NOAA Technical Memorandum NOS OMA 49

# A Summary of Data on Tissue Contaminantion from the First Three Years (1986-1988) of the Mussel Watch Project

Rockville, Maryland
August 1989

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## Abstract

Since 1986, the National Oceanic and Atmospheric Administration's (NOAA) National Status and Trends Program has included a component called the Mussel Watch Project that has annually collected and chemically analyzed mussels and oysters from 177 sites around the coastal and estuarine United States. At 132 of those sites mollusks have been collected in all three years. The chemical contaminants analyzed have included polyaromatic hydrocarbons, polychlorinated biphenyls, chlorinated pesticides, and 12 trace elements. The main reason for analyzing mollusks is to establish temporal trends. With three mean values at each site for each contaminant it is premature to declare the existence of trends. Hints of trends are indicated by statistically significant and monotonic differences among the years. Some groups of sites displayed similar behavior. e.g. cadmium decreasing in Long Island Sound sites or mercury increasing at sites in the Hudson/Raritan Estuary. At some individual sites many contaminants showed hints of trends, e.g. seven decreasing trends at a site in Tampa Bay. As more data are collected in subsequent years, the data can be more rigorously examined and conclusions more firmly established than is the case at the third year of the project. Regardless of temporal differences, spatial distributions of contamination indicate a tendency for most of the highest contaminant concentrations to be in urban areas.

## Introduction

The National Status and Trends (NS&T) Program for Marine Environmental Quality was formed to monitor spatial distributions and temporal trends of contaminant concentrations in coastal and estuarine regions of the United States and biological responses to that contamination. Samples for chemical analysis are collected through two projects. Since 1984 the Benthic Surveillance Project has annually collected benthic fish and sediments at about 50 sites spread throughout the United States and, since 1986, the Mussel Watch Project has collected mollusks (mussels or oysters) and sediments at about 150 sites.

The first report in this series (NOAA, 1987a) highlighted average concentrations of chemical contaminants in fish livers and sediments collected in 1984. The second report (NOAA, 1987b) was an analysis of that 1984 Benthic Surveillance tissue data as well as some data from 1985, and of Mussel Watch tissue data from 1986. Data from sediments collected in conjunction with these tissue samples were presented and discussed in NOAA (1988). This report is the first to consider differences among years of contaminant concentrations in molluscan tissues.

## Utility of Analyzing Mollusks to Assess Temporal Trends

It is well established that mussels, oysters, and, in general, any aquatic organism will accumulate contaminants within its tissues to many times higher levels than in its surrounding water. It is also established that tissue contamination increases or decreases whenever the surroundings become more or less contaminated. That is why tissues of organisms can be used as

sentinels of contamination. Sessile mollusks are chosen for this purpose because they are permanent residents of geographically fixed sites. There is, however, the complication that differences among species lead to differences in levels of tissue contamination even under identical conditions of exposure. Since the NS&T Program is designed to monitor the coast of the entire United States and cannot sample the same species over that geographic range, the program also uses results of sediment analyses. Sediments can be taken over all coasts and sites can be compared on the basis of sediment contamination without the complication that levels may be affected by the choice of species.

The utility of mollusks lies in the NS&T objective of monitoring temporal trends in contamination. Contaminant levels in tissues change fairly rapidly in response to the surroundings. Roesijadi et al. (1984), for example, moved mussels from a contaminated area to a clean area and *vice-versa* and found the levels of trace elements in tissues to reflect the surroundings in 2 months. Pruell et all. (1987) exposed mussels to a suspension of contaminated sediment and found levels of polychlorinated biphenyls and polyaromatic hydrocarbons to increase to a steady state level in about 20 days. The NS&T program is attempting to monitor trends in contamination by annually collecting and analyzing mollusks. Given that mollusks adjust to changes in contamination on time scales of a few months or less, it is fair to expect chemical concentrations in succeeding years to be independent of one another. Surface sediments, on the other hand, are mixtures of material deposited over several years. Samples collected in succeeding years should to a large extent be essentially the same material and chemical concentrations will not be independent.

When changes in tissue contamination are observed between years, it does not necessarily follow that surrounding waters have been gradually changing over that year. There can always be instances where a short-term temporary alteration of water quality will be appear as an annual change in tissue contamination. As the program proceeds and as more data accumulates the influence of these short-term excursions will diminish. This is the first of what will be a series of NS&T reports on temporal trends in contamination. In this first endeavor, the data are those for only three years.

## Site Locations

Sites occupied by the Mussel Watch Project since 1986 are listed in Appendix A along with the dates on which they have been sampled. On average, distances between sites are 20 km in estuaries and embayments and 100 km along open coastlines. The sites have been selected with the intention of collecting samples that are "representative" of their surroundings. Small scale patches of contamination and known points of waste discharge have been avoided. The only test of a site's representativeness is comparison of contaminant levels with those at the next closest site. When two sites do not yield very different levels of contamination, they can be considered representative.

The first report in this series on molluscan contamination (NOAA, 1987b) contained data from the 145 sites sampled in 1986. This report contains data from 177 sites. The new sites are identified in Appendix A as those not sampled in 1986. No new sites were occupied in 1987 but, at a few sites, mollusks were found where they were not found in 1986. Thirty sites were added in 1988. Six East Coast sites were added to fill in large spatial gaps between sites. One site was added in Hawaii to provide a third sample for an oyster species that is otherwise not sampled in the project. One site, each, was occupied on the NOAA Marine Sanctuaries in the Channel Islands and the Farrallon Islands off the California coast. Twenty new sites were selected in the Gulf of Mexico with the specific purpose of getting closer to urban centers than in 1986 or 1987. It has been evident (NOAA, 1987b) that the highest levels of contamination have been near urban areas on the East and West coast, and that, on a relative scale, few sites in the Gulf of Mexico could be considered contaminated. Since the urban centers along the Gulf are further inland than those along other coasts, a deliberate attempt was made to sample as close to them as possible. The major limitation is the availability of oysters as salinities decrease further inland but, even in these cases, known small-scale patches of contamination were avoided.

## Field Methods

A detailed listing of sampling and analytical protocols has been prepared (Shigenaka and Lauenstein, 1987). Mussels are taken along the West Coast and the East Coast (north of Delaware Bay) and oysters are collected at Gulf Coast sites, at the remaining East Coast (Delaware Bay and south) sites, and at the three sites in Hawaii. Two species of mussels and two species of oysters are collected; the blue mussel *Mytilus edulis* on the East Coast, it or the species *Mytilus californianus* on the West Coast, the oyster *Crassostrea virginica* in the continental United States and the oyster, *Ostrea sandvicensis* in Hawaii. The preferred size ranges are 5 to 8 cm for mussels, 7 to 10 cm for C. *virginica* and 2.5 to 5 cm for *O. sandvicensis.* Mollusks are not shucked in the field. They are separated when found to be adhering to one another and scrubbed with a nylon or natural fiber brush to remove adhering detritus. Cleaned samples are then packed in dry ice and shipped back to the laboratory. Composite samples are made by homogenizing the soft parts of 30 mussels or 20 oysters. Six composites are used for chemical analysis, three for replicate organic contaminant analyses and three for trace elements. The exception to this sequence is that mollusks used to identify the gonadal state of the sampled populations are shucked and preserved immediately after collection.

## Chemical Analyses

Trace metals and organic compounds measured in the NS&T Program are listed in Table 1. The methods used for the analysis of organic chemicals in sediment and tissue are described in a technical report prepared by NOAA's National Analytical Facility (MacLeod et al., 1985 and subsequent revisions). Elemental analysis of tissues is preceded by digestion in concentrated nitric acid.

In this report, most of the organic compound concentrations have been aggregated into classes. All six forms of DDT and its metabolites have been combined into a single class called, DDT. Chlordane in this report is the sum of the concentrations of alpha-chlordane,trans-nonachlor, heptachlor, and heptachlor epoxide. All 2- and 3-ring and 4- and 5-ring polyaromatic hydrocarbons have been aggregated into the classes, Low Molecular Weight PAHs (LMWpah) and High Molecular Weight PAHs (HMWpah), respectively. Figure 1 indicates which compounds are included in each class and the mean percentages of each compound's contribution to its aggregate total. Not shown is the aggregate, dieldrin, which is the concentration of dieldrin itself amended by the small addition of aldrin and averages 89% dieldrin.

The individual polychlorinated biphenyl (PCBs) compound determinations were altered in 1988. For the first two years of the program, PCBs were quantified to the level of chlorination by relating the chromatographic signals to those of representative standard compounds at each level of chlorination. Since 1988, eighteen distinct compounds (PCB congeners) have been quantified. In order to compare data obtained in either way, the two main Mussel Watch contract laboratories (Battelle and Texas A&M) determined correlations between total PCB as defined by the sum of the levels of chlorination and by the sum of the eighteen congeners. For Battelle and TAMU, repectively, the equations correlating total PCBs to the sum of 18 congeners are:

$\Sigma$(PCBs at each level of chlorination)=
1.95 x $\Sigma$(18 congeners) + 2.1 (n=153, $r^2$=0.96)
and,
$\Sigma$(PCBs at each level of chlorination)=
2.30 x $\Sigma$(18 congeners) + 8.1 (n=149, $r^2$=0.96)

Both
1.945 (Σcon) + 3.4
Corg
+ 2 / 2.165 (Σcon) + 2.6

In this report the aggregate class PCB is the sum of the concentrations of PCBs at each level of chlorination or, for the 1988 data, it is calculated with these equations and the concentrations of 18 individual PCB congeners.

Several laboratories participate in the NS&T Program. Three have been analyzing molluscan tissues ; the Geochemical and Environmental Research Group at Texas A&M University in College Station, TX; the Battelle Laboratories in Duxbury, MA and Sequim, WA, and (under sub-contract to Battelle) the LaJolla, CA laboratory of Scientific Applications International Corporation. Those and laboratories within NOAA's National Marine Fisheries Service that are performing analyses under the Benthic Surveillance Project are all participating in the Quality Assurance (QA)

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

| DDT and its metabolites | Polyaromatic hydrocarbons[b] | Major elements | |
|---|---|---|---|
| o,p'-DDD | 2-ring | Al | Aluminum |
| p,p'-DDD | Biphenyl | Fe | Iron |
| o,p'-DDE | Naphthalene | Mn | Manganese |
| p,p'-DDE | 1-Methylnaphthalene | Si | Silicon |
| o,p'-DDT | 2-Methylnaphthalene | | |
| p,p'-DDT | 2,6-Dimethylnaphthalene | | |
| | Acenaphthene | Trace elements | |
| Chlorinated pesticides other than DDT | 3-ring | Sb | Antimony |
| | Fluorene | As | Arsenic |
| | Phenanthrene | Cd | Cadmium |
| Aldrin | 1-Methylphenanthrene | Cr | Chromium |
| Alpha-Chlordane | Anthracene | Cu | Copper |
| Trans-Nonachlor | | Pb | Lead |
| Dieldrin | 4-ring | Hg | Mercury |
| Heptachlor | Fluoranthene | Ni | Nickel |
| Heptachlor epoxide | Pyrene | Se | Selenium |
| Hexachlorobenzene | Benz(a)anthracene | Ag | Silver |
| Lindane (gamma-BHC) | | Sn | Tin |
| Mirex | 5-ring | Zn | Zinc |
| | Chrysene | | |
| | Benzo(a)pyrene | | |
| | Benzo(e)pyrene | | |
| | Perylene | | |
| | Dibenz(a,h)anthracene | | |

| Polychlorinated biphenyls[a] | Related parameters |
|---|---|
| Dichlorobiphenyls | Lipid |
| Trichlorobiphenyls | |
| Tetrachlorobiphenyls | |
| Pentachlorobiphenyls | |
| Hexachlorobiphenyls | |
| Heptachlorobiphenyls | |
| Octachlorobiphenyls | |
| Nonachlorobiphenyls | |

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

[b] Five PAH compounds added to the list of analytes in 1988; acenaphthylene, 2,3,5-trimethyl naphthalene,benzo(b) and benzo(k) fluoranthene, indeno(1,2,3-cd)pyrene, and benzo(g,h,i)perylene

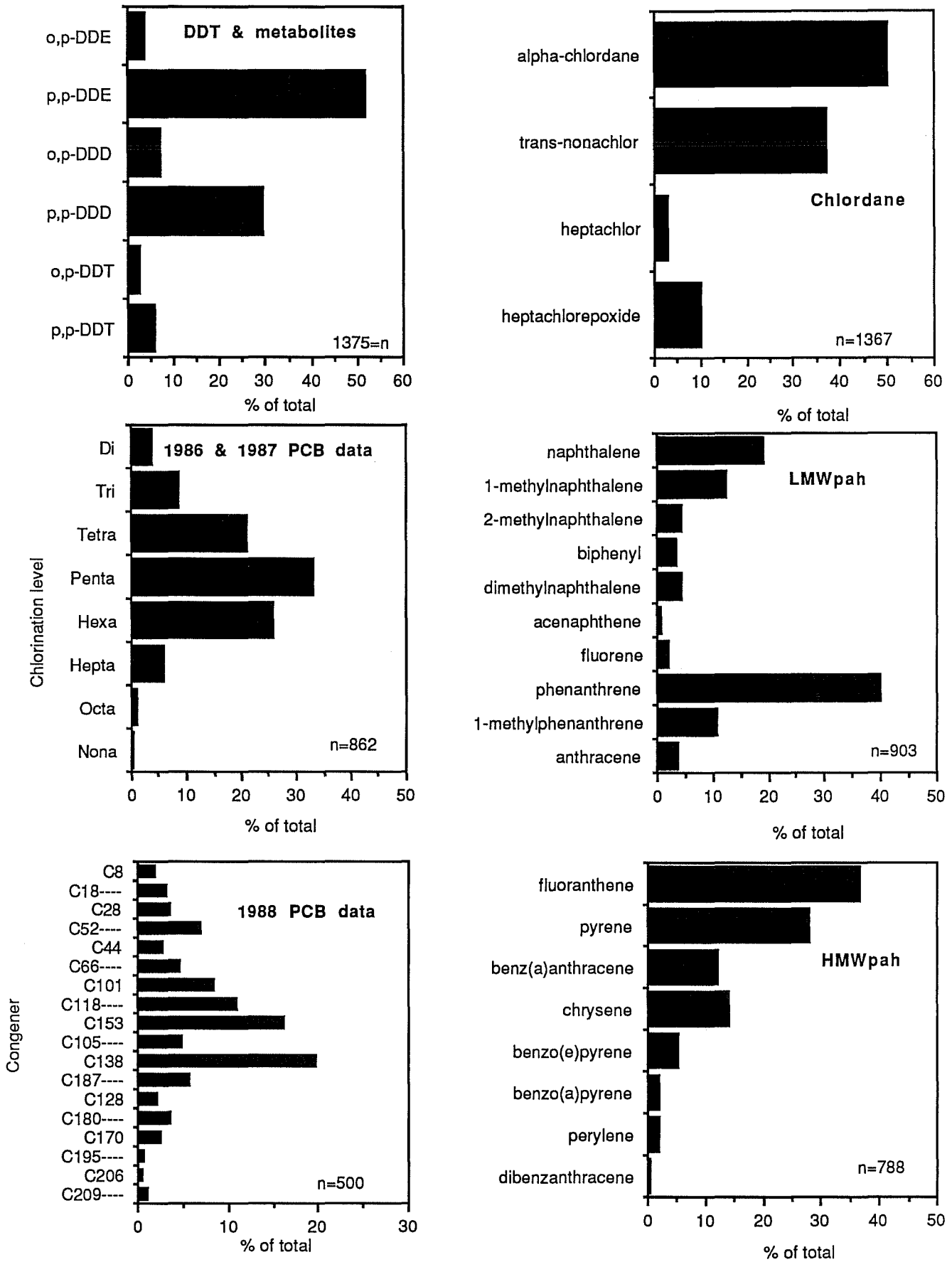



Figure 1. Mean percentage contributions of individual organic compounds to their respective contaminant classes.

program that is 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:

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

## Detection Limits and Frequencies of Non-detection

Tables 2a and 2b contain the reported detection limits for all analytes in all years and the frequencies of finding concentrations to be below detection. For organic classes the listed detection limit is the lowest detection limit among compounds in the class. Among the elements only antimony, thallium, and tin have presented the problem of frequently being undetected. Antimony and thallium were so rarely reported in 1986 and 1987 that they have stopped being sought in molluscan tissue and no results for either element are reported here. The frequency of tin detection increased in 1988 when the California coast samples began being analyzed by the same laboratory that has been finding tin in most East Coast and Northwest Coast samples.

Among the organic compounds, or more-precisely, the aggregated classes of organic compounds, non-detection has been frequent for polyaromatic hydrocarbons and lindane and, especially, for hexachlorobenzene and mirex.

Results for all elements, save antimony and thallium, and all organic classes are reported in Appendix B in terms of mean concentrations at each site in each year and in terms of the overall means and coefficients of variation. Results of tests of significance of differences among years and indications of trends are also given. In all cases, below-detection determinations have been treated as zeros when calculating means. Whenever more than half of the data for an analyte or class are non-detected values, those data have not been used to estimate significant differences, trends, or coefficients of variation.

## Data Revisions

Whenever further considerations prove the necessity, previously published data in the NS&T Program will be changed and two sets of changes to the 1986 data on mollusks reported in NOAA (1987b) must be indicated. In that report thallium was listed as being at detectable concentrations in mollusks at one site in the Gulf of Mexico and at 20 West Coast sites. Thallium was not detected at any of those sites or any site at all in 1987 and those concentrations reported for 1986 are therefore considered invalid. In that earlier report all polyaromatic hydrocarbon concentrations were aggregated into a single class called total PAH (tPAH) rather than into LMWpah and HMWpah classes. The sums of the LMWpah and HMWpah in this report should equal the tPAH values reported earlier. They will not do so for several West Coast sites where close examination of chromatograms generated in 1986 has lead to changing low concentrations (less than about 500 ng/g dry tPAH) to non-detectable concentrations and to lowering some of the higher 1986 concentrations. Values listed in this report for 1986 concentrations that do not agree with values reported earlier are correct and supercede those values.

## Variability in Chemical Concentration Measurements

The standard Mussel Watch protocol requires collecting three composite samples at each site, so three determinations per site are made each year for each analyte. An estimate of the variability in concentrations for each analyte is the average coefficient of variation among all sites. Those averages are listed in Table 3 and exemplify two main points; that variability among all data regardless of year is larger than within-year variability, and that variability for organic contaminants is larger than it is for elemental contaminants. Therefore, year-to-year differences are important for all analytes and

Table 2a. Detection Limits (limits below which signal could not be confidently related to a concentration) reported by each Mussel Watch laboratory for each year. (µg/g-dry weight for elements, ng/g-dry weight for organic compounds).

| | 1986 | | | 1987 | | | 1988 | | |
|---|---|---|---|---|---|---|---|---|---|
| Chem. | BATT[a] | TAMU | SAIC | BATT | TAMU | SAIC | BATT | TAMU | SAIC |
| Ag | 0.4 | -[b] | 0.033 | 0.4 | - | 0.086 | 0.033 | - | 0.04 |
| As | 5 | - | 5.6 | 5 | - | 1.6 | 6.6 | - | 2 |
| Cd | 3 | - | 0.033 | 3 | - | 0.1 | 0.63 | - | 0.073 |
| Cr | 0.7 | - | 0.5 | 0.61 | - | 0.046 | 0.4 | - | 0.16 |
| Cu | 9.9 | - | 0.43 | 9.9 | - | 0.4 | 9.9 | - | 0.46 |
| Hg | 0.0023 | - | 0.01 | 0.0023 | - | 0.043 | 0.036 | - | 0.036 |
| Ni | 0.76 | - | 0.79 | 0.76 | - | 0.66 | 0.83 | - | 0.63 |
| Pb | 0.2 | - | 0.2 | 0.2 | - | 0.19 | 0.56 | - | 0.66 |
| Sb | 1.32 | 0.1 | 0.99 | 1.32 | 0.1 | 0.5 | c | c | c |
| Se | 1.9 | - | 1.7 | 1.9 | - | 0.59 | 3.3 | - | 1.2 |
| Sn | 1.7 | 0.1 | 2 | 1.7 | 0.1 | 3.3 | 0.14 | - | d |
| Tl | 0.17 | 0.1 | 0.20 | 0.17 | 0.1 | 0.53 | c | c | c |
| Zn | 6.6 | - | 3.3 | 6.6 | - | 3.3 | 17 | - | 6.3 |
| LMWpah | 10 | 20 | 3.3 | 67 | 20 | 3.3 | 5.4 | 20 | 27 |
| HMWpah | 17 | 20 | 30 | 47 | 20 | 30 | 3.9 | 20 | 40 |
| PCB | 1.7 | 0.25 | 0.35 | 0.57 | 0.25 | 0.35 | 0.21 | 0.25 | 0.15 |
| DDT | 1.0 | 0.25 | 0.35 | 0.58 | 0.25 | 0.35 | 0.36 | 0.25 | 1.5 |
| Dieldrin | 2.0 | 0.25 | 0.53 | 1.7 | 0.25 | 0.53 | 0.36 | 0.25 | 1.4 |
| Chlordane | 1.0 | 0.25 | 0.19 | 0.96 | 0.25 | 0.19 | 0.34 | 0.25 | 0.34 |
| Hexachb. | 1.7 | 0.25 | 2.4 | 1.1 | 0.25 | 2.4 | 1.1 | 0.25 | 0.18 |
| Lindane | 1.7 | 0.25 | 0.09 | 0.34 | 0.25 | 0.09 | 0.59 | 0.25 | 0.38 |
| Mirex | 2.5 | 0.25 | 0.87 | 1.1 | 0.25 | 0.87 | 0.64 | 0.25 | 2.9 |

[a] BATT (Battelle) analyzed all East coast samples, TAMU (Texas A&M) analyzed all Gulf coast samples, BATT performed all elemental analyses of samples from OR, WA, and AK and, in 1988, organic analyses for samples from those states.SAIC (Scientific Applications Inc) made all analyses of samples from CA and HI and, in 1986 and 1987, also performed organic analyses for samples from OR, WA, and AK.

[b]TAMU reported no detection limits for Ag,As,Cd,Cr,Cu,Hg,Ni,Pb,Se, or Zn and for those elements the concentrations were detectable in all oysters and in all years.

[c]Analyses for Sb and Tl stopped being made in 1988

[d]BATT made all analyses for Sn in West coast mollusks collected in 1988

Table 2b. Frequency of non-detectable concentrations among all samples collected.

| Chem | # determinations | %nd | Chem | # determinations | %nd |
|---|---|---|---|---|---|
| Ag | 1378 | 2.3 | Tl | 890 | 94 |
| As | 1378 | 0 | Zn | 1378 | 0 |
| Cd | 1378 | 0 | PCB | 1363 | 0.37 |
| Cr | 1378 | 0 | DDT | 1370 | 1.3 |
| Cu | 1378 | 0 | Chlordane | 1372 | 2.0 |
| Hg | 1378 | 0.58 | Dieldrin | 1369 | 9.3 |
| Ni | 1378 | 0 | Hexachb. | 1354 | 77 |
| Pb | 1378 | 0.15 | Mirex | 1362 | 70 |
| Sb | 871 | 82 | Lindane | 1372 | 30 |
| Se | 1378 | 0.36 | LMWpah | 1343 | 33 |
| Sn | 1378 | 50 | HMWpah | 1277 | 38 |

Table 3. Variability in chemical concentrations in 1986 and for all data regardless of year. In no case have data from a site been used if more than half of it indicated non-detectable concentrations.

| Chemical | 1986 cv% | overall[a] c.v.% | Chemical | 1986 cv% | overall[a] c.v.% |
|---|---|---|---|---|---|
| Arsenic | 11 | 19 | PCB | 37 | 50 |
| Cadmium | 14 | 22 | DDT | 42 | 54 |
| Chromium | 24 | 37 | Chlordane | 39 | 51 |
| Copper | 12 | 22 | Dieldrin | 41 | 68 |
| Copper(mussel only) | 8 | 16 | Lindane | 51 | 80 |
| Lead | 22 | 36 | LMWpah | 64 | 97 |
| Mercury | 21 | 31 | HMWpah | 51 | 72 |
| Nickel | 17 | 30 | | | |
| Selenium | 15 | 26 | | | |
| Silver | 24 | 39 | | | |
| Silver(mussel only) | 27 | 43 | | | |
| Tin (1988 only) | - | 38 | | | |
| Zinc | 12 | 22 | | | |
| Zinc(mussel only) | 9 | 15 | | | |

Table 4. Results of tests of significance and identification of trends among sites with three-years of data and at which more than half the reported concentrations are above detection. Significance of the difference is based on the Kruskal-Wallis test at the 0.05 level. Trends are identified when the change has been monotonic and, among trends, cases where the change has been greater than twofold are separately noted.

| Chemical | Σsites | ΣSignif. Diff. | %Signif Diff | Monotonic increases ≥2x | all | Monotonic decreases ≤0.5x | all |
|---|---|---|---|---|---|---|---|
| PCB | 136 | 32 | 24% | 0 | 0 | 12 | 13 |
| DDT | 136 | 37 | 27 | 3 | 4 | 8(2)[a] | 8 |
| Chlordane | 136 | 23 | 17 | 3 | 3 | 5 | 6 |
| Dieldrin | 136 | 33 | 24 | 2(1) | 1 | 8(2) | 8 |
| Lindane | 101 | 26 | 26 | 2 | 2 | 4(3) | 4 |
| LMWpah | 91 | 34 | 37 | 5(1) | 5 | 6(2) | 6 |
| HMWpah | 76 | 21 | 27 | 3(1) | 3 | 4 | 4 |
| Arsenic | 136 | 45 | 33 | 3 | 6 | 2 | 8 |
| Cadmium | 136 | 48 | 35 | 3 | 4 | 7 | 17 |
| Chromium | 136 | 47 | 35 | 5 | 8 | 3 | 7 |
| Copper | 136 | 48 | 35 | 3 | 10 | 4 | 12 |
| Lead | 136 | 47 | 35 | 3 | 5 | 1 | 1 |
| Mercury | 136 | 42 | 31 | 4 | 11 | 1 | 4 |
| Nickel | 136 | 45 | 33 | 3 | 7 | 7 | 9 |
| Selenium | 136 | 39 | 29 | 8 | 12 | 2 | 2 |
| Silver | 134 | 55 | 41 | 11(1) | 11 | 12 | 13 |
| Zinc | 136 | 56 | 41 | 4 | 7 | 2 | 10 |

[a]The numbers in parentheses are the numbers of times a trend was identified and where the lowest mean concentration was a non-detected value (i.e. none of the analyses in either 1986 or 1988 yielded a detectable value)

differences among organic concentrations must be larger than those among elements in order to establish statistical significance.

## Tests of Significant Difference

With three years of data we can begin to look for temporal trends in contaminant levels at each site. The basic intention is to find sites where contaminant levels are decreasing or increasing because of human activities and to therefore indicate places where control measures are working or might be needed. At this point, with only three years of data, it cannot be claimed that differences among years are related to human endeavors. Nevertheless, the first steps will be taken in the full knowledge that more data will be obtained and that any hints of trends are subject to future verification.

The first requirement for a trend in the concentration of any contaminant is that there be a statistically significant difference among the years. There are two ways to test for that difference; the non-parametric Kruskal-Wallis (K-W) method and the parametric analysis of variance (ANOVA). The difference between them is exemplified by the following nine values for HMWpah concentrations (ng/g-dry) in mussels collected at the site in Boston Harbor at Hingham Bay (BHHB):

The three 1986 concentrations(2060,5450, 2553) and their rankings among all nine values (7,9,8).

The three 1987 concentrations (368,430, 210) and their rankings among all nine values (3,5,2).

The three 1988 concentrations(402,482, 184) and their rankings among all nine values (4,6,1).

The K-W test (Wilkinson, 1987) found no significant difference (at the 0.05 level) among the HMWpah concentrations in the three years. The ANOVA test did find a difference (at the 0.05 level).

The K-W test is based solely on the rankings of the nine values. The fact that all three of the 1986 values are at least five times larger than all the others does not matter. The result would be the same if all 1986 values were 100 times larger than they are. If, on the other hand, the lowest 1988 value were transposed with the highest 1987 value, the rankings would be resorted and the the K-W test would declare there to be a significant difference. The results of the ANOVA test, on the other hand, depend on the magnitude of the numbers and that test does find a difference among the three years. The difficulty with applying the ANOVA test is that it assumes the data in each year to be from normally distributed populations with a common variance. It is standard practice to approximate those assumptions by making the statistical test on logarithms of the data rather than the raw data themselves. That was done in this example but with only nine values divided into three groups the test is very sensitive to the underlying, unproven assumptions.

Both the K-W and ANOVA tests were run on all the data for five contaminants with the following results where "Y" indicates a significant difference and "N" indicates otherwise;

| | | # of cases in disagreement | |
|---|---|---|---|
| Chemical | # of cases in agreement | ANOVA (Y) K-W (N) | ANOVA (N) K-W(Y) |
| PCB | 106 | 29 | 1 |
| DDT | 105 | 26 | 5 |
| HMWpah | 58 | 13 | 5 |
| Lead | 111 | 21 | 4 |
| Silver | 102 | 26 | 4 |

The ANOVA and K-W tests agree in the main, but in about 25 cases per analyte (not the same 25 for each analyte) the ANOVA test would find differences while K-W does not. There would also be about 5 cases where the reverse applies but certainly the K-W test is more conservative. Part of the difference is simply due to there only being nine data points among the three years. With four years of data and twelve points it is expected that the K-W procedure will define more significant differences. The only way a fourth year of HMWpah data for the BHHB site, for example, will not result in a significant difference by the K-W test is for the three new data points to be so disparate that one is less and another is more than all the present nine values. It is perilous to declare the existence of trends with only three years of data. Caution dictates that the conservative test of significance be used. In the future, with more data, the two methods of testing

should converge to the same sets of significant difference.

## Indications of Temporal Trends

A significant difference is required, but for a trend to exist there also has to be a correlation between contaminant levels and time. Without that correlation, a significant difference could mean only that the concentration was unusually high or low in one year (i.e. a peak or a valley in an otherwise flat temporal sequence). In future years, with more data, trends can be established even when concentrations in a few individual years are unusually high or low. With annual data for only three years, however, linear correlation coefficients would have to exceed 0.997 to be statistically significant. Correlations, therefore, have not been calculated but cases have been identified where there was a monotonic change. This excludes instances where there was a significant difference but where the highest or the lowest concentration was the middle-year (1987) value.

Regardless of whether a significant difference exists, just by chance one should expect monotonic changes in half the cases. That is because, ignoring ties, the second-year concentration has to be higher or lower than the first. When the second year is the high year, there is a 50% chance that the third year will be higher still. Similarly, when the second year is low there is a 50% chance that the third year will be the lowest. As each year of data is collected the random chances for monotonicity decrease by a factor of two. So, while monotonicity is necessary for there to be even a hint of a trend in three years of data, it is not a very severe constraint on the data.

Tabulated results of applying the K-W test of significance and then searching for monotonic changes are listed in Table 4. Significant differences are common, appearing about in 35% of the cases for elements and 25% for the more variable organic contaminants. In all cases, fewer than half the significant differences were also monotonic so there are fewer such changes than chance would allow. Among monotonic changes, chance would dictate a 50/50 split between decreases and increases. There is a decided tendency towards decreasing trends for PCB, DDT, chlordane, dieldrin, and cadmium. Conversely there is a tendency towards increasing for mercury, selenium and lead, though for the latter there is a total of only six monotonic changes. Changes which have been less than twofold in size have been given special notice in Table 4 because they are more likely than the larger changes to be chance occurrences.

There are fewer trends among the organic contaminants than among any element, except for lead. PCB may present a special case because every one of its changes has been decreasing change. Since the individual components that comprise PCB began being quantified differently in 1988, it is possible that the 13 apparent decreases are an artifact of that change. Yet, all classes of chlorinated organic compounds showed a stronger tendency to decrease than to increase. That is consistent with the fact that uses of all those compounds have been banned or severely restricted. Changes among high and low molecular weight PAHs were about evenly split between increases and decreases. The LMWpah compounds are generally found in relatively fresh, unburned petroleum. The HMWpahs are derived from the combustion of fossil fuels. Both LMWpahs and HMWpahs are or are derived from naturally occurring materials. While their inputs to the ocean are subject to point- and non-point control measures, their production and use cannot simply be banned as is the case with chlorinated compounds.

Inputs of elemental contaminants are, of course, subject only to control not elimination. There is no obvious reason for the tendencies of cadmium to decrease and for mercury and selenium to increase. There are, however, some patterns to the geographical distributions of those and the organic compound trends. Table 5 lists, by contaminant, all the sites at which significant and monotonic changes have occurred. Many changes can have been due to chance but when nearby sites reveal identical changes, the case for a real trend is strengthened. The sequences on Table 5 indicate the following concurrent trends at nearby sites:

Table 5. Sites where contaminant concentrations in mollusks have been increasing or decreasing over the period 1986-1988. An asterisk (*) indicates a less than twofold change.

| | | |
|---|---|---|
| **Arsenic decreasing** | | |
| LICR* | Long Island Snd | CT |
| LINH* | Long Island Snd. | CT |
| CBMP* | Chesapeake Bay | MD |
| CBCI* | Chincoteague Bay | VA |
| TBMK* | Tampa Bay | FL |
| ABOB | Atchafalaya Bay | LA |
| VBSP | Vermillion Bay | LA |
| YBOP* | Yaquina Bay | OR |
| **Arsenic increasing** | | |
| BBRH* | Buzzards Bay | MA |
| MRCB* | Matanzas River | FL |
| SJCB | St. Johns R. | FL |
| LJLJ* | LaJolla | CA |
| NBWJ | Newport Bch. | CA |
| SFSM | San Fran. Bay | CA |
| **Cadmium decreasing** | | |
| NBDI | Narr. Bay | RI |
| LICR* | Long Island Snd. | CT |
| LINH* | Long Island Snd. | CT |
| LIHR | Long Island Snd. | CT |
| LIMR* | Long Island Snd | NY |
| LITN | Long Island Snd. | NY |
| DBFE | Delaware Bay | DE |
| DBBD* | Delaware Bay | DE |
| DBAP* | Delaware Bay | DE |
| CBHG* | Chesapeake Bay | MD |
| CBDP | Chesapeake Bay | VA |
| CHFJ* | Charleston Hrb. | SC |
| CHSF | Charleston Hrb. | SC |
| SSSI* | Sapelo Snd. | GA |
| MBEM* | Matagorda Bay | TX |
| UISB* | Unakwit Inlet | AK |
| HHKL | Honolulu Hrb. | HI |
| **Cadmium increasing** | | |
| PBPI | Penobscot Bay | ME |
| TBLB | Terrebonne Bay | LA |
| SPFP* | San Pedro Hrb. | CA |
| PGLP | Pacific Grove | CA |

| | | |
|---|---|---|
| **Chromium decreasing** | | |
| TBMK | Tampa Bay | FL |
| OSBJ* | Oceanside | CA |
| MDSJ | Marina Del Rey | CA |
| PDPD | Pt. Dume | CA |
| PALH* | Pt. Arena | CA |
| SSBI* | S. Puget Snd. | WA |
| BBSM* | Bellingham Bay | WA |
| **Chromium increasing** | | |
| BBGN | Buzzards Bay | MA |
| LIHU* | Long Island Snd | NY |
| LIPJ* | Long Island Snd. | NY |
| HRLB | Hud./Rar. Est. | NY |
| NYSH | New York Bight | NJ |
| NYLB* | New York Bight | NJ |
| SRTI | Savannah R. Est. | GA |
| MRCB | Matanzas R. | FL |
| **Copper decreasing** | | |
| LIHR* | Long Island Snd | CT |
| LIPJ* | Long Island Snd | NY |
| CBHG | Chesapeake Bay | MD |
| SSSI* | Sapelo Snd | GA |
| TBMK | Tampa Bay | FL |
| APDB* | Apalachicola Bay | FL |
| SAWB | St. Andrew Bay | FL |
| OSBJ* | Oceanside | CA |
| PDPD* | Pt. Dume | CA |
| PCPC* | Pt. Conception | CA |
| TBSR | Tomales Bay | CA |
| **Copper increasing** | | |
| HRJB* | Hud./Rar. Est | NY |
| HRUB* | Hud./Rar. Est | NY |
| HRLB* | Hud./Rar. Est | NY |
| NYSH* | New York Bight | NJ |
| NYSR* | New York Bight | NJ |
| CKBP | Cedar Key | FL |
| BBSD | Barataria Bay | LA |
| TBLB | Terrebonne Bay | LA |
| MBGP* | Matagorda Bay | TX |
| GHWJ* | Gray's Hrb. | WA |
| **Lead decreasing** | | |
| BPBP | Barber's Pt. | HI |
| **Lead increasing** | | |
| CBCC | Chesapeake Bay | VA |
| CBSP | Choctawhat. Bay | FL |
| CCNB* | Corpus Christi | TX |
| LMSB | L. Laguna Madre | TX |
| BBSM* | Bellingham Bay | WA |

Table 5 (continued)

| | | |
|---|---|---|
| **Mercury decreasing** | | |
| LIHR* | Long Island Snd | CT |
| CBCC* | Chesapeake Bay | VA |
| EVFU* | Everglades | FL |
| BPBP | Barber's Pt. | HI |
| **Mercury increasing** | | |
| LICR* | Long Island Snd | CT |
| HRUB* | Hud./Rar. Est. | NY |
| NYSH* | New York Bight | NJ |
| NYLB* | New York Bight | NJ |
| CBHP | Chesapeake Bay | MD |
| QIUB* | Quinby Inlet | VA |
| RSJC* | Roanake Snd. | NC |
| CFBI | Cape Fear | NC |
| MRCB | Matanzas R. | FL |
| TBLB* | Terrebonne Bay | LA |
| SSSS | San Simeon Pt. | CA |
| **Nickel decreasing** | | |
| LIHR* | Long Island Snd | CT |
| SLBB | Sabine Lake | TX |
| MBGP | Matagorda Bay | TX |
| ABLR | Aransas Bay | TX |
| PLLH* | Pt. Loma | CA |
| MBVB | Mission Bay | CA |
| MDSJ | Marina Del Rey | CA |
| BBBE | Bodega Bay | CA |
| TBSR | Tomales Bay | CA |
| **Nickel increasing** | | |
| HRJB | Hud./Rar. Est | NY |
| HRUB* | Hud./Rar. Est | NY |
| NYSH | New York Bight | NJ |
| CBHP* | Chesapeake Bay | MD |
| PSWB* | Pamlico Snd. | NC |
| SRTI | Savannah R. Est. | GA |
| ABOB* | Atchafalaya Bay | LA |
| **Selenium decreasing** | | |
| CBTP | Comm. Bay | WA |
| HHKL | Honolulu Hrb. | HI |
| **Selenium increasing** | | |
| TBPB | Tampa Bay | FL |
| APCP* | Apalachicola Bay | FL |
| APDB | Apalachicola Bay | FL |
| CBSP | Choctawhat. Bay | FL |
| MSBB | Miss. Snd. | MS |
| BBSD | Barataria Bay | LA |
| BBMB | Barataria Bay | LA |
| CLCL* | Caillou Lake | LA |
| ABOB* | Atchafalaya Bay | LA |
| VBSP | Vermillion Bay | LA |
| MBGP* | Matagorda Bay | TX |
| SFSM | San Fran. Bay | CA |
| **Silver Decreasing** | | |
| BHDB | Boston Hrb. | MA |
| BHDI | Boston Hrb. | MA |
| LIHR | Long Island Snd. | CT |
| LISI | Long Island Snd. | CT |
| DBBD | Delaware Bay | DE |
| CBMP | Chesapeake Bay | MD |
| CBHG | Chesapeake Bay | MD |
| CBDP | Chesapeake Bay | VA |
| RSJC | Roanoke Snd. | NC |
| CFBI | Cape Fear | NC |
| TBMK | Tampa Bay | FL |
| CCNB* | Corpus Christi | TX |
| LMSB | L. Laguna Madre | TX |
| **Silver increasing** | | |
| BBGN | Buzzards Bay | MA |
| CKBP | Cedar Key | FL |
| BBSD | Barataria Bay | LA |
| TBLB | Terrebonne Bay | LA |
| ABOB | Atchafalaya Bay | LA |
| MBGP | Matagorda Bay | TX |
| SFSM | San Fran. Bay | CA |
| JFCF | S. Juan de Fuca | WA |
| BBSM | Bellingham Bay | WA |
| BPBP | Barber's Pt. | HI |
| PVMC* | Port Valdez | AK |
| **Zinc decreasing** | | |
| LIHR* | Long Island Snd. | CT |
| LIHU* | Long Island Snd. | CT |
| LIMR* | Long Island Snd. | NY |
| CBHG* | Chesapeake Bay | MD |
| MRCB | Matanzas R. | FL |
| TBMK | Tampa Bay | FL |
| SAWB* | St. Andrew Bay | FL |
| SLBB* | Sabine Lake | TX |
| IBNJ* | Imperial Beach | CA |
| ABWJ* | Anaheim Bay | CA |
| **Zinc increasing** | | |
| CKBP | Cedar Key | FL |
| BBSD | Barataria Bay | LA |
| BBMB | Barataria Bay | LA |
| JHJH* | Joseph Hrb. Bayou | LA |
| SFSM* | San Francisco Bay | CA |
| UISB* | Unakwit Inlet | AK |
| HHKL | Honolulu Hrb. | HI |

Table 5 (continued)

| | | |
|---|---|---|
| **PCB decreasing** | | |
| BHDI | Boston Hrb. | MA |
| DBKI | Delaware Bay | DE |
| HRLB | Hud./Rar. Est. | NY |
| PLLH | Pt. Loma | CA |
| SCBR | S. Catalina Island | CA |
| SCFP | Santa Cruz Island | CA |
| SBSB | Pt. S. Barbara | CA |
| PCPC | Pt. Conception | CA |
| PDSC | Pt. Delgada | CA |
| GHWJ | Gray's Hrb. | WA |
| EBFR | Elliott Bay | WA |
| SIWP* | Sinclair Inlet | WA |
| PRPR | Pt. Roberts | WA |
| **PCB increasing** | | |
| none | | |
| **DDT decreasing** | | |
| BBAR | Buzzards Bay | MA |
| HRLB | Hud./Rar. Est. | NY |
| CBHG | Chesapeake Bay | MD |
| CBCC | Chesapeake Bay | VA |
| LMSB | L. Laguna Madre | TX |
| CBTP | Comm. Bay | WA |
| **DDT increasing** | | |
| MSPB | Miss. Snd. | MS |
| OSBJ | Oceanside | CA |
| MDSJ | Marina Del Rey | CA |
| SSBI* | S. Puget Snd. | WA |
| **Chlordane decreasing** | | |
| BHDI | Boston Hrb. | MA |
| DBFE | Delaware Bay | DE |
| LINH | Long Island Snd. | CT |
| LISI | Long Island Snd. | CT |
| LITN* | Long Island Snd | NY |
| HRLB | Hud./Rar. Est. | NY |
| **Chlordane increasing** | | |
| EVFU | Everglades | FL |
| APDB | Apalachicola Bay | FL |
| MSPB | Miss. Snd. | MS |
| **Dieldrin decreasing** | | |
| PBSI | Penobscot Bay | ME |
| BHDI | Boston Hrb. | MA |
| HRJB | Hud./Rar. Est. | NY |
| HRLB | Hud./Rar. Est. | NY |
| NYSH | New York Bight | NJ |
| DBFE | Delaware Bay | DE |
| SAWB | St. Andrew Bay | FL |
| JHJH | J. Hrb. Bayou | LA |
| **Dieldrin increasing** | | |
| MBTH | Moriches Bay | NY |
| YHYH | Yaquina Head | OR |
| **Lindane decreasing** | | |
| LISI | Long Island Snd | CT |
| LIPJ | Long Island Snd | NY |
| HRLB | Hud./Rar. Est. | NY |
| NYLB | New York Bight | NJ |
| **Lindane increasing** | | |
| NBDi | Narr. Bay | RI |
| VBSP | Vermillion Bay | LA |
| **LMWpah decreasing** | | |
| HRUB | Hud./Rar. Est. | NY |
| NYLB | New York Bight | NJ |
| TBMK | Tampa Bay | FL |
| GBTD | GalvestonBay | TX |
| SSSS | San Simeon Pt. | CA |
| SGSG | Pt. St. George | OR |
| **LMWpah increasing** | | |
| BBAR | Buzzards Bay | MA |
| CBMP | Chesapeake Bay | MD |
| MSPB | Miss. Snd. | MS |
| MBTP | Matagorda Bay | TX |
| CCNB | Corpus Christi | TX |
| **HMWpah decreasing** | | |
| HRUB | Hud./Rar. Est. | NY |
| TBMK | Tampa Bay | FL |
| SAWB | St. Andrew Bay | FL |
| SIWP | Sinclair Inlet | WA |
| **HMWpah increasing** | | |
| LINH | Long Island Snd. | CT |
| CBMP | Chesapeake Bay | MD |
| CBSR | Choctawhat. Bay | FL |

Decreasing Trends

1. 3 of 6 chlordane decreases among the 9 Long Island Sound sites.
2. 3 of 6 dieldrin decreases among the 6 Hudson/ Raritan Estuary and New York Bight sites.
3. 6 of 17 cadmium decreases among the 9 Long Island Sound sites.
4. 3 of 17 cadmium decreases among the 4 Delaware Bay sites.
5. 2 of 17 cadmium decreases among the 2 Charleston Harbor sites.
6. 3 of 10 zinc decreases among the 9 Long Island Sound sites.

Increasing Trends

1. 3 of 8 chromium increases among the 6 Hudson/Raritan Estuary and New York Bight sites.
2. 5 of 10 copper increases among the 6 Hudson/Raritan Estuary and New York Bight sites.
3. 3 of 11 mercury increases among the 6 Hudson/Raritan Estuary and New York Bight sites.
4. 3 of 7 nickel increases among the 6 Hudson/Raritan Estuary and New York Bight sites.
5. 2 of 12 selenium increases at the 2 Apalachicola Bay sites.
6. 5 of 12 selenium increases at the 7 three-year Louisiana sites between Barataria and Vermillion Bays.

The NS&T sites have been selected to be representative of relatively large areas and representativeness is demonstrated when contaminants at nearby sites show similar levels and change in the same direction. Regardless of other sites, when three or more contaminants are monotonically and significantly changing at a site, it is likely that contamination is changing at that site. Table 6 is a listing of the 34 sites where more than two possible trends were identified. Half of those sites are in Long Island Sound, the Hudson Estuary, Chesapeake Bay, and western Louisiana where some patterns have already been noted. The rest of those sites are relatively isolated from one another.

## Seasonality in Tissue Contamination

Annual trends in contaminant levels cannot be rigorously established with only three data points. Significant differences have been found for some contaminants at some sites and in some of those there has been a monotonic change. These instances may be the beginnings of trends and other trends may appear as the database extends through time. Since trends will be interpreted as reflecting changes in water quality, it needs to be established that the trends are not merely an artifact of seasonal changes in the tendency of mollusks to accumulate contaminants.

Farrington et al. (1983) sampled mussels monthly for 18 to 24 months at two sites and found that concentrations of PCB, lead, cadmium, nickel, cesium and plutonium varied throughout the year. At their Narragansett Bay site the data showed a more-or-less cyclic pattern with the mid-summer values for the metals being about half of their wintertime concentrations. The relative range of PCB concentrations was less than twofold but the changes were not cyclic. Similarly the cesium and plutonium data, with the exception of single points, showed little variation or cyclicity. At the Bodega Bay site, PCB and nickel concentrations varied over about a twofold range without evidence of annual cycles. The cadmium and lead concentrations also displayed non-cyclic behavior and varied within a factor of about two, but there were instances for those metals where month-to-month changes were well outside the twofold range.

The observation that a twofold range in concentrations at a site may be within the limits of variation of molluscan tissue contamination is the reason for differentiating the twofold from lesser changes in the current analysis.

To minimize any possible influence of season on contaminant levels, mollusks in the NS&T Program have been collected in the winter or late fall of each year. The intention is to always sample a site within a three weeks of an exactly annual cycle (sampling dates are listed in Appendix A). In the first year of the program, because of start-up difficulties, sampling at some sites did not occur until two to three months after the intended time. It is not likely that this offset in time is responsible for any apparent trends. All the sampling was still in the winter. In Long Island Sound and in the Hudson Estuary sampling has occurred at about the

Table 6. Sites where there have been more than two contaminants showing statistically significant and monotonic changes.

| | | | | Significant and Monotonic Changes | |
|---|---|---|---|---|---|
| Site | Location | State | Total | Increasing | Decreasing |
| BHDI | Boston Hrb. | MA | 4 | | PCB, Chlordane, Dieldrin, Ag |
| LICR | Long Island Snd | CT | 3 | Hg | As, Cd |
| LINH | Long Island Snd. | CT | 4 | HMWpah | Chlordane, As, Cd |
| LISI | Long Island Snd | CT | 3 | | Chlordane, Lindane, Ag |
| LIHR | Long Island Snd | CT | 5 | | Ag, Cd,Cu, Hg, Ni, Zn |
| LIPJ | Long Island Snd | NY | 3 | | Lindane, Cu, Cr |
| HRJB | Hud./Rar. Est | NY | 3 | Cu, Ni | Dieldrin |
| HRLB | Hud./Rar. Est | NY | 7 | Cr, Cu | DDT, Chlordane, Dieldrin, Lindane, PCB |
| HRUB | Hud./Rar. Est | NY | 5 | Cu, Ni, Hg | LMWpah, HMWpah |
| NYLB | New York Bight | NJ | 4 | Cr, Hg | Lindane, LMWpah |
| NYSH | New York Bight | NJ | 5 | Cr, Cu, Hg, Ni | Dieldrin |
| DBFE | Delaware Bay | DE | 3 | | Chlordane, Dieldrin, Cd |
| CBCC | Chesapeake Bay | VA | 3 | Pb | DDT, Hg |
| CBHG | Chesapeake Bay | MD | 5 | | DDT, Ag, Cd, Cu, Zn |
| CBMP | Chesapeake Bay | MD | 4 | LMWpah, HMWpah | Ag, As |
| MRCB | Matanzas R. | FL | 4 | As, Cr, Hg | Zn |
| TBMK | Tampa Bay | FL | 7 | | HMWpah, LMWpah, Ag, As, Cr,Cu, Zn |
| CKBP | Cedar Key | FL | 3 | Ag, Cu, Zn | |
| APDB | Apalachicola Bay | FL | 3 | Chlordane, Se | Cu |
| SAWB | St. Andrew Bay | FL | 4 | | Dieldrin, HMWpah, Cu, Zn |
| MSPB | Miss. Snd. | MS | 3 | DDT, Chlordane, LMWpah | |
| BBSD | Barataria Bay | LA | 4 | Ag, Cu, Se, Zn | |
| TBLB | Terrebonne Bay | LA | 4 | Ag, Cd, Cu, Hg | |
| ABOB | Atchafalaya Bay | LA | 4 | Ag, Ni, Se | As |
| VBSP | Vermillion Bay | LA | 3 | Lindane, Se | As |
| MBGP | Matagorda Bay | TX | 4 | Ag, Cu, Se | Ni |
| CCNB | Corpus Christi | TX | 3 | LMWpah, Pb | Ag |
| LMSB | Laguna Madre | TX | 3 | Pb | DDT, Ag |
| OSBJ | Oceanside | CA | 3 | DDT | Cu, Cr |
| MDSJ | Marina Del Rey | CA | 3 | DDT | Cr, Ni |
| SFSM | San Fran. Bay | CA | 4 | Ag, As, Se, Zn | |
| BBSM | Bellingham Bay | WA | 3 | Ag, Pb | Cr |
| BPBP | Barber's Pt. | HI | 3 | Ag | Hg, Pb |
| HHKL | Honolulu Hrb. | HI | 3 | Zn | Cd, Se |

same in all years, including being in March in the first year but in December (or late November) in later years. Yet the apparent trends in contamination in those two areas have been in separate directions.

## Normalizing on Lipid Content

It has been suggested (e.g. Phillips, 1980) that concentrations of lipophilic organic contaminants in aquatic organisms vary in concert with their lipid content. Lipid data are included in Appendix B but have not been used to adjust organic contaminant concentrations. If those concentrations were being altered by changes in lipid, the variability in lipid-adjusted data should be less than that in the raw data. It is evident in Table 7a that lipid-normalized data are, instead, more variable. Also, if lipid content was influencing contaminant levels, one would expect a significant correlation between lipid and contaminant concentrations. If the main factor determining contaminant levels in mollusks was not water quality, there would be no point in using them as sentinels of contamination. Nevertheless, if lipid content is of any influence there should be some small but significant correlation between it and contamination. When all the data are combined (Table 7b) there is no correlation between lipid and concentrations of PCB, DDT, Lindane, HMWpah, or LMWpah. In all those cases the numbers of pairs of data are large and a correlation coefficient of only 0.06 would be significant (at the 0.05 level), yet none of the coefficients exceed 0.03. For both chlordane and dieldrin the coefficients are 0.12 which is significant but nevertheless very small. Except for that small inkling of a connection, the lipid contents are not related to the organic contaminant levels.

## The Most Contaminated Sites

Contaminant analyses of mussels and oysters collected at a common site (Table 8a) revealed a strong species preference for some elements, but not for organic contaminants. Between two species of mussels collected at another site, there was not a strong preference for any contaminant ( the threefold DDT ratio in Table 8a is a ratio of two small concentrations and is not interpreted as a species preference). None of the species collected in the continental United States or Alaska can be found in Hawaii so there is no direct way to test the contaminant preferences in the Hawaiian samples of *O. sandvicensis*. However, a site on Kauai was sampled in 1988 along with the two established sites on Oahu. The fact that tissue levels of several metals were very high at this new site and remained high at the Oahu sites indicates a metal preference by *O. sandvicensis* that is even stronger than that of *C. virginica*. Data from analyses of mollusks and sediment have been combined to test correlations between rankings of sites based on contaminant concentrations in both media (Table 8b). The general results of comparing between species of mollusks and between mollusks and sediments are: 1) that it is necessary to separate mussel from oyster data when considering concentrations of copper, silver, and zinc; 2) that cadmium levels in neither species are related to cadmium levels in sediment; and 3) that for all other contaminants, save arsenic and zinc, mussels follow contaminant levels better than do oysters. Because molluscan data incorporate species differences and are not universally and strongly correlated with sediment contamination, sediment analyses provide better measures of differences in contamination among sites.

Still, given the limitations, comparisons of molluscan data among sites are valid and do provide insight as to where contamination is highest. The first report containing data on molluscan contaminantion (NOAA, 1987b) highlighted the 15 of the 145 total sites where concentrations were highest for each contaminant. Now, with 177 sites, the upper ten percent is about the highest 20 concentrations. Appendix C is a listing, ranking, and set of concentration plots for all sites at which the concentration was among the highest 20 concentrations for any of the three years. As in NOAA (1987b) it is recognized that differences between closely ranking sites are not significantly different and that a concentration near the low end of the high 20 may well be no different from a concentration well down on the list. Unless a concentration is very high, say in the upper five, no particular meaning should be attached to a single or even two instances where a site appears among the upper 20. When three contaminant concentrations at a site appear among the high 20, one can judge the site to be contaminated. The plots in Appendix C are limited to the high concentrations but display the gamut of temporal change. They demonstrate

Table 7a. The influence of lipid normalizing on the variances in organic contaminant data. Overall coefficients of variation (cv%) are the averages of all coefficients of variation for a given contaminant. Individual site coefficients of variation were calculated from all data regardless of year. For Lindane, LMWpah, and HMWpah, sites were excluded when no contaminant was detected in one half or more of the determinations. For all East Coast and some West Coast sites, lipid data are not available for 1988 collections (see Appendix B).

| Chemical | n(of means) | overall cv% (raw data) | overall cv% (lipid normalized) |
|---|---|---|---|
| PCB | 171 | 50 | 57 |
| DDT | 171 | 52 | 60 |
| Chlordane | 171 | 50 | 57 |
| Dieldrin | 171 | 66 | 72 |
| Lindane | 121 | 78 | 83 |
| LMWpah | 76 | 94 | 96 |
| HMWpah | 53 | 60 | 65 |

Table 7b. Correlations between concentrations of organic compounds and lipid. The correlation coefficient calculations did not include the cases where Lindane, LMWpah, or HMWpah were not detected.

| Chemical | n(of data pairs) | Correlation Coefficient (r) with lipid |
|---|---|---|
| PCB | 1147 | -0.005 |
| DDT | 1150 | -0.011 |
| Chlordane | 1152 | 0.124 |
| Dieldrin | 1150 | 0.126 |
| Lindane | 779 | -0.029 |
| LMWpah | 647 | 0.012 |
| HMWpah | 583 | -0.024 |

Table 8a. Ratios of mean concentrations of contaminants in two species of mollusks collected at two common sites. *M. californianus* and *M. edulis* collected at site CRSJ on the Columbia River in OR. *C. virginica* and *M. edulis* collected at site LIHR in Long Island Sound CT.

| Chemical | *M. californianus*/ *M. edulis* | *C. virginica*/ *M. edulis* |
|---|---|---|
| PCB | 2.0 | 1.3 |
| DDT | 3.7 | 1.0 |
| TotalPAH | 0.97 | 1.0 |
| Ag | 1.3 | 14 |
| As | 0.89 | 0.82 |
| Cd | 1.5 | 1.9 |
| Cr | 1.5 | 0.18 |
| Cu | 1.0 | 31 |
| Hg | 1.9 | 0.77 |
| Ni | 0.92 | 2.4 |
| Pb | 1.2 | 0.29 |
| Zn | 1.1 | 40 |

Table 8b. Spearman Ranked Correlation coefficients (r's) for arithmetic means of concentrations in sediments and mollusks at Mussel Watch sites where mollusks and fine-sediment (<63μ) were sampled in 1986 or 1987 or both. All sediment data have been normalized for grain size. Correlation coefficients that are statistically different from zero at the .01 level of confidence are noted with an asterisk.

| Chemical | All Mollusks (n=117) | Mussels (n=53) | *C. virginica* (n=64) |
|---|---|---|---|
| PCB | .681* | .855* | .372* |
| DDT | .696* | .754* | .644* |
| Chlordane | .478* | .567* | .409* |
| Dieldrin | .515* | .690* | .281 |
| LMWpah | .503* | .550* | .441* |
| HMWpah | .602* | .611* | .519* |
| Ag | -.288* | .587* | .247 |
| As | .260* | .238 | .333* |
| Cd | -.175 | .049 | -.087 |
| Cr | .627* | .565* | .097 |
| Cu | -.513* | .697* | .102 |
| Hg | .430* | .442* | .242 |
| Ni | .427* | .611* | .406* |
| Pb | .696* | .750* | .372* |
| Zn | -.329* | .253 | .509* |

differences that appear large but are not statistically significant, smaller differences that are significantly different, significant differences without trends, and monotonic changes that are not significant. It is important to note that suggestions of trends have no connection with whether or not a site ranks among the highest 20.

Sites listed among the upper 20 in concentration in one year do not necessarily remain there. Figure 2 shows that mollusks at ten or more sites in all years remained among the 20 most concentrated for PCB, DDT, HMWpah, As, Pb, Hg, Ni, and (for mussel sites only) Cu, Ag, and Zn. Chemical variability within and among years is obviously a reason for sites not remaining on the high concentration list. Another reason is the addition of data from previously unsampled sites. Sites listed in Table 9 were not sampled in 1986 but have since been sampled and found to have high concentrations of three or more contaminants. With the exceptions of the Hawaiian site, a site in the mouth of the Mississippi River, and a Matagorda Bay site, they are all urban sites located within 20 km of 100,000 people (Appendix A includes the classification of sites as urban or rural). The Gulf of Mexico sites listed in Table 9 were sampled with the express purpose of testing whether getting closer to urban centers would yield more sites with high levels of contamination. Obviously, it did.

The importance of proximity to urban areas is conveyed in Figures 3a and 3b. Except for LMWpah, more of the high organic contaminant concentrations have been found at urban sites than would be expected in the absence of an urban influence. The elements lead and mercury show that same tendency and, when considering only mussel sites, so do copper and silver. No contaminants show a tendency towards high concentrations at rural sites. The apparent rural preferences of copper and silver in Fig. 3a are an artifact of the high concentrations always being in oysters. In effect, for copper, silver, and zinc, Fig. 3a applies not to all sites but just to oyster sites. While 49% of all sites are urban, only 39% of the oyster sites are urban, the values in Fig. 3a for copper, silver, and zinc should be 10% higher.

## Conclusions

The primary purpose of this report has been to begin using data on contaminant levels in mollusks to assess temporal trends of contamination in the coastal and estuarine United States. With only three annual samples it is too soon to confidently declare the existence of any trends. However hints of trends have been indicated on the basis of significant differences and monotonic increases or decreases. For chlorinated organic compounds and cadmium there were decidedly more decreasing than increasing tendencies. For mercury and selenium, increases outnumbered decrease. Mussels from a group of sites in Long Island Sound all showed decreasing levels of cadmium , and sites in the Hudson Estuary/New York Bight showed increasing copper, chromium, mercury and nickel. When contiguous sites show similar behavior, the case for a trend is stronger. Nevertheless all hints of trends are compromised by the simple fact that there are few data points, three annual replicates per contaminant per site. This limits the ability to discern differences among years and to correlate annual means with time. Both abilities will strengthen as data accumulates and any trends suggested here are subject to future verification.

Molluscan contaminant data are of secondary value relative to sediment data for establishing the spatial distribution of contamination. However, examination of the distributions of sites with the highest levels of contamination has shown that organic contaminants, copper, silver, and lead have a strong affinity with urban areas. No contaminants are strongly associated with rural areas.

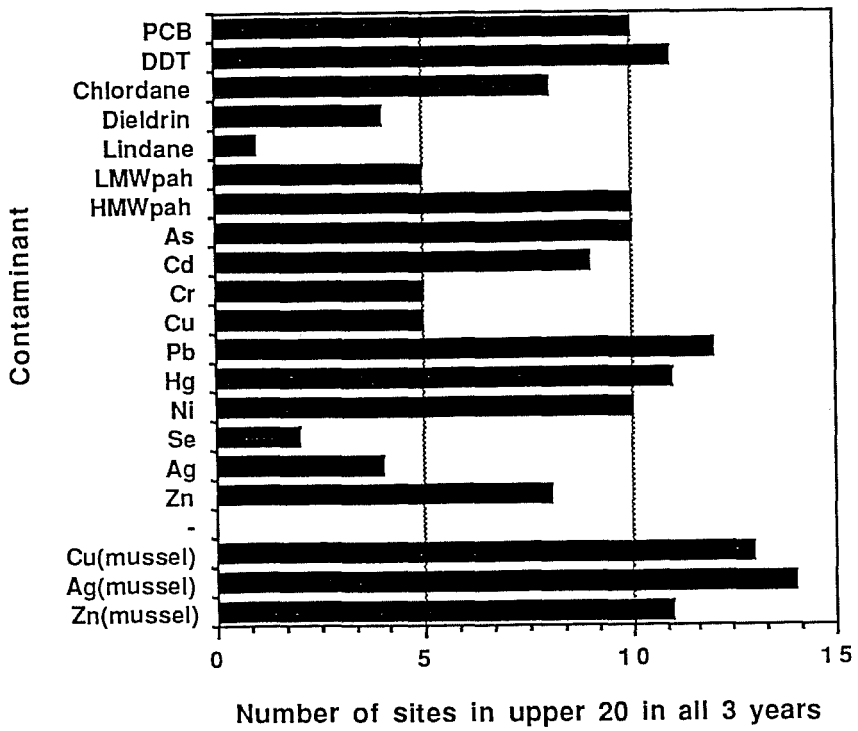
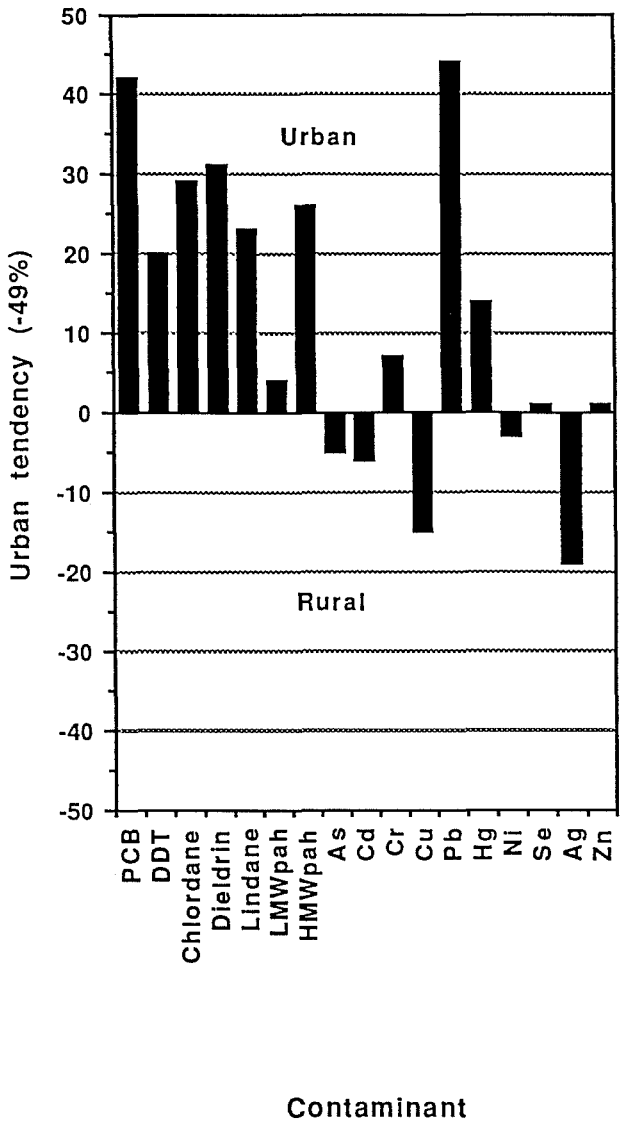
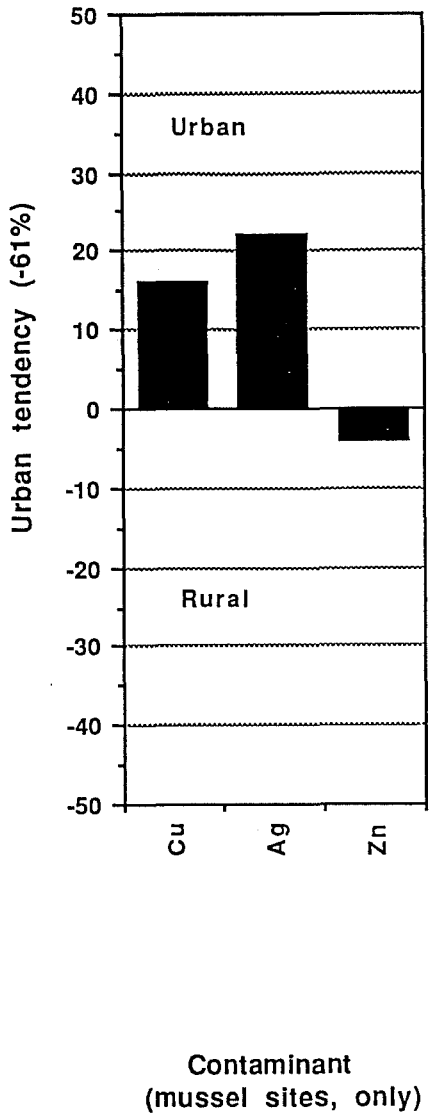



Figure 2. Numbers of sites per contaminant at which concentrations in mollusks have remained among the highest 20 in all three years.

Table 9. Sites not sampled in 1986 and at which 3 or more contaminant concentrations in mollusks have been among the highest 20 concentrations in 1987 or 1988.

| Site | Location | State | Species | Total | Contaminant |
|---|---|---|---|---|---|
| SHFP | Salem Harbor | MA | me | 3 | Cr, Cu(mussels), Pb |
| NMML | North Miami | FL | cv | 3 | LMWpah, Cu, Zn |
| PCMP | Panama City | FL | cv | 4 | HMWpah, LMWpah, As, Cu |
| LBNO | Lake Borgne | LA | cv | 3 | Cu, Se, Zn |
| MRPL | Miss. River | LA | cv | 6 | Chlordane, DDT, Dieldrin, Ag, Cd, Cu |
| CLLC | Calcasieu Lake | LA | cv | 4 | Chlordane, Ag, Cu, Zn |
| GBSC | Galveston Bay | TX | cv | 8 | Chlordane, DDT,Dieldrin, HMWpah, Lindane,PCB,Se,Zn |
| BRFS | Brazos River | TX | cv | 4 | DDT, Cu,Se,Zn |
| MBCB | Matagorda Bay | TX | cv | 3 | Ag, Cd, Se |
| ABHI | Aransas Bay | TX | cv | 4 | HMWpah,Ag, Cu,Se,Zn |
| CCBH | Corpus Christi | TX | cv | 4 | Cd,Cu, Se, Zn |
| LMPI | Laguna Madre | TX | cv | 5 | HMWpah,As,Cu,Se,Zn |
| SFEM | San Fran. Bay | CA | me | 11 | Chlordane, DDT, Dieldrin, HMWpah, LMWpah, PCB, Cd, Cr, Hg, Ni, Zn(mussels) |
| KAUI | Kauai | HI | os | 5 | Ag, Cr, Cu, Ni, Se |




Figures 3a and 3b. Tendencies for highest 20 concentrations to be in mollusks at urban sites. Among all 177 sites sampled during 1986 through 1988, 49% were in urban areas.The values plotted on Fig. 3a are the percentages among all sites (minus 49%) that were urban and at which concentrations were ever among the highest 20 (e.g. Of the 32 sites at which PCB concentrations were among the highest 20 in any year, 91% of those sites were urban and the plotted value is 91-49=42%). Three chemicals, Cu, Ag, and Zn, are so heavily preferred by oysters that the urban tendencies are plotted in Fig. 3b for only those 81 sites where mussels were collected. In that case 61% of the sites were urban.

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# Appendix A

## Site Names, Site Types,Sampling Dates and Location Maps

# APPENDIX A

## Site Names, Site Types. Sampling Dates and Location Maps

Mussel Watch Sites are listed in a geographical order that begins in Maine and moves clockwise around the United States to Alaska and ends with the three Hawaiian sites. The listing indicates the four-letter code, the general and specific locations and the state. Sites are designated as urban (U) or rural (R) on the basis of whether or not there are more or fewer than 100,000 people, respectively, living within 20 km. The last three columns are the sampling times for 1986, 1987, and 1988. Some sites have been sampled in November or December of the year preceeding the nominal year, so, for example, a sample collected during November of 1985 is considered a 1986 sample.

MAP SEQUENCE


| Map | Page |
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| Long Island Sound to New York Bight | A-6 |
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| Roanoke Sound to Biscayne Bay | A-8 |
| South Florida | A-9 |
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| Middle Florida | A-11 |
| Western Florida | A-12 |
| Mississiippi to Alabama | A-13 |
| Eastern Louisiana and Mississippi Delta | A-14 |
| Western Louisiana | A-15 |
| Galveston Bay | A-16 |
| South Texas | A-17 |
| Laguna Madre South Bay | A-18 |
| Southern California and Hawaii | A-19 |
| Point Conception to Point Arena | A-20 |
| Point Delgada to Yaquina Head | A-21 |
| Northwest Pacific | A-22 |
| Alaska | A-23 |


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.

