	—	-	-	—	-	-	—	-	-
Pamlico Snd. NC	PAM	1.28	-	1	nd	-	1	—	-	-
Cape Fear NC	CFBI	nd	-	1	nd	-	1	nd	-	1
Charleston Hrb. SC	CHFJ	—	-	-	—	-	-	—	-	-
Charleston Hrb. SC	CHSF	nd	-	1	nd	-	1	nd	-	1
Savannah R. Est. GA	SRTI	nd	-	4	nd	-	4	.32	200	4
Sapelo Snd. GA	SSSI	—	-	-	—	-	-	—	-	-
St. Johns R. FL	SJCB	.96	-	1	.38	-	1	2.28	-	1
St. Johns R. FL	SJR	.26	141	2	.54	141	2	100.13	-	1
Matanzas R. FL	MRCB	—	-	-	—	-	-	—	-	-
Everglades FL	EVFU	nd	-	2	.08	71	2	1.9	67	2
Naples Bay FL	NBNB	4.82	75	2	3.53	88	2	12.64	34	2
Charlotte Hrb. FL	CBBI	.33	54	3	.58	79	4	2.62	131	4
Charlotte Hrb. FL	LOT	1.09	95	3	nd	-	3	nd	-	1
Tampa Bay FL	TAM	1.33	154	5	.23	138	5	nd	-	3
Tampa Bay FL	TBMK	1.33	69	4	2.09	126	4	6.4	69	4
Tampa Bay FL	TBCB	1.29	47	6	2.29	134	6	2.04	64	6
Tampa Bay FL	TBHB	.64	5	4	6.24	172	5	27.44	57	5
Tampa Bay FL	TBPB	.55	36	3	.13	44	3	.7	25	3
Cedar Key FL	CKBP	.27	-	1	.05	-	1	.5	-	1
Apalachicola Bay FL	APCP	.61	42	3	1.22	54	3	4.73	82	3
Choctawhat. Bay FL	CBSP	2.57	66	2	35.54	115	2	17.6	92	2
Mobile Bay AL	MBCP	2.16	138	2	4.32	109	2	47.04	139	2
Miss. Snd. MS	MSBB	1.38	117	3	1.6	39	3	6.83	23	3

Concentrations, ng/g dry-wt., of total non-DDT chlorinated pesticides (**tChlP**) , total DDT (**tDDT**) and total polychlorinated biphenyls (**tPCB**) in sandy sediments from NS&T Sites from **Louisianna** through **Alaska.**

SITE	CODE	tChlP	c.v.%	n	tDDT	c.v.%	n	tPCB	c.v.%	n
Barataria Bay LA	BAR	1.11	-	1	nd	-	1	—	-	-
J. Hrb. Bayou LA	JHJH	.06	-	1	.67	-	1	7	-	1
Galveston Bay TX	GAL	nd	-	1	nd	-	1	nd	-	1
Matagorda Bay TX	MBEM	nd	-	1	1.34	-	1	4	-	1
Espiritu Santo TX	ESBD	.27	105	2	.37	28	2	2.9	98	2
Corpus Christi TX	CCIC	.21	121	2	.14	141	2	1.2	35	2
Corpus Christi Bay TX	CCB	nd	-	1	nd	-	1	nd	-	1
Imperial Beach CA	IBIB	—	-	-	—	-	-	—	-	-
San Diego Bay CA	SDF	nd	-	4	21	200	4	13.27	102	4
Mission Bay CA	MBVB	—	-	-	—	-	-	—	-	-
San Pedro Cyn. CA	SPC	nd	-	1	351	-	1	104	-	1
S. Catalina Is. CA	SCBR	—	-	-	—	-	-	—	-	-
Santa Monica Bay CA	SMB	.31	114	6	2.41	73	6	13.28	18	6
Pt. Conception CA	PCPC	—	-	-	—	-	-	—	-	-
San Luis Ob. Bay CA	SLSL	—	-	-	—	-	-	—	-	-
Pacific Grove CA	PGLP	—	-	-	—	-	-	—	-	-
Monterey Bay CA	MBSC	—	-	-	—	-	-	—	-	-
Monterey Bay CA	MON	nd	-	3	.2	100	3	7	26	3
Southamp. Shl. CA	SHS	nd	-	6	.33	103	6	10.5	51	6
Bodega Bay CA	BOD	nd	-	6	.05	167	6	4.88	46	6
Bodega Bay CA	BBBE	—	-	-	—	-	-	—	-	-
Humboldt Bay CA	HMBJ	—	-	-	—	-	-	—	-	-
Humboldt Bay CA	HMB	—	-	-	—	-	-	—	-	-
Pt. St. George OR	SGSG	—	-	-	—	-	-	—	-	-
Coos Bay OR	COO	nd	-	3	nd	-	3	1.56	26	3
Coos Bay OR	CBCH	.13	87	3	.53	157	3	4.8	4	3
Coos Bay OR	CBRP	.2	-	2	.4	-	2	2.79	15	2
Tillamook Bay OR	TBHP	.1	-	1	.1	-	1	3.39	-	1
Columbia R. OR	CRYB	.65	33	2	1.75	28	2	2.09	114	2
Columbia R. OR	COL	.1	173	3	.1	173	3	8.16	88	3
Gray's Hrb. WA	GHWJ	—	-	-	—	-	-	—	-	-
Nisqually Rch. WA	NIS	nd	-	6	nd	-	6	4.28	57	6
Elliott Bay WA	EBFR	—	-	-	—	-	-	—	-	-
Oliktok Pt. AK	OLI	—	-	-	—	-	-	—	-	-

Concentrations, µg/g dry-wt., of antimony (**Sb**), arsenic (**As**), and cadmium (**Cd**) in sandy sediments from NS&T Sites from **Maine** through **Mississippi**.

SITE	CODE	Sb	c.v.%	n	As	c.v.%	n	Cd	c.v.%	n
Penobscot Bay ME	PBPI	—	-	-	—	-	-	—	-	-
Merrimac R. MA	MER	nd	-	5	4.17	47	5	.02	224	5
Boston Hrb. MA	BHDI	nd	-	1	2.59	-	1	.15	-	1
Boston Hrb. MA	BHDB	3.4	-	1	9.1	-	1	.6	-	1
Boston Hrb. MA	BHHB	2.73	18	3	3.73	23	3	.19	21	3
Buzzards Bay MA	BBAR	nd	-	1	nd	-	1	.17	-	1
Buzzards Bay MA	BBGN	nd	-	1	3.9	-	1	.09	-	1
Narr. Bay RI	NBDI	.62	-	1	6.9	-	1	.07	-	1
E. Long Is. Snd. CT	ELI	.24	111	6	3.19	50	6	.09	48	6
Long Is. Snd. CT	LICR	nd	-	1	4.69	-	1	.29	-	1
Long Is. Snd. CT	LINH	nd	-	3	1.5	87	3	.04	25	3
Long Is. Snd. CT	LIHR	.63	173	3	2.03	106	3	.41	121	3
Long Is. Snd. CT	LISI	nd	-	1	2.59	-	1	.12	-	1
Long Is. Snd. NY	LIPJ	nd	-	3	1.33	98	3	.07	20	3
Hud./Rar. Est NY	HRJB	nd	-	1	2.5	-	1	.16	-	1
Hud./Rar. Est. NY	HRUB	—	-	-	—	-	-	—	-	-
Hud./Rar. Est. NY	HRLB	1.79	-	1	6.69	-	1	.91	-	1
N.Y. Bight NJ	NYLB	—	-	-	—	-	-	—	-	-
N.Y. Bight NJ	NYSR	—	-	-	—	-	-	—	-	-
Moriches Bay NY	MBTH	.36	-	1	3.2	-	1	.16	-	1
Delaware Bay DE	DEL	nd	-	3	4.94	74	3	.08	109	3
Delaware Bay DE	DBFE	—	-	-	—	-	-	—	-	-
Delaware Bay DE	DBBD	—	-	-	—	-	-	—	-	-
Ches. Bay MD	CBHG	nd	-	3	1.39	89	3	.07	64	3
Mid. Ches. Bay VA	MCB	nd	-	1	5.17	-	1	.13	-	1
Ches. Bay VA	CBIB	1.1	-	1	3	-	1	.09	-	1
Ches. Bay VA	CBCC	.78	82	4	nd	-	4	.04	20	4
Ches. Bay VA	CBDP	.84	27	2	2.54	36	2	.1	43	2
Roanoke Snd. NC	RSJC	—	-	-	—	-	-	—	-	-
Pamlico Snd. NC	PSWB	—	-	-	—	-	-	—	-	-
Pamlico Snd. NC	PAM	nd	-	1	1.29	-	1	-	-	1
Cape Fear NC	CFBI	1.2	-	1	3.5	-	1	.03	-	1
Charleston Hrb. SC	CHFJ	—	-	-	—	-	-	—	-	-
Charleston Hrb. SC	CHSF	.18	-	1	5.59	-	1	.06	-	1
Savannah R. Est. GA	SRTI	.34	71	4	4.97	41	4	.06	67	4
Sapelo Snd. GA	SSSI	—	-	-	—	-	-	—	-	-
St. Johns R. FL	SJCB	1.7	-	1	2.09	-	1	.06	-	1
St. Johns R. FL	SJR	nd	-	2	1.04	61	2	.09	13	2
Matanzas R. FL	MRCB	—	-	-	—	-	-	—	-	-
Everglades FL	EVFU	.09	28	2	.45	16	2	.02	3	2
Naples Bay FL	NBNB	.18	-	2	4.34	21	2	.1	47	2
Charlotte Hrb. FL	CBBI	.21	67	4	1.57	86	4	.12	91	4
Charlotte Hrb. FL	LOT	nd	-	3	.77	87	3	.05	87	3
Tampa Bay FL	TAM	nd	-	5	.69	60	5	.11	66	5
Tampa Bay FL	TBMK	.15	75	4	1.57	62	4	.08	60	4
Tampa Bay FL	TBCB	.03	126	6	1.23	48	6	.06	59	6
Tampa Bay FL	TBHB	.23	46	5	1.27	47	5	.6	16	5
Tampa Bay FL	TBPB	.11	13	3	.8	33	3	.08	23	3
Cedar Key FL	CKBP	nd	-	1	4	-	1	.12	-	1
Apalachicola Bay FL	APCP	nd	-	3	1.93	20	3	.01	11	3
Choctawhat. Bay FL	CBSP	.3	39	2	1.29	65	2	.04	50	2
Mobile Bay AL	MBCP	.06	141	2	2.4	6	2	.01	-	2
Miss. Snd. MS	MSBB	.08	173	3	1.93	48	3	.04	50	3

Concentrations, µg/g dry-wt., of antimony (**Sb**), arsenic (**As**), and cadmium (**Cd**) in sandy sediments from NS&T Sites from **Louisianna** through **Alaska.**

SITE	CODE	Sb	c.v.%	n	As	c.v.%	n	Cd	c.v.%	n
Barataria Bay LA	BAR	nd	-	1	1.84	-	1	nd	-	1
J. Hrb. Bayou LA	JHJH	.55	-	1	14	-	1	.03	-	1
Galveston Bay TX	GAL	nd	-	1	.8	-	1	.01	-	1
Matagorda Bay TX	MBEM	.35	-	1	3.09	-	1	.06	-	1
Espiritu Santo TX	ESBD	.32	-	2	1.9	7	2	.02	10	2
Corpus Christi TX	CCIC	.35	8	2	1.7	8	2	.05	7	2
Corpus Christi Bay TX	CCB	nd	-	1	1.7	-	1	.09	-	1
Imperial Beach CA	IBIB	—	-	-	—	-	-	—	-	-
San Diego Bay CA	SDF	.84	22	4	3.4	128	4	.17	156	4
Mission Bay CA	MBVB	—	-	-	—	-	-	—	-	-
San Pedro Cyn. CA	SPC	.32	-	1	1.73	-	1	.55	-	1
S. Catalina Is. CA	SCBR	—	-	-	—	-	-	—	-	-
Santa Monica Bay CA	SMB	.69	36	6	8.94	8	6	.29	41	6
Pt. Conception CA	PCPC	—	-	-	—	-	-	—	-	-
San Luis Ob. Bay CA	SLSL	—	-	-	—	-	-	—	-	-
Pacific Grove CA	PGLP	—	-	-	—	-	-	—	-	-
Monterey Bay CA	MBSC	—	-	-	—	-	-	—	-	-
Monterey Bay CA	MON	.37	12	3	7.53	10	3	.25	19	3
Southamp. Shl. CA	SHS	.88	9	6	8.36	51	6	.28	63	6
Bodega Bay CA	BOD	.85	21	6	4.6	80	6	.22	88	6
Bodega Bay CA	BBBE	—	-	-	—	-	-	—	-	-
Humboldt Bay CA	HMBJ	—	-	-	—	-	-	—	-	-
Humboldt Bay CA	HMB	.69	1	2	7.11	3	2	.18	8	2
Pt. St. George OR	SGSG	—	-	-	—	-	-	—	-	-
Coos Bay OR	COO	.55	53	3	7.13	15	3	.52	52	3
Coos Bay OR	CBCH	2.09	68	4	6.37	2	4	.22	31	4
Coos Bay OR	CBRP	2	7	2	6.34	19	2	.11	-	2
Tillamook Bay OR	TBHP	1.5	-	1	7.09	-	1	.09	-	1
Columbia R. OR	CRYB	1.79	8	2	4.69	9	2	.13	33	2
Columbia R. OR	COL	.99	19	3	6.84	82	3	.75	8	3
Gray's Hrb. WA	GHWJ	.33	173	3	7.33	14	3	.07	8	3
Nisqually Rch. WA	NIS	1.02	28	6	.22	161	6	.66	14	6
Elliott Bay WA	EBFR	6.36	27	3	9.56	7	3	.19	58	3
Oliktok Pt. AK	OLI	.62	52	3	3.62	62	3	.37	54	3