Table A. Mussel Watch site descriptions and sampling dates.

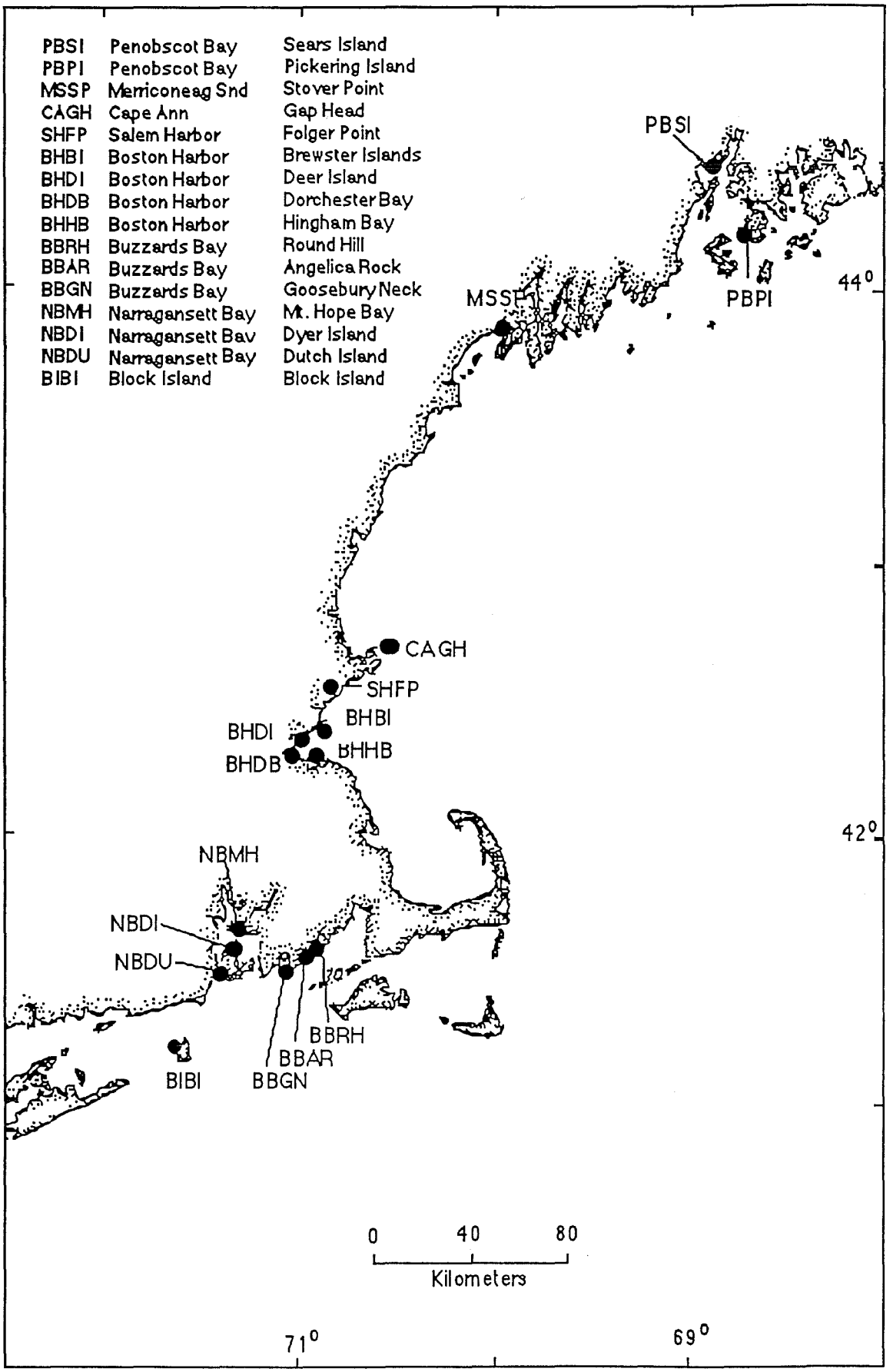
| Code | General Location | Specific Location | State | U/R | 1986 | 1987 | 1988 |
|---|---|---|---|---|---|---|---|
| PBSI | Penobscot Bay | Sears Island | ME | R | 3/25/86 | 3/27/87 | 3/19/88 |
| PBPI | Penobscot Bay | Pickering Island | ME | R | 3/26/86 | 3/28/87 | 3/19/88 |
| MSSP | Merriconeag Snd. | Stover Point | ME | U | not sampled | not sampled | 3/18/88 |
| CAGH | Cape Ann | Gap Head | MA | R | not sampled | 3/25/87 | 3/15/88 |
| SHFP | Salem Harbor | Folger Point | MA | U | not sampled | not sampled | 3/1/88 |
| BHDI | Boston Hrb. | Deer Island | MA | U | 1/21/86 | 3/4/87 | 2/23/88 |
| BHDB | Boston Hrb. | Dorchester Bay | MA | U | 1/11/86 | 3/3/87 | 2/24/88 |
| BHHB | Boston Hrb. | Hingham Bay | MA | U | 1/18/86 | 3/2/87 | 2/24/88 |
| BHBI | Boston Hrb. | Brewster Island | MA | U | 4/6/86 | 3/8/87 | 2/25/88 |
| BBRH | Buzzards Bay | Round Hill | MA | U | 1/23/86 | 3/7/87 | 3/2/88 |
| BBAR | Buzzards Bay | Angelica Rock | MA | U | 4/4/86 | 3/9/87 | 3/2/88 |
| BBGN | Buzzards Bay | Goosebury Neck | MA | U | 4/3/86 | 3/5/87 | 3/3/88 |
| NBDU | Narr. Bay | Dutch Island | RI | R | 2/3/86 | 3/12/87 | not sampled |
| NBDI | Narr. Bay | Dyer Island | RI | U | 1/25/86 | 3/12/87 | 3/5/88 |
| BIBI | Block Is. | Block Island | RI | R | not sampled | 3/16/87 | 3/6/88 |
| LICR | Long Is. Snd. | Connecticut River | CT | U | 2/20/86 | 11/11/86 | 11/20/87 |
| LINH | Long Is. Snd. | New Haven | CT | U | 3/31/86 | 11/13/86 | 11/21/87 |
| LIHR | Long Is. Snd. | Housatonic River | CT | U | 2/12/86 | 11/14/86 | 11/22/87 |
| LISI | Long Is. Snd. | Sheffield Island | CT | U | 2/16/86 | 11/15/86 | 11/23/87 |
| LIHU | Long Is. Snd. | Huntington Hrb. | NY | U | 2/28/86 | 11/24/86 | 12/7/87 |
| LIPJ | Long Is. Snd. | Port Jefferson | NY | U | 3/1/86 | 11/25/86 | 12/8/87 |
| LIMR | Long Is. Snd. | Mamaroneck | NY | U | 2/22/86 | 11/19/86 | 12/2/87 |
| LIHH | Long Is. Snd. | Hempstead Hrb. | NY | U | 2/27/86 | 11/23/86 | 12/7/87 |
| LITN | Long Is. Snd. | Throgs Neck | NY | U | 2/24/86 | 11/20/86 | 12/3/87 |
| MBTH | Moriches Bay | Tuthill Point | NY | U | 3/6/86 | 12/4/86 | 12/9/87 |
| HRJB | Hud./Rar. Est | Jamaica Bay | NY | U | 3/10/86 | 12/2/86 | 12/4/87 |
| HRUB | Hud./Rar. Est. | Upper Bay | NY | U | 3/17/86 | 12/8/86 | 12/14/87 |
| HRLB | Hud./Rar. Est. | Lower Bay | NY | U | 3/13/86 | 12/7/86 | 12/14/87 |
| NYSH | N.Y. Bight | Sandy Hook | NJ | U | 3/12/86 | 12/11/86 | 12/19/87 |
| NYLB | N.Y. Bight | Long Branch | NJ | U | 3/15/86 | 12/12/86 | 12/15/87 |
| NYSR | N.Y. Bight | Shark River | NJ | U | 3/15/86 | 12/12/86 | 12/15/87 |
| BIBL | Barnegat Inlet | Barnegat Light | NJ | R | not sampled | not sampled | 1/7/88 |
| AIAC | Absecon Inlet | Atlantic City | NJ | U | not sampled | not sampled | 1/5/88 |
| DBFE | Delaware Bay | False Egg Is. Pt | DE | R | 3/22/86 | 12/16/86 | 1/12/88 |
| DBBD | Delaware Bay | Ben Davis Pt. Shl | DE | R | 3/22/86 | 12/16/86 | 1/17/88 |
| DBAP | Delaware Bay | Arnolds Point Shl | DE | R | 3/25/86 | 12/17/86 | 1/22/88 |
| DBKI | Delaware Bay | Kelly Island | DE | R | 3/27/86 | 1/6/87 | 1/21/88 |
| CBMP | Ches. Bay | Mountain Pt. Bar | MD | U | 3/12/86 | 2/2/87 | 1/28/88 |
| CBHP | Ches. Bay | Hackett Point Bar | MD | U | 3/10/86 | 1/21/87 | 1/29/88 |
| CBHG | Ches. Bay | Hog Point | MD | R | 3/8/86 | 1/20/87 | 1/30/88 |
| CBIB | Ches. Bay | Ingram Bay | VA | R | 3/4/86 | 1/19/87 | not sampled |
| CBCC | Ches. Bay | Cape Charles | VA | R | 2/26/86 | 1/9/87 | 1/25/88 |
| CBDP | Ches. Bay | Dandy Point | VA | R | 3/1/86 | 1/16/87 | 2/4/88 |
| CBCI | Chincot. Bay | Chincot. Inlet | VA | R | 2/27/86 | 12/19/86 | 1/15/88 |
| QIUB | Quinby Inlet | Upshur Bay | VA | R | 3/30/86 | 1/8/87 | 1/24/88 |
| RSJC | Roanoke Snd. | John Creek | NC | R | 2/22/86 | 1/13/87 | 2/8/88 |
| PSWB | Pamlico Snd. | Wysoching Bay | NC | R | 2/19/86 | 1/13/87 | 2/9/88 |
| CFBI | Cape Fear | Battery Island | NC | R | 2/16/86 | 2/7/87 | 2/11/88 |
| CHFJ | Charleston Hrb. | Fort Johnson | SC | U | 2/11/86 | 2/10/87 | 2/14/88 |
| CHSF | Charleston Hrb. | Shutes Folly Is. | SC | U | 2/9/86 | 2/11/87 | 2/14/88 |
| SRTI | Savannah R. Est | Tybee Island | GA | U | 2/4/86 | 2/13/87 | 2/17/88 |
| SSSI | Sapelo Snd. | Sapelo Island | GA | R | 2/1/86 | 2/14/87 | 2/20/88 |
| SJCB | St. Johns R. | Chicopit Bay | FL | U | 1/30/86 | 2/17/87 | 2/23/88 |
| MRCB | Matanzas R. | Cresent Beach | FL | R | 1/23/86 | 2/18/87 | 2/24/88 |
| IRSR | Indian River | Sebastian River | FL | R | not sampled | not sampled | 3/3/88 |
| NMML | North Miami | Maule Lake | FL | U | not sampled | not sampled | 2/27/88 |
| BBPC | Biscayne Bay | Princeton Canal | FL | U | 1/18/86 | 2/21/87 | not sampled |
| EVFU | Everglades | Faka Union Bay | FL | R | 2/20/86 | 3/2/87 | 2/21/88 |
| RBHC | Rookery Bay | Henderson Creek | FL | R | 2/20/86 | 3/2/87 | 2/21/88 |

Table A. (continued)

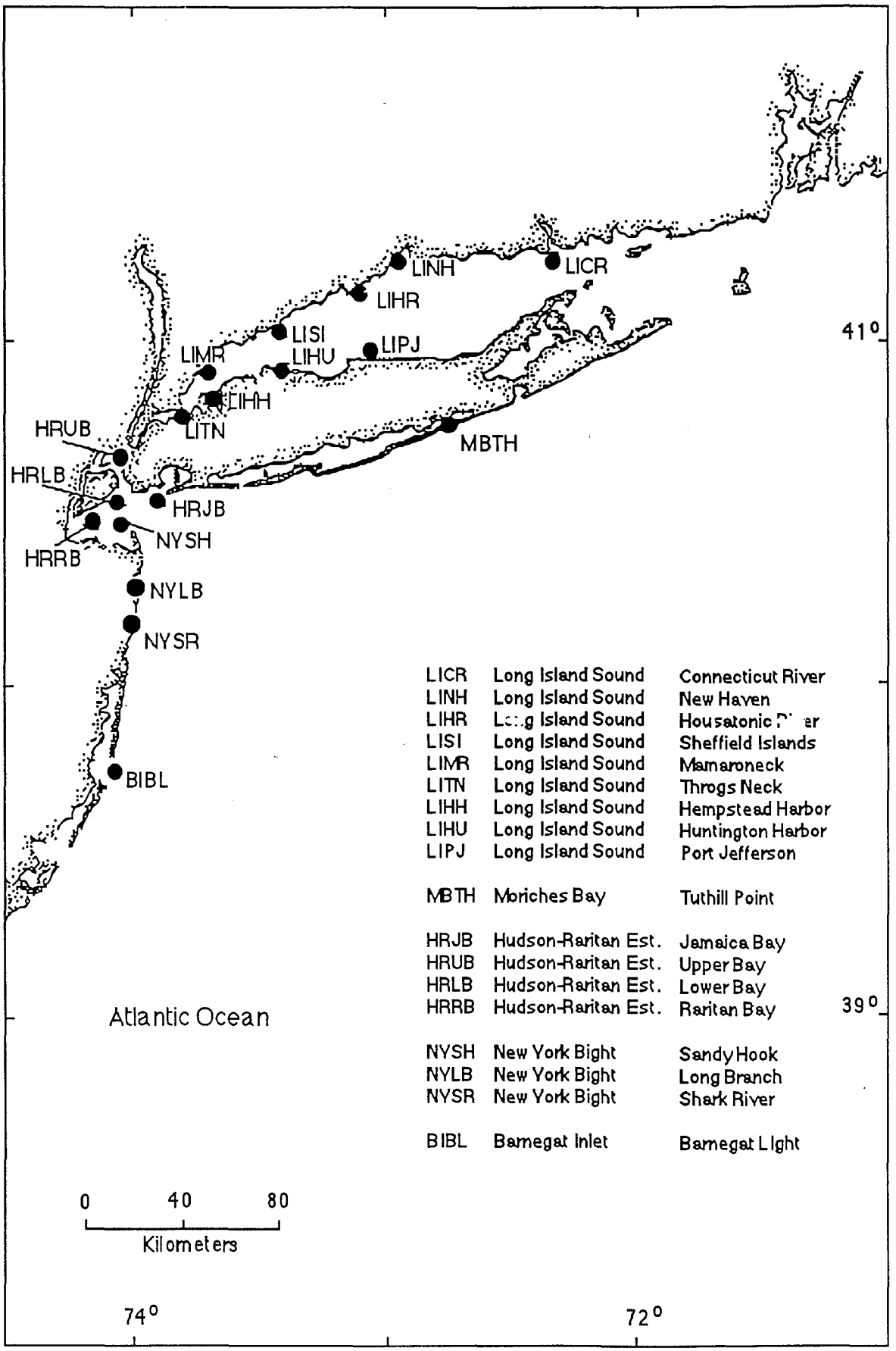
| Code | General Location | Specific Location | State | U/R | 1986 | 1987 | 1988 |
|---|---|---|---|---|---|---|---|
| NBNB | Naples Bay | Naples Bay | FL | R | 2/21/86 | 3/2/87 | 2/20/88 |
| CBBI | Charlotte Hrb. | Bird Island | FL | R | 2/21/86 | 3/2/87 | not sampled |
| CBFM | Charlotte Hrb. | Fort Meyers | FL | R | not sampled | not sampled | 2/22/88 |
| TBMK | Tampa Bay | Mullet Key Bayou | FL | U | 2/25/86 | 3/1/87 | 2/19/88 |
| TBCB | Tampa Bay | Cockroach Bay | FL | U | 2/24/86 | 3/1/87 | 2/20/88 |
| TBHB | Tampa Bay | Hillsborough Bay | FL | U | 2/24/86 | 3/1/87 | 2/20/88 |
| TBPB | Tampa Bay | Papys Bayou | FL | U | 2/23/86 | 2/28/87 | 2/21/88 |
| TBOT | Tampa Bay | Old Tampa Bay | FL | U | not sampled | not sampled | 2/22/88 |
| CKBP | Cedar Key | Black Point | FL | R | 2/27/86 | 2/28/87 | 2/19/88 |
| SRWP | Suwannee River | West Pass | FL | R | not sampled | not sampled | 2/19/88 |
| APCP | Apalachicola Bay | Cat Point Bar | FL | R | 2/27/86 | 2/26/87 | 2/18/88 |
| APDB | Apalachicola Bay | Dry Bar | FL | R | 2/28/86 | 2/27/87 | 2/18/88 |
| PCMP | Panama City | Municipal Pier | FL | R | not sampled | not sampled | 2/18/88 |
| SAWB | St. Andrew Bay | Watson Bayou | FL | R | 3/1/86 | 2/25/87 | 2/18/88 |
| CBSP | Choctawhat. Bay | Shirk Point | FL | R | 3/1/86 | 2/26/87 | 2/17/88 |
| CBSR | Choctawhat. Bay | Off Santa Rosa | FL | R | 3/2/86 | 2/26/87 | 2/17/88 |
| PBPH | Pensacola Bay | Public Harbor | FL | U | not sampled | not sampled | 2/19/88 |
| PBIB | Pensacola Bay | Indian Bayou | FL | U | 3/3/86 | 2/28/87 | 2/16/88 |
| MBHI | Mobile Bay | Hollingers Is. Ch | AL | U | not sampled | not sampled | 2/15/88 |
| MBCP | Mobile Bay | Cedar Point Reef | AL | R | 3/4/86 | 2/16/87 | 2/2/88 |
| MSPB | Miss. Snd. | Pascagoula Bay | MS | R | 3/5/86 | 2/16/87 | 2/15/88 |
| MSBB | Miss. Snd. | Biloxi Bay | MS | R | 3/4/86 | 2/16/87 | 2/2/88 |
| MSPC | Miss. Snd. | Pass Christian | MS | R | 3/6/86 | 2/16/87 | 2/2/88 |
| LBNO | Lake Borgne | New Orleans | LA | U | not sampled | not sampled | 1/31/88 |
| LBMP | Lake Borgne | Malheureux Pt. | LA | R | 3/27/86 | 2/15/87 | 1/30/88 |
| BSBG | Breton Snd. | Bay Garderne | LA | R | 3/26/86 | 2/14/87 | 2/25/88 |
| BSSI | Breton Snd. | Sable Island | LA | R | 3/26/86 | 2/14/87 | 2/25/88 |
| MRTP | Miss. River | Tiger Pass | LA | R | not sampled | not sampled | 1/31/88 |
| MRPL | Miss. River | Pass a Loutre | LA | R | not sampled | not sampled | 2/26/88 |
| BBSD | Barataria Bay | Bayou St. Denis | LA | R | 3/27/86 | 2/13/87 | 1/28/88 |
| BBTB | Barataria Bay | Turtle Bay | LA | R | not sampled | not sampled | 1/30/88 |
| BBMB | Barataria Bay | Middle Bank | LA | R | 3/27/86 | 2/12/87 | 1/28/88 |
| TBLF | Terrebonne Bay | Lake Felicity | LA | R | 3/28/86 | 2/11/87 | 1/29/88 |
| TBLB | Terrebonne Bay | Lake Barre | LA | R | 3/29/86 | 2/11/87 | 1/29/88 |
| CLCL | Caillou Lake | Caillou Lake | LA | R | 3/29/86 | 2/11/87 | 1/29/88 |
| ABOB | Atchafalaya Bay | Oyster Bayou | LA | R | 3/29/86 | 2/11/87 | 1/29/88 |
| VBSP | Vermillion Bay | Southwest Pass | LA | R | 3/31/86 | 2/10/87 | 1/28/88 |
| JHJH | J. Hrb. Bayou | Joseph Hrb. Bay | LA | R | 3/31/86 | 2/10/87 | 12/17/87 |
| CLLC | Calcasieu Lake | Lake Charles | LA | U | not sampled | not sampled | 12/16/87 |
| CLSJ | Calcasieu Lake | St. Johns Island | LA | R | 1/18/86 | 2/9/87 | 12/15/87 |
| SLBB | Sabine Lake | Blue Buck Point | TX | U | 1/29/86 | 12/10/86 | 12/18/87 |
| GBHR | Galveston Bay | Hanna Reef | TX | U | 1/11/86 | 12/16/86 | 12/9/87 |
| GBSC | Galveston Bay | Ship Channel | TX | U | not sampled | not sampled | 12/12/87 |
| GBYC | Galveston Bay | Yacht Club | TX | U | 1/12/86 | 12/16/86 | 12/11/87 |
| GBTD | Galveston Bay | Todd's Dump | TX | U | 1/12/86 | 12/19/86 | 12/9/87 |
| GBCR | Galveston Bay | Confed.Reef | TX | U | 1/10/86 | 12/16/86 | 12/10/87 |
| GBOB | Galveston Bay | Offats Bayou | TX | U | not sampled | not sampled | 12/8/87 |
| BRFS | Brazos River | Ferrport Surfside | TX | U | not sampled | not sampled | 12/16/87 |
| MBEM | Matagorda Bay | East Matagorda | TX | R | 1/30/86 | 1/12/87 | 1/11/88 |
| MBDI | Matagorda Bay | Dog Island | TX | R | not sampled | not sampled | 1/11/88 |
| MBCB | Matagorda Bay | Carancahua Bay | TX | R | not sampled | not sampled | 1/12/88 |
| MBTP | Matagorda Bay | Tres Palacios Bay | TX | R | 2/1/86 | 1/14/87 | 1/12/88 |
| MBGP | Matagorda Bay | Gallinipper Point | TX | U | 1/31/86 | 1/13/87 | 1/12/88 |
| MBLR | Matagorda Bay | Lavaca R. Mouth | TX | U | 1/31/86 | 1/13/87 | not sampled |
| ESSP | Espiritu Santo | South Pass Reef | TX | U | 2/1/86 | 1/15/87 | not sampled |
| ESBD | Espiritu Santo | Bill Days Reef | TX | U | not sampled | not sampled | 1/14/88 |
| SAMP | San Antonio Bay | Mosquito Point | TX | R | 2/2/86 | 1/14/87 | not sampled |
| SAPP | San Antonio Bay | Panther Pt. Reef | TX | R | 2/2/86 | 1/15/87 | not sampled |
| MBAR | Mesquite Bay | Ayres Point | TX | R | 1/28/86 | 1/13/87 | 1/14/88 |

Table A. (continued)

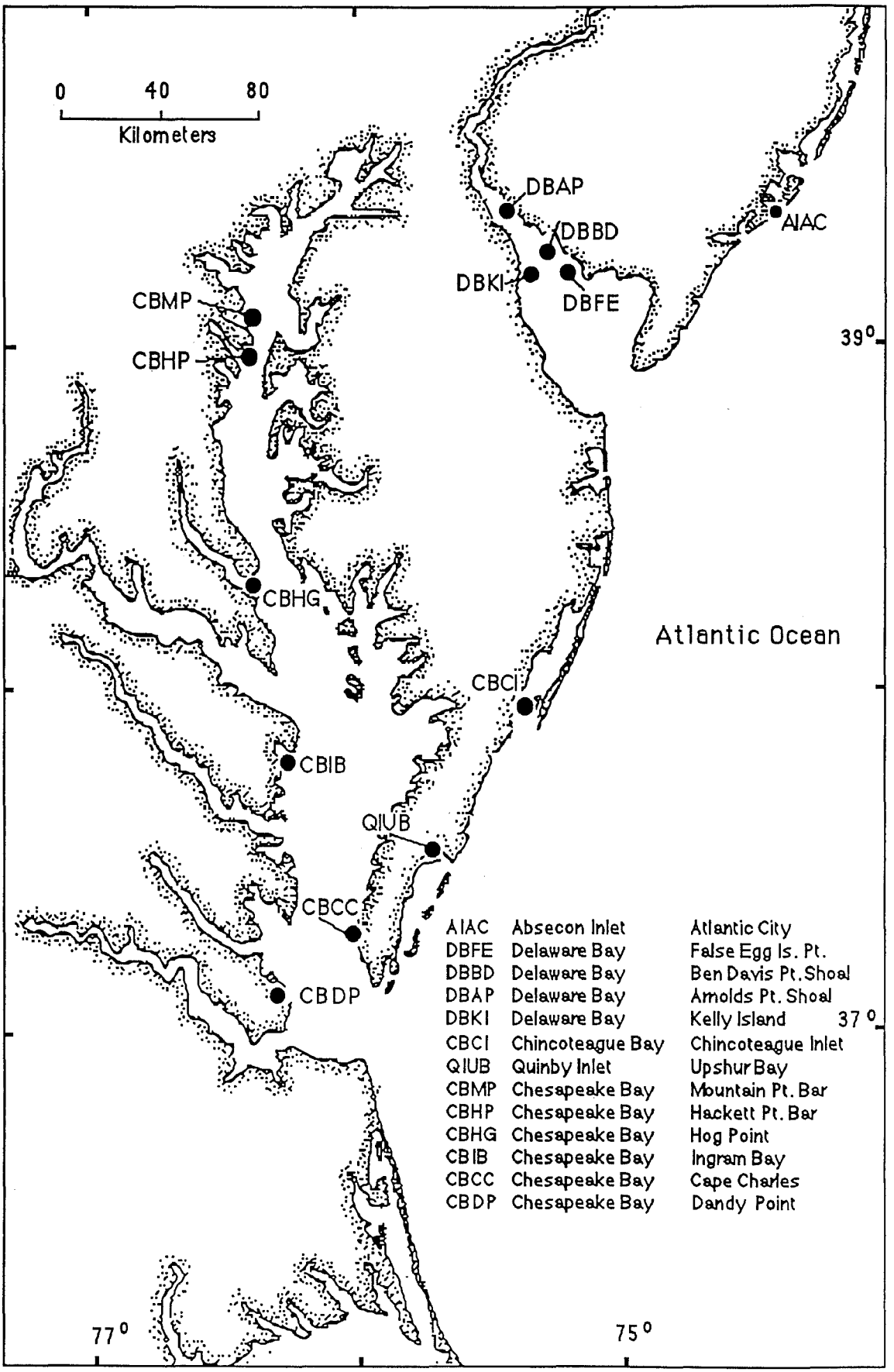
| Code | General Location | Specific Location | State | U/R | 1986 | 1987 | 1988 |
|---|---|---|---|---|---|---|---|
| CBCR | Copano Bay | Copano Reef | TX | R | 1/25/86 | 1/14/87 | 1/13/88 |
| ABHI | Aransas Bay | Harbor Island | TX | U | not sampled | not sampled | 1/13/88 |
| ABLR | Aransas Bay | Long Reef | TX | R | 1/26/86 | 1/13/87 | 1/13/88 |
| CCBH | Corpus Christi | Boat Harbor | TX | U | not sampled | not sampled | 1/13/88 |
| CCIC | Corpus Christi | Ingleside Cove | TX | U | 2/2/86 | not sampled | 1/12/88 |
| CCNB | Corpus Christi | Neuces Bay | TX | U | 1/29/86 | 1/13/87 | 1/12/88 |
| LMSB | Laguna Madre | South Bay | TX | U | 1/24/86 | 12/9/86 | 12/15/87 |
| LMPI | Laguna Madre | Port Isabell | TX | U | not sampled | not sampled | 12/16/87 |
| IBNJ | Imperial Beach | North Jetty | CA | U | 1/11/86 | 12/30/86 | 2/2/88 |
| SDHI | San Diego Bay | Harbor Island | CA | U | 1/13/86 | 12/31/86 | 12/30/87 |
| PLLH | Pt. Loma | Lighthouse | CA | U | 4/2/86 | 3/11/87 | 3/17/88 |
| MBVB | Mission Bay | Ventura Bridge | CA | U | 1/15/86 | 1/2/87 | 1/3/88 |
| LJLJ | La Jolla | Point La Jolla | CA | U | 1/10/86 | 12/29/86 | 12/31/87 |
| OSBJ | Oceanside | Beach Jetty | CA | U | 1/23/86 | 12/28/86 | 2/27/88 |
| NBWJ | Newport Bch. | Wedge Jetty | CA | U | 1/22/86 | 12/5/86 | 3/1/88 |
| ABWJ | Anaheim Bay | West Jetty | CA | U | 1/27/86 | 3/24/87 | 1/6/88 |
| SPFP | San Pedro Hrb. | Fishing Peir | CA | U | 2/10/86 | 2/23/87 | 1/5/88 |
| PVRP | Palos Verdes | Royal Palms St Pk | CA | U | 1/26/86 | 12/2/86 | 12/21/87 |
| SCBR | S. Catalina Is. | Bird Rock | CA | R | 4/4/86 | 3/23/87 | 2/28/88 |
| MDSJ | Marina Del Rey | South Jetty | CA | U | 2/5/86 | 12/3/86 | 1/8/88 |
| PDPD | Pt. Dume | Point Dume | CA | R | 2/6/86 | 11/29/86 | 3/30/88 |
| SCFP | Santa Cruz Is. | Fraser Point | CA | R | 4/28/86 | 3/24/87 | 3/13/88 |
| SANM | San Miguel Is. | Tyler Bight | CA | R | not sampled | not sampled | 3/14/88 |
| SBSB | Pt. S. Barbara | Pt.Santa Barbara | CA | U | 2/8/86 | 12/4/86 | 12/18/87 |
| PCPC | Pt. Conception | Pt. Conception | CA | R | 2/24/86 | 11/30/86 | 2/3/88 |
| SLSL | San Luis Ob. B. | Pt. San Luis | CA | U | 4/26/86 | 12/1/86 | 12/19/87 |
| SSSS | San Simeon Pt. | San Simeon Pt. | CA | R | 3/8/86 | 2/9/87 | 1/29/88 |
| PGLP | Pacific Grove | Lovers Point | CA | U | 3/5/86 | 2/28/87 | 1/30/88 |
| MBSC | Monterey Bay | Point Santa Cruz | CA | U | 3/7/86 | 11/15/86 | 1/31/88 |
| FIEL | Farallon Is. | East Landing | CA | U | not sampled | not sampled | 1/15/88 |
| SFDB | San Fran. Bay | Dumbarton Br. | CA | U | 4/13/86 | 2/11/87 | 3/18/88 |
| SFSM | San Fran. Bay | San Mateo Bridge | CA | U | 4/11/86 | 2/26/87 | 3/18/88 |
| SFEM | San Fran. Bay | Emeryville | CA | U | not sampled | 2/27/87 | 1/17/88 |
| TBSR | Tomales Bay | Spanger's Res. | CA | R | 3/21/86 | 2/5/87 | 3/17/88 |
| BBBE | Bodega Bay | Bodega Bay Entr | CA | R | 3/22/86 | 12/14/86 | 2/1/88 |
| PALH | Pt. Arena | Lighthouse | CA | R | 3/23/86 | 12/15/86 | 2/2/88 |
| PDSC | Pt. Delgada | Shelter Cove | CA | R | 3/30/86 | 11/16/86 | 1/21/88 |
| HMBJ | Humboldt Bay | Jetty | CA | R | 3/28/86 | 12/16/86 | 1/20/88 |
| SGSG | Pt. St. George | Point St. George | CA | R | 3/29/86 | 11/17/86 | 1/19/88 |
| CBCH | Coos Bay | Coos Head | OR | R | 2/6/86 | 12/4/86 | 12/19/87 |
| CBRP | Coos Bay | Russell Point | OR | R | 2/6/86 | 12/3/86 | 12/20/87 |
| YBOP | Yaquina Bay | Oneata Point | OR | R | 2/5/86 | 12/3/86 | 12/19/87 |
| YHYH | Yaquina Head | Yaquina Head | OR | R | 2/4/86 | 12/2/86 | 12/18/87 |
| TBHP | Tillamook Bay | Hobsonville Pt. | OR | R | 2/3/86 | 12/1/86 | 12/18/87 |
| CRSJ | Columbia R. | South Jetty | OR | R | 3/4/86 | 12/30/86 | 1/28/88 |
| GHWJ | Gray's Hrb. | Westport Jetty | WA | R | 3/3/86 | 12/29/86 | 1/29/88 |
| JFCF | S. Juan de Fuca | Cape Flattery | WA | R | 2/21/86 | 2/23/87 | 1/27/88 |
| SSBI | S.Puget Snd. | Budd Inlet | WA | R | 1/7/86 | 12/12/86 | 1/15/88 |
| CBTP | Comm. Bay | Tahlequah Point | WA | U | 1/22/86 | 12/15/86 | 11/23/87 |
| EBFR | Elliott Bay | Four-Mile Rock | WA | U | 1/20/86 | 12/17/86 | 1/16/88 |
| SIWP | Sinclair Inlet | Waterman Point | WA | U | 1/8/86 | 12/18/86 | 11/20/87 |
| WIPP | Whidbey Is. | Possession Pt. | WA | U | 1/21/86 | 12/16/86 | 1/18/88 |
| BBSM | Bellingham Bay | Squalicum Marina | WA | R | 3/17/86 | 1/27/87 | 11/19/87 |
| PRPR | Pt. Roberts | Point Roberts | WA | R | 3/17/86 | 1/26/87 | 11/18/87 |
| PVMC | Port Valdez | Mineral Ck. Flats | AK | R | 3/25/86 | 3/27/87 | 3/29/88 |
| UISB | Unakwit Inlet | Siwash Bay | AK | R | 3/24/86 | 3/26/87 | 3/28/88 |
| BPBP | Barber's Pt. | Barber's Pt. | HI | R | 5/13/86 | 3/16/87 | 2/18/88 |
| HHKL | Honolulu Hrb. | Keehi Lagoon | HI | U | 5/14/86 | 3/17/87 | 2/16/88 |
| KAUI | Kauai | Nawiliwili Harbor | HI | R | not sampled | not sampled | 2/13/88 |



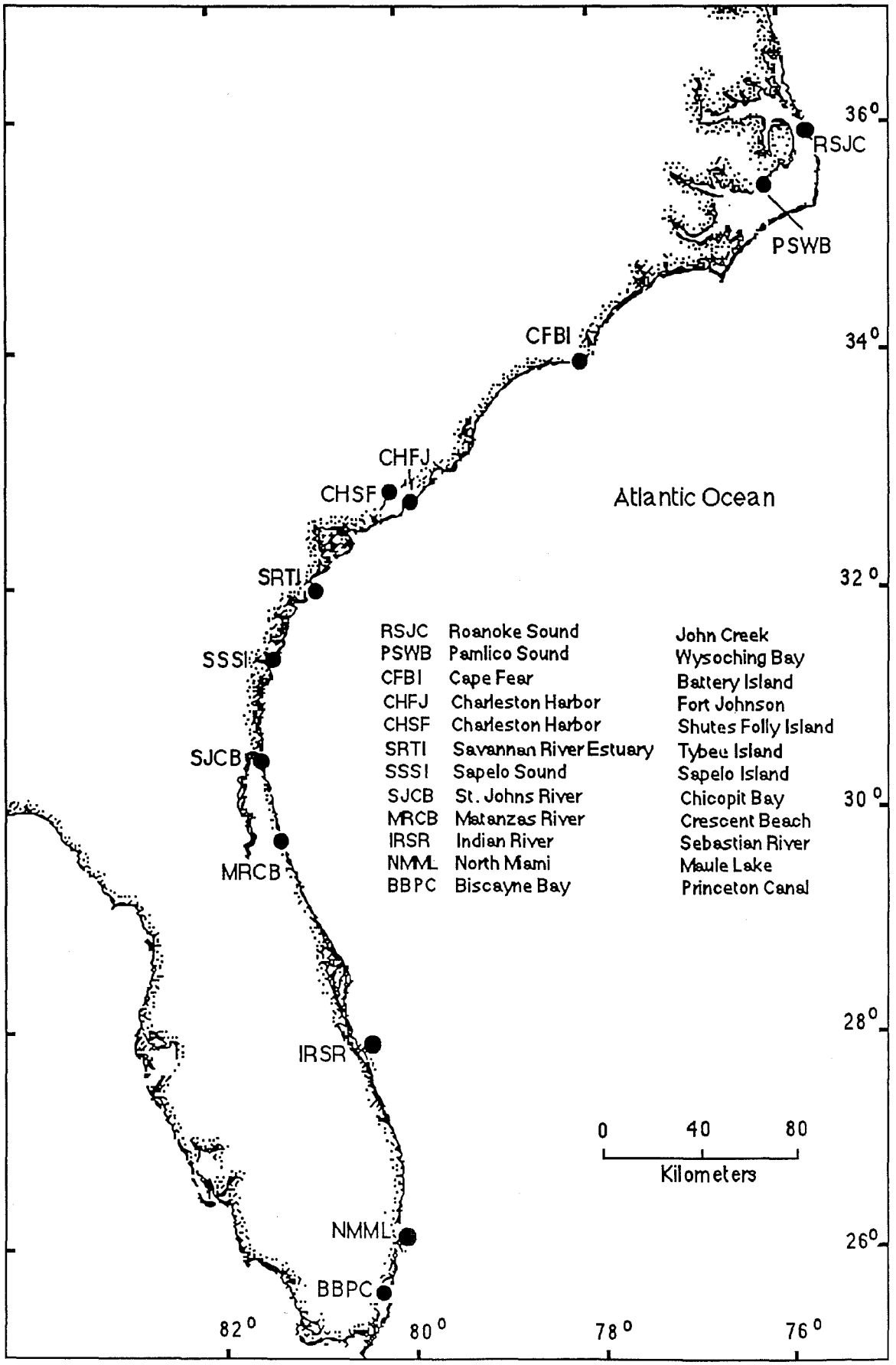

**Penobscot Bay to Narragansett Bay**



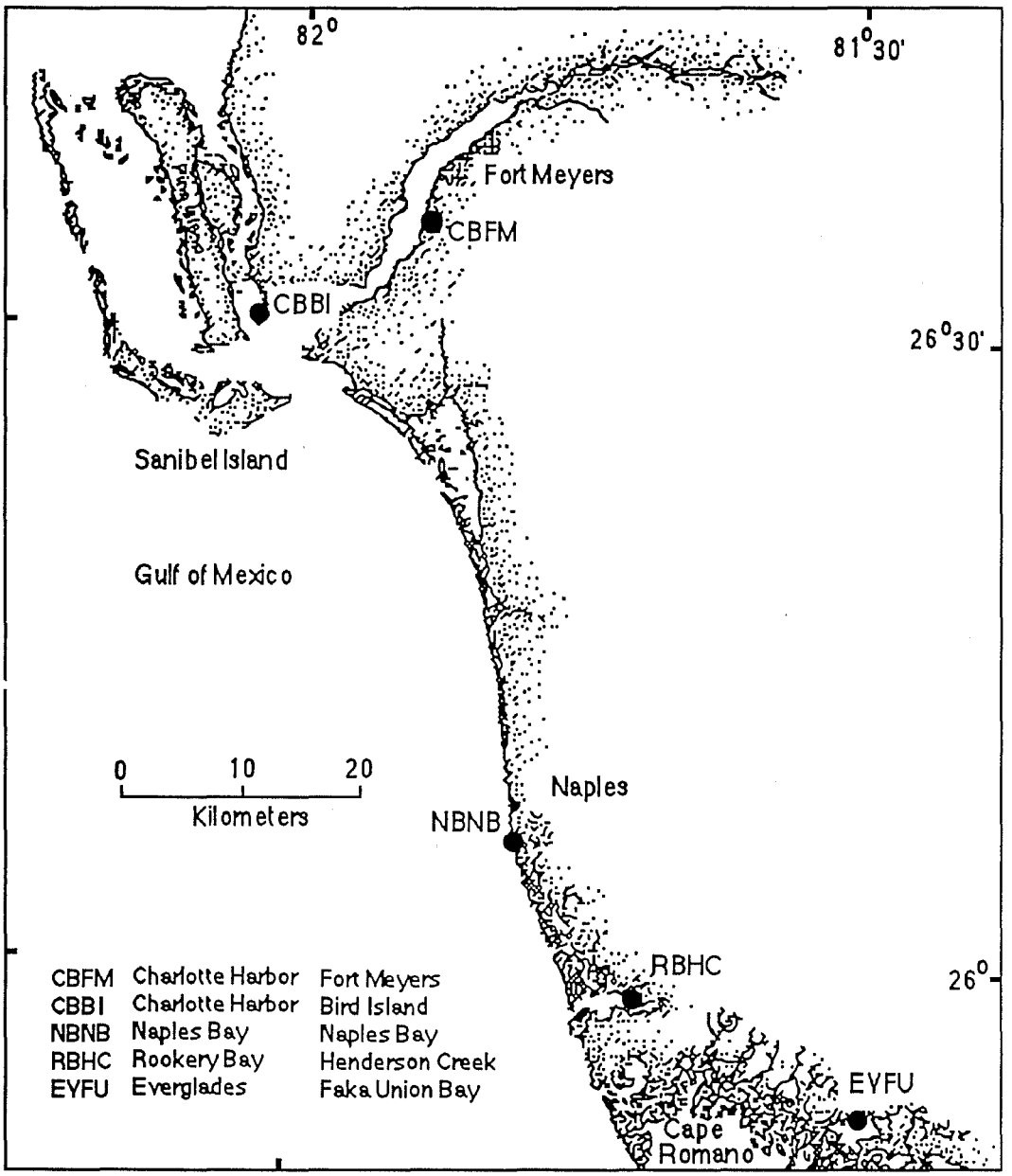

**Long Island Sound to New York Bight**



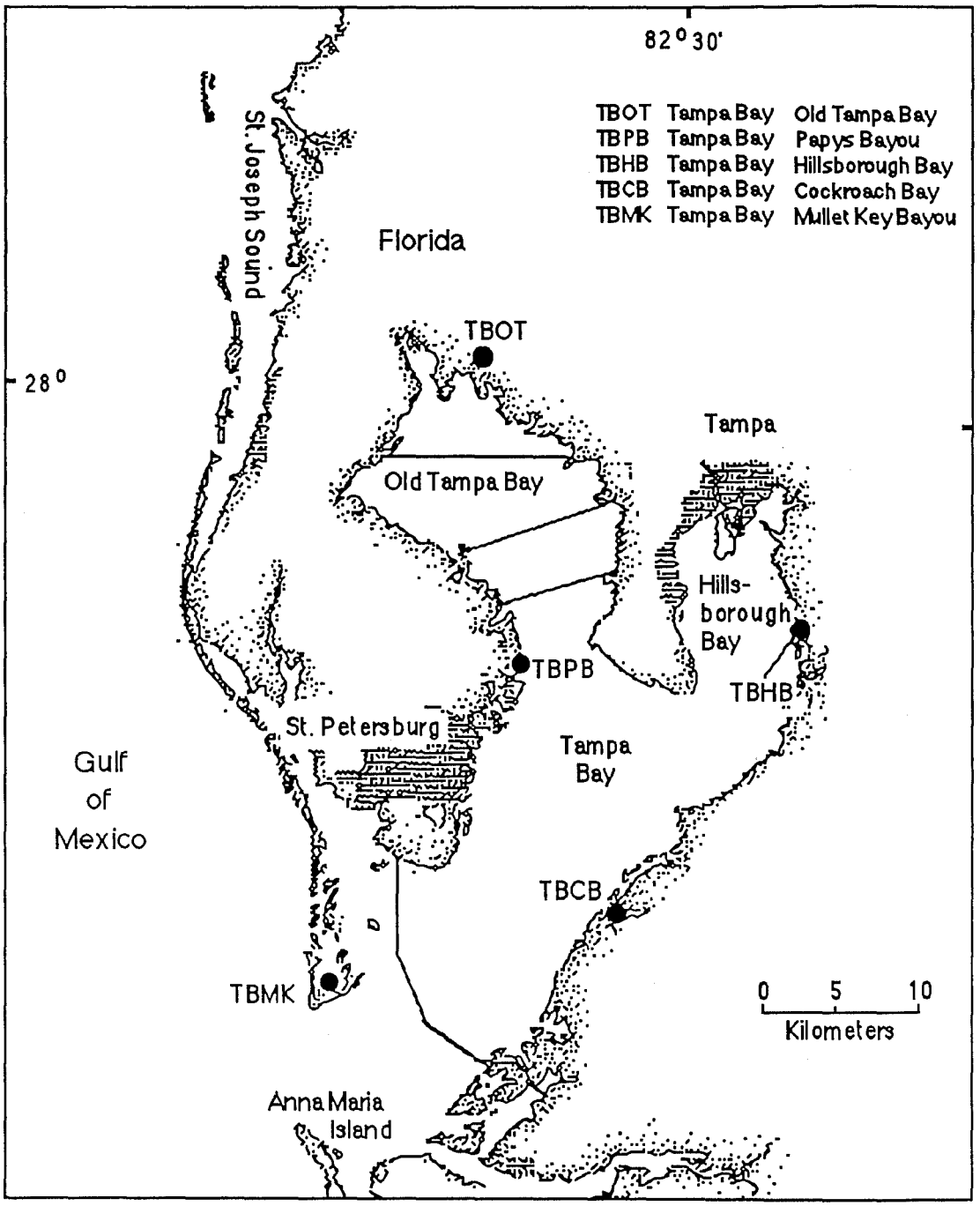

**Delaware Bay to Chesapeake Bay**



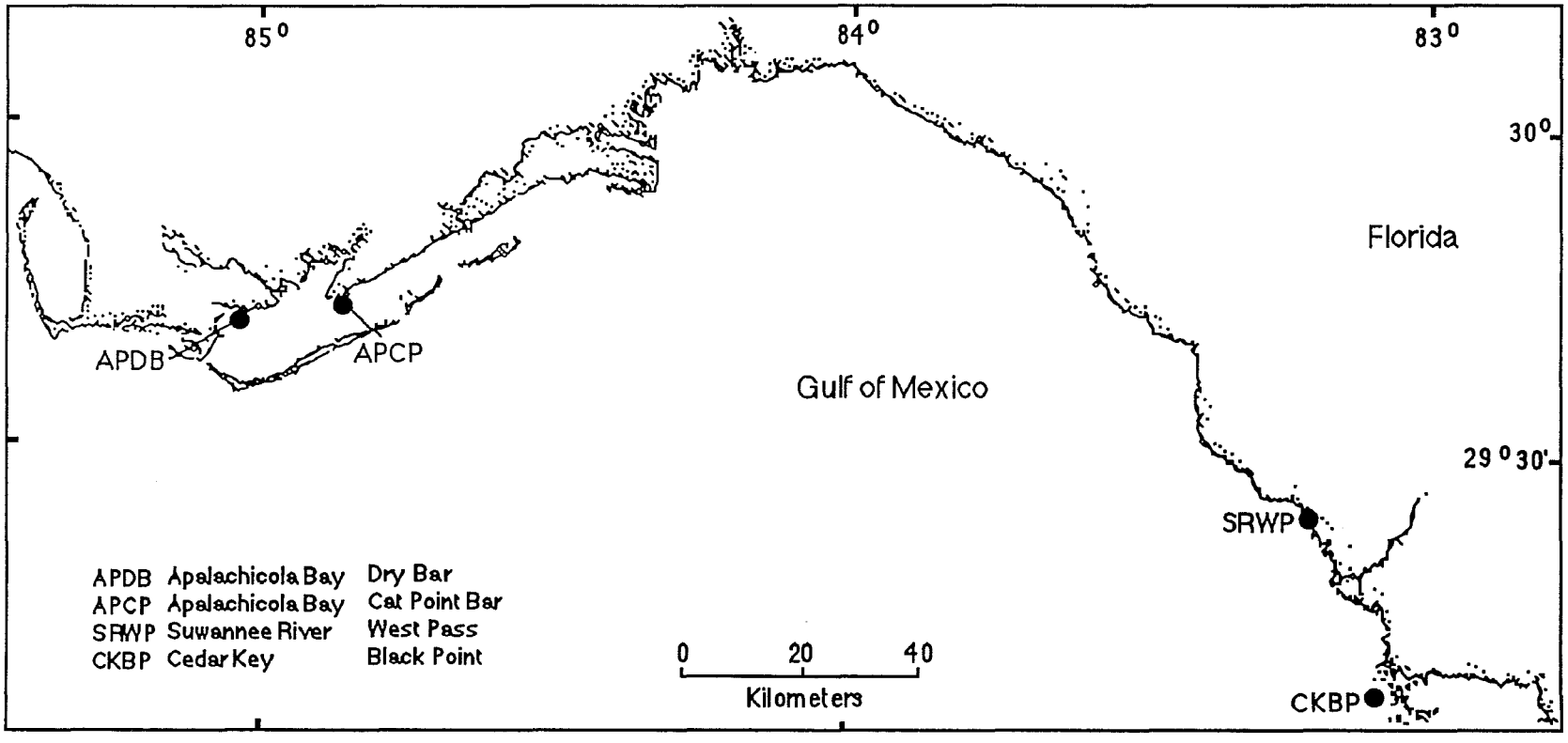

**Roanoke Sound to Biscayne Bay**



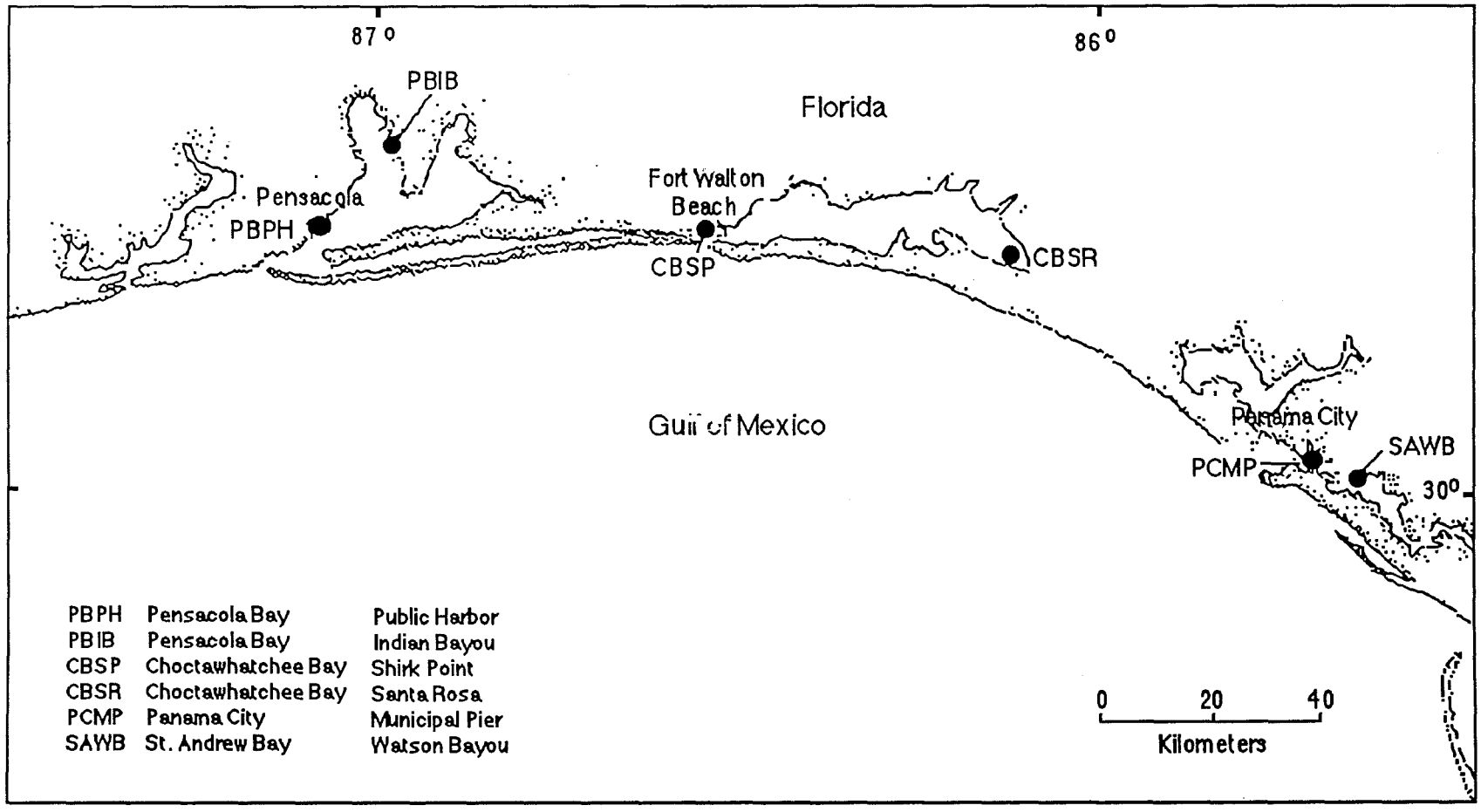

**South Florida**


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

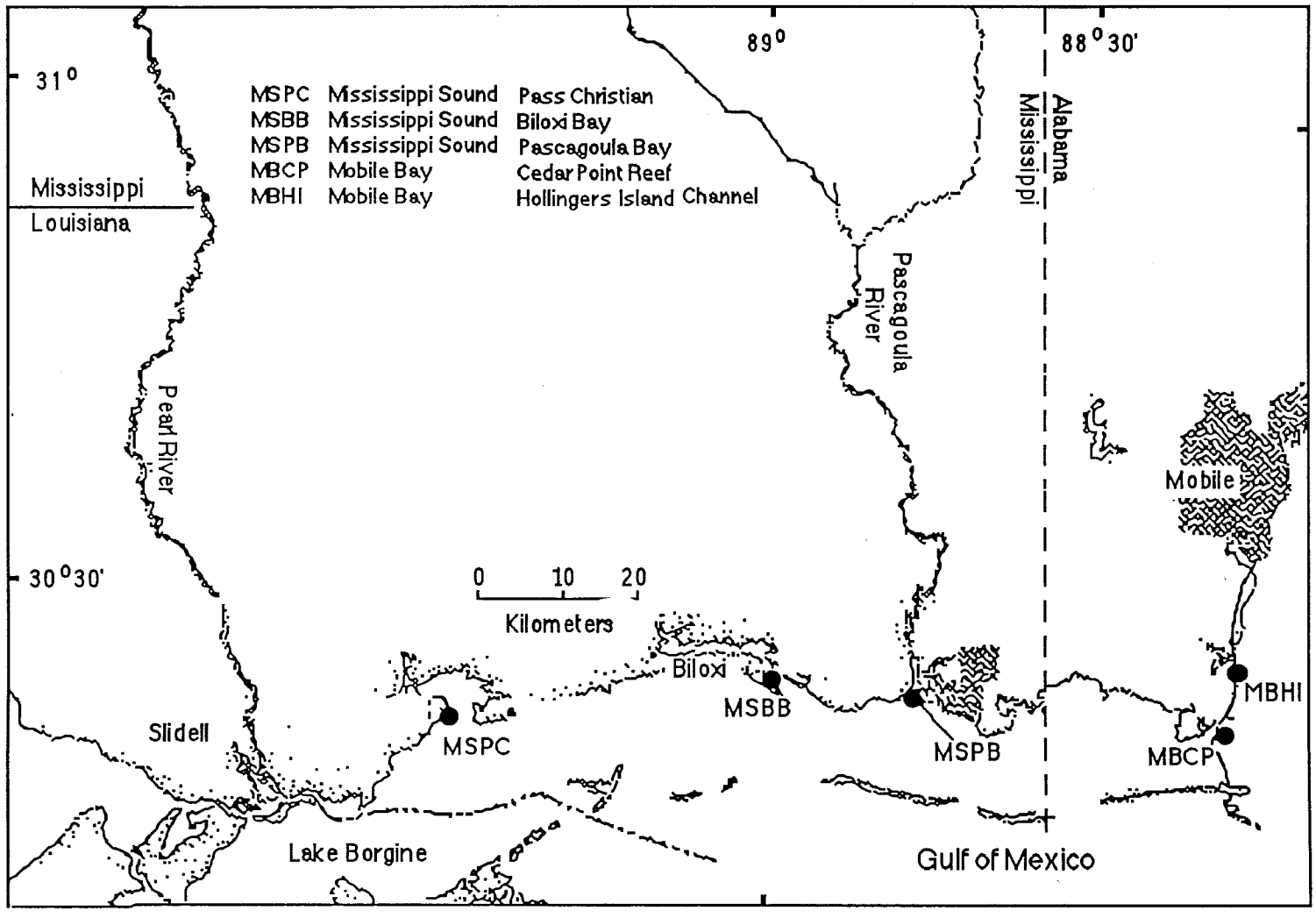
**Tampa Bay**




**Middle Florida**

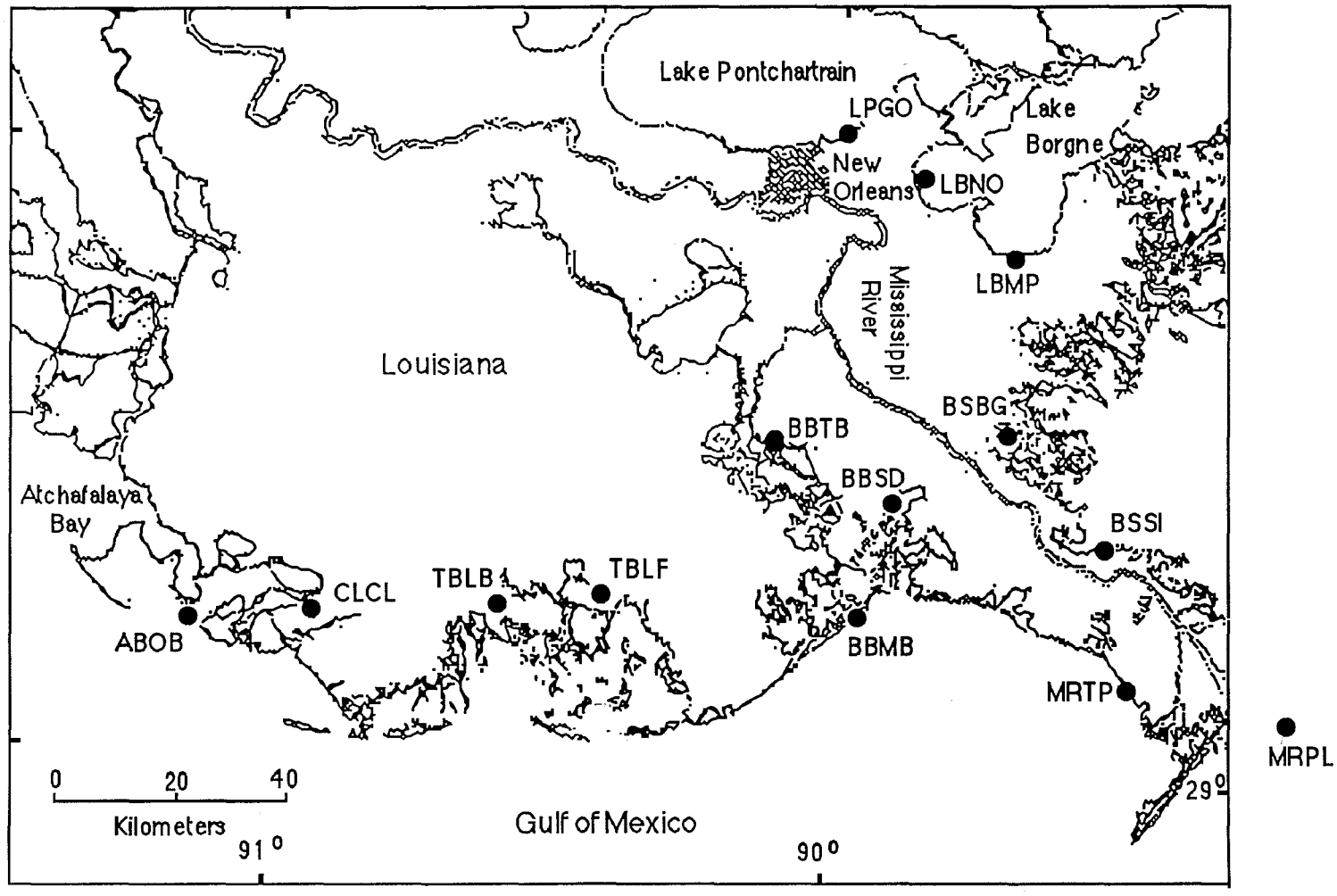



**Western Florida**



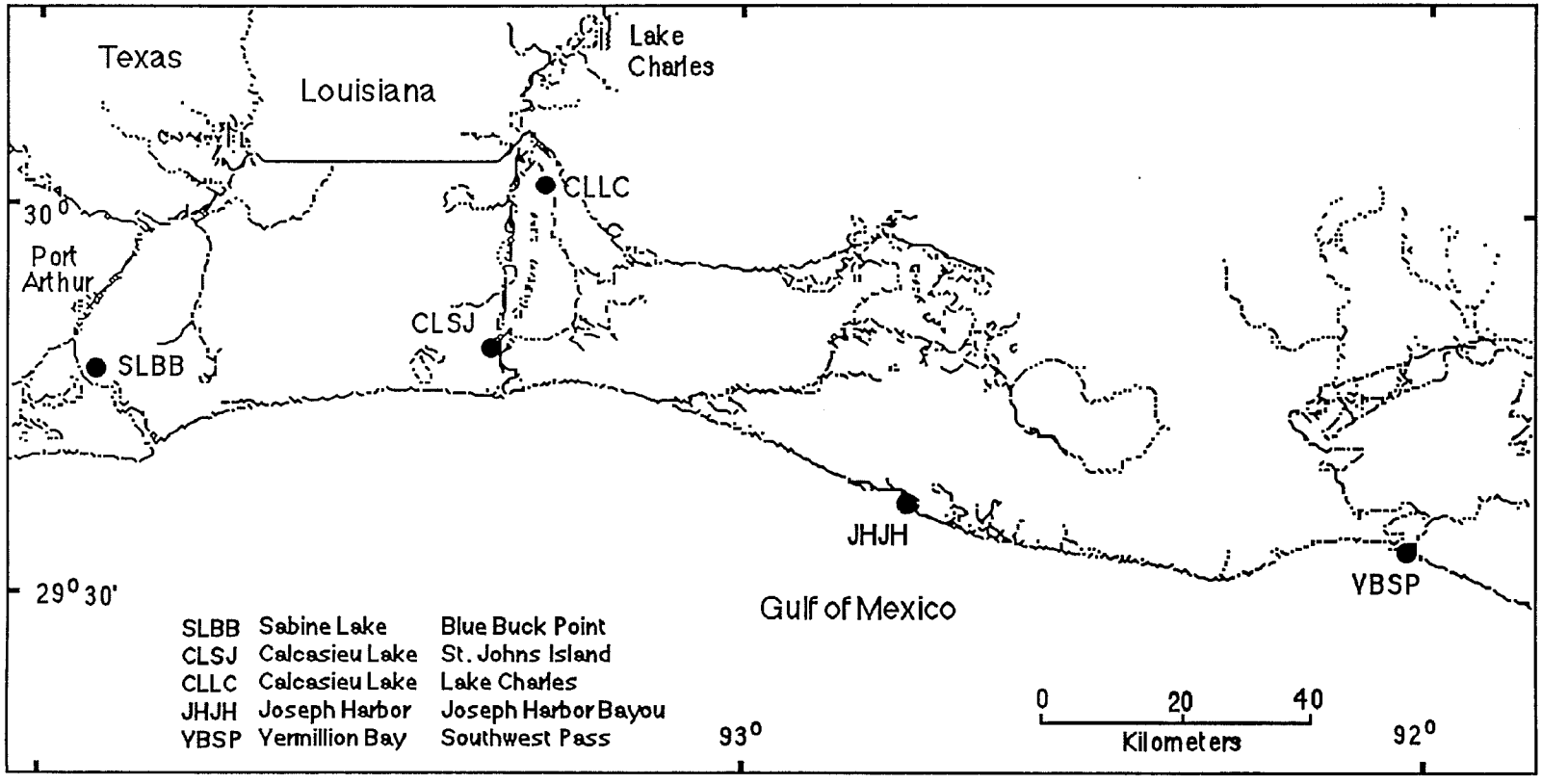

**Mississippi - Alabama**

## Eastern Louisiana and Mississippi Delta

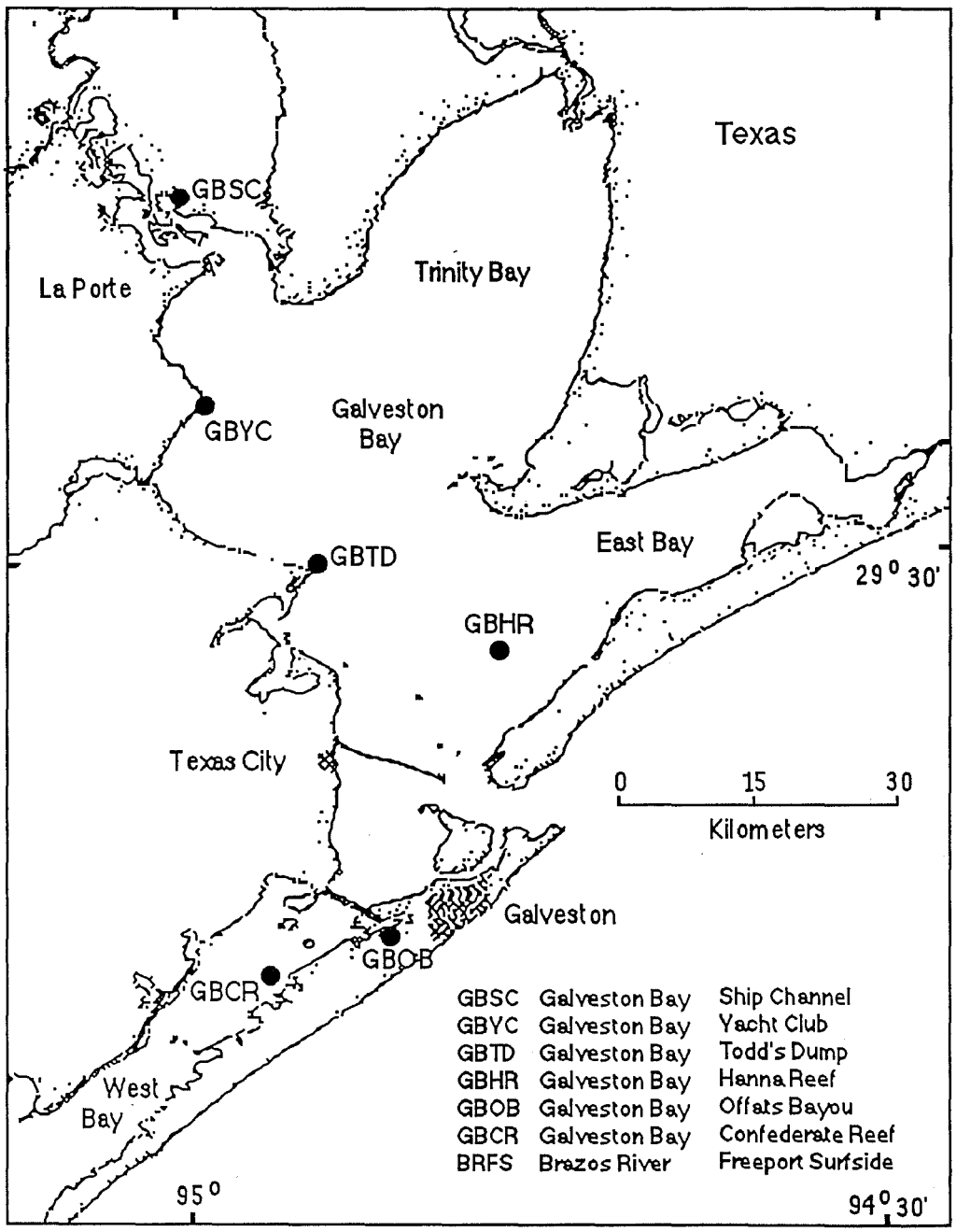



| | | |
|---|---|---|
| ABOB | Atchafalaya Bay | Oyster Bayou |
| CLCL | Caillou Lake | Caillou Lake |
| TBLB | Terrebonne Bay | Lake Barre |
| TBLF | Terrebonne Bay | Lake Felicity |
| BBSD | Barataria Bay | Bayou St. Denis |
| BBMB | Barataria Bay | Middle Bank |
| BBTB | Barataria Bay | Turtle Bay |

| | | |
|---|---|---|
| LPGO | Lake Ponchartrain | Gulf Outlet |
| LBNO | Lake Borgne | New Orleans |
| LBMP | Lake Borgne | Malheureux Point |
| BSBG | Breton Sound | Bay Gardeme |
| BSSI | Breton Sound | Sable Island |
| MRPL | Mississippi River | Pass A Loutre |
| MRTP | Mississippi River | Tiger Pass |