Concentrations, µg/g dry-wt., of chromium (**Cr**), copper (**Cu**) and lead (**Pb**) in sandy sediments from NS&T Sites from **Maine** through **Mississippi.**

SITE	CODE	Cr	c.v.%	n	Cu	c.v.%	n	Pb	c.v.%	n
Penobscot Bay ME	PBPI	—	-	-	—	-	-	—	-	-
Merrimac R. MA	MER	20.6	100	5	4.72	39	5	21.1	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	36.66	96	3	18	24	3	27.66	17	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	NBDI	53	-	1	19	-	1	31	-	1
E. Long Is. Snd. CT	ELI	38.09	23	6	8.58	48	6	20.18	15	6
Long Is. Snd. CT	LICR	38	-	1	18	-	1	26	-	1
Long Is. Snd. CT	LINH	12.33	89	3	13.33	11	3	14	21	3
Long Is. Snd. CT	LIHR	55.66	67	3	167	64	3	32.66	70	3
Long Is. Snd. CT	LISI	26	-	1	29	-	1	31	-	1
Long Is. Snd. NY	LIPJ	nd	-	3	12.66	16	3	9.13	20	3
Hud./Rar. Est NY	HRJB	21	-	1	9.8	-	1	16	-	1
Hud./Rar. Est. NY	HRUB	—	-	-	—	-	-	—	-	-
Hud./Rar. Est. NY	HRLB	83	-	1	42	-	1	62	-	1
N.Y. Bight NJ	NYLB	—	-	-	—	-	-	—	-	-
N.Y. Bight NJ	NYSR	—	-	-	—	-	-	—	-	-
Moriches Bay NY	MBTH	34	-	1	7.8	-	1	13	-	1
Delaware Bay DE	DEL	23.66	74	3	6.67	39	3	13.64	55	3
Delaware Bay DE	DBFE	—	-	-	—	-	-	—	-	-
Delaware Bay DE	DBBD	—	-	-	—	-	-	—	-	-
Ches. Bay MD	CBHG	nd	-	3	5.66	16	3	3.96	16	3
Mid. Ches. Bay VA	MCB	36.79	-	1	7.26	-	1	8.47	-	1
Ches. Bay VA	CBIB	26	-	1	8.39	-	1	6.69	-	1
Ches. Bay VA	CBCC	13.5	200	4	4.5	21	4	8.27	26	4
Ches. Bay VA	CBDP	31	27	2	6.15	31	2	10.5	7	2
Roanoke Snd. NC	RSJC	—	-	-	—	-	-	—	-	-
Pamlico Snd. NC	PSWB	—	-	-	—	-	-	—	-	-
Pamlico Snd. NC	PAM	5.39	-	1	.99	-	1	5.45	-	1
Cape Fear NC	CFBI	nd	-	1	4.4	-	1	6.5	-	1
Charleston Hrb. SC	CHFJ	—	-	-	—	-	-	—	-	-
Charleston Hrb. SC	CHSF	32	-	1	6.59	-	1	14	-	1
Savannah R. Est. GA	SRTI	14.25	116	4	6.22	42	4	8.32	39	4
Sapelo Snd. GA	SSSI	—	-	-	—	-	-	—	-	-
St. Johns R. FL	SJCB	90	-	1	6.3	-	1	11	-	1
St. Johns R. FL	SJR	18.49	84	2	2.81	40	2	9.45	68	2
Matanzas R. FL	MRCB	—	-	-	—	-	-	—	-	-
Everglades FL	EVFU	—	-	-	.55	13	2	.9	-	2
Naples Bay FL	NBNB	—	-	-	9.25	42	2	3.29	73	2
Charlotte Hrb. FL	CBBI	25	-	1	2.55	39	4	2.75	9	4
Charlotte Hrb. FL	LOT	18.54	44	3	.64	90	3	2.55	28	3
Tampa Bay FL	TAM	15.97	68	5	3.6	107	5	4.18	26	5
Tampa Bay FL	TBMK	11	-	1	4.53	67	4	9.57	59	4
Tampa Bay FL	TBCB	5.33	54	3	2.29	38	6	1.86	50	6
Tampa Bay FL	TBHB	50.5	85	2	6.13	36	5	62.24	39	5
Tampa Bay FL	TBPB	—	-	-	1.29	8	3	2.7	10	3
Cedar Key FL	CKBP	—	-	-	1.79	-	1	5	-	1
Apalachicola Bay FL	APCP	—	-	-	1.86	8	3	2.76	34	3
Choctawhat. Bay FL	CBSP	—	-	-	2.45	49	2	23.25	90	2
Mobile Bay AL	MBCP	20	-	1	2.07	26	2	5.09	11	2
Miss. Snd. MS	MSBB	—	-	-	4.13	38	3	27.33	120	3

Concentrations,µg/g dry-wt., of chromium (**Cr**), copper (**Cu**) and lead (**Pb**) in sandy sediments from NS&T Sites from **Louisianna** through **Alaska.**

SITE	CODE	Cr	c.v.%	n	Cu	c.v.%	n	Pb	c.v.%	n
Barataria Bay LA	BAR	16.02	-	1	2.42	-	1	7.54	-	1
J. Hrb. Bayou LA	JHJH	—	-	-	3	-	1	17	-	1
Galveston Bay TX	GAL	38.5	-	1	1.5	-	1	22	-	1
Matagorda Bay TX	MBEM	20	-	1	4.5	-	1	9	-	1
Espiritu Santo TX	ESBD	—	-	-	2.54	31	2	6.25	17	2
Corpus Christi TX	CCIC	8	-	2	6.69	91	2	4.44	17	2
Corpus Christi Bay TX	CCB	14.89	-	1	2.29	-	1	4	-	1
Imperial Beach CA	IBIB	—	-	-	—	-	-	—	-	-
San Diego Bay CA	SDF	45.67	24	4	7.73	4	4	11.14	15	4
Mission Bay CA	MBVB	—	-	-	—	-	-	—	-	-
San Pedro Cyn. CA	SPC	78.5	-	1	24	-	1	15.1	-	1
S. Catalina Is. CA	SCBR	—	-	-	—	-	-	—	-	-
Santa Monica Bay CA	SMB	60.23	15	6	10.04	40	6	25.73	33	6
Pt. Conception CA	PCPC	—	-	-	—	-	-	—	-	-
San Luis Ob. Bay CA	SLSL	—	-	-	—	-	-	—	-	-
Pacific Grove CA	PGLP	—	-	-	—	-	-	—	-	-
Monterey Bay CA	MBSC	—	-	-	—	-	-	—	-	-
Monterey Bay CA	MON	61.46	52	3	4.1	37	3	12.19	5	3
Southamp. Shl. CA	SHS	259.16	22	6	13.68	25	6	5.22	33	6
Bodega Bay CA	BOD	349.66	56	6	3.81	112	6	1.08	126	6
Bodega Bay CA	BBBE	—	-	-	—	-	-	—	-	-
Humboldt Bay CA	HMBJ	—	-	-	—	-	-	—	-	-
Humboldt Bay CA	HMB	328.5	54	2	5.07	4	2	nd	-	2
Pt. St. George OR	SGSG	—	-	-	—	-	-	—	-	-
Coos Bay OR	COO	87.26	123	3	.41	173	3	3.38	26	3
Coos Bay OR	CBCH	66.25	20	4	7.8	36	4	11.05	19	4
Coos Bay OR	CBRP	59.5	11	2	8.89	33	2	12	-	2
Tillamook Bay OR	TBHP	140	-	1	20	-	1	8.19	-	1
Columbia R. OR	CRYB	52.5	4	2	16.5	30	2	14	30	2
Columbia R. OR	COL	49.16	32	3	15.23	19	3	7.27	119	3
Gray's Hrb. WA	GHWJ	51	23	3	18.33	8	3	6.73	12	3
Nisqually Rch. WA	NIS	114.9	58	6	14.61	18	6	12.28	110	6
Elliott Bay WA	EBFR	89.66	10	3	26.33	25	3	25	12	3
Oliktok Pt. AK	OLI	69.36	36	3	19.9	48	3	13.83	23	3

Concentrations, µg/g dry-wt., of mercury (**Hg**), nickel (**Ni**), and selenium (**Se**) in sandy sediments from NS&T Sites from **Maine** through **Mississippi.**

SITE	CODE	Hg	c.v.%	n	Ni	c.v.%	n	Se	c.v.%	n
Penobscot Bay ME	PBPI	—	-	-	—	-	-	—	-	-
Merrimac R. MA	MER	.01	224	5	4.71	40	5	.01	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	.16	24	3	11.6	14	3	.03	173	3
Buzzards Bay MA	BBAR	.03	-	1	7.8	-	1	nd	-	1
Buzzards Bay MA	BBGN	.03	-	1	5.69	-	1	.11	-	1
Narr. Bay RI	NBDI	.1	-	1	14	-	1	nd	-	1
E. Long Is. Snd. CT	ELI	.01	245	6	9.77	24	6	.01	155	6
Long Is. Snd. CT	LICR	.08	-	1	20	-	1	nd	-	1
Long Is. Snd. CT	LINH	.03	17	3	20.33	28	3	nd	-	3
Long Is. Snd. CT	LIHR	.09	106	3	24	44	3	.06	173	3
Long Is. Snd. CT	LISI	.09	-	1	13	-	1	nd	-	1
Long Is. Snd. NY	LIPJ	.04	43	3	12.93	29	3	nd	-	3
Hud./Rar. Est NY	HRJB	.08	-	1	7.59	-	1	nd	-	1
Hud./Rar. Est. NY	HRUB	—	-	-	—	-	-	—	-	-
Hud./Rar. Est. NY	HRLB	.75	-	1	21	-	1	.25	-	1
N.Y. Bight NJ	NYLB	—	-	-	—	-	-	—	-	-
N.Y. Bight NJ	NYSR	—	-	-	—	-	-	—	-	-
Moriches Bay NY	MBTH	.1	-	1	3.7	-	1	nd	-	1
Delaware Bay DE	DEL	.04	132	3	5.84	81	3	.04	173	3
Delaware Bay DE	DBFE	—	-	-	—	-	-	—	-	-
Delaware Bay DE	DBBD	—	-	-	—	-	-	—	-	-
Ches. Bay MD	CBHG	nd	42	3	15.66	26	3	.06	173	3
Mid. Ches. Bay VA	MCB	nd	-	1	8.61	-	1	nd	-	1
Ches. Bay VA	CBIB	.05	-	1	6.69	-	1	nd	-	1
Ches. Bay VA	CBCC	.02	89	4	10.6	122	4	nd	-	4
Ches. Bay VA	CBDP	.05	12	2	7.3	12	2	nd	-	2
Roanoke Snd. NC	RSJC	—	-	-	—	-	-	—	-	-
Pamlico Snd. NC	PSWB	—	-	-	—	-	-	—	-	-
Pamlico Snd. NC	PAM	.01	-	1	nd	-	1	.04	-	1
Cape Fear NC	CFBI	nd	-	1	4.69	-	1	nd	-	1
Charleston Hrb. SC	CHFJ	—	-	-	—	-	-	—	-	-
Charleston Hrb. SC	CHSF	nd	-	1	7.5	-	1	.29	-	1
Savannah R. Est. GA	SRTI	.04	54	4	6.12	68	4	nd	-	4
Sapelo Snd. GA	SSSI	—	-	-	—	-	-	—	-	-
St. Johns R. FL	SJCB	.15	-	1	3.5	-	1	nd	-	1
St. Johns R. FL	SJR	.01	141	2	2.38	60	2	.37	112	2
Matanzas R. FL	MRCB	—	-	-	—	-	-	—	-	-
Everglades FL	EVFU	nd	-	2	1.5	47	2	nd	-	2
Naples Bay FL	NBNB	.03	33	2	2.5	28	2	nd	-	2
Charlotte Hrb. FL	CBBI	nd	200	4	2.9	62	4	.05	200	4
Charlotte Hrb. FL	LOT	nd	173	3	1.64	101	3	.18	66	3
Tampa Bay FL	TAM	.01	109	5	2.37	25	5	.16	63	5
Tampa Bay FL	TBMK	.01	200	4	2.4	64	4	.1	200	4
Tampa Bay FL	TBCB	nd	53	6	1.43	53	6	.06	117	6
Tampa Bay FL	TBHB	.08	89	5	3.14	54	5	.14	144	5
Tampa Bay FL	TBPB	nd	-	3	2	-	3	nd	-	3
Cedar Key FL	CKBP	.05	-	1	1	-	1	nd	-	1
Apalachicola Bay FL	APCP	nd	-	3	2.66	22	3	nd	-	3
Choctawhat. Bay FL	CBSP	.02	141	2	2.5	85	2	nd	-	2
Mobile Bay AL	MBCP	.06	49	2	14.89	122	2	.2	141	2
Miss. Snd. MS	MSBB	.04	87	3	2.66	57	3	nd	-	3

Concentrations, µg/g dry-wt., of mercury (Hg), nickel (Ni), and selenium (Se) in sandy sediments from NS&T Sites from **Louisianna** through **Alaska.**

SITE	CODE	Hg	c.v.%	n	Ni	c.v.%	n	Se	c.v.%	n
Barataria Bay LA	BAR	nd	-	1	4.71	-	1	.06	-	1
J. Hrb. Bayou LA	JHJH	.01	-	1	11	-	1	nd	-	1
Galveston Bay TX	GAL	.01	-	1	2.59	-	1	.12	-	1
Matagorda Bay TX	MBEM	nd	-	1	12	-	1	nd	-	1
Espiritu Santo TX	ESBD	nd	141	2	2.5	28	2	nd	-	2
Corpus Christi TX	CCIC	.01	-	2	1	-	2	nd	-	2
Corpus Christi Bay TX	CCB	.03	-	1	2.09	-	1	.16	-	1
Imperial Beach CA	IBIB	—	-	-	—	-	-	—	-	-
San Diego Bay CA	SDF	.02	132	4	3.97	45	4	.12	50	4
Mission Bay CA	MBVB	—	-	-	—	-	-	—	-	-
San Pedro Cyn. CA	SPC	nd	-	1	25.1	-	1	.4	-	1
S. Catalina Is. CA	SCBR	—	-	-	—	-	-	—	-	-
Santa Monica Bay CA	SMB	nd	-	6	12.58	21	6	.14	25	6
Pt. Conception CA	PCPC	—	-	-	—	-	-	—	-	-
San Luis Ob. Bay CA	SLSL	—	-	-	—	-	-	—	-	-
Pacific Grove CA	PGLP	—	-	-	—	-	-	—	-	-
Monterey Bay CA	MBSC	—	-	-	—	-	-	—	-	-
Monterey Bay CA	MON	nd	-	3	10.27	31	3	.09	26	3
Southamp. Shl. CA	SHS	.05	113	6	72.08	10	6	.11	49	6
Bodega Bay CA	BOD	.13	57	6	54.78	38	6	.09	23	6
Bodega Bay CA	BBBE	—	-	-	—	-	-	—	-	-
Humboldt Bay CA	HMBJ	—	-	-	—	-	-	—	-	-
Humboldt Bay CA	HMB	.04	72	2	52.29	-	2	.08	19	2
Pt. St. George OR	SGSG	—	-	-	—	-	-	—	-	-
Coos Bay OR	COO	.1	87	3	3.04	94	3	.05	14	3
Coos Bay OR	CBCH	.02	73	4	26.5	22	4	.04	200	4
Coos Bay OR	CBRP	.03	7	2	21.5	3	2	nd	-	2
Tillamook Bay OR	TBHP	.01	-	1	35	-	1	nd	-	1
Columbia R. OR	CRYB	.02	66	2	20.5	24	2	nd	-	2
Columbia R. OR	COL	.07	119	3	20.5	14	3	.2	102	3
Gray's Hrb. WA	GHWJ	nd	-	3	20.66	16	3	nd	-	3
Nisqually Rch. WA	NIS	.17	222	6	33.5	18	6	.08	38	6
Elliott Bay WA	EBFR	.08	12	3	24.66	5	3	.3	4	3
Oliktok Pt. AK	OLI	.27	17	3	36.53	41	3	.51	45	3

Concentrations, µg/g dry-wt., of silver (**Ag**), tin (**Sn**), and zinc (**Zn**) in sandy sediments from NS&T Sites from **Maine** through **Mississippi.**

SITE	CODE	Ag	c.v.%	n	Sn	c.v.%	n	Zn	c.v.%	n
Penobscot Bay ME	PBPI	—	-	-	—	-	-	—	-	-
Merrimac R. MA	MER	.02	89	5	3.14	93	5	27	31	5
Boston Hrb. MA	BHDI	.27	-	1	1.39	-	1	41	-	1
Boston Hrb. MA	BHDB	1.2	-	1	5.19	-	1	77	-	1
Boston Hrb. MA	BHHB	.85	26	3	2.46	8	3	46	20	3
Buzzards Bay MA	BBAR	.29	-	1	1	-	1	26	-	1
Buzzards Bay MA	BBGN	.05	-	1	.71	-	1	28	-	1
Narr. Bay RI	NBDI	.24	-	1	2.59	-	1	98	-	1
E. Long Is. Snd. CT	ELI	.09	125	6	2.32	75	6	53	16	6
Long Is. Snd. CT	LICR	.25	-	1	.49	-	1	78	-	1
Long Is. Snd. CT	LINH	.04	35	3	.27	49	3	22	5	3
Long Is. Snd. CT	LIHR	.39	94	3	.64	23	3	117	63	3
Long Is. Snd. CT	LISI	.21	-	1	.76	-	1	59	-	1
Long Is. Snd. NY	LIPJ	.06	33	3	.25	13	3	28	18	3
Hud./Rar. Est NY	HRJB	.22	-	1	.69	-	1	31	-	1
Hud./Rar. Est. NY	HRUB	—	-	-	—	-	-	—	-	-
Hud./Rar. Est. NY	HRLB	2.7	-	1	7.59	-	1	110	-	1
N.Y. Bight NJ	NYLB	—	-	-	—	-	-	—	-	-
N.Y. Bight NJ	NYSR	—	-	-	—	-	-	—	-	-
Moriches Bay NY	MBTH	.15	-	1	.72	-	1	32	-	1
Delaware Bay DE	DEL	.06	93	3	1.32	87	3	40	65	3
Delaware Bay DE	DBFE	—	-	-	—	-	-	—	-	-
Delaware Bay DE	DBBD	—	-	-	—	-	-	—	-	-
Ches. Bay MD	CBHG	nd	91	3	.06	9	3	29	12	3
Mid. Ches. Bay VA	MCB	.03	-	1	1.32	-	1	58	-	1
Ches. Bay VA	CBIB	.07	-	1	.54	-	1	24	-	1
Ches. Bay VA	CBCC	.02	86	4	.26	113	4	11	27	4
Ches. Bay VA	CBDP	.04	50	2	.87	12	2	24	24	2
Roanoke Snd. NC	RSJC	—	-	-	—	-	-	—	-	-
Pamlico Snd. NC	PSWB	—	-	-	—	-	-	—	-	-
Pamlico Snd. NC	PAM	nd	-	1	nd	-	1	9	-	1
Cape Fear NC	CFBI	nd	-	1	nd	-	1	14	-	1
Charleston Hrb. SC	CHFJ	—	-	-	—	-	-	—	-	-
Charleston Hrb. SC	CHSF	nd	-	1	.92	-	1	27	-	1
Savannah R. Est. GA	SRTI	.02	86	4	.17	49	4	24	57	4
Sapelo Snd. GA	SSSI	—	-	-	—	-	-	—	-	-
St. Johns R. FL	SJCB	.04	-	1	.15	-	1	17	-	1
St. Johns R. FL	SJR	.02	141	2	1.04	21	2	20	49	2
Matanzas R. FL	MRCB	—	-	-	—	-	-	—	-	-
Everglades FL	EVFU	nd	-	2	nd	-	2	3	47	2
Naples Bay FL	NBNB	.04	52	2	.8	-	2	24	35	2
Charlotte Hrb. FL	CBBI	.01	61	4	.58	77	4	9	56	4
Charlotte Hrb. FL	LOT	nd	173	3	.73	20	3	6	18	3
Tampa Bay FL	TAM	.05	88	5	.85	41	5	9	24	5
Tampa Bay FL	TBMK	.02	57	4	1.09	87	4	13	65	4
Tampa Bay FL	TBCB	.01	68	6	.46	31	6	5	36	6
Tampa Bay FL	TBHB	.08	18	5	1.2	64	5	52	37	5
Tampa Bay FL	TBPB	.02	3	3	.7	62	3	2	35	3
Cedar Key FL	CKBP	.02	-	1	.3	-	1	7	-	1
Apalachicola Bay FL	APCP	nd	46	3	.2	132	3	8	12	3
Choctawhat. Bay FL	CBSP	.14	87	2	.3	-	2	8	75	2
Mobile Bay AL	MBCP	.04	86	2	.54	12	2	22	6	2
Miss. Snd. MS	MSBB	.04	53	3	1.26	64	3	29	49	3

Concentrations, µg/g dry-wt., of silver (**Ag**), tin (**Sn**), and zinc (**Zn**) in sandy sediments from NS&T Sites from **Louisianna** through **Alaska.**

SITE	CODE	Ag	c.v.%	n	Sn	c.v.%	n	Zn	c.v.%	n
Barataria Bay LA	BAR	nd	-	1	.95	-	1	25	-	1
J. Hrb. Bayou LA	JHJH	.04	-	1	nd	-	1	85	-	1
Galveston Bay TX	GAL	.07	-	1	.7	-	1	6	-	1
Matagorda Bay TX	MBEM	.05	-	1	.6	-	1	24	-	1
Espiritu Santo TX	ESBD	.05	6	2	.35	20	2	6	39	2
Corpus Christi TX	CCIC	.07	10	2	.6	24	2	13	11	2
Corpus Christi Bay TX	CCB	.04	-	1	.7	-	1	20	-	1
Imperial Beach CA	IBIB	—	-	-	—	-	-	—	-	-
San Diego Bay CA	SDF	.57	95	4	1.79	67	4	54	16	4
Mission Bay CA	MBVB	—	-	-	—	-	-	—	-	-
San Pedro Cyn. CA	SPC	1.04	-	1	4.5	-	1	107	-	1
S. Catalina Is. CA	SCBR	—	-	-	—	-	-	—	-	-
Santa Monica Bay CA	SMB	.4	35	6	.98	60	6	35	26	6
Pt. Conception CA	PCPC	—	-	-	—	-	-	—	-	-
San Luis Ob. Bay CA	SLSL	—	-	-	—	-	-	—	-	-
Pacific Grove CA	PGLP	—	-	-	—	-	-	—	-	-
Monterey Bay CA	MBSC	—	-	-	—	-	-	—	-	-
Monterey Bay CA	MON	.23	6	3	nd	-	3	17	11	3
Southamp. Shl. CA	SHS	.44	137	6	1.31	71	6	86	8	6
Bodega Bay CA	BOD	.92	142	6	nd	-	6	41	19	6
Bodega Bay CA	BBBE	—	-	-	—	-	-	—	-	-
Humboldt Bay CA	HMBJ	—	-	-	—	-	-	—	-	-
Humboldt Bay CA	HMB	.29	113	2	nd	-	2	41	1	2
Pt. St. George OR	SGSG	—	-	-	—	-	-	—	-	-
Coos Bay OR	COO	.12	135	3	nd	-	3	19	33	3
Coos Bay OR	CBCH	.03	25	4	.52	23	4	28	18	4
Coos Bay OR	CBRP	.05	14	2	.69	21	2	30	2	2
Tillamook Bay OR	TBHP	.02	-	1	.6	-	1	48	-	1
Columbia R. OR	CRYB	.04	29	2	1.21	34	2	76	7	2
Columbia R. OR	COL	.35	166	3	nd	-	3	86	12	3
Gray's Hrb. WA	GHWJ	.03	16	3	.74	5	3	55	9	3
Nisqually Rch. WA	NIS	1.36	119	6	nd	-	6	100	14	6
Elliott Bay WA	EBFR	.19	16	3	1.76	20	3	69	19	3
Oliktok Pt. AK	OLI	.09	35	3	.27	173	3	86	41	3

APPENDIX D.

Plots of Ranked Contaminant Concentrations

APPENDIX D.