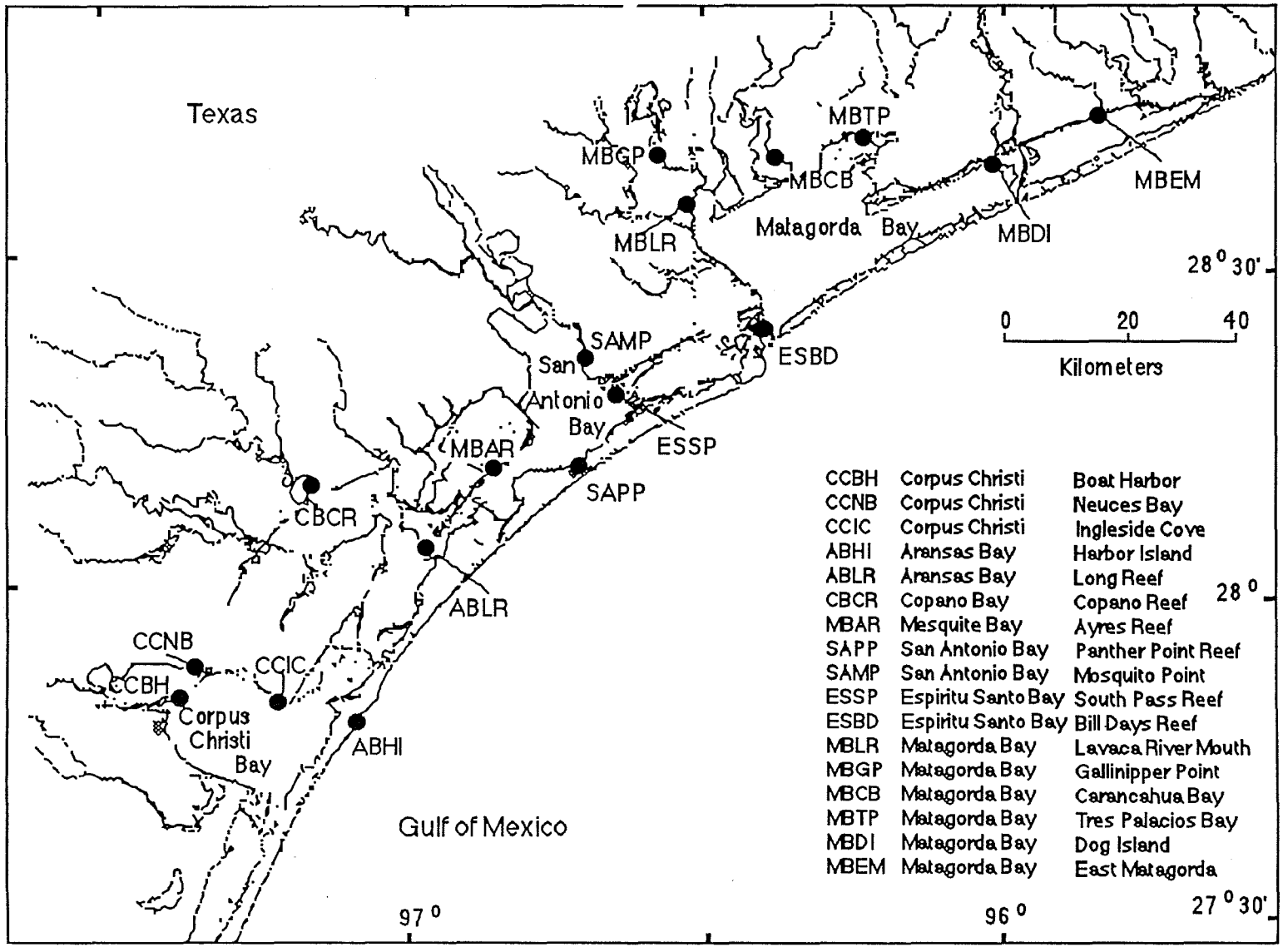



**Western Louisiana**

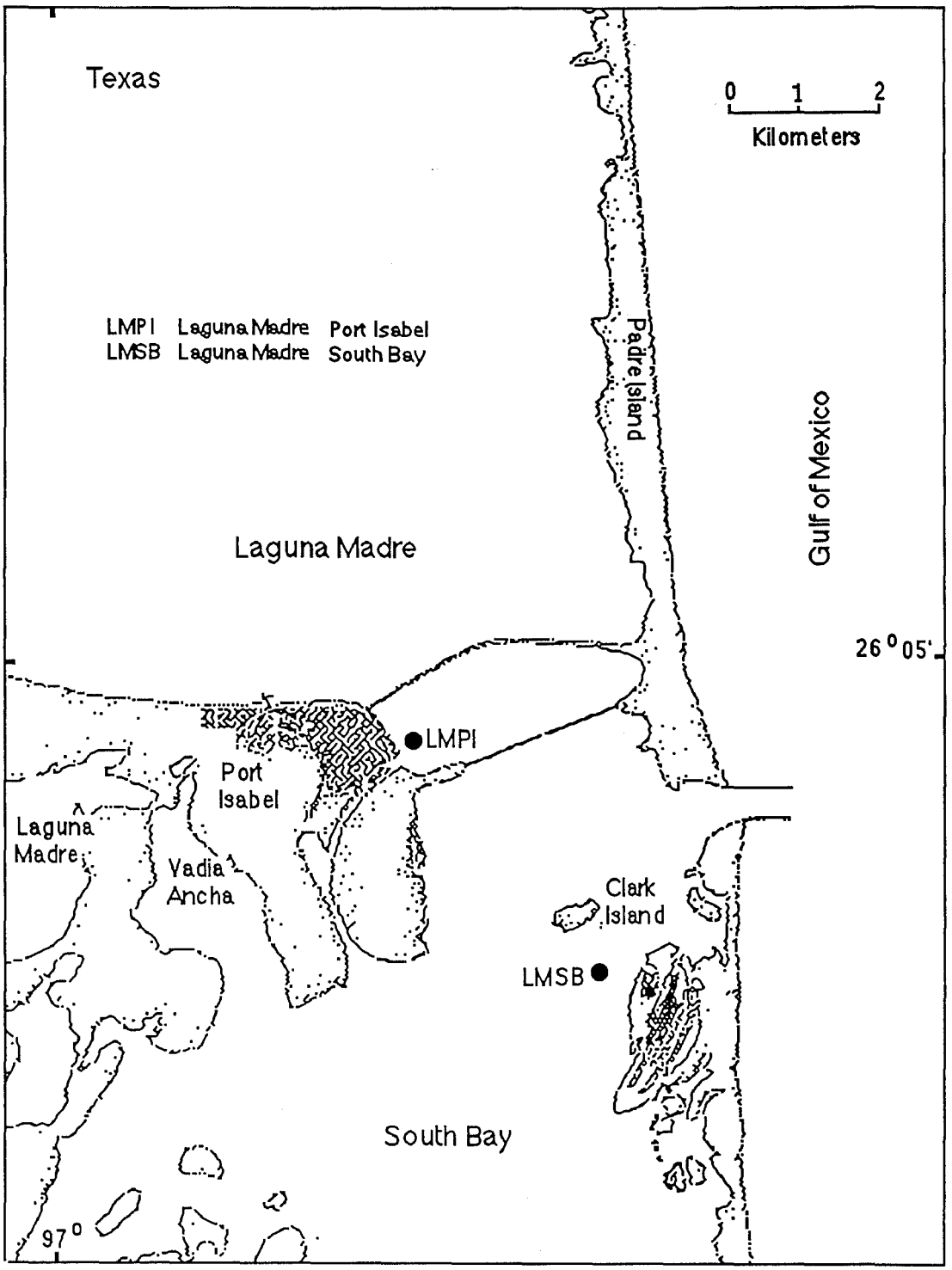



**Galveston Bay**

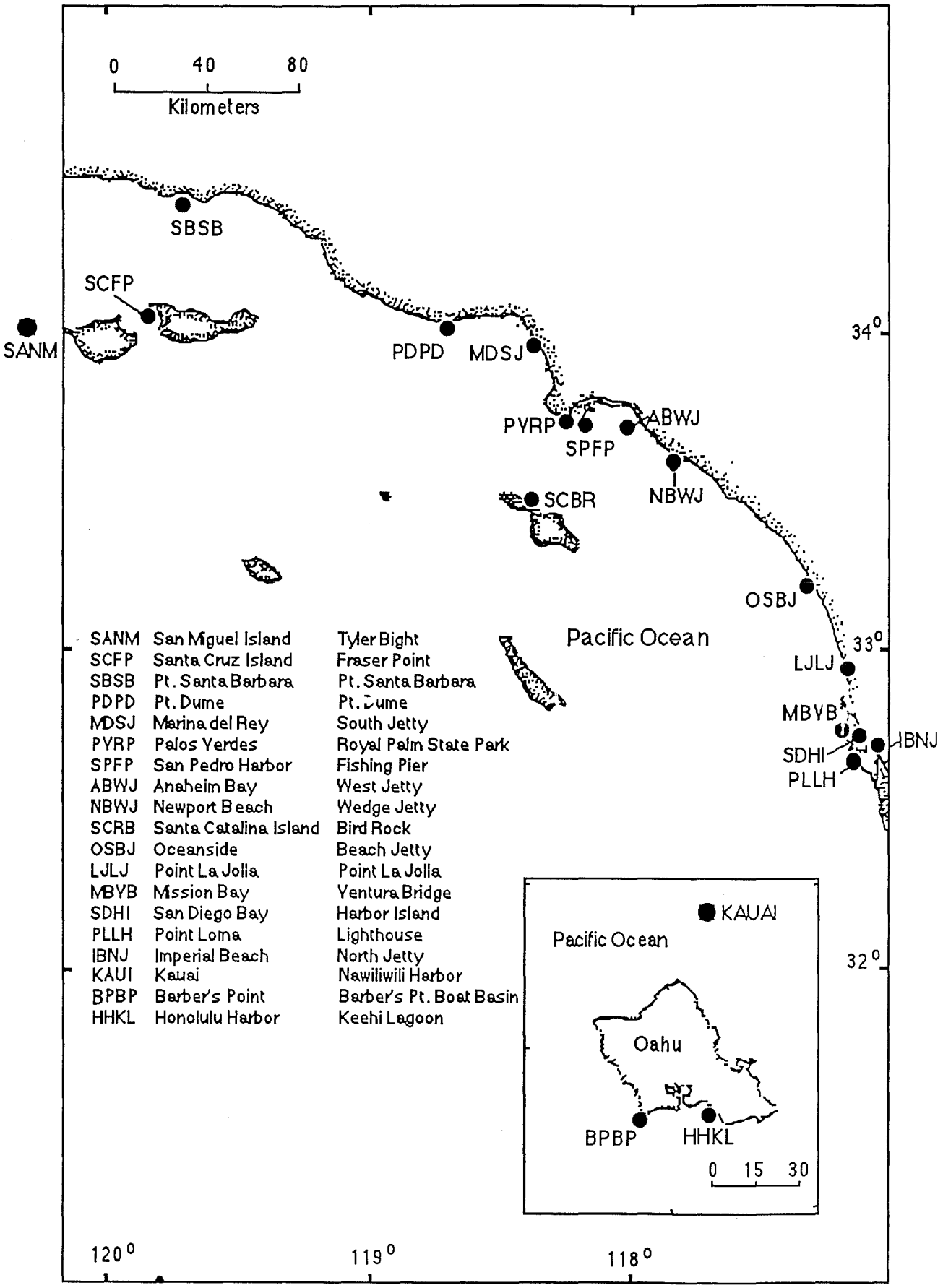
● BRFS


Texas
MBTP
MBGP
MBCB
MBEM
MBLR
Matagorda Bay
MBDI
28° 30'
0 20 40
Kilometers
SAMP
ESBD
San Antonio Bay
ESSP
MBAR
SAPP
CBCR
ABLR
28°
CCNB
CCIC
CCBH
Corpus Christi Bay
ABHI
Gulf of Mexico
97°
96°
27° 30'
CCBH Corpus Christi Boat Harbor
CCNB Corpus Christi Neuces Bay
CCIC Corpus Christi Ingleside Cove
ABHI Aransas Bay Harbor Island
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 Bay South Pass Reef
ESBD Espiritu Santo Bay Bill Days Reef
MBLR Matagorda Bay Lavaca River Mouth
MBGP Matagorda Bay Gallinipper Point
MBCB Matagorda Bay Carancahua Bay
MBTP Matagorda Bay Tres Palacios Bay
MBDI Matagorda Bay Dog Island
MBEM Matagorda Bay East Matagorda

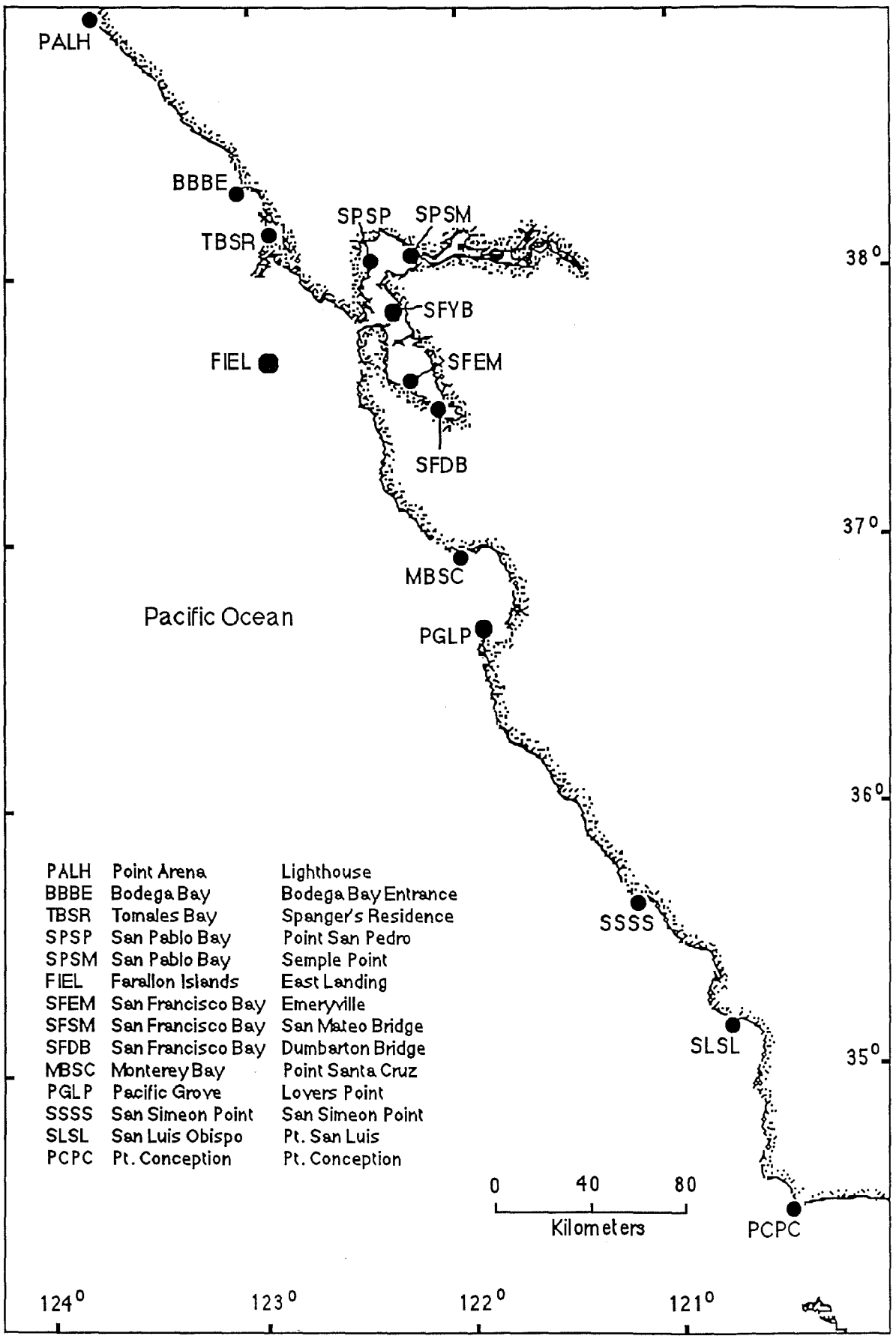
**South Texas**



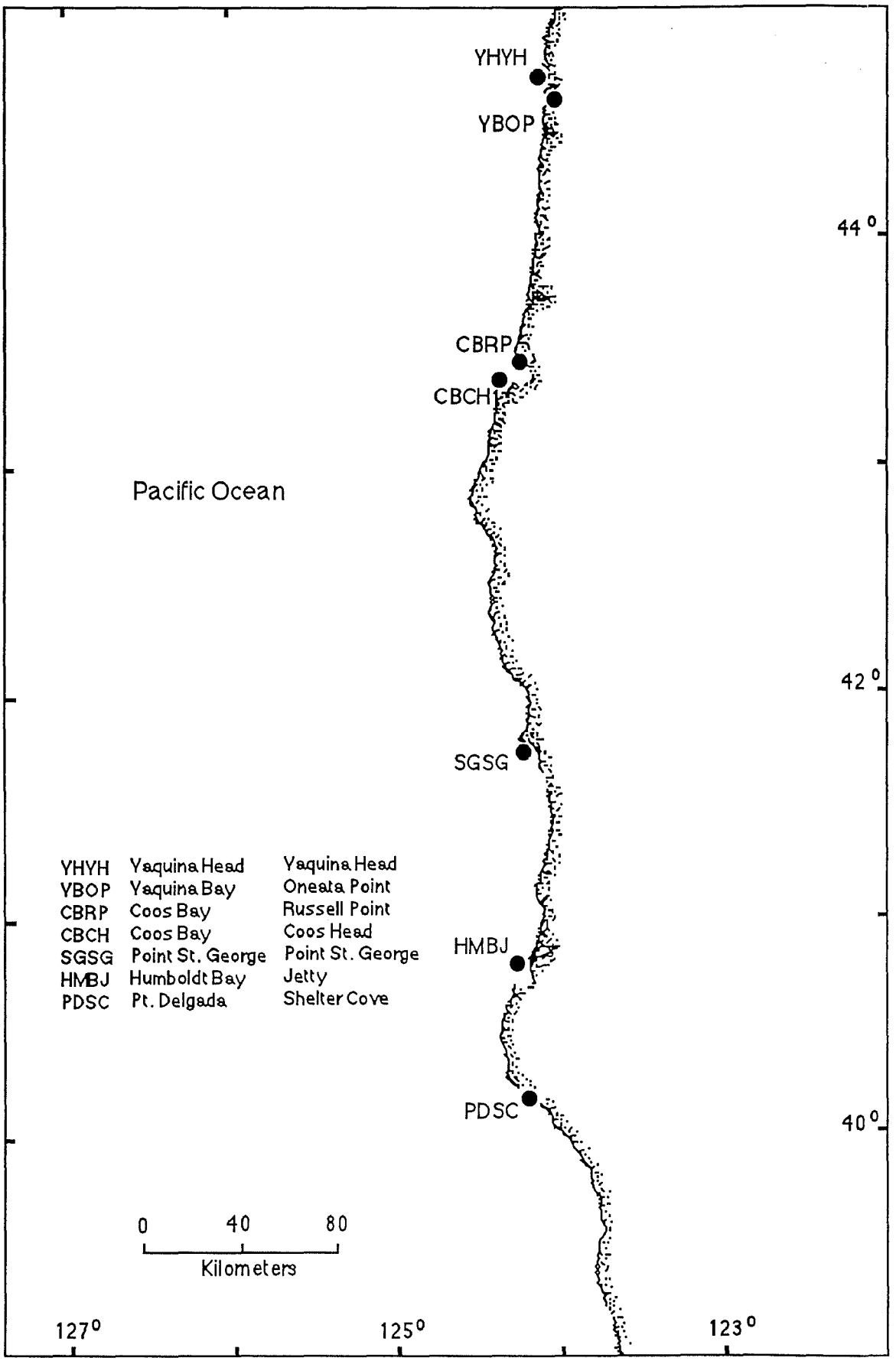

**Laguna Madre South Bay**



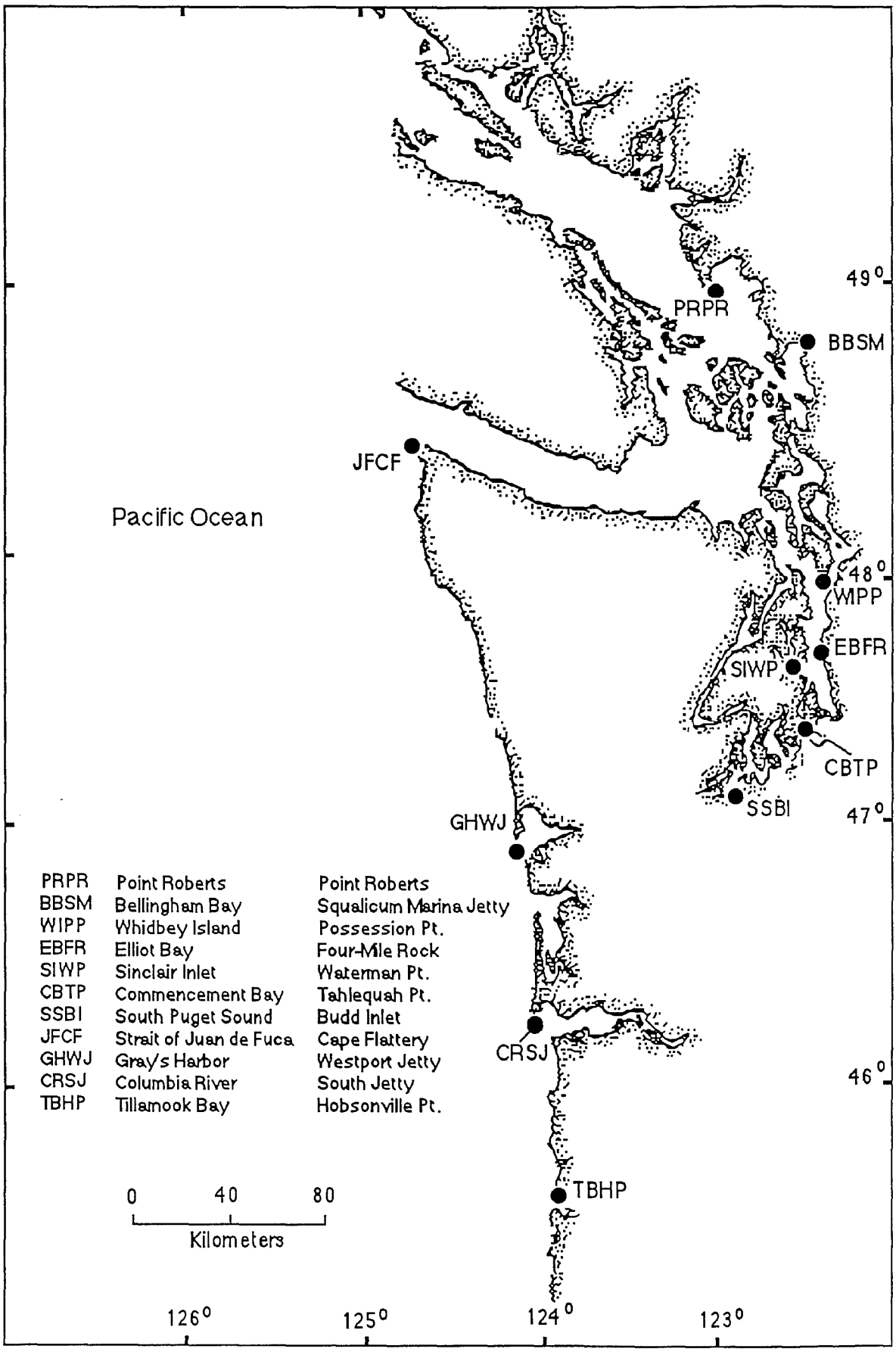

**Southern California and Hawaii**



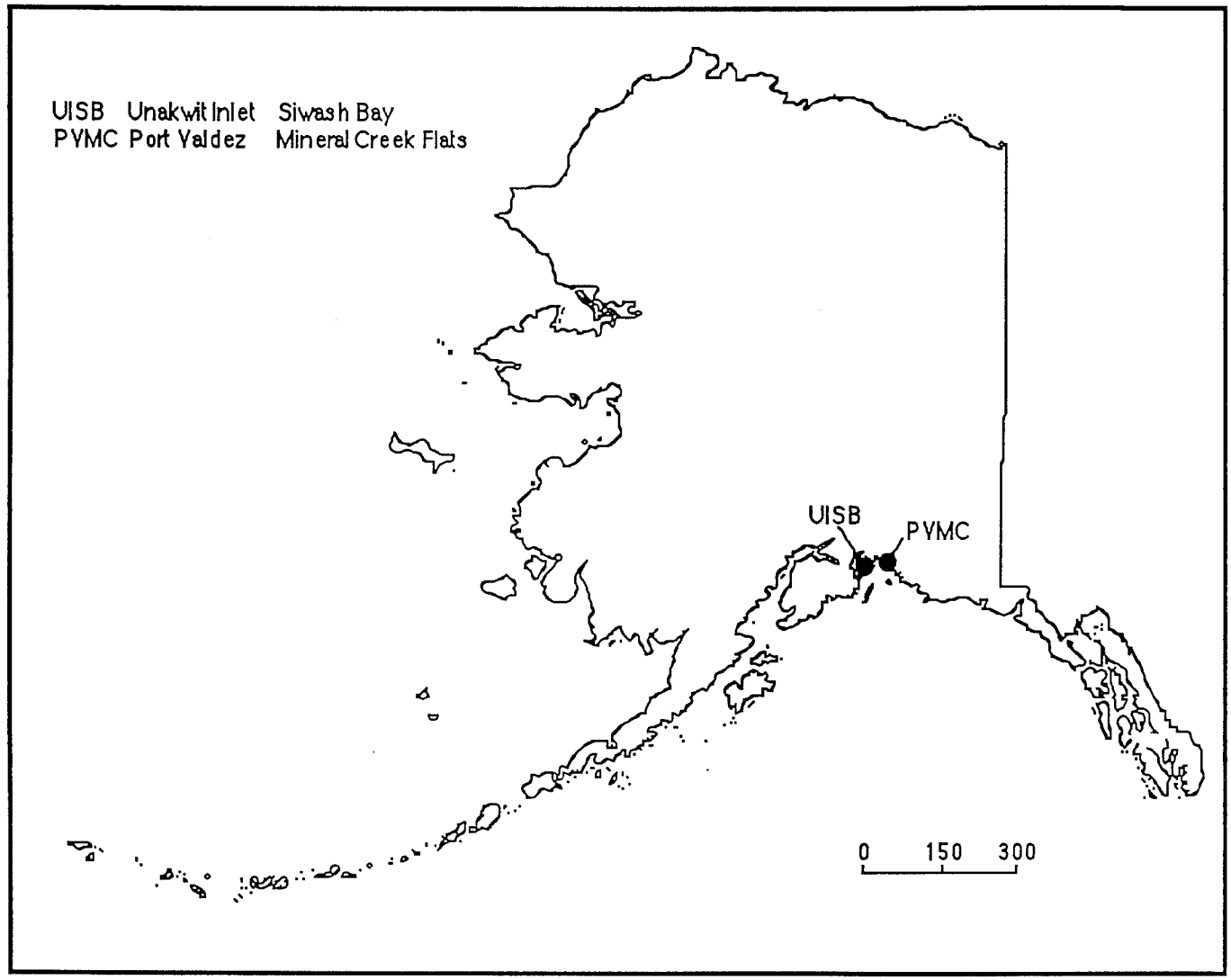

**Point Conception to Point Arena**




**Point Delgada to Yaquina Head**




**Northwest Pacific Coast**


UISB Unakwit Inlet Siwash Bay
PVMC Port Valdez Mineral Creek Flats
UISB
PVMC
0 150 300

**Alaska**

# Appendix B

## Summary of data for contaminant levels in bivalve mollusks from the first three years of the NOAA NS&T Mussel Watch Project

# Appendix B

## Summary of data for contaminant levels in mollusks from the first three years of the NOAA NS&T Mussel Watch Project

Data are listed separately for each contaminant and are under the following headings with the following meanings:

| | |
|---|---|
| SITE | The four-letter code for the site. Sites are listed in a geographic sequence that starts in Maine, moves clockwise around the U.S. to Alaska, and ends with Hawaii. |
| Location | The general area in which the site is located. |
| State | The state in which the site is located |
| Species | The species of mollusks collected at the site: me=*Mytilus edulis*, cv=*Crassostrea virginica*, mc=*Mytilus californianus*, and os= *Ostrea sandvicensis* |
| 1986 mean | The mean of concentrations determined in three composites samples collected at the site in 1986. A dash (-) in this column indicates that no samples were collected at the site in 1986. An "nd" indicates that the contaminant was not detected in any sample. When calculating means among samples that included undetected concentrations those undetected values were treated as zeros. |
| 1987 mean | Same as 1986 mean |
| 1988 mean | Same as 1986 mean except for "n.a." for lipid means at East and Northwest Sites. Those data are not available as of this writing. |
| Diff | A "yes" in this column indicates that application of the non-parametric Kruskal-Wallis (K-W) test to the nine values in the three years of data yielded a 95% probability that there was a difference among the years. A "no" indicates that the K-W test did not find a 95% probability of a difference among the years. A dash (-) in this column means that no test of signifigance was made either because there there was not three years of data or because more than four determinations of the nine values in the three years yielded a non-detected concentration. |
| Trend | Trends can only be indicated when there is a significant difference and when the difference is monotonic. The middle year (1987) cannot be the year with the highest or lowest mean concentration. An "i" in this column indicates a twofold monotonic increases from 1986 to 1988. An "i*" means that the monotonic change was less than twofold. A "d" indicates a twofold montonic decrease, and a "d*", a less than twofold decrease. |
| Overall mean | The mean of all concentration determinations regardless of year. In general the number of determinations is three times the number of years with a mean value. |
| Overall cv% | The coefficient of variation (100 x standard deviation/mean) of the overall mean. A dash in this column means that more than half of all the concentration determinations yieded a non-detected value. |

SEQUENCE of TABLES

| Chemical | Table Number |
|---|---|
| PCB | B.1 |
| DDT | B.2 |
| Chlordane | B.3 |
| Dieldrin (+aldrin) | B.4 |
| Lindane | B.5 |
| Hexachlorobenzene | B.6 |
| Mirex | B.7 |
| Low Molecular Weight PAHs | B.8 |
| High Molecular Weight PAHs | B.9 |
| Lipid [a] | B.10 |
| Arsenic | B.11 |
| Cadmium | B.12 |
| Chromium | B.13 |
| Copper | B.14 |
| Lead | B.15 |
| Mercury | B.16 |
| Nickel | B.17 |
| Selenium | B.18 |
| Silver | B.19 |
| Tin[b] | B.20 |
| Zinc | B.21 |

[a] Lipid is not considered a contaminant but its variation is discussed in the text. Data for lipid content in mollusks collected at East and Northwest Coast Sites in 1988 are not available as of this writing.

[b] For tin the last column, cv%, lists the coefficients of variation for 1988 samples only. Tin determinations in earlier years at some sites often yielded non-detected concentrations while a different laboratory made the 1988 determinations.

Table B.1 Summary of 1986 through 1988 data for **total PCB** (ng/g dry) in mollusks.

| SITE | Location | State | Species | 1986 mean | 1987 mean | 1988 mean | Diff | Trend | Overall mean | Overall cv% |
|---|---|---|---|---|---|---|---|---|---|---|
| PBSI | Penobscot Bay | ME | me | 220 | 100 | 130 | no | no | 150 | 47 |
| PBPI | Penobscot Bay | ME | me | 52 | 65 | 66 | no | no | 61 | 27 |
| MSSP | Merriconeag Snd. | ME | me | - | - | 120 | - | - | 120 | 8 |
| CAGH | Cape Ann | MA | me | - | 150 | 140 | - | - | 140 | 18 |
| SHFP | Salem Harbor | MA | me | - | - | 500 | - | - | 500 | 4 |
| BHDI | Boston Hrb. | MA | me | 1400 | 690 | 470 | yes | d | 840 | 50 |
| BHDB | Boston Hrb. | MA | me | 1700 | 1600 | 420 | no | no | 1200 | 61 |
| BHHB | Boston Hrb. | MA | me | 1000 | 840 | 290 | no | no | 710 | 51 |
| BHBI | Boston Hrb. | MA | me | 540 | 700 | 350 | yes | no | 530 | 30 |
| BBRH | Buzzards Bay | MA | me | 1500 | 3000 | 1400 | no | no | 2000 | 48 |
| BBAR | Buzzards Bay | MA | me | 6800 | 3000 | 3000 | no | no | 4300 | 51 |
| BBGN | Buzzards Bay | MA | me | 1600 | 440 | 440 | no | no | 830 | 71 |
| NBDU | Narr. Bay | RI | me | 210 | 250 | - | - | - | 230 | 27 |
| NBDI | Narr. Bay | RI | me | 210 | 450 | 260 | no | no | 310 | 47 |
| BIBI | Block Is. | RI | me | - | 250 | 130 | - | - | 190 | 34 |
| LICR | Long Is. Snd. | CT | me | 470 | 380 | 530 | no | no | 460 | 20 |
| LINH | Long Is. Snd. | CT | me | 960 | 550 | 530 | no | no | 680 | 33 |
| LIHR | Long Is. Snd. | CT | me | 730 | 1100 | 440 | yes | no | 760 | 41 |
| LISI | Long Is. Snd. | CT | me | 850 | 430 | 370 | no | no | 550 | 48 |
| LIHU | Long Is. Snd. | NY | me | 600 | 570 | 390 | no | no | 520 | 24 |
| LIPJ | Long Is. Snd. | NY | me | 380 | 310 | 350 | no | no | 350 | 23 |
| LIMR | Long Is. Snd. | NY | me | 950 | 300 | 600 | no | no | 620 | 59 |
| LIHH | Long Is. Snd. | NY | me | 600 | 1200 | 420 | yes | no | 740 | 62 |
| LITN | Long Is. Snd. | NY | me | 1400 | 1200 | 1100 | no | no | 1300 | 23 |
| MBTH | Moriches Bay | NY | me | 240 | 120 | 130 | yes | no | 160 | 35 |
| HRJB | Hud./Rar. Est | NY | me | 990 | 370 | 910 | yes | no | 760 | 39 |
| HRUB | Hud./Rar. Est. | NY | me | 3300 | 1600 | 2500 | no | no | 2500 | 41 |
| HRLB | Hud./Rar. Est. | NY | me | 4300 | 2400 | 1400 | yes | d | 2700 | 52 |
| NYSH | N.Y. Bight | NJ | me | 1800 | 1000 | 1300 | yes | no | 1400 | 29 |
| NYLB | N.Y. Bight | NJ | me | 770 | 760 | 560 | no | no | 700 | 18 |
| NYSR | N.Y. Bight | NJ | me | 4200 | 700 | 840 | no | no | 1600 | 140 |
| BIBL | Barnegat Inlet | NJ | me | - | - | 350 | - | - | 350 | 3 |
| AIAC | Absecon Inlet | NJ | me | - | - | 360 | - | - | 360 | 22 |
| DBFE | Delaware Bay | DE | cv | 400 | 150 | 150 | no | no | 230 | 55 |
| DBBD | Delaware Bay | DE | cv | 430 | 650 | 290 | no | no | 460 | 52 |
| DBAP | Delaware Bay | DE | cv | 570 | 290 | 260 | no | no | 370 | 59 |
| DBKI | Delaware Bay | DE | cv | 560 | 270 | 190 | yes | d | 340 | 58 |
| CBMP | Ches. Bay | MD | cv | 430 | 460 | 270 | no | no | 390 | 33 |
| CBHP | Ches. Bay | MD | cv | 330 | 220 | 300 | no | no | 280 | 28 |
| CBHG | Ches. Bay | MD | cv | 150 | 140 | 99 | no | no | 130 | 30 |
| CBIB | Ches. Bay | VA | cv | 82 | 120 | - | - | - | 100 | 34 |
| CBCC | Ches. Bay | VA | cv | 78 | 51 | 86 | no | no | 72 | 30 |
| CBDP | Ches. Bay | VA | cv | 230 | 210 | 87 | no | no | 180 | 46 |
| CBCI | Chincoteague Bay | VA | cv | 91 | 130 | 160 | no | no | 130 | 49 |
| QIUB | Quinby Inlet | VA | cv | 79 | 62 | 100 | no | no | 80 | 24 |
| RSJC | Roanoke Snd. | NC | cv | 30 | 130 | 66 | yes | no | 75 | 64 |
| PSWB | Pamlico Snd. | NC | cv | 23 | 110 | 41 | yes | no | 58 | 90 |
| CFBI | Cape Fear | NC | cv | 22 | 32 | 130 | no | no | 60 | 88 |
| CHFJ | Charleston Hrb. | SC | cv | 120 | 62 | 68 | no | no | 78 | 35 |
| CHSF | Charleston Hrb. | SC | cv | 160 | 130 | 140 | no | no | 140 | 25 |
| SRTI | Savannah R. Est. | GA | cv | 62 | 47 | 34 | no | no | 46 | 36 |
| SSSI | Sapelo Snd. | GA | cv | 55 | 85 | 58 | no | no | 66 | 42 |
| SJCB | St. Johns R. | FL | cv | 380 | 560 | 150 | no | no | 360 | 66 |
| MRCB | Matanzas R. | FL | cv | 57 | 54 | 45 | no | no | 52 | 55 |
| IRSR | Indian River | FL | cv | - | - | 39 | - | - | 39 | 8 |
| NMML | North Miami | FL | cv | - | - | 480 | - | - | 480 | 6 |
| BBPC | Biscayne Bay | FL | cv | 10 | 400 | - | - | - | 210 | 140 |
| EVFU | Everglades | FL | cv | 27 | 30 | 74 | no | no | 44 | 57 |
| RBHC | Rookery Bay | FL | cv | 26 | 27 | 80 | no | no | 44 | 78 |

Table B.1 **Total PCB** (Continued)

| SITE | Location | State | Species | 1986 mean | 1987 mean | 1988 mean | Diff | Trend | Overall mean | Overall cv% |
|---|---|---|---|---|---|---|---|---|---|---|
| NBNB | Naples Bay | FL | cv | 77 | 75 | 170 | no | no | 110 | 85 |
| CBBI | Charlotte Hrb. | FL | cv | 130 | 69 | - | - | - | 95 | 87 |
| CBFM | Charlotte Hrb. | FL | cv | - | - | 230 | - | - | 230 | 43 |
| TBMK | Tampa Bay | FL | cv | 51 | 54 | 54 | no | no | 53 | 24 |
| TBCB | Tampa Bay | FL | cv | 46 | 91 | 140 | no | no | 91 | 52 |
| TBHB | Tampa Bay | FL | cv | 300 | 120 | 23 | no | no | 180 | 72 |
| TBPB | Tampa Bay | FL | cv | 170 | 150 | 98 | no | no | 140 | 39 |
| TBOT | Tampa Bay | FL | cv | - | - | 140 | - | - | 140 | 26 |
| CKBP | Cedar Key | FL | cv | 42 | 24 | 170 | no | no | 79 | 170 |
| SRWP | Suwannee River | FL | cv | - | - | 130 | - | - | 130 | 67 |
| APCP | Apalachicola Bay | FL | cv | 73 | 51 | 97 | no | no | 74 | 37 |
| APDB | Apalachicola Bay | FL | cv | 63 | 38 | 750 | yes | no | 280 | 140 |
| PCMP | Panama City | FL | cv | - | - | 300 | - | - | 300 | 21 |
| SAWB | St. Andrew Bay | FL | cv | 890 | 540 | 560 | no | no | 650 | 38 |
| CBSP | Choctawhat. Bay | FL | cv | 180 | 780 | 150 | no | no | 370 | 140 |
| CBSR | Choctawhat. Bay | FL | cv | 37 | 25 | 140 | yes | no | 66 | 95 |
| PBPH | Pensacola Bay | FL | cv | - | - | 490 | - | - | 490 | 27 |
| PBIB | Pensacola Bay | FL | cv | 630 | 660 | 600 | no | no | 620 | 24 |
| MBHI | Mobile Bay | AL | cv | - | - | 470 | - | - | 470 | 11 |
| MBCP | Mobile Bay | AL | cv | 170 | 180 | 240 | no | no | 200 | 42 |
| MSPB | Miss. Snd. | MS | cv | 200 | 140 | 330 | no | no | 220 | 48 |
| MSBB | Miss. Snd. | MS | cv | 380 | 350 | 350 | no | no | 360 | 31 |
| MSPC | Miss. Snd. | MS | cv | 58 | 150 | 76 | no | no | 96 | 68 |
| LBNO | Lake Borgne | LA | cv | - | - | 53 | - | - | 53 | 55 |
| LBMP | Lake Borgne | LA | cv | 100 | 42 | 81 | no | no | 75 | 71 |
| BSBG | Breton Snd. | LA | cv | 100 | 25 | 97 | no | no | 74 | 82 |
| BSSI | Breton Snd. | LA | cv | 360 | 70 | 190 | yes | no | 210 | 71 |
| MRTP | Miss. River | LA | cv | - | - | 300 | - | - | 300 | 58 |
| MRPL | Miss. River | LA | cv | - | - | 480 | - | - | 480 | 15 |
| BBSD | Barataria Bay | LA | cv | 60 | 16 | 170 | yes | no | 81 | 100 |
| BBTB | Barataria Bay | LA | cv | - | - | 34 | - | - | 34 | 25 |
| BBMB | Barataria Bay | LA | cv | 210 | 60 | 130 | no | no | 130 | 71 |
| TBLF | Terrebonne Bay | LA | cv | 44 | 20 | 47 | no | no | 37 | 50 |
| TBLB | Terrebonne Bay | LA | cv | 70 | 28 | 120 | no | no | 72 | 110 |
| CLCL | Caillou Lake | LA | cv | 68 | 49 | 46 | no | no | 54 | 35 |
| ABOB | Atchafalaya Bay | LA | cv | 130 | 67 | 150 | no | no | 120 | 38 |
| VBSP | Vermillion Bay | LA | cv | 140 | 140 | 170 | no | no | 150 | 15 |
| JHJH | J. Hrb. Bayou | LA | cv | 110 | 58 | 94 | yes | no | 86 | 35 |
| CLLC | Calcasieu Lake | LA | cv | - | - | 240 | - | - | 240 | 12 |
| CLSJ | Calcasieu Lake | LA | cv | 150 | 92 | 86 | no | no | 110 | 29 |
| SLBB | Sabine Lake | TX | cv | 150 | 56 | 110 | no | no | 100 | 53 |
| GBHR | Galveston Bay | TX | cv | 52 | 86 | 47 | no | no | 62 | 33 |
| GBSC | Galveston Bay | TX | cv | - | - | 970 | - | - | 970 | 9 |
| GBYC | Galveston Bay | TX | cv | 2000 | 1200 | 590 | no | no | 1200 | 88 |
| GBTD | Galveston Bay | TX | cv | 140 | 230 | 84 | yes | no | 150 | 46 |
| GBCR | Galveston Bay | TX | cv | 120 | 140 | 130 | no | no | 130 | 17 |
| GBOB | Galveston Bay | TX | cv | - | - | 250 | - | - | 250 | 20 |
| BRFS | Brazos River | TX | cv | - | - | 240 | - | - | 240 | 18 |
| MBEM | Matagorda Bay | TX | cv | 100 | 45 | 53 | no | no | 66 | 67 |
| MBDI | Matagorda Bay | TX | cv | - | - | 110 | - | - | 110 | 68 |
| MBCB | Matagorda Bay | TX | cv | - | - | 77 | - | - | 77 | 30 |
| MBTP | Matagorda Bay | TX | cv | 93 | 93 | 83 | no | no | 90 | 55 |
| MBGP | Matagorda Bay | TX | cv | 97 | 54 | 79 | yes | no | 77 | 30 |
| MBLR | Matagorda Bay | TX | cv | 180 | 48 | - | - | - | 110 | 70 |
| ESSP | Espiritu Santo | TX | cv | 14 | 38 | - | - | - | 26 | 110 |
| ESBD | Espiritu Santo | TX | cv | - | - | 68 | - | - | 68 | 12 |
| SAMP | San Antonio Bay | TX | cv | 29 | 65 | - | - | - | 47 | 76 |
| SAPP | San Antonio Bay | TX | cv | 31 | 36 | - | - | - | 34 | 23 |
| MBAR | Mesquite Bay | TX | cv | 40 | 54 | 62 | no | no | 52 | 30 |

Table B.1 **Total PCB** (Continued)

| SITE | Location | State | Species | 1986 mean | 1987 mean | 1988 mean | Diff | Trend | Overall mean | Overall cv% |
|---|---|---|---|---|---|---|---|---|---|---|
| CBCR | Copano Bay | TX | cv | 68 | 36 | 62 | no | no | 55 | 35 |
| ABHI | Aransas Bay | TX | cv | - | - | 63 | - | - | 63 | 19 |
| ABLR | Aransas Bay | TX | cv | 37 | 41 | 40 | no | no | 39 | 24 |
| CCBH | Corpus Christi | TX | cv | - | - | 110 | - | - | 110 | 49 |
| CCIC | Corpus Christi | TX | cv | 110 | - | 80 | - | - | 96 | 46 |
| CCNB | Corpus Christi | TX | cv | 110 | 120 | 180 | no | no | 140 | 49 |
| LMSB | L. Laguna Madre | TX | cv | 69 | 64 | 32 | no | no | 55 | 57 |
| LMPI | Laguna Madre | TX | cv | - | - | 250 | - | - | 250 | 15 |
| IBNJ | Imperial Beach | CA | mc | 210 | 120 | 150 | no | no | 160 | 38 |
| SDHI | San Diego Bay | CA | me | 2100 | 2100 | 1300 | no | no | 1800 | 35 |
| PLLH | Pt. Loma | CA | mc | 380 | 250 | 160 | yes | d | 260 | 40 |
| MBVB | Mission Bay | CA | me | 610 | 130 | 200 | yes | no | 310 | 80 |
| LJLJ | La Jolla | CA | mc | 660 | 160 | 22 | no | no | 350 | 82 |
| OSBJ | Oceanside | CA | me | 64 | 68 | 57 | no | no | 63 | 33 |
| NBWJ | Newport Bch. | CA | mc | 150 | 160 | 120 | no | no | 140 | 37 |
| ABWJ | Anaheim Bay | CA | mc | 330 | 590 | 660 | no | no | 530 | 36 |
| SPFP | San Pedro Hrb. | CA | me | 530 | 430 | 490 | no | no | 480 | 31 |
| PVRP | Palos Verdes | CA | mc | 330 | 250 | 170 | no | no | 250 | 40 |
| SCBR | S. Catalina Is. | CA | mc | 110 | 73 | 25 | yes | d | 71 | 59 |
| MDSJ | Marina Del Rey | CA | me | 210 | 720 | 270 | yes | no | 400 | 62 |
| PDPD | Pt. Dume | CA | mc | 180 | 130 | 61 | no | no | 120 | 50 |
| SCFP | Santa Cruz Is. | CA | mc | 140 | 35 | 8.9 | yes | d | 61 | 140 |
| SANM | San Miguel Is. | CA | mc | - | - | 88 | - | - | 88 | 13 |
| SBSB | Pt. S. Barbara | CA | mc | 70 | 28 | 12 | yes | d | 37 | 71 |
| PCPC | Pt. Conception | CA | mc | 140 | 45 | 20 | yes | d | 73 | 100 |
| SLSL | San Luis Ob. Bay | CA | mc | 130 | 140 | 39 | no | no | 100 | 49 |
| SSSS | San Simeon Pt. | CA | mc | 110 | 88 | 16 | no | no | 79 | 53 |
| PGLP | Pacific Grove | CA | mc | 99 | 140 | 46 | yes | no | 96 | 53 |
| MBSC | Monterey Bay | CA | mc | 83 | 85 | 24 | no | no | 64 | 56 |
| FIEL | Farallon Is. | CA | mc | - | - | 45 | - | - | 45 | 6 |
| SFDB | San Fran. Bay | CA | me | 520 | 540 | 240 | no | no | 440 | 46 |
| SFSM | San Fran. Bay | CA | me | 680 | 540 | 530 | no | no | 580 | 57 |
| SFEM | San Fran. Bay | CA | me | - | 1600 | 1100 | - | - | 1400 | 24 |
| TBSR | Tomales Bay | CA | me | 51 | 25 | 26 | no | no | 34 | 72 |
| BBBE | Bodega Bay | CA | mc | 210 | 29 | 16 | no | no | 85 | 110 |
| PALH | Pt. Arena | CA | mc | 67 | 61 | 3.2 | no | no | 44 | 73 |
| PDSC | Pt. Delgada | CA | mc | 160 | 32 | 13 | yes | d | 70 | 130 |
| HMBJ | Humboldt Bay | CA | mc | 41 | 15 | 53 | no | no | 34 | 67 |
| SGSG | Pt. St. George | CA | mc | 130 | 29 | 55 | yes | no | 72 | 67 |
| CBCH | Coos Bay | OR | mc | 150 | 68 | 54 | no | no | 91 | 56 |
| CBRP | Coos Bay | OR | me | 280 | 98 | 97 | no | no | 160 | 59 |
| YBOP | Yaquina Bay | OR | me | 91 | 100 | 87 | no | no | 93 | 17 |
| YHYH | Yaquina Head | OR | mc | 68 | 24 | 83 | no | no | 58 | 85 |
| TBHP | Tillamook Bay | OR | me | 110 | 50 | 41 | no | no | 73 | 56 |
| CRSJ | Columbia R. | OR | me | 86 | 92 | 110 | no | no | 98 | 37 |
| GHWJ | Gray's Hrb. | WA | mc | 91 | 56 | 17 | yes | d | 55 | 61 |
| JFCF | S. Juan de Fuca | WA | mc | 60 | 64 | 17 | no | no | 51 | 72 |
| SSBI | South Puget Snd. | WA | me | 130 | 170 | 140 | no | no | 150 | 16 |
| CBTP | Comm. Bay | WA | me | 190 | 340 | 36 | no | no | 190 | 100 |
| EBFR | Elliott Bay | WA | me | 1100 | 580 | 450 | yes | d | 700 | 50 |
| SIWP | Sinclair Inlet | WA | me | 320 | 250 | 190 | yes | d* | 240 | 24 |
| WIPP | Whidbey Is. | WA | me | 150 | 110 | 120 | no | no | 130 | 33 |
| BBSM | Bellingham Bay | WA | me | 110 | 110 | 81 | no | no | 100 | 26 |
| PRPR | Pt. Roberts | WA | me | 110 | 52 | 13 | yes | d | 52 | 89 |
| PVMC | Port Valdez | AK | me | 84 | 20 | nd | no | no | 52 | 73 |
| UISB | Unakwit Inlet | AK | me | 55 | 17 | 20 | no | no | 31 | 77 |
| BPBP | Barber's Pt. | HI | os | 590 | 43 | 41 | no | no | 230 | 130 |
| HHKL | Honolulu Hrb. | HI | os | 130 | 280 | 260 | no | no | 220 | 38 |
| KAUI | Kauai | HI | os | - | - | 220 | - | - | 220 | 26 |

Table B.2 Summary of 1986 through 1988 data for **total DDT** (ng/g dry) in mollusks.

| SITE | Location | State | Species | 1986 mean | 1987 mean | 1988 mean | Diff | Trend | Overall mean | Overall cv% |
|---|---|---|---|---|---|---|---|---|---|---|
| PBSI | Penobscot Bay | ME | me | 24 | 35 | 9.1 | yes | no | 23 | 57 |
| PBPI | Penobscot Bay | ME | me | 3.9 | 24 | 6.3 | no | no | 12 | 86 |
| MSSP | Merriconeag Snd. | ME | me | - | - | 15 | - | - | 15 | 10 |
| CAGH | Cape Ann | MA | me | - | 30 | 19 | - | - | 25 | 57 |
| SHFP | Salem Harbor | MA | me | - | - | 110 | - | - | 110 | 6 |
| BHDI | Boston Hrb. | MA | me | 130 | 160 | 50 | yes | no | 110 | 47 |
| BHDB | Boston Hrb. | MA | me | 79 | 240 | 33 | no | no | 120 | 88 |
| BHHB | Boston Hrb. | MA | me | 64 | 200 | 38 | yes | no | 100 | 82 |
| BHBI | Boston Hrb. | MA | me | 84 | 160 | 49 | yes | no | 97 | 53 |
| BBRH | Buzzards Bay | MA | me | 61 | 120 | 23 | yes | no | 71 | 70 |
| BBAR | Buzzards Bay | MA | me | 270 | 110 | 37 | yes | d | 140 | 83 |
| BBGN | Buzzards Bay | MA | me | 93 | 24 | 13 | no | no | 44 | 140 |
| NBDU | Narr. Bay | RI | me | 32 | 28 | - | - | - | 30 | 16 |
| NBDI | Narr. Bay | RI | me | 8.5 | 54 | 22 | yes | no | 28 | 77 |
| BIBI | Block Is. | RI | me | - | 32 | 16 | - | - | 24 | 43 |
| LICR | Long Is. Snd. | CT | me | 58 | 48 | 49 | no | no | 52 | 32 |
| LINH | Long Is. Snd. | CT | me | 110 | 88 | 49 | no | no | 82 | 42 |
| LIHR | Long Is. Snd. | CT | me | 56 | 83 | 39 | no | no | 60 | 48 |
| LISI | Long Is. Snd. | CT | me | 97 | 78 | 63 | no | no | 79 | 38 |
| LIHU | Long Is. Snd. | NY | me | 45 | 180 | 60 | yes | no | 96 | 69 |
| LIPJ | Long Is. Snd. | NY | me | 32 | 82 | 66 | no | no | 60 | 45 |
| LIMR | Long Is. Snd. | NY | me | 150 | 140 | 120 | no | no | 140 | 39 |
| LIHH | Long Is. Snd. | NY | me | 130 | 210 | 73 | yes | no | 140 | 58 |
| LITN | Long Is. Snd. | NY | me | 220 | 280 | 140 | yes | no | 210 | 34 |
| MBTH | Moriches Bay | NY | me | 63 | 36 | 42 | yes | no | 47 | 27 |
| HRJB | Hud./Rar. Est | NY | me | 170 | 130 | 250 | yes | no | 180 | 31 |
| HRUB | Hud./Rar. Est. | NY | me | 190 | 240 | 380 | no | no | 270 | 45 |
| HRLB | Hud./Rar. Est. | NY | me | 1100 | 550 | 300 | yes | d | 650 | 58 |
| NYSH | N.Y. Bight | NJ | me | 270 | 220 | 200 | no | no | 230 | 28 |
| NYLB | N.Y. Bight | NJ | me | 130 | 120 | 74 | no | no | 110 | 29 |
| NYSR | N.Y. Bight | NJ | me | 240 | 150 | 110 | no | no | 160 | 62 |
| BIBL | Barnegat Inlet | NJ | me | - | - | 63 | - | - | 63 | 5 |
| AIAC | Absecon Inlet | NJ | me | - | - | 50 | - | - | 50 | 30 |
| DBFE | Delaware Bay | DE | cv | 120 | 100 | 68 | no | no | 95 | 37 |
| DBBD | Delaware Bay | DE | cv | 170 | 470 | 140 | no | no | 260 | 64 |
| DBAP | Delaware Bay | DE | cv | 100 | 270 | 130 | no | no | 170 | 59 |
| DBKI | Delaware Bay | DE | cv | 130 | 220 | 70 | no | no | 140 | 62 |
| CBMP | Ches. Bay | MD | cv | 99 | 130 | 35 | yes | no | 89 | 52 |
| CBHP | Ches. Bay | MD | cv | 68 | 65 | 60 | no | no | 65 | 21 |
| CBHG | Ches. Bay | MD | cv | 85 | 50 | 27 | yes | d | 54 | 50 |
| CBIB | Ches. Bay | VA | cv | 25 | 36 | - | - | - | 31 | 50 |
| CBCC | Ches. Bay | VA | cv | 190 | 84 | 37 | yes | d | 100 | 81 |
| CBDP | Ches. Bay | VA | cv | 66 | 61 | 16 | no | no | 48 | 58 |
| CBCI | Chincoteague Bay | VA | cv | 22 | 68 | 55 | no | no | 48 | 50 |
| QIUB | Quinby Inlet | VA | cv | 23 | 28 | 15 | no | no | 22 | 48 |
| RSJC | Roanoke Snd. | NC | cv | 9 | 67 | 19 | yes | no | 31 | 87 |
| PSWB | Pamlico Snd. | NC | cv | 5.7 | 28 | 8.8 | no | no | 14 | 86 |
| CFBI | Cape Fear | NC | cv | 4 | 19 | 18 | no | no | 13 | 82 |
| CHFJ | Charleston Hrb. | SC | cv | 30 | 35 | 20 | no | no | 28 | 46 |
| CHSF | Charleston Hrb. | SC | cv | 18 | 34 | 18 | no | no | 23 | 66 |
| SRTI | Savannah R. Est. | GA | cv | 13 | 18 | 9 | no | no | 13 | 40 |
| SSSI | Sapelo Snd. | GA | cv | 8.7 | 22 | 11 | no | no | 14 | 61 |
| SJCB | St. Johns R. | FL | cv | 51 | 84 | 27 | no | no | 54 | 92 |
| MRCB | Matanzas R. | FL | cv | 2.8 | 9.7 | 5.4 | yes | no | 5.9 | 64 |
| IRSR | Indian River | FL | cv | - | - | 25 | - | - | 25 | 57 |
| NMML | North Miami | FL | cv | - | - | 54 | - | - | 54 | 8 |
| BBPC | Biscayne Bay | FL | cv | 6.4 | 83 | - | - | - | 45 | 170 |
| EVFU | Everglades | FL | cv | 2.8 | 5.7 | 20 | no | no | 9.6 | 97 |
| RBHC | Rookery Bay | FL | cv | 5.6 | 3.6 | 19 | no | no | 9.3 | 97 |

Table B.2 **Total DDT** (Continued)

| SITE | Location | State | Species | 1986 mean | 1987 mean | 1988 mean | Diff | Trend | Overall mean | Overall cv% |
|---|---|---|---|---|---|---|---|---|---|---|
| NBNB | Naples Bay | FL | cv | 10 | 51 | 34 | no | no | 32 | 73 |
| CBBI | Charlotte Hrb. | FL | cv | 18 | 37 | - | - | - | 29 | 77 |
| CBFM | Charlotte Hrb. | FL | cv | - | - | 110 | - | - | 110 | 17 |
| TBMK | Tampa Bay | FL | cv | 27 | 28 | 9.9 | no | no | 22 | 61 |
| TBCB | Tampa Bay | FL | cv | 45 | 75 | 120 | no | no | 79 | 53 |
| TBHB | Tampa Bay | FL | cv | 50 | 27 | 3.1 | no | no | 34 | 57 |
| TBPB | Tampa Bay | FL | cv | 21 | 100 | 61 | no | no | 62 | 100 |
| TBOT | Tampa Bay | FL | cv | - | - | 26 | - | - | 26 | 48 |
| CKBP | Cedar Key | FL | cv | 12 | 23 | 46 | no | no | 27 | 140 |
| SRWP | Suwannee River | FL | cv | - | - | 17 | - | - | 17 | 23 |
| APCP | Apalachicola Bay | FL | cv | 38 | 32 | 29 | no | no | 33 | 24 |
| APDB | Apalachicola Bay | FL | cv | 32 | 58 | 200 | no | no | 97 | 110 |
| PCMP | Panama City | FL | cv | - | - | 110 | - | - | 110 | 65 |
| SAWB | St. Andrew Bay | FL | cv | 190 | 160 | 160 | no | no | 170 | 33 |
| CBSP | Choctawhat. Bay | FL | cv | 300 | 1300 | 820 | no | no | 810 | 140 |
| CBSR | Choctawhat. Bay | FL | cv | 48 | 38 | 34 | no | no | 40 | 28 |
| PBPH | Pensacola Bay | FL | cv | - | - | 59 | - | - | 59 | 16 |
| PBIB | Pensacola Bay | FL | cv | 68 | 46 | 39 | no | no | 52 | 52 |
| MBHI | Mobile Bay | AL | cv | - | - | 640 | - | - | 640 | 4 |
| MBCP | Mobile Bay | AL | cv | 150 | 160 | 190 | no | no | 170 | 39 |
| MSPB | Miss. Snd. | MS | cv | 23 | 33 | 190 | yes | i | 82 | 100 |
| MSBB | Miss. Snd. | MS | cv | 110 | 77 | 38 | no | no | 76 | 77 |
| MSPC | Miss. Snd. | MS | cv | 18 | 41 | 75 | no | no | 45 | 100 |
| LBNO | Lake Borgne | LA | cv | - | - | 6.3 | - | - | 6.3 | 31 |
| LBMP | Lake Borgne | LA | cv | 20 | 5.6 | 8.4 | no | no | 11 | 82 |
| BSBG | Breton Snd. | LA | cv | 24 | 3.1 | 11 | no | no | 13 | 120 |
| BSSI | Breton Snd. | LA | cv | 73 | 20 | 60 | no | no | 51 | 63 |
| MRTP | Miss. River | LA | cv | - | - | 70 | - | - | 70 | 48 |
| MRPL | Miss. River | LA | cv | - | - | 240 | - | - | 240 | 19 |
| BBSD | Barataria Bay | LA | cv | 13 | 5.9 | 54 | yes | no | 24 | 100 |
| BBTB | Barataria Bay | LA | cv | - | - | 6.5 | - | - | 6.5 | 71 |
| BBMB | Barataria Bay | LA | cv | 17 | 11 | 20 | no | no | 16 | 50 |
| TBLF | Terrebonne Bay | LA | cv | 6.5 | 5.6 | 4.1 | no | no | 5.4 | 42 |
| TBLB | Terrebonne Bay | LA | cv | 8.3 | 8.7 | 11 | no | no | 9.2 | 60 |
| CLCL | Caillou Lake | LA | cv | 17 | 12 | 6.7 | no | no | 12 | 45 |
| ABOB | Atchafalaya Bay | LA | cv | 49 | 55 | 95 | no | no | 66 | 49 |
| VBSP | Vermillion Bay | LA | cv | 56 | 70 | 74 | no | no | 67 | 25 |
| JHJH | J. Hrb. Bayou | LA | cv | 44 | 38 | 32 | no | no | 38 | 33 |
| CLLC | Calcasieu Lake | LA | cv | - | - | 57 | - | - | 57 | 17 |
| CLSJ | Calcasieu Lake | LA | cv | 28 | 18 | 18 | no | no | 21 | 34 |
| SLBB | Sabine Lake | TX | cv | 20 | 18 | 21 | no | no | 20 | 65 |
| GBHR | Galveston Bay | TX | cv | 10 | 21 | 7 | no | no | 13 | 65 |
| GBSC | Galveston Bay | TX | cv | - | - | 230 | - | - | 230 | 13 |
| GBYC | Galveston Bay | TX | cv | 150 | 120 | 90 | no | no | 120 | 30 |
| GBTD | Galveston Bay | TX | cv | 34 | 52 | 7.5 | yes | no | 31 | 68 |
| GBCR | Galveston Bay | TX | cv | 16 | 19 | 20 | no | no | 18 | 23 |
| GBOB | Galveston Bay | TX | cv | - | - | 70 | - | - | 70 | 49 |
| BRFS | Brazos River | TX | cv | - | - | 190 | - | - | 190 | 19 |
| MBEM | Matagorda Bay | TX | cv | 34 | 42 | 32 | no | no | 36 | 54 |
| MBDI | Matagorda Bay | TX | cv | - | - | 86 | - | - | 86 | 13 |
| MBCB | Matagorda Bay | TX | cv | - | - | 39 | - | - | 39 | 50 |
| MBTP | Matagorda Bay | TX | cv | 93 | 87 | 95 | no | no | 92 | 56 |
| MBGP | Matagorda Bay | TX | cv | 38 | 120 | 55 | no | no | 70 | 110 |
| MBLR | Matagorda Bay | TX | cv | 50 | 27 | - | - | - | 39 | 50 |
| ESSP | Espiritu Santo | TX | cv | 10 | 15 | - | - | - | 12 | 33 |
| ESBD | Espiritu Santo | TX | cv | - | - | 41 | - | - | 41 | 13 |
| SAMP | San Antonio Bay | TX | cv | 26 | 31 | - | - | - | 29 | 24 |
| SAPP | San Antonio Bay | TX | cv | 12 | 14 | - | - | - | 13 | 21 |
| MBAR | Mesquite Bay | TX | cv | 16 | 10 | 28 | no | no | 18 | 50 |

Table B.2 **Total DDT** (Continued)

| SITE | Location | State | Species | 1986 mean | 1987 mean | 1988 mean | Diff | Trend | Overall mean | Overall cv% |
|---|---|---|---|---|---|---|---|---|---|---|
| CBCR | Copano Bay | TX | cv | 39 | 29 | 42 | no | no | 37 | 28 |
| ABHI | Aransas Bay | TX | cv | - | - | 15 | - | - | 15 | 9 |
| ABLR | Aransas Bay | TX | cv | 12 | 14 | 17 | no | no | 15 | 32 |
| CCBH | Corpus Christi | TX | cv | - | - | 42 | - | - | 42 | 54 |
| CCIC | Corpus Christi | TX | cv | 23 | - | 18 | - | - | 21 | 20 |
| CCNB | Corpus Christi | TX | cv | 31 | 37 | 32 | no | no | 34 | 30 |
| LMSB | L. Laguna Madre | TX | cv | 15 | 10 | 4.8 | yes | d | 9.8 | 48 |
| LMPI | Laguna Madre | TX | cv | - | - | 22 | - | - | 22 | 21 |
| IBNJ | Imperial Beach | CA | mc | 260 | 290 | 420 | no | no | 300 | 22 |
| SDHI | San Diego Bay | CA | me | 110 | 230 | 110 | no | no | 150 | 50 |
| PLLH | Pt. Loma | CA | mc | 130 | 210 | 48 | yes | no | 130 | 58 |
| MBVB | Mission Bay | CA | me | 69 | 70 | 70 | no | no | 70 | 5 |
| LJLJ | La Jolla | CA | mc | 37 | 160 | 14 | yes | no | 69 | 98 |
| OSBJ | Oceanside | CA | me | 64 | 170 | 270 | yes | i | 170 | 62 |
| NBWJ | Newport Bch. | CA | mc | 79 | 240 | 170 | no | no | 160 | 56 |
| ABWJ | Anaheim Bay | CA | mc | 360 | 1100 | 730 | yes | no | 720 | 51 |
| SPFP | San Pedro Hrb. | CA | me | 1100 | 1000 | 1200 | no | no | 1100 | 30 |
| PVRP | Palos Verdes | CA | mc | 1100 | 1600 | 1100 | no | no | 1300 | 42 |
| SCBR | S. Catalina Is. | CA | mc | 21 | 77 | 38 | yes | no | 45 | 63 |
| MDSJ | Marina Del Rey | CA | me | 130 | 390 | 650 | yes | i | 390 | 62 |
| PDPD | Pt. Dume | CA | mc | 160 | 570 | 260 | no | no | 330 | 95 |
| SCFP | Santa Cruz Is. | CA | mc | 17 | 63 | 35 | yes | no | 38 | 55 |
| SANM | San Miguel Is. | CA | mc | - | - | 190 | - | - | 190 | 6 |
| SBSB | Pt. S. Barbara | CA | mc | 41 | 28 | 31 | no | no | 33 | 30 |
| PCPC | Pt. Conception | CA | mc | 34 | 70 | 28 | no | no | 44 | 51 |
| SLSL | San Luis Ob. Bay | CA | mc | 190 | 140 | 52 | no | no | 130 | 68 |
| SSSS | San Simeon Pt. | CA | mc | 26 | 36 | 14 | yes | no | 25 | 38 |
| PGLP | Pacific Grove | CA | mc | 46 | 230 | 47 | no | no | 110 | 86 |
| MBSC | Monterey Bay | CA | mc | 150 | 150 | 50 | no | no | 120 | 54 |
| FIEL | Farallon Is. | CA | mc | - | - | 80 | - | - | 80 | 55 |
| SFDB | San Fran. Bay | CA | me | 320 | 280 | 63 | no | no | 220 | 71 |
| SFSM | San Fran. Bay | CA | me | 130 | 240 | 92 | no | no | 150 | 62 |
| SFEM | San Fran. Bay | CA | me | - | 580 | 310 | - | - | 440 | 38 |
| TBSR | Tomales Bay | CA | me | 9.4 | 17 | 18 | no | no | 15 | 59 |
| BBBE | Bodega Bay | CA | mc | 27 | 9.9 | 19 | yes | no | 19 | 52 |
| PALH | Pt. Arena | CA | mc | 17 | 24 | 6.8 | yes | no | 16 | 52 |
| PDSC | Pt. Delgada | CA | mc | 5.4 | 5.3 | 6.8 | no | no | 5.9 | 48 |
| HMBJ | Humboldt Bay | CA | mc | 12 | 5.1 | 8.5 | no | no | 8.5 | 53 |
| SGSG | Pt. St. George | CA | mc | 9.7 | 8.2 | 14 | no | no | 11 | 30 |
| CBCH | Coos Bay | OR | mc | 24 | 12 | 19 | no | no | 18 | 44 |
| CBRP | Coos Bay | OR | me | 9.4 | 25 | 5.5 | no | no | 13 | 89 |
| YBOP | Yaquina Bay | OR | me | 8.7 | 12 | 15 | no | no | 12 | 39 |
| YHYH | Yaquina Head | OR | mc | 6.3 | 3.7 | 5.7 | no | no | 5.2 | 40 |
| TBHP | Tillamook Bay | OR | me | 7.3 | 10 | 6.2 | no | no | 7.2 | 20 |
| CRSJ | Columbia R. | OR | me | 75 | 36 | 63 | yes | no | 58 | 33 |
| GHWJ | Gray's Hrb. | WA | mc | 21 | 14 | 28 | no | no | 21 | 40 |
| JFCF | S. Juan de Fuca | WA | mc | 11 | 8.1 | 5.6 | no | no | 8.4 | 74 |
| SSBI | South Puget Snd. | WA | me | 14 | 20 | 25 | yes | i* | 20 | 27 |
| CBTP | Comm. Bay | WA | me | 33 | 20 | 6.2 | yes | d | 20 | 68 |
| EBFR | Elliott Bay | WA | me | 130 | 35 | 49 | no | no | 72 | 70 |
| SIWP | Sinclair Inlet | WA | me | 26 | 18 | 11 | no | no | 18 | 41 |
| WIPP | Whidbey Is. | WA | me | 22 | 11 | 13 | no | no | 15 | 55 |
| BBSM | Bellingham Bay | WA | me | 20 | 18 | 16 | no | no | 18 | 23 |
| PRPR | Pt. Roberts | WA | me | 41 | 5 | 5.2 | no | no | 14 | 140 |
| PVMC | Port Valdez | AK | me | 3.4 | .67 | nd | yes | d | 1.4 | 120 |
| UISB | Unakwit Inlet | AK | me | 5.3 | 1.3 | nd | yes | d | 2.2 | 140 |
| BPBP | Barber's Pt. | HI | os | 53 | 4.7 | 2 | no | no | 22 | 130 |
| HHKL | Honolulu Hrb. | HI | os | 7.5 | 32 | 28 | no | no | 23 | 57 |
| KAUI | Kauai | HI | os | - | - | 36 | - | - | 36 | 12 |

Table B.3 Summary of 1986 through 1988 data for **total Chlordane** (ng/g dry) in mollusks.