National Status and Trends Program

Plots of Ranked Contaminant Concentrations Observed in Sediments Collected in 1984,5,6,and 7 [a,b]

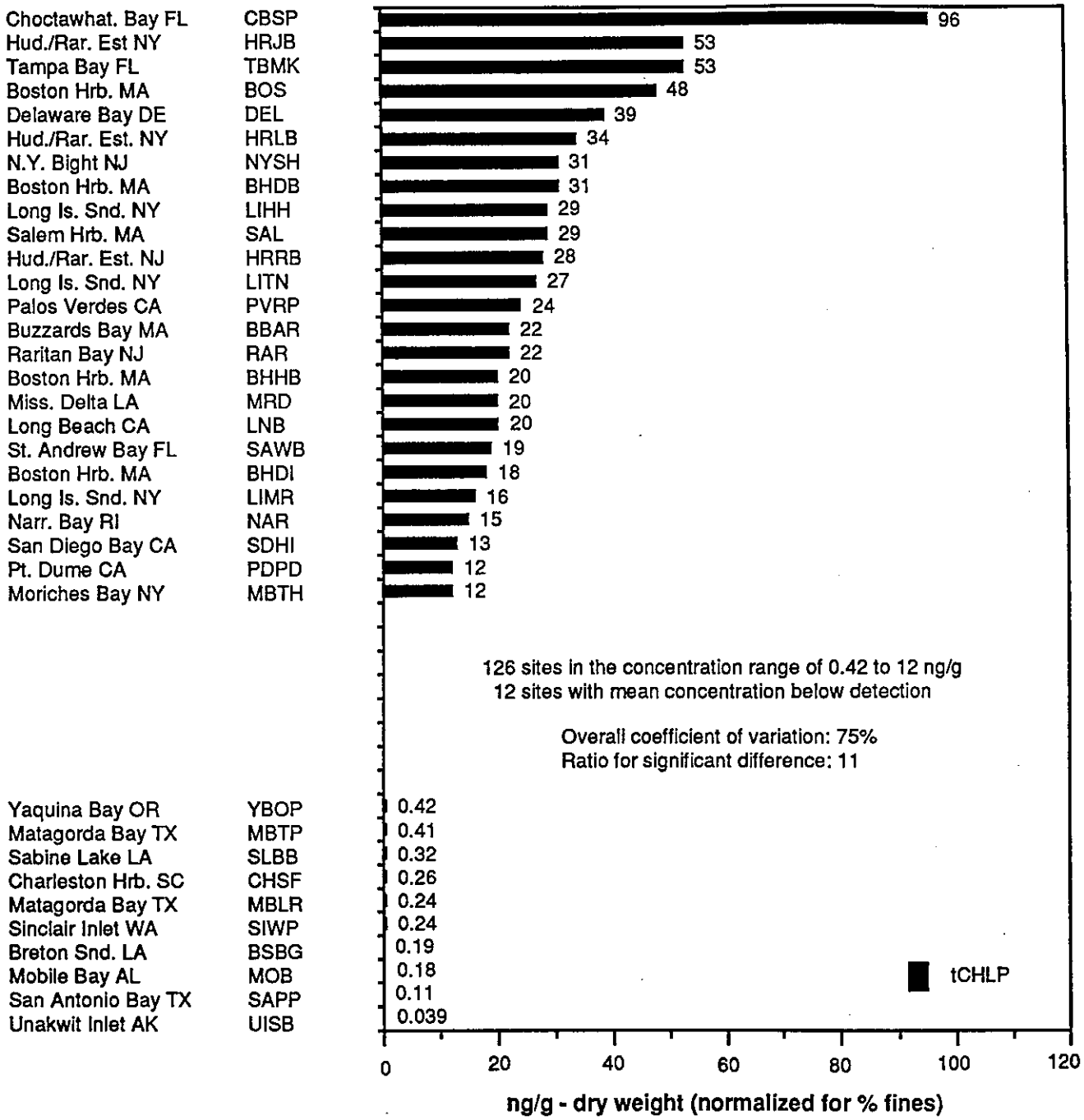
Sequence of Plots by Contaminant

Total (non-DDT) Pesticides (tChlP)	D-1
Total DDT (tDDT)	D-2
Total Polychlorinated Biphenyls (tPCB)	D-3
Total Polyaromatic Hydrocarbons (tPAH)	D-4
Total Organic Carbon (TOC)	D-5
Antimony	D-6
Arsenic	D-7
Cadmium	D-8
Chromium	D-9
Copper	D-10
Lead	D-11
Mercury	D-12
Nickel	D-13
Selenium	D-14
Silver	D-15
Tin	D-16
Zinc	D-17

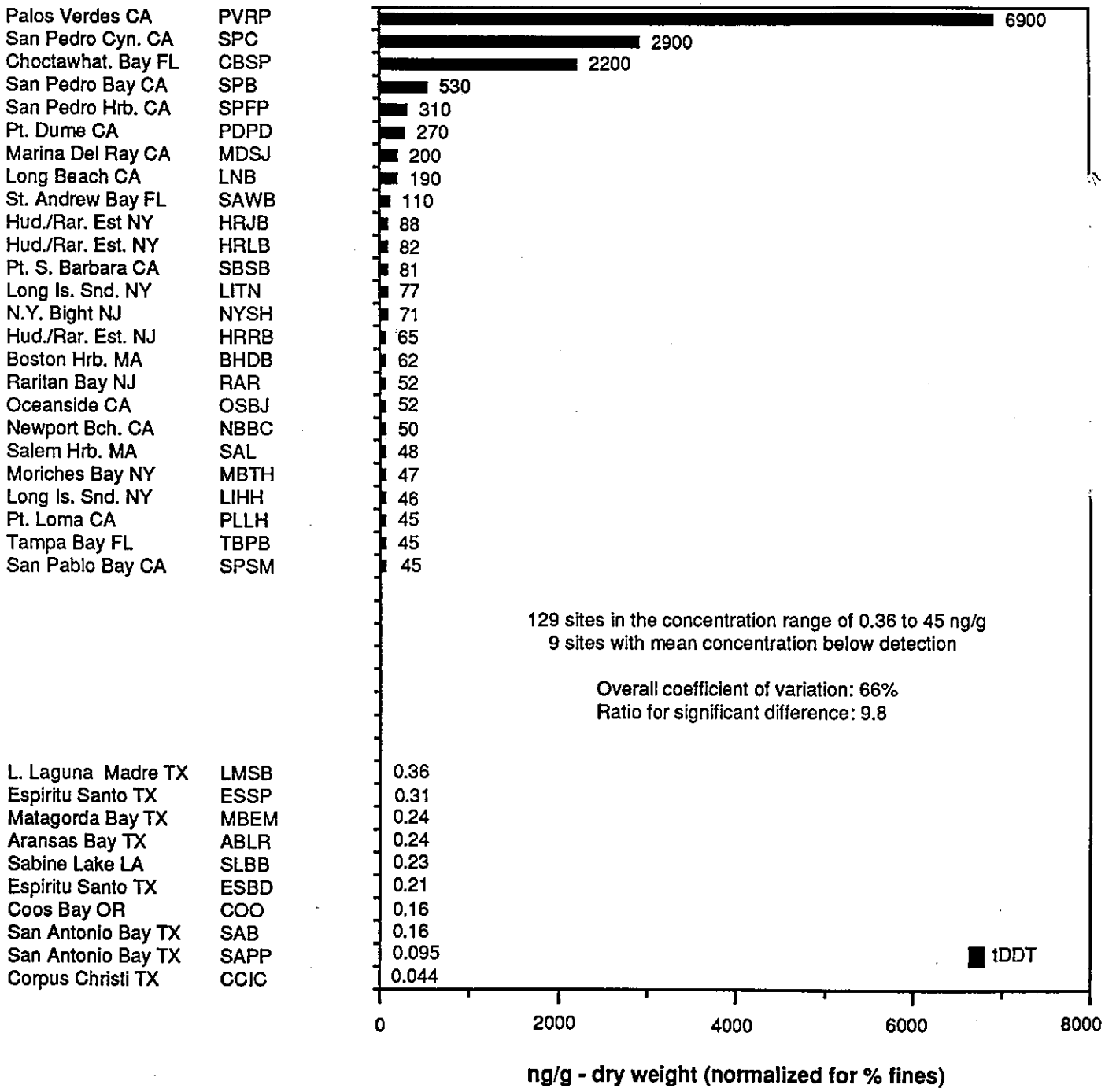
[a] Concentrations for all samples have been normalized by being divided by the fraction of fine-grained (<64μ) sediment in that sample. The rankings are of the means of the normalized values for each site. The number of fine-grained samples at each site are noted inTable 2 of the text. Sediment samples containing <20% fine-grained material have not been considered.

[b] Within each graph are the overall coefficient of variability in the mean concentrations for that contaminant and the ratio of two means that should be exceeded to, statistically, consider two means to be different (see Table 2 in text).