| SITE | Location | State | Species | 1986 mean | 1987 mean | 1988 mean | Diff | Trend | Overall mean | Overall cv% |
|---|---|---|---|---|---|---|---|---|---|---|
| PBSI | Penobscot Bay | ME | me | 8 | 6.4 | 6.9 | no | no | 7.1 | 20 |
| PBPI | Penobscot Bay | ME | me | 1.4 | 8.9 | 2.4 | yes | no | 4.2 | 85 |
| MSSP | Merriconeag Snd. | ME | me | - | - | 4.3 | - | - | 4.3 | 40 |
| CAGH | Cape Ann | MA | me | - | 8.2 | 13 | - | - | 11 | 33 |
| SHFP | Salem Harbor | MA | me | - | - | 24 | - | - | 24 | 10 |
| BHDI | Boston Hrb. | MA | me | 80 | 57 | 30 | yes | d | 56 | 41 |
| BHDB | Boston Hrb. | MA | me | 65 | 85 | 20 | yes | no | 57 | 56 |
| BHHB | Boston Hrb. | MA | me | 55 | 75 | 20 | no | no | 50 | 53 |
| BHBI | Boston Hrb. | MA | me | 41 | 39 | 31 | no | no | 37 | 32 |
| BBRH | Buzzards Bay | MA | me | 43 | 55 | 8.6 | no | no | 35 | 93 |
| BBAR | Buzzards Bay | MA | me | 90 | 55 | 12 | no | no | 52 | 93 |
| BBGN | Buzzards Bay | MA | me | 18 | 5.4 | 7.9 | no | no | 10 | 94 |
| NBDU | Narr. Bay | RI | me | 15 | 13 | - | - | - | 14 | 40 |
| NBDI | Narr. Bay | RI | me | 7.7 | 19 | 11 | no | no | 13 | 69 |
| BIBI | Block Is. | RI | me | - | 13 | 13 | - | - | 13 | 10 |
| LICR | Long Is. Snd. | CT | me | 19 | 34 | 15 | yes | no | 22 | 42 |
| LINH | Long Is. Snd. | CT | me | 70 | 35 | 25 | yes | d | 43 | 58 |
| LIHR | Long Is. Snd. | CT | me | 27 | 66 | 18 | no | no | 38 | 80 |
| LISI | Long Is. Snd. | CT | me | 70 | 46 | 22 | yes | d | 46 | 54 |
| LIHU | Long Is. Snd. | NY | me | 52 | 53 | 29 | no | no | 45 | 30 |
| LIPJ | Long Is. Snd. | NY | me | 21 | 23 | 22 | no | no | 22 | 33 |
| LIMR | Long Is. Snd. | NY | me | 91 | 78 | 58 | no | no | 76 | 46 |
| LIHH | Long Is. Snd. | NY | me | 61 | 170 | 40 | yes | no | 91 | 74 |
| LITN | Long Is. Snd. | NY | me | 100 | 89 | 68 | yes | d* | 86 | 22 |
| MBTH | Moriches Bay | NY | me | 16 | 6.9 | 11 | yes | no | 11 | 40 |
| HRJB | Hud./Rar. Est | NY | me | 76 | 61 | 71 | no | no | 69 | 15 |
| HRUB | Hud./Rar. Est. | NY | me | 71 | 53 | 73 | no | no | 66 | 28 |
| HRLB | Hud./Rar. Est. | NY | me | 250 | 140 | 47 | yes | d | 150 | 65 |
| NYSH | N.Y. Bight | NJ | me | 110 | 64 | 42 | no | no | 71 | 49 |
| NYLB | N.Y. Bight | NJ | me | 53 | 57 | 18 | yes | no | 43 | 44 |
| NYSR | N.Y. Bight | NJ | me | 200 | 41 | 29 | no | no | 77 | 150 |
| BIBL | Barnegat Inlet | NJ | me | - | - | 16 | - | - | 16 | 14 |
| AIAC | Absecon Inlet | NJ | me | - | - | 15 | - | - | 15 | 36 |
| DBFE | Delaware Bay | DE | cv | 30 | 19 | 12 | yes | d | 20 | 43 |
| DBBD | Delaware Bay | DE | cv | 30 | 50 | 17 | no | no | 33 | 57 |
| DBAP | Delaware Bay | DE | cv | 25 | 33 | 22 | no | no | 27 | 51 |
| DBKI | Delaware Bay | DE | cv | 25 | 23 | 15 | no | no | 21 | 52 |
| CBMP | Ches. Bay | MD | cv | 62 | 67 | 24 | no | no | 51 | 47 |
| CBHP | Ches. Bay | MD | cv | 38 | 40 | 27 | no | no | 35 | 24 |
| CBHG | Ches. Bay | MD | cv | 21 | 30 | 18 | no | no | 23 | 31 |
| CBIB | Ches. Bay | VA | cv | 22 | 27 | - | - | - | 24 | 43 |
| CBCC | Ches. Bay | VA | cv | 25 | 23 | 15 | no | no | 21 | 27 |
| CBDP | Ches. Bay | VA | cv | 27 | 32 | 15 | no | no | 25 | 44 |
| CBCI | Chincoteague Bay | VA | cv | 12 | 19 | 18 | no | no | 17 | 33 |
| QIUB | Quinby Inlet | VA | cv | 7.8 | 6.5 | 6.3 | no | no | 6.9 | 33 |
| RSJC | Roanoke Snd. | NC | cv | 10 | 27 | 11 | no | no | 16 | 59 |
| PSWB | Pamlico Snd. | NC | cv | 7.1 | 20 | 5.6 | no | no | 11 | 76 |
| CFBI | Cape Fear | NC | cv | 3 | 14 | 10 | no | no | 9.3 | 75 |
| CHFJ | Charleston Hrb. | SC | cv | 24 | 25 | 12 | no | no | 20 | 45 |
| CHSF | Charleston Hrb. | SC | cv | 26 | 24 | 13 | no | no | 21 | 45 |
| SRTI | Savannah R. Est. | GA | cv | 10 | 15 | 8.9 | no | no | 12 | 40 |
| SSSI | Sapelo Snd. | GA | cv | 8.7 | 11 | 12 | no | no | 11 | 48 |
| SJCB | St. Johns R. | FL | cv | 34 | 45 | 16 | no | no | 31 | 76 |
| MRCB | Matanzas R. | FL | cv | 2 | 5.8 | 5.6 | no | no | 4.5 | 59 |
| IRSR | Indian River | FL | cv | - | - | 4.5 | - | - | 4.5 | 13 |
| NMML | North Miami | FL | cv | - | - | 25 | - | - | 25 | 6 |
| BBPC | Biscayne Bay | FL | cv | 4.8 | 51 | - | - | - | 28 | 160 |
| EVFU | Everglades | FL | cv | 2 | 5.5 | 23 | yes | i | 10 | 110 |
| RBHC | Rookery Bay | FL | cv | 3.9 | 3.6 | 19 | no | no | 8.9 | 120 |

Table B.3 **Total Chlordane** (Continued)

| SITE | Location | State | Species | 1986 mean | 1987 mean | 1988 mean | Diff | Trend | Overall mean | Overall cv% |
|---|---|---|---|---|---|---|---|---|---|---|
| NBNB | Naples Bay | FL | cv | 110 | 45 | 31 | no | no | 64 | 65 |
| CBBI | Charlotte Hrb. | FL | cv | 9.3 | 20 | - | - | - | 15 | 78 |
| CBFM | Charlotte Hrb. | FL | cv | - | - | 73 | - | - | 73 | 6 |
| TBMK | Tampa Bay | FL | cv | 23 | 21 | 21 | no | no | 22 | 33 |
| TBCB | Tampa Bay | FL | cv | 74 | 45 | 110 | yes | no | 75 | 49 |
| TBHB | Tampa Bay | FL | cv | 22 | 18 | 1.5 | no | no | 17 | 44 |
| TBPB | Tampa Bay | FL | cv | 58 | 99 | 60 | no | no | 72 | 56 |
| TBOT | Tampa Bay | FL | cv | - | - | 35 | - | - | 35 | 16 |
| CKBP | Cedar Key | FL | cv | 8.6 | 14 | 25 | no | no | 16 | 110 |
| SRWP | Suwannee River | FL | cv | - | - | 12 | - | - | 12 | 21 |
| APCP | Apalachicola Bay | FL | cv | 12 | 12 | 15 | no | no | 13 | 24 |
| APDB | Apalachicola Bay | FL | cv | 8 | 13 | 53 | yes | i | 25 | 110 |
| PCMP | Panama City | FL | cv | - | - | 24 | - | - | 24 | 44 |
| SAWB | St. Andrew Bay | FL | cv | 80 | 58 | 36 | no | no | 56 | 45 |
| CBSP | Choctawhat. Bay | FL | cv | 57 | 290 | 45 | no | no | 130 | 140 |
| CBSR | Choctawhat. Bay | FL | cv | 10 | 8.1 | 14 | no | no | 11 | 40 |
| PBPH | Pensacola Bay | FL | cv | - | - | 35 | - | - | 35 | 5 |
| PBIB | Pensacola Bay | FL | cv | 15 | 24 | 19 | no | no | 19 | 24 |
| MBHI | Mobile Bay | AL | cv | - | - | 34 | - | - | 34 | 20 |
| MBCP | Mobile Bay | AL | cv | 15 | 24 | 14 | no | no | 18 | 57 |
| MSPB | Miss. Snd. | MS | cv | 12 | 19 | 28 | yes | i | 20 | 42 |
| MSBB | Miss. Snd. | MS | cv | 98 | 86 | 71 | no | no | 85 | 54 |
| MSPC | Miss. Snd. | MS | cv | 22 | 69 | 16 | no | no | 35 | 92 |
| LBNO | Lake Borgne | LA | cv | - | - | 8.6 | - | - | 8.6 | 37 |
| LBMP | Lake Borgne | LA | cv | 12 | 10 | 11 | no | no | 11 | 56 |
| BSBG | Breton Snd. | LA | cv | 10 | 11 | 12 | no | no | 11 | 42 |
| BSSI | Breton Snd. | LA | cv | 45 | 13 | 29 | yes | no | 29 | 60 |
| MRTP | Miss. River | LA | cv | - | - | 27 | - | - | 27 | 41 |
| MRPL | Miss. River | LA | cv | - | - | 61 | - | - | 61 | 27 |
| BBSD | Barataria Bay | LA | cv | 11 | 12 | 20 | no | no | 14 | 48 |
| BBTB | Barataria Bay | LA | cv | - | - | 7.7 | - | - | 7.7 | 61 |
| BBMB | Barataria Bay | LA | cv | 35 | 16 | 14 | no | no | 22 | 68 |
| TBLF | Terrebonne Bay | LA | cv | 6.4 | 5.4 | 5.3 | no | no | 5.7 | 32 |
| TBLB | Terrebonne Bay | LA | cv | 6.5 | 8.6 | 12 | no | no | 8.9 | 65 |
| CLCL | Caillou Lake | LA | cv | 8.2 | 10 | 5 | no | no | 7.8 | 45 |
| ABOB | Atchafalaya Bay | LA | cv | 14 | 20 | 15 | no | no | 16 | 29 |
| VBSP | Vermillion Bay | LA | cv | 15 | 21 | 15 | no | no | 17 | 26 |
| JHJH | J. Hrb. Bayou | LA | cv | 11 | 11 | 5 | no | no | 8.9 | 37 |
| CLLC | Calcasieu Lake | LA | cv | - | - | 45 | - | - | 45 | 8 |
| CLSJ | Calcasieu Lake | LA | cv | 14 | 16 | 14 | no | no | 15 | 19 |
| SLBB | Sabine Lake | TX | cv | 12 | 8.9 | 20 | no | no | 14 | 57 |
| GBHR | Galveston Bay | TX | cv | 10 | 15 | 7.9 | no | no | 11 | 48 |
| GBSC | Galveston Bay | TX | cv | - | - | 140 | - | - | 140 | 26 |
| GBYC | Galveston Bay | TX | cv | 120 | 140 | 61 | no | no | 110 | 37 |
| GBTD | Galveston Bay | TX | cv | 25 | 55 | 14 | yes | no | 31 | 60 |
| GBCR | Galveston Bay | TX | cv | 9.8 | 15 | 14 | no | no | 13 | 36 |
| GBOB | Galveston Bay | TX | cv | - | - | 88 | - | - | 88 | 17 |
| BRFS | Brazos River | TX | cv | - | - | 9.9 | - | - | 9.9 | 17 |
| MBEM | Matagorda Bay | TX | cv | 16 | 19 | 8.2 | no | no | 15 | 61 |
| MBDI | Matagorda Bay | TX | cv | - | - | 8.2 | - | - | 8.2 | 3 |
| MBCB | Matagorda Bay | TX | cv | - | - | 8.7 | - | - | 8.7 | 52 |
| MBTP | Matagorda Bay | TX | cv | 15 | 20 | 8.6 | no | no | 14 | 52 |
| MBGP | Matagorda Bay | TX | cv | 8 | 19 | 9.2 | no | no | 12 | 84 |
| MBLR | Matagorda Bay | TX | cv | 16 | 16 | - | - | - | 16 | 25 |
| ESSP | Espiritu Santo | TX | cv | 4.7 | 8.7 | - | - | - | 6.7 | 37 |
| ESBD | Espiritu Santo | TX | cv | - | - | 7.8 | - | - | 7.8 | 20 |
| SAMP | San Antonio Bay | TX | cv | 12 | 15 | - | - | - | 13 | 23 |
| SAPP | San Antonio Bay | TX | cv | 9.4 | 9 | - | - | - | 9.2 | 29 |
| MBAR | Mesquite Bay | TX | cv | 8.1 | 11 | 8.1 | no | no | 9 | 31 |

Table B.3 **Total Chlordane** (Continued)

| SITE | Location | State | Species | 1986 mean | 1987 mean | 1988 mean | Diff | Trend | Overall mean | Overall cv% |
|---|---|---|---|---|---|---|---|---|---|---|
| CBCR | Copano Bay | TX | cv | 8.6 | 12 | 9.5 | no | no | 10 | 33 |
| ABHI | Aransas Bay | TX | cv | - | - | 4.9 | - | - | 4.9 | 38 |
| ABLR | Aransas Bay | TX | cv | 8.7 | 9.6 | 4.6 | no | no | 7.6 | 42 |
| CCBH | Corpus Christi | TX | cv | - | - | 15 | - | - | 15 | 51 |
| CCIC | Corpus Christi | TX | cv | 24 | - | 4.4 | - | - | 14 | 75 |
| CCNB | Corpus Christi | TX | cv | 19 | 14 | 14 | no | no | 15 | 56 |
| LMSB | L. Laguna Madre | TX | cv | 3.2 | 2.4 | 3.1 | no | no | 2.9 | 71 |
| LMPI | Laguna Madre | TX | cv | - | - | 8.4 | - | - | 8.4 | 34 |
| IBNJ | Imperial Beach | CA | mc | 18 | 15 | 18 | no | no | 17 | 12 |
| SDHI | San Diego Bay | CA | me | 32 | 27 | 32 | no | no | 30 | 34 |
| PLLH | Pt. Loma | CA | mc | 16 | 34 | 9.1 | no | no | 20 | 66 |
| MBVB | Mission Bay | CA | me | 21 | 21 | 17 | no | no | 20 | 16 |
| LJLJ | La Jolla | CA | mc | 14 | 21 | 6.3 | yes | no | 14 | 48 |
| OSBJ | Oceanside | CA | me | 8.1 | 15 | 11 | no | no | 11 | 43 |
| NBWJ | Newport Bch. | CA | mc | 8.8 | 23 | 8.9 | no | no | 14 | 60 |
| ABWJ | Anaheim Bay | CA | mc | 61 | 150 | 64 | no | no | 92 | 58 |
| SPFP | San Pedro Hrb. | CA | me | 27 | 31 | 17 | no | no | 25 | 36 |
| PVRP | Palos Verdes | CA | mc | 24 | 42 | 15 | no | no | 27 | 63 |
| SCBR | S. Catalina Is. | CA | mc | 2.9 | 5.5 | 8 | no | no | 5.5 | 86 |
| MDSJ | Marina Del Rey | CA | me | 63 | 180 | 150 | no | no | 130 | 50 |
| PDPD | Pt. Dume | CA | mc | 12 | 27 | 11 | no | no | 17 | 59 |
| SCFP | Santa Cruz Is. | CA | mc | 5.3 | 5.3 | 4.1 | no | no | 4.9 | 46 |
| SANM | San Miguel Is. | CA | mc | - | - | 12 | - | - | 12 | 6 |
| SBSB | Pt. S. Barbara | CA | mc | 7.3 | 8 | 3.2 | no | no | 6.2 | 48 |
| PCPC | Pt. Conception | CA | mc | 5.6 | 5.2 | 4.1 | no | no | 4.9 | 50 |
| SLSL | San Luis Ob. Bay | CA | mc | 22 | 32 | 9.1 | no | no | 21 | 67 |
| SSSS | San Simeon Pt. | CA | mc | 5.7 | 33 | 4 | no | no | 14 | 110 |
| PGLP | Pacific Grove | CA | mc | 25 | 46 | 16 | yes | no | 29 | 47 |
| MBSC | Monterey Bay | CA | mc | 28 | 40 | 31 | no | no | 33 | 40 |
| FIEL | Farallon Is. | CA | mc | - | - | 16 | - | - | 16 | 45 |
| SFDB | San Fran. Bay | CA | me | 140 | 100 | 19 | no | no | 88 | 77 |
| SFSM | San Fran. Bay | CA | me | 55 | 82 | 20 | no | no | 52 | 65 |
| SFEM | San Fran. Bay | CA | me | - | 120 | 33 | - | - | 77 | 62 |
| TBSR | Tomales Bay | CA | me | 3.5 | 5 | 1.3 | no | no | 3.3 | 62 |
| BBBE | Bodega Bay | CA | mc | 16 | 5.4 | 12 | yes | no | 11 | 48 |
| PALH | Pt. Arena | CA | mc | 5.6 | 9 | 4.8 | no | no | 6.5 | 71 |
| PDSC | Pt. Delgada | CA | mc | 10 | 6.1 | 7.6 | no | no | 7.9 | 35 |
| HMBJ | Humboldt Bay | CA | mc | 3.2 | 1.3 | 3 | no | no | 2.5 | 52 |
| SGSG | Pt. St. George | CA | mc | 9.6 | 9.4 | 8.6 | no | no | 9.2 | 32 |
| CBCH | Coos Bay | OR | mc | 8.5 | 3.4 | 3.8 | no | no | 5.3 | 71 |
| CBRP | Coos Bay | OR | me | 4 | 12 | 6.2 | no | no | 7.5 | 82 |
| YBOP | Yaquina Bay | OR | me | 2.7 | 1.7 | 6.1 | no | no | 3.5 | 70 |
| YHYH | Yaquina Head | OR | mc | 2.1 | 5.4 | 5.7 | no | no | 4.4 | 54 |
| TBHP | Tillamook Bay | OR | me | 3.1 | 4 | 3.5 | no | no | 3.4 | 44 |
| CRSJ | Columbia R. | OR | me | 8 | 4.5 | 6.3 | no | no | 6.3 | 30 |
| GHWJ | Gray's Hrb. | WA | mc | 8.9 | 6.1 | 8.6 | no | no | 7.9 | 27 |
| JFCF | S. Juan de Fuca | WA | mc | 5.9 | 8.3 | 5.9 | no | no | 6.7 | 39 |
| SSBI | South Puget Snd. | WA | me | 7.3 | 13 | 11 | no | no | 10 | 34 |
| CBTP | Comm. Bay | WA | me | 14 | 19 | 1.6 | yes | no | 12 | 69 |
| EBFR | Elliott Bay | WA | me | 27 | 6.4 | 10 | yes | no | 14 | 70 |
| SIWP | Sinclair Inlet | WA | me | 6.8 | 4.6 | 2.8 | no | no | 4.5 | 64 |
| WIPP | Whidbey Is. | WA | me | 8.3 | 7 | 3.2 | no | no | 6.2 | 46 |
| BBSM | Bellingham Bay | WA | me | 6.5 | 8.9 | 9.4 | no | no | 8.3 | 31 |
| PRPR | Pt. Roberts | WA | me | 4 | 4 | nd | no | no | 2.5 | 93 |
| PVMC | Port Valdez | AK | me | 2.1 | 1 | nd | no | no | 1 | 120 |
| UISB | Unakwit Inlet | AK | me | 4.1 | 3.6 | nd | no | no | 2.5 | 100 |
| BPBP | Barber's Pt. | HI | os | 47 | 7.7 | 1.9 | no | no | 19 | 120 |
| HHKL | Honolulu Hrb. | HI | os | 4.6 | 32 | 41 | no | no | 26 | 68 |
| KAUI | Kauai | HI | os | - | - | 13 | - | - | 13 | 160 |

Table B.4 Summary of 1986 through 1988 data for **Dieldrin** (ng/g dry) in mollusks.

| SITE | Location | State | Species | 1986 mean | 1987 mean | 1988 mean | Diff | Trend | Overall mean | Overall cv% |
|---|---|---|---|---|---|---|---|---|---|---|
| PBSI | Penobscot Bay | ME | me | 7.7 | 4.1 | 2.5 | yes | d | 4.8 | 52 |
| PBPI | Penobscot Bay | ME | me | nd | 4.1 | 2.9 | yes | no | 2.3 | 79 |
| MSSP | Merriconeag Snd. | ME | me | - | - | 3.8 | - | - | 3.8 | 23 |
| CAGH | Cape Ann | MA | me | - | 4.2 | 4.2 | - | - | 4.2 | 59 |
| SHFP | Salem Harbor | MA | me | - | - | 16 | - | - | 16 | 11 |
| BHDI | Boston Hrb. | MA | me | 42 | 34 | 4.4 | yes | d | 27 | 66 |
| BHDB | Boston Hrb. | MA | me | 37 | 42 | 3.9 | no | no | 28 | 93 |
| BHHB | Boston Hrb. | MA | me | 20 | 39 | 3.1 | yes | no | 21 | 81 |
| BHBI | Boston Hrb. | MA | me | 20 | 18 | 7.9 | no | no | 15 | 50 |
| BBRH | Buzzards Bay | MA | me | 26 | 63 | 2.1 | yes | no | 31 | 92 |
| BBAR | Buzzards Bay | MA | me | 46 | 64 | nd | no | no | 37 | 88 |
| BBGN | Buzzards Bay | MA | me | 24 | 8.3 | 3.6 | no | no | 12 | 120 |
| NBDU | Narr. Bay | RI | me | 11 | 11 | - | - | - | 11 | 18 |
| NBDI | Narr. Bay | RI | me | 2.4 | 18 | 5.6 | no | no | 8.8 | 96 |
| BIBI | Block Is. | RI | me | - | 9.3 | 9.3 | - | - | 9.3 | 7 |
| LICR | Long Is. Snd. | CT | me | nd | 73 | 6.7 | yes | no | 27 | 190 |
| LINH | Long Is. Snd. | CT | me | 33 | 20 | 24 | no | no | 26 | 40 |
| LIHR | Long Is. Snd. | CT | me | 42 | 29 | 4.4 | no | no | 23 | 81 |
| LISI | Long Is. Snd. | CT | me | nd | 16 | 10 | yes | no | 8.7 | 84 |
| LIHU | Long Is. Snd. | NY | me | 16 | 26 | 35 | no | no | 26 | 51 |
| LIPJ | Long Is. Snd. | NY | me | 5.4 | 12 | 17 | no | no | 11 | 62 |
| LIMR | Long Is. Snd. | NY | me | nd | 39 | 26 | no | no | 21 | 110 |
| LIHH | Long Is. Snd. | NY | me | 2.1 | 80 | 4 | yes | no | 29 | 150 |
| LITN | Long Is. Snd. | NY | me | nd | 44 | 16 | yes | no | 20 | 99 |
| MBTH | Moriches Bay | NY | me | nd | 5 | 8.9 | yes | i | 4.6 | 85 |
| HRJB | Hud./Rar. Est | NY | me | 32 | 14 | nd | yes | d | 15 | 97 |
| HRUB | Hud./Rar. Est. | NY | me | 60 | 43 | 4.7 | no | no | 36 | 85 |
| HRLB | Hud./Rar. Est. | NY | me | 160 | 69 | 3.3 | yes | d | 76 | 94 |
| NYSH | N.Y. Bight | NJ | me | 69 | 35 | nd | yes | d | 35 | 89 |
| NYLB | N.Y. Bight | NJ | me | 33 | 33 | 5.6 | no | no | 24 | 60 |
| NYSR | N.Y. Bight | NJ | me | 44 | 18 | nd | no | no | 18 | 160 |
| BIBL | Barnegat Inlet | NJ | me | - | - | 18 | - | - | 18 | 12 |
| AIAC | Absecon Inlet | NJ | me | - | - | 9.7 | - | - | 9.7 | 63 |
| DBFE | Delaware Bay | DE | cv | 13 | 8.5 | 1.1 | yes | d | 7.4 | 74 |
| DBBD | Delaware Bay | DE | cv | 31 | 34 | 26 | no | no | 30 | 47 |
| DBAP | Delaware Bay | DE | cv | 12 | 28 | 15 | no | no | 18 | 47 |
| DBKI | Delaware Bay | DE | cv | 19 | 54 | 9.3 | no | no | 28 | 150 |
| CBMP | Ches. Bay | MD | cv | 28 | 27 | 12 | no | no | 22 | 39 |
| CBHP | Ches. Bay | MD | cv | 17 | 19 | 17 | no | no | 18 | 18 |
| CBHG | Ches. Bay | MD | cv | 9.6 | 22 | 9.3 | no | no | 14 | 49 |
| CBIB | Ches. Bay | VA | cv | 5.6 | 16 | - | - | - | 11 | 89 |
| CBCC | Ches. Bay | VA | cv | 9 | 8.1 | 5.9 | no | no | 7.7 | 21 |
| CBDP | Ches. Bay | VA | cv | 2.2 | 7.6 | 3.8 | no | no | 4.5 | 70 |
| CBCI | Chincoteague Bay | VA | cv | 10 | 6.8 | 8.5 | no | no | 8.5 | 68 |
| QIUB | Quinby Inlet | VA | cv | 1.1 | 3.2 | 4.5 | no | no | 2.9 | 110 |
| RSJC | Roanoke Snd. | NC | cv | 1.2 | 18 | 8.5 | no | no | 9.4 | 93 |
| PSWB | Pamlico Snd. | NC | cv | 2 | 9 | 10 | no | no | 7 | 65 |
| CFBI | Cape Fear | NC | cv | 5 | 8.8 | 10 | no | no | 8 | 49 |
| CHFJ | Charleston Hrb. | SC | cv | 3.5 | 9 | 4.5 | no | no | 5.9 | 53 |
| CHSF | Charleston Hrb. | SC | cv | 4.1 | 9.2 | 1.1 | no | no | 4.8 | 94 |
| SRTI | Savannah R. Est. | GA | cv | 3.7 | 11 | 2.6 | no | no | 5.9 | 93 |
| SSSI | Sapelo Snd. | GA | cv | 5.5 | 2.8 | 7.1 | no | no | 5.1 | 67 |
| SJCB | St. Johns R. | FL | cv | 10 | 19 | 4.4 | no | no | 11 | 93 |
| MRCB | Matanzas R. | FL | cv | 1.1 | 1.9 | 1.9 | no | no | 1.6 | 87 |
| IRSR | Indian River | FL | cv | - | - | nd | - | - | nd | - |
| NMML | North Miami | FL | cv | - | - | 5.4 | - | - | 5.4 | 14 |
| BBPC | Biscayne Bay | FL | cv | 5 | 29 | - | - | - | 17 | 130 |
| EVFU | Everglades | FL | cv | .38 | 1.3 | 6.7 | no | no | 2.8 | 130 |
| RBHC | Rookery Bay | FL | cv | .96 | .077 | 2.7 | yes | no | 1.2 | 120 |

Table B.4 **Dieldrin** (Continued)

| SITE | Location | State | Species | 1986 mean | 1987 mean | 1988 mean | Diff | Trend | Overall mean | Overall cv% |
|---|---|---|---|---|---|---|---|---|---|---|
| NBNB | Naples Bay | FL | cv | 2.2 | 6.9 | 5 | no | no | 4.7 | 52 |
| CBBI | Charlotte Hrb. | FL | cv | 2.4 | 3.4 | - | - | - | 3 | 100 |
| CBFM | Charlotte Hrb. | FL | cv | - | - | 18 | - | - | 18 | 5 |
| TBMK | Tampa Bay | FL | cv | 2.2 | 2.2 | 2.6 | no | no | 2.4 | 61 |
| TBCB | Tampa Bay | FL | cv | 3 | 1.4 | 3.2 | no | no | 2.6 | 42 |
| TBHB | Tampa Bay | FL | cv | 4 | 1.1 | .49 | no | no | 2.2 | 73 |
| TBPB | Tampa Bay | FL | cv | 7.7 | 8.5 | 4.1 | no | no | 6.8 | 62 |
| TBOT | Tampa Bay | FL | cv | - | - | 4.5 | - | - | 4.5 | 110 |
| CKBP | Cedar Key | FL | cv | 3.8 | 1.1 | 3.4 | no | no | 2.8 | 85 |
| SRWP | Suwannee River | FL | cv | - | - | 2.4 | - | - | 2.4 | 50 |
| APCP | Apalachicola Bay | FL | cv | 5.8 | 3.5 | 4.3 | no | no | 4.5 | 49 |
| APDB | Apalachicola Bay | FL | cv | 4.7 | 4.6 | 8.4 | no | no | 5.9 | 59 |
| PCMP | Panama City | FL | cv | - | - | 2.4 | - | - | 2.4 | 19 |
| SAWB | St. Andrew Bay | FL | cv | 18 | 12 | 4.9 | yes | d | 11 | 60 |
| CBSP | Choctawhat. Bay | FL | cv | 8.7 | 14 | 4.2 | no | no | 9.1 | 83 |
| CBSR | Choctawhat. Bay | FL | cv | 4.6 | 1.3 | 7.9 | yes | no | 4.6 | 68 |
| PBPH | Pensacola Bay | FL | cv | - | - | 17 | - | - | 17 | 33 |
| PBIB | Pensacola Bay | FL | cv | 6.9 | 6.9 | 5.9 | no | no | 6.5 | 35 |
| MBHI | Mobile Bay | AL | cv | - | - | 12 | - | - | 12 | 34 |
| MBCP | Mobile Bay | AL | cv | 7.7 | 8.3 | 3.7 | no | no | 6.6 | 67 |
| MSPB | Miss. Snd. | MS | cv | 5.6 | 4.2 | 8.6 | no | no | 6.2 | 42 |
| MSBB | Miss. Snd. | MS | cv | 32 | 18 | 6.8 | no | no | 19 | 86 |
| MSPC | Miss. Snd. | MS | cv | 6.8 | 11 | 2.1 | no | no | 6.8 | 84 |
| LBNO | Lake Borgne | LA | cv | - | - | 1.4 | - | - | 1.4 | 77 |
| LBMP | Lake Borgne | LA | cv | 6.1 | 3 | 1.6 | no | no | 3.6 | 91 |
| BSBG | Breton Snd. | LA | cv | 5.4 | 3.6 | 4.1 | no | no | 4.3 | 45 |
| BSSI | Breton Snd. | LA | cv | 42 | 4.1 | 19 | yes | no | 22 | 84 |
| MRTP | Miss. River | LA | cv | - | - | 17 | - | - | 17 | 39 |
| MRPL | Miss. River | LA | cv | - | - | 39 | - | - | 39 | 20 |
| BBSD | Barataria Bay | LA | cv | 8.3 | 1.5 | 9.7 | no | no | 6.5 | 60 |
| BBTB | Barataria Bay | LA | cv | - | - | 1.2 | - | - | 1.2 | 65 |
| BBMB | Barataria Bay | LA | cv | 15 | 3.8 | 8.8 | yes | no | 9.2 | 70 |
| TBLF | Terrebonne Bay | LA | cv | 2.7 | 2.1 | .98 | no | no | 1.9 | 76 |
| TBLB | Terrebonne Bay | LA | cv | 2.5 | 1.5 | 1.2 | no | no | 1.7 | 61 |
| CLCL | Caillou Lake | LA | cv | 5 | 2.5 | 1.2 | no | no | 2.9 | 66 |
| ABOB | Atchafalaya Bay | LA | cv | 14 | 8.4 | 7.8 | no | no | 9.9 | 44 |
| VBSP | Vermillion Bay | LA | cv | 18 | 13 | 9.8 | no | no | 14 | 33 |
| JHJH | J. Hrb. Bayou | LA | cv | 15 | 7.3 | 4.2 | yes | d | 8.9 | 63 |
| CLLC | Calcasieu Lake | LA | cv | - | - | 6.5 | - | - | 6.5 | 43 |
| CLSJ | Calcasieu Lake | LA | cv | 10 | 4.4 | 4.5 | no | no | 6.3 | 46 |
| SLBB | Sabine Lake | TX | cv | 5 | 4.4 | 5.2 | no | no | 4.9 | 41 |
| GBHR | Galveston Bay | TX | cv | 9.7 | 9.7 | 2.7 | no | no | 7.4 | 59 |
| GBSC | Galveston Bay | TX | cv | - | - | 37 | - | - | 37 | 51 |
| GBYC | Galveston Bay | TX | cv | 36 | 35 | 20 | no | no | 30 | 39 |
| GBTD | Galveston Bay | TX | cv | 13 | 23 | 3 | yes | no | 13 | 68 |
| GBCR | Galveston Bay | TX | cv | 8 | 7.6 | 4.8 | no | no | 6.8 | 41 |
| GBOB | Galveston Bay | TX | cv | - | - | 10 | - | - | 10 | 40 |
| BRFS | Brazos River | TX | cv | - | - | 14 | - | - | 14 | 37 |
| MBEM | Matagorda Bay | TX | cv | 6.8 | 5.9 | 3.4 | no | no | 5.4 | 70 |
| MBDI | Matagorda Bay | TX | cv | - | - | 5 | - | - | 5 | 29 |
| MBCB | Matagorda Bay | TX | cv | - | - | 7.8 | - | - | 7.8 | 83 |
| MBTP | Matagorda Bay | TX | cv | 5.6 | 5.2 | 2.9 | no | no | 4.6 | 68 |
| MBGP | Matagorda Bay | TX | cv | 2.4 | 3.8 | 3.7 | no | no | 3.3 | 45 |
| MBLR | Matagorda Bay | TX | cv | 6.6 | 4 | - | - | - | 5.3 | 33 |
| ESSP | Espiritu Santo | TX | cv | 2.3 | 3.2 | - | - | - | 2.8 | 30 |
| ESBD | Espiritu Santo | TX | cv | - | - | 3.7 | - | - | 3.7 | 2 |
| SAMP | San Antonio Bay | TX | cv | 5.7 | 10 | - | - | - | 8 | 71 |
| SAPP | San Antonio Bay | TX | cv | 4.4 | 6.2 | - | - | - | 5.3 | 53 |
| MBAR | Mesquite Bay | TX | cv | 6.8 | 3.3 | 5.2 | no | no | 5.1 | 43 |

Table B.4 **Dieldrin** (Continued)

| SITE | Location | State | Species | 1986 mean | 1987 mean | 1988 mean | Diff | Trend | Overall mean | Overall cv% |
|---|---|---|---|---|---|---|---|---|---|---|
| CBCR | Copano Bay | TX | cv | 2.9 | 2.4 | 7.1 | no | no | 4.1 | 68 |
| ABHI | Aransas Bay | TX | cv | - | - | 3.3 | - | - | 3.3 | 50 |
| ABLR | Aransas Bay | TX | cv | 4.1 | 3.2 | 3 | no | no | 3.4 | 31 |
| CCBH | Corpus Christi | TX | cv | - | - | 6.2 | - | - | 6.2 | 57 |
| CCIC | Corpus Christi | TX | cv | 20 | - | 2.3 | - | - | 11 | 89 |
| CCNB | Corpus Christi | TX | cv | 7.2 | 3.3 | 3.6 | no | no | 4.7 | 69 |
| LMSB | L. Laguna Madre | TX | cv | 1.3 | .71 | 2.3 | no | no | 1.4 | 95 |
| LMPI | Laguna Madre | TX | cv | - | - | 1.8 | - | - | 1.8 | - |
| IBNJ | Imperial Beach | CA | mc | 7.4 | 6.3 | 4.5 | no | no | 6.1 | 23 |
| SDHI | San Diego Bay | CA | me | nd | 57 | 1.8 | yes | no | 20 | - |
| PLLH | Pt. Loma | CA | mc | 8.3 | 21 | nd | yes | no | 9.7 | 96 |
| MBVB | Mission Bay | CA | me | 3.7 | 4.3 | 1.6 | no | no | 3.2 | 68 |
| LJLJ | La Jolla | CA | mc | 3.4 | 9.5 | .87 | yes | no | 4.6 | 91 |
| OSBJ | Oceanside | CA | me | 1.9 | 8.7 | 4.1 | yes | no | 4.9 | 71 |
| NBWJ | Newport Bch. | CA | mc | .97 | 17 | 4.6 | yes | no | 7.5 | 100 |
| ABWJ | Anaheim Bay | CA | mc | 28 | 56 | 25 | no | no | 36 | 49 |
| SPFP | San Pedro Hrb. | CA | me | 4.3 | 25 | 3.3 | no | no | 11 | 100 |
| PVRP | Palos Verdes | CA | mc | 6.1 | 28 | 5.5 | no | no | 13 | 99 |
| SCBR | S. Catalina Is. | CA | mc | 2.1 | 3.7 | 2.3 | no | no | 2.7 | 41 |
| MDSJ | Marina Del Rey | CA | me | 10 | 32 | 8 | no | no | 17 | 98 |
| PDPD | Pt. Dume | CA | mc | 4.1 | 20 | 4.1 | no | no | 9.3 | 92 |
| SCFP | Santa Cruz Is. | CA | mc | 2.3 | 2.7 | 2.9 | no | no | 2.6 | 34 |
| SANM | San Miguel Is. | CA | mc | - | - | 5.9 | - | - | 5.9 | 5 |
| SBSB | Pt. S. Barbara | CA | mc | 3.2 | 6.9 | 1.2 | yes | no | 3.8 | 73 |
| PCPC | Pt. Conception | CA | mc | 2.3 | 8.2 | 2.2 | no | no | 4.2 | 76 |
| SLSL | San Luis Ob. Bay | CA | mc | 13 | 18 | 5 | no | no | 12 | 60 |
| SSSS | San Simeon Pt. | CA | mc | 2.6 | 15 | 4 | no | no | 7.1 | 91 |
| PGLP | Pacific Grove | CA | mc | 16 | 35 | 15 | no | no | 22 | 48 |
| MBSC | Monterey Bay | CA | mc | 28 | 45 | 18 | yes | no | 30 | 43 |
| FIEL | Farallon Is. | CA | mc | - | - | 15 | - | - | 15 | 46 |
| SFDB | San Fran. Bay | CA | me | 110 | 95 | 17 | no | no | 73 | 76 |
| SFSM | San Fran. Bay | CA | me | 55 | 120 | 19 | no | no | 64 | 97 |
| SFEM | San Fran. Bay | CA | me | - | 79 | 17 | - | - | 48 | 73 |
| TBSR | Tomales Bay | CA | me | 1.5 | 6.3 | 2.8 | yes | no | 3.5 | 78 |
| BBBE | Bodega Bay | CA | mc | 20 | 5.3 | 9.9 | no | no | 12 | 61 |
| PALH | Pt. Arena | CA | mc | 7.6 | 15 | 7.2 | no | no | 9.9 | 42 |
| PDSC | Pt. Delgada | CA | mc | 14 | 12 | 4.3 | no | no | 9.8 | 52 |
| HMBJ | Humboldt Bay | CA | mc | 1.8 | 2.7 | 2.4 | no | no | 2.3 | 70 |
| SGSG | Pt. St. George | CA | mc | 8.7 | 6.7 | 4.6 | no | no | 6.7 | 34 |
| CBCH | Coos Bay | OR | mc | 7.8 | 6.2 | 6.4 | no | no | 6.8 | 36 |
| CBRP | Coos Bay | OR | me | 2.5 | 11 | 4.7 | no | no | 6.2 | 76 |
| YBOP | Yaquina Bay | OR | me | 1.4 | 5.6 | 3.7 | yes | no | 3.6 | 54 |
| YHYH | Yaquina Head | OR | mc | 1.3 | 2 | 8.2 | yes | i | 4.1 | 87 |
| TBHP | Tillamook Bay | OR | me | 1.1 | 7.4 | nd | no | no | 1.5 | 170 |
| CRSJ | Columbia R. | OR | me | 4.9 | 7 | 4 | no | no | 5.3 | 53 |
| GHWJ | Gray's Hrb. | WA | mc | 7.7 | 6.3 | 10 | no | no | 8 | 42 |
| JFCF | S. Juan de Fuca | WA | mc | 7.4 | 4.2 | 7.6 | no | no | 6.4 | 58 |
| SSBI | South Puget Snd. | WA | me | 4.6 | 7 | 3.3 | no | no | 5 | 70 |
| CBTP | Comm. Bay | WA | me | 5 | 14 | nd | no | no | 4.1 | 120 |
| EBFR | Elliott Bay | WA | me | 12 | 2.2 | 2.9 | no | no | 5.7 | 95 |
| SIWP | Sinclair Inlet | WA | me | 2.8 | 2.7 | 1.5 | no | no | 2.3 | 31 |
| WIPP | Whidbey Is. | WA | me | 2.5 | 5.7 | 2.2 | no | no | 3.5 | 81 |
| BBSM | Bellingham Bay | WA | me | 3.2 | 7.4 | nd | yes | no | 3.5 | 100 |
| PRPR | Pt. Roberts | WA | me | 2.4 | 5.7 | 3 | no | no | 3.9 | 74 |
| PVMC | Port Valdez | AK | me | .92 | .67 | nd | no | no | .53 | - |
| UISB | Unakwit Inlet | AK | me | 1.4 | 2.4 | nd | no | no | 1.2 | 120 |
| BPBP | Barber's Pt. | HI | os | 14 | 8.7 | 1.6 | no | no | 8.2 | 85 |
| HHKL | Honolulu Hrb. | HI | os | .13 | 8.6 | 13 | no | no | 7.2 | 97 |
| KAUI | Kauai | HI | os | - | - | 1.5 | - | - | 1.5 | - |

Table B.5 Summary of 1986 through 1988 data for **Lindane** (ng/g dry) in mollusks.

| SITE | Location | State | Species | 1986 mean | 1987 mean | 1988 mean | Diff | Trend | Overall mean | Overall cv% |
|---|---|---|---|---|---|---|---|---|---|---|
| PBSI | Penobscot Bay | ME | me | .57 | nd | 3.9 | - | - | 1.5 | - |
| PBPI | Penobscot Bay | ME | me | nd | nd | 1.9 | - | - | .63 | - |
| MSSP | Merriconeag Snd. | ME | me | - | - | 2.9 | - | - | 2.9 | 33 |
| CAGH | Cape Ann | MA | me | - | 2.1 | 2.4 | - | - | 2.3 | 100 |
| SHFP | Salem Harbor | MA | me | - | - | .41 | - | - | .41 | 27 |
| BHDI | Boston Hrb. | MA | me | 5 | nd | 2.1 | no | no | 2.4 | 130 |
| BHDB | Boston Hrb. | MA | me | 1.9 | 1.2 | 2.1 | no | no | 1.7 | 100 |
| BHHB | Boston Hrb. | MA | me | 2.2 | 1.5 | 2.6 | no | no | 2.1 | 55 |
| BHBI | Boston Hrb. | MA | me | 3.6 | nd | nd | - | - | 1.2 | 160 |
| BBRH | Buzzards Bay | MA | me | nd | nd | nd | - | - | nd | - |
| BBAR | Buzzards Bay | MA | me | 4 | 9.8 | nd | - | - | 4.6 | - |
| BBGN | Buzzards Bay | MA | me | 1.4 | 1.9 | nd | - | - | 1.1 | - |
| NBDU | Narr. Bay | RI | me | 15 | 1.3 | - | - | - | 8.2 | 94 |
| NBDI | Narr. Bay | RI | me | .63 | .7 | 2.4 | yes | i | 1.2 | 96 |
| BIBI | Block Is. | RI | me | - | 1.8 | 1.3 | - | - | 1.6 | 23 |
| LICR | Long Is. Snd. | CT | me | 3.1 | nd | nd | - | - | 1 | - |
| LINH | Long Is. Snd. | CT | me | 2.6 | 6.3 | nd | yes | no | 3 | 100 |
| LIHR | Long Is. Snd. | CT | me | nd | 2.5 | 2.6 | no | no | 1.9 | 74 |
| LISI | Long Is. Snd. | CT | me | 9 | 1.9 | nd | yes | d | 3.6 | 140 |
| LIHU | Long Is. Snd. | NY | me | 2.7 | 3.8 | 3.4 | no | no | 3.3 | 73 |
| LIPJ | Long Is. Snd. | NY | me | 5.9 | 2.1 | nd | yes | d | 2.6 | 120 |
| LIMR | Long Is. Snd. | NY | me | 18 | 1.6 | 4 | yes | no | 7.7 | 110 |
| LIHH | Long Is. Snd. | NY | me | 8.8 | 1.4 | 7 | no | no | 5.7 | 77 |
| LITN | Long Is. Snd. | NY | me | 7.4 | 2.1 | 2.6 | no | no | 4 | 69 |
| MBTH | Moriches Bay | NY | me | 3.1 | .33 | nd | - | - | 1.2 | - |
| HRJB | Hud./Rar. Est | NY | me | 2.3 | .2 | nd | - | - | .82 | - |
| HRUB | Hud./Rar. Est. | NY | me | .87 | .27 | nd | - | - | .38 | - |
| HRLB | Hud./Rar. Est. | NY | me | 25 | 1 | .43 | yes | d | 8.8 | 200 |
| NYSH | N.Y. Bight | NJ | me | 5.8 | .11 | 5.2 | no | no | 3.7 | 110 |
| NYLB | N.Y. Bight | NJ | me | 3.7 | .55 | nd | yes | d | 1.4 | 130 |
| NYSR | N.Y. Bight | NJ | me | 41 | 1.6 | 2.2 | no | no | 12 | 210 |
| BIBL | Barnegat Inlet | NJ | me | - | - | 1.3 | - | - | 1.3 | - |
| AIAC | Absecon Inlet | NJ | me | - | - | nd | - | - | nd | - |
| DBFE | Delaware Bay | DE | cv | 2.6 | 2.7 | 5.6 | no | no | 3.6 | 60 |
| DBBD | Delaware Bay | DE | cv | 1.8 | 6.3 | 2.8 | no | no | 3.6 | 61 |
| DBAP | Delaware Bay | DE | cv | 2.1 | 4.2 | 5.8 | no | no | 4 | 51 |
| DBKI | Delaware Bay | DE | cv | 3.5 | 2.9 | 3.2 | no | no | 3.2 | 44 |
| CBMP | Ches. Bay | MD | cv | 5.7 | 2.2 | 2.6 | no | no | 3.5 | 130 |
| CBHP | Ches. Bay | MD | cv | .57 | 2.5 | 3.4 | no | no | 2.2 | 72 |
| CBHG | Ches. Bay | MD | cv | 2.4 | 1.1 | 2.6 | no | no | 2 | 38 |
| CBIB | Ches. Bay | VA | cv | 3 | 2.9 | - | - | - | 3 | 51 |
| CBCC | Ches. Bay | VA | cv | .48 | 3.4 | 1.3 | yes | no | 1.7 | 91 |
| CBDP | Ches. Bay | VA | cv | nd | .13 | 2.4 | - | - | .85 | - |
| CBCI | Chincoteague Bay | VA | cv | nd | .75 | .29 | - | - | .34 | - |
| QIUB | Quinby Inlet | VA | cv | nd | .55 | nd | - | - | .18 | - |
| RSJC | Roanoke Snd. | NC | cv | nd | .74 | 1.2 | - | - | .66 | - |
| PSWB | Pamlico Snd. | NC | cv | nd | 2.6 | nd | - | - | .86 | - |
| CFBI | Cape Fear | NC | cv | nd | .62 | 1.5 | - | - | .7 | - |
| CHFJ | Charleston Hrb. | SC | cv | 2 | .96 | .53 | no | no | 1 | 77 |
| CHSF | Charleston Hrb. | SC | cv | 2.8 | 3.9 | 1.4 | no | no | 2.7 | 58 |
| SRTI | Savannah R. Est. | GA | cv | .75 | .28 | 1.2 | no | no | .74 | 85 |
| SSSI | Sapelo Snd. | GA | cv | nd | .76 | nd | - | - | .25 | - |
| SJCB | St. Johns R. | FL | cv | 1.6 | 2.4 | 2.4 | no | no | 2.1 | 87 |
| MRCB | Matanzas R. | FL | cv | nd | 3.9 | .38 | yes | no | 1.4 | 130 |
| IRSR | Indian River | FL | cv | - | - | .67 | - | - | .67 | - |
| NMML | North Miami | FL | cv | - | - | .53 | - | - | .53 | - |
| BBPC | Biscayne Bay | FL | cv | nd | 5.5 | - | - | - | 2.8 | - |
| EVFU | Everglades | FL | cv | nd | .21 | 2.5 | - | - | .91 | - |
| RBHC | Rookery Bay | FL | cv | nd | nd | .95 | - | - | .32 | - |

Table B.5 **Lindane** (Continued)

| SITE | Location | State | Species | 1986 mean | 1987 mean | 1988 mean | Diff | Trend | Overall mean | Overall cv% |
|---|---|---|---|---|---|---|---|---|---|---|
| NBNB | Naples Bay | FL | cv | .34 | .81 | 1.6 | no | no | .91 | 82 |
| CBBI | Charlotte Hrb. | FL | cv | nd | nd | - | - | - | nd | - |
| CBFM | Charlotte Hrb. | FL | cv | - | - | 1.4 | - | - | 1.4 | 110 |
| TBMK | Tampa Bay | FL | cv | nd | 2 | .94 | yes | no | .99 | 91 |
| TBCB | Tampa Bay | FL | cv | .13 | nd | .43 | - | - | .19 | - |
| TBHB | Tampa Bay | FL | cv | .76 | 1 | 1.3 | no | no | .94 | 27 |
| TBPB | Tampa Bay | FL | cv | 1.2 | 2 | 2.8 | no | no | 2 | 59 |
| TBOT | Tampa Bay | FL | cv | - | - | 1.4 | - | - | 1.4 | 97 |
| CKBP | Cedar Key | FL | cv | .66 | .47 | 1.4 | no | no | .85 | 130 |
| SRWP | Suwannee River | FL | cv | - | - | 1.6 | - | - | 1.6 | 58 |
| APCP | Apalachicola Bay | FL | cv | 1.5 | .45 | 3.8 | no | no | 1.9 | 110 |
| APDB | Apalachicola Bay | FL | cv | .82 | 2 | 1.5 | no | no | 1.5 | 64 |
| PCMP | Panama City | FL | cv | - | - | .12 | - | - | .12 | - |
| SAWB | St. Andrew Bay | FL | cv | 1.4 | 1.5 | .82 | no | no | 1.2 | 60 |
| CBSP | Choctawhat. Bay | FL | cv | .51 | 2.3 | .38 | no | no | 1.1 | 130 |
| CBSR | Choctawhat. Bay | FL | cv | .097 | .77 | 2.5 | no | no | 1.1 | 130 |
| PBPH | Pensacola Bay | FL | cv | - | - | 3.6 | - | - | 3.6 | 21 |
| PBIB | Pensacola Bay | FL | cv | .59 | 4.7 | .46 | no | no | 1.6 | 140 |
| MBHI | Mobile Bay | AL | cv | - | - | 2.6 | - | - | 2.6 | 39 |
| MBCP | Mobile Bay | AL | cv | .85 | 1.4 | 1.3 | no | no | 1.2 | 46 |
| MSPB | Miss. Snd. | MS | cv | .47 | .15 | 1.9 | yes | no | .82 | 98 |
| MSBB | Miss. Snd. | MS | cv | 2 | 2.6 | .69 | yes | no | 1.8 | 84 |
| MSPC | Miss. Snd. | MS | cv | 1.3 | .66 | 1.1 | no | no | 1 | 66 |
| LBNO | Lake Borgne | LA | cv | - | - | 1.2 | - | - | 1.2 | 81 |
| LBMP | Lake Borgne | LA | cv | 1.2 | 1.6 | 1 | no | no | 1.3 | 46 |
| BSBG | Breton Snd. | LA | cv | .77 | .68 | .57 | no | no | .67 | 70 |
| BSSI | Breton Snd. | LA | cv | 1.4 | 1.5 | 1.1 | no | no | 1.3 | 58 |
| MRTP | Miss. River | LA | cv | - | - | 1.4 | - | - | 1.4 | 62 |
| MRPL | Miss. River | LA | cv | - | - | .26 | - | - | .26 | - |
| BBSD | Barataria Bay | LA | cv | .8 | 2 | 2.5 | no | no | 1.8 | 78 |
| BBTB | Barataria Bay | LA | cv | - | - | .69 | - | - | .69 | 72 |
| BBMB | Barataria Bay | LA | cv | .89 | 2.2 | 1.4 | no | no | 1.5 | 62 |
| TBLF | Terrebonne Bay | LA | cv | .66 | .28 | .62 | no | no | .52 | 59 |
| TBLB | Terrebonne Bay | LA | cv | .45 | .82 | .62 | no | no | .63 | 75 |
| CLCL | Caillou Lake | LA | cv | .72 | 1.5 | .97 | no | no | 1.1 | 51 |
| ABOB | Atchafalaya Bay | LA | cv | 1 | 2.5 | 1.9 | no | no | 1.8 | 56 |
| VBSP | Vermillion Bay | LA | cv | .76 | 1.1 | 1.8 | yes | i | 1.2 | 44 |
| JHJH | J. Hrb. Bayou | LA | cv | .91 | .86 | .12 | no | no | .63 | 63 |
| CLLC | Calcasieu Lake | LA | cv | - | - | nd | - | - | nd | - |
| CLSJ | Calcasieu Lake | LA | cv | 1 | 1.2 | .6 | no | no | .93 | 65 |
| SLBB | Sabine Lake | TX | cv | .58 | .47 | 3.9 | no | no | 1.7 | 180 |
| GBHR | Galveston Bay | TX | cv | 2.4 | 4.4 | 2 | no | no | 2.9 | 47 |
| GBSC | Galveston Bay | TX | cv | - | - | 9.3 | - | - | 9.3 | 70 |
| GBYC | Galveston Bay | TX | cv | 5 | 8.4 | 6.6 | no | no | 6.6 | 42 |
| GBTD | Galveston Bay | TX | cv | 2.6 | 8 | 2.8 | no | no | 4.5 | 62 |
| GBCR | Galveston Bay | TX | cv | 1.5 | 3 | 2 | no | no | 2.2 | 43 |
| GBOB | Galveston Bay | TX | cv | - | - | 1.2 | - | - | 1.2 | 25 |
| BRFS | Brazos River | TX | cv | - | - | 1.2 | - | - | 1.2 | 51 |
| MBEM | Matagorda Bay | TX | cv | 1.3 | 1.6 | .92 | no | no | 1.3 | 53 |
| MBDI | Matagorda Bay | TX | cv | - | - | 1.9 | - | - | 1.9 | 65 |
| MBCB | Matagorda Bay | TX | cv | - | - | 1.3 | - | - | 1.3 | 88 |
| MBTP | Matagorda Bay | TX | cv | .24 | 1.5 | .96 | no | no | .92 | 83 |
| MBGP | Matagorda Bay | TX | cv | .41 | 1.3 | .98 | no | no | .89 | 83 |
| MBLR | Matagorda Bay | TX | cv | .76 | .68 | - | - | - | .72 | 65 |
| ESSP | Espiritu Santo | TX | cv | .5 | 1.5 | - | - | - | 1 | 56 |
| ESBD | Espiritu Santo | TX | cv | - | - | .6 | - | - | .6 | 29 |
| SAMP | San Antonio Bay | TX | cv | 2.1 | 2.4 | - | - | - | 2.3 | 25 |
| SAPP | San Antonio Bay | TX | cv | 1.2 | 2.4 | - | - | - | 1.8 | 40 |
| MBAR | Mesquite Bay | TX | cv | .37 | 2.5 | 1.7 | yes | no | 1.5 | 72 |

Table B.5 **Lindane** (Continued)

| SITE | Location | State | Species | 1986 mean | 1987 mean | 1988 mean | Diff | Trend | Overall mean | Overall cv% |
|---|---|---|---|---|---|---|---|---|---|---|
| CBCR | Copano Bay | TX | cv | .13 | 1.3 | 1.9 | no | no | 1.1 | 83 |
| ABHI | Aransas Bay | TX | cv | - | - | 1.2 | - | - | 1.2 | 25 |
| ABLR | Aransas Bay | TX | cv | 1.1 | 2.1 | .99 | no | no | 1.4 | 58 |
| CCBH | Corpus Christi | TX | cv | - | - | 1.3 | - | - | 1.3 | 34 |
| CCIC | Corpus Christi | TX | cv | 4.1 | - | 1.3 | - | - | 2.7 | 65 |
| CCNB | Corpus Christi | TX | cv | 1 | .53 | 1.2 | no | no | .93 | 71 |
| LMSB | L. Laguna Madre | TX | cv | nd | .46 | .31 | - | - | .26 | - |
| LMPI | Laguna Madre | TX | cv | - | - | 2.2 | - | - | 2.2 | 57 |
| IBNJ | Imperial Beach | CA | mc | 1.8 | nd | nd | - | - | .66 | - |
| SDHI | San Diego Bay | CA | me | nd | nd | nd | - | - | nd | - |
| PLLH | Pt. Loma | CA | mc | 3 | 7.3 | nd | yes | no | 3.4 | 110 |
| MBVB | Mission Bay | CA | me | 1 | nd | nd | - | - | .33 | - |
| LJLJ | La Jolla | CA | mc | 2.2 | 5.2 | nd | yes | no | 2.5 | 100 |
| OSBJ | Oceanside | CA | me | .87 | nd | nd | - | - | .29 | - |
| NBWJ | Newport Bch. | CA | mc | .36 | nd | .26 | no | no | .21 | 96 |
| ABWJ | Anaheim Bay | CA | mc | 3.3 | 9 | nd | yes | no | 4.1 | 100 |
| SPFP | San Pedro Hrb. | CA | me | 2.2 | 3.4 | nd | yes | no | 1.9 | 86 |
| PVRP | Palos Verdes | CA | mc | 2.1 | 1.4 | nd | - | - | 1.1 | - |
| SCBR | S. Catalina Is. | CA | mc | 1.2 | 1.1 | .4 | no | no | .91 | 120 |
| MDSJ | Marina Del Rey | CA | me | .9 | 12 | nd | yes | no | 4.4 | 190 |
| PDPD | Pt. Dume | CA | mc | .8 | 1.3 | nd | - | - | .69 | - |
| SCFP | Santa Cruz Is. | CA | mc | .47 | nd | nd | - | - | .16 | - |
| SANM | San Miguel Is. | CA | mc | - | - | .39 | - | - | .39 | 18 |
| SBSB | Pt. S. Barbara | CA | mc | 1.3 | .4 | nd | - | - | .57 | - |
| PCPC | Pt. Conception | CA | mc | 2.4 | nd | nd | - | - | .82 | - |
| SLSL | San Luis Ob. Bay | CA | mc | 1.5 | 3 | .63 | no | no | 1.7 | 100 |
| SSSS | San Simeon Pt. | CA | mc | 1.3 | 2.7 | .45 | no | no | 1.5 | 110 |
| PGLP | Pacific Grove | CA | mc | .93 | 5.8 | .32 | yes | no | 2.3 | 110 |
| MBSC | Monterey Bay | CA | mc | 1 | 4.5 | .14 | yes | no | 1.9 | 110 |
| FIEL | Farallon Is. | CA | mc | - | - | .16 | - | - | .16 | - |
| SFDB | San Fran. Bay | CA | me | 4.2 | 8.4 | nd | yes | no | 4.2 | 91 |
| SFSM | San Fran. Bay | CA | me | 1.3 | 7.7 | nd | yes | no | 3 | 140 |
| SFEM | San Fran. Bay | CA | me | - | 3.8 | nd | - | - | 1.9 | 110 |
| TBSR | Tomales Bay | CA | me | .5 | 1.3 | nd | - | - | .61 | - |
| BBBE | Bodega Bay | CA | mc | 2.2 | 1.5 | .43 | no | no | 1.4 | 110 |
| PALH | Pt. Arena | CA | mc | 1.4 | 1.1 | .087 | no | no | .86 | 130 |
| PDSC | Pt. Delgada | CA | mc | 5.3 | 8.5 | 1 | yes | no | 4.9 | 76 |
| HMBJ | Humboldt Bay | CA | mc | .93 | 1.3 | nd | no | no | .75 | 110 |
| SGSG | Pt. St. George | CA | mc | 2.1 | 2.7 | .92 | yes | no | 1.9 | 45 |
| CBCH | Coos Bay | OR | mc | 2.8 | 1.7 | 2 | no | no | 2.2 | 56 |
| CBRP | Coos Bay | OR | me | 1.7 | 4.5 | 2 | no | no | 2.7 | 88 |
| YBOP | Yaquina Bay | OR | me | .77 | 1 | 2.8 | no | no | 1.5 | 110 |
| YHYH | Yaquina Head | OR | mc | .74 | 3.3 | 2.1 | no | no | 2.1 | 66 |
| TBHP | Tillamook Bay | OR | me | 1.3 | 3 | 2.4 | no | no | 2 | 48 |
| CRSJ | Columbia R. | OR | me | 1.1 | .33 | .82 | no | no | .76 | 74 |
| GHWJ | Gray's Hrb. | WA | mc | 2.5 | 2.3 | 4 | no | no | 2.9 | 58 |
| JFCF | S. Juan de Fuca | WA | mc | 2.5 | 1.3 | 2.4 | no | no | 2.1 | 60 |
| SSBI | South Puget Snd. | WA | me | 1.7 | 1.7 | 1.1 | no | no | 1.5 | 40 |
| CBTP | Comm. Bay | WA | me | 1.2 | .67 | .15 | no | no | .68 | 110 |
| EBFR | Elliott Bay | WA | me | .31 | nd | 1.9 | - | - | .75 | - |
| SIWP | Sinclair Inlet | WA | me | nd | .67 | 2.1 | - | - | 1 | - |
| WIPP | Whidbey Is. | WA | me | 1.5 | 1.3 | 2.2 | no | no | 1.7 | 72 |
| BBSM | Bellingham Bay | WA | me | .47 | 1.3 | 5.2 | no | no | 2.3 | 100 |
| PRPR | Pt. Roberts | WA | me | .95 | .67 | 6.6 | no | no | 3 | 110 |
| PVMC | Port Valdez | AK | me | 1.6 | 1.4 | 5.7 | no | no | 2.9 | 85 |
| UISB | Unakwit Inlet | AK | me | 1.2 | .67 | 6.5 | yes | no | 2.8 | 100 |
| BPBP | Barber's Pt. | HI | os | 1.1 | nd | .88 | - | - | .66 | - |
| HHKL | Honolulu Hrb. | HI | os | nd | .33 | .35 | - | - | .23 | - |
| KAUI | Kauai | HI | os | - | - | .73 | - | - | .73 | 86 |

Table B.6 Summary of 1986 through 1988 data for **Hexachlorobenzene** (ng/g dry) in mollusks.

| SITE | Location | State | Species | 1986 mean | 1987 mean | 1988 mean | Diff | Trend | Overall mean | Overall cv% |
|---|---|---|---|---|---|---|---|---|---|---|
| PBSI | Penobscot Bay | ME | me | 4.1 | nd | 1.4 | yes | no | 1.8 | 100 |
| PBPI | Penobscot Bay | ME | me | .7 | nd | .7 | - | - | .47 | - |
| MSSP | Merriconeag Snd. | ME | me | - | - | nd | - | - | nd | - |
| CAGH | Cape Ann | MA | me | - | nd | .77 | - | - | .39 | 120 |
| SHFP | Salem Harbor | MA | me | - | - | .42 | - | - | .42 | 11 |
| BHDI | Boston Hrb. | MA | me | 7.7 | nd | nd | - | - | 2.6 | - |
| BHDB | Boston Hrb. | MA | me | nd | nd | 1.1 | - | - | .36 | - |
| BHHB | Boston Hrb. | MA | me | .43 | nd | .13 | - | - | .19 | - |
| BHBI | Boston Hrb. | MA | me | nd | nd | nd | - | - | nd | - |
| BBRH | Buzzards Bay | MA | me | nd | nd | 1.4 | - | - | .51 | - |
| BBAR | Buzzards Bay | MA | me | nd | nd | 1.4 | - | - | .46 | - |
| BBGN | Buzzards Bay | MA | me | nd | nd | 1.7 | - | - | .58 | - |
| NBDU | Narr. Bay | RI | me | nd | nd | - | - | - | nd | - |
| NBDI | Narr. Bay | RI | me | .77 | .43 | 1.1 | no | no | .78 | 110 |
| BIBI | Block Is. | RI | me | - | nd | .43 | - | - | .21 | 110 |
| LICR | Long Is. Snd. | CT | me | .46 | .11 | 1.7 | yes | no | .75 | 110 |
| LINH | Long Is. Snd. | CT | me | 2.3 | 1.2 | 1.2 | yes | no | 1.6 | 38 |
| LIHR | Long Is. Snd. | CT | me | nd | nd | 1.2 | - | - | .47 | - |
| LISI | Long Is. Snd. | CT | me | 1.5 | nd | .84 | yes | no | .77 | 88 |
| LIHU | Long Is. Snd. | NY | me | nd | nd | 1.3 | - | - | .44 | - |
| LIPJ | Long Is. Snd. | NY | me | nd | nd | .77 | - | - | .26 | - |
| LIMR | Long Is. Snd. | NY | me | 1 | .24 | .52 | no | no | .59 | 100 |
| LIHH | Long Is. Snd. | NY | me | .84 | .87 | .37 | no | no | .69 | 120 |
| LITN | Long Is. Snd. | NY | me | .98 | 3.1 | 1.3 | no | no | 1.8 | 64 |
| MBTH | Moriches Bay | NY | me | nd | nd | nd | - | - | nd | - |
| HRJB | Hud./Rar. Est | NY | me | nd | .57 | .31 | - | - | .29 | - |
| HRUB | Hud./Rar. Est. | NY | me | 1.1 | .43 | .67 | - | - | .74 | - |
| HRLB | Hud./Rar. Est. | NY | me | nd | 1 | 1.3 | - | - | .78 | - |
| NYSH | N.Y. Bight | NJ | me | nd | .4 | .63 | - | - | .34 | - |
| NYLB | N.Y. Bight | NJ | me | nd | nd | .37 | - | - | .12 | - |
| NYSR | N.Y. Bight | NJ | me | 3.2 | nd | nd | - | - | .8 | - |
| BIBL | Barnegat Inlet | NJ | me | - | - | .33 | - | - | .33 | - |
| AIAC | Absecon Inlet | NJ | me | - | - | .47 | - | - | .47 | - |
| DBFE | Delaware Bay | DE | cv | nd | nd | nd | - | - | nd | - |
| DBBD | Delaware Bay | DE | cv | nd | nd | nd | - | - | nd | - |
| DBAP | Delaware Bay | DE | cv | nd | nd | nd | - | - | nd | - |
| DBKI | Delaware Bay | DE | cv | nd | .86 | .23 | - | - | .36 | - |
| CBMP | Ches. Bay | MD | cv | 5.6 | nd | .1 | - | - | 1.9 | - |
| CBHP | Ches. Bay | MD | cv | nd | 1.1 | nd | - | - | .38 | - |
| CBHG | Ches. Bay | MD | cv | .57 | nd | nd | - | - | .19 | - |
| CBIB | Ches. Bay | VA | cv | 1.9 | .25 | - | - | - | 1.1 | 110 |
| CBCC | Ches. Bay | VA | cv | .23 | .097 | nd | - | - | .11 | - |
| CBDP | Ches. Bay | VA | cv | 1 | 1.9 | .57 | - | - | 1.1 | 71 |
| CBCI | Chincoteague Bay | VA | cv | nd | nd | .073 | - | - | .024 | - |
| QIUB | Quinby Inlet | VA | cv | nd | nd | nd | - | - | nd | - |
| RSJC | Roanoke Snd. | NC | cv | nd | nd | .11 | - | - | .036 | - |
| PSWB | Pamlico Snd. | NC | cv | nd | nd | nd | - | - | nd | - |
| CFBI | Cape Fear | NC | cv | nd | nd | 5.4 | - | - | 1.8 | - |
| CHFJ | Charleston Hrb. | SC | cv | nd | nd | nd | - | - | nd | - |
| CHSF | Charleston Hrb. | SC | cv | nd | nd | nd | - | - | nd | - |
| SRTI | Savannah R. Est. | GA | cv | nd | nd | nd | - | - | nd | - |
| SSSI | Sapelo Snd. | GA | cv | nd | nd | nd | - | - | nd | - |
| SJCB | St. Johns R. | FL | cv | nd | 1.9 | 1.5 | - | - | 1.1 | - |
| MRCB | Matanzas R. | FL | cv | nd | nd | nd | - | - | nd | - |
| IRSR | Indian River | FL | cv | - | - | nd | - | - | nd | - |
| NMML | North Miami | FL | cv | - | - | nd | - | - | nd | - |
| BBPC | Biscayne Bay | FL | cv | nd | 4.3 | - | - | - | 2.2 | - |
| EVFU | Everglades | FL | cv | nd | .55 | .15 | - | - | .26 | - |
| RBHC | Rookery Bay | FL | cv | .18 | 1.4 | nd | - | - | .54 | - |

Table B.6 **Hexachlorobenzene** (Continued)

| SITE | Location | State | Species | 1986 mean | 1987 mean | 1988 mean | Diff | Trend | Overall mean | Overall cv% |
|---|---|---|---|---|---|---|---|---|---|---|
| NBNB | Naples Bay | FL | cv | .45 | nd | nd | - | - | .15 | - |
| CBBI | Charlotte Hrb. | FL | cv | nd | .083 | - | - | - | .055 | - |
| CBFM | Charlotte Hrb. | FL | cv | - | - | nd | - | - | nd | - |
| TBMK | Tampa Bay | FL | cv | .23 | .2 | .027 | - | - | .15 | - |
| TBCB | Tampa Bay | FL | cv | 1.1 | nd | .49 | - | - | .51 | - |
| TBHB | Tampa Bay | FL | cv | .083 | nd | nd | - | - | .036 | - |
| TBPB | Tampa Bay | FL | cv | .44 | nd | nd | - | - | .11 | - |
| TBOT | Tampa Bay | FL | cv | - | - | nd | - | - | nd | - |
| CKBP | Cedar Key | FL | cv | 1 | .16 | .093 | - | - | .36 | - |
| SRWP | Suwannee River | FL | cv | - | - | .15 | - | - | .15 | - |
| APCP | Apalachicola Bay | FL | cv | nd | .087 | nd | - | - | .033 | - |
| APDB | Apalachicola Bay | FL | cv | .39 | .24 | nd | - | - | .16 | - |
| PCMP | Panama City | FL | cv | - | - | nd | - | - | nd | - |
| SAWB | St. Andrew Bay | FL | cv | nd | nd | nd | - | - | nd | - |
| CBSP | Choctawhat. Bay | FL | cv | .47 | nd | .61 | - | - | .36 | - |
| CBSR | Choctawhat. Bay | FL | cv | nd | nd | .19 | - | - | .062 | - |
| PBPH | Pensacola Bay | FL | cv | - | - | nd | - | - | nd | - |
| PBIB | Pensacola Bay | FL | cv | nd | 1.2 | .053 | - | - | .33 | - |
| MBHI | Mobile Bay | AL | cv | - | - | nd | - | - | nd | - |
| MBCP | Mobile Bay | AL | cv | nd | nd | nd | - | - | nd | - |
| MSPB | Miss. Snd. | MS | cv | .057 | nd | nd | - | - | .019 | - |
| MSBB | Miss. Snd. | MS | cv | .03 | nd | nd | - | - | .01 | - |
| MSPC | Miss. Snd. | MS | cv | nd | .47 | nd | - | - | .2 | - |
| LBNO | Lake Borgne | LA | cv | - | - | nd | - | - | nd | - |
| LBMP | Lake Borgne | LA | cv | .55 | .25 | nd | - | - | .27 | - |
| BSBG | Breton Snd. | LA | cv | nd | .22 | nd | - | - | .083 | - |
| BSSI | Breton Snd. | LA | cv | .06 | .32 | .22 | - | - | .22 | - |
| MRTP | Miss. River | LA | cv | - | - | nd | - | - | nd | - |
| MRPL | Miss. River | LA | cv | - | - | .17 | - | - | .17 | - |
| BBSD | Barataria Bay | LA | cv | nd | .69 | .21 | - | - | .3 | - |
| BBTB | Barataria Bay | LA | cv | - | - | .08 | - | - | .08 | - |
| BBMB | Barataria Bay | LA | cv | .12 | nd | nd | - | - | .04 | - |
| TBLF | Terrebonne Bay | LA | cv | nd | .22 | nd | - | - | .073 | - |
| TBLB | Terrebonne Bay | LA | cv | nd | nd | nd | - | - | nd | - |
| CLCL | Caillou Lake | LA | cv | .067 | nd | nd | - | - | .022 | - |
| ABOB | Atchafalaya Bay | LA | cv | nd | nd | nd | - | - | nd | - |
| VBSP | Vermillion Bay | LA | cv | nd | nd | nd | - | - | nd | - |
| JHJH | J. Hrb. Bayou | LA | cv | nd | nd | .14 | - | - | .048 | - |
| CLLC | Calcasieu Lake | LA | cv | - | - | .16 | - | - | .16 | 120 |
| CLSJ | Calcasieu Lake | LA | cv | .79 | nd | .027 | - | - | .27 | - |
| SLBB | Sabine Lake | TX | cv | nd | nd | nd | - | - | nd | - |
| GBHR | Galveston Bay | TX | cv | nd | nd | .077 | - | - | .026 | - |
| GBSC | Galveston Bay | TX | cv | - | - | nd | - | - | nd | - |
| GBYC | Galveston Bay | TX | cv | nd | .62 | .39 | - | - | .34 | - |
| GBTD | Galveston Bay | TX | cv | .11 | nd | nd | - | - | .016 | - |
| GBCR | Galveston Bay | TX | cv | .19 | nd | nd | - | - | .048 | - |
| GBOB | Galveston Bay | TX | cv | - | - | nd | - | - | nd | - |
| BRFS | Brazos River | TX | cv | - | - | 1.6 | - | - | 1.6 | 59 |
| MBEM | Matagorda Bay | TX | cv | nd | nd | .96 | - | - | .32 | - |
| MBDI | Matagorda Bay | TX | cv | - | - | nd | - | - | nd | - |
| MBCB | Matagorda Bay | TX | cv | - | - | nd | - | - | nd | - |
| MBTP | Matagorda Bay | TX | cv | nd | nd | nd | - | - | nd | - |
| MBGP | Matagorda Bay | TX | cv | .06 | nd | nd | - | - | .015 | - |
| MBLR | Matagorda Bay | TX | cv | .54 | nd | - | - | - | .27 | - |
| ESSP | Espiritu Santo | TX | cv | .01 | nd | - | - | - | .005 | - |
| ESBD | Espiritu Santo | TX | cv | - | - | nd | - | - | nd | - |
| SAMP | San Antonio Bay | TX | cv | nd | .26 | - | - | - | .16 | - |
| SAPP | San Antonio Bay | TX | cv | nd | .26 | - | - | - | .13 | - |
| MBAR | Mesquite Bay | TX | cv | .11 | nd | nd | - | - | .036 | - |

Table B.6 **Hexachlorobenzene** (Continued)

| SITE | Location | State | Species | 1986 mean | 1987 mean | 1988 mean | Diff | Trend | Overall mean | Overall cv% |
|---|---|---|---|---|---|---|---|---|---|---|
| CBCR | Copano Bay | TX | cv | .12 | nd | nd | - | - | .038 | - |
| ABHI | Aransas Bay | TX | cv | - | - | nd | - | - | nd | - |
| ABLR | Aransas Bay | TX | cv | .53 | nd | .093 | - | - | .21 | – |
| CCBH | Corpus Christi | TX | cv | - | - | nd | - | - | nd | - |
| CCIC | Corpus Christi | TX | cv | nd | - | nd | - | - | nd | - |
| CCNB | Corpus Christi | TX | cv | .13 | nd | nd | - | - | .043 | - |
| LMSB | L. Laguna Madre | TX | cv | .32 | .31 | nd | - | - | .21 | - |
| LMPI | Laguna Madre | TX | cv | - | - | nd | - | - | nd | - |
| IBNJ | Imperial Beach | CA | mc | .27 | nd | nd | - | - | .1 | - |
| SDHI | San Diego Bay | CA | me | nd | nd | nd | - | - | nd | - |
| PLLH | Pt. Loma | CA | mc | nd | nd | nd | - | - | nd | - |
| MBVB | Mission Bay | CA | me | 15 | nd | nd | - | - | 5 | - |
| LJLJ | La Jolla | CA | mc | 34 | nd | nd | - | - | 11 | - |
| OSBJ | Oceanside | CA | me | .13 | nd | nd | - | - | .044 | - |
| NBWJ | Newport Bch. | CA | mc | nd | nd | .12 | - | - | .04 | - |
| ABWJ | Anaheim Bay | CA | mc | nd | nd | nd | - | - | nd | - |
| SPFP | San Pedro Hrb. | CA | me | nd | nd | nd | - | - | nd | - |
| PVRP | Palos Verdes | CA | mc | nd | nd | .3 | - | - | .099 | - |
| SCBR | S. Catalina Is. | CA | mc | nd | nd | nd | - | - | nd | - |
| MDSJ | Marina Del Rey | CA | me | nd | nd | .21 | - | - | .069 | - |
| PDPD | Pt. Dume | CA | mc | .01 | nd | nd | - | - | .003 | - |
| SCFP | Santa Cruz Is. | CA | mc | .43 | nd | nd | - | - | .14 | - |
| SANM | San Miguel Is. | CA | mc | - | - | .28 | - | - | .28 | 19 |
| SBSB | Pt. S. Barbara | CA | mc | nd | nd | nd | - | - | nd | - |
| PCPC | Pt. Conception | CA | mc | 1.3 | nd | .43 | - | - | .58 | - |
| SLSL | San Luis Ob. Bay | CA | mc | nd | nd | .09 | - | - | .03 | - |
| SSSS | San Simeon Pt. | CA | mc | nd | nd | nd | - | - | nd | - |
| PGLP | Pacific Grove | CA | mc | nd | nd | .073 | - | - | .024 | - |
| MBSC | Monterey Bay | CA | mc | nd | nd | nd | - | - | nd | - |
| FIEL | Farallon Is. | CA | mc | - | - | nd | - | - | nd | - |
| SFDB | San Fran. Bay | CA | me | .23 | nd | nd | - | - | .078 | - |
| SFSM | San Fran. Bay | CA | me | .33 | nd | nd | - | - | .11 | - |
| SFEM | San Fran. Bay | CA | me | - | 1 | .56 | - | - | .8 | 88 |
| TBSR | Tomales Bay | CA | me | nd | nd | .23 | - | - | .076 | - |
| BBBE | Bodega Bay | CA | mc | nd | nd | .063 | - | - | .021 | - |
| PALH | Pt. Arena | CA | mc | nd | nd | nd | - | - | nd | - |
| PDSC | Pt. Delgada | CA | mc | nd | 9.1 | nd | - | - | 3 | - |
| HMBJ | Humboldt Bay | CA | mc | nd | 3.7 | nd | - | - | 1.2 | - |
| SGSG | Pt. St. George | CA | mc | nd | .67 | .17 | - | - | .28 | - |
| CBCH | Coos Bay | OR | mc | nd | nd | .73 | - | - | .24 | - |
| CBRP | Coos Bay | OR | me | nd | .33 | 1 | - | - | .44 | - |
| YBOP | Yaquina Bay | OR | me | .33 | nd | 1.9 | - | - | .75 | - |
| YHYH | Yaquina Head | OR | mc | nd | nd | 12 | - | - | 3.9 | - |
| TBHP | Tillamook Bay | OR | me | nd | nd | .9 | - | - | .39 | - |
| CRSJ | Columbia R. | OR | me | nd | nd | .87 | - | - | .29 | - |
| GHWJ | Gray's Hrb. | WA | mc | nd | nd | nd | - | - | nd | - |
| JFCF | S. Juan de Fuca | WA | mc | nd | nd | 1.9 | - | - | .63 | - |
| SSBI | South Puget Snd. | WA | me | nd | .33 | 1.6 | - | - | .63 | - |
| CBTP | Comm. Bay | WA | me | nd | .67 | 3.4 | - | - | 1.4 | - |
| EBFR | Elliott Bay | WA | me | nd | nd | 1.9 | - | - | .64 | - |
| SIWP | Sinclair Inlet | WA | me | nd | nd | 2.2 | - | - | .82 | - |
| WIPP | Whidbey Is. | WA | me | nd | nd | 2.4 | - | - | .8 | - |
| BBSM | Bellingham Bay | WA | me | nd | .33 | 1.3 | - | - | .54 | - |
| PRPR | Pt. Roberts | WA | me | nd | nd | 2.4 | - | - | .9 | - |
| PVMC | Port Valdez | AK | me | nd | nd | 1.3 | - | - | .42 | - |
| UISB | Unakwit Inlet | AK | me | nd | nd | 2.5 | - | - | .84 | - |
| BPBP | Barber's Pt. | HI | os | 29 | .33 | nd | - | - | 9.7 | - |
| HHKL | Honolulu Hrb. | HI | os | nd | nd | .14 | - | - | .048 | - |
| KAUI | Kauai | HI | os | - | - | nd | - | - | nd | - |

Table B.7 Summary of 1986 through 1988 data for **Mirex** (ng/g dry) in mollusks.

| SITE | Location | State | Species | 1986 mean | 1987 mean | 1988 mean | Diff | Trend | Overall mean | Overall cv% |
|---|---|---|---|---|---|---|---|---|---|---|
| PBSI | Penobscot Bay | ME | me | 8.1 | nd | 1.1 | yes | no | 3.1 | 120 |
| PBPI | Penobscot Bay | ME | me | .7 | nd | nd | no | no | .23 | 300 |
| MSSP | Merriconeag Snd. | ME | me | - | - | nd | - | - | nd | - |
| CAGH | Cape Ann | MA | me | - | nd | 2.1 | - | - | 1 | 110 |
| SHFP | Salem Harbor | MA | me | - | - | nd | - | - | nd | - |
| BHDI | Boston Hrb. | MA | me | 9.5 | nd | nd | - | - | 3.2 | - |
| BHDB | Boston Hrb. | MA | me | 3.2 | 1.4 | nd | - | - | 1.5 | - |
| BHHB | Boston Hrb. | MA | me | .67 | nd | .24 | - | - | .3 | - |
| BHBI | Boston Hrb. | MA | me | 2.5 | 4.9 | nd | yes | no | 2.5 | 97 |
| BBRH | Buzzards Bay | MA | me | nd | 3.9 | nd | - | - | 1.5 | - |
| BBAR | Buzzards Bay | MA | me | nd | nd | nd | - | - | nd | - |
| BBGN | Buzzards Bay | MA | me | nd | nd | nd | - | - | nd | - |
| NBDU | Narr. Bay | RI | me | 6.3 | nd | - | - | - | 3.1 | 170 |
| NBDI | Narr. Bay | RI | me | nd | nd | 1.4 | - | - | .47 | - |
| BIBI | Block Is. | RI | me | - | nd | 2.5 | - | - | 1.3 | 110 |
| LICR | Long Is. Snd. | CT | me | 5.5 | nd | nd | - | - | 1.8 | - |
| LINH | Long Is. Snd. | CT | me | 6.8 | nd | nd | - | - | 2.3 | - |
| LIHR | Long Is. Snd. | CT | me | nd | .4 | nd | - | - | .15 | - |
| LISI | Long Is. Snd. | CT | me | nd | nd | nd | - | - | nd | - |
| LIHU | Long Is. Snd. | NY | me | nd | 1.3 | .053 | - | - | .45 | - |
| LIPJ | Long Is. Snd. | NY | me | 2.6 | nd | 1.2 | - | - | 1.3 | - |
| LIMR | Long Is. Snd. | NY | me | nd | 2.5 | 1.4 | - | - | 1.3 | - |
| LIHH | Long Is. Snd. | NY | me | 3.7 | 9.2 | 1.2 | no | no | 4.7 | 130 |
| LITN | Long Is. Snd. | NY | me | 12 | 6.9 | 4.1 | no | no | 7.7 | 80 |
| MBTH | Moriches Bay | NY | me | 17 | .73 | nd | - | - | 5.9 | - |
| HRJB | Hud./Rar. Est | NY | me | nd | 2.3 | 3.3 | yes | i | 1.8 | 83 |
| HRUB | Hud./Rar. Est. | NY | me | 3.6 | 5.4 | nd | yes | no | 3 | 80 |
| HRLB | Hud./Rar. Est. | NY | me | 5 | 4.9 | .53 | no | no | 3.5 | 130 |
| NYSH | N.Y. Bight | NJ | me | 11 | 7.8 | .33 | no | no | 6.4 | 170 |
| NYLB | N.Y. Bight | NJ | me | 4.6 | 8.4 | 1.1 | yes | no | 4.7 | 70 |
| NYSR | N.Y. Bight | NJ | me | 3.4 | 2.8 | .43 | no | no | 2 | 130 |
| BIBL | Barnegat Inlet | NJ | me | - | - | 1.6 | - | - | 1.6 | - |
| AIAC | Absecon Inlet | NJ | me | - | - | .67 | - | - | .67 | - |
| DBFE | Delaware Bay | DE | cv | 2.4 | nd | nd | - | - | .8 | - |
| DBBD | Delaware Bay | DE | cv | nd | 2 | nd | - | - | .67 | - |
| DBAP | Delaware Bay | DE | cv | 2.1 | nd | 2.9 | - | - | 1.7 | - |
| DBKI | Delaware Bay | DE | cv | nd | 7.4 | 2.7 | no | no | 3.4 | 200 |
| CBMP | Ches. Bay | MD | cv | nd | nd | nd | - | - | nd | - |
| CBHP | Ches. Bay | MD | cv | nd | nd | nd | - | - | nd | - |
| CBHG | Ches. Bay | MD | cv | nd | nd | nd | - | - | nd | - |
| CBIB | Ches. Bay | VA | cv | 5.2 | nd | - | - | - | 2.6 | 140 |
| CBCC | Ches. Bay | VA | cv | nd | nd | 1 | - | - | .33 | - |
| CBDP | Ches. Bay | VA | cv | 16 | nd | .57 | - | - | 5.4 | - |
| CBCI | Chincoteague Bay | VA | cv | .73 | nd | nd | - | - | .24 | - |
| QIUB | Quinby Inlet | VA | cv | nd | nd | .27 | - | - | .091 | - |
| RSJC | Roanoke Snd. | NC | cv | nd | nd | nd | - | - | nd | - |
| PSWB | Pamlico Snd. | NC | cv | nd | 1.3 | nd | - | - | .42 | - |
| CFBI | Cape Fear | NC | cv | nd | nd | .7 | - | - | .23 | - |
| CHFJ | Charleston Hrb. | SC | cv | 1 | nd | .59 | - | - | .48 | - |
| CHSF | Charleston Hrb. | SC | cv | 1.7 | 1.7 | .86 | no | no | 1.4 | 79 |
| SRTI | Savannah R. Est. | GA | cv | 3.8 | nd | 1.4 | yes | no | 1.4 | 110 |
| SSSI | Sapelo Snd. | GA | cv | 1.9 | nd | 2 | no | no | 1.3 | 110 |
| SJCB | St. Johns R. | FL | cv | 1.9 | 4.3 | .63 | - | - | 2.3 | - |
| MRCB | Matanzas R. | FL | cv | nd | nd | nd | - | - | nd | - |
| IRSR | Indian River | FL | cv | - | - | .06 | - | - | .06 | 140 |
| NMML | North Miami | FL | cv | - | - | .87 | - | - | .87 | - |
| BBPC | Biscayne Bay | FL | cv | nd | 70 | - | - | - | 35 | - |
| EVFU | Everglades | FL | cv | nd | nd | .54 | - | - | .18 | - |
| RBHC | Rookery Bay | FL | cv | nd | nd | .97 | - | - | .32 | - |

Table B.7 **Mirex** (Continued)

| SITE | Location | State | Species | 1986 mean | 1987 mean | 1988 mean | Diff | Trend | Overall mean | Overall cv% |
|---|---|---|---|---|---|---|---|---|---|---|
| NBNB | Naples Bay | FL | cv | nd | .71 | .82 | - | - | .51 | - |
| CBBI | Charlotte Hrb. | FL | cv | nd | .78 | - | - | - | .45 | - |
| CBFM | Charlotte Hrb. | FL | cv | - | - | nd | - | - | nd | - |
| TBMK | Tampa Bay | FL | cv | 1.8 | 3.6 | 2.2 | no | no | 2.5 | 67 |
| TBCB | Tampa Bay | FL | cv | 12 | 9.2 | 6.3 | no | no | 9 | 48 |
| TBHB | Tampa Bay | FL | cv | 1.9 | 1.2 | .35 | no | no | 1.4 | 93 |
| TBPB | Tampa Bay | FL | cv | 12 | 6.3 | 5 | no | no | 7.8 | 55 |
| TBOT | Tampa Bay | FL | cv | - | - | 1 | - | - | 1 | - |
| CKBP | Cedar Key | FL | cv | .49 | nd | 1.5 | - | - | .67 | - |
| SRWP | Suwannee River | FL | cv | - | - | .97 | - | - | .97 | - |
| APCP | Apalachicola Bay | FL | cv | .51 | 2.7 | 1.8 | no | no | 1.7 | 130 |
| APDB | Apalachicola Bay | FL | cv | .72 | .28 | 2.2 | no | no | 1.1 | 120 |
| PCMP | Panama City | FL | cv | - | - | 3.8 | - | - | 3.8 | 77 |
| SAWB | St. Andrew Bay | FL | cv | 5.6 | 1.3 | 1.8 | no | no | 2.8 | 110 |
| CBSP | Choctawhat. Bay | FL | cv | .26 | nd | .18 | - | - | .15 | - |
| CBSR | Choctawhat. Bay | FL | cv | nd | nd | 2.3 | - | - | .77 | - |
| PBPH | Pensacola Bay | FL | cv | - | - | .57 | - | - | .57 | 120 |
| PBIB | Pensacola Bay | FL | cv | .37 | 2.5 | .28 | - | - | .88 | - |
| MBHI | Mobile Bay | AL | cv | - | - | nd | - | - | nd | - |
| MBCP | Mobile Bay | AL | cv | 3.5 | 2.8 | 1.7 | no | no | 2.7 | 76 |
| MSPB | Miss. Snd. | MS | cv | 4.8 | 3.1 | 11 | yes | no | 6.2 | 66 |
| MSBB | Miss. Snd. | MS | cv | 2.2 | 6.2 | .58 | no | no | 3 | 170 |
| MSPC | Miss. Snd. | MS | cv | 1.3 | .78 | .053 | no | no | .7 | 120 |
| LBNO | Lake Borgne | LA | cv | - | - | nd | - | - | nd | - |
| LBMP | Lake Borgne | LA | cv | .19 | .44 | nd | - | - | .21 | - |
| BSBG | Breton Snd. | LA | cv | .7 | nd | nd | - | - | .23 | - |
| BSSI | Breton Snd. | LA | cv | .4 | nd | .41 | - | - | .27 | - |
| MRTP | Miss. River | LA | cv | - | - | .37 | - | - | .37 | - |
| MRPL | Miss. River | LA | cv | - | - | .25 | - | - | .25 | - |
| BBSD | Barataria Bay | LA | cv | nd | nd | nd | - | - | nd | - |
| BBTB | Barataria Bay | LA | cv | - | - | .043 | - | - | .043 | - |
| BBMB | Barataria Bay | LA | cv | nd | nd | .22 | - | - | .073 | - |
| TBLF | Terrebonne Bay | LA | cv | nd | nd | nd | - | - | nd | - |
| TBLB | Terrebonne Bay | LA | cv | nd | .21 | nd | - | - | .069 | - |
| CLCL | Caillou Lake | LA | cv | .23 | nd | nd | - | - | .077 | - |
| ABOB | Atchafalaya Bay | LA | cv | nd | nd | nd | - | - | nd | - |
| VBSP | Vermillion Bay | LA | cv | .69 | 1.1 | .25 | yes | no | .69 | 78 |
| JHJH | J. Hrb. Bayou | LA | cv | .69 | nd | .053 | - | - | .25 | - |
| CLLC | Calcasieu Lake | LA | cv | - | - | 1.3 | - | - | 1.3 | 32 |
| CLSJ | Calcasieu Lake | LA | cv | 1.5 | .63 | .35 | no | no | .82 | 89 |
| SLBB | Sabine Lake | TX | cv | 2 | .51 | .16 | yes | d | .88 | 110 |
| GBHR | Galveston Bay | TX | cv | nd | 1.9 | nd | - | - | .63 | - |
| GBSC | Galveston Bay | TX | cv | - | - | .3 | - | - | .3 | - |
| GBYC | Galveston Bay | TX | cv | 3.4 | 10 | 1.6 | yes | no | 5.2 | 93 |
| GBTD | Galveston Bay | TX | cv | .65 | .49 | nd | no | no | .38 | 100 |
| GBCR | Galveston Bay | TX | cv | .22 | .15 | nd | - | - | .12 | - |
| GBOB | Galveston Bay | TX | cv | - | - | .05 | - | - | .05 | - |
| BRFS | Brazos River | TX | cv | - | - | 5 | - | - | 5 | 17 |
| MBEM | Matagorda Bay | TX | cv | nd | .27 | .95 | yes | i | .4 | 150 |
| MBDI | Matagorda Bay | TX | cv | - | - | .37 | - | - | .37 | 87 |
| MBCB | Matagorda Bay | TX | cv | - | - | .4 | - | - | .4 | - |
| MBTP | Matagorda Bay | TX | cv | 1.7 | .91 | 2 | no | no | 1.5 | 85 |
| MBGP | Matagorda Bay | TX | cv | .067 | nd | .41 | yes | no | .16 | 140 |
| MBLR | Matagorda Bay | TX | cv | .38 | nd | - | - | - | .19 | - |
| ESSP | Espiritu Santo | TX | cv | 1.6 | nd | - | - | - | .82 | - |
| ESBD | Espiritu Santo | TX | cv | - | - | .2 | - | - | .2 | 94 |
| SAMP | San Antonio Bay | TX | cv | .21 | nd | - | - | - | .1 | - |
| SAPP | San Antonio Bay | TX | cv | nd | nd | - | - | - | nd | - |
| MBAR | Mesquite Bay | TX | cv | nd | .26 | .16 | no | no | .14 | - |

Table B.7 **Mirex** (Continued)

| SITE | Location | State | Species | 1986 mean | 1987 mean | 1988 mean | Diff | Trend | Overall mean | Overall cv% |
|---|---|---|---|---|---|---|---|---|---|---|
| CBCR | Copano Bay | TX | cv | nd | 1.3 | nd | - | - | .44 | - |
| ABHI | Aransas Bay | TX | cv | - | - | .13 | - | - | .13 | - |
| ABLR | Aransas Bay | TX | cv | nd | .053 | .067 | - | - | .04 | - |
| CCBH | Corpus Christi | TX | cv | - | - | .72 | - | - | .72 | - |
| CCIC | Corpus Christi | TX | cv | nd | - | .15 | - | - | .075 | - |
| CCNB | Corpus Christi | TX | cv | nd | .15 | nd | - | - | .049 | - |
| LMSB | L. Laguna Madre | TX | cv | .1 | nd | nd | - | - | .033 | - |
| LMPI | Laguna Madre | TX | cv | - | - | nd | - | - | nd | - |
| IBNJ | Imperial Beach | CA | mc | nd | nd | nd | - | - | nd | - |
| SDHI | San Diego Bay | CA | me | .9 | nd | nd | - | - | .3 | - |
| PLLH | Pt. Loma | CA | mc | nd | nd | nd | - | - | nd | - |
| MBVB | Mission Bay | CA | me | nd | nd | nd | - | - | nd | - |
| LJLJ | La Jolla | CA | mc | 1.1 | nd | nd | - | - | .36 | - |
| OSBJ | Oceanside | CA | me | nd | nd | .7 | - | - | .23 | - |
| NBWJ | Newport Bch. | CA | mc | .37 | nd | nd | - | - | .12 | - |
| ABWJ | Anaheim Bay | CA | mc | .6 | nd | nd | - | - | .2 | - |
| SPFP | San Pedro Hrb. | CA | me | nd | nd | nd | - | - | nd | - |
| PVRP | Palos Verdes | CA | mc | .5 | nd | nd | - | - | .19 | - |
| SCBR | S. Catalina Is. | CA | mc | nd | nd | nd | - | - | nd | - |
| MDSJ | Marina Del Rey | CA | me | 1.6 | nd | nd | - | - | .52 | - |
| PDPD | Pt. Dume | CA | mc | 2.2 | nd | nd | - | - | .72 | - |
| SCFP | Santa Cruz Is. | CA | mc | nd | nd | nd | - | - | nd | - |
| SANM | San Miguel Is. | CA | mc | - | - | .93 | - | - | .93 | 86 |
| SBSB | Pt. S. Barbara | CA | mc | nd | nd | nd | - | - | nd | - |
| PCPC | Pt. Conception | CA | mc | 1.1 | nd | nd | - | - | .46 | - |
| SLSL | San Luis Ob. Bay | CA | mc | nd | nd | nd | - | - | nd | - |
| SSSS | San Simeon Pt. | CA | mc | nd | nd | nd | - | - | nd | - |
| PGLP | Pacific Grove | CA | mc | nd | nd | nd | - | - | nd | - |
| MBSC | Monterey Bay | CA | mc | .19 | nd | nd | - | - | .064 | - |
| FIEL | Farallon Is. | CA | mc | - | - | 2.1 | - | - | 2.1 | - |
| SFDB | San Fran. Bay | CA | me | nd | nd | nd | - | - | nd | - |
| SFSM | San Fran. Bay | CA | me | nd | nd | nd | - | - | nd | - |
| SFEM | San Fran. Bay | CA | me | - | 6.6 | 1.2 | - | - | 2.5 | - |
| TBSR | Tomales Bay | CA | me | .4 | nd | nd | - | - | .13 | - |
| BBBE | Bodega Bay | CA | mc | 1.8 | nd | nd | - | - | .59 | - |
| PALH | Pt. Arena | CA | mc | nd | nd | nd | - | - | nd | - |
| PDSC | Pt. Delgada | CA | mc | 1.7 | nd | nd | - | - | .56 | - |
| HMBJ | Humboldt Bay | CA | mc | nd | nd | nd | - | - | nd | - |
| SGSG | Pt. St. George | CA | mc | nd | nd | nd | - | - | nd | - |
| CBCH | Coos Bay | OR | mc | .73 | nd | nd | - | - | .24 | - |
| CBRP | Coos Bay | OR | me | 1.9 | nd | 1.4 | - | - | 1.2 | - |
| YBOP | Yaquina Bay | OR | me | nd | nd | nd | - | - | nd | - |
| YHYH | Yaquina Head | OR | mc | nd | nd | nd | - | - | nd | - |
| TBHP | Tillamook Bay | OR | me | nd | nd | .22 | - | - | .093 | - |
| CRSJ | Columbia R. | OR | me | nd | nd | nd | - | - | nd | - |
| GHWJ | Gray's Hrb. | WA | mc | nd | nd | nd | - | - | nd | - |
| JFCF | S. Juan de Fuca | WA | mc | nd | nd | nd | - | - | nd | - |
| SSBI | South Puget Snd. | WA | me | nd | nd | nd | - | - | nd | - |
| CBTP | Comm. Bay | WA | me | nd | nd | nd | - | - | nd | - |
| EBFR | Elliott Bay | WA | me | nd | nd | nd | - | - | nd | - |
| SIWP | Sinclair Inlet | WA | me | nd | nd | nd | - | - | nd | - |
| WIPP | Whidbey Is. | WA | me | nd | nd | nd | - | - | nd | - |
| BBSM | Bellingham Bay | WA | me | nd | nd | nd | - | - | nd | - |
| PRPR | Pt. Roberts | WA | me | nd | nd | nd | - | - | nd | - |
| PVMC | Port Valdez | AK | me | nd | nd | nd | - | - | nd | - |
| UISB | Unakwit Inlet | AK | me | nd | nd | nd | - | - | nd | - |
| BPBP | Barber's Pt. | HI | os | .6 | nd | nd | - | - | .2 | - |
| HHKL | Honolulu Hrb. | HI | os | nd | nd | nd | - | - | nd | - |
| KAUI | Kauai | HI | os | - | - | nd | - | - | nd | - |

Table B.8 Summary of 1986 through 1988 data for **Low molecular weight PAH** in mollusks.

| SITE | Location | State | Species | 1986 mean | 1987 mean | 1988 mean | Diff | Trend | Overall mean | Overall cv% |
|---|---|---|---|---|---|---|---|---|---|---|
| PBSI | Penobscot Bay | ME | me | 260 | 190 | 500 | yes | no | 310 | 47 |
| PBPI | Penobscot Bay | ME | me | 410 | 160 | 400 | no | no | 320 | 85 |
| MSSP | Merriconeag Snd. | ME | me | - | - | 650 | - | - | 650 | 4 |
| CAGH | Cape Ann | MA | me | - | 110 | 230 | - | - | 170 | 58 |
| SHFP | Salem Harbor | MA | me | - | - | 580 | - | - | 580 | 11 |
| BHDI | Boston Hrb. | MA | me | 2400 | 1700 | 2700 | yes | no | 2300 | 24 |
| BHDB | Boston Hrb. | MA | me | 3000 | 1000 | 1400 | no | no | 1800 | 75 |
| BHHB | Boston Hrb. | MA | me | 2000 | 310 | 590 | yes | no | 980 | 110 |
| BHBI | Boston Hrb. | MA | me | 940 | 630 | 1500 | no | no | 1000 | 43 |
| BBRH | Buzzards Bay | MA | me | 660 | 280 | 580 | no | no | 510 | 63 |
| BBAR | Buzzards Bay | MA | me | 270 | 490 | 800 | yes | i | 520 | 47 |
| BBGN | Buzzards Bay | MA | me | 100 | 71 | 610 | no | no | 260 | 100 |
| NBDU | Narr. Bay | RI | me | 170 | 69 | - | - | - | 120 | 62 |
| NBDI | Narr. Bay | RI | me | 300 | 70 | 250 | yes | no | 200 | 54 |
| BIBI | Block Is. | RI | me | - | 46 | 200 | - | - | 120 | 90 |
| LICR | Long Is. Snd. | CT | me | 160 | 50 | 1000 | no | no | 410 | 160 |
| LINH | Long Is. Snd. | CT | me | 350 | 160 | 730 | yes | no | 410 | 65 |
| LIHR | Long Is. Snd. | CT | me | 60 | 82 | 610 | no | no | 250 | 110 |
| LISI | Long Is. Snd. | CT | me | 320 | 2.6 | 380 | no | no | 240 | 84 |
| LIHU | Long Is. Snd. | NY | me | 940 | 24 | 490 | no | no | 480 | 180 |
| LIPJ | Long Is. Snd. | NY | me | 460 | 23 | 400 | yes | no | 300 | 77 |
| LIMR | Long Is. Snd. | NY | me | 500 | 370 | 390 | no | no | 410 | 62 |
| LIHH | Long Is. Snd. | NY | me | 610 | 360 | 220 | no | no | 410 | 56 |
| LITN | Long Is. Snd. | NY | me | 2900 | 770 | 840 | no | no | 1500 | 120 |
| MBTH | Moriches Bay | NY | me | - | 18 | nd | - | - | 8.8 | - |
| HRJB | Hud./Rar. Est | NY | me | 1400 | 1800 | 1800 | no | no | 1700 | 33 |
| HRUB | Hud./Rar. Est. | NY | me | 4900 | 2200 | 560 | yes | d | 2600 | 81 |
| HRLB | Hud./Rar. Est. | NY | me | 1000 | 240 | 220 | no | no | 500 | 110 |
| NYSH | N.Y. Bight | NJ | me | 1300 | 13 | 540 | yes | no | 620 | 100 |
| NYLB | N.Y. Bight | NJ | me | 1200 | 580 | 210 | yes | d | 660 | 72 |
| NYSR | N.Y. Bight | NJ | me | 240 | 590 | 590 | no | no | 470 | 56 |
| BIBL | Barnegat Inlet | NJ | me | - | - | 370 | - | - | 370 | 8 |
| AIAC | Absecon Inlet | NJ | me | - | - | 700 | - | - | 700 | 18 |
| DBFE | Delaware Bay | DE | cv | 460 | nd | nd | - | - | 150 | - |
| DBBD | Delaware Bay | DE | cv | 79 | 2.1 | nd | - | - | 27 | - |
| DBAP | Delaware Bay | DE | cv | 270 | 53 | 930 | no | no | 420 | 100 |
| DBKI | Delaware Bay | DE | cv | 220 | 99 | 700 | no | no | 340 | 120 |
| CBMP | Ches. Bay | MD | cv | nd | 43 | 700 | yes | i | 250 | 140 |
| CBHP | Ches. Bay | MD | cv | 350 | 240 | 110 | no | no | 230 | 140 |
| CBHG | Ches. Bay | MD | cv | 770 | 30 | 66 | no | no | 290 | 140 |
| CBIB | Ches. Bay | VA | cv | 310 | 44 | - | - | - | 110 | 120 |
| CBCC | Ches. Bay | VA | cv | 140 | 110 | 42 | no | no | 99 | 87 |
| CBDP | Ches. Bay | VA | cv | nd | 200 | 530 | no | no | 240 | 170 |
| CBCI | Chincoteague Bay | VA | cv | 190 | 19 | 1000 | no | no | 410 | 120 |
| QIUB | Quinby Inlet | VA | cv | 21 | 10 | nd | - | - | 10 | - |
| RSJC | Roanoke Snd. | NC | cv | 450 | 380 | 380 | no | no | 400 | 98 |
| PSWB | Pamlico Snd. | NC | cv | 770 | 36 | 340 | yes | no | 380 | 110 |
| CFBI | Cape Fear | NC | cv | 1200 | 4.2 | 95 | no | no | 420 | 170 |
| CHFJ | Charleston Hrb. | SC | cv | 780 | 9.6 | 87 | no | no | 230 | 160 |
| CHSF | Charleston Hrb. | SC | cv | 1200 | 120 | 160 | no | no | 510 | 140 |
| SRTI | Savannah R. Est. | GA | cv | 480 | 11 | 220 | yes | no | 230 | 95 |
| SSSI | Sapelo Snd. | GA | cv | 52 | 1.3 | nd | - | - | 18 | - |
| SJCB | St. Johns R. | FL | cv | - | 110 | 320 | no | no | 220 | 87 |
| MRCB | Matanzas R. | FL | cv | 230 | 140 | 9.7 | no | no | 110 | 100 |
| IRSR | Indian River | FL | cv | - | - | 840 | - | - | 840 | 7 |
| NMML | North Miami | FL | cv | - | - | 1100 | - | - | 1100 | 19 |
| BBPC | Biscayne Bay | FL | cv | - | 500 | - | - | - | 500 | - |
| EVFU | Everglades | FL | cv | 98 | nd | 32 | - | - | 43 | - |
| RBHC | Rookery Bay | FL | cv | 32 | nd | 7.3 | - | - | 13 | - |

Table B.8 **Low molecular weight PAH** (Continued)

| SITE | Location | State | Species | 1986 mean | 1987 mean | 1988 mean | Diff | Trend | Overall mean | Overall cv% |
|---|---|---|---|---|---|---|---|---|---|---|
| NBNB | Naples Bay | FL | cv | nd | 20 | nd | - | - | 6.8 | - |
| CBBI | Charlotte Hrb. | FL | cv | 7.3 | 32 | - | - | - | 20 | 140 |
| CBFM | Charlotte Hrb. | FL | cv | - | - | 100 | - | - | 100 | - |
| TBMK | Tampa Bay | FL | cv | 81 | 26 | nd | yes | d | 36 | 150 |
| TBCB | Tampa Bay | FL | cv | nd | nd | 39 | - | - | 13 | - |
| TBHB | Tampa Bay | FL | cv | 41 | 62 | 52 | no | no | 52 | 34 |
| TBPB | Tampa Bay | FL | cv | 14 | 7.7 | 18 | no | no | 13 | 98 |
| TBOT | Tampa Bay | FL | cv | - | - | 390 | - | - | 390 | 150 |
| CKBP | Cedar Key | FL | cv | 38 | 15 | 310 | no | no | 120 | 240 |
| SRWP | Suwannee River | FL | cv | - | - | 78 | - | - | 78 | 90 |
| APCP | Apalachicola Bay | FL | cv | 47 | 9.3 | 700 | yes | no | 250 | 140 |
| APDB | Apalachicola Bay | FL | cv | nd | 12 | 1100 | - | - | 430 | - |
| PCMP | Panama City | FL | cv | - | - | 3700 | - | - | 3700 | 88 |
| SAWB | St. Andrew Bay | FL | cv | 9600 | 500 | 570 | no | no | 3300 | 140 |
| CBSP | Choctawhat. Bay | FL | cv | 91 | 75 | 170 | no | no | 110 | 89 |
| CBSR | Choctawhat. Bay | FL | cv | 140 | 760 | 640 | yes | no | 510 | 59 |
| PBPH | Pensacola Bay | FL | cv | - | - | 180 | - | - | 180 | 26 |
| PBIB | Pensacola Bay | FL | cv | 110 | 110 | 51 | no | no | 90 | 56 |
| MBHI | Mobile Bay | AL | cv | - | - | 95 | - | - | 95 | 26 |
| MBCP | Mobile Bay | AL | cv | 56 | 140 | 76 | no | no | 89 | 120 |
| MSPB | Miss. Snd. | MS | cv | 24 | 110 | 150 | yes | i | 94 | 73 |
| MSBB | Miss. Snd. | MS | cv | 510 | 1300 | 390 | no | no | 740 | 61 |
| MSPC | Miss. Snd. | MS | cv | 160 | 140 | 39 | no | no | 110 | 110 |
| LBNO | Lake Borgne | LA | cv | - | - | 76 | - | - | 76 | 150 |
| LBMP | Lake Borgne | LA | cv | 38 | 20 | 54 | no | no | 38 | 100 |
| BSBG | Breton Snd. | LA | cv | 250 | 72 | 96 | no | no | 140 | 64 |
| BSSI | Breton Snd. | LA | cv | 110 | 20 | 270 | yes | no | 130 | 88 |
| MRTP | Miss. River | LA | cv | - | - | 670 | - | - | 670 | 20 |
| MRPL | Miss. River | LA | cv | - | - | 36 | - | - | 36 | 90 |
| BBSD | Barataria Bay | LA | cv | 53 | 29 | nd | - | - | 27 | - |
| BBTB | Barataria Bay | LA | cv | - | - | nd | - | - | nd | - |
| BBMB | Barataria Bay | LA | cv | 450 | 980 | 510 | no | no | 650 | 58 |
| TBLF | Terrebonne Bay | LA | cv | 380 | 13 | 210 | no | no | 200 | 200 |
| TBLB | Terrebonne Bay | LA | cv | 26 | 21 | 66 | no | no | 38 | 130 |
| CLCL | Caillou Lake | LA | cv | 20 | 17 | nd | - | - | 12 | - |
| ABOB | Atchafalaya Bay | LA | cv | 680 | 78 | 80 | no | no | 280 | 230 |
| VBSP | Vermillion Bay | LA | cv | 69 | 26 | 7.6 | no | no | 34 | 100 |
| JHJH | J. Hrb. Bayou | LA | cv | 26 | 75 | nd | no | no | 34 | 130 |
| CLLC | Calcasieu Lake | LA | cv | - | - | 82 | - | - | 82 | 49 |
| CLSJ | Calcasieu Lake | LA | cv | - | 27 | nd | - | - | 14 | - |
| SLBB | Sabine Lake | TX | cv | 25 | 29 | 9.6 | - | - | 21 | - |
| GBHR | Galveston Bay | TX | cv | 21 | 77 | nd | - | - | 33 | - |
| GBSC | Galveston Bay | TX | cv | - | - | 110 | - | - | 110 | 49 |
| GBYC | Galveston Bay | TX | cv | 120 | 130 | 21 | yes | no | 91 | 74 |
| GBTD | Galveston Bay | TX | cv | 51 | 15 | nd | yes | d | 22 | 120 |
| GBCR | Galveston Bay | TX | cv | 340 | 60 | 40 | no | no | 150 | 110 |
| GBOB | Galveston Bay | TX | cv | - | - | 43 | - | - | 43 | 47 |
| BRFS | Brazos River | TX | cv | - | - | 160 | - | - | 160 | 44 |
| MBEM | Matagorda Bay | TX | cv | 31 | 9.7 | 15 | no | no | 19 | 120 |
| MBDI | Matagorda Bay | TX | cv | - | - | 61 | - | - | 61 | - |
| MBCB | Matagorda Bay | TX | cv | - | - | 17 | - | - | 17 | - |
| MBTP | Matagorda Bay | TX | cv | 8.3 | 8.3 | 100 | yes | i | 39 | 150 |
| MBGP | Matagorda Bay | TX | cv | 6.7 | 13 | 33 | no | no | 17 | 100 |
| MBLR | Matagorda Bay | TX | cv | 34 | 190 | - | - | - | 110 | 200 |
| ESSP | Espiritu Santo | TX | cv | 15 | 16 | - | - | - | 16 | - |
| ESBD | Espiritu Santo | TX | cv | - | - | 14 | - | - | 14 | 86 |
| SAMP | San Antonio Bay | TX | cv | 93 | 61 | - | - | - | 74 | 100 |
| SAPP | San Antonio Bay | TX | cv | 15 | 7.7 | - | - | - | 11 | - |
| MBAR | Mesquite Bay | TX | cv | 56 | nd | nd | - | - | 19 | - |

Table B.8 **Low molecular weight PAH** (Continued)

| SITE | Location | State | Species | 1986 mean | 1987 mean | 1988 mean | Diff | Trend | Overall mean | Overall cv% |
|---|---|---|---|---|---|---|---|---|---|---|
| CBCR | Copano Bay | TX | cv | 44 | 20 | 690 | - | - | 250 | - |
| ABHI | Aransas Bay | TX | cv | - | - | 500 | - | - | 500 | - |
| ABLR | Aransas Bay | TX | cv | 32 | 14 | nd | - | - | 16 | - |
| CCBH | Corpus Christi | TX | cv | - | - | 490 | - | - | 490 | 82 |
| CCIC | Corpus Christi | TX | cv | 230 | - | 170 | - | - | 200 | 19 |
| CCNB | Corpus Christi | TX | cv | 14 | 120 | 280 | yes | i | 140 | 90 |
| LMSB | L. Laguna Madre | TX | cv | nd | nd | 7.7 | - | - | 2.9 | - |
| LMPI | Laguna Madre | TX | cv | - | - | 680 | - | - | 680 | 51 |
| IBNJ | Imperial Beach | CA | mc | nd | nd | 100 | - | - | 25 | - |
| SDHI | San Diego Bay | CA | me | 47 | 3200 | 390 | yes | no | 1200 | 140 |
| PLLH | Pt. Loma | CA | mc | 2000 | nd | 57 | yes | no | 690 | 180 |
| MBVB | Mission Bay | CA | me | nd | nd | 210 | - | - | 71 | - |
| LJLJ | La Jolla | CA | mc | nd | nd | 48 | - | - | 16 | - |
| OSBJ | Oceanside | CA | me | nd | nd | 9 | - | - | 3 | - |
| NBWJ | Newport Bch. | CA | mc | nd | nd | 8 | - | - | 2.7 | - |
| ABWJ | Anaheim Bay | CA | mc | nd | nd | 67 | - | - | 22 | - |
| SPFP | San Pedro Hrb. | CA | me | nd | 71 | 27 | - | - | 33 | - |
| PVRP | Palos Verdes | CA | mc | nd | nd | 17 | - | - | 5.7 | - |
| SCBR | S. Catalina Is. | CA | mc | 1800 | nd | 4.7 | - | - | 610 | - |
| MDSJ | Marina Del Rey | CA | me | nd | 110 | 53 | no | no | 55 | 140 |
| PDPD | Pt. Dume | CA | mc | nd | nd | 25 | - | - | 9.2 | - |
| SCFP | Santa Cruz Is. | CA | mc | 1900 | nd | nd | - | - | 650 | - |
| SANM | San Miguel Is. | CA | mc | - | - | 4.7 | - | - | 4.7 | 170 |
| SBSB | Pt. S. Barbara | CA | mc | 30 | 21 | 120 | no | no | 57 | 120 |
| PCPC | Pt. Conception | CA | mc | nd | nd | 17 | - | - | 5.7 | - |
| SLSL | San Luis Ob. Bay | CA | mc | 160 | 91 | 77 | no | no | 110 | 40 |
| SSSS | San Simeon Pt. | CA | mc | 1900 | 33 | 6 | yes | d | 630 | 150 |
| PGLP | Pacific Grove | CA | mc | nd | nd | 19 | - | - | 6.2 | - |
| MBSC | Monterey Bay | CA | mc | 16 | 100 | 38 | yes | no | 52 | 87 |
| FIEL | Farallon Is. | CA | mc | - | - | 5.7 | - | - | 5.7 | - |
| SFDB | San Fran. Bay | CA | me | nd | 40 | nd | - | - | 13 | - |
| SFSM | San Fran. Bay | CA | me | 890 | 20 | 23 | no | no | 310 | 190 |
| SFEM | San Fran. Bay | CA | me | - | 1200 | 940 | - | - | 1100 | 41 |
| TBSR | Tomales Bay | CA | me | nd | nd | 27 | - | - | 8.9 | - |
| BBBE | Bodega Bay | CA | mc | nd | nd | 32 | - | - | 11 | - |
| PALH | Pt. Arena | CA | mc | nd | nd | nd | - | - | nd | - |
| PDSC | Pt. Delgada | CA | mc | nd | nd | nd | - | - | nd | - |
| HMBJ | Humboldt Bay | CA | mc | 60 | nd | 33 | - | - | 35 | - |
| SGSG | Pt. St. George | CA | mc | 2500 | 61 | 24 | yes | d | 870 | 160 |
| CBCH | Coos Bay | OR | mc | 2400 | 41 | 590 | yes | no | 1000 | 120 |
| CBRP | Coos Bay | OR | me | 3600 | 140 | 310 | yes | no | 1300 | 130 |
| YBOP | Yaquina Bay | OR | me | 430 | nd | 610 | no | no | 350 | 96 |
| YHYH | Yaquina Head | OR | mc | nd | nd | 73 | - | - | 24 | - |
| TBHP | Tillamook Bay | OR | me | nd | - | 230 | yes | no | 120 | 180 |
| CRSJ | Columbia R. | OR | me | nd | nd | 560 | - | - | 190 | - |
| GHWJ | Gray's Hrb. | WA | mc | nd | nd | 520 | - | - | 220 | - |
| JFCF | S. Juan de Fuca | WA | mc | 87 | 39 | 340 | no | no | 160 | 110 |
| SSBI | South Puget Snd. | WA | me | 300 | 110 | 720 | yes | no | 380 | 75 |
| CBTP | Comm. Bay | WA | me | 490 | 570 | 1000 | no | no | 690 | 41 |
| EBFR | Elliott Bay | WA | me | 7800 | 590 | 4300 | yes | no | 4200 | 75 |
| SIWP | Sinclair Inlet | WA | me | 2000 | nd | 580 | yes | no | 710 | 120 |
| WIPP | Whidbey Is. | WA | me | nd | nd | 470 | - | - | 180 | - |
| BBSM | Bellingham Bay | WA | me | nd | nd | 1000 | - | - | 330 | - |
| PRPR | Pt. Roberts | WA | me | nd | nd | 650 | - | - | 280 | - |
| PVMC | Port Valdez | AK | me | nd | - | 330 | no | no | 170 | 140 |
| UISB | Unakwit Inlet | AK | me | nd | nd | 770 | - | - | 290 | - |
| BPBP | Barber's Pt. | HI | os | 1500 | 260 | 23 | no | no | 600 | 170 |
| HHKL | Honolulu Hrb. | HI | os | nd | 1300 | 270 | yes | no | 520 | 120 |
| KAUI | Kauai | HI | os | - | - | 82 | - | - | 82 | 22 |

Table B.9 Summary of 1986 through 1988 data for **High molecular weight PAH** in mollusks.

| SITE | Location | State | Species | 1986 mean | 1987 mean | 1988 mean | Diff | Trend | Overall mean | Overall cv% |
|---|---|---|---|---|---|---|---|---|---|---|
| PBSI | Penobscot Bay | ME | me | 580 | nd | 360 | yes | no | 310 | 92 |
| PBPI | Penobscot Bay | ME | me | 320 | nd | 75 | yes | no | 130 | 110 |
| MSSP | Merriconeag Snd. | ME | me | - | - | 43 | - | - | 43 | 22 |
| CAGH | Cape Ann | MA | me | - | nd | nd | - | - | nd | - |
| SHFP | Salem Harbor | MA | me | - | - | 840 | - | - | 840 | 3 |
| BHDI | Boston Hrb. | MA | me | 1900 | 1800 | 1900 | no | no | 1800 | 19 |
| BHDB | Boston Hrb. | MA | me | 2900 | 2000 | 980 | no | no | 2000 | 66 |
| BHHB | Boston Hrb. | MA | me | 3400 | 340 | 360 | no | no | 1300 | 130 |
| BHBI | Boston Hrb. | MA | me | 580 | 1200 | 580 | no | no | 770 | 42 |
| BBRH | Buzzards Bay | MA | me | 980 | 560 | 200 | no | no | 580 | 92 |
| BBAR | Buzzards Bay | MA | me | 790 | 360 | 420 | - | - | 520 | - |
| BBGN | Buzzards Bay | MA | me | 180 | nd | nd | - | - | 59 | - |
| NBDU | Narr. Bay | RI | me | 160 | nd | - | - | - | 64 | - |
| NBDI | Narr. Bay | RI | me | 59 | 53 | nd | - | - | 37 | - |
| BIBI | Block Is. | RI | me | - | nd | nd | - | - | nd | - |
| LICR | Long Is. Snd. | CT | me | 630 | nd | 1000 | yes | no | 550 | 95 |
| LINH | Long Is. Snd. | CT | me | 470 | 880 | 1300 | yes | i | 900 | 57 |
| LIHR | Long Is. Snd. | CT | me | 280 | 170 | 480 | no | no | 310 | 59 |
| LISI | Long Is. Snd. | CT | me | 300 | 57 | 330 | no | no | 230 | 71 |
| LIHU | Long Is. Snd. | NY | me | 2300 | 270 | 230 | no | no | 940 | 240 |
| LIPJ | Long Is. Snd. | NY | me | 440 | 300 | 420 | no | no | 390 | 60 |
| LIMR | Long Is. Snd. | NY | me | 560 | 1900 | 840 | yes | no | 1100 | 59 |
| LIHH | Long Is. Snd. | NY | me | 1200 | 2200 | 690 | no | no | 1100 | 49 |
| LITN | Long Is. Snd. | NY | me | 3300 | 4700 | 2000 | no | no | 3400 | 48 |
| MBTH | Moriches Bay | NY | me | - | nd | nd | - | - | nd | - |
| HRJB | Hud./Rar. Est | NY | me | 1700 | 2500 | 2300 | no | no | 2200 | 26 |
| HRUB | Hud./Rar. Est. | NY | me | 15000 | 10000 | 6700 | yes | d | 11000 | 38 |
| HRLB | Hud./Rar. Est. | NY | me | 2200 | 4900 | 2900 | no | no | 3300 | 46 |
| NYSH | N.Y. Bight | NJ | me | 1200 | 1400 | 1800 | no | no | 1500 | 19 |
| NYLB | N.Y. Bight | NJ | me | 770 | 860 | 520 | no | no | 710 | 36 |
| NYSR | N.Y. Bight | NJ | me | 1100 | 1500 | 1700 | no | no | 1400 | 24 |
| BIBL | Barnegat Inlet | NJ | me | - | - | 260 | - | - | 260 | 11 |
| AIAC | Absecon Inlet | NJ | me | - | - | 750 | - | - | 750 | 24 |
| DBFE | Delaware Bay | DE | cv | 470 | nd | nd | - | - | 160 | - |
| DBBD | Delaware Bay | DE | cv | 480 | nd | nd | - | - | 160 | - |
| DBAP | Delaware Bay | DE | cv | 500 | nd | 42 | - | - | 90 | - |
| DBKI | Delaware Bay | DE | cv | 1300 | nd | 100 | no | no | 450 | 150 |
| CBMP | Ches. Bay | MD | cv | nd | 250 | 450 | yes | i | 230 | 84 |
| CBHP | Ches. Bay | MD | cv | 190 | 760 | 160 | no | no | 370 | 190 |
| CBHG | Ches. Bay | MD | cv | 360 | nd | 16 | - | - | 130 | - |
| CBIB | Ches. Bay | VA | cv | nd | nd | - | - | - | nd | - |
| CBCC | Ches. Bay | VA | cv | 530 | nd | 29 | yes | no | 190 | 160 |
| CBDP | Ches. Bay | VA | cv | 280 | 53 | 310 | no | no | 210 | 150 |
| CBCI | Chincoteague Bay | VA | cv | 330 | 110 | 650 | yes | no | 360 | 68 |
| QIUB | Quinby Inlet | VA | cv | 420 | nd | nd | - | - | 140 | - |
| RSJC | Roanoke Snd. | NC | cv | 180 | 290 | 120 | no | no | 200 | 140 |
| PSWB | Pamlico Snd. | NC | cv | 310 | nd | nd | - | - | 100 | - |
| CFBI | Cape Fear | NC | cv | 1000 | nd | .5 | - | - | 340 | - |
| CHFJ | Charleston Hrb. | SC | cv | 1000 | 220 | 350 | no | no | 470 | 92 |
| CHSF | Charleston Hrb. | SC | cv | 1400 | 550 | 790 | no | no | 930 | 52 |
| SRTI | Savannah R. Est. | GA | cv | 250 | nd | 96 | yes | no | 120 | 110 |
| SSSI | Sapelo Snd. | GA | cv | 29 | nd | nd | - | - | 9.6 | - |
| SJCB | St. Johns R. | FL | cv | 260 | 320 | nd | - | - | 190 | - |
| MRCB | Matanzas R. | FL | cv | nd | nd | nd | - | - | nd | - |
| IRSR | Indian River | FL | cv | - | - | 710 | - | - | 710 | 3 |
| NMML | North Miami | FL | cv | - | - | 530 | - | - | 530 | 1 |
| BBPC | Biscayne Bay | FL | cv | 380 | 900 | - | - | - | 640 | 170 |
| EVFU | Everglades | FL | cv | nd | nd | 160 | - | - | 55 | - |
| RBHC | Rookery Bay | FL | cv | nd | nd | 29 | - | - | 9.7 | - |

Table B.9 **High molecular weight PAH** (Continued)

| SITE | Location | State | Species | 1986 mean | 1987 mean | 1988 mean | Diff | Trend | Overall mean | Overall cv% |
|---|---|---|---|---|---|---|---|---|---|---|
| NBNB | Naples Bay | FL | cv | 260 | 110 | 120 | - | - | 160 | - |
| CBBI | Charlotte Hrb. | FL | cv | nd | 170 | - | - | - | 85 | - |
| CBFM | Charlotte Hrb. | FL | cv | - | - | 200 | - | - | 200 | 11 |
| TBMK | Tampa Bay | FL | cv | 420 | 22 | 14 | yes | d | 150 | 190 |
| TBCB | Tampa Bay | FL | cv | nd | 17 | 18 | - | - | 12 | - |
| TBHB | Tampa Bay | FL | cv | 430 | 250 | nd | no | no | 290 | 57 |
| TBPB | Tampa Bay | FL | cv | 84 | 70 | 180 | no | no | 110 | 61 |
| TBOT | Tampa Bay | FL | cv | - | - | 120 | - | - | 120 | 110 |
| CKBP | Cedar Key | FL | cv | nd | 23 | 270 | - | - | 99 | - |
| SRWP | Suwannee River | FL | cv | - | - | 160 | - | - | 160 | - |
| APCP | Apalachicola Bay | FL | cv | 88 | nd | 130 | yes | no | 74 | 100 |
| APDB | Apalachicola Bay | FL | cv | nd | nd | 1000 | - | - | 380 | - |
| PCMP | Panama City | FL | cv | - | - | 1500 | - | - | 1500 | 18 |
| SAWB | St. Andrew Bay | FL | cv | 3600 | 2200 | 660 | yes | d | 2000 | 79 |
| CBSP | Choctawhat. Bay | FL | cv | 310 | 340 | 310 | no | no | 320 | 33 |
| CBSR | Choctawhat. Bay | FL | cv | 80 | 1400 | 2000 | yes | i | 1100 | 82 |
| PBPH | Pensacola Bay | FL | cv | - | - | 380 | - | - | 380 | 76 |
| PBIB | Pensacola Bay | FL | cv | 330 | 76 | 120 | no | no | 180 | 73 |
| MBHI | Mobile Bay | AL | cv | - | - | 1100 | - | - | 1100 | 25 |
| MBCP | Mobile Bay | AL | cv | 17 | 200 | 170 | no | no | 130 | 110 |
| MSPB | Miss. Snd. | MS | cv | 220 | 220 | 420 | no | no | 290 | 40 |
| MSBB | Miss. Snd. | MS | cv | 1000 | 2600 | 740 | yes | no | 1400 | 62 |
| MSPC | Miss. Snd. | MS | cv | 130 | 110 | 120 | no | no | 120 | 69 |
| LBNO | Lake Borgne | LA | cv | - | - | 20 | - | - | 20 | - |
| LBMP | Lake Borgne | LA | cv | 23 | 7.7 | 24 | - | - | 18 | - |
| BSBG | Breton Snd. | LA | cv | 33 | 31 | 77 | no | no | 47 | 71 |
| BSSI | Breton Snd. | LA | cv | 40 | 8.3 | 120 | no | no | 58 | 140 |
| MRTP | Miss. River | LA | cv | - | - | 490 | - | - | 490 | 20 |
| MRPL | Miss. River | LA | cv | - | - | 540 | - | - | 540 | 9 |
| BBSD | Barataria Bay | LA | cv | nd | 8.3 | 50 | - | - | 19 | - |
| BBTB | Barataria Bay | LA | cv | - | - | 26 | - | - | 26 | - |
| BBMB | Barataria Bay | LA | cv | 660 | 350 | 950 | no | no | 650 | 56 |
| TBLF | Terrebonne Bay | LA | cv | 390 | nd | 390 | - | - | 260 | - |
| TBLB | Terrebonne Bay | LA | cv | 19 | 12 | 130 | - | - | 55 | - |
| CLCL | Caillou Lake | LA | cv | nd | nd | nd | - | - | nd | - |
| ABOB | Atchafalaya Bay | LA | cv | 24 | 41 | 83 | no | no | 49 | 100 |
| VBSP | Vermillion Bay | LA | cv | nd | 56 | 31 | - | - | 29 | - |
| JHJH | J. Hrb. Bayou | LA | cv | 15 | 87 | 15 | - | - | 39 | - |
| CLLC | Calcasieu Lake | LA | cv | - | - | 690 | - | - | 690 | 19 |
| CLSJ | Calcasieu Lake | LA | cv | - | 36 | 76 | no | no | 56 | 87 |
| SLBB | Sabine Lake | TX | cv | 190 | 23 | 160 | no | no | 130 | 68 |
| GBHR | Galveston Bay | TX | cv | nd | 8 | 56 | - | - | 21 | - |
| GBSC | Galveston Bay | TX | cv | - | - | 2900 | - | - | 2900 | 20 |
| GBYC | Galveston Bay | TX | cv | 900 | 510 | 240 | no | no | 550 | 60 |
| GBTD | Galveston Bay | TX | cv | 68 | 92 | 16 | no | no | 59 | 82 |
| GBCR | Galveston Bay | TX | cv | 780 | 380 | 520 | no | no | 560 | 42 |
| GBOB | Galveston Bay | TX | cv | - | - | 560 | - | - | 560 | 22 |
| BRFS | Brazos River | TX | cv | - | - | 560 | - | - | 560 | 21 |
| MBEM | Matagorda Bay | TX | cv | 53 | 48 | 14 | no | no | 38 | 120 |
| MBDI | Matagorda Bay | TX | cv | - | - | 120 | - | - | 120 | 97 |
| MBCB | Matagorda Bay | TX | cv | - | - | 26 | - | - | 26 | - |
| MBTP | Matagorda Bay | TX | cv | 7 | nd | 140 | - | - | 49 | - |
| MBGP | Matagorda Bay | TX | cv | 7 | 76 | 56 | no | no | 46 | 91 |
| MBLR | Matagorda Bay | TX | cv | 57 | 65 | - | - | - | 61 | 43 |
| ESSP | Espiritu Santo | TX | cv | nd | 16 | - | - | - | 8.2 | - |
| ESBD | Espiritu Santo | TX | cv | - | - | 21 | - | - | 21 | 99 |
| SAMP | San Antonio Bay | TX | cv | nd | 26 | - | - | - | 16 | - |
| SAPP | San Antonio Bay | TX | cv | 23 | 35 | - | - | - | 29 | 94 |
| MBAR | Mesquite Bay | TX | cv | nd | nd | nd | no | no | nd | - |

Table B.9 **High molecular weight PAH** (Continued)

| SITE | Location | State | Species | 1986 mean | 1987 mean | 1988 mean | Diff | Trend | Overall mean | Overall cv% |
|---|---|---|---|---|---|---|---|---|---|---|
| CBCR | Copano Bay | TX | cv | nd | nd | 1000 | - | - | 340 | - |
| ABHI | Aransas Bay | TX | cv | - | - | 1200 | - | - | 1200 | 19 |
| ABLR | Aransas Bay | TX | cv | nd | nd | 22 | - | - | 7.2 | - |
| CCBH | Corpus Christi | TX | cv | - | - | 600 | - | - | 600 | 83 |
| CCIC | Corpus Christi | TX | cv | 840 | - | 650 | - | - | 750 | 16 |
| CCNB | Corpus Christi | TX | cv | 47 | 300 | 320 | no | no | 220 | 69 |
| LMSB | L. Laguna Madre | TX | cv | 14 | nd | 17 | - | - | 10 | - |
| LMPI | Laguna Madre | TX | cv | - | - | 2500 | - | - | 2500 | 13 |
| IBNJ | Imperial Beach | CA | mc | nd | nd | nd | - | - | nd | - |
| SDHI | San Diego Bay | CA | me | 1600 | 2500 | 3800 | no | no | 2700 | 66 |
| PLLH | Pt. Loma | CA | mc | - | nd | nd | - | - | nd | - |
| MBVB | Mission Bay | CA | me | - | nd | 300 | - | - | 150 | - |
| LJLJ | La Jolla | CA | mc | nd | nd | nd | - | - | nd | - |
| OSBJ | Oceanside | CA | me | nd | nd | 16 | - | - | 6 | - |
| NBWJ | Newport Bch. | CA | mc | nd | nd | nd | - | - | nd | - |
| ABWJ | Anaheim Bay | CA | mc | nd | nd | 21 | - | - | 7.7 | - |
| SPFP | San Pedro Hrb. | CA | me | 1900 | 3000 | 1200 | no | no | 2000 | 61 |
| PVRP | Palos Verdes | CA | mc | nd | nd | nd | - | - | nd | - |
| SCBR | S. Catalina Is. | CA | mc | nd | nd | nd | - | - | nd | - |
| MDSJ | Marina Del Rey | CA | me | 1200 | 530 | 490 | no | no | 740 | 58 |
| PDPD | Pt. Dume | CA | mc | 26 | nd | nd | - | - | 9.9 | - |
| SCFP | Santa Cruz Is. | CA | mc | 270 | nd | nd | - | - | 39 | - |
| SANM | San Miguel Is. | CA | mc | - | - | 8 | - | - | 8 | - |
| SBSB | Pt. S. Barbara | CA | mc | nd | nd | 200 | - | - | 84 | - |
| PCPC | Pt. Conception | CA | mc | nd | nd | 62 | - | - | 26 | - |
| SLSL | San Luis Ob. Bay | CA | mc | 240 | - | 62 | no | no | 150 | 110 |
| SSSS | San Simeon Pt. | CA | mc | 47 | nd | nd | - | - | 19 | - |
| PGLP | Pacific Grove | CA | mc | nd | nd | nd | - | - | nd | - |
| MBSC | Monterey Bay | CA | mc | nd | nd | nd | - | - | nd | - |
| FIEL | Farallon Is. | CA | mc | - | - | nd | - | - | nd | - |
| SFDB | San Fran. Bay | CA | me | 100 | 400 | 49 | - | - | 210 | - |
| SFSM | San Fran. Bay | CA | me | 530 | 660 | 260 | no | no | 490 | 59 |
| SFEM | San Fran. Bay | CA | me | - | 4600 | 2300 | - | - | 3500 | 42 |
| TBSR | Tomales Bay | CA | me | nd | nd | 76 | - | - | 25 | - |
| BBBE | Bodega Bay | CA | mc | nd | nd | nd | no | no | nd | - |
| PALH | Pt. Arena | CA | mc | nd | nd | nd | - | - | nd | - |
| PDSC | Pt. Delgada | CA | mc | nd | nd | nd | - | - | nd | - |
| HMBJ | Humboldt Bay | CA | mc | nd | - | 5 | - | - | 3.3 | - |
| SGSG | Pt. St. George | CA | mc | - | nd | nd | - | - | nd | - |
| CBCH | Coos Bay | OR | mc | - | 33 | 13 | - | - | 23 | - |
| CBRP | Coos Bay | OR | me | 560 | 37 | 240 | yes | no | 280 | 84 |
| YBOP | Yaquina Bay | OR | me | 640 | 26 | 70 | yes | no | 240 | 140 |
| YHYH | Yaquina Head | OR | mc | nd | nd | nd | - | - | nd | - |
| TBHP | Tillamook Bay | OR | me | - | - | 11 | no | no | 11 | 120 |
| CRSJ | Columbia R. | OR | me | 97 | nd | 410 | yes | no | 170 | 110 |
| GHWJ | Gray's Hrb. | WA | mc | nd | nd | 11 | - | - | 5.7 | - |
| JFCF | S. Juan de Fuca | WA | mc | nd | - | .87 | - | - | .52 | - |
| SSBI | South Puget Snd. | WA | me | 1900 | 1800 | 780 | no | no | 1500 | 61 |
| CBTP | Comm. Bay | WA | me | 1900 | 1500 | 1400 | no | no | 1600 | 29 |
| EBFR | Elliott Bay | WA | me | 15000 | 7700 | 11000 | yes | no | 11000 | 32 |
| SIWP | Sinclair Inlet | WA | me | 1000 | 710 | 270 | yes | d | 630 | 56 |
| WIPP | Whidbey Is. | WA | me | 85 | nd | 200 | no | no | 110 | 86 |
| BBSM | Bellingham Bay | WA | me | 1500 | 300 | 1800 | no | no | 1200 | 65 |
| PRPR | Pt. Roberts | WA | me | nd | nd | 160 | - | - | 69 | - |
| PVMC | Port Valdez | AK | me | nd | nd | 3.2 | - | - | 1.6 | - |
| UISB | Unakwit Inlet | AK | me | nd | nd | 47 | no | no | 23 | 130 |
| BPBP | Barber's Pt. | HI | os | 6000 | nd | 11 | yes | no | 2000 | 170 |
| HHKL | Honolulu Hrb. | HI | os | nd | 2500 | 2700 | no | no | 1900 | 85 |
| KAUI | Kauai | HI | os | - | - | 110 | - | - | 110 | 4 |

Table B.10 Summary of 1986 through 1988 data for **Lipids** (g/g dry)in mollusks.

| SITE | Location | State | Species | 1986 mean | 1987 mean | 1988 mean | Diff | Trend | Overall mean | Overall cv% |
|---|---|---|---|---|---|---|---|---|---|---|
| PBSI | Penobscot Bay | ME | me | .056 | .013 | n.a. | - | - | - | - |
| PBPI | Penobscot Bay | ME | me | .062 | .016 | n.a. | - | - | - | - |
| MSSP | Merriconeag Snd. | ME | me | - | - | n.a. | - | - | - | - |
| CAGH | Cape Ann | MA | me | - | .022 | n.a. | - | - | - | - |
| SHFP | Salem Harbor | MA | me | - | - | n.a. | - | - | - | - |
| BHDI | Boston Hrb. | MA | me | .056 | .058 | n.a. | - | - | - | - |
| BHDB | Boston Hrb. | MA | me | .078 | .034 | n.a. | - | - | - | - |
| BHHB | Boston Hrb. | MA | me | .071 | .053 | n.a. | - | - | - | - |
| BHBI | Boston Hrb. | MA | me | .079 | .079 | n.a. | - | - | - | - |
| BBRH | Buzzards Bay | MA | me | .052 | .067 | n.a. | - | - | - | - |
| BBAR | Buzzards Bay | MA | me | .073 | .039 | n.a. | - | - | - | - |
| BBGN | Buzzards Bay | MA | me | .062 | .035 | n.a. | - | - | - | - |
| NBDU | Narr. Bay | RI | me | .082 | .041 | - | - | - | .062 | 48 |
| NBDI | Narr. Bay | RI | me | .071 | .059 | n.a. | - | - | - | - |
| BIBI | Block Is. | RI | me | - | .06 | n.a. | - | - | - | - |
| LICR | Long Is. Snd. | CT | me | .068 | .034 | n.a. | - | - | - | - |
| LINH | Long Is. Snd. | CT | me | .075 | .014 | n.a. | - | - | - | - |
| LIHR | Long Is. Snd. | CT | me | .051 | .036 | n.a. | - | - | - | - |
| LISI | Long Is. Snd. | CT | me | .07 | .056 | n.a. | - | - | - | - |
| LIHU | Long Is. Snd. | NY | me | .089 | .085 | n.a. | - | - | - | - |
| LIPJ | Long Is. Snd. | NY | me | .068 | .05 | n.a. | - | - | - | - |
| LIMR | Long Is. Snd. | NY | me | .076 | .053 | n.a. | - | - | - | - |
| LIHH | Long Is. Snd. | NY | me | .049 | .44 | n.a. | - | - | - | - |
| LITN | Long Is. Snd. | NY | me | .084 | .058 | n.a. | - | - | - | - |
| MBTH | Moriches Bay | NY | me | .083 | .046 | n.a. | - | - | - | - |
| HRJB | Hud./Rar. Est | NY | me | .055 | .041 | n.a. | - | - | - | - |
| HRUB | Hud./Rar. Est. | NY | me | .048 | .05 | n.a. | - | - | - | - |
| HRLB | Hud./Rar. Est. | NY | me | .066 | .039 | n.a. | - | - | - | - |
| NYSH | N.Y. Bight | NJ | me | .068 | .057 | n.a. | - | - | - | - |
| NYLB | N.Y. Bight | NJ | me | .088 | .05 | n.a. | - | - | - | - |
| NYSR | N.Y. Bight | NJ | me | .061 | .023 | n.a. | - | - | - | - |
| BIBL | Barnegat Inlet | NJ | me | - | - | n.a. | - | - | - | - |
| AIAC | Absecon Inlet | NJ | me | - | - | n.a. | - | - | - | - |
| DBFE | Delaware Bay | DE | cv | .071 | .042 | n.a. | - | - | - | - |
| DBBD | Delaware Bay | DE | cv | .074 | .11 | n.a. | - | - | - | - |
| DBAP | Delaware Bay | DE | cv | .089 | .048 | n.a. | - | - | - | - |
| DBKI | Delaware Bay | DE | cv | .082 | .033 | n.a. | - | - | - | - |
| CBMP | Ches. Bay | MD | cv | .11 | .12 | n.a. | - | - | - | - |
| CBHP | Ches. Bay | MD | cv | .086 | .06 | n.a. | - | - | - | - |
| CBHG | Ches. Bay | MD | cv | .089 | .047 | n.a. | - | - | - | - |
| CBIB | Ches. Bay | VA | cv | .065 | .05 | - | - | - | .057 | 45 |
| CBCC | Ches. Bay | VA | cv | .073 | .078 | n.a. | - | - | - | - |
| CBDP | Ches. Bay | VA | cv | .065 | .05 | n.a. | - | - | - | - |
| CBCI | Chincoteague Bay | VA | cv | .069 | .06 | n.a. | - | - | - | - |
| QIUB | Quinby Inlet | VA | cv | .07 | .047 | n.a. | - | - | - | - |
| RSJC | Roanoke Snd. | NC | cv | .041 | .057 | n.a. | - | - | - | - |
| PSWB | Pamlico Snd. | NC | cv | .051 | .031 | n.a. | - | - | - | - |
| CFBI | Cape Fear | NC | cv | .072 | .053 | n.a. | - | - | - | - |
| CHFJ | Charleston Hrb. | SC | cv | .057 | .041 | n.a. | - | - | - | - |
| CHSF | Charleston Hrb. | SC | cv | .06 | .014 | n.a. | - | - | - | - |
| SRTI | Savannah R. Est. | GA | cv | .073 | .05 | n.a. | - | - | - | - |
| SSSI | Sapelo Snd. | GA | cv | .051 | .057 | n.a. | - | - | - | - |
| SJCB | St. Johns R. | FL | cv | .11 | .045 | n.a. | - | - | - | - |
| MRCB | Matanzas R. | FL | cv | .032 | .003 | n.a. | - | - | - | - |
| IRSR | Indian River | FL | cv | - | - | n.a. | - | - | - | - |
| NMML | North Miami | FL | cv | - | - | n.a. | - | - | - | - |
| BBPC | Biscayne Bay | FL | cv | .028 | .067 | - | - | - | .048 | 54 |
| EVFU | Everglades | FL | cv | .054 | .085 | .049 | yes | no | .062 | 32 |
| RBHC | Rookery Bay | FL | cv | .044 | .047 | .087 | no | no | .059 | 35 |