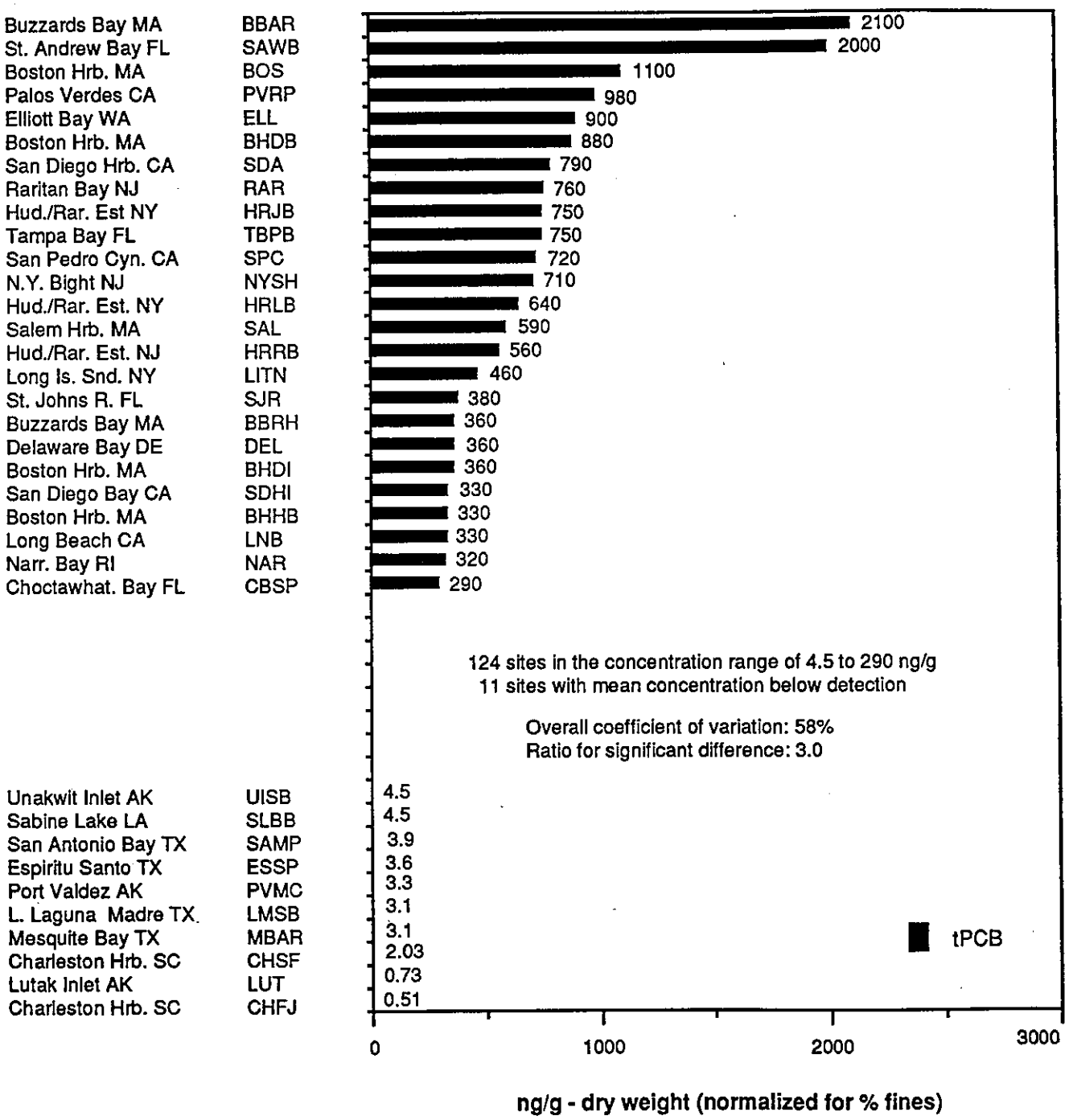
Total (non-DDT) Pesticides in Sediments



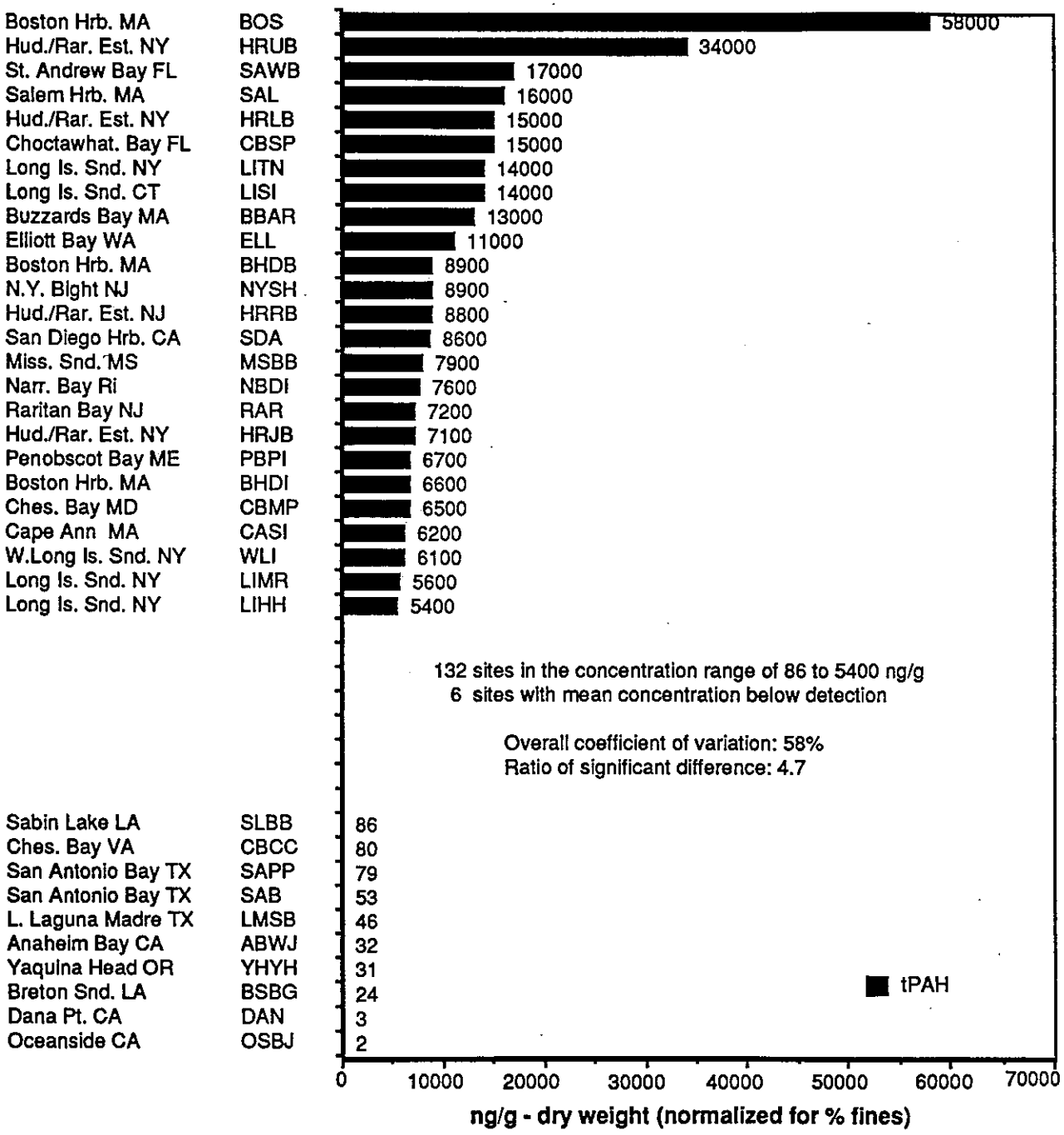
Total DDT in Sediments



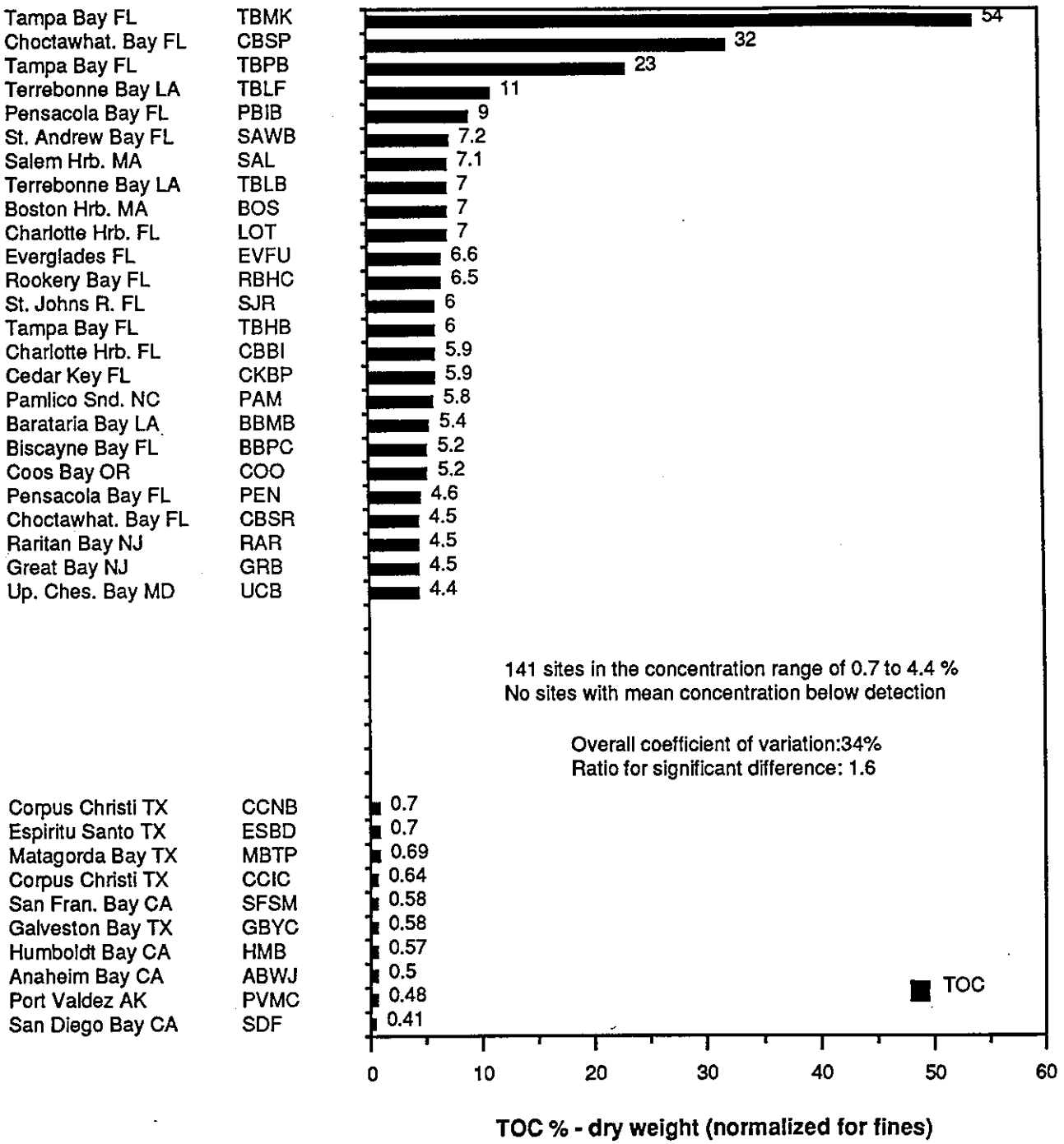
Total PCB in Sediments



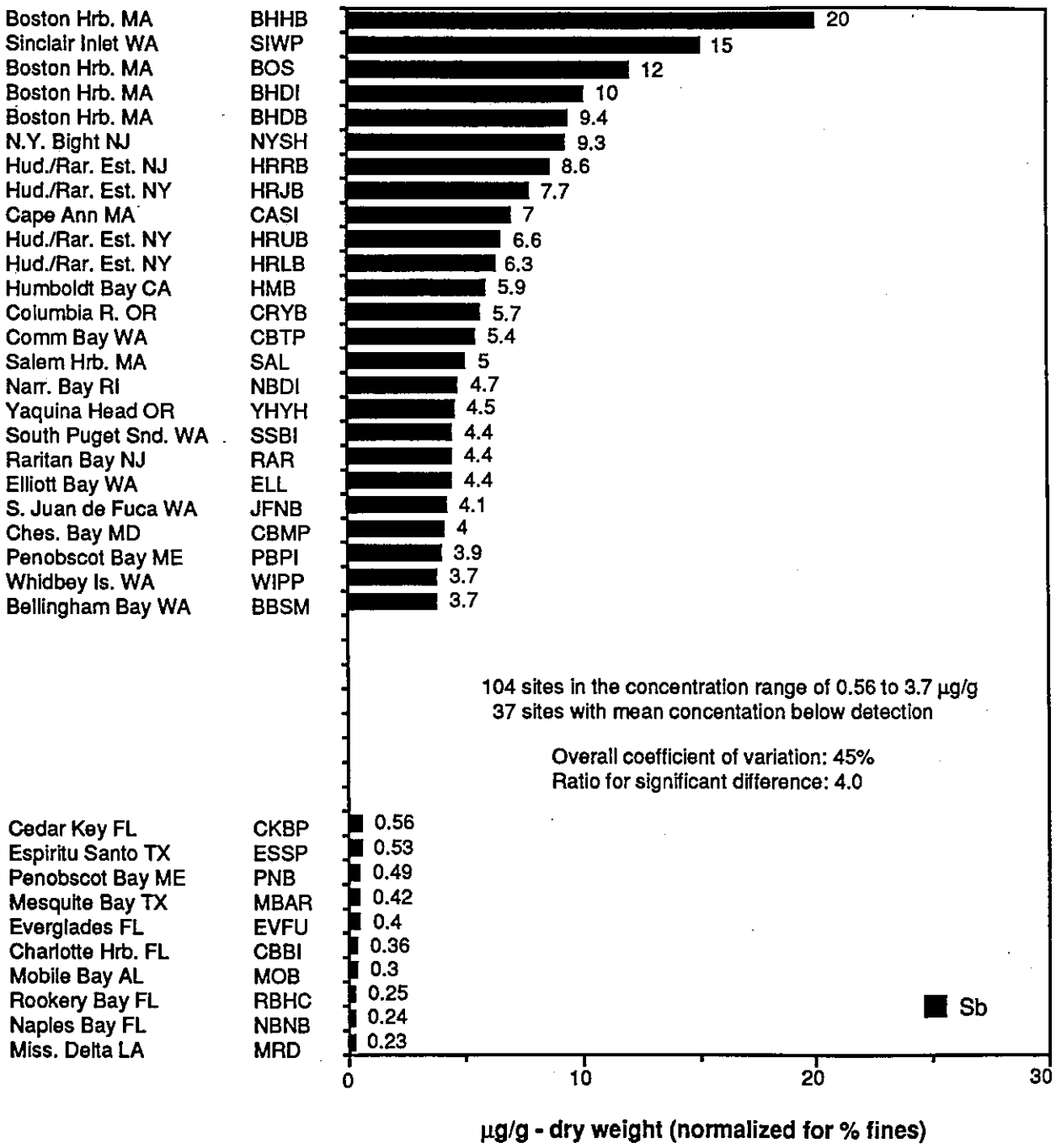
Total PAH in Sediments



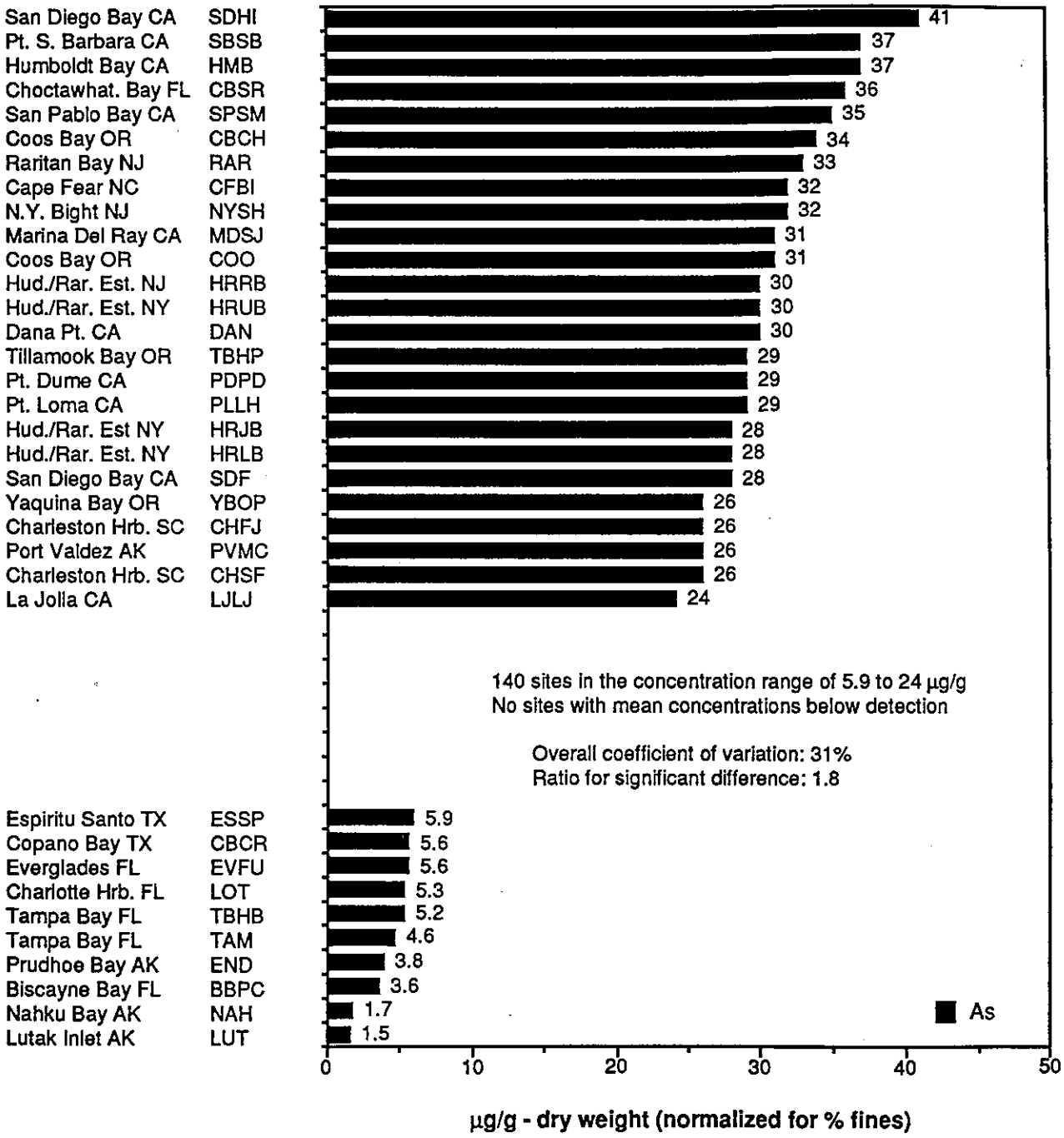
Total Organic Carbon in Sediments



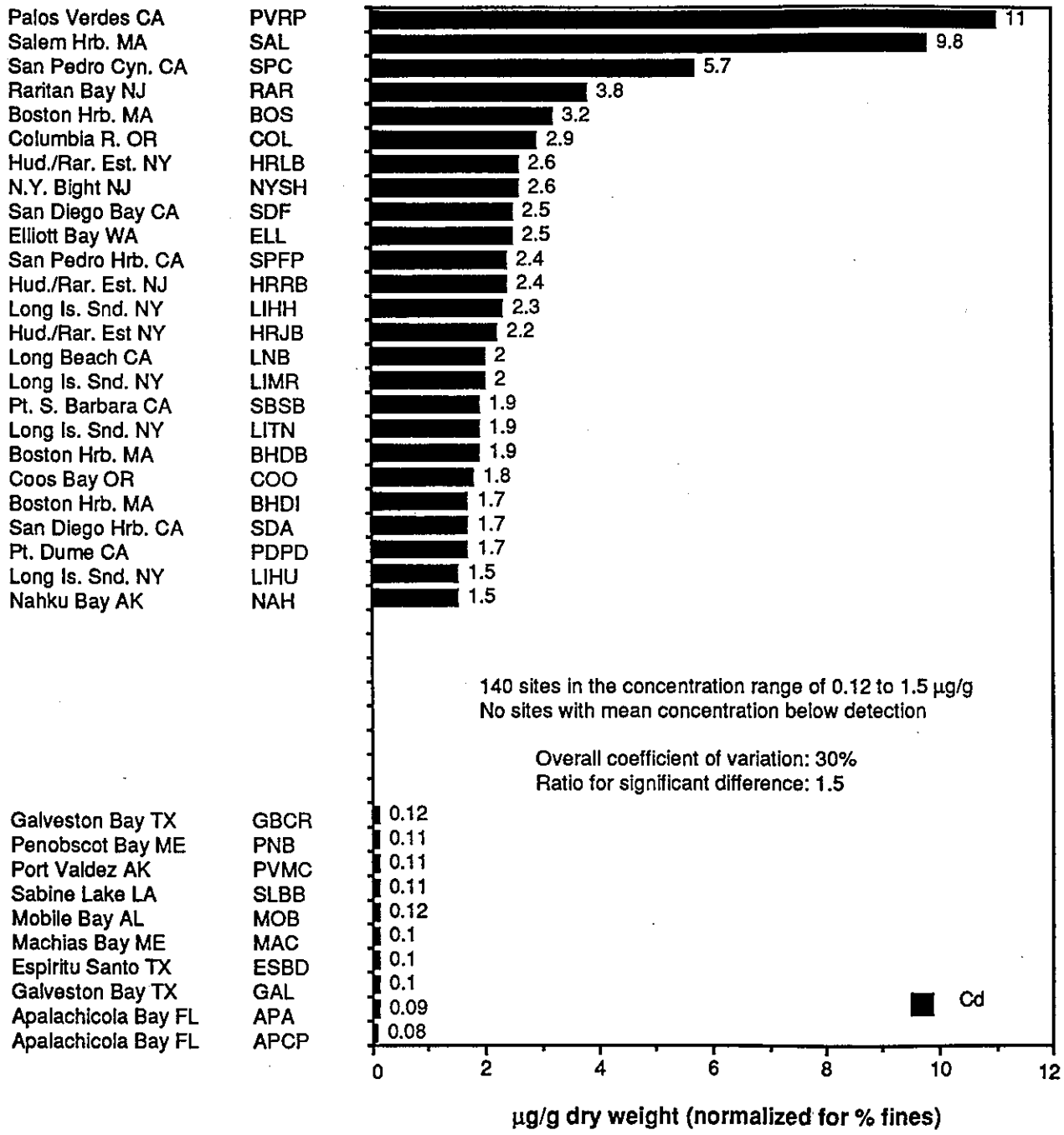
Antimony in Sediments



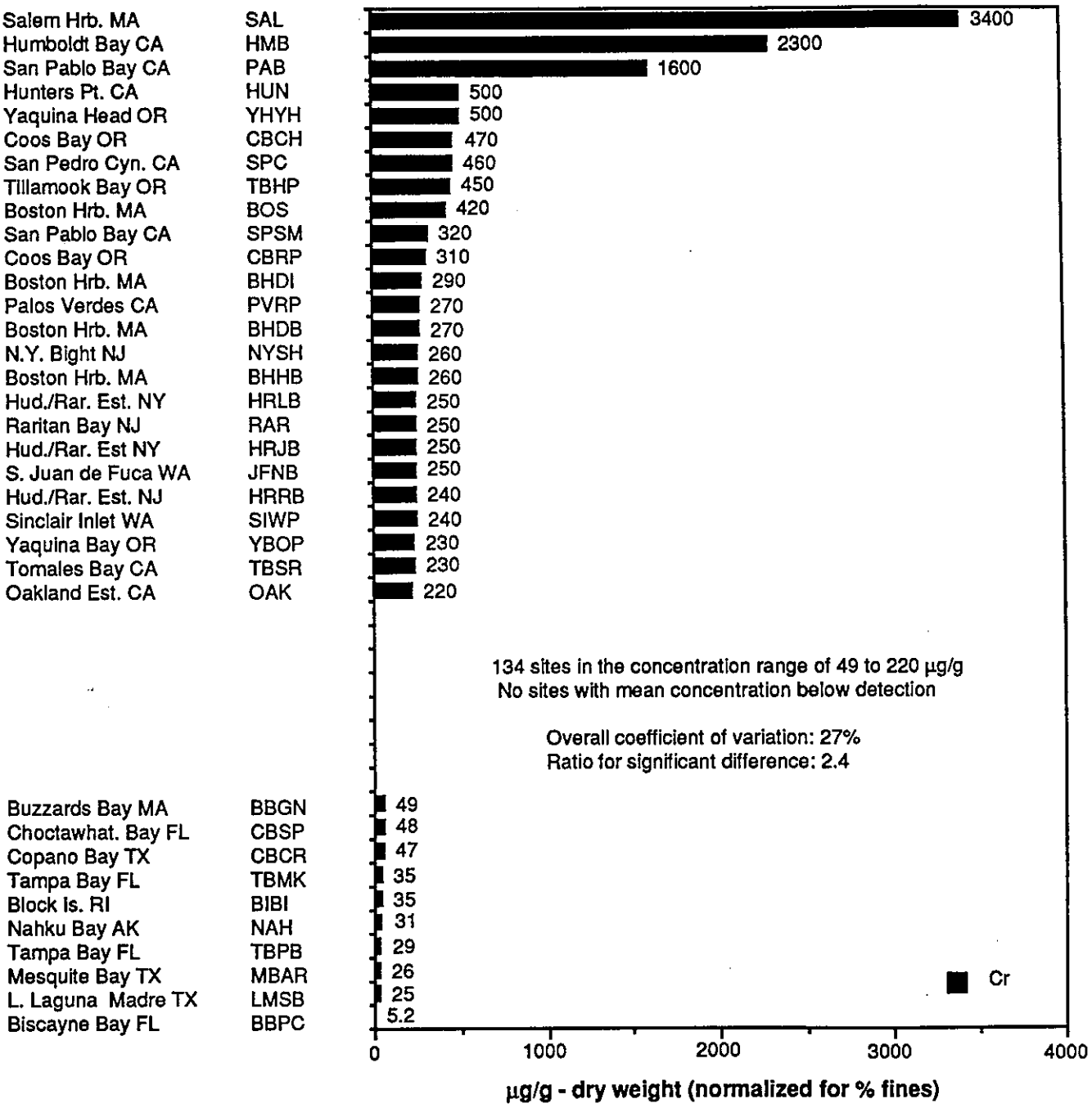
Arsenic in Sediments



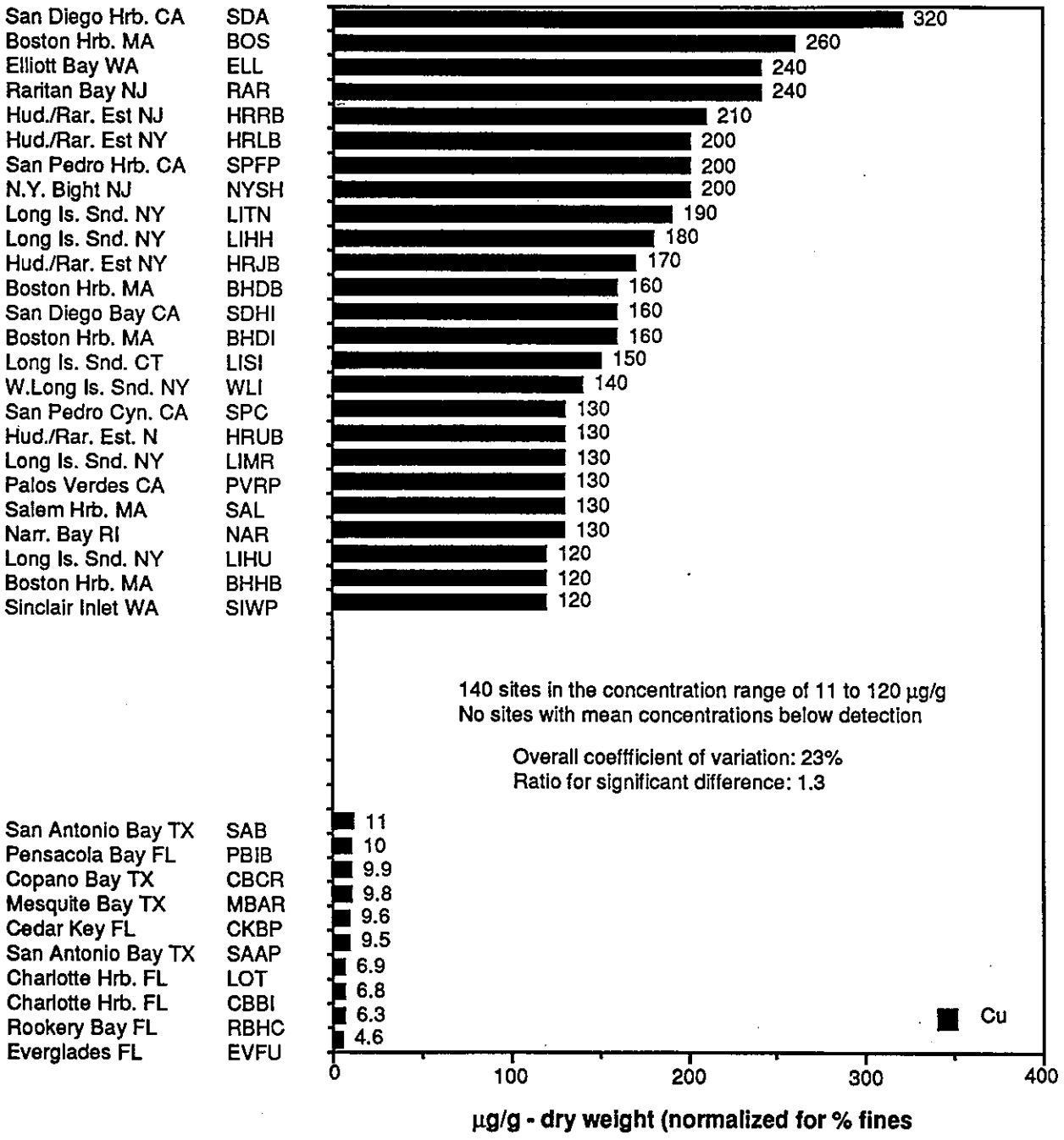