Table B.10 **Lipids** (Continued)

| SITE | Location | State | Species | 1986 mean | 1987 mean | 1988 mean | Diff | Trend | Overall mean | cv% |
|---|---|---|---|---|---|---|---|---|---|---|
| NBNB | Naples Bay | FL | cv | .064 | .073 | .068 | no | no | .068 | 14 |
| CBBI | Charlotte Hrb. | FL | cv | .064 | .063 | - | - | - | .063 | 22 |
| CBFM | Charlotte Hrb. | FL | cv | - | - | .083 | - | - | .083 | 0 |
| TBMK | Tampa Bay | FL | cv | .071 | .073 | .096 | no | no | .08 | 17 |
| TBCB | Tampa Bay | FL | cv | .07 | .077 | .073 | no | no | .073 | 16 |
| TBHB | Tampa Bay | FL | cv | .079 | .1 | - | - | - | .09 | 15 |
| TBPB | Tampa Bay | FL | cv | .062 | .091 | .064 | no | no | .072 | 22 |
| TBOT | Tampa Bay | FL | cv | - | - | .057 | - | - | .057 | 0 |
| CKBP | Cedar Key | FL | cv | .075 | .081 | .063 | yes | no | .073 | 13 |
| SRWP | Suwannee River | FL | cv | - | - | .076 | - | - | .076 | 0 |
| APCP | Apalachicola Bay | FL | cv | .092 | .078 | .084 | no | no | .085 | 9 |
| APDB | Apalachicola Bay | FL | cv | .09 | .1 | .12 | yes | no | .1 | 17 |
| PCMP | Panama City | FL | cv | - | - | .08 | - | - | .08 | 0 |
| SAWB | St. Andrew Bay | FL | cv | .084 | .094 | .12 | yes | no | .1 | 16 |
| CBSP | Choctawhat. Bay | FL | cv | .089 | .13 | .053 | yes | no | .089 | 40 |
| CBSR | Choctawhat. Bay | FL | cv | .11 | .088 | .068 | yes | no | .09 | 23 |
| PBPH | Pensacola Bay | FL | cv | - | - | .086 | - | - | .086 | 0 |
| PBIB | Pensacola Bay | FL | cv | .1 | .14 | .076 | yes | no | .1 | 30 |
| MBHI | Mobile Bay | AL | cv | - | - | .23 | - | - | .23 | 0 |
| MBCP | Mobile Bay | AL | cv | .083 | .13 | .14 | no | no | .11 | 27 |
| MSPB | Miss. Snd. | MS | cv | .069 | .089 | .08 | no | no | .079 | 24 |
| MSBB | Miss. Snd. | MS | cv | .091 | .13 | .12 | no | no | .11 | 18 |
| MSPC | Miss. Snd. | MS | cv | .095 | .15 | .11 | yes | no | .12 | 23 |
| LBNO | Lake Borgne | LA | cv | - | - | .082 | - | - | .082 | 0 |
| LBMP | Lake Borgne | LA | cv | .099 | .11 | .083 | yes | no | .099 | 14 |
| BSBG | Breton Snd. | LA | cv | .088 | .13 | .087 | no | no | .1 | 22 |
| BSSI | Breton Snd. | LA | cv | .1 | .084 | .12 | yes | no | .1 | 16 |
| MRTP | Miss. River | LA | cv | - | - | .12 | - | - | .12 | 0 |
| MRPL | Miss. River | LA | cv | - | - | .096 | - | - | .096 | 0 |
| BBSD | Barataria Bay | LA | cv | .091 | .091 | .19 | no | no | .13 | 40 |
| BBTB | Barataria Bay | LA | cv | - | - | .12 | - | - | .12 | 0 |
| BBMB | Barataria Bay | LA | cv | .086 | .093 | .12 | no | no | .1 | 17 |
| TBLF | Terrebonne Bay | LA | cv | .092 | .12 | .097 | no | no | .1 | 20 |
| TBLB | Terrebonne Bay | LA | cv | .08 | .093 | .084 | no | no | .086 | 17 |
| CLCL | Caillou Lake | LA | cv | .1 | .074 | .18 | yes | no | .12 | 38 |
| ABOB | Atchafalaya Bay | LA | cv | .099 | .06 | .048 | yes | d | .069 | 36 |
| VBSP | Vermillion Bay | LA | cv | .09 | .096 | .12 | no | no | .1 | 18 |
| JHJH | J. Hrb. Bayou | LA | cv | .082 | .081 | .1 | no | no | .088 | 13 |
| CLLC | Calcasieu Lake | LA | cv | - | - | .065 | - | - | .065 | 0 |
| CLSJ | Calcasieu Lake | LA | cv | .082 | .085 | .055 | no | no | .074 | 22 |
| SLBB | Sabine Lake | TX | cv | .066 | .06 | .054 | no | no | .06 | 16 |
| GBHR | Galveston Bay | TX | cv | .077 | .1 | .11 | yes | no | .097 | 16 |
| GBSC | Galveston Bay | TX | cv | - | - | .16 | - | - | .16 | 0 |
| GBYC | Galveston Bay | TX | cv | .093 | .069 | .15 | yes | no | .1 | 40 |
| GBTD | Galveston Bay | TX | cv | .085 | .097 | .094 | no | no | .092 | 22 |
| GBCR | Galveston Bay | TX | cv | .076 | .091 | .09 | no | no | .086 | 11 |
| GBOB | Galveston Bay | TX | cv | - | - | .1 | - | - | .1 | 0 |
| BRFS | Brazos River | TX | cv | - | - | .067 | - | - | .067 | 0 |
| MBEM | Matagorda Bay | TX | cv | .064 | .099 | .087 | no | no | .083 | 22 |
| MBDI | Matagorda Bay | TX | cv | - | - | .059 | - | - | .059 | 0 |
| MBCB | Matagorda Bay | TX | cv | - | - | .059 | - | - | .059 | 0 |
| MBTP | Matagorda Bay | TX | cv | .068 | .077 | .062 | no | no | .069 | 23 |
| MBGP | Matagorda Bay | TX | cv | .071 | .072 | .088 | no | no | .077 | 14 |
| MBLR | Matagorda Bay | TX | cv | .099 | .1 | - | - | - | .1 | 21 |
| ESSP | Espiritu Santo | TX | cv | .075 | .085 | - | - | - | .08 | 25 |
| ESBD | Espiritu Santo | TX | cv | - | - | .085 | - | - | .085 | 0 |
| SAMP | San Antonio Bay | TX | cv | .073 | .12 | - | - | - | .099 | 32 |
| SAPP | San Antonio Bay | TX | cv | .072 | .093 | - | - | - | .083 | 18 |
| MBAR | Mesquite Bay | TX | cv | .095 | .1 | .24 | no | no | .15 | 48 |

Table B.10 **Lipids** (Continued)

| SITE | Location | State | Species | 1986 mean | 1987 mean | 1988 mean | Diff | Trend | Overall mean | Overall cv% |
|---|---|---|---|---|---|---|---|---|---|---|
| CBCR | Copano Bay | TX | cv | .063 | .088 | .097 | no | no | .083 | 19 |
| ABHI | Aransas Bay | TX | cv | - | - | .058 | - | - | .058 | 0 |
| ABLR | Aransas Bay | TX | cv | .071 | .085 | .068 | no | no | .074 | 24 |
| CCBH | Corpus Christi | TX | cv | - | - | .072 | - | - | .072 | 0 |
| CCIC | Corpus Christi | TX | cv | .088 | - | .076 | - | - | .082 | 9 |
| CCNB | Corpus Christi | TX | cv | .079 | .076 | .075 | no | no | .077 | 7 |
| LMSB | L. Laguna Madre | TX | cv | .058 | .047 | .021 | yes | d | .042 | 40 |
| LMPI | Laguna Madre | TX | cv | - | - | .024 | - | - | .024 | 0 |
| IBNJ | Imperial Beach | CA | mc | .097 | .054 | .048 | yes | d | .066 | 39 |
| SDHI | San Diego Bay | CA | me | .061 | .095 | .074 | no | no | .077 | 33 |
| PLLH | Pt. Loma | CA | mc | .095 | .11 | .027 | no | no | .076 | 51 |
| MBVB | Mission Bay | CA | me | .066 | .088 | .066 | no | no | .074 | 20 |
| LJLJ | La Jolla | CA | mc | .15 | .072 | .019 | yes | d | .079 | 72 |
| OSBJ | Oceanside | CA | me | .064 | .065 | .044 | no | no | .058 | 27 |
| NBWJ | Newport Bch. | CA | mc | .057 | .043 | .042 | no | no | .048 | 31 |
| ABWJ | Anaheim Bay | CA | mc | .071 | .057 | .032 | yes | d | .053 | 33 |
| SPFP | San Pedro Hrb. | CA | me | .074 | .094 | .025 | yes | no | .064 | 50 |
| PVRP | Palos Verdes | CA | mc | .027 | .059 | .017 | yes | no | .034 | 58 |
| SCBR | S. Catalina Is. | CA | mc | .047 | .078 | .075 | no | no | .067 | 29 |
| MDSJ | Marina Del Rey | CA | me | .046 | .065 | .032 | no | no | .048 | 54 |
| PDPD | Pt. Dume | CA | mc | .052 | .062 | .053 | no | no | .056 | 23 |
| SCFP | Santa Cruz Is. | CA | mc | .061 | .055 | .047 | no | no | .054 | 18 |
| SANM | San Miguel Is. | CA | mc | - | - | .053 | - | - | .053 | 13 |
| SBSB | Pt. S. Barbara | CA | mc | .08 | .029 | .046 | yes | no | .051 | 49 |
| PCPC | Pt. Conception | CA | mc | .19 | .02 | .025 | yes | i* | .078 | 110 |
| SLSL | San Luis Ob. Bay | CA | mc | .3 | .038 | .049 | yes | i* | .13 | 100 |
| SSSS | San Simeon Pt. | CA | mc | .056 | .048 | .027 | yes | d | .044 | 29 |
| PGLP | Pacific Grove | CA | mc | .062 | .083 | .059 | no | no | .068 | 23 |
| MBSC | Monterey Bay | CA | mc | .051 | .062 | .034 | no | no | .049 | 28 |
| FIEL | Farallon Is. | CA | mc | - | - | .053 | - | - | .053 | 9 |
| SFDB | San Fran. Bay | CA | me | .49 | .083 | .082 | no | no | .22 | 95 |
| SFSM | San Fran. Bay | CA | me | .11 | .12 | .1 | no | no | .11 | 17 |
| SFEM | San Fran. Bay | CA | me | - | .059 | .064 | - | - | .062 | 27 |
| TBSR | Tomales Bay | CA | me | .052 | .066 | .062 | no | no | .06 | 31 |
| BBBE | Bodega Bay | CA | mc | .056 | .072 | .038 | yes | no | .055 | 30 |
| PALH | Pt. Arena | CA | mc | .071 | .044 | .046 | no | no | .054 | 25 |
| PDSC | Pt. Delgada | CA | mc | .068 | .043 | .047 | yes | no | .052 | 26 |
| HMBJ | Humboldt Bay | CA | mc | .055 | .067 | .07 | no | no | .064 | 14 |
| SGSG | Pt. St. George | CA | mc | .064 | .063 | .085 | no | no | .071 | 23 |
| CBCH | Coos Bay | OR | mc | .052 | .07 | n.a. | - | - | - | - |
| CBRP | Coos Bay | OR | me | .083 | .06 | n.a. | - | - | - | - |
| YBOP | Yaquina Bay | OR | me | .097 | .1 | n.a. | - | - | - | - |
| YHYH | Yaquina Head | OR | mc | .072 | .081 | n.a. | - | - | - | - |
| TBHP | Tillamook Bay | OR | me | .08 | .1 | n.a. | - | - | - | - |
| CRSJ | Columbia R. | OR | me | .13 | .067 | n.a. | - | - | - | - |
| GHWJ | Gray's Hrb. | WA | mc | .063 | .048 | n.a. | - | - | - | - |
| JFCF | S. Juan de Fuca | WA | mc | .086 | .048 | n.a. | - | - | - | - |
| SSBI | South Puget Snd. | WA | me | .11 | .096 | n.a. | - | - | - | - |
| CBTP | Comm. Bay | WA | me | .11 | .11 | n.a. | - | - | - | - |
| EBFR | Elliott Bay | WA | me | .12 | .12 | n.a. | - | - | - | - |
| SIWP | Sinclair Inlet | WA | me | .1 | .087 | n.a. | - | - | - | - |
| WIPP | Whidbey Is. | WA | me | .17 | .087 | n.a. | - | - | - | - |
| BBSM | Bellingham Bay | WA | me | .057 | .076 | n.a. | - | - | - | - |
| PRPR | Pt. Roberts | WA | me | .079 | .062 | n.a. | - | - | - | - |
| PVMC | Port Valdez | AK | me | .1 | .086 | n.a. | - | - | - | - |
| UISB | Unakwit Inlet | AK | me | .081 | .083 | n.a. | - | - | - | - |
| BPBP | Barber's Pt. | HI | os | .08 | .043 | .064 | no | no | .062 | 33 |
| HHKL | Honolulu Hrb. | HI | os | .058 | .062 | .072 | no | no | .064 | 12 |
| KAUI | Kauai | HI | os | - | - | .084 | - | - | .084 | 23 |

Table B.11 Summary of 1986 through 1988 data for **Arsenic (As)** (µg/g dry) in mollusks.

| SITE | Location | State | Species | 1986 mean | 1987 mean | 1988 mean | Diff | Trend | Overall mean | Overall cv% |
|---|---|---|---|---|---|---|---|---|---|---|
| PBSI | Penobscot Bay | ME | me | 8.9 | 8.5 | 9 | no | no | 8.8 | 5 |
| PBPI | Penobscot Bay | ME | me | 9.2 | 7.6 | 10 | yes | no | 9 | 14 |
| MSSP | Merriconeag Snd. | ME | me | - | - | 7.8 | - | - | 7.8 | 11 |
| CAGH | Cape Ann | MA | me | - | 15 | 15 | - | - | 15 | 5 |
| SHFP | Salem Harbor | MA | me | - | - | 9.4 | - | - | 9.4 | 6 |
| BHDI | Boston Hrb. | MA | me | 8.2 | 8.9 | 9.3 | no | no | 8.8 | 9 |
| BHDB | Boston Hrb. | MA | me | 8.9 | 9.6 | 9.1 | no | no | 9.2 | 6 |
| BHHB | Boston Hrb. | MA | me | 8.5 | 9 | 8.7 | no | no | 8.7 | 4 |
| BHBI | Boston Hrb. | MA | me | 8.3 | 11 | 10 | yes | no | 9.8 | 14 |
| BBRH | Buzzards Bay | MA | me | 13 | 14 | 16 | yes | i* | 14 | 8 |
| BBAR | Buzzards Bay | MA | me | 14 | 16 | 16 | no | no | 15 | 9 |
| BBGN | Buzzards Bay | MA | me | 12 | 17 | 17 | no | no | 16 | 14 |
| NBDU | Narr. Bay | RI | me | 11 | 11 | - | - | - | 11 | 7 |
| NBDI | Narr. Bay | RI | me | 11 | 12 | 10 | no | no | 11 | 7 |
| BIBI | Block Is. | RI | me | - | 14 | 14 | - | - | 14 | 8 |
| LICR | Long Is. Snd. | CT | me | 11 | 9 | 8.3 | yes | d* | 9.4 | 12 |
| LINH | Long Is. Snd. | CT | me | 7 | 5.5 | 5.1 | yes | d* | 5.8 | 17 |
| LIHR | Long Is. Snd. | CT | me | 8.8 | 6.6 | 7.1 | yes | no | 7.5 | 14 |
| LISI | Long Is. Snd. | CT | me | 6.8 | 6.5 | 5.4 | no | no | 6.3 | 13 |
| LIHU | Long Is. Snd. | NY | me | 6.5 | 4.9 | 5.4 | yes | no | 5.6 | 13 |
| LIPJ | Long Is. Snd. | NY | me | 6.8 | 5.7 | 6.3 | no | no | 6.3 | 12 |
| LIMR | Long Is. Snd. | NY | me | 6.9 | 6.5 | 6.1 | no | no | 6.5 | 10 |
| LIHH | Long Is. Snd. | NY | me | 6.1 | 5.9 | 5.7 | no | no | 5.9 | 7 |
| LITN | Long Is. Snd. | NY | me | 6.2 | 5.4 | 5.1 | no | no | 5.6 | 16 |
| MBTH | Moriches Bay | NY | me | 14 | 13 | 13 | yes | no | 13 | 6 |
| HRJB | Hud./Rar. Est | NY | me | 8.4 | 7.8 | 8.8 | no | no | 8.3 | 7 |
| HRUB | Hud./Rar. Est. | NY | me | 9.5 | 9.5 | 10 | no | no | 9.7 | 6 |
| HRLB | Hud./Rar. Est. | NY | me | 9 | 8 | 8.6 | no | no | 8.5 | 8 |
| NYSH | N.Y. Bight | NJ | me | 8.8 | 8.5 | 9.1 | no | no | 8.8 | 6 |
| NYLB | N.Y. Bight | NJ | me | 8.5 | 8.8 | 7.9 | no | no | 8.4 | 6 |
| NYSR | N.Y. Bight | NJ | me | 8.4 | 9 | 8.5 | no | no | 8.6 | 6 |
| BIBL | Barnegat Inlet | NJ | me | - | - | 7.6 | - | - | 7.6 | 14 |
| AIAC | Absecon Inlet | NJ | me | - | - | 11 | - | - | 11 | 9 |
| DBFE | Delaware Bay | DE | cv | 7.3 | 7.7 | 6.5 | yes | no | 7.1 | 8 |
| DBBD | Delaware Bay | DE | cv | 6.3 | 7.2 | 5.7 | no | no | 6.4 | 12 |
| DBAP | Delaware Bay | DE | cv | 5.6 | 4.5 | 4.4 | no | no | 4.8 | 27 |
| DBKI | Delaware Bay | DE | cv | 8 | 8.2 | 7 | no | no | 7.7 | 9 |
| CBMP | Ches. Bay | MD | cv | 6.5 | 6.2 | 5.7 | no | no | 6.1 | 7 |
| CBHP | Ches. Bay | MD | cv | 6.7 | 6 | 5.6 | yes | d* | 6.1 | 9 |
| CBHG | Ches. Bay | MD | cv | 8.1 | 7.5 | 6.8 | no | no | 7.5 | 10 |
| CBIB | Ches. Bay | VA | cv | 11 | 9.3 | - | - | - | 10 | 11 |
| CBCC | Ches. Bay | VA | cv | 17 | 16 | 14 | no | no | 16 | 8 |
| CBDP | Ches. Bay | VA | cv | 15 | 15 | 12 | no | no | 14 | 12 |
| CBCI | Chincoteague Bay | VA | cv | 12 | 11 | 10 | yes | d* | 11 | 9 |
| QIUB | Quinby Inlet | VA | cv | 10 | 9.9 | 9.1 | no | no | 9.8 | 7 |
| RSJC | Roanoke Snd. | NC | cv | 7.7 | 9.7 | 6 | yes | no | 7.8 | 20 |
| PSWB | Pamlico Snd. | NC | cv | 7.2 | 5.8 | 5.5 | no | no | 6.2 | 14 |
| CFBI | Cape Fear | NC | cv | 43 | 43 | 37 | no | no | 41 | 8 |
| CHFJ | Charleston Hrb. | SC | cv | 30 | 29 | 27 | no | no | 29 | 8 |
| CHSF | Charleston Hrb. | SC | cv | 28 | 28 | 28 | no | no | 28 | 9 |
| SRTI | Savannah R. Est. | GA | cv | 25 | 23 | 34 | yes | no | 27 | 20 |
| SSSI | Sapelo Snd. | GA | cv | 26 | 28 | 40 | yes | no | 31 | 22 |
| SJCB | St. Johns R. | FL | cv | 9 | 15 | 19 | yes | i | 14 | 29 |
| MRCB | Matanzas R. | FL | cv | 15 | 16 | 24 | yes | i* | 19 | 24 |
| IRSR | Indian River | FL | cv | - | - | 8.1 | - | - | 8.1 | 5 |
| NMML | North Miami | FL | cv | - | - | 6.4 | - | - | 6.4 | 4 |
| BBPC | Biscayne Bay | FL | cv | 8.8 | 20 | - | - | - | 15 | 43 |
| EVFU | Everglades | FL | cv | 8.8 | 7.6 | 7.5 | no | no | 8 | 11 |
| RBHC | Rookery Bay | FL | cv | 27 | 30 | 28 | no | no | 28 | 8 |

Table B.11 **Arsenic (As)** (Continued)

| SITE | Location | State | Species | 1986 mean | 1987 mean | 1988 mean | Diff | Trend | Overall mean | Overall cv% |
|---|---|---|---|---|---|---|---|---|---|---|
| NBNB | Naples Bay | FL | cv | 22 | 26 | 29 | no | no | 26 | 15 |
| CBBI | Charlotte Hrb. | FL | cv | 39 | 31 | - | - | - | 35 | 14 |
| CBFM | Charlotte Hrb. | FL | cv | - | - | 8.6 | - | - | 8.6 | 32 |
| TBMK | Tampa Bay | FL | cv | 21 | 16 | 13 | yes | d* | 17 | 26 |
| TBCB | Tampa Bay | FL | cv | 4.2 | 5.1 | 4.2 | no | no | 4.5 | 17 |
| TBHB | Tampa Bay | FL | cv | 4.8 | 4 | 22 | no | no | 6.9 | 95 |
| TBPB | Tampa Bay | FL | cv | 6.7 | 6.2 | 8.9 | no | no | 7.3 | 25 |
| TBOT | Tampa Bay | FL | cv | - | - | 4.7 | - | - | 4.7 | 35 |
| CKBP | Cedar Key | FL | cv | 10 | 24 | 20 | yes | no | 18 | 34 |
| SRWP | Suwannee River | FL | cv | - | - | 18 | - | - | 18 | 10 |
| APCP | Apalachicola Bay | FL | cv | 11 | 22 | 13 | yes | no | 15 | 34 |
| APDB | Apalachicola Bay | FL | cv | 9.3 | 6.5 | 10 | yes | no | 8.6 | 19 |
| PCMP | Panama City | FL | cv | - | - | 21 | - | - | 21 | 3 |
| SAWB | St. Andrew Bay | FL | cv | 16 | 13 | 15 | no | no | 14 | 9 |
| CBSP | Choctawhat. Bay | FL | cv | 5.4 | 8.2 | 8.4 | no | no | 7.3 | 30 |
| CBSR | Choctawhat. Bay | FL | cv | 8.3 | 7.8 | 4.6 | no | no | 6.9 | 26 |
| PBPH | Pensacola Bay | FL | cv | - | - | 14 | - | - | 14 | 3 |
| PBIB | Pensacola Bay | FL | cv | 11 | 17 | 10 | no | no | 13 | 27 |
| MBHI | Mobile Bay | AL | cv | - | - | 5.5 | - | - | 5.5 | 1 |
| MBCP | Mobile Bay | AL | cv | 16 | 6.3 | 9.1 | no | no | 10 | 47 |
| MSPB | Miss. Snd. | MS | cv | 17 | 16 | 18 | no | no | 17 | 17 |
| MSBB | Miss. Snd. | MS | cv | 19 | 10 | 13 | no | no | 14 | 39 |
| MSPC | Miss. Snd. | MS | cv | 10 | 5.5 | 13 | yes | no | 9.4 | 36 |
| LBNO | Lake Borgne | LA | cv | - | - | 4.6 | - | - | 4.6 | 23 |
| LBMP | Lake Borgne | LA | cv | 6.3 | 4.3 | 5.2 | no | no | 5.3 | 22 |
| BSBG | Breton Snd. | LA | cv | 6.8 | 5.7 | 11 | yes | no | 8 | 34 |
| BSSI | Breton Snd. | LA | cv | 6.8 | 15 | 9.2 | no | no | 10 | 44 |
| MRTP | Miss. River | LA | cv | - | - | 7.2 | - | - | 7.2 | 23 |
| MRPL | Miss. River | LA | cv | - | - | 8.4 | - | - | 8.4 | 16 |
| BBSD | Barataria Bay | LA | cv | 9.7 | 12 | 6.6 | yes | no | 9.4 | 27 |
| BBTB | Barataria Bay | LA | cv | - | - | 7.4 | - | - | 7.4 | 19 |
| BBMB | Barataria Bay | LA | cv | 9.8 | 9.8 | 10 | no | no | 9.9 | 7 |
| TBLF | Terrebonne Bay | LA | cv | 14 | 11 | 8.8 | yes | no | 11 | 22 |
| TBLB | Terrebonne Bay | LA | cv | 7.5 | 7.2 | 6.2 | no | no | 7 | 13 |
| CLCL | Caillou Lake | LA | cv | 7.8 | 5.9 | 9.1 | no | no | 7.6 | 26 |
| ABOB | Atchafalaya Bay | LA | cv | 13 | 8.6 | 5.7 | yes | d | 9.1 | 36 |
| VBSP | Vermillion Bay | LA | cv | 9.7 | 8.5 | 4.7 | yes | d | 7.6 | 31 |
| JHJH | J. Hrb. Bayou | LA | cv | 8 | 8 | 4.8 | no | no | 6.9 | 26 |
| CLLC | Calcasieu Lake | LA | cv | - | - | 2.9 | - | - | 2.9 | 12 |
| CLSJ | Calcasieu Lake | LA | cv | 10 | 6.6 | 6.6 | no | no | 7.8 | 25 |
| SLBB | Sabine Lake | TX | cv | 5.5 | 4.1 | 5.5 | no | no | 5 | 16 |
| GBHR | Galveston Bay | TX | cv | 5 | 4.5 | 4.3 | no | no | 4.6 | 11 |
| GBSC | Galveston Bay | TX | cv | - | - | 2.6 | - | - | 2.6 | 14 |
| GBYC | Galveston Bay | TX | cv | 3.2 | 4 | 2.4 | yes | no | 3.2 | 25 |
| GBTD | Galveston Bay | TX | cv | 5.3 | 5.2 | 3.1 | no | no | 4.5 | 27 |
| GBCR | Galveston Bay | TX | cv | 6.3 | 6.1 | 5.2 | no | no | 5.9 | 12 |
| GBOB | Galveston Bay | TX | cv | - | - | 4.1 | - | - | 4.1 | 28 |
| BRFS | Brazos River | TX | cv | - | - | 5.9 | - | - | 5.9 | 20 |
| MBEM | Matagorda Bay | TX | cv | 8.3 | 5.8 | 5.9 | no | no | 6.7 | 21 |
| MBDI | Matagorda Bay | TX | cv | - | - | 5.1 | - | - | 5.1 | 12 |
| MBCB | Matagorda Bay | TX | cv | - | - | 7.9 | - | - | 7.9 | 7 |
| MBTP | Matagorda Bay | TX | cv | 10 | 5.4 | 8 | yes | no | 7.8 | 28 |
| MBGP | Matagorda Bay | TX | cv | 7 | 6.9 | 8.9 | no | no | 7.6 | 14 |
| MBLR | Matagorda Bay | TX | cv | 8 | 5.4 | - | - | - | 6.7 | 25 |
| ESSP | Espiritu Santo | TX | cv | 14 | 5.7 | - | - | - | 9.9 | 71 |
| ESBD | Espiritu Santo | TX | cv | - | - | 11 | - | - | 11 | 7 |
| SAMP | San Antonio Bay | TX | cv | 5.8 | 6.1 | - | - | - | 6 | 19 |
| SAPP | San Antonio Bay | TX | cv | 5.3 | 5.9 | - | - | - | 5.6 | 6 |
| MBAR | Mesquite Bay | TX | cv | 5 | 4.9 | 5.4 | no | no | 5.1 | 16 |

Table B.11 **Arsenic (As)** (Continued)

| SITE | Location | State | Species | 1986 mean | 1987 mean | 1988 mean | Diff | Trend | Overall mean | Overall cv% |
|---|---|---|---|---|---|---|---|---|---|---|
| CBCR | Copano Bay | TX | cv | 10 | 7.6 | 7.5 | no | no | 8.4 | 17 |
| ABHI | Aransas Bay | TX | cv | - | - | 15 | - | - | 15 | 7 |
| ABLR | Aransas Bay | TX | cv | 13 | 6.9 | 6.3 | no | no | 8.8 | 41 |
| CCBH | Corpus Christi | TX | cv | - | - | 8.6 | - | - | 8.6 | 19 |
| CCIC | Corpus Christi | TX | cv | 12 | - | 12 | - | - | 12 | 5 |
| CCNB | Corpus Christi | TX | cv | 10 | 11 | 8.3 | no | no | 9.7 | 16 |
| LMSB | L. Laguna Madre | TX | cv | 22 | 15 | 17 | no | no | 18 | 22 |
| LMPI | Laguna Madre | TX | cv | - | - | 21 | - | - | 21 | 36 |
| IBNJ | Imperial Beach | CA | mc | 11 | 13 | 7.6 | yes | no | 11 | 23 |
| SDHI | San Diego Bay | CA | me | 16 | 9 | 7.9 | no | no | 11 | 36 |
| PLLH | Pt. Loma | CA | mc | 22 | 23 | 24 | no | no | 23 | 10 |
| MBVB | Mission Bay | CA | me | 13 | 11 | 8.8 | no | no | 11 | 21 |
| LJLJ | La Jolla | CA | mc | 15 | 19 | 22 | yes | i* | 19 | 17 |
| OSBJ | Oceanside | CA | me | 7.1 | 10 | 7.4 | no | no | 8.2 | 21 |
| NBWJ | Newport Bch. | CA | mc | 8.3 | 11 | 17 | yes | i | 12 | 33 |
| ABWJ | Anaheim Bay | CA | mc | 7.4 | 11 | 8.2 | yes | no | 8.8 | 18 |
| SPFP | San Pedro Hrb. | CA | me | 7.6 | 11 | 7.3 | no | no | 8.7 | 41 |
| PVRP | Palos Verdes | CA | mc | 14 | 18 | 26 | no | no | 21 | 23 |
| SCBR | S. Catalina Is. | CA | mc | 16 | 23 | 18 | no | no | 19 | 22 |
| MDSJ | Marina Del Rey | CA | me | 10 | 11 | 7.7 | no | no | 9.4 | 17 |
| PDPD | Pt. Dume | CA | mc | 11 | 11 | 12 | no | no | 11 | 11 |
| SCFP | Santa Cruz Is. | CA | mc | 20 | 40 | 40 | no | no | 33 | 31 |
| SANM | San Miguel Is. | CA | mc | - | - | 20 | - | - | 20 | 5 |
| SBSB | Pt. S. Barbara | CA | mc | 17 | 18 | 18 | no | no | 18 | 9 |
| PCPC | Pt. Conception | CA | mc | 21 | 17 | 22 | yes | no | 20 | 12 |
| SLSL | San Luis Ob. Bay | CA | mc | 12 | 11 | 9.5 | no | no | 11 | 12 |
| SSSS | San Simeon Pt. | CA | mc | 18 | 22 | 23 | no | no | 21 | 14 |
| PGLP | Pacific Grove | CA | mc | 16 | 13 | 22 | yes | no | 17 | 23 |
| MBSC | Monterey Bay | CA | mc | 21 | 14 | 18 | yes | no | 17 | 19 |
| FIEL | Farallon Is. | CA | mc | - | - | 16 | - | - | 16 | 6 |
| SFDB | San Fran. Bay | CA | me | 2 | 6 | 5.9 | no | no | 4.6 | 44 |
| SFSM | San Fran. Bay | CA | me | 2.5 | 6.1 | 6.6 | yes | i | 5 | 40 |
| SFEM | San Fran. Bay | CA | me | - | 8.8 | 8.1 | - | - | 8.5 | 6 |
| TBSR | Tomales Bay | CA | me | 6.8 | 5.5 | 5.6 | no | no | 6 | 20 |
| BBBE | Bodega Bay | CA | mc | 15 | 9.9 | 13 | yes | no | 13 | 21 |
| PALH | Pt. Arena | CA | mc | 19 | 17 | 14 | no | no | 17 | 17 |
| PDSC | Pt. Delgada | CA | mc | 16 | 12 | 12 | no | no | 13 | 21 |
| HMBJ | Humboldt Bay | CA | mc | 8.5 | 9.4 | 16 | yes | no | 11 | 34 |
| SGSG | Pt. St. George | CA | mc | 12 | 13 | 16 | no | no | 14 | 15 |
| CBCH | Coos Bay | OR | mc | 10 | 7.4 | 8.4 | yes | no | 8.7 | 15 |
| CBRP | Coos Bay | OR | me | 9.5 | 5.1 | 6.7 | yes | no | 7.1 | 28 |
| YBOP | Yaquina Bay | OR | me | 7.5 | 5.9 | 5.3 | yes | d* | 6.2 | 17 |
| YHYH | Yaquina Head | OR | mc | 12 | 17 | 11 | yes | no | 13 | 20 |
| TBHP | Tillamook Bay | OR | me | 9 | 9.4 | 7.7 | no | no | 8.7 | 13 |
| CRSJ | Columbia R. | OR | me | 9.7 | 8.8 | 9 | no | no | 9.2 | 7 |
| GHWJ | Gray's Hrb. | WA | mc | 8.8 | 9.2 | 8.8 | no | no | 8.9 | 27 |
| JFCF | S. Juan de Fuca | WA | mc | 12 | 12 | 14 | no | no | 13 | 11 |
| SSBI | South Puget Snd. | WA | me | 7 | 5.4 | 7.9 | yes | no | 6.7 | 17 |
| CBTP | Comm. Bay | WA | me | 9.3 | 6.6 | 6.6 | no | no | 7.5 | 21 |
| EBFR | Elliott Bay | WA | me | 8.2 | 5.7 | 8.2 | no | no | 7.4 | 19 |
| SIWP | Sinclair Inlet | WA | me | 9.2 | 7.8 | 7.4 | no | no | 8.1 | 12 |
| WIPP | Whidbey Is. | WA | me | 7.4 | 6.1 | 7.3 | no | no | 6.9 | 11 |
| BBSM | Bellingham Bay | WA | me | 9.7 | 6.9 | 9.1 | yes | no | 8.5 | 15 |
| PRPR | Pt. Roberts | WA | me | 9.2 | 6.9 | 9.1 | no | no | 8.4 | 14 |
| PVMC | Port Valdez | AK | me | 13 | 13 | 12 | no | no | 13 | 7 |
| UISB | Unakwit Inlet | AK | me | 16 | 11 | 12 | yes | no | 13 | 19 |
| BPBP | Barber's Pt. | HI | os | 16 | 20 | 14 | no | no | 16 | 20 |
| HHKL | Honolulu Hrb. | HI | os | 22 | 20 | 11 | no | no | 18 | 32 |
| KAUI | Kauai | HI | os | - | - | 8 | - | - | 8 | 27 |

Table B.12 Summary of 1986 through 1988 data for **Cadmium (Cd)** (µg/g dry) in mollusks.

| SITE | Location | State | Species | 1986 mean | 1987 mean | 1988 mean | Diff | Trend | Overall mean | Overall cv% |
|---|---|---|---|---|---|---|---|---|---|---|
| PBSI | Penobscot Bay | ME | me | 1 | .87 | .95 | no | no | .96 | 21 |
| PBPI | Penobscot Bay | ME | me | .2 | .79 | 1.1 | yes | i | .71 | 58 |
| MSSP | Merriconeag Snd. | ME | me | - | - | .78 | - | - | .78 | 9 |
| CAGH | Cape Ann | MA | me | - | 1 | 1.1 | - | - | 1.1 | 15 |
| SHFP | Salem Harbor | MA | me | - | - | .78 | - | - | .78 | 5 |
| BHDI | Boston Hrb. | MA | me | 1.6 | 1.7 | 1 | yes | no | 1.5 | 23 |
| BHDB | Boston Hrb. | MA | me | 1.7 | 1.8 | 1.3 | yes | no | 1.6 | 15 |
| BHHB | Boston Hrb. | MA | me | 1 | 1.3 | 1 | no | no | 1.1 | 16 |
| BHBI | Boston Hrb. | MA | me | .76 | 1.4 | 1.1 | yes | no | 1.1 | 26 |
| BBRH | Buzzards Bay | MA | me | 1.2 | 1.1 | 1.3 | no | no | 1.2 | 9 |
| BBAR | Buzzards Bay | MA | me | 1.3 | 1.8 | 1.4 | yes | no | 1.5 | 16 |
| BBGN | Buzzards Bay | MA | me | .98 | 1.2 | .95 | no | no | 1.1 | 14 |
| NBDU | Narr. Bay | RI | me | 1.3 | 1 | - | - | - | 1.2 | 13 |
| NBDI | Narr. Bay | RI | me | 1.9 | 1.4 | .93 | yes | d | 1.4 | 30 |
| BIBI | Block Is. | RI | me | - | .74 | .83 | - | - | .78 | 7 |
| LICR | Long Is. Snd. | CT | me | 3.1 | 2.8 | 2.4 | yes | d* | 2.8 | 12 |
| LINH | Long Is. Snd. | CT | me | 2.8 | 2.3 | 1.7 | yes | d* | 2.3 | 25 |
| LIHR | Long Is. Snd. | CT | me | 5.7 | 3.5 | 2 | yes | d | 3.7 | 43 |
| LISI | Long Is. Snd. | CT | me | 2.2 | 2.4 | 1.7 | yes | no | 2.1 | 15 |
| LIHU | Long Is. Snd. | NY | me | 3 | 1.9 | 2 | no | no | 2.3 | 22 |
| LIPJ | Long Is. Snd. | NY | me | 3.1 | 2 | 2.1 | no | no | 2.4 | 22 |
| LIMR | Long Is. Snd. | NY | me | 3.4 | 2.3 | 2.1 | yes | d* | 2.6 | 26 |
| LIHH | Long Is. Snd. | NY | me | 3.2 | 3.7 | 2.6 | yes | no | 3.2 | 17 |
| LITN | Long Is. Snd. | NY | me | 4.6 | 3.8 | 2.3 | yes | d | 3.6 | 28 |
| MBTH | Moriches Bay | NY | me | .97 | .98 | .82 | no | no | .92 | 14 |
| HRJB | Hud./Rar. Est | NY | me | 2.2 | 2.4 | 1.8 | yes | no | 2.2 | 13 |
| HRUB | Hud./Rar. Est. | NY | me | 9.3 | 16 | 7.5 | yes | no | 11 | 34 |
| HRLB | Hud./Rar. Est. | NY | me | 3.3 | 7.1 | 3.1 | no | no | 4.5 | 44 |
| NYSH | N.Y. Bight | NJ | me | 4.2 | 6.3 | 3.4 | yes | no | 4.6 | 28 |
| NYLB | N.Y. Bight | NJ | me | 2.1 | 2.8 | 2.1 | no | no | 2.3 | 15 |
| NYSR | N.Y. Bight | NJ | me | 2.1 | 2.1 | 1.6 | no | no | 1.9 | 15 |
| BIBL | Barnegat Inlet | NJ | me | - | - | 1.1 | - | - | 1.1 | 6 |
| AIAC | Absecon Inlet | NJ | me | - | - | .91 | - | - | .91 | 9 |
| DBFE | Delaware Bay | DE | cv | 6.2 | 4.3 | 2.8 | yes | d | 4.4 | 34 |
| DBBD | Delaware Bay | DE | cv | 7.8 | 6.3 | 4.6 | yes | d* | 6.2 | 22 |
| DBAP | Delaware Bay | DE | cv | 13 | 12 | 7.9 | yes | d* | 11 | 21 |
| DBKI | Delaware Bay | DE | cv | 10 | 5.1 | 4.9 | no | no | 6.7 | 39 |
| CBMP | Ches. Bay | MD | cv | 10 | 6.7 | 8.2 | yes | no | 8.4 | 20 |
| CBHP | Ches. Bay | MD | cv | 5.7 | 5.1 | 5 | no | no | 5.3 | 8 |
| CBHG | Ches. Bay | MD | cv | 4.7 | 4.1 | 2.7 | yes | d* | 3.8 | 23 |
| CBIB | Ches. Bay | VA | cv | 2.3 | 2.4 | - | - | - | 2.3 | 3 |
| CBCC | Ches. Bay | VA | cv | 1.8 | 1.3 | 1.3 | no | no | 1.4 | 19 |
| CBDP | Ches. Bay | VA | cv | 2.9 | 2.1 | 1.2 | yes | d | 2.1 | 37 |
| CBCI | Chincoteague Bay | VA | cv | 3.2 | 1.8 | 2.1 | yes | no | 2.4 | 28 |
| QIUB | Quinby Inlet | VA | cv | 3.2 | 2.7 | 2.8 | no | no | 2.9 | 12 |
| RSJC | Roanoke Snd. | NC | cv | 3.4 | 2.6 | 3.2 | no | no | 3.1 | 14 |
| PSWB | Pamlico Snd. | NC | cv | 4.8 | 3.7 | 4.4 | yes | no | 4.3 | 11 |
| CFBI | Cape Fear | NC | cv | 2 | 1.5 | 1.6 | no | no | 1.7 | 16 |
| CHFJ | Charleston Hrb. | SC | cv | 2.5 | 2.4 | 1.4 | yes | d* | 2.1 | 24 |
| CHSF | Charleston Hrb. | SC | cv | 2.6 | 2.3 | 1.3 | yes | d | 2.1 | 28 |
| SRTI | Savannah R. Est. | GA | cv | 2.9 | 3.2 | 2.6 | yes | no | 2.9 | 11 |
| SSSI | Sapelo Snd. | GA | cv | 2.9 | 2.5 | 1.5 | yes | d* | 2.3 | 27 |
| SJCB | St. Johns R. | FL | cv | 1.5 | .58 | 1 | yes | no | 1 | 39 |
| MRCB | Matanzas R. | FL | cv | 1.4 | 1.4 | 1.5 | no | no | 1.4 | 8 |
| IRSR | Indian River | FL | cv | - | - | .83 | - | - | .83 | 3 |
| NMML | North Miami | FL | cv | - | - | 1.2 | - | - | 1.2 | 9 |
| BBPC | Biscayne Bay | FL | cv | .39 | .34 | - | - | - | .36 | 31 |
| EVFU | Everglades | FL | cv | 3.2 | 1.8 | 2.2 | no | no | 2.4 | 45 |
| RBHC | Rookery Bay | FL | cv | 2.4 | 1.8 | 1.6 | no | no | 2 | 24 |

Table B.12 **Cadmium (Cd)** (Continued)

| SITE | Location | State | Species | 1986 mean | 1987 mean | 1988 mean | Diff | Trend | Overall mean | Overall cv% |
|---|---|---|---|---|---|---|---|---|---|---|
| NBNB | Naples Bay | FL | cv | 1.7 | 1 | 2 | no | no | 1.6 | 34 |
| CBBI | Charlotte Hrb. | FL | cv | 3.9 | 4.1 | - | - | - | 4 | 14 |
| CBFM | Charlotte Hrb. | FL | cv | - | - | 3.9 | - | - | 3.9 | 7 |
| TBMK | Tampa Bay | FL | cv | 2.5 | 1.8 | 1.2 | no | no | 1.8 | 48 |
| TBCB | Tampa Bay | FL | cv | 2.5 | 2.8 | 2.6 | no | no | 2.6 | 39 |
| TBHB | Tampa Bay | FL | cv | 2 | 2.5 | 4.5 | no | no | 2.6 | 34 |
| TBPB | Tampa Bay | FL | cv | 2.2 | 2 | 3.2 | no | no | 2.5 | 25 |
| TBOT | Tampa Bay | FL | cv | - | - | 5.1 | - | - | 5.1 | 9 |
| CKBP | Cedar Key | FL | cv | 2.1 | 1.7 | 3.5 | no | no | 2.4 | 38 |
| SRWP | Suwannee River | FL | cv | - | - | 1.7 | - | - | 1.7 | 6 |
| APCP | Apalachicola Bay | FL | cv | 2.4 | 2.6 | 2 | no | no | 2.3 | 16 |
| APDB | Apalachicola Bay | FL | cv | 3.4 | 2.6 | 3.2 | no | no | 3.1 | 12 |
| PCMP | Panama City | FL | cv | - | - | 1.2 | - | no | 1.2 | 22 |
| SAWB | St. Andrew Bay | FL | cv | 1.1 | 1.2 | .9 | yes | - | 1 | 16 |
| CBSP | Choctawhat. Bay | FL | cv | 2.7 | 1.5 | 2.9 | yes | no | 2.4 | 30 |
| CBSR | Choctawhat. Bay | FL | cv | 4.7 | 4.2 | 6.5 | yes | no | 5.1 | 22 |
| PBPH | Pensacola Bay | FL | cv | - | - | 2.9 | - | - | 2.9 | 14 |
| PBIB | Pensacola Bay | FL | cv | 3.9 | 2.8 | 2.8 | no | no | 3.2 | 17 |
| MBHI | Mobile Bay | AL | cv | - | - | 4.2 | - | - | 4.2 | 7 |
| MBCP | Mobile Bay | AL | cv | 2.5 | 2.4 | 3 | no | no | 2.6 | 34 |
| MSPB | Miss. Snd. | MS | cv | 3 | 2.5 | 2.1 | no | no | 2.5 | 29 |
| MSBB | Miss. Snd. | MS | cv | 2.8 | 3.3 | 4.5 | no | no | 3.5 | 40 |
| MSPC | Miss. Snd. | MS | cv | 8.5 | 6.5 | 6.1 | no | no | 7 | 18 |
| LBNO | Lake Borgne | LA | cv | - | - | 6.2 | - | - | 6.2 | 7 |
| LBMP | Lake Borgne | LA | cv | 5.4 | 5.3 | 5.1 | no | no | 5.3 | 18 |
| BSBG | Breton Snd. | LA | cv | 4.6 | 4 | 4.8 | no | no | 4.5 | 16 |
| BSSI | Breton Snd. | LA | cv | 6.3 | 11 | 10 | yes | no | 9.4 | 29 |
| MRTP | Miss. River | LA | cv | - | - | 5.7 | - | - | 5.7 | 10 |
| MRPL | Miss. River | LA | cv | - | - | 13 | - | - | 13 | 26 |
| BBSD | Barataria Bay | LA | cv | 1.9 | 1.9 | 4.6 | no | no | 2.8 | 63 |
| BBTB | Barataria Bay | LA | cv | - | - | 2.2 | - | - | 2.2 | 7 |
| BBMB | Barataria Bay | LA | cv | 1.1 | 1.1 | 1 | no | no | 1.1 | 21 |
| TBLF | Terrebonne Bay | LA | cv | 2.2 | 1.7 | 3.5 | no | no | 2.5 | 50 |
| TBLB | Terrebonne Bay | LA | cv | 1.8 | 3.1 | 3.9 | yes | i | 2.9 | 33 |
| CLCL | Caillou Lake | LA | cv | 2.6 | 4.4 | 3.2 | yes | no | 3.4 | 28 |
| ABOB | Atchafalaya Bay | LA | cv | 4.3 | 6.4 | 7.4 | no | no | 6 | 28 |
| VBSP | Vermillion Bay | LA | cv | 7.5 | 9.2 | 6.4 | no | no | 7.7 | 21 |
| JHJH | J. Hrb. Bayou | LA | cv | 4.8 | 3.6 | 4.6 | no | no | 4.3 | 22 |
| CLLC | Calcasieu Lake | LA | cv | - | - | 3.5 | - | - | 3.5 | 54 |
| CLSJ | Calcasieu Lake | LA | cv | 4.3 | 5.1 | 3.6 | no | no | 4.3 | 19 |
| SLBB | Sabine Lake | TX | cv | 4.2 | 7.2 | 4.6 | no | no | 5.3 | 36 |
| GBHR | Galveston Bay | TX | cv | 5 | 5.7 | 4.6 | no | no | 5.1 | 23 |
| GBSC | Galveston Bay | TX | cv | - | - | 4.6 | - | - | 4.6 | 12 |
| GBYC | Galveston Bay | TX | cv | 4.6 | 4.9 | 3.9 | no | no | 4.5 | 16 |
| GBTD | Galveston Bay | TX | cv | 4.4 | 3.6 | 3.3 | no | no | 3.7 | 16 |
| GBCR | Galveston Bay | TX | cv | 3.5 | 2.8 | 2.9 | no | no | 3.1 | 13 |
| GBOB | Galveston Bay | TX | cv | - | - | 1.3 | - | - | 1.3 | 3 |
| BRFS | Brazos River | TX | cv | - | - | 2.9 | - | - | 2.9 | 12 |
| MBEM | Matagorda Bay | TX | cv | 7.3 | 6.6 | 4.7 | yes | d* | 6.2 | 20 |
| MBDI | Matagorda Bay | TX | cv | - | - | 3.3 | - | - | 3.3 | 18 |
| MBCB | Matagorda Bay | TX | cv | - | - | 6.3 | - | - | 6.3 | 27 |
| MBTP | Matagorda Bay | TX | cv | 5.2 | 4.4 | 6.4 | no | no | 5.4 | 25 |
| MBGP | Matagorda Bay | TX | cv | 4 | 3.5 | 5.2 | yes | no | 4.2 | 18 |
| MBLR | Matagorda Bay | TX | cv | 4.6 | 3.9 | - | - | - | 4.2 | 14 |
| ESSP | Espiritu Santo | TX | cv | 6.9 | 4 | - | - | - | 5.4 | 51 |
| ESBD | Espiritu Santo | TX | cv | - | - | 3.8 | - | - | 3.8 | 23 |
| SAMP | San Antonio Bay | TX | cv | 4.9 | 4.3 | - | - | - | 4.6 | 11 |
| SAPP | San Antonio Bay | TX | cv | 4.5 | 4.3 | - | - | - | 4.4 | 7 |
| MBAR | Mesquite Bay | TX | cv | 4.7 | 3.2 | 5 | no | no | 4.3 | 22 |

Table B.12 **Cadmium (Cd)** (Continued)

| SITE | Location | State | Species | 1986 mean | 1987 mean | 1988 mean | Diff | Trend | Overall mean | Overall cv% |
|---|---|---|---|---|---|---|---|---|---|---|
| CBCR | Copano Bay | TX | cv | 13 | 9.1 | 9.6 | no | no | 11 | 24 |
| ABHI | Aransas Bay | TX | cv | - | - | 3.3 | - | - | 3.3 | 24 |
| ABLR | Aransas Bay | TX | cv | 6.3 | 4.7 | 5.3 | no | no | 5.4 | 17 |
| CCBH | Corpus Christi | TX | cv | - | - | 7.1 | - | - | 7.1 | 4 |
| CCIC | Corpus Christi | TX | cv | 4.5 | - | 4.2 | - | - | 4.4 | 9 |
| CCNB | Corpus Christi | TX | cv | 8.8 | 12 | 4.7 | yes | no | 8.5 | 37 |
| LMSB | L. Laguna Madre | TX | cv | 3.8 | 2.7 | 3.1 | no | no | 3.2 | 21 |
| LMPI | Laguna Madre | TX | cv | - | - | 1.5 | - | - | 1.5 | 35 |
| IBNJ | Imperial Beach | CA | mc | .86 | .72 | .77 | no | no | .78 | 20 |
| SDHI | San Diego Bay | CA | me | 6.5 | 5.4 | 7.1 | no | no | 6.4 | 13 |
| PLLH | Pt. Loma | CA | mc | 1.6 | 1.1 | 2 | no | no | 1.6 | 27 |
| MBVB | Mission Bay | CA | me | 3.3 | 2.4 | 2.3 | no | no | 2.6 | 19 |
| LJLJ | La Jolla | CA | mc | 2.3 | 1.8 | 2.2 | no | no | 2.1 | 26 |
| OSBJ | Oceanside | CA | me | 2.7 | 2.6 | 2.1 | no | no | 2.5 | 19 |
| NBWJ | Newport Bch. | CA | mc | 1 | .65 | 1.4 | yes | no | 1 | 39 |
| ABWJ | Anaheim Bay | CA | mc | .75 | .77 | .77 | no | no | .76 | 9 |
| SPFP | San Pedro Hrb. | CA | me | 2 | 2.2 | 2.6 | yes | i* | 2.3 | 11 |
| PVRP | Palos Verdes | CA | mc | 1.5 | 1.6 | 2.3 | no | no | 1.9 | 27 |
| SCBR | S. Catalina Is. | CA | mc | 3.4 | 4.6 | 6.6 | no | no | 4.9 | 34 |
| MDSJ | Marina Del Rey | CA | me | 3.1 | 3.3 | 2.3 | no | no | 2.9 | 18 |
| PDPD | Pt. Dume | CA | mc | 1.7 | 1.6 | 1.8 | no | no | 1.7 | 16 |
| SCFP | Santa Cruz Is. | CA | mc | 5.4 | 4.7 | 4.6 | no | no | 4.9 | 30 |
| SANM | San Miguel Is. | CA | mc | - | - | 4.9 | - | - | 4.9 | 13 |
| SBSB | Pt. S. Barbara | CA | mc | 3 | 2.6 | 2.5 | no | no | 2.7 | 15 |
| PCPC | Pt. Conception | CA | mc | 3.9 | 3.7 | 3.8 | no | no | 3.8 | 11 |
| SLSL | San Luis Ob. Bay | CA | mc | 2 | 3.2 | 2.5 | yes | no | 2.5 | 23 |
| SSSS | San Simeon Pt. | CA | mc | 5 | 5.8 | 6.1 | no | no | 5.6 | 18 |
| PGLP | Pacific Grove | CA | mc | 2.6 | 3.3 | 6.1 | yes | i | 4 | 43 |
| MBSC | Monterey Bay | CA | mc | 2.9 | 2.9 | 4.8 | no | no | 3.6 | 27 |
| FIEL | Farallon Is. | CA | mc | - | - | 6.3 | - | - | 6.3 | 30 |
| SFDB | San Fran. Bay | CA | me | 7 | 6.7 | 6.2 | no | no | 6.6 | 9 |
| SFSM | San Fran. Bay | CA | me | 5.7 | 6.8 | 7.2 | no | no | 6.6 | 12 |
| SFEM | San Fran. Bay | CA | me | - | 5.2 | 6.5 | - | - | 5.9 | 19 |
| TBSR | Tomales Bay | CA | me | 5.5 | 4.3 | 5.2 | no | no | 5 | 17 |
| BBBE | Bodega Bay | CA | mc | 3.8 | 8.7 | 4.8 | no | no | 5.8 | 40 |
| PALH | Pt. Arena | CA | mc | 5.1 | 7.6 | 7.8 | no | no | 6.9 | 30 |
| PDSC | Pt. Delgada | CA | mc | 7.6 | 7.2 | 7.1 | no | no | 7.3 | 22 |
| HMBJ | Humboldt Bay | CA | mc | 4.5 | 3.3 | 4.1 | no | no | 4 | 22 |
| SGSG | Pt. St. George | CA | mc | 5.1 | 4.5 | 5.2 | no | no | 4.9 | 26 |
| CBCH | Coos Bay | OR | mc | 2.9 | 2 | 2.1 | no | no | 2.4 | 21 |
| CBRP | Coos Bay | OR | me | 3.7 | 2.5 | 3.2 | yes | no | 3.2 | 17 |
| YBOP | Yaquina Bay | OR | me | 3.7 | 3.3 | 3 | no | no | 3.3 | 12 |
| YHYH | Yaquina Head | OR | mc | 3.7 | 3.7 | 3.7 | no | no | 3.7 | 8 |
| TBHP | Tillamook Bay | OR | me | 3.3 | 3.3 | 3 | no | no | 3.2 | 8 |
| CRSJ | Columbia R. | OR | me | 3.9 | 4.5 | 3 | yes | no | 3.8 | 17 |
| GHWJ | Gray's Hrb. | WA | mc | 2.6 | 3.6 | 3.3 | yes | no | 3.2 | 14 |
| JFCF | S. Juan de Fuca | WA | mc | 6.8 | 8.5 | 8.7 | no | no | 8 | 27 |
| SSBI | South Puget Snd. | WA | me | 2.4 | 2.2 | 3.2 | no | no | 2.6 | 20 |
| CBTP | Comm. Bay | WA | me | 4.6 | 2.3 | 2.2 | no | no | 3 | 42 |
| EBFR | Elliott Bay | WA | me | 2.9 | 2.4 | 2.6 | no | no | 2.6 | 16 |
| SIWP | Sinclair Inlet | WA | me | 2.9 | 3.1 | 2.2 | no | no | 2.7 | 18 |
| WIPP | Whidbey Is. | WA | me | 2.5 | 3 | 2.1 | yes | no | 2.5 | 17 |
| BBSM | Bellingham Bay | WA | me | 3.4 | 2.7 | 3.3 | no | no | 3.1 | 12 |
| PRPR | Pt. Roberts | WA | me | 3.2 | 3.7 | 3.7 | no | no | 3.5 | 10 |
| PVMC | Port Valdez | AK | me | 2.8 | 2.5 | 2.7 | no | no | 2.7 | 9 |
| UISB | Unakwit Inlet | AK | me | 4.6 | 3.5 | 2.7 | yes | d* | 3.6 | 24 |
| BPBP | Barber's Pt. | HI | os | .95 | 1.9 | .68 | no | no | 1.2 | 61 |
| HHKL | Honolulu Hrb. | HI | os | 1.6 | .51 | .36 | yes | d | .81 | 71 |
| KAUI | Kauai | HI | os | - | - | .35 | - | - | .35 | 18 |

Table B.13 Summary of 1986 through 1988 data for **Chromium (Cr)** (µg/g dry) in mollusks.

| SITE | Location | State | Species | 1986 mean | 1987 mean | 1988 mean | Diff | Trend | Overall mean | Overall cv% |
|---|---|---|---|---|---|---|---|---|---|---|
| PBSI | Penobscot Bay | ME | me | 1.5 | .82 | 1.1 | no | no | 1.1 | 35 |
| PBPI | Penobscot Bay | ME | me | 1.4 | 1.5 | 1.5 | no | no | 1.5 | 12 |
| MSSP | Merriconeag Snd. | ME | me | - | - | .66 | - | - | .66 | 6 |
| CAGH | Cape Ann | MA | me | - | 1.1 | 1.2 | - | - | 1.2 | 11 |
| SHFP | Salem Harbor | MA | me | - | - | 4.1 | - | - | 4.1 | 8 |
| BHDI | Boston Hrb. | MA | me | 2.4 | 2.2 | 1.1 | no | no | 1.9 | 32 |
| BHDB | Boston Hrb. | MA | me | 2.5 | 2.9 | 1.3 | no | no | 2.2 | 36 |
| BHHB | Boston Hrb. | MA | me | 2.7 | 2.3 | .74 | no | no | 1.9 | 81 |
| BHBI | Boston Hrb. | MA | me | 1.6 | 2.5 | 1.8 | yes | no | 2 | 23 |
| BBRH | Buzzards Bay | MA | me | 1.4 | 1.2 | 1.1 | no | no | 1.2 | 19 |
| BBAR | Buzzards Bay | MA | me | 1.4 | 1.8 | 1.4 | yes | no | 1.5 | 14 |
| BBGN | Buzzards Bay | MA | me | .44 | .87 | 1 | yes | d | .82 | 30 |
| NBDU | Narr. Bay | RI | me | .9 | 1.8 | - | - | - | 1.4 | 38 |
| NBDI | Narr. Bay | RI | me | 1.9 | 2 | 2.2 | no | no | 2 | 26 |
| BIBI | Block Is. | RI | me | - | .88 | .7 | - | - | .79 | 19 |
| LICR | Long Is. Snd. | CT | me | 3 | 2.1 | 2.2 | yes | no | 2.4 | 20 |
| LINH | Long Is. Snd. | CT | me | 1.1 | .84 | .83 | no | no | .93 | 19 |
| LIHR | Long Is. Snd. | CT | me | 5.6 | 1.8 | 1.9 | no | no | 3.1 | 60 |
| LISI | Long Is. Snd. | CT | me | .86 | 1 | .85 | no | no | .92 | 15 |
| LIHU | Long Is. Snd. | NY | me | .74 | .92 | 1.2 | yes | i* | .94 | 21 |
| LIPJ | Long Is. Snd. | NY | me | .81 | .95 | 1.2 | yes | i* | .99 | 19 |
| LIMR | Long Is. Snd. | NY | me | 1.1 | 1.5 | 1.7 | no | no | 1.4 | 25 |
| LIHH | Long Is. Snd. | NY | me | 1 | 2 | 1.6 | yes | no | 1.6 | 27 |
| LITN | Long Is. Snd. | NY | me | 2 | 2.1 | 1.8 | no | no | 2 | 13 |
| MBTH | Moriches Bay | NY | me | 1.3 | .88 | 1.3 | no | no | 1.1 | 19 |
| HRJB | Hud./Rar. Est | NY | me | 1 | 2.1 | 2.3 | no | no | 1.8 | 37 |
| HRUB | Hud./Rar. Est. | NY | me | 11 | 8.6 | 14 | yes | no | 11 | 23 |
| HRLB | Hud./Rar. Est. | NY | me | 1.8 | 2.5 | 3.8 | yes | i | 2.7 | 33 |
| NYSH | N.Y. Bight | NJ | me | 1.5 | 3.2 | 7.3 | yes | i | 4 | 64 |
| NYLB | N.Y. Bight | NJ | me | 2 | 2.5 | 3.6 | yes | i* | 2.7 | 27 |
| NYSR | N.Y. Bight | NJ | me | 1.2 | 2.8 | 3 | no | no | 2.3 | 36 |
| BIBL | Barnegat Inlet | NJ | me | - | - | 1.6 | - | - | 1.6 | 15 |
| AIAC | Absecon Inlet | NJ | me | - | - | 1.7 | - | - | 1.7 | 9 |
| DBFE | Delaware Bay | DE | cv | .38 | .41 | .76 | no | no | .52 | 40 |
| DBBD | Delaware Bay | DE | cv | .36 | .31 | .4 | yes | no | .36 | 13 |
| DBAP | Delaware Bay | DE | cv | 2.1 | .7 | .6 | no | no | 1.1 | 69 |
| DBKI | Delaware Bay | DE | cv | .96 | .54 | .74 | no | no | .75 | 45 |
| CBMP | Ches. Bay | MD | cv | .88 | .62 | .51 | no | no | .67 | 29 |
| CBHP | Ches. Bay | MD | cv | .27 | .26 | .49 | no | no | .34 | 43 |
| CBHG | Ches. Bay | MD | cv | .18 | .15 | .3 | no | no | .21 | 42 |
| CBIB | Ches. Bay | VA | cv | .12 | .25 | - | - | - | .18 | 54 |
| CBCC | Ches. Bay | VA | cv | .15 | .14 | .21 | no | no | .17 | 28 |
| CBDP | Ches. Bay | VA | cv | .19 | .73 | .43 | yes | no | .45 | 55 |
| CBCI | Chincoteague Bay | VA | cv | .43 | .37 | .34 | no | no | .38 | 17 |
| QIUB | Quinby Inlet | VA | cv | .42 | .27 | .4 | no | no | .36 | 24 |
| RSJC | Roanoke Snd. | NC | cv | .53 | .28 | .31 | yes | no | .38 | 36 |
| PSWB | Pamlico Snd. | NC | cv | .86 | .33 | .44 | no | no | .54 | 63 |
| CFBI | Cape Fear | NC | cv | .45 | .58 | .43 | no | no | .49 | 17 |
| CHFJ | Charleston Hrb. | SC | cv | .87 | .5 | .92 | no | no | .76 | 29 |
| CHSF | Charleston Hrb. | SC | cv | .57 | .39 | .56 | no | no | .51 | 26 |
| SRTI | Savannah R. Est. | GA | cv | .34 | .49 | .68 | yes | i | .51 | 32 |
| SSSI | Sapelo Snd. | GA | cv | .36 | .39 | .34 | no | no | .36 | 18 |
| SJCB | St. Johns R. | FL | cv | .47 | .67 | .5 | no | no | .54 | 29 |
| MRCB | Matanzas R. | FL | cv | .25 | .51 | .71 | yes | i | .49 | 42 |
| IRSR | Indian River | FL | cv | - | - | .48 | - | - | .48 | 11 |
| NMML | North Miami | FL | cv | - | - | .42 | - | - | .42 | 12 |
| BBPC | Biscayne Bay | FL | cv | .21 | .21 | - | - | - | .21 | 7 |
| EVFU | Everglades | FL | cv | 1.5 | .3 | .4 | yes | no | .74 | 87 |
| RBHC | Rookery Bay | FL | cv | 1.2 | 2.4 | 1.4 | no | no | 1.7 | 39 |

Table B.13 **Chromium (Cr)** (Continued)

| SITE | Location | State | Species | 1986 mean | 1987 mean | 1988 mean | Diff | Trend | Overall mean | Overall cv% |
|---|---|---|---|---|---|---|---|---|---|---|
| NBNB | Naples Bay | FL | cv | .55 | .65 | 1.1 | yes | no | .76 | 38 |
| CBBI | Charlotte Hrb. | FL | cv | .68 | 1 | - | - | - | .85 | 31 |
| CBFM | Charlotte Hrb. | FL | cv | - | - | .81 | - | - | .81 | 24 |
| TBMK | Tampa Bay | FL | cv | .97 | .44 | .35 | yes | d | .59 | 63 |
| TBCB | Tampa Bay | FL | cv | .53 | .73 | .67 | no | no | .64 | 20 |
| TBHB | Tampa Bay | FL | cv | .7 | .67 | .7 | no | no | .69 | 8 |
| TBPB | Tampa Bay | FL | cv | .87 | .83 | .44 | no | no | .71 | 39 |
| TBOT | Tampa Bay | FL | cv | - | - | .34 | - | - | .34 | 5 |
| CKBP | Cedar Key | FL | cv | .51 | .45 | .5 | no | no | .49 | 44 |
| SRWP | Suwannee River | FL | cv | - | - | .66 | - | - | .66 | 28 |
| APCP | Apalachicola Bay | FL | cv | .35 | .85 | .12 | yes | no | .44 | 73 |
| APDB | Apalachicola Bay | FL | cv | .98 | .85 | 1.8 | no | no | 1.2 | 59 |
| PCMP | Panama City | FL | cv | - | - | .39 | - | - | .39 | 13 |
| SAWB | St. Andrew Bay | FL | cv | .56 | .38 | .41 | no | no | .44 | 38 |
| CBSP | Choctawhat. Bay | FL | cv | .45 | .3 | .59 | no | no | .45 | 54 |
| CBSR | Choctawhat. Bay | FL | cv | .28 | .46 | .43 | no | no | .39 | 30 |
| PBPH | Pensacola Bay | FL | cv | - | - | .26 | - | - | .26 | 13 |
| PBIB | Pensacola Bay | FL | cv | .7 | 2.6 | .43 | yes | no | 1.2 | 91 |
| MBHI | Mobile Bay | AL | cv | - | - | .31 | - | - | .31 | 42 |
| MBCP | Mobile Bay | AL | cv | .73 | 1.7 | .33 | yes | no | .92 | 65 |
| MSPB | Miss. Snd. | MS | cv | 1.1 | 1.1 | .39 | no | no | .84 | 63 |
| MSBB | Miss. Snd. | MS | cv | .69 | .56 | .25 | no | no | .5 | 81 |
| MSPC | Miss. Snd. | MS | cv | .61 | .35 | .46 | no | no | .48 | 47 |
| LBNO | Lake Borgne | LA | cv | - | - | .35 | - | - | .35 | 41 |
| LBMP | Lake Borgne | LA | cv | .37 | .34 | .35 | no | no | .35 | 38 |
| BSBG | Breton Snd. | LA | cv | .27 | .28 | .19 | no | no | .25 | 27 |
| BSSI | Breton Snd. | LA | cv | .22 | .98 | .16 | no | no | .45 | 89 |
| MRTP | Miss. River | LA | cv | - | - | .6 | - | - | .6 | 63 |
| MRPL | Miss. River | LA | cv | - | - | .8 | - | - | .8 | 21 |
| BBSD | Barataria Bay | LA | cv | .24 | .31 | .32 | no | no | .29 | 20 |
| BBTB | Barataria Bay | LA | cv | - | - | .43 | - | - | .43 | 20 |
| BBMB | Barataria Bay | LA | cv | .14 | .21 | .41 | no | no | .25 | 80 |
| TBLF | Terrebonne Bay | LA | cv | .3 | .26 | .55 | no | no | .37 | 62 |
| TBLB | Terrebonne Bay | LA | cv | .49 | .53 | .57 | no | no | .53 | 40 |
| CLCL | Caillou Lake | LA | cv | .48 | .4 | .36 | no | no | .41 | 27 |
| ABOB | Atchafalaya Bay | LA | cv | .49 | .29 | .82 | yes | no | .53 | 74 |
| VBSP | Vermillion Bay | LA | cv | .8 | .52 | .74 | no | no | .69 | 25 |
| JHJH | J. Hrb. Bayou | LA | cv | .73 | .18 | .58 | yes | no | .5 | 54 |
| CLLC | Calcasieu Lake | LA | cv | - | - | .61 | - | - | .61 | 54 |
| CLSJ | Calcasieu Lake | LA | cv | .27 | .72 | .29 | no | no | .43 | 62 |
| SLBB | Sabine Lake | TX | cv | .98 | .77 | .95 | no | no | .9 | 28 |
| GBHR | Galveston Bay | TX | cv | .22 | .41 | .32 | no | no | .31 | 39 |
| GBSC | Galveston Bay | TX | cv | - | - | .78 | - | - | .78 | 10 |
| GBYC | Galveston Bay | TX | cv | .35 | 1.3 | .58 | yes | no | .74 | 61 |
| GBTD | Galveston Bay | TX | cv | .27 | 1.2 | .3 | no | no | .61 | 140 |
| GBCR | Galveston Bay | TX | cv | .19 | .15 | .42 | no | no | .25 | 53 |
| GBOB | Galveston Bay | TX | cv | - | - | .28 | - | - | .28 | 14 |
| BRFS | Brazos River | TX | cv | - | - | 1.3 | - | - | 1.3 | 14 |
| MBEM | Matagorda Bay | TX | cv | .95 | .24 | .2 | no | no | .47 | 90 |
| MBDI | Matagorda Bay | TX | cv | - | - | .27 | - | - | .27 | 59 |
| MBCB | Matagorda Bay | TX | cv | - | - | .6 | - | - | .6 | 50 |
| MBTP | Matagorda Bay | TX | cv | .68 | .27 | .47 | no | no | .47 | 47 |
| MBGP | Matagorda Bay | TX | cv | .63 | .14 | .37 | yes | no | .38 | 59 |
| MBLR | Matagorda Bay | TX | cv | .6 | .17 | - | - | - | .39 | 64 |
| ESSP | Espiritu Santo | TX | cv | .69 | .52 | - | - | - | .6 | 54 |
| ESBD | Espiritu Santo | TX | cv | - | - | .3 | - | - | .3 | 19 |
| SAMP | San Antonio Bay | TX | cv | .32 | .58 | - | - | - | .45 | 73 |
| SAPP | San Antonio Bay | TX | cv | 4.9 | .41 | - | - | - | 2.7 | 170 |
| MBAR | Mesquite Bay | TX | cv | .41 | .23 | .33 | no | no | .32 | 41 |