Cadmium in Sediments



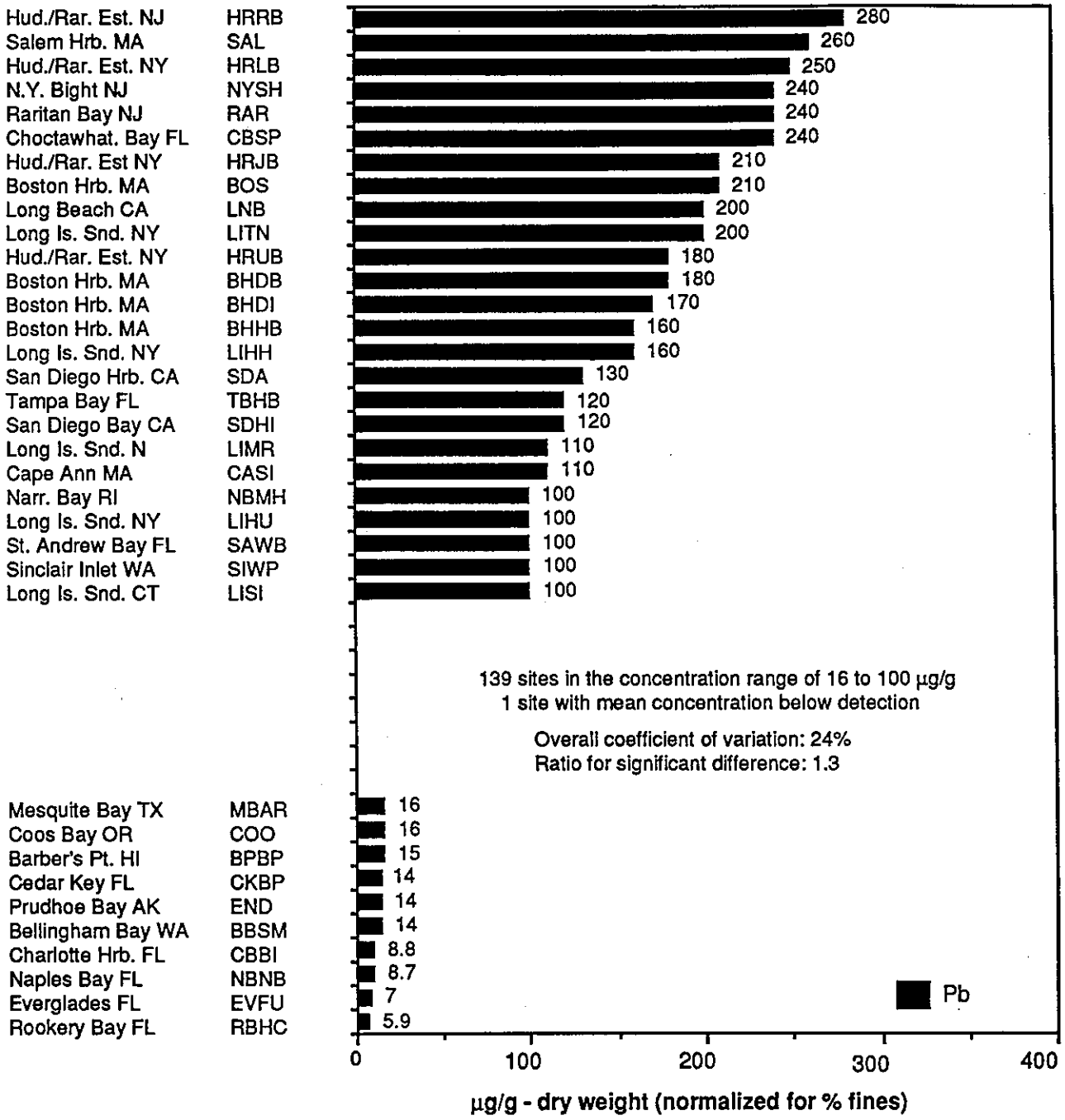
Chromium in Sediments



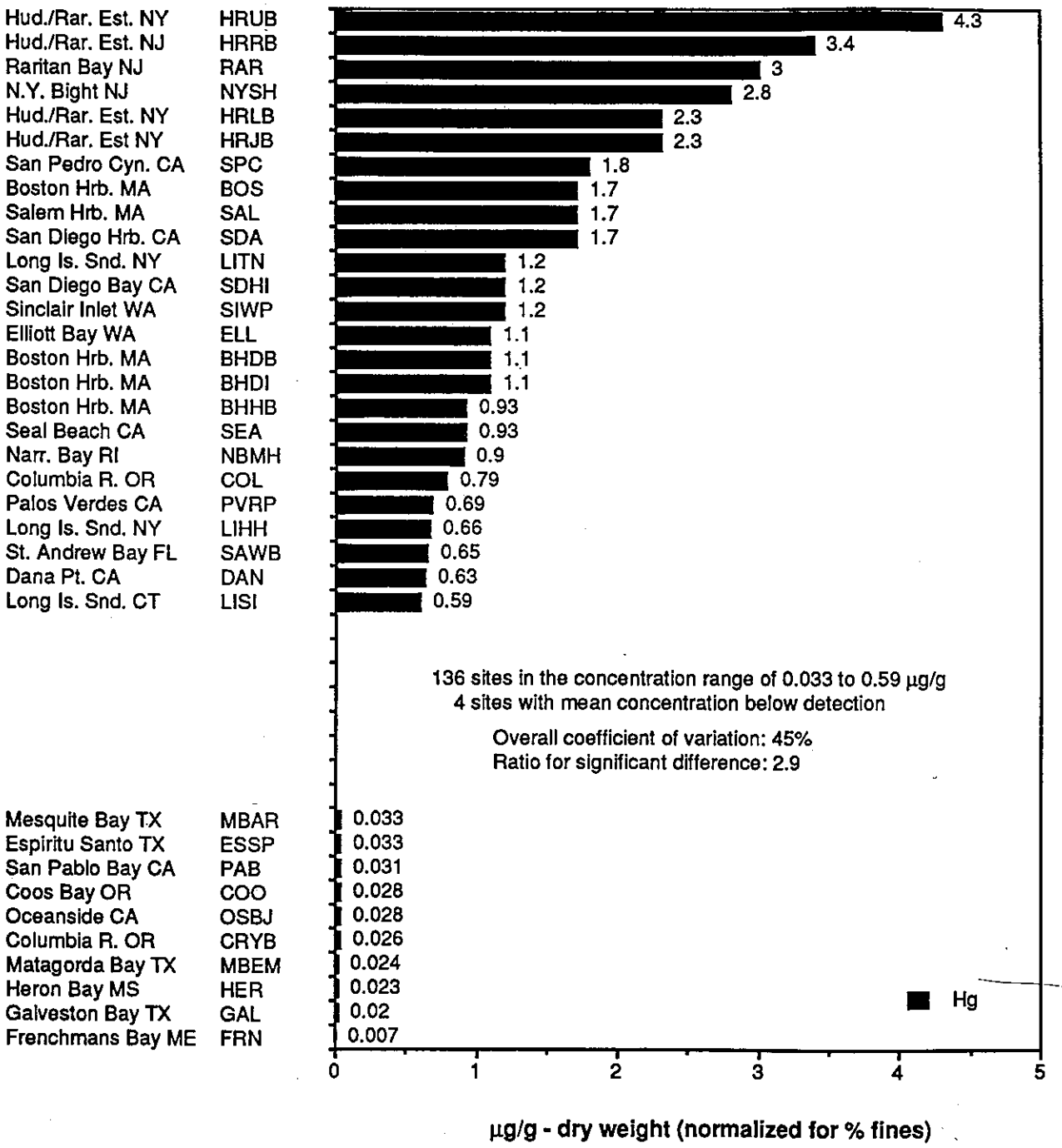
Copper in Sediments



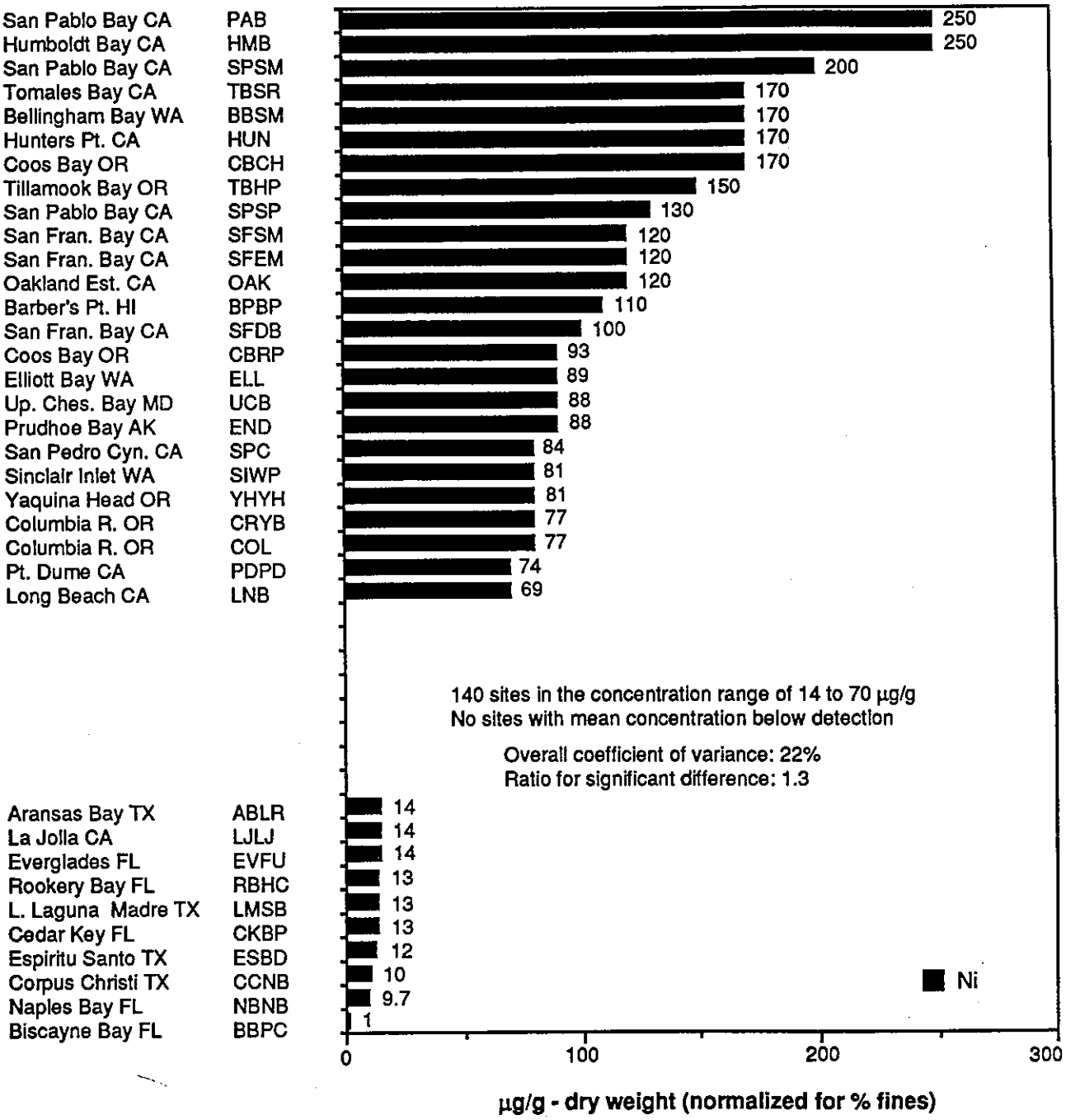
Lead in Sediments



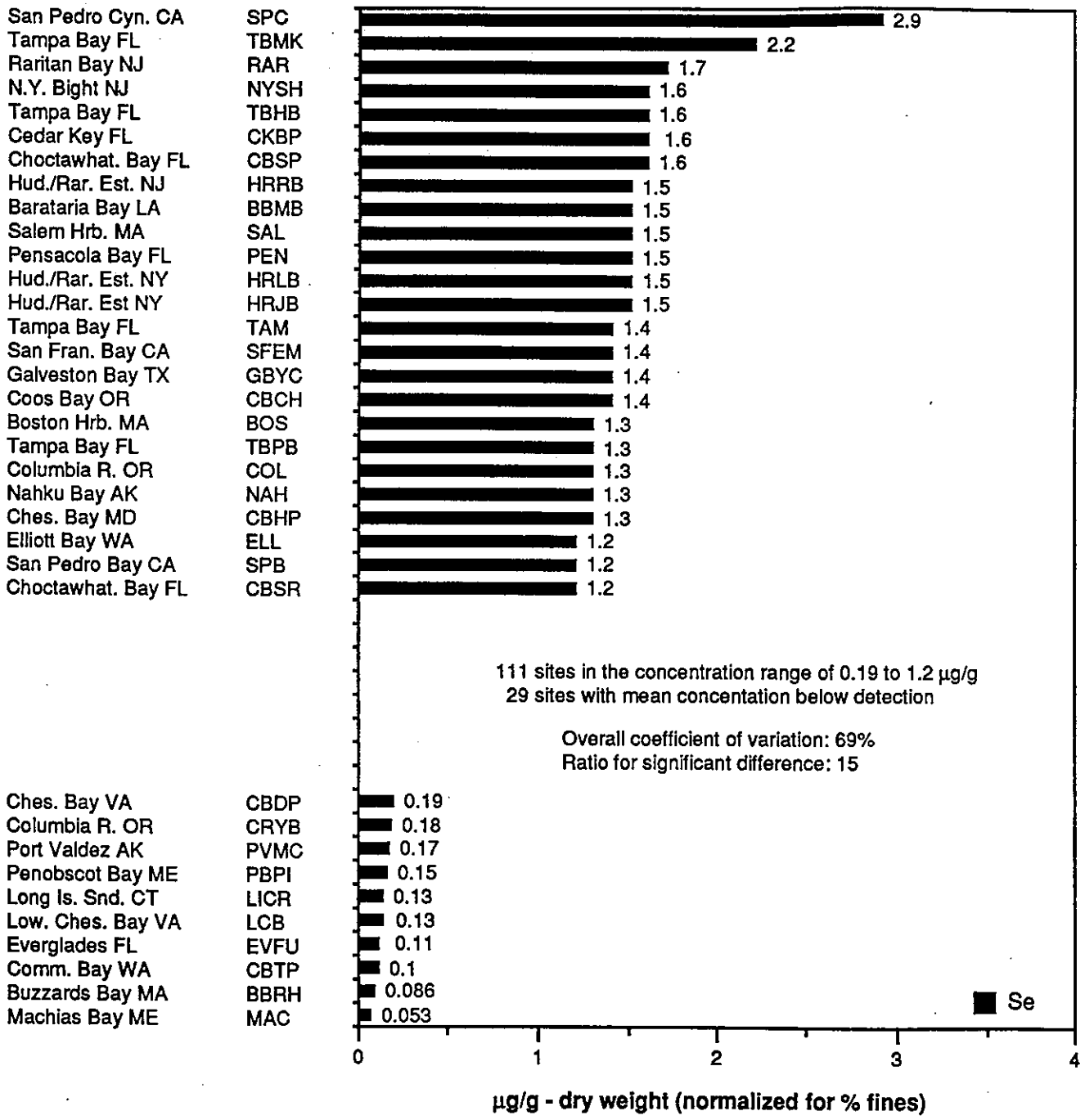