Table B.13 **Chromium (Cr)** (Continued)

| SITE | Location | State | Species | 1986 mean | 1987 mean | 1988 mean | Diff | Trend | Overall mean | Overall cv% |
|---|---|---|---|---|---|---|---|---|---|---|
| CBCR | Copano Bay | TX | cv | .52 | .77 | .33 | yes | no | .54 | 53 |
| ABHI | Aransas Bay | TX | cv | - | - | .36 | - | - | .36 | 22 |
| ABLR | Aransas Bay | TX | cv | .67 | .18 | .3 | yes | no | .38 | 59 |
| CCBH | Corpus Christi | TX | cv | - | - | .32 | - | - | .32 | 15 |
| CCIC | Corpus Christi | TX | cv | .26 | - | .15 | - | - | .21 | 58 |
| CCNB | Corpus Christi | TX | cv | .33 | .45 | .45 | no | no | .41 | 28 |
| LMSB | L. Laguna Madre | TX | cv | .41 | 1.3 | .88 | no | no | .87 | 54 |
| LMPI | Laguna Madre | TX | cv | - | - | .37 | - | - | .37 | 14 |
| IBNJ | Imperial Beach | CA | mc | .99 | 1.2 | .79 | yes | no | .98 | 18 |
| SDHI | San Diego Bay | CA | me | 2.4 | 1.4 | 2 | yes | no | 1.9 | 22 |
| PLLH | Pt. Loma | CA | mc | 1.2 | 1.4 | 1.6 | no | no | 1.4 | 15 |
| MBVB | Mission Bay | CA | me | 1 | .96 | .6 | no | no | .87 | 26 |
| LJLJ | La Jolla | CA | mc | 1.4 | 1.3 | 1.4 | no | no | 1.4 | 9 |
| OSBJ | Oceanside | CA | me | 1.8 | 1.2 | .99 | yes | d* | 1.3 | 29 |
| NBWJ | Newport Bch. | CA | mc | 1.4 | .82 | 1.5 | no | no | 1.2 | 26 |
| ABWJ | Anaheim Bay | CA | mc | 1.8 | 1.8 | 1 | no | no | 1.5 | 28 |
| SPFP | San Pedro Hrb. | CA | me | 2.4 | 1.5 | 1.7 | no | no | 1.9 | 26 |
| PVRP | Palos Verdes | CA | mc | 2.6 | 1.5 | 2 | no | no | 1.9 | 26 |
| SCBR | S. Catalina Is. | CA | mc | 1.2 | 2 | 1.6 | no | no | 1.6 | 24 |
| MDSJ | Marina Del Rey | CA | me | 3.7 | 2.3 | 1.8 | yes | d | 2.6 | 36 |
| PDPD | Pt. Dume | CA | mc | 2.5 | 1.4 | 1 | yes | d | 1.6 | 44 |
| SCFP | Santa Cruz Is. | CA | mc | 1.9 | 1.7 | 1.5 | no | no | 1.7 | 16 |
| SANM | San Miguel Is. | CA | mc | - | - | 1.6 | - | - | 1.6 | 16 |
| SBSB | Pt. S. Barbara | CA | mc | 2.2 | 2.3 | 1.6 | yes | no | 2 | 18 |
| PCPC | Pt. Conception | CA | mc | 1.9 | 1.6 | 1.6 | no | no | 1.7 | 24 |
| SLSL | San Luis Ob. Bay | CA | mc | 1.4 | 1.2 | 1.9 | no | no | 1.5 | 23 |
| SSSS | San Simeon Pt. | CA | mc | 2.7 | 3 | 2.1 | no | no | 2.6 | 23 |
| PGLP | Pacific Grove | CA | mc | 1.1 | .84 | 1.1 | no | no | .99 | 15 |
| MBSC | Monterey Bay | CA | mc | 2.2 | 1 | 1.6 | yes | no | 1.6 | 34 |
| FIEL | Farallon Is. | CA | mc | - | - | .96 | - | - | .96 | 7 |
| SFDB | San Fran. Bay | CA | me | 2.1 | 2.3 | .63 | no | no | 1.7 | 50 |
| SFSM | San Fran. Bay | CA | me | 2 | 2.6 | .83 | yes | no | 1.8 | 46 |
| SFEM | San Fran. Bay | CA | me | - | 2.6 | 2.2 | - | - | 2.4 | 16 |
| TBSR | Tomales Bay | CA | me | 3.2 | 1.1 | 1.1 | no | no | 1.8 | 60 |
| BBBE | Bodega Bay | CA | mc | 2.3 | .86 | 1.3 | yes | no | 1.5 | 42 |
| PALH | Pt. Arena | CA | mc | 2.4 | 1.8 | 1.5 | yes | d* | 1.9 | 24 |
| PDSC | Pt. Delgada | CA | mc | 2.4 | 1.6 | 1.5 | no | no | 1.8 | 32 |
| HMBJ | Humboldt Bay | CA | mc | 3.9 | 2.9 | 3.2 | no | no | 3.3 | 17 |
| SGSG | Pt. St. George | CA | mc | 3.4 | 2.2 | 2.7 | no | no | 2.8 | 31 |
| CBCH | Coos Bay | OR | mc | 2.1 | 1.2 | 2.6 | yes | no | 2 | 32 |
| CBRP | Coos Bay | OR | me | 2.2 | .97 | 1.8 | yes | no | 1.6 | 34 |
| YBOP | Yaquina Bay | OR | me | 2.5 | 1.1 | 1.7 | yes | no | 1.7 | 35 |
| YHYH | Yaquina Head | OR | mc | 2.2 | 1.4 | 2.4 | yes | no | 2 | 22 |
| TBHP | Tillamook Bay | OR | me | 1.8 | 1.1 | 1.5 | yes | no | 1.5 | 26 |
| CRSJ | Columbia R. | OR | me | 1.4 | 2.3 | 2.3 | no | no | 2 | 29 |
| GHWJ | Gray's Hrb. | WA | mc | 1.7 | 1.6 | 2.8 | no | no | 2 | 36 |
| JFCF | S. Juan de Fuca | WA | mc | 1.9 | 2.6 | 2 | no | no | 2.2 | 26 |
| SSBI | South Puget Snd. | WA | me | .69 | .45 | .4 | yes | d* | .51 | 27 |
| CBTP | Comm. Bay | WA | me | 1.6 | .75 | 1.2 | yes | no | 1.2 | 39 |
| EBFR | Elliott Bay | WA | me | 1.5 | 1 | 2.4 | yes | no | 1.6 | 43 |
| SIWP | Sinclair Inlet | WA | me | 1.1 | 2 | .46 | no | no | 1.2 | 93 |
| WIPP | Whidbey Is. | WA | me | 2.7 | 2.5 | 3.8 | no | no | 3 | 25 |
| BBSM | Bellingham Bay | WA | me | 4.1 | 3.2 | 2.8 | yes | d* | 3.4 | 19 |
| PRPR | Pt. Roberts | WA | me | 2.4 | 1.7 | 2.3 | no | no | 2.1 | 21 |
| PVMC | Port Valdez | AK | me | 2.5 | 1.9 | 4 | no | no | 2.8 | 45 |
| UISB | Unakwit Inlet | AK | me | 2 | 3 | 1.6 | no | no | 2.2 | 35 |
| BPBP | Barber's Pt. | HI | os | 2.2 | 2.2 | 1.4 | no | no | 1.9 | 44 |
| HHKL | Honolulu Hrb. | HI | os | 1.3 | 2.5 | 3.1 | no | no | 2.3 | 53 |
| KAUI | Kauai | HI | os | - | - | 8.2 | - | - | 8.2 | 22 |

Table B.14 Summary of 1986 through 1988 data for **Copper (Cu)** (µg/g dry) in mollusks.

| SITE | Location | State | Species | 1986 mean | 1987 mean | 1988 mean | Diff | Trend | Overall mean | Overall cv% |
|---|---|---|---|---|---|---|---|---|---|---|
| PBSI | Penobscot Bay | ME | me | 9.3 | 8.4 | 9.5 | no | no | 9.1 | 7 |
| PBPI | Penobscot Bay | ME | me | 6.6 | 6.8 | 7.6 | no | no | 7 | 9 |
| MSSP | Merriconeag Snd. | ME | me | - | - | 8.7 | - | - | 8.7 | 3 |
| CAGH | Cape Ann | MA | me | - | 9.9 | 10 | - | - | 10 | 9 |
| SHFP | Salem Harbor | MA | me | - | - | 11 | - | - | 11 | nd |
| BHDI | Boston Hrb. | MA | me | 13 | 13 | 9.8 | no | no | 12 | 14 |
| BHDB | Boston Hrb. | MA | me | 13 | 17 | 12 | yes | no | 14 | 16 |
| BHHB | Boston Hrb. | MA | me | 11 | 15 | 9.9 | no | no | 12 | 21 |
| BHBI | Boston Hrb. | MA | me | 10 | 12 | 11 | no | no | 11 | 7 |
| BBRH | Buzzards Bay | MA | me | 10 | 12 | 11 | no | no | 11 | 9 |
| BBAR | Buzzards Bay | MA | me | 10 | 11 | 11 | no | no | 11 | 7 |
| BBGN | Buzzards Bay | MA | me | 8.4 | 11 | 10 | no | no | 10 | 12 |
| NBDU | Narr. Bay | RI | me | 11 | 13 | - | - | - | 12 | 15 |
| NBDI | Narr. Bay | RI | me | 14 | 17 | 14 | no | no | 15 | 10 |
| BIBI | Block Is. | RI | me | - | 11 | 10 | - | - | 11 | 8 |
| LICR | Long Is. Snd. | CT | me | 15 | 9.8 | 11 | yes | no | 12 | 19 |
| LINH | Long Is. Snd. | CT | me | 11 | 8.7 | 8.6 | no | no | 9.5 | 13 |
| LIHR | Long Is. Snd. | CT | me | 20 | 14 | 11 | yes | d* | 15 | 26 |
| LISI | Long Is. Snd. | CT | me | 11 | 11 | 9.7 | no | no | 10 | 6 |
| LIHU | Long Is. Snd. | NY | me | 12 | 11 | 10 | no | no | 11 | 8 |
| LIPJ | Long Is. Snd. | NY | me | 12 | 11 | 9.6 | yes | d* | 11 | 9 |
| LIMR | Long Is. Snd. | NY | me | 14 | 15 | 13 | yes | no | 14 | 7 |
| LIHH | Long Is. Snd. | NY | me | 13 | 15 | 12 | no | no | 13 | 12 |
| LITN | Long Is. Snd. | NY | me | 17 | 15 | 13 | no | no | 15 | 12 |
| MBTH | Moriches Bay | NY | me | 9.7 | 11 | 10 | no | no | 10 | 9 |
| HRJB | Hud./Rar. Est | NY | me | 10 | 13 | 13 | yes | i* | 12 | 13 |
| HRUB | Hud./Rar. Est. | NY | me | 17 | 20 | 25 | yes | i* | 21 | 19 |
| HRLB | Hud./Rar. Est. | NY | me | 10 | 13 | 15 | yes | i* | 13 | 18 |
| NYSH | N.Y. Bight | NJ | me | 13 | 16 | 18 | yes | i* | 16 | 16 |
| NYLB | N.Y. Bight | NJ | me | 11 | 14 | 13 | yes | no | 12 | 11 |
| NYSR | N.Y. Bight | NJ | me | 10 | 13 | 14 | yes | i* | 12 | 14 |
| BIBL | Barnegat Inlet | NJ | me | - | - | 10 | - | - | 10 | 5 |
| AIAC | Absecon Inlet | NJ | me | - | - | 11 | - | - | 11 | 9 |
| DBFE | Delaware Bay | DE | cv | 230 | 140 | 140 | no | no | 170 | 33 |
| DBBD | Delaware Bay | DE | cv | 340 | 220 | 220 | no | no | 260 | 24 |
| DBAP | Delaware Bay | DE | cv | 670 | 450 | 370 | yes | no | 500 | 29 |
| DBKI | Delaware Bay | DE | cv | 400 | 180 | 200 | no | no | 260 | 45 |
| CBMP | Ches. Bay | MD | cv | 340 | 190 | 240 | yes | no | 250 | 26 |
| CBHP | Ches. Bay | MD | cv | 210 | 120 | 130 | no | no | 150 | 29 |
| CBHG | Ches. Bay | MD | cv | 98 | 81 | 45 | yes | d | 75 | 33 |
| CBIB | Ches. Bay | VA | cv | 71 | 49 | - | - | - | 60 | 22 |
| CBCC | Ches. Bay | VA | cv | 32 | 30 | 27 | no | no | 30 | 10 |
| CBDP | Ches. Bay | VA | cv | 67 | 100 | 78 | no | no | 82 | 22 |
| CBCI | Chincoteague Bay | VA | cv | 99 | 62 | 82 | yes | no | 81 | 20 |
| QIUB | Quinby Inlet | VA | cv | 200 | 130 | 120 | no | no | 150 | 24 |
| RSJC | Roanoke Snd. | NC | cv | 96 | 64 | 89 | yes | no | 83 | 18 |
| PSWB | Pamlico Snd. | NC | cv | 63 | 59 | 73 | no | no | 65 | 13 |
| CFBI | Cape Fear | NC | cv | 63 | 70 | 49 | yes | no | 61 | 16 |
| CHFJ | Charleston Hrb. | SC | cv | 120 | 120 | 92 | no | no | 110 | 14 |
| CHSF | Charleston Hrb. | SC | cv | 140 | 120 | 120 | no | no | 130 | 9 |
| SRTI | Savannah R. Est. | GA | cv | 62 | 71 | 58 | no | no | 64 | 11 |
| SSSI | Sapelo Snd. | GA | cv | 69 | 60 | 49 | yes | d* | 60 | 16 |
| SJCB | St. Johns R. | FL | cv | 52 | 41 | 63 | yes | no | 52 | 20 |
| MRCB | Matanzas R. | FL | cv | 50 | 52 | 34 | no | no | 45 | 29 |
| IRSR | Indian River | FL | cv | - | - | 110 | - | - | 110 | 5 |
| NMML | North Miami | FL | cv | - | - | 820 | - | - | 820 | 6 |
| BBPC | Biscayne Bay | FL | cv | 110 | 70 | - | - | - | 90 | 27 |
| EVFU | Everglades | FL | cv | 45 | 40 | 48 | no | no | 44 | 19 |
| RBHC | Rookery Bay | FL | cv | 68 | 170 | 130 | yes | no | 120 | 39 |

Table B.14 **Copper (Cu)** (Continued)

| SITE | Location | State | Species | 1986 mean | 1987 mean | 1988 mean | Diff | Trend | Overall mean | Overall cv% |
|---|---|---|---|---|---|---|---|---|---|---|
| NBNB | Naples Bay | FL | cv | 330 | 330 | 320 | no | no | 330 | 12 |
| CBBI | Charlotte Hrb. | FL | cv | 85 | 150 | - | - | - | 120 | 33 |
| CBFM | Charlotte Hrb. | FL | cv | - | - | 150 | - | - | 150 | 10 |
| TBMK | Tampa Bay | FL | cv | 43 | 22 | 9.7 | yes | d | 25 | 64 |
| TBCB | Tampa Bay | FL | cv | 92 | 110 | 140 | no | no | 110 | 21 |
| TBHB | Tampa Bay | FL | cv | 82 | 54 | 60 | no | no | 67 | 26 |
| TBPB | Tampa Bay | FL | cv | 67 | 57 | 90 | no | no | 71 | 23 |
| TBOT | Tampa Bay | FL | cv | - | - | 190 | - | - | 190 | 1 |
| CKBP | Cedar Key | FL | cv | 15 | 20 | 35 | yes | i | 23 | 39 |
| SRWP | Suwannee River | FL | cv | - | - | 9.3 | - | - | 9.3 | 6 |
| APCP | Apalachicola Bay | FL | cv | 43 | 42 | 67 | no | no | 51 | 27 |
| APDB | Apalachicola Bay | FL | cv | 68 | 40 | 37 | yes | d* | 49 | 30 |
| PCMP | Panama City | FL | cv | - | - | 320 | - | - | 320 | 35 |
| SAWB | St. Andrew Bay | FL | cv | 420 | 280 | 140 | yes | d | 260 | 48 |
| CBSP | Choctawhat. Bay | FL | cv | 72 | 47 | 110 | yes | no | 75 | 36 |
| CBSR | Choctawhat. Bay | FL | cv | 83 | 64 | 95 | no | no | 81 | 21 |
| PBPH | Pensacola Bay | FL | cv | - | - | 99 | - | - | 99 | 5 |
| PBIB | Pensacola Bay | FL | cv | 75 | 43 | 43 | no | no | 54 | 30 |
| MBHI | Mobile Bay | AL | cv | - | - | 180 | - | - | 180 | 4 |
| MBCP | Mobile Bay | AL | cv | 100 | 59 | 100 | no | no | 87 | 24 |
| MSPB | Miss. Snd. | MS | cv | 100 | 130 | 130 | no | no | 120 | 17 |
| MSBB | Miss. Snd. | MS | cv | 140 | 150 | 220 | no | no | 170 | 25 |
| MSPC | Miss. Snd. | MS | cv | 140 | 160 | 180 | no | no | 160 | 19 |
| LBNO | Lake Borgne | LA | cv | - | - | 320 | - | - | 320 | 3 |
| LBMP | Lake Borgne | LA | cv | 290 | 120 | 240 | yes | no | 220 | 40 |
| BSBG | Breton Snd. | LA | cv | 73 | 50 | 55 | yes | no | 59 | 19 |
| BSSI | Breton Snd. | LA | cv | 120 | 220 | 160 | no | no | 170 | 42 |
| MRTP | Miss. River | LA | cv | - | - | 170 | - | - | 170 | 21 |
| MRPL | Miss. River | LA | cv | - | - | 240 | - | - | 240 | 20 |
| BBSD | Barataria Bay | LA | cv | 59 | 81 | 310 | yes | i | 150 | 81 |
| BBTB | Barataria Bay | LA | cv | - | - | 140 | - | - | 140 | 3 |
| BBMB | Barataria Bay | LA | cv | 26 | 94 | 55 | no | no | 58 | 76 |
| TBLF | Terrebonne Bay | LA | cv | 70 | 61 | 100 | no | no | 77 | 35 |
| TBLB | Terrebonne Bay | LA | cv | 58 | 93 | 130 | yes | i | 94 | 35 |
| CLCL | Caillou Lake | LA | cv | 95 | 140 | 110 | yes | no | 110 | 18 |
| ABOB | Atchafalaya Bay | LA | cv | 120 | 250 | 250 | no | no | 210 | 38 |
| VBSP | Vermillion Bay | LA | cv | 350 | 510 | 250 | yes | no | 370 | 31 |
| JHJH | J. Hrb. Bayou | LA | cv | 170 | 180 | 180 | no | no | 180 | 17 |
| CLLC | Calcasieu Lake | LA | cv | - | - | 370 | - | - | 370 | 16 |
| CLSJ | Calcasieu Lake | LA | cv | 180 | 180 | 210 | no | no | 190 | 15 |
| SLBB | Sabine Lake | TX | cv | 90 | 490 | 270 | yes | no | 290 | 62 |
| GBHR | Galveston Bay | TX | cv | 110 | 140 | 150 | no | no | 130 | 18 |
| GBSC | Galveston Bay | TX | cv | - | - | 180 | - | - | 180 | 40 |
| GBYC | Galveston Bay | TX | cv | 140 | 340 | 120 | no | no | 200 | 55 |
| GBTD | Galveston Bay | TX | cv | 130 | 120 | 140 | no | no | 130 | 12 |
| GBCR | Galveston Bay | TX | cv | 120 | 120 | 150 | no | no | 130 | 12 |
| GBOB | Galveston Bay | TX | cv | - | - | 210 | - | - | 210 | 23 |
| BRFS | Brazos River | TX | cv | - | - | 240 | - | - | 240 | 45 |
| MBEM | Matagorda Bay | TX | cv | 190 | 130 | 210 | no | no | 180 | 25 |
| MBDI | Matagorda Bay | TX | cv | - | - | 190 | - | - | 190 | 35 |
| MBCB | Matagorda Bay | TX | cv | - | - | 220 | - | - | 220 | 19 |
| MBTP | Matagorda Bay | TX | cv | 140 | 110 | 240 | yes | no | 160 | 38 |
| MBGP | Matagorda Bay | TX | cv | 88 | 110 | 170 | yes | i | 120 | 32 |
| MBLR | Matagorda Bay | TX | cv | 120 | 100 | - | - | - | 110 | 13 |
| ESSP | Espiritu Santo | TX | cv | 170 | 140 | - | - | - | 150 | 35 |
| ESBD | Espiritu Santo | TX | cv | - | - | 120 | - | - | 120 | 9 |
| SAMP | San Antonio Bay | TX | cv | 270 | 90 | - | - | - | 180 | 54 |
| SAPP | San Antonio Bay | TX | cv | 150 | 76 | - | - | - | 110 | 39 |
| MBAR | Mesquite Bay | TX | cv | 97 | 74 | 140 | yes | no | 100 | 28 |

Table B.14 **Copper (Cu)** (Continued)

| SITE | Location | State | Species | 1986 mean | 1987 mean | 1988 mean | Diff | Trend | Overall mean | Overall cv% |
|---|---|---|---|---|---|---|---|---|---|---|
| CBCR | Copano Bay | TX | cv | 280 | 140 | 340 | yes | no | 250 | 34 |
| ABHI | Aransas Bay | TX | cv | - | - | 290 | - | - | 290 | 14 |
| ABLR | Aransas Bay | TX | cv | 170 | 92 | 170 | no | no | 140 | 31 |
| CCBH | Corpus Christi | TX | cv | - | - | 250 | - | - | 250 | 1 |
| CCIC | Corpus Christi | TX | cv | 73 | - | 95 | - | - | 84 | 18 |
| CCNB | Corpus Christi | TX | cv | 170 | 160 | 200 | no | no | 180 | 16 |
| LMSB | L. Laguna Madre | TX | cv | 120 | 120 | 99 | no | no | 110 | 14 |
| LMPI | Laguna Madre | TX | cv | - | - | 290 | - | - | 290 | 23 |
| IBNJ | Imperial Beach | CA | mc | 8.7 | 11 | 6.6 | yes | no | 8.7 | 21 |
| SDHI | San Diego Bay | CA | me | 17 | 13 | 22 | no | no | 17 | 34 |
| PLLH | Pt. Loma | CA | mc | 11 | 11 | 12 | no | no | 12 | 11 |
| MBVB | Mission Bay | CA | me | 6.5 | 6.1 | 4.1 | no | no | 5.6 | 20 |
| LJLJ | La Jolla | CA | mc | 6.9 | 8.3 | 6.5 | no | no | 7.2 | 19 |
| OSBJ | Oceanside | CA | me | 8.1 | 5.7 | 5.1 | yes | d* | 6.3 | 23 |
| NBWJ | Newport Bch. | CA | mc | 6.3 | 7 | 6.4 | no | no | 6.6 | 8 |
| ABWJ | Anaheim Bay | CA | mc | 8.7 | 12 | 7 | yes | no | 9.2 | 24 |
| SPFP | San Pedro Hrb. | CA | me | 13 | 13 | 12 | no | no | 12 | 18 |
| PVRP | Palos Verdes | CA | mc | 8.8 | 10 | 8.4 | no | no | 9.1 | 12 |
| SCBR | S. Catalina Is. | CA | mc | 7 | 5.4 | 4.7 | no | no | 5.7 | 23 |
| MDSJ | Marina Del Rey | CA | me | 11 | 9.4 | 13 | no | no | 11 | 41 |
| PDPD | Pt. Dume | CA | mc | 11 | 9 | 7.6 | yes | d* | 9.2 | 17 |
| SCFP | Santa Cruz Is. | CA | mc | 6.5 | 7.6 | 6.2 | no | no | 6.8 | 14 |
| SANM | San Miguel Is. | CA | mc | - | - | 6.4 | - | - | 6.4 | 5 |
| SBSB | Pt. S. Barbara | CA | mc | 7.9 | 8 | 7.1 | no | no | 7.7 | 8 |
| PCPC | Pt. Conception | CA | mc | 9 | 7.2 | 6.4 | yes | no | 7.5 | 16 |
| SLSL | San Luis Ob. Bay | CA | mc | 9.1 | 10 | 8.9 | no | no | 9.5 | 8 |
| SSSS | San Simeon Pt. | CA | mc | 7.6 | 8.1 | 6.3 | no | no | 7.3 | 17 |
| PGLP | Pacific Grove | CA | mc | 7.2 | 5.9 | 5.9 | no | no | 6.3 | 11 |
| MBSC | Monterey Bay | CA | mc | 8.2 | 8.8 | 10 | no | no | 9.2 | 17 |
| FIEL | Farallon Is. | CA | mc | - | - | 9 | - | - | 9 | 1 |
| SFDB | San Fran. Bay | CA | me | 8.6 | 8.9 | 6.2 | no | no | 7.9 | 17 |
| SFSM | San Fran. Bay | CA | me | 8 | 12 | 7.6 | no | no | 9.3 | 27 |
| SFEM | San Fran. Bay | CA | me | - | 9.9 | 7.9 | - | - | 8.9 | 18 |
| TBSR | Tomales Bay | CA | me | 8 | 4.9 | 3.3 | yes | d | 5.4 | 39 |
| BBBE | Bodega Bay | CA | mc | 9.6 | 7.2 | 6.3 | yes | d* | 7.7 | 19 |
| PALH | Pt. Arena | CA | mc | 8.2 | 6.9 | 6.9 | no | no | 7.3 | 13 |
| PDSC | Pt. Delgada | CA | mc | 7.6 | 7.4 | 7.8 | no | no | 7.6 | 9 |
| HMBJ | Humboldt Bay | CA | mc | 9.2 | 11 | 9.6 | no | no | 9.9 | 10 |
| SGSG | Pt. St. George | CA | mc | 9.3 | 7.5 | 8.2 | no | no | 8.3 | 11 |
| CBCH | Coos Bay | OR | mc | 9.7 | 11 | 11 | no | no | 10 | 8 |
| CBRP | Coos Bay | OR | me | 11 | 7.8 | 8.6 | no | no | 9.1 | 19 |
| YBOP | Yaquina Bay | OR | me | 9.8 | 9 | 9.1 | no | no | 9.3 | 7 |
| YHYH | Yaquina Head | OR | mc | 11 | 8.1 | 9.2 | yes | no | 9.3 | 12 |
| TBHP | Tillamook Bay | OR | me | 8 | 8.6 | 7.6 | no | no | 8.1 | 10 |
| CRSJ | Columbia R. | OR | me | 10 | 11 | 10 | no | no | 11 | 9 |
| GHWJ | Gray's Hrb. | WA | mc | 10 | 11 | 13 | yes | i* | 11 | 9 |
| JFCF | S. Juan de Fuca | WA | mc | 8.7 | 9.2 | 9.5 | no | no | 9.1 | 9 |
| SSBI | South Puget Snd. | WA | me | 8.2 | 6.4 | 8.7 | yes | no | 7.8 | 14 |
| CBTP | Comm. Bay | WA | me | 9 | 7.6 | 7.2 | no | no | 7.9 | 12 |
| EBFR | Elliott Bay | WA | me | 12 | 8.7 | 11 | no | no | 10 | 16 |
| SIWP | Sinclair Inlet | WA | me | 8.3 | 7.6 | 8.5 | no | no | 8.2 | 10 |
| WIPP | Whidbey Is. | WA | me | 8.3 | 6.9 | 8.9 | yes | no | 8 | 13 |
| BBSM | Bellingham Bay | WA | me | 11 | 10 | 12 | no | no | 11 | 11 |
| PRPR | Pt. Roberts | WA | me | 9.8 | 9.9 | 9.8 | no | no | 9.8 | 6 |
| PVMC | Port Valdez | AK | me | 11 | 12 | 14 | no | no | 12 | 13 |
| UISB | Unakwit Inlet | AK | me | 9.7 | 11 | 9.9 | yes | no | 10 | 8 |
| BPBP | Barber's Pt. | HI | os | 1600 | 1200 | 810 | no | no | 1200 | 69 |
| HHKL | Honolulu Hrb. | HI | os | 250 | 2100 | 1900 | no | no | 1400 | 69 |
| KAUI | Kauai | HI | os | - | - | 700 | - | - | 700 | 17 |

Table B.15 Summary of 1986 through 1988 data for **Lead (Pb)** (µg/g dry) in mollusks.

| SITE | Location | State | Species | 1986 mean | 1987 mean | 1988 mean | Diff | Trend | Overall mean | Overall cv% |
|---|---|---|---|---|---|---|---|---|---|---|
| PBSI | Penobscot Bay | ME | me | 1.5 | 1.2 | 1.6 | no | no | 1.4 | 15 |
| PBPI | Penobscot Bay | ME | me | 1.9 | 1.3 | 2 | no | no | 1.7 | 22 |
| MSSP | Merriconeag Snd. | ME | me | - | - | 1.6 | - | - | 1.6 | 10 |
| CAGH | Cape Ann | MA | me | - | 3 | 3.5 | - | - | 3.2 | 11 |
| SHFP | Salem Harbor | MA | me | - | - | 22 | - | - | 22 | 24 |
| BHDI | Boston Hrb. | MA | me | 8.3 | 11 | 5.3 | yes | no | 8.3 | 32 |
| BHDB | Boston Hrb. | MA | me | 13 | 19 | 12 | yes | no | 14 | 23 |
| BHHB | Boston Hrb. | MA | me | 8.4 | 15 | 6.4 | yes | no | 9.9 | 41 |
| BHBI | Boston Hrb. | MA | me | 4.4 | 8.8 | 6.6 | yes | no | 6.6 | 31 |
| BBRH | Buzzards Bay | MA | me | 3.4 | 3.5 | 3 | no | no | 3.3 | 10 |
| BBAR | Buzzards Bay | MA | me | 4.6 | 5.1 | 4 | yes | no | 4.6 | 13 |
| BBGN | Buzzards Bay | MA | me | 1.4 | 1.9 | 1.4 | no | no | 1.6 | 18 |
| NBDU | Narr. Bay | RI | me | 2.9 | 2.7 | - | - | - | 2.8 | 5 |
| NBDI | Narr. Bay | RI | me | 6.1 | 6.2 | 6.1 | no | no | 6.1 | 9 |
| BIBI | Block Is. | RI | me | - | 1.2 | 1.4 | - | - | 1.3 | 11 |
| LICR | Long Is. Snd. | CT | me | 3.3 | 1.3 | 2.5 | yes | no | 2.4 | 41 |
| LINH | Long Is. Snd. | CT | me | 2.7 | 1.6 | 1.9 | yes | no | 2.1 | 25 |
| LIHR | Long Is. Snd. | CT | me | 3.9 | 2.4 | 2.3 | no | no | 2.9 | 53 |
| LISI | Long Is. Snd. | CT | me | 2.5 | 1.9 | 2.3 | yes | no | 2.2 | 14 |
| LIHU | Long Is. Snd. | NY | me | 2.8 | 2.3 | 3.1 | yes | no | 2.7 | 13 |
| LIPJ | Long Is. Snd. | NY | me | 2.2 | 1.6 | 2.5 | no | no | 2.1 | 23 |
| LIMR | Long Is. Snd. | NY | me | 5.1 | 3 | 4.9 | no | no | 4.3 | 29 |
| LIHH | Long Is. Snd. | NY | me | 3.6 | 3.8 | 3 | yes | no | 3.4 | 11 |
| LITN | Long Is. Snd. | NY | me | 7.2 | 14 | 5.5 | yes | no | 8.8 | 42 |
| MBTH | Moriches Bay | NY | me | 2.6 | 2.1 | 2.2 | yes | no | 2.3 | 11 |
| HRJB | Hud./Rar. Est | NY | me | 3.1 | 7.4 | 5.9 | yes | no | 5.5 | 35 |
| HRUB | Hud./Rar. Est. | NY | me | 14 | 28 | 22 | no | no | 21 | 45 |
| HRLB | Hud./Rar. Est. | NY | me | 3.7 | 10 | 4.8 | yes | no | 6.3 | 50 |
| NYSH | N.Y. Bight | NJ | me | 6 | 13 | 9.6 | yes | no | 9.4 | 32 |
| NYLB | N.Y. Bight | NJ | me | 3.1 | 4.1 | 4.3 | no | no | 3.8 | 17 |
| NYSR | N.Y. Bight | NJ | me | 2.5 | 3.3 | 4.7 | yes | no | 3.5 | 28 |
| BIBL | Barnegat Inlet | NJ | me | - | - | 2.8 | - | - | 2.8 | 11 |
| AIAC | Absecon Inlet | NJ | me | - | - | 2.5 | - | - | 2.5 | 8 |
| DBFE | Delaware Bay | DE | cv | .47 | .72 | .45 | no | no | .54 | 28 |
| DBBD | Delaware Bay | DE | cv | .67 | .7 | .55 | no | no | .64 | 13 |
| DBAP | Delaware Bay | DE | cv | 1.5 | .62 | .64 | no | no | .93 | 53 |
| DBKI | Delaware Bay | DE | cv | 1 | .58 | .71 | yes | no | .76 | 39 |
| CBMP | Ches. Bay | MD | cv | .34 | .41 | .38 | no | no | .38 | 14 |
| CBHP | Ches. Bay | MD | cv | .31 | .31 | .31 | no | no | .31 | 11 |
| CBHG | Ches. Bay | MD | cv | .31 | .31 | .23 | no | no | .28 | 23 |
| CBIB | Ches. Bay | VA | cv | .17 | .31 | - | - | - | .24 | 36 |
| CBCC | Ches. Bay | VA | cv | .23 | .39 | .47 | yes | i | .36 | 39 |
| CBDP | Ches. Bay | VA | cv | .3 | .86 | .72 | yes | no | .63 | 43 |
| CBCI | Chincoteague Bay | VA | cv | .34 | .47 | .38 | no | no | .39 | 24 |
| QIUB | Quinby Inlet | VA | cv | .32 | .29 | .35 | no | no | .32 | 13 |
| RSJC | Roanoke Snd. | NC | cv | .42 | .35 | .26 | no | no | .34 | 28 |
| PSWB | Pamlico Snd. | NC | cv | .51 | .34 | .29 | no | no | .38 | 40 |
| CFBI | Cape Fear | NC | cv | .27 | .24 | .19 | no | no | .23 | 17 |
| CHFJ | Charleston Hrb. | SC | cv | .4 | .35 | .29 | no | no | .35 | 20 |
| CHSF | Charleston Hrb. | SC | cv | .31 | .35 | .27 | no | no | .31 | 21 |
| SRTI | Savannah R. Est. | GA | cv | .11 | .32 | .22 | yes | no | .22 | 47 |
| SSSI | Sapelo Snd. | GA | cv | .16 | .26 | .11 | yes | no | .18 | 42 |
| SJCB | St. Johns R. | FL | cv | .92 | 1.1 | .63 | yes | no | .9 | 26 |
| MRCB | Matanzas R. | FL | cv | .23 | .34 | .36 | no | no | .31 | 25 |
| IRSR | Indian River | FL | cv | - | - | .46 | - | - | .46 | 8 |
| NMML | North Miami | FL | cv | - | - | 1 | - | - | 1 | 60 |
| BBPC | Biscayne Bay | FL | cv | .16 | .41 | - | - | - | .28 | 78 |
| EVFU | Everglades | FL | cv | .11 | .24 | .25 | no | no | .2 | 71 |
| RBHC | Rookery Bay | FL | cv | .17 | .66 | .14 | no | no | .33 | 82 |

Table B.15 **Lead (Pb)** (Continued)

| SITE | Location | State | Species | 1986 mean | 1987 mean | 1988 mean | Diff | Trend | Overall mean | Overall cv% |
|---|---|---|---|---|---|---|---|---|---|---|
| NBNB | Naples Bay | FL | cv | .2 | .34 | .16 | no | no | .23 | 40 |
| CBBI | Charlotte Hrb. | FL | cv | .13 | .55 | - | - | - | .34 | 68 |
| CBFM | Charlotte Hrb. | FL | cv | - | - | .67 | - | - | .67 | 28 |
| TBMK | Tampa Bay | FL | cv | .51 | .53 | .42 | no | no | .49 | 37 |
| TBCB | Tampa Bay | FL | cv | .15 | .44 | .31 | yes | no | .3 | 46 |
| TBHB | Tampa Bay | FL | cv | 1.4 | 1.5 | .84 | no | no | 1.3 | 31 |
| TBPB | Tampa Bay | FL | cv | .95 | 1.4 | 1.8 | no | no | 1.4 | 35 |
| TBOT | Tampa Bay | FL | cv | - | - | .53 | - | - | .53 | 6 |
| CKBP | Cedar Key | FL | cv | .19 | .25 | .38 | no | no | .27 | 38 |
| SRWP | Suwannee River | FL | cv | - | - | .36 | - | - | .36 | 5 |
| APCP | Apalachicola Bay | FL | cv | .24 | .41 | .25 | no | no | .3 | 31 |
| APDB | Apalachicola Bay | FL | cv | .14 | 1.9 | .69 | no | no | .91 | 180 |
| PCMP | Panama City | FL | cv | - | - | .83 | - | - | .83 | 38 |
| SAWB | St. Andrew Bay | FL | cv | 1.2 | 1.7 | 1.2 | no | no | 1.4 | 42 |
| CBSP | Choctawhat. Bay | FL | cv | 2.3 | 4.6 | 9.1 | yes | i | 5.4 | 64 |
| CBSR | Choctawhat. Bay | FL | cv | .12 | .62 | .38 | yes | no | .38 | 66 |
| PBPH | Pensacola Bay | FL | cv | - | - | .29 | - | - | .29 | 16 |
| PBIB | Pensacola Bay | FL | cv | .41 | .3 | .4 | no | no | .37 | 18 |
| MBHI | Mobile Bay | AL | cv | - | - | .62 | - | - | .62 | 8 |
| MBCP | Mobile Bay | AL | cv | .39 | .33 | .29 | no | no | .34 | 21 |
| MSPB | Miss. Snd. | MS | cv | .62 | .62 | .38 | no | no | .54 | 29 |
| MSBB | Miss. Snd. | MS | cv | .73 | 1.4 | .44 | yes | no | .86 | 56 |
| MSPC | Miss. Snd. | MS | cv | .33 | .43 | .5 | no | no | .42 | 39 |
| LBNO | Lake Borgne | LA | cv | - | - | .55 | - | - | .55 | 65 |
| LBMP | Lake Borgne | LA | cv | .45 | .56 | .32 | no | no | .44 | 27 |
| BSBG | Breton Snd. | LA | cv | .26 | .42 | .27 | no | no | .32 | 28 |
| BSSI | Breton Snd. | LA | cv | .32 | .6 | .41 | no | no | .44 | 36 |
| MRTP | Miss. River | LA | cv | - | - | 1.3 | - | - | 1.3 | 44 |
| MRPL | Miss. River | LA | cv | - | - | .78 | - | - | .78 | 29 |
| BBSD | Barataria Bay | LA | cv | .37 | .35 | .39 | no | no | .37 | 15 |
| BBTB | Barataria Bay | LA | cv | - | - | .53 | - | - | .53 | 29 |
| BBMB | Barataria Bay | LA | cv | .39 | .59 | .54 | no | no | .51 | 61 |
| TBLF | Terrebonne Bay | LA | cv | .45 | .5 | .65 | no | no | .53 | 52 |
| TBLB | Terrebonne Bay | LA | cv | .72 | .51 | .82 | no | no | .68 | 37 |
| CLCL | Caillou Lake | LA | cv | .23 | .34 | .63 | no | no | .4 | 65 |
| ABOB | Atchafalaya Bay | LA | cv | .72 | .28 | .52 | no | no | .51 | 58 |
| VBSP | Vermillion Bay | LA | cv | .54 | .52 | .89 | no | no | .65 | 42 |
| JHJH | J. Hrb. Bayou | LA | cv | 1.4 | .35 | .48 | no | no | .74 | 110 |
| CLLC | Calcasieu Lake | LA | cv | - | - | .62 | - | - | .62 | 82 |
| CLSJ | Calcasieu Lake | LA | cv | .41 | .61 | .38 | yes | no | .47 | 24 |
| SLBB | Sabine Lake | TX | cv | .58 | .39 | .62 | no | no | .53 | 32 |
| GBHR | Galveston Bay | TX | cv | .35 | .43 | .34 | no | no | .37 | 39 |
| GBSC | Galveston Bay | TX | cv | - | - | .68 | - | - | .68 | 21 |
| GBYC | Galveston Bay | TX | cv | .48 | .84 | .62 | yes | no | .64 | 27 |
| GBTD | Galveston Bay | TX | cv | .55 | 1.4 | .66 | no | no | .86 | 100 |
| GBCR | Galveston Bay | TX | cv | .43 | .5 | .54 | no | no | .49 | 43 |
| GBOB | Galveston Bay | TX | cv | - | - | .98 | - | - | .98 | 63 |
| BRFS | Brazos River | TX | cv | - | - | .74 | - | - | .74 | 27 |
| MBEM | Matagorda Bay | TX | cv | .53 | .49 | .36 | no | no | .46 | 30 |
| MBDI | Matagorda Bay | TX | cv | - | - | .27 | - | - | .27 | 87 |
| MBCB | Matagorda Bay | TX | cv | - | - | .53 | - | - | .53 | 51 |
| MBTP | Matagorda Bay | TX | cv | .4 | .79 | .35 | no | no | .51 | 84 |
| MBGP | Matagorda Bay | TX | cv | .44 | .47 | .54 | no | no | .49 | 19 |
| MBLR | Matagorda Bay | TX | cv | .52 | .38 | - | - | - | .45 | 31 |
| ESSP | Espiritu Santo | TX | cv | .58 | .43 | - | - | - | .51 | 47 |
| ESBD | Espiritu Santo | TX | cv | - | - | .39 | - | - | .39 | 18 |
| SAMP | San Antonio Bay | TX | cv | .85 | .4 | - | - | - | .63 | 54 |
| SAPP | San Antonio Bay | TX | cv | .6 | .33 | - | - | - | .47 | 60 |
| MBAR | Mesquite Bay | TX | cv | .39 | .31 | .32 | no | no | .34 | 44 |

Table B.15 **Lead (Pb)** (Continued)

| SITE | Location | State | Species | 1986 mean | 1987 mean | 1988 mean | Diff | Trend | Overall mean | Overall cv% |
|---|---|---|---|---|---|---|---|---|---|---|
| CBCR | Copano Bay | TX | cv | .65 | .45 | .42 | no | no | .5 | 26 |
| ABHI | Aransas Bay | TX | cv | - | - | .5 | - | - | .5 | 51 |
| ABLR | Aransas Bay | TX | cv | .55 | .36 | .55 | no | no | .49 | 39 |
| CCBH | Corpus Christi | TX | cv | - | - | 1.9 | - | - | 1.9 | 51 |
| CCIC | Corpus Christi | TX | cv | .46 | - | .67 | - | - | .57 | 52 |
| CCNB | Corpus Christi | TX | cv | .48 | .72 | .82 | yes | i* | .68 | 25 |
| LMSB | L. Laguna Madre | TX | cv | .25 | .52 | .91 | yes | i | .56 | 54 |
| LMPI | Laguna Madre | TX | cv | - | - | .83 | - | - | .83 | 59 |
| IBNJ | Imperial Beach | CA | mc | 1.5 | 2 | 1.6 | no | no | 1.7 | 18 |
| SDHI | San Diego Bay | CA | me | 4.4 | 4.5 | 4 | no | no | 4.3 | 17 |
| PLLH | Pt. Loma | CA | mc | 2.4 | 2.2 | 3.5 | yes | no | 2.7 | 25 |
| MBVB | Mission Bay | CA | me | 1.8 | 1.2 | .93 | no | no | 1.3 | 32 |
| LJLJ | La Jolla | CA | mc | 5.9 | 4.2 | 4.5 | no | no | 4.9 | 29 |
| OSBJ | Oceanside | CA | me | 1.3 | .76 | .76 | no | no | .93 | 72 |
| NBWJ | Newport Bch. | CA | mc | 5.3 | 3.7 | 7.6 | yes | no | 5.5 | 33 |
| ABWJ | Anaheim Bay | CA | mc | 14 | 16 | 8.5 | no | no | 13 | 28 |
| SPFP | San Pedro Hrb. | CA | me | 3.2 | 2.6 | 3.3 | no | no | 3 | 16 |
| PVRP | Palos Verdes | CA | mc | 2.5 | 3 | 3.5 | no | no | 3.1 | 21 |
| SCBR | S. Catalina Is. | CA | mc | 2 | 2.9 | 1.7 | yes | no | 2.2 | 24 |
| MDSJ | Marina Del Rey | CA | me | 23 | 38 | 16 | yes | no | 26 | 40 |
| PDPD | Pt. Dume | CA | mc | 3 | 2.1 | 1.9 | no | no | 2.3 | 24 |
| SCFP | Santa Cruz Is. | CA | mc | 1.1 | .85 | .7 | no | no | .88 | 28 |
| SANM | San Miguel Is. | CA | mc | - | - | .79 | - | - | .79 | 9 |
| SBSB | Pt. S. Barbara | CA | mc | 1.2 | 1.4 | 1.2 | no | no | 1.3 | 16 |
| PCPC | Pt. Conception | CA | mc | 1.3 | 1.6 | 1.5 | no | no | 1.4 | 14 |
| SLSL | San Luis Ob. Bay | CA | mc | .93 | 1.4 | 1.5 | no | no | 1.3 | 23 |
| SSSS | San Simeon Pt. | CA | mc | .82 | 1.7 | 1.3 | yes | no | 1.3 | 32 |
| PGLP | Pacific Grove | CA | mc | 5.9 | 4.8 | 8.8 | no | no | 6.5 | 34 |
| MBSC | Monterey Bay | CA | mc | 5.1 | 2 | 3.3 | yes | no | 3.3 | 39 |
| FIEL | Farallon Is. | CA | mc | - | - | 2.9 | - | - | 2.9 | 43 |
| SFDB | San Fran. Bay | CA | me | .76 | 1.1 | .31 | yes | no | .73 | 50 |
| SFSM | San Fran. Bay | CA | me | .51 | 1.3 | .39 | no | no | .73 | 61 |
| SFEM | San Fran. Bay | CA | me | - | 3.5 | 3.8 | - | - | 3.7 | 20 |
| TBSR | Tomales Bay | CA | me | .42 | .99 | .18 | no | no | .53 | 130 |
| BBBE | Bodega Bay | CA | mc | 1.1 | .91 | .65 | yes | no | .88 | 25 |
| PALH | Pt. Arena | CA | mc | 1.2 | .72 | .74 | no | no | .87 | 28 |
| PDSC | Pt. Delgada | CA | mc | 1.9 | 1.6 | 1.3 | no | no | 1.6 | 29 |
| HMBJ | Humboldt Bay | CA | mc | .82 | 1.3 | 1.4 | no | no | 1.2 | 23 |
| SGSG | Pt. St. George | CA | mc | .75 | 1.2 | .84 | no | no | .92 | 26 |
| CBCH | Coos Bay | OR | mc | .7 | .54 | .65 | no | no | .63 | 15 |
| CBRP | Coos Bay | OR | me | .87 | .62 | .69 | yes | no | .73 | 16 |
| YBOP | Yaquina Bay | OR | me | .76 | .39 | .47 | yes | no | .54 | 31 |
| YHYH | Yaquina Head | OR | mc | .6 | .64 | .67 | yes | no | .63 | 5 |
| TBHP | Tillamook Bay | OR | me | .48 | .34 | .34 | no | no | .39 | 18 |
| CRSJ | Columbia R. | OR | me | .61 | .78 | .62 | no | no | .67 | 19 |
| GHWJ | Gray's Hrb. | WA | mc | .44 | .51 | .56 | no | no | .5 | 16 |
| JFCF | S. Juan de Fuca | WA | mc | .74 | 1.2 | .79 | no | no | .92 | 26 |
| SSBI | South Puget Snd. | WA | me | .89 | .52 | 1 | yes | no | .81 | 29 |
| CBTP | Comm. Bay | WA | me | 3 | .96 | 1.6 | yes | no | 1.9 | 54 |
| EBFR | Elliott Bay | WA | me | 4.4 | 1.7 | 3.2 | yes | no | 3.1 | 41 |
| SIWP | Sinclair Inlet | WA | me | 1.7 | 4.8 | 1.2 | no | no | 2.6 | 140 |
| WIPP | Whidbey Is. | WA | me | .45 | .62 | .58 | no | no | .55 | 18 |
| BBSM | Bellingham Bay | WA | me | 1 | 1.2 | 1.5 | yes | i* | 1.2 | 18 |
| PRPR | Pt. Roberts | WA | me | .74 | .69 | .85 | no | no | .76 | 13 |
| PVMC | Port Valdez | AK | me | 1.5 | 1.4 | 2.2 | yes | no | 1.7 | 21 |
| UISB | Unakwit Inlet | AK | me | 1 | 1.3 | 1 | no | no | 1.1 | 18 |
| BPBP | Barber's Pt. | HI | os | 5.2 | .97 | .64 | yes | d | 2.3 | 100 |
| HHKL | Honolulu Hrb. | HI | os | .59 | 7.7 | 6.3 | no | no | 4.9 | 73 |
| KAUI | Kauai | HI | os | - | - | .77 | - | - | .77 | 28 |

Table B.16 Summary of 1986 through 1988 data for **Mercury (Hg)** (µg/g dry) in mollusks.

| SITE | Location | State | Species | 1986 mean | 1987 mean | 1988 mean | Diff | Trend | Overall mean | cv% |
|---|---|---|---|---|---|---|---|---|---|---|
| PBSI | Penobscot Bay | ME | me | .27 | .22 | .27 | no | no | .25 | 27 |
| PBPI | Penobscot Bay | ME | me | .14 | .12 | .3 | no | no | .19 | 88 |
| MSSP | Merriconeag Snd. | ME | me | - | - | .062 | - | - | .062 | 8 |
| CAGH | Cape Ann | MA | me | - | .16 | .16 | - | - | .16 | 7 |
| SHFP | Salem Harbor | MA | me | - | - | .17 | - | - | .17 | nd |
| BHDI | Boston Hrb. | MA | me | .33 | .43 | .21 | yes | no | .32 | 31 |
| BHDB | Boston Hrb. | MA | me | .2 | .28 | .2 | no | no | .23 | 18 |
| BHHB | Boston Hrb. | MA | me | .2 | .23 | .18 | no | no | .2 | 18 |
| BHBI | Boston Hrb. | MA | me | .2 | .4 | .26 | yes | no | .29 | 32 |
| BBRH | Buzzards Bay | MA | me | .11 | .1 | .11 | no | no | .11 | 6 |
| BBAR | Buzzards Bay | MA | me | .082 | .14 | .088 | yes | no | .1 | 26 |
| BBGN | Buzzards Bay | MA | me | .095 | .2 | .15 | yes | no | .16 | 29 |
| NBDU | Narr. Bay | RI | me | .09 | .11 | - | - | - | .1 | 11 |
| NBDI | Narr. Bay | RI | me | .13 | .16 | .082 | yes | no | .12 | 28 |
| BIBI | Block Is. | RI | me | - | .11 | .08 | - | - | .095 | 18 |
| LICR | Long Is. Snd. | CT | me | .087 | .13 | .15 | yes | i* | .12 | 25 |
| LINH | Long Is. Snd. | CT | me | .057 | .059 | .046 | no | no | .054 | 18 |
| LIHR | Long Is. Snd. | CT | me | .087 | .067 | .065 | yes | d* | .073 | 16 |
| LISI | Long Is. Snd. | CT | me | .073 | .09 | .073 | no | no | .079 | 18 |
| LIHU | Long Is. Snd. | NY | me | .063 | .081 | .08 | no | no | .075 | 12 |
| LIPJ | Long Is. Snd. | NY | me | .08 | .082 | .082 | no | no | .081 | 8 |
| LIMR | Long Is. Snd. | NY | me | .063 | .071 | .074 | no | no | .069 | 18 |
| LIHH | Long Is. Snd. | NY | me | .057 | .11 | .086 | yes | no | .084 | 28 |
| LITN | Long Is. Snd. | NY | me | .11 | .16 | .13 | no | no | .13 | 21 |
| MBTH | Moriches Bay | NY | me | .32 | .26 | .37 | no | no | .32 | 17 |
| HRJB | Hud./Rar. Est | NY | me | .21 | .28 | .28 | no | no | .26 | 15 |
| HRUB | Hud./Rar. Est. | NY | me | .47 | .59 | .69 | yes | i* | .58 | 17 |
| HRLB | Hud./Rar. Est. | NY | me | .28 | .3 | .37 | no | no | .32 | 33 |
| NYSH | N.Y. Bight | NJ | me | .24 | .25 | .31 | yes | i* | .27 | 13 |
| NYLB | N.Y. Bight | NJ | me | .16 | .21 | .25 | yes | i* | .21 | 20 |
| NYSR | N.Y. Bight | NJ | me | .24 | .22 | .23 | no | no | .23 | 6 |
| BIBL | Barnegat Inlet | NJ | me | - | - | .19 | - | - | .19 | 5 |
| AIAC | Absecon Inlet | NJ | me | - | - | .21 | - | - | .21 | 8 |
| DBFE | Delaware Bay | DE | cv | .073 | .081 | .085 | no | no | .08 | 10 |
| DBBD | Delaware Bay | DE | cv | .077 | .066 | .09 | yes | no | .077 | 15 |
| DBAP | Delaware Bay | DE | cv | .087 | .07 | .07 | no | no | .076 | 11 |
| DBKI | Delaware Bay | DE | cv | .077 | .076 | .11 | no | no | .088 | 23 |
| CBMP | Ches. Bay | MD | cv | .023 | .018 | .023 | no | no | .021 | 19 |
| CBHP | Ches. Bay | MD | cv | .011 | .021 | .042 | yes | i | .025 | 56 |
| CBHG | Ches. Bay | MD | cv | .04 | .031 | .044 | no | no | .038 | 21 |
| CBIB | Ches. Bay | VA | cv | .03 | .035 | - | - | - | .033 | 21 |
| CBCC | Ches. Bay | VA | cv | .08 | .063 | .056 | yes | d* | .066 | 18 |
| CBDP | Ches. Bay | VA | cv | .09 | .19 | .17 | yes | no | .15 | 31 |
| CBCI | Chincoteague Bay | VA | cv | .13 | .14 | .13 | no | no | .13 | 7 |
| QIUB | Quinby Inlet | VA | cv | .14 | .17 | .2 | yes | i* | .17 | 17 |
| RSJC | Roanoke Snd. | NC | cv | .047 | .067 | .084 | yes | i* | .066 | 27 |
| PSWB | Pamlico Snd. | NC | cv | .09 | .093 | .14 | no | no | .11 | 24 |
| CFBI | Cape Fear | NC | cv | .07 | .14 | .15 | yes | i | .12 | 31 |
| CHFJ | Charleston Hrb. | SC | cv | .06 | .077 | .066 | yes | no | .068 | 14 |
| CHSF | Charleston Hrb. | SC | cv | .06 | .064 | .047 | no | no | .057 | 17 |
| SRTI | Savannah R. Est. | GA | cv | .033 | .074 | .076 | no | no | .061 | 36 |
| SSSI | Sapelo Snd. | GA | cv | .077 | .11 | .052 | no | no | .08 | 37 |
| SJCB | St. Johns R. | FL | cv | .1 | .095 | .12 | no | no | .1 | 13 |
| MRCB | Matanzas R. | FL | cv | .07 | .14 | .17 | yes | i | .13 | 40 |
| IRSR | Indian River | FL | cv | - | - | .071 | - | - | .071 | 11 |
| NMML | North Miami | FL | cv | - | - | .19 | - | - | .19 | 6 |
| BBPC | Biscayne Bay | FL | cv | .12 | .16 | - | - | - | .14 | 22 |
| EVFU | Everglades | FL | cv | .25 | .19 | .16 | yes | d* | .2 | 25 |
| RBHC | Rookery Bay | FL | cv | .23 | .28 | .18 | no | no | .23 | 28 |

Table B.16 **Mercury (Hg)** (Continued)

| SITE | Location | State | Species | 1986 mean | 1987 mean | 1988 mean | Diff | Trend | Overall mean | Overall cv% |
|---|---|---|---|---|---|---|---|---|---|---|
| NBNB | Naples Bay | FL | cv | .15 | .096 | .1 | no | no | .12 | 34 |
| CBBI | Charlotte Hrb. | FL | cv | .31 | .3 | - | - | - | .3 | 28 |
| CBFM | Charlotte Hrb. | FL | cv | - | - | .17 | - | - | .17 | 36 |
| TBMK | Tampa Bay | FL | cv | .23 | .19 | .12 | no | no | .18 | 40 |
| TBCB | Tampa Bay | FL | cv | .24 | .39 | .27 | no | no | .3 | 33 |
| TBHB | Tampa Bay | FL | cv | .11 | .068 | .09 | no | no | .088 | 31 |
| TBPB | Tampa Bay | FL | cv | .48 | .3 | .44 | no | no | .41 | 25 |
| TBOT | Tampa Bay | FL | cv | - | - | .64 | - | - | .64 | 16 |
| CKBP | Cedar Key | FL | cv | .11 | .14 | .16 | no | no | .14 | 33 |
| SRWP | Suwannee River | FL | cv | - | - | .12 | - | - | .12 | 15 |
| APCP | Apalachicola Bay | FL | cv | .11 | .11 | .087 | no | no | .1 | 26 |
| APDB | Apalachicola Bay | FL | cv | .12 | .09 | .063 | no | no | .092 | 33 |
| PCMP | Panama City | FL | cv | - | - | .005 | - | - | .005 | 100 |
| SAWB | St. Andrew Bay | FL | cv | .072 | .043 | .053 | no | no | .056 | 41 |
| CBSP | Choctawhat. Bay | FL | cv | .27 | .21 | .24 | no | no | .24 | 23 |
| CBSR | Choctawhat. Bay | FL | cv | .25 | .43 | .23 | no | no | .3 | 42 |
| PBPH | Pensacola Bay | FL | cv | - | - | .13 | - | - | .13 | 15 |
| PBIB | Pensacola Bay | FL | cv | .24 | .084 | .11 | yes | no | .15 | 63 |
| MBHI | Mobile Bay | AL | cv | - | - | .05 | - | - | .05 | 52 |
| MBCP | Mobile Bay | AL | cv | .07 | .068 | .11 | no | no | .082 | 39 |
| MSPB | Miss. Snd. | MS | cv | .16 | .2 | .12 | yes | no | .16 | 25 |
| MSBB | Miss. Snd. | MS | cv | .14 | .098 | .098 | no | no | .11 | 28 |
| MSPC | Miss. Snd. | MS | cv | .1 | .13 | .13 | no | no | .12 | 25 |
| LBNO | Lake Borgne | LA | cv | - | - | .11 | - | - | .11 | 82 |
| LBMP | Lake Borgne | LA | cv | .034 | .15 | .14 | no | no | .11 | 59 |
| BSBG | Breton Snd. | LA | cv | .031 | .12 | .068 | no | no | .073 | 61 |
| BSSI | Breton Snd. | LA | cv | .034 | .1 | .04 | no | no | .058 | 60 |
| MRTP | Miss. River | LA | cv | - | - | .032 | - | - | .032 | 62 |
| MRPL | Miss. River | LA | cv | - | - | .043 | - | - | .043 | 13 |
| BBSD | Barataria Bay | LA | cv | .022 | .038 | .056 | no | no | .039 | 61 |
| BBTB | Barataria Bay | LA | cv | - | - | .035 | - | - | .035 | 85 |
| BBMB | Barataria Bay | LA | cv | .044 | .088 | .091 | no | no | .075 | 34 |
| TBLF | Terrebonne Bay | LA | cv | .037 | .093 | .087 | no | no | .072 | 63 |
| TBLB | Terrebonne Bay | LA | cv | .052 | .065 | .088 | yes | d* | .068 | 26 |
| CLCL | Caillou Lake | LA | cv | .026 | .053 | .033 | no | no | .037 | 51 |
| ABOB | Atchafalaya Bay | LA | cv | .041 | .041 | .062 | no | no | .048 | 31 |
| VBSP | Vermillion Bay | LA | cv | .039 | .078 | .038 | no | no | .052 | 48 |
| JHJH | J. Hrb. Bayou | LA | cv | .048 | .05 | .07 | no | no | .056 | 25 |
| CLLC | Calcasieu Lake | LA | cv | - | - | .1 | - | - | .1 | 37 |
| CLSJ | Calcasieu Lake | LA | cv | .11 | .089 | .093 | no | no | .098 | 28 |
| SLBB | Sabine Lake | TX | cv | .14 | .15 | .11 | no | no | .13 | 23 |
| GBHR | Galveston Bay | TX | cv | .046 | .25 | .03 | yes | no | .11 | 130 |
| GBSC | Galveston Bay | TX | cv | - | - | .058 | - | - | .058 | 17 |
| GBYC | Galveston Bay | TX | cv | .072 | .068 | .045 | no | no | .062 | 58 |
| GBTD | Galveston Bay | TX | cv | .052 | .06 | .042 | no | no | .051 | 23 |
| GBCR | Galveston Bay | TX | cv | .062 | .068 | .05 | no | no | .06 | 53 |
| GBOB | Galveston Bay | TX | cv | - | - | .068 | - | - | .068 | 4 |
| BRFS | Brazos River | TX | cv | - | - | .044 | - | - | .044 | 88 |
| MBEM | Matagorda Bay | TX | cv | .068 | .077 | .069 | no | no | .071 | 25 |
| MBDI | Matagorda Bay | TX | cv | - | - | .078 | - | - | .078 | 38 |
| MBCB | Matagorda Bay | TX | cv | - | - | .19 | - | - | .19 | 27 |
| MBTP | Matagorda Bay | TX | cv | .073 | .034 | .12 | yes | no | .076 | 60 |
| MBGP | Matagorda Bay | TX | cv | .36 | .37 | .41 | no | no | .38 | 7 |
| MBLR | Matagorda Bay | TX | cv | .2 | .084 | - | - | - | .14 | 68 |
| ESSP | Espiritu Santo | TX | cv | .11 | .059 | - | - | - | .085 | 70 |
| ESBD | Espiritu Santo | TX | cv | - | - | .098 | - | - | .098 | 28 |
| SAMP | San Antonio Bay | TX | cv | .053 | .088 | - | - | - | .071 | 110 |
| SAPP | San Antonio Bay | TX | cv | .047 | .046 | - | - | - | .047 | 23 |
| MBAR | Mesquite Bay | TX | cv | .083 | .023 | .09 | no | no | .066 | 59 |

Table B.16 **Mercury (Hg)** (Continued)

| SITE | Location | State | Species | 1986 mean | 1987 mean | 1988 mean | Diff | Trend | Overall mean | Overall cv% |
|---|---|---|---|---|---|---|---|---|---|---|
| CBCR | Copano Bay | TX | cv | .14 | .32 | .2 | no | no | .22 | 49 |
| ABHI | Aransas Bay | TX | cv | - | - | .12 | - | - | .12 | 23 |
| ABLR | Aransas Bay | TX | cv | .1 | .018 | .16 | yes | no | .092 | 69 |
| CCBH | Corpus Christi | TX | cv | - | - | .15 | - | - | .15 | 6 |
| CCIC | Corpus Christi | TX | cv | .047 | - | .095 | - | - | .071 | 53 |
| CCNB | Corpus Christi | TX | cv | .14 | .019 | .2 | yes | no | .12 | 68 |
| LMSB | L. Laguna Madre | TX | cv | .13 | .2 | .16 | no | no | .16 | 23 |
| LMPI | Laguna Madre | TX | cv | - | - | .063 | - | - | .063 | 46 |
| IBNJ | Imperial Beach | CA | mc | .093 | .1 | .089 | no | no | .094 | 17 |
| SDHI | San Diego Bay | CA | me | .19 | .11 | .19 | no | no | .16 | 26 |
| PLLH | Pt. Loma | CA | mc | .27 | .23 | .31 | no | no | .27 | 18 |
| MBVB | Mission Bay | CA | me | .11 | .059 | .089 | yes | no | .087 | 29 |
| LJLJ | La Jolla | CA | mc | .23 | .091 | .3 | yes | no | .21 | 52 |
| OSBJ | Oceanside | CA | me | .097 | .006 | .072 | yes | no | .058 | 82 |
| NBWJ | Newport Bch. | CA | mc | .077 | .055 | .15 | no | no | .093 | 56 |
| ABWJ | Anaheim Bay | CA | mc | .11 | .098 | .094 | no | no | .1 | 16 |
| SPFP | San Pedro Hrb. | CA | me | .067 | .095 | .089 | no | no | .084 | 30 |
| PVRP | Palos Verdes | CA | mc | .13 | .085 | .18 | no | no | .13 | 37 |
| SCBR | S. Catalina Is. | CA | mc | .14 | .18 | .14 | no | no | .16 | 23 |
| MDSJ | Marina Del Rey | CA | me | .17 | .17 | .24 | no | no | .19 | 33 |
| PDPD | Pt. Dume | CA | mc | .16 | .084 | .11 | yes | no | .12 | 30 |
| SCFP | Santa Cruz Is. | CA | mc | .11 | .086 | .087 | no | no | .095 | 24 |
| SANM | San Miguel Is. | CA | mc | - | - | .57 | - | - | .57 | 19 |
| SBSB | Pt. S. Barbara | CA | mc | .093 | .058 | .07 | no | no | .074 | 29 |
| PCPC | Pt. Conception | CA | mc | .11 | .093 | .099 | no | no | .1 | 14 |
| SLSL | San Luis Ob. Bay | CA | mc | .067 | .07 | .084 | no | no | .073 | 24 |
| SSSS | San Simeon Pt. | CA | mc | .11 | .27 | .36 | yes | i | .25 | 47 |
| PGLP | Pacific Grove | CA | mc | .093 | .1 | .13 | no | no | .11 | 23 |
| MBSC | Monterey Bay | CA | mc | .22 | .14 | .28 | no | no | .21 | 36 |
| FIEL | Farallon Is. | CA | mc | - | - | .15 | - | - | .15 | 40 |
| SFDB | San Fran. Bay | CA | me | .28 | .33 | .27 | no | no | .29 | 15 |
| SFSM | San Fran. Bay | CA | me | .27 | .32 | .33 | no | no | .31 | 15 |
| SFEM | San Fran. Bay | CA | me | - | .39 | .56 | - | - | .48 | 20 |
| TBSR | Tomales Bay | CA | me | .28 | .12 | .18 | yes | no | .2 | 38 |
| BBBE | Bodega Bay | CA | mc | .12 | .066 | .095 | yes | no | .095 | 27 |
| PALH | Pt. Arena | CA | mc | .19 | .16 | .19 | no | no | .18 | 30 |
| PDSC | Pt. Delgada | CA | mc | .18 | .15 | .17 | no | no | .17 | 23 |
| HMBJ | Humboldt Bay | CA | mc | .077 | .077 | .068 | no | no | .074 | 25 |
| SGSG | Pt. St. George | CA | mc | .11 | .15 | .18 | no | no | .15 | 31 |
| CBCH | Coos Bay | OR | mc | .12 | .085 | .12 | no | no | .11 | 16 |
| CBRP | Coos Bay | OR | me | .15 | .13 | .16 | yes | no | .15 | 10 |
| YBOP | Yaquina Bay | OR | me | .15 | .12 | .13 | yes | no | .13 | 12 |
| YHYH | Yaquina Head | OR | mc | .093 | .087 | .098 | no | no | .093 | 7 |
| TBHP | Tillamook Bay | OR | me | .083 | .082 | .11 | no | no | .091 | 14 |
| CRSJ | Columbia R. | OR | me | .09 | .12 | .074 | yes | no | .096 | 23 |
| GHWJ | Gray's Hrb. | WA | mc | .053 | .063 | .055 | no | no | .057 | 10 |
| JFCF | S. Juan de Fuca | WA | mc | .12 | .19 | .15 | yes | no | .15 | 21 |
| SSBI | South Puget Snd. | WA | me | .14 | .09 | .16 | yes | no | .13 | 23 |
| CBTP | Comm. Bay | WA | me | .19 | .089 | .085 | no | no | .12 | 45 |
| EBFR | Elliott Bay | WA | me | .2 | .13 | .12 | no | no | .15 | 25 |
| SIWP | Sinclair Inlet | WA | me | .12 | .11 | .089 | no | no | .11 | 14 |
| WIPP | Whidbey Is. | WA | me | .086 | .074 | .07 | no | no | .076 | 13 |
| BBSM | Bellingham Bay | WA | me | .28 | .17 | .23 | yes | no | .23 | 22 |
| PRPR | Pt. Roberts | WA | me | .1 | .084 | .077 | no | no | .087 | 17 |
| PVMC | Port Valdez | AK | me | .06 | .058 | .067 | no | no | .062 | 24 |
| UISB | Unakwit Inlet | AK | me | .09 | .089 | .11 | no | no | .096 | 29 |
| BPBP | Barber's Pt. | HI | os | .41 | .21 | .1 | yes | d | .24 | 56 |
| HHKL | Honolulu Hrb. | HI | os | .28 | .43 | .26 | no | no | .32 | 31 |
| KAUI | Kauai | HI | os | - | - | .17 | - | - | .17 | 12 |

Table B.17 Summary of 1986 through 1988 data for **Nickel (Ni)** (µg/g dry) in mollusks.