Mercury in Sediments



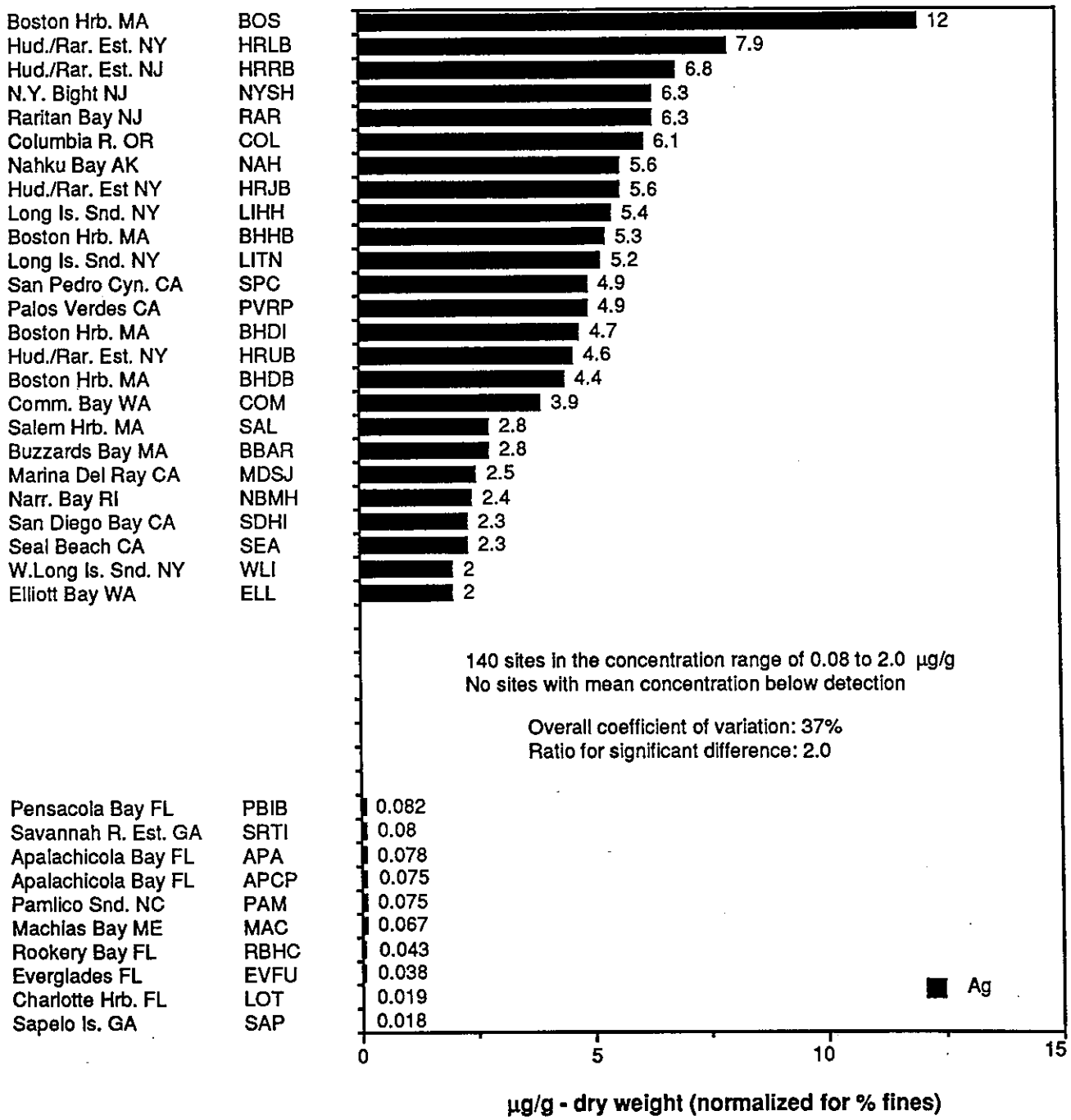
Nickel In Sediments



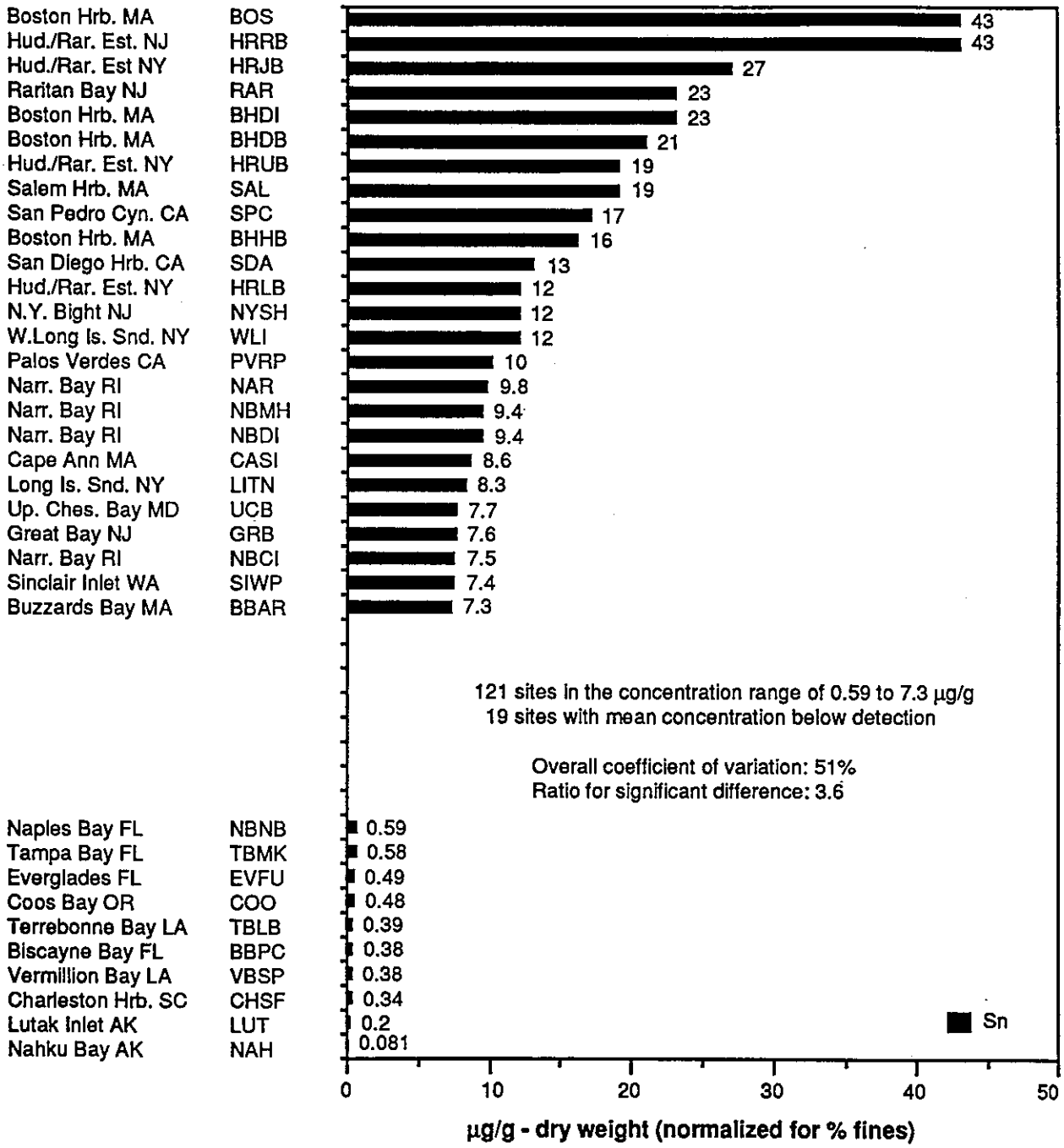
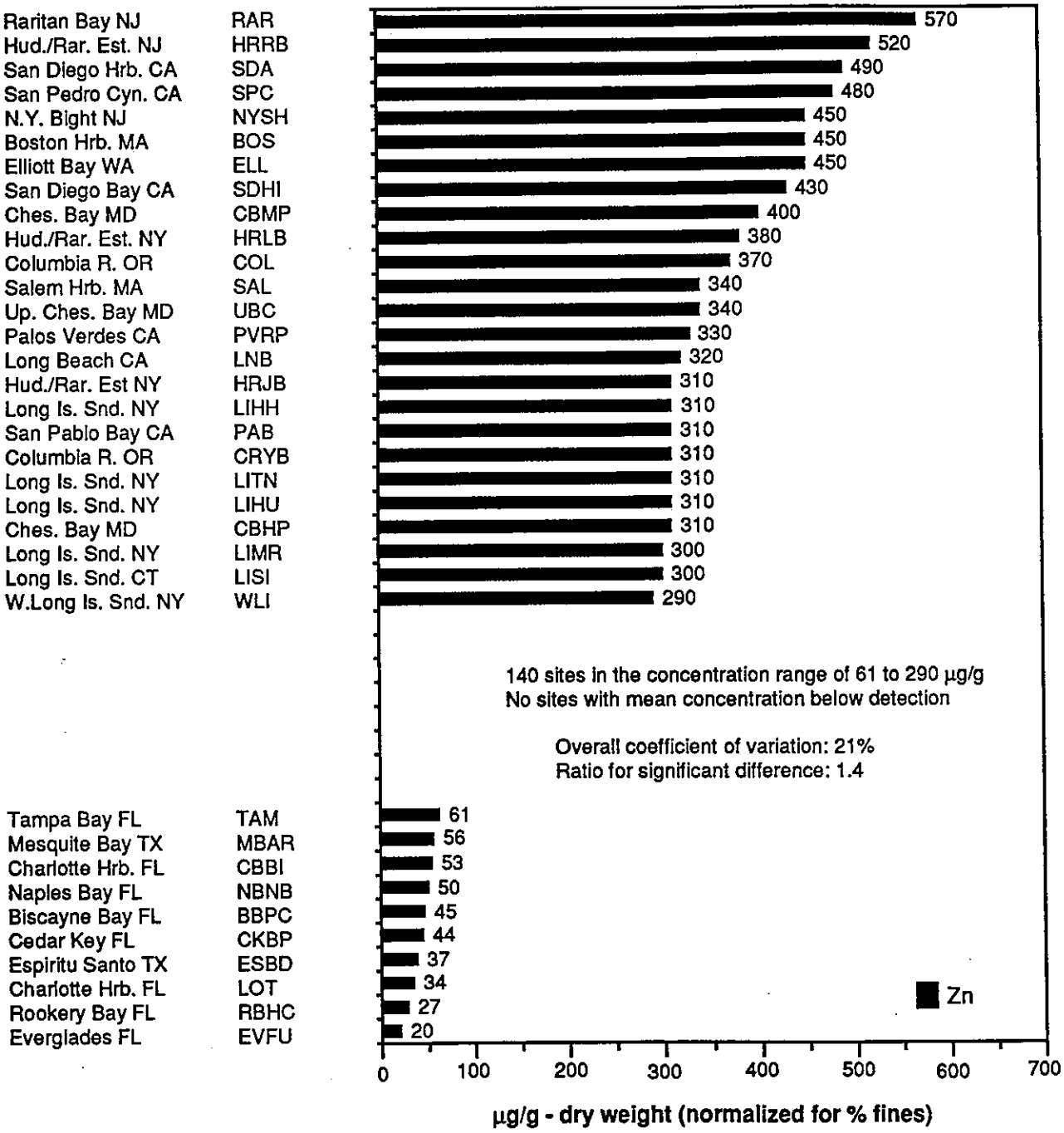
Selenium in Sediments



Silver in Sediments



Tin In Sediments



Zinc in Sediments