| SITE | Location | State | Species | 1986 mean | 1987 mean | 1988 mean | Diff | Trend | Overall mean | Overall cv% |
|---|---|---|---|---|---|---|---|---|---|---|
| PBSI | Penobscot Bay | ME | me | 1.5 | .49 | 1.6 | no | no | 1.2 | 45 |
| PBPI | Penobscot Bay | ME | me | 1.9 | .93 | 1.7 | yes | no | 1.5 | 32 |
| MSSP | Merriconeag Snd. | ME | me | - | - | 1.1 | - | - | 1.1 | 11 |
| CAGH | Cape Ann | MA | me | - | 1.6 | 1.7 | - | - | 1.6 | 6 |
| SHFP | Salem Harbor | MA | me | - | - | 1.5 | - | - | 1.5 | 6 |
| BHDI | Boston Hrb. | MA | me | .67 | 1.2 | .82 | yes | no | .89 | 26 |
| BHDB | Boston Hrb. | MA | me | .97 | 1.1 | .91 | no | no | .99 | 17 |
| BHHB | Boston Hrb. | MA | me | 2.7 | 1.4 | .62 | no | no | 1.6 | 120 |
| BHBI | Boston Hrb. | MA | me | 1 | 1.1 | 1.2 | no | no | 1.1 | 16 |
| BBRH | Buzzards Bay | MA | me | 1.9 | 1.1 | 1.3 | no | no | 1.4 | 26 |
| BBAR | Buzzards Bay | MA | me | 1.3 | 1.9 | 1.3 | no | no | 1.5 | 23 |
| BBGN | Buzzards Bay | MA | me | .92 | 1.8 | 1.5 | no | no | 1.5 | 26 |
| NBDU | Narr. Bay | RI | me | 3.4 | 4.4 | - | - | - | 3.9 | 14 |
| NBDI | Narr. Bay | RI | me | 3.4 | 3.9 | 2.6 | yes | no | 3.3 | 21 |
| BIBI | Block Is. | RI | me | - | 1.3 | 1.8 | - | - | 1.6 | 17 |
| LICR | Long Is. Snd. | CT | me | 4.2 | 3.2 | 2.5 | no | no | 3.3 | 29 |
| LINH | Long Is. Snd. | CT | me | 1.6 | 1.8 | 1.6 | no | no | 1.7 | 21 |
| LIHR | Long Is. Snd. | CT | me | 3.1 | 2.6 | 2.2 | yes | d* | 2.6 | 16 |
| LISI | Long Is. Snd. | CT | me | 1.2 | 1.8 | 1.7 | no | no | 1.6 | 21 |
| LIHU | Long Is. Snd. | NY | me | 1.6 | 1.6 | 2 | no | no | 1.7 | 13 |
| LIPJ | Long Is. Snd. | NY | me | 1.4 | 1.3 | 2 | no | no | 1.6 | 22 |
| LIMR | Long Is. Snd. | NY | me | 2 | 2.4 | 2.4 | no | no | 2.3 | 22 |
| LIHH | Long Is. Snd. | NY | me | 1.8 | 4.1 | 2.7 | yes | no | 2.9 | 36 |
| LITN | Long Is. Snd. | NY | me | 2.3 | 3.8 | 3.2 | no | no | 3.1 | 24 |
| MBTH | Moriches Bay | NY | me | 1.6 | 1.6 | 2.1 | no | no | 1.7 | 15 |
| HRJB | Hud./Rar. Est | NY | me | 1.2 | 2.3 | 3.4 | yes | i | 2.3 | 42 |
| HRUB | Hud./Rar. Est. | NY | me | 4.6 | 6.7 | 8.2 | yes | i* | 6.5 | 25 |
| HRLB | Hud./Rar. Est. | NY | me | 1.9 | 3.6 | 2.9 | no | no | 2.8 | 31 |
| NYSH | N.Y. Bight | NJ | me | 2.2 | 4.4 | 5.2 | yes | i | 3.9 | 34 |
| NYLB | N.Y. Bight | NJ | me | 2 | 3.8 | 3.3 | yes | no | 3 | 27 |
| NYSR | N.Y. Bight | NJ | me | 2.1 | 2.7 | 2.6 | no | no | 2.5 | 15 |
| BIBL | Barnegat Inlet | NJ | me | - | - | 1.4 | - | - | 1.4 | 11 |
| AIAC | Absecon Inlet | NJ | me | - | - | 2.4 | - | - | 2.4 | 4 |
| DBFE | Delaware Bay | DE | cv | 4.2 | 4.6 | 4.3 | no | no | 4.4 | 18 |
| DBBD | Delaware Bay | DE | cv | 4.4 | 5.2 | 4.9 | no | no | 4.8 | 8 |
| DBAP | Delaware Bay | DE | cv | 4.7 | 6.2 | 6.2 | no | no | 5.7 | 15 |
| DBKI | Delaware Bay | DE | cv | 4.2 | 3.7 | 6 | no | no | 4.6 | 33 |
| CBMP | Ches. Bay | MD | cv | 6.6 | 5.9 | 8 | no | no | 6.8 | 16 |
| CBHP | Ches. Bay | MD | cv | 5.8 | 6.1 | 7.1 | yes | i* | 6.3 | 11 |
| CBHG | Ches. Bay | MD | cv | 4 | 4.5 | 4 | no | no | 4.2 | 11 |
| CBIB | Ches. Bay | VA | cv | 3.1 | 3 | - | - | - | 3.1 | 7 |
| CBCC | Ches. Bay | VA | cv | 2.8 | 2.6 | 2.2 | no | no | 2.5 | 13 |
| CBDP | Ches. Bay | VA | cv | 1.6 | 3.4 | 2.4 | yes | no | 2.5 | 33 |
| CBCI | Chincoteague Bay | VA | cv | 2.2 | 2.8 | 2.2 | no | no | 2.4 | 15 |
| QIUB | Quinby Inlet | VA | cv | 2.1 | 2.8 | 2.8 | no | no | 2.6 | 18 |
| RSJC | Roanoke Snd. | NC | cv | 2.2 | 1.7 | 2.7 | yes | no | 2.2 | 20 |
| PSWB | Pamlico Snd. | NC | cv | 2.1 | 2.7 | 4.1 | yes | i* | 3 | 33 |
| CFBI | Cape Fear | NC | cv | 1.9 | 2.6 | 1.8 | no | no | 2.1 | 19 |
| CHFJ | Charleston Hrb. | SC | cv | 1.8 | 2.3 | 2.8 | no | no | 2.3 | 26 |
| CHSF | Charleston Hrb. | SC | cv | 1.2 | 2.4 | 2.1 | yes | no | 1.9 | 30 |
| SRTI | Savannah R. Est. | GA | cv | 1.1 | 3.3 | 3.7 | yes | i | 2.7 | 44 |
| SSSI | Sapelo Snd. | GA | cv | 1.3 | 2.6 | 2 | yes | no | 1.9 | 29 |
| SJCB | St. Johns R. | FL | cv | 1.5 | 1.9 | 1.8 | no | no | 1.7 | 15 |
| MRCB | Matanzas R. | FL | cv | 1.1 | 2.2 | 2.4 | no | no | 1.9 | 35 |
| IRSR | Indian River | FL | cv | - | - | .92 | - | - | .92 | 8 |
| NMML | North Miami | FL | cv | - | - | .74 | - | - | .74 | 4 |
| BBPC | Biscayne Bay | FL | cv | .6 | 1 | - | - | - | .82 | 30 |
| EVFU | Everglades | FL | cv | 1.6 | .72 | .99 | yes | no | 1.1 | 44 |
| RBHC | Rookery Bay | FL | cv | 1.2 | 1.2 | 1.1 | no | no | 1.2 | 22 |

Table B.17 **Nickel (Ni)** (Continued)

| SITE | Location | State | Species | 1986 mean | 1987 mean | 1988 mean | Diff | Trend | Overall mean | Overall cv% |
|---|---|---|---|---|---|---|---|---|---|---|
| NBNB | Naples Bay | FL | cv | .63 | .86 | .93 | no | no | .81 | 22 |
| CBBI | Charlotte Hrb. | FL | cv | 1.1 | 1.3 | - | - | - | 1.2 | 13 |
| CBFM | Charlotte Hrb. | FL | cv | - | - | 1 | - | - | 1 | 23 |
| TBMK | Tampa Bay | FL | cv | 1.4 | .95 | .76 | no | no | 1 | 51 |
| TBCB | Tampa Bay | FL | cv | 1 | 1.2 | 1.1 | no | no | 1.1 | 24 |
| TBHB | Tampa Bay | FL | cv | 1.4 | .85 | 1.2 | no | no | 1.1 | 25 |
| TBPB | Tampa Bay | FL | cv | 1.8 | 1.9 | 1.8 | no | no | 1.8 | 20 |
| TBOT | Tampa Bay | FL | cv | - | - | 1.3 | - | - | 1.3 | 18 |
| CKBP | Cedar Key | FL | cv | .55 | 1 | .85 | no | no | .81 | 30 |
| SRWP | Suwannee River | FL | cv | - | - | 1.1 | - | - | 1.1 | 31 |
| APCP | Apalachicola Bay | FL | cv | .87 | 1.7 | .93 | no | no | 1.2 | 35 |
| APDB | Apalachicola Bay | FL | cv | 1.5 | .89 | 1.4 | no | no | 1.3 | 24 |
| PCMP | Panama City | FL | cv | - | - | .89 | - | - | .89 | 6 |
| SAWB | St. Andrew Bay | FL | cv | .93 | .8 | 1.3 | no | no | 1.1 | 54 |
| CBSP | Choctawhat. Bay | FL | cv | 1 | 1 | 1.1 | no | no | 1 | 24 |
| CBSR | Choctawhat. Bay | FL | cv | 1.3 | 1.7 | 1.1 | yes | no | 1.4 | 21 |
| PBPH | Pensacola Bay | FL | cv | - | - | .87 | - | - | .87 | 10 |
| PBIB | Pensacola Bay | FL | cv | 1.7 | 1.8 | 1.8 | no | no | 1.7 | 12 |
| MBHI | Mobile Bay | AL | cv | - | - | 1.8 | - | - | 1.8 | 23 |
| MBCP | Mobile Bay | AL | cv | 2.3 | .94 | .78 | no | no | 1.3 | 56 |
| MSPB | Miss. Snd. | MS | cv | 2.3 | 2.2 | 1.5 | no | no | 2 | 22 |
| MSBB | Miss. Snd. | MS | cv | 2.4 | 1.6 | 1.4 | no | no | 1.8 | 28 |
| MSPC | Miss. Snd. | MS | cv | 2.4 | 1.4 | 1.8 | no | no | 1.9 | 32 |
| LBNO | Lake Borgne | LA | cv | - | - | 3.4 | - | - | 3.4 | 31 |
| LBMP | Lake Borgne | LA | cv | 3.5 | 1.9 | 1.6 | no | no | 2.3 | 42 |
| BSBG | Breton Snd. | LA | cv | 2.1 | 1.8 | 1.3 | yes | no | 1.7 | 22 |
| BSSI | Breton Snd. | LA | cv | 2.4 | 3.3 | 1.8 | yes | no | 2.5 | 27 |
| MRTP | Miss. River | LA | cv | - | - | 1.8 | - | - | 1.8 | 41 |
| MRPL | Miss. River | LA | cv | - | - | 3.4 | - | - | 3.4 | 17 |
| BBSD | Barataria Bay | LA | cv | 1.4 | 3.4 | 2.6 | no | no | 2.5 | 50 |
| BBTB | Barataria Bay | LA | cv | - | - | 1.9 | - | - | 1.9 | 36 |
| BBMB | Barataria Bay | LA | cv | .82 | 1.4 | 1.4 | no | no | 1.2 | 43 |
| TBLF | Terrebonne Bay | LA | cv | 1.6 | 2.5 | 1.3 | no | no | 1.8 | 42 |
| TBLB | Terrebonne Bay | LA | cv | 2 | 2.3 | 3.2 | no | no | 2.5 | 29 |
| CLCL | Caillou Lake | LA | cv | 2.3 | 2.7 | 1.1 | yes | no | 2 | 40 |
| ABOB | Atchafalaya Bay | LA | cv | 1.7 | 2.7 | 2.9 | yes | i* | 2.4 | 24 |
| VBSP | Vermillion Bay | LA | cv | 2 | 2.7 | 1.6 | yes | no | 2.1 | 25 |
| JHJH | J. Hrb. Bayou | LA | cv | 2.1 | 1.6 | 2.1 | no | no | 1.9 | 34 |
| CLLC | Calcasieu Lake | LA | cv | - | - | 2.3 | - | - | 2.3 | 43 |
| CLSJ | Calcasieu Lake | LA | cv | 2.6 | 1.8 | 1.6 | no | no | 2 | 31 |
| SLBB | Sabine Lake | TX | cv | 3.4 | 2.7 | 1.7 | yes | d | 2.6 | 32 |
| GBHR | Galveston Bay | TX | cv | 1.7 | 1.9 | 2 | no | no | 1.9 | 20 |
| GBSC | Galveston Bay | TX | cv | - | - | 2.4 | - | - | 2.4 | 40 |
| GBYC | Galveston Bay | TX | cv | 2.6 | 3.2 | 1.3 | yes | no | 2.4 | 36 |
| GBTD | Galveston Bay | TX | cv | 2.1 | 2.1 | 1.8 | no | no | 2 | 20 |
| GBCR | Galveston Bay | TX | cv | 1.7 | 1.2 | 1.2 | no | no | 1.3 | 25 |
| GBOB | Galveston Bay | TX | cv | - | - | 2.1 | - | - | 2.1 | 17 |
| BRFS | Brazos River | TX | cv | - | - | .85 | - | - | .85 | 54 |
| MBEM | Matagorda Bay | TX | cv | 3.2 | 1.7 | 1.7 | no | no | 2.2 | 37 |
| MBDI | Matagorda Bay | TX | cv | - | - | 1.4 | - | - | 1.4 | 52 |
| MBCB | Matagorda Bay | TX | cv | - | - | 2 | - | - | 2 | 36 |
| MBTP | Matagorda Bay | TX | cv | 3.4 | 1.8 | 1.8 | no | no | 2.4 | 44 |
| MBGP | Matagorda Bay | TX | cv | 2.5 | 1.8 | .76 | yes | d | 1.7 | 45 |
| MBLR | Matagorda Bay | TX | cv | 13 | 1.8 | - | - | - | 7.2 | 160 |
| ESSP | Espiritu Santo | TX | cv | 3.3 | 1.3 | - | - | - | 2.3 | 71 |
| ESBD | Espiritu Santo | TX | cv | - | - | 1.7 | - | - | 1.7 | 21 |
| SAMP | San Antonio Bay | TX | cv | 3.4 | 1.4 | - | - | - | 2.4 | 46 |
| SAPP | San Antonio Bay | TX | cv | 3.1 | 1.5 | - | - | - | 2.3 | 43 |
| MBAR | Mesquite Bay | TX | cv | 2.4 | .99 | 1.1 | no | no | 1.5 | 47 |

Table B.17 **Nickel (Ni)** (Continued)

| SITE | Location | State | Species | 1986 mean | 1987 mean | 1988 mean | Diff | Trend | Overall mean | Overall cv% |
|---|---|---|---|---|---|---|---|---|---|---|
| CBCR | Copano Bay | TX | cv | 3.8 | 1.6 | 1.3 | no | no | 2.2 | 60 |
| ABHI | Aransas Bay | TX | cv | - | - | 1.4 | - | - | 1.4 | 14 |
| ABLR | Aransas Bay | TX | cv | 3.3 | .94 | .71 | yes | d | 1.7 | 77 |
| CCBH | Corpus Christi | TX | cv | - | - | .6 | - | - | .6 | 67 |
| CCIC | Corpus Christi | TX | cv | 1.2 | - | .95 | - | - | 1.1 | 55 |
| CCNB | Corpus Christi | TX | cv | 2 | 1.6 | 1 | no | no | 1.5 | 37 |
| LMSB | L. Laguna Madre | TX | cv | 1.3 | 1.3 | 1.2 | no | no | 1.3 | 21 |
| LMPI | Laguna Madre | TX | cv | - | - | .62 | - | - | .62 | 15 |
| IBNJ | Imperial Beach | CA | mc | .93 | 1.2 | .76 | no | no | .96 | 28 |
| SDHI | San Diego Bay | CA | me | 2.5 | 1.5 | 1.2 | no | no | 1.7 | 43 |
| PLLH | Pt. Loma | CA | mc | 1.8 | 1.3 | .93 | yes | d* | 1.4 | 35 |
| MBVB | Mission Bay | CA | me | 2.3 | .99 | .59 | yes | d | 1.3 | 89 |
| LJLJ | La Jolla | CA | mc | 1.4 | 1.5 | 1 | no | no | 1.3 | 21 |
| OSBJ | Oceanside | CA | me | 1.7 | 2.2 | 1.4 | no | no | 1.8 | 34 |
| NBWJ | Newport Bch. | CA | mc | 1.3 | 1.2 | 2.6 | no | no | 1.7 | 42 |
| ABWJ | Anaheim Bay | CA | mc | 1.3 | 1.4 | .63 | no | no | 1.1 | 36 |
| SPFP | San Pedro Hrb. | CA | me | 2 | 1.4 | 1 | no | no | 1.5 | 38 |
| PVRP | Palos Verdes | CA | mc | 2.6 | 2.2 | 2.6 | no | no | 2.4 | 12 |
| SCBR | S. Catalina Is. | CA | mc | 2.3 | 2 | 6.6 | yes | no | 3.6 | 62 |
| MDSJ | Marina Del Rey | CA | me | 2.9 | 1.8 | 1.4 | yes | d | 2 | 36 |
| PDPD | Pt. Dume | CA | mc | 2.5 | 1.5 | 1.4 | no | no | 1.8 | 28 |
| SCFP | Santa Cruz Is. | CA | mc | 2.6 | 3.3 | 3 | yes | no | 3 | 11 |
| SANM | San Miguel Is. | CA | mc | - | - | 2 | - | - | 2 | 7 |
| SBSB | Pt. S. Barbara | CA | mc | 3.1 | 3.4 | 3.1 | no | no | 3.2 | 6 |
| PCPC | Pt. Conception | CA | mc | 2.4 | 2.2 | 2.2 | no | no | 2.3 | 21 |
| SLSL | San Luis Ob. Bay | CA | mc | 3.1 | 2.4 | 2.8 | no | no | 2.8 | 17 |
| SSSS | San Simeon Pt. | CA | mc | 5.2 | 6.4 | 4.4 | no | no | 5.4 | 25 |
| PGLP | Pacific Grove | CA | mc | 1.8 | 1.4 | 2.1 | no | no | 1.8 | 21 |
| MBSC | Monterey Bay | CA | mc | 3.8 | 2.2 | 2.8 | yes | no | 2.8 | 25 |
| FIEL | Farallon Is. | CA | mc | - | - | 1.3 | - | - | 1.3 | 21 |
| SFDB | San Fran. Bay | CA | me | 3.9 | 5.2 | 1.5 | yes | no | 3.6 | 48 |
| SFSM | San Fran. Bay | CA | me | 3.3 | 6.1 | 1.4 | yes | no | 3.6 | 57 |
| SFEM | San Fran. Bay | CA | me | - | 4.3 | 3.7 | - | - | 4 | 11 |
| TBSR | Tomales Bay | CA | me | 6.6 | 3.8 | 1.2 | yes | d | 3.9 | 63 |
| BBBE | Bodega Bay | CA | mc | 4 | 1.6 | .91 | yes | d | 2.2 | 66 |
| PALH | Pt. Arena | CA | mc | 4 | 3 | 2.8 | no | no | 3.3 | 20 |
| PDSC | Pt. Delgada | CA | mc | 3.1 | 2.6 | 2.5 | no | no | 2.7 | 17 |
| HMBJ | Humboldt Bay | CA | mc | 3.5 | 2.8 | 2.6 | no | no | 3 | 18 |
| SGSG | Pt. St. George | CA | mc | 6.4 | 4.6 | 7.8 | no | no | 6.3 | 35 |
| CBCH | Coos Bay | OR | mc | 3.3 | 2.2 | 5.1 | yes | no | 3.5 | 36 |
| CBRP | Coos Bay | OR | me | 2.9 | 2 | 3.8 | yes | no | 2.9 | 27 |
| YBOP | Yaquina Bay | OR | me | 3.1 | 1.9 | 2.8 | yes | no | 2.6 | 22 |
| YHYH | Yaquina Head | OR | mc | 4 | 2.2 | 3.6 | no | no | 3.3 | 34 |
| TBHP | Tillamook Bay | OR | me | 2.6 | 2.1 | 2.2 | no | no | 2.3 | 15 |
| CRSJ | Columbia R. | OR | me | 2 | 4.2 | 2.2 | yes | no | 2.8 | 47 |
| GHWJ | Gray's Hrb. | WA | mc | 2.3 | 2.3 | 2.6 | no | no | 2.4 | 17 |
| JFCF | S. Juan de Fuca | WA | mc | 1.7 | 3.1 | 2.7 | yes | no | 2.5 | 26 |
| SSBI | South Puget Snd. | WA | me | .79 | .73 | 1.6 | yes | no | 1 | 41 |
| CBTP | Comm. Bay | WA | me | 1.7 | 1.2 | 1.3 | no | no | 1.4 | 25 |
| EBFR | Elliott Bay | WA | me | 1.6 | 1.5 | 2.3 | no | no | 1.8 | 27 |
| SIWP | Sinclair Inlet | WA | me | 1.1 | 1.9 | 1.5 | no | no | 1.5 | 48 |
| WIPP | Whidbey Is. | WA | me | 3.1 | 3.4 | 6.1 | no | no | 4.2 | 39 |
| BBSM | Bellingham Bay | WA | me | 4.6 | 5.6 | 4.3 | no | no | 4.9 | 16 |
| PRPR | Pt. Roberts | WA | me | 3.7 | 2.8 | 2.8 | no | no | 3.1 | 17 |
| PVMC | Port Valdez | AK | me | 2.6 | 1.6 | 5 | yes | no | 3.1 | 54 |
| UISB | Unakwit Inlet | AK | me | 2.2 | 2.8 | 1.9 | yes | no | 2.3 | 20 |
| BPBP | Barber's Pt. | HI | os | 2.7 | 2.2 | 2.7 | no | no | 2.5 | 35 |
| HHKL | Honolulu Hrb. | HI | os | 1.2 | 2.1 | 2.2 | no | no | 1.8 | 30 |
| KAUI | Kauai | HI | os | - | - | 20 | - | - | 20 | 82 |

Table B.18 Summary of 1986 through 1988 data for **Selenium (Se)** (µg/g dry) in mollusks.

| SITE | Location | State | Species | 1986 mean | 1987 mean | 1988 mean | Diff | Trend | Overall mean | Overall cv% |
|---|---|---|---|---|---|---|---|---|---|---|
| PBSI | Penobscot Bay | ME | me | 1.9 | 1.8 | 2.1 | no | no | 1.9 | 20 |
| PBPI | Penobscot Bay | ME | me | 2 | 1.7 | 2.4 | no | no | 2 | 24 |
| MSSP | Merriconeag Snd. | ME | me | - | - | 2.1 | - | - | 2.1 | 4 |
| CAGH | Cape Ann | MA | me | - | 2 | 2.1 | - | - | 2 | 5 |
| SHFP | Salem Harbor | MA | me | - | - | 1.7 | - | - | 1.7 | 5 |
| BHDI | Boston Hrb. | MA | me | 2 | 1.5 | 2 | no | no | 1.8 | 26 |
| BHDB | Boston Hrb. | MA | me | 2.2 | 2.1 | 1.9 | no | no | 2.1 | 21 |
| BHHB | Boston Hrb. | MA | me | 2 | 2.1 | 1.9 | no | no | 2 | 13 |
| BHBI | Boston Hrb. | MA | me | 2.1 | 2 | 1.9 | no | no | 2 | 15 |
| BBRH | Buzzards Bay | MA | me | 2.3 | 2.2 | 2.4 | no | no | 2.3 | 15 |
| BBAR | Buzzards Bay | MA | me | 2.5 | 3 | 2.9 | no | no | 2.8 | 13 |
| BBGN | Buzzards Bay | MA | me | 3.2 | 3.7 | 2.4 | yes | no | 3.1 | 20 |
| NBDU | Narr. Bay | RI | me | 2.4 | 2.7 | - | - | - | 2.6 | 12 |
| NBDI | Narr. Bay | RI | me | 2.8 | 3.3 | 2.4 | no | no | 2.8 | 23 |
| BIBI | Block Is. | RI | me | - | 3.4 | 2.8 | - | - | 3.1 | 15 |
| LICR | Long Is. Snd. | CT | me | 3.6 | 2 | 2.2 | no | no | 2.6 | 33 |
| LINH | Long Is. Snd. | CT | me | 2.6 | 1.8 | 1.6 | no | no | 2 | 29 |
| LIHR | Long Is. Snd. | CT | me | 2.8 | 1.8 | 1.9 | no | no | 2.2 | 24 |
| LISI | Long Is. Snd. | CT | me | 2.3 | 1.6 | 1.6 | no | no | 1.8 | 22 |
| LIHU | Long Is. Snd. | NY | me | 2.3 | 1.4 | 1.8 | no | no | 1.8 | 26 |
| LIPJ | Long Is. Snd. | NY | me | 2.8 | 1 | 1.8 | yes | no | 1.9 | 44 |
| LIMR | Long Is. Snd. | NY | me | 2.4 | 1.6 | 1.9 | no | no | 2 | 26 |
| LIHH | Long Is. Snd. | NY | me | 2 | 1.8 | 2.4 | no | no | 2.1 | 19 |
| LITN | Long Is. Snd. | NY | me | 1.9 | 1.6 | 2.3 | no | no | 1.9 | 21 |
| MBTH | Moriches Bay | NY | me | 2.1 | 3.1 | 3.1 | no | no | 2.8 | 20 |
| HRJB | Hud./Rar. Est | NY | me | 2.3 | 2 | 1.7 | no | no | 2 | 14 |
| HRUB | Hud./Rar. Est. | NY | me | 3.3 | 4.1 | 3.6 | no | no | 3.7 | 15 |
| HRLB | Hud./Rar. Est. | NY | me | 2.8 | 2.1 | 3.1 | yes | no | 2.7 | 16 |
| NYSH | N.Y. Bight | NJ | me | 3.8 | 2.5 | 3.5 | no | no | 3.3 | 22 |
| NYLB | N.Y. Bight | NJ | me | 3.3 | 2.6 | 2.1 | yes | no | 2.7 | 21 |
| NYSR | N.Y. Bight | NJ | me | 3 | 2.9 | 2.2 | no | no | 2.7 | 15 |
| BIBL | Barnegat Inlet | NJ | me | - | - | 2.6 | - | - | 2.6 | 26 |
| AIAC | Absecon Inlet | NJ | me | - | - | 3.2 | - | - | 3.2 | 20 |
| DBFE | Delaware Bay | DE | cv | 2.5 | 2.8 | 2.5 | no | no | 2.6 | 12 |
| DBBD | Delaware Bay | DE | cv | 2.6 | 2.7 | 2.8 | no | no | 2.7 | 14 |
| DBAP | Delaware Bay | DE | cv | 2.8 | 2.1 | 2.5 | no | no | 2.5 | 14 |
| DBKI | Delaware Bay | DE | cv | 3 | 2.6 | 3 | no | no | 2.9 | 14 |
| CBMP | Ches. Bay | MD | cv | 3.6 | 3 | 2.7 | no | no | 3.1 | 16 |
| CBHP | Ches. Bay | MD | cv | 3.1 | 2.2 | 3.4 | yes | no | 2.9 | 21 |
| CBHG | Ches. Bay | MD | cv | 3.1 | 3 | 2.5 | no | no | 2.8 | 19 |
| CBIB | Ches. Bay | VA | cv | 3.8 | 2.2 | - | - | - | 3 | 30 |
| CBCC | Ches. Bay | VA | cv | 1.8 | 1.6 | 2 | no | no | 1.8 | 24 |
| CBDP | Ches. Bay | VA | cv | 2 | 2.3 | 2.1 | no | no | 2.1 | 17 |
| CBCI | Chincoteague Bay | VA | cv | 1.9 | 1.7 | 2.2 | no | no | 1.9 | 25 |
| QIUB | Quinby Inlet | VA | cv | 1.8 | 1.8 | 2.4 | no | no | 2 | 18 |
| RSJC | Roanoke Snd. | NC | cv | 2.4 | 2.7 | 2.2 | no | no | 2.4 | 13 |
| PSWB | Pamlico Snd. | NC | cv | 2.6 | 2.6 | 2.6 | no | no | 2.6 | 15 |
| CFBI | Cape Fear | NC | cv | 2.6 | 2.5 | 2.1 | no | no | 2.4 | 14 |
| CHFJ | Charleston Hrb. | SC | cv | 2.2 | 2.9 | 1.7 | yes | no | 2.3 | 25 |
| CHSF | Charleston Hrb. | SC | cv | 2.8 | 3.1 | 2.2 | yes | no | 2.7 | 17 |
| SRTI | Savannah R. Est. | GA | cv | 2.7 | 2.7 | 1.8 | no | no | 2.4 | 24 |
| SSSI | Sapelo Snd. | GA | cv | 2.4 | 2.5 | 2.6 | no | no | 2.5 | 13 |
| SJCB | St. Johns R. | FL | cv | 2.3 | 2.3 | 2.6 | no | no | 2.4 | 13 |
| MRCB | Matanzas R. | FL | cv | 1.9 | 2 | 2.1 | no | no | 2 | 19 |
| IRSR | Indian River | FL | cv | - | - | .97 | - | - | .97 | 93 |
| NMML | North Miami | FL | cv | - | - | .4 | - | - | .4 | 170 |
| BBPC | Biscayne Bay | FL | cv | 1.9 | 2 | - | - | - | 1.9 | 21 |
| EVFU | Everglades | FL | cv | 1.9 | 2 | 2.4 | no | no | 2.1 | 21 |
| RBHC | Rookery Bay | FL | cv | 1.8 | 2.4 | 2.2 | no | no | 2.1 | 21 |

Table B.18 **Selenium (Se)** (Continued)

| SITE | Location | State | Species | 1986 mean | 1987 mean | 1988 mean | Diff | Trend | Overall mean | Overall cv% |
|---|---|---|---|---|---|---|---|---|---|---|
| NBNB | Naples Bay | FL | cv | 1.2 | 2 | 2 | no | no | 1.7 | 27 |
| CBBI | Charlotte Hrb. | FL | cv | 1.7 | 2.6 | - | - | - | 2.2 | 32 |
| CBFM | Charlotte Hrb. | FL | cv | - | - | 2.2 | - | - | 2.2 | 24 |
| TBMK | Tampa Bay | FL | cv | 1.6 | 2.2 | 2 | no | no | 2 | 26 |
| TBCB | Tampa Bay | FL | cv | 1.1 | 2.2 | 2.6 | no | no | 2 | 43 |
| TBHB | Tampa Bay | FL | cv | 1.8 | 1.9 | 1.4 | no | no | 1.8 | 11 |
| TBPB | Tampa Bay | FL | cv | 1 | 2.1 | 2.9 | yes | i | 2 | 42 |
| TBOT | Tampa Bay | FL | cv | - | - | 3.6 | - | - | 3.6 | 40 |
| CKBP | Cedar Key | FL | cv | 1.4 | 2.4 | 1.6 | no | no | 1.8 | 29 |
| SRWP | Suwannee River | FL | cv | - | - | 2.7 | - | - | 2.7 | 35 |
| APCP | Apalachicola Bay | FL | cv | 2 | 2.3 | 3.1 | yes | i* | 2.5 | 22 |
| APDB | Apalachicola Bay | FL | cv | 1.3 | 1.7 | 3.5 | yes | i | 2.2 | 50 |
| PCMP | Panama City | FL | cv | - | - | 3.3 | - | - | 3.3 | 30 |
| SAWB | St. Andrew Bay | FL | cv | 1.2 | 1.7 | 1.9 | no | no | 1.6 | 38 |
| CBSP | Choctawhat. Bay | FL | cv | 2.8 | 3.4 | 5.9 | yes | i | 4 | 45 |
| CBSR | Choctawhat. Bay | FL | cv | 3.9 | 3.9 | 5.8 | no | no | 4.5 | 35 |
| PBPH | Pensacola Bay | FL | cv | - | - | 3.4 | - | - | 3.4 | 14 |
| PBIB | Pensacola Bay | FL | cv | 2.4 | 2.1 | 3.4 | no | no | 2.7 | 27 |
| MBHI | Mobile Bay | AL | cv | - | - | 2 | - | - | 2 | 13 |
| MBCP | Mobile Bay | AL | cv | 1.6 | 1.8 | 2.7 | no | no | 2 | 26 |
| MSPB | Miss. Snd. | MS | cv | 2.1 | 3 | 2.6 | no | no | 2.6 | 22 |
| MSBB | Miss. Snd. | MS | cv | 1.9 | 2.6 | 4 | yes | i | 2.8 | 33 |
| MSPC | Miss. Snd. | MS | cv | 2.3 | 2.3 | 3.8 | no | no | 2.8 | 36 |
| LBNO | Lake Borgne | LA | cv | - | - | 4.3 | - | - | 4.3 | 24 |
| LBMP | Lake Borgne | LA | cv | 2.6 | 2.3 | 4.3 | no | no | 3.1 | 35 |
| BSBG | Breton Snd. | LA | cv | 2 | 2.2 | 3.8 | no | no | 2.7 | 40 |
| BSSI | Breton Snd. | LA | cv | 1.7 | 3.4 | 4 | no | no | 3 | 44 |
| MRTP | Miss. River | LA | cv | - | - | 5 | - | - | 5 | 45 |
| MRPL | Miss. River | LA | cv | - | - | 3.6 | - | - | 3.6 | 26 |
| BBSD | Barataria Bay | LA | cv | .93 | 1.6 | 3.7 | yes | i | 2.1 | 63 |
| BBTB | Barataria Bay | LA | cv | - | - | 3.4 | - | - | 3.4 | 53 |
| BBMB | Barataria Bay | LA | cv | 1 | 1.9 | 3.7 | yes | i | 2.2 | 57 |
| TBLF | Terrebonne Bay | LA | cv | 1.7 | 1.8 | 6.6 | no | no | 3.4 | 71 |
| TBLB | Terrebonne Bay | LA | cv | 1.4 | 2.7 | 4 | no | no | 2.7 | 57 |
| CLCL | Caillou Lake | LA | cv | 1.5 | 2.4 | 3 | yes | i* | 2.3 | 32 |
| ABOB | Atchafalaya Bay | LA | cv | 2.1 | 2.9 | 3.5 | yes | i* | 2.8 | 24 |
| VBSP | Vermillion Bay | LA | cv | 2.2 | 4.4 | 5.4 | yes | i | 4 | 39 |
| JHJH | J. Hrb. Bayou | LA | cv | 2.1 | 3.5 | 3.5 | no | no | 3 | 28 |
| CLLC | Calcasieu Lake | LA | cv | - | - | 3.3 | - | - | 3.3 | 24 |
| CLSJ | Calcasieu Lake | LA | cv | 2.3 | 2.2 | 4.1 | no | no | 2.9 | 61 |
| SLBB | Sabine Lake | TX | cv | 2.5 | 2.7 | 4.1 | no | no | 3.1 | 32 |
| GBHR | Galveston Bay | TX | cv | 2.9 | 2.5 | 5 | no | no | 3.4 | 35 |
| GBSC | Galveston Bay | TX | cv | - | - | 4.9 | - | - | 4.9 | 13 |
| GBYC | Galveston Bay | TX | cv | 3 | 3.9 | 4 | no | no | 3.6 | 21 |
| GBTD | Galveston Bay | TX | cv | 3.5 | 3.1 | 3.3 | no | no | 3.3 | 18 |
| GBCR | Galveston Bay | TX | cv | 2.8 | 2.9 | 3.5 | no | no | 3.1 | 18 |
| GBOB | Galveston Bay | TX | cv | - | - | 3.8 | - | - | 3.8 | 22 |
| BRFS | Brazos River | TX | cv | - | - | 5 | - | - | 5 | 35 |
| MBEM | Matagorda Bay | TX | cv | 4.1 | 3.5 | 4.6 | yes | no | 4 | 12 |
| MBDI | Matagorda Bay | TX | cv | - | - | 3.7 | - | - | 3.7 | 20 |
| MBCB | Matagorda Bay | TX | cv | - | - | 5.4 | - | - | 5.4 | 12 |
| MBTP | Matagorda Bay | TX | cv | 3.1 | 3.3 | 4.9 | no | no | 3.7 | 40 |
| MBGP | Matagorda Bay | TX | cv | 3 | 3.5 | 5.3 | yes | i | 3.9 | 28 |
| MBLR | Matagorda Bay | TX | cv | 2 | 1.3 | - | - | - | 1.6 | 36 |
| ESSP | Espiritu Santo | TX | cv | 5 | 3.6 | - | - | - | 4.3 | 48 |
| ESBD | Espiritu Santo | TX | cv | - | - | 5.1 | - | - | 5.1 | 13 |
| SAMP | San Antonio Bay | TX | cv | 3.8 | 3.9 | - | - | - | 3.8 | 25 |
| SAPP | San Antonio Bay | TX | cv | 3.3 | 4 | - | - | - | 3.7 | 12 |
| MBAR | Mesquite Bay | TX | cv | 3.4 | 3.3 | 6.8 | no | no | 4.5 | 42 |

Table B.18 **Selenium (Se)** (Continued)

| SITE | Location | State | Species | 1986 mean | 1987 mean | 1988 mean | Diff | Trend | Overall mean | Overall cv% |
|---|---|---|---|---|---|---|---|---|---|---|
| CBCR | Copano Bay | TX | cv | 4.5 | 3.8 | 6.3 | yes | no | 4.9 | 25 |
| ABHI | Aransas Bay | TX | cv | - | - | 5.5 | - | - | 5.5 | 17 |
| ABLR | Aransas Bay | TX | cv | 5.7 | 1.7 | 4.1 | yes | no | 3.8 | 49 |
| CCBH | Corpus Christi | TX | cv | - | - | 7.4 | - | - | 7.4 | 38 |
| CCIC | Corpus Christi | TX | cv | 2.8 | - | 3.9 | - | - | 3.4 | 26 |
| CCNB | Corpus Christi | TX | cv | 2.5 | 2.3 | 4.4 | no | no | 3.1 | 41 |
| LMSB | L. Laguna Madre | TX | cv | 2.9 | 2.1 | 4.2 | no | no | 3.1 | 36 |
| LMPI | Laguna Madre | TX | cv | - | - | 5.2 | - | - | 5.2 | 62 |
| IBNJ | Imperial Beach | CA | mc | 2.4 | 4.3 | 2.8 | yes | no | 3.2 | 28 |
| SDHI | San Diego Bay | CA | me | 3.2 | 3 | 2.8 | no | no | 3 | 14 |
| PLLH | Pt. Loma | CA | mc | 3.2 | 3.9 | 2.8 | yes | no | 3.3 | 16 |
| MBVB | Mission Bay | CA | me | 2.6 | 3.2 | 2.1 | no | no | 2.6 | 19 |
| LJLJ | La Jolla | CA | mc | 3.7 | 3.9 | 3 | yes | no | 3.5 | 13 |
| OSBJ | Oceanside | CA | me | 2 | 3.8 | 3.1 | yes | no | 3 | 28 |
| NBWJ | Newport Bch. | CA | mc | 2.5 | 3 | 2.5 | no | no | 2.7 | 16 |
| ABWJ | Anaheim Bay | CA | mc | 2.5 | 3.4 | 1.7 | yes | no | 2.6 | 30 |
| SPFP | San Pedro Hrb. | CA | me | 2.5 | 3.8 | 2.8 | yes | no | 3 | 21 |
| PVRP | Palos Verdes | CA | mc | 3.7 | 3.7 | 3.3 | no | no | 3.5 | 10 |
| SCBR | S. Catalina Is. | CA | mc | 3.9 | 5.5 | 3.8 | no | no | 4.4 | 21 |
| MDSJ | Marina Del Rey | CA | me | 4.8 | 5.4 | 4.3 | yes | no | 4.8 | 10 |
| PDPD | Pt. Dume | CA | mc | 3.6 | 3.6 | 4 | no | no | 3.7 | 17 |
| SCFP | Santa Cruz Is. | CA | mc | 3 | 4.1 | 3.7 | yes | no | 3.6 | 14 |
| SANM | San Miguel Is. | CA | mc | - | - | 3.5 | - | - | 3.5 | 9 |
| SBSB | Pt. S. Barbara | CA | mc | 2.7 | 3.4 | 3.3 | no | no | 3.1 | 15 |
| PCPC | Pt. Conception | CA | mc | 4.6 | 3.5 | 4.8 | no | no | 4.3 | 16 |
| SLSL | San Luis Ob. Bay | CA | mc | 1.8 | 3.3 | 2.1 | yes | no | 2.4 | 30 |
| SSSS | San Simeon Pt. | CA | mc | 2.9 | 4.2 | 3.5 | no | no | 3.5 | 21 |
| PGLP | Pacific Grove | CA | mc | 2.7 | 2.4 | 3.5 | no | no | 2.9 | 23 |
| MBSC | Monterey Bay | CA | mc | 4.4 | 2.8 | 4 | no | no | 3.6 | 21 |
| FIEL | Farallon Is. | CA | mc | - | - | 3.2 | - | - | 3.2 | 3 |
| SFDB | San Fran. Bay | CA | me | 2.7 | 5.4 | 3.9 | yes | no | 4 | 32 |
| SFSM | San Fran. Bay | CA | me | 2.1 | 4.6 | 5.3 | yes | i | 4 | 37 |
| SFEM | San Fran. Bay | CA | me | - | 3.7 | 4 | - | - | 3.9 | 7 |
| TBSR | Tomales Bay | CA | me | 2.4 | 2.9 | 3.7 | yes | no | 3 | 20 |
| BBBE | Bodega Bay | CA | mc | 3.8 | 2.5 | 2.2 | yes | no | 2.8 | 27 |
| PALH | Pt. Arena | CA | mc | 2.9 | 3.3 | 3.4 | no | no | 3.2 | 7 |
| PDSC | Pt. Delgada | CA | mc | 4 | 3.1 | 3.4 | no | no | 3.5 | 17 |
| HMBJ | Humboldt Bay | CA | mc | 2 | 2.8 | 2.4 | yes | no | 2.4 | 17 |
| SGSG | Pt. St. George | CA | mc | 2.9 | 2.6 | 3.1 | no | no | 2.9 | 17 |
| CBCH | Coos Bay | OR | mc | 2.4 | 2 | 1.7 | no | no | 2 | 18 |
| CBRP | Coos Bay | OR | me | 2.9 | 1.9 | 2 | no | no | 2.3 | 24 |
| YBOP | Yaquina Bay | OR | me | 3.5 | 1.9 | 2.1 | no | no | 2.5 | 34 |
| YHYH | Yaquina Head | OR | mc | 2.5 | 2 | 2.2 | no | no | 2.2 | 15 |
| TBHP | Tillamook Bay | OR | me | 2.9 | 2.1 | 2.3 | yes | no | 2.4 | 16 |
| CRSJ | Columbia R. | OR | me | 3 | 1.6 | 3.3 | no | no | 2.7 | 34 |
| GHWJ | Gray's Hrb. | WA | mc | 2.6 | 3.3 | 3.2 | no | no | 3 | 13 |
| JFCF | S. Juan de Fuca | WA | mc | 2.8 | 3 | 3 | no | no | 2.9 | 9 |
| SSBI | South Puget Snd. | WA | me | 2 | .77 | 1.7 | no | no | 1.5 | 49 |
| CBTP | Comm. Bay | WA | me | 2.6 | 1.7 | .73 | yes | d | 1.7 | 51 |
| EBFR | Elliott Bay | WA | me | 2.2 | 1.8 | 2.5 | no | no | 2.2 | 22 |
| SIWP | Sinclair Inlet | WA | me | 2.7 | 2.1 | 2.6 | no | no | 2.5 | 27 |
| WIPP | Whidbey Is. | WA | me | 3.1 | 2.2 | 3.4 | yes | no | 2.9 | 20 |
| BBSM | Bellingham Bay | WA | me | 3 | 1.8 | 3.1 | no | no | 2.7 | 25 |
| PRPR | Pt. Roberts | WA | me | 3.2 | 2.6 | 3.6 | no | no | 3.1 | 18 |
| PVMC | Port Valdez | AK | me | 3.7 | 3.1 | 3 | no | no | 3.3 | 14 |
| UISB | Unakwit Inlet | AK | me | 4.6 | 3.5 | 3.8 | no | no | 4 | 15 |
| BPBP | Barber's Pt. | HI | os | 7.1 | 5 | 4.7 | no | no | 5.6 | 27 |
| HHKL | Honolulu Hrb. | HI | os | 8.2 | 5.6 | 4.4 | yes | d | 6.1 | 35 |
| KAUI | Kauai | HI | os | - | - | 5.4 | - | - | 5.4 | 21 |

Table B.19 Summary of 1986 through 1988 data for **Silver (Ag)** (µg/g dry) in mollusks.

| SITE | Location | State | Species | 1986 mean | 1987 mean | 1988 mean | Diff | Trend | Overall mean | Overall cv% |
|---|---|---|---|---|---|---|---|---|---|---|
| PBSI | Penobscot Bay | ME | me | .14 | .17 | .17 | no | no | .16 | 13 |
| PBPI | Penobscot Bay | ME | me | .01 | .076 | .076 | no | no | .054 | 64 |
| MSSP | Merriconeag Snd. | ME | me | - | - | .097 | - | - | .097 | 5 |
| CAGH | Cape Ann | MA | me | - | .37 | .41 | - | - | .39 | 10 |
| SHFP | Salem Harbor | MA | me | - | - | .11 | - | - | .11 | 9 |
| BHDI | Boston Hrb. | MA | me | 1.7 | 1.2 | .49 | yes | d | 1.2 | 48 |
| BHDB | Boston Hrb. | MA | me | 1.4 | .76 | .56 | yes | d | .91 | 47 |
| BHHB | Boston Hrb. | MA | me | 1.2 | 1.3 | .52 | no | no | 1 | 37 |
| BHBI | Boston Hrb. | MA | me | 1.5 | .42 | .4 | no | no | .76 | 70 |
| BBRH | Buzzards Bay | MA | me | .34 | .29 | .25 | yes | no | .29 | 13 |
| BBAR | Buzzards Bay | MA | me | .19 | .19 | .22 | no | no | .2 | 17 |
| BBGN | Buzzards Bay | MA | me | .1 | .18 | .32 | yes | i | .22 | 45 |
| NBDU | Narr. Bay | RI | me | .053 | .3 | - | - | - | .18 | 77 |
| NBDI | Narr. Bay | RI | me | .25 | .33 | .16 | yes | no | .25 | 31 |
| BIBI | Block Is. | RI | me | - | .099 | .14 | - | - | .12 | 25 |
| LICR | Long Is. Snd. | CT | me | .23 | .14 | .19 | no | no | .19 | 28 |
| LINH | Long Is. Snd. | CT | me | .22 | .22 | .15 | no | no | .19 | 27 |
| LIHR | Long Is. Snd. | CT | me | .49 | .19 | .063 | yes | d | .25 | 78 |
| LISI | Long Is. Snd. | CT | me | .097 | .05 | .039 | yes | d | .062 | 43 |
| LIHU | Long Is. Snd. | NY | me | .19 | .07 | .098 | yes | no | .12 | 47 |
| LIPJ | Long Is. Snd. | NY | me | .11 | .072 | .081 | no | no | .087 | 20 |
| LIMR | Long Is. Snd. | NY | me | .31 | .11 | .1 | no | no | .17 | 62 |
| LIHH | Long Is. Snd. | NY | me | .35 | .56 | .3 | yes | no | .4 | 33 |
| LITN | Long Is. Snd. | NY | me | .36 | .31 | .3 | no | no | .32 | 11 |
| MBTH | Moriches Bay | NY | me | .42 | .71 | .46 | yes | no | .53 | 27 |
| HRJB | Hud./Rar. Est | NY | me | .46 | .42 | .29 | no | no | .39 | 23 |
| HRUB | Hud./Rar. Est. | NY | me | 1.9 | 1.6 | 1.7 | no | no | 1.7 | 22 |
| HRLB | Hud./Rar. Est. | NY | me | 1.3 | 1.3 | .59 | no | no | 1.1 | 37 |
| NYSH | N.Y. Bight | NJ | me | .68 | .65 | .54 | no | no | .62 | 12 |
| NYLB | N.Y. Bight | NJ | me | .3 | .44 | .25 | yes | no | .33 | 27 |
| NYSR | N.Y. Bight | NJ | me | .19 | .66 | .35 | yes | no | .4 | 56 |
| BIBL | Barnegat Inlet | NJ | me | - | - | .6 | - | - | .6 | 13 |
| AIAC | Absecon Inlet | NJ | me | - | - | .18 | - | - | .18 | 13 |
| DBFE | Delaware Bay | DE | cv | 4.1 | 2.6 | 1.4 | no | no | 2.7 | 61 |
| DBBD | Delaware Bay | DE | cv | 4.2 | 2.7 | 2.1 | yes | d | 3 | 35 |
| DBAP | Delaware Bay | DE | cv | 3.9 | 3.3 | 2.2 | no | no | 3.1 | 34 |
| DBKI | Delaware Bay | DE | cv | 6.7 | 4.2 | 2.3 | no | no | 4.4 | 64 |
| CBMP | Ches. Bay | MD | cv | 6.9 | 3.1 | .74 | yes | d | 3.6 | 75 |
| CBHP | Ches. Bay | MD | cv | 4.8 | 1.1 | .76 | no | no | 2.2 | 88 |
| CBHG | Ches. Bay | MD | cv | 1.8 | 1.2 | .61 | yes | d | 1.2 | 44 |
| CBIB | Ches. Bay | VA | cv | .92 | .55 | - | - | - | .73 | 28 |
| CBCC | Ches. Bay | VA | cv | .38 | .34 | .34 | no | no | .35 | 8 |
| CBDP | Ches. Bay | VA | cv | 2.5 | 1.2 | .57 | yes | d | 1.4 | 59 |
| CBCI | Chincoteague Bay | VA | cv | 4 | 1.3 | 1.7 | yes | no | 2.3 | 64 |
| QIUB | Quinby Inlet | VA | cv | 4.8 | 1.3 | 2.4 | no | no | 2.8 | 84 |
| RSJC | Roanoke Snd. | NC | cv | 1.4 | .84 | .47 | yes | d | .9 | 45 |
| PSWB | Pamlico Snd. | NC | cv | 1.7 | 1.5 | 1.1 | yes | no | 1.4 | 23 |
| CFBI | Cape Fear | NC | cv | 2.5 | 2.2 | 1 | yes | d | 1.9 | 36 |
| CHFJ | Charleston Hrb. | SC | cv | 4 | .97 | 1.2 | yes | no | 2.1 | 71 |
| CHSF | Charleston Hrb. | SC | cv | 3.5 | .88 | 1.4 | yes | no | 1.9 | 62 |
| SRTI | Savannah R. Est. | GA | cv | 1.6 | 1.8 | 1.1 | yes | no | 1.5 | 23 |
| SSSI | Sapelo Snd. | GA | cv | 1.8 | 1.4 | .73 | no | no | 1.3 | 45 |
| SJCB | St. Johns R. | FL | cv | .83 | .43 | .56 | yes | no | .61 | 35 |
| MRCB | Matanzas R. | FL | cv | 1.8 | 1.4 | 1.2 | no | no | 1.4 | 50 |
| IRSR | Indian River | FL | cv | - | - | .57 | - | - | .57 | 2 |
| NMML | North Miami | FL | cv | - | - | .85 | - | - | .85 | 10 |
| BBPC | Biscayne Bay | FL | cv | 1.5 | .77 | - | - | - | 1.2 | 42 |
| EVFU | Everglades | FL | cv | .7 | 1.4 | .75 | no | no | .95 | 38 |
| RBHC | Rookery Bay | FL | cv | 1.6 | 2.3 | 2.4 | no | no | 2.1 | 24 |

Table B.19 **Silver (Ag)** (Continued)

| SITE | Location | State | Species | 1986 mean | 1987 mean | 1988 mean | Diff | Trend | Overall mean | Overall cv% |
|---|---|---|---|---|---|---|---|---|---|---|
| NBNB | Naples Bay | FL | cv | 4 | 3.9 | 4.4 | no | no | 4.1 | 19 |
| CBBI | Charlotte Hrb. | FL | cv | 1.5 | 3.4 | - | - | - | 2.5 | 41 |
| CBFM | Charlotte Hrb. | FL | cv | - | - | 1.6 | - | - | 1.6 | 52 |
| TBMK | Tampa Bay | FL | cv | .63 | .38 | .18 | yes | d | .4 | 59 |
| TBCB | Tampa Bay | FL | cv | .73 | 1.4 | 1 | yes | no | 1 | 34 |
| TBHB | Tampa Bay | FL | cv | .63 | 2.2 | .74 | no | no | 1.3 | 62 |
| TBPB | Tampa Bay | FL | cv | 2.3 | 1.6 | 2.3 | no | no | 2.1 | 23 |
| TBOT | Tampa Bay | FL | cv | - | - | 1.3 | - | - | 1.3 | 35 |
| CKBP | Cedar Key | FL | cv | .33 | .45 | .75 | yes | i | .51 | 41 |
| SRWP | Suwannee River | FL | cv | - | - | .24 | - | - | .24 | 16 |
| APCP | Apalachicola Bay | FL | cv | 1.2 | 2.2 | 2.4 | no | no | 1.9 | 49 |
| APDB | Apalachicola Bay | FL | cv | 2.4 | 3.1 | 1.3 | yes | no | 2.3 | 37 |
| PCMP | Panama City | FL | cv | - | - | 2.2 | - | - | 2.2 | 6 |
| SAWB | St. Andrew Bay | FL | cv | 1.7 | 1.7 | 1.2 | no | no | 1.5 | 24 |
| CBSP | Choctawhat. Bay | FL | cv | 4.3 | 4.9 | 4.5 | no | no | 4.6 | 36 |
| CBSR | Choctawhat. Bay | FL | cv | 3.7 | 1.3 | 1.7 | yes | no | 2.2 | 53 |
| PBPH | Pensacola Bay | FL | cv | - | - | 2 | - | - | 2 | 3 |
| PBIB | Pensacola Bay | FL | cv | 1.3 | 2.8 | 1.4 | yes | no | 1.8 | 39 |
| MBHI | Mobile Bay | AL | cv | - | - | 1.9 | - | - | 1.9 | 22 |
| MBCP | Mobile Bay | AL | cv | 2.2 | 1.8 | 2.1 | yes | no | 2 | 8 |
| MSPB | Miss. Snd. | MS | cv | 3.2 | 2.4 | 2.1 | no | no | 2.5 | 30 |
| MSBB | Miss. Snd. | MS | cv | 2.9 | 1.5 | 2.1 | yes | no | 2.2 | 32 |
| MSPC | Miss. Snd. | MS | cv | 3.9 | 2.3 | 2.2 | no | no | 2.8 | 37 |
| LBNO | Lake Borgne | LA | cv | - | - | 1.7 | - | - | 1.7 | 12 |
| LBMP | Lake Borgne | LA | cv | 1.8 | .78 | 1.3 | yes | no | 1.3 | 39 |
| BSBG | Breton Snd. | LA | cv | .9 | .3 | .64 | yes | no | .61 | 44 |
| BSSI | Breton Snd. | LA | cv | 1.3 | 3.1 | 3.5 | no | no | 2.6 | 54 |
| MRTP | Miss. River | LA | cv | - | - | 1.5 | - | - | 1.5 | 58 |
| MRPL | Miss. River | LA | cv | - | - | 3.8 | - | - | 3.8 | 17 |
| BBSD | Barataria Bay | LA | cv | .57 | .69 | 3.6 | yes | i | 1.6 | 92 |
| BBTB | Barataria Bay | LA | cv | - | - | .9 | - | - | .9 | 1 |
| BBMB | Barataria Bay | LA | cv | .23 | .78 | .59 | no | no | .54 | 81 |
| TBLF | Terrebonne Bay | LA | cv | .5 | .5 | .85 | no | no | .62 | 41 |
| TBLB | Terrebonne Bay | LA | cv | .37 | .52 | .96 | yes | i | .62 | 45 |
| CLCL | Caillou Lake | LA | cv | .73 | 1.1 | 1.2 | yes | no | 1 | 24 |
| ABOB | Atchafalaya Bay | LA | cv | 1.5 | 2.4 | 3.3 | yes | i | 2.4 | 37 |
| VBSP | Vermillion Bay | LA | cv | 5 | 4.6 | 3.5 | no | no | 4.3 | 27 |
| JHJH | J. Hrb. Bayou | LA | cv | 2.6 | 3.2 | 2.9 | no | no | 2.9 | 25 |
| CLLC | Calcasieu Lake | LA | cv | - | - | 2.6 | - | - | 2.6 | 17 |
| CLSJ | Calcasieu Lake | LA | cv | 2 | 2.2 | 2.4 | no | no | 2.2 | 15 |
| SLBB | Sabine Lake | TX | cv | 2.7 | 7.1 | 4.6 | yes | no | 4.8 | 43 |
| GBHR | Galveston Bay | TX | cv | 2 | 1.7 | 2.2 | no | no | 2 | 18 |
| GBSC | Galveston Bay | TX | cv | - | - | 2 | - | - | 2 | 1 |
| GBYC | Galveston Bay | TX | cv | .97 | 2.6 | 1.7 | no | no | 1.7 | 49 |
| GBTD | Galveston Bay | TX | cv | 1.7 | 1.6 | 1.8 | no | no | 1.7 | 10 |
| GBCR | Galveston Bay | TX | cv | 3 | 4.6 | 4.9 | no | no | 4.1 | 27 |
| GBOB | Galveston Bay | TX | cv | - | - | 1.9 | - | - | 1.9 | 22 |
| BRFS | Brazos River | TX | cv | - | - | 2 | - | - | 2 | 21 |
| MBEM | Matagorda Bay | TX | cv | 4.7 | 5.1 | 2.5 | no | no | 4.1 | 33 |
| MBDI | Matagorda Bay | TX | cv | - | - | 3 | - | - | 3 | 25 |
| MBCB | Matagorda Bay | TX | cv | - | - | 3 | - | - | 3 | 20 |
| MBTP | Matagorda Bay | TX | cv | 2.2 | 2.2 | 4.9 | no | no | 3.1 | 48 |
| MBGP | Matagorda Bay | TX | cv | 1.5 | 1.8 | 3.6 | yes | i | 2.3 | 46 |
| MBLR | Matagorda Bay | TX | cv | 2 | 1.1 | - | - | - | 1.5 | 34 |
| ESSP | Espiritu Santo | TX | cv | 5.1 | 2.3 | - | - | - | 3.7 | 60 |
| ESBD | Espiritu Santo | TX | cv | - | - | 1.8 | - | - | 1.8 | 8 |
| SAMP | San Antonio Bay | TX | cv | 5.2 | 1.6 | - | - | - | 3.4 | 60 |
| SAPP | San Antonio Bay | TX | cv | 3.7 | 1.6 | - | - | - | 2.7 | 53 |
| MBAR | Mesquite Bay | TX | cv | 2 | 1.3 | 2.1 | no | no | 1.8 | 25 |

Table B.19 **Silver (Ag)** (Continued)

| SITE | Location | State | Species | 1986 mean | 1987 mean | 1988 mean | Diff | Trend | Overall mean | Overall cv% |
|---|---|---|---|---|---|---|---|---|---|---|
| CBCR | Copano Bay | TX | cv | 7 | 3.7 | 4.1 | no | no | 4.9 | 39 |
| ABHI | Aransas Bay | TX | cv | - | - | 3.2 | - | - | 3.2 | 3 |
| ABLR | Aransas Bay | TX | cv | 4.7 | 1.9 | 2.5 | yes | no | 3 | 44 |
| CCBH | Corpus Christi | TX | cv | - | - | 1.8 | - | - | 1.8 | 20 |
| CCIC | Corpus Christi | TX | cv | .73 | - | 1.6 | - | - | 1.2 | 52 |
| CCNB | Corpus Christi | TX | cv | 2.6 | 1.8 | 1.4 | yes | d* | 1.9 | 27 |
| LMSB | L. Laguna Madre | TX | cv | 1.7 | 1.1 | .6 | yes | d | 1.2 | 42 |
| LMPI | Laguna Madre | TX | cv | - | - | 1.3 | - | - | 1.3 | 8 |
| IBNJ | Imperial Beach | CA | mc | .95 | 2.2 | 2.2 | no | no | 1.8 | 37 |
| SDHI | San Diego Bay | CA | me | .097 | .037 | .24 | no | no | .12 | 110 |
| PLLH | Pt. Loma | CA | mc | 1.2 | 2.3 | 1.8 | yes | no | 1.8 | 34 |
| MBVB | Mission Bay | CA | me | .11 | .11 | .13 | no | no | .12 | 64 |
| LJLJ | La Jolla | CA | mc | 1.6 | 2 | 1.5 | no | no | 1.7 | 22 |
| OSBJ | Oceanside | CA | me | .67 | .023 | .027 | no | no | .24 | 260 |
| NBWJ | Newport Bch. | CA | mc | 1.4 | 1.2 | 1.2 | no | no | 1.3 | 38 |
| ABWJ | Anaheim Bay | CA | mc | .31 | 1.1 | .72 | no | no | .72 | 64 |
| SPFP | San Pedro Hrb. | CA | me | .037 | nd | .034 | no | no | .023 | 78 |
| PVRP | Palos Verdes | CA | mc | 1.5 | 1.7 | .72 | no | no | 1.3 | 49 |
| SCBR | S. Catalina Is. | CA | mc | .56 | 1.4 | 1.1 | no | no | 1 | 59 |
| MDSJ | Marina Del Rey | CA | me | .74 | .9 | .78 | no | no | .81 | 26 |
| PDPD | Pt. Dume | CA | mc | 1.8 | 2.6 | 1.9 | no | no | 2.1 | 23 |
| SCFP | Santa Cruz Is. | CA | mc | .36 | .3 | .25 | no | no | .3 | 41 |
| SANM | San Miguel Is. | CA | mc | - | - | .12 | - | - | .12 | 16 |
| SBSB | Pt. S. Barbara | CA | mc | .56 | .61 | .75 | no | no | .64 | 27 |
| PCPC | Pt. Conception | CA | mc | .66 | .52 | .7 | no | no | .63 | 25 |
| SLSL | San Luis Ob. Bay | CA | mc | .23 | .24 | .29 | no | no | .25 | 18 |
| SSSS | San Simeon Pt. | CA | mc | .18 | .16 | .18 | no | no | .17 | 33 |
| PGLP | Pacific Grove | CA | mc | .093 | .052 | .12 | no | no | .087 | 45 |
| MBSC | Monterey Bay | CA | mc | .84 | .44 | 1.4 | yes | no | .89 | 51 |
| FIEL | Farallon Is. | CA | mc | - | - | nd | - | - | nd | - |
| SFDB | San Fran. Bay | CA | me | .49 | .54 | .71 | no | no | .58 | 22 |
| SFSM | San Fran. Bay | CA | me | .37 | .44 | 1.4 | yes | i | .74 | 68 |
| SFEM | San Fran. Bay | CA | me | - | .17 | .1 | - | - | .14 | 96 |
| TBSR | Tomales Bay | CA | me | .037 | nd | nd | - | - | .012 | - |
| BBBE | Bodega Bay | CA | mc | .11 | .096 | .094 | no | no | .1 | 36 |
| PALH | Pt. Arena | CA | mc | .067 | .072 | .087 | no | no | .075 | 32 |
| PDSC | Pt. Delgada | CA | mc | .2 | .11 | .12 | no | no | .15 | 40 |
| HMBJ | Humboldt Bay | CA | mc | .02 | nd | nd | - | - | .007 | - |
| SGSG | Pt. St. George | CA | mc | .26 | .059 | .096 | no | no | .14 | 120 |
| CBCH | Coos Bay | OR | mc | .023 | .027 | .031 | no | no | .027 | 18 |
| CBRP | Coos Bay | OR | me | .05 | .067 | .067 | no | no | .061 | 19 |
| YBOP | Yaquina Bay | OR | me | .03 | .048 | .062 | no | no | .047 | 34 |
| YHYH | Yaquina Head | OR | mc | .037 | .056 | .035 | yes | no | .043 | 34 |
| TBHP | Tillamook Bay | OR | me | .013 | .032 | .026 | yes | no | .024 | 37 |
| CRSJ | Columbia R. | OR | me | .008 | .035 | .032 | no | no | .025 | 56 |
| GHWJ | Gray's Hrb. | WA | mc | .01 | .027 | .036 | no | no | .024 | 62 |
| JFCF | S. Juan de Fuca | WA | mc | .033 | .048 | .073 | yes | i | .052 | 51 |
| SSBI | South Puget Snd. | WA | me | .11 | .084 | .15 | no | no | .11 | 30 |
| CBTP | Comm. Bay | WA | me | .087 | .098 | .16 | no | no | .12 | 37 |
| EBFR | Elliott Bay | WA | me | .63 | .24 | .33 | yes | no | .4 | 49 |
| SIWP | Sinclair Inlet | WA | me | .073 | .13 | .097 | no | no | .099 | 37 |
| WIPP | Whidbey Is. | WA | me | .069 | .072 | .15 | no | no | .097 | 45 |
| BBSM | Bellingham Bay | WA | me | .017 | .042 | .055 | yes | i | .038 | 44 |
| PRPR | Pt. Roberts | WA | me | .02 | .052 | .056 | no | no | .042 | 47 |
| PVMC | Port Valdez | AK | me | nd | .036 | .071 | yes | i | .036 | 97 |
| UISB | Unakwit Inlet | AK | me | .023 | .044 | .028 | no | no | .032 | 34 |
| BPBP | Barber's Pt. | HI | os | 1.7 | 3.3 | 5 | yes | i | 3.3 | 47 |
| HHKL | Honolulu Hrb. | HI | os | 7 | 3.9 | 5.1 | no | no | 5.3 | 37 |
| KAUI | Kauai | HI | os | - | - | 4.8 | - | - | 4.8 | 17 |

Table B.20 Summary of 1986 through 1988 data for **Tin (Sn)** (µg/g dry) in mollusks.

| SITE | Location | State | Species | 1986 mean | 1987 mean | 1988 mean | Diff | Trend | Overall mean | Overall cv% |
|---|---|---|---|---|---|---|---|---|---|---|
| PBSI | Penobscot Bay | ME | me | .036 | .012 | nd | yes | yes | | - |
| PBPI | Penobscot Bay | ME | me | .017 | .028 | .13 | no | no | | 45 |
| MSSP | Merriconeag Snd. | ME | me | - | - | .19 | - | - | | 36 |
| CAGH | Cape Ann | MA | me | - | .1 | .14 | - | - | | 19 |
| SHFP | Salem Harbor | MA | me | - | - | .37 | - | - | | 39 |
| BHDI | Boston Hrb. | MA | me | .33 | .46 | .24 | yes | no | | 9 |
| BHDB | Boston Hrb. | MA | me | .33 | .37 | .42 | no | no | | 2 |
| BHHB | Boston Hrb. | MA | me | .12 | .29 | .15 | no | no | | 38 |
| BHBI | Boston Hrb. | MA | me | .17 | .33 | .35 | no | no | | 8 |
| BBRH | Buzzards Bay | MA | me | .057 | .14 | .13 | no | no | | 11 |
| BBAR | Buzzards Bay | MA | me | .12 | .2 | .3 | yes | yes | | 8 |
| BBGN | Buzzards Bay | MA | me | .045 | .084 | .29 | yes | yes | | 91 |
| NBDU | Narr. Bay | RI | me | .14 | .2 | - | - | - | | - |
| NBDI | Narr. Bay | RI | me | .17 | .17 | .15 | no | no | | 20 |
| BIBI | Block Is. | RI | me | - | .087 | .27 | - | - | | 6 |
| LICR | Long Is. Snd. | CT | me | .22 | .11 | .1 | no | no | | 16 |
| LINH | Long Is. Snd. | CT | me | .19 | .15 | .12 | yes | no | | 13 |
| LIHR | Long Is. Snd. | CT | me | .17 | .13 | .14 | no | no | | 31 |
| LISI | Long Is. Snd. | CT | me | .09 | .13 | .16 | yes | no | | 22 |
| LIHU | Long Is. Snd. | NY | me | .17 | .16 | .3 | no | no | | 7 |
| LIPJ | Long Is. Snd. | NY | me | .14 | .16 | .26 | no | no | | 10 |
| LIMR | Long Is. Snd. | NY | me | .2 | .46 | .48 | no | no | | 94 |
| LIHH | Long Is. Snd. | NY | me | .17 | .25 | .27 | no | no | | 8 |
| LITN | Long Is. Snd. | NY | me | .26 | .099 | .33 | yes | no | | 3 |
| MBTH | Moriches Bay | NY | me | .08 | .13 | .25 | no | no | | 46 |
| HRJB | Hud./Rar. Est | NY | me | .2 | .34 | .4 | yes | no | | 15 |
| HRUB | Hud./Rar. Est. | NY | me | 1.6 | .35 | nd | yes | yes | | - |
| HRLB | Hud./Rar. Est. | NY | me | .49 | .66 | .41 | yes | no | | 21 |
| NYSH | N.Y. Bight | NJ | me | .36 | .7 | .21 | yes | no | | 42 |
| NYLB | N.Y. Bight | NJ | me | .24 | .36 | .25 | no | no | | 46 |
| NYSR | N.Y. Bight | NJ | me | .25 | .22 | .38 | no | no | | 63 |
| BIBL | Barnegat Inlet | NJ | me | - | - | .14 | - | - | | 19 |
| AIAC | Absecon Inlet | NJ | me | - | - | .089 | - | - | | 31 |
| DBFE | Delaware Bay | DE | cv | .067 | .057 | .16 | no | no | | 125 |
| DBBD | Delaware Bay | DE | cv | .093 | .087 | .12 | no | no | | 5 |
| DBAP | Delaware Bay | DE | cv | .03 | .044 | .062 | no | no | | 19 |
| DBKI | Delaware Bay | DE | cv | .073 | .08 | .094 | no | no | | 38 |
| CBMP | Ches. Bay | MD | cv | .26 | .24 | .25 | no | no | | 4 |
| CBHP | Ches. Bay | MD | cv | .15 | .27 | .24 | no | no | | 17 |
| CBHG | Ches. Bay | MD | cv | .12 | .14 | .1 | no | no | | 6 |
| CBIB | Ches. Bay | VA | cv | .033 | .092 | - | - | - | | - |
| CBCC | Ches. Bay | VA | cv | .023 | .03 | .031 | no | no | | 87 |
| CBDP | Ches. Bay | VA | cv | .063 | .21 | .2 | no | no | | 36 |
| CBCI | Chincoteague Bay | VA | cv | .07 | .061 | .018 | no | no | | - |
| QIUB | Quinby Inlet | VA | cv | .04 | .022 | nd | yes | yes | | - |
| RSJC | Roanoke Snd. | NC | cv | .017 | .065 | .097 | no | no | | 2 |
| PSWB | Pamlico Snd. | NC | cv | .023 | .027 | nd | no | no | | - |
| CFBI | Cape Fear | NC | cv | .067 | .048 | .089 | no | no | | 50 |
| CHFJ | Charleston Hrb. | SC | cv | .18 | .22 | .26 | no | no | | 7 |
| CHSF | Charleston Hrb. | SC | cv | .26 | .19 | .33 | no | no | | 9 |
| SRTI | Savannah R. Est. | GA | cv | .077 | .087 | .12 | no | no | | 21 |
| SSSI | Sapelo Snd. | GA | cv | .007 | .007 | .076 | no | no | | 28 |
| SJCB | St. Johns R. | FL | cv | .29 | .58 | .5 | no | no | | 2 |
| MRCB | Matanzas R. | FL | cv | .05 | .053 | .15 | no | no | | 99 |
| IRSR | Indian River | FL | cv | - | - | .2 | - | - | | 23 |
| NMML | North Miami | FL | cv | - | - | 3.2 | - | - | | 7 |
| BBPC | Biscayne Bay | FL | cv | .01 | .019 | - | - | - | | - |
| EVFU | Everglades | FL | cv | .05 | nd | nd | - | - | | - |
| RBHC | Rookery Bay | FL | cv | nd | nd | .083 | - | - | | - |

Table B.20 **Tin (Sn)** (Continued)

| SITE | Location | State | Species | 1986 mean | 1987 mean | 1988 mean | Diff | Trend | Overall mean | Overall cv% |
|---|---|---|---|---|---|---|---|---|---|---|
| NBNB | Naples Bay | FL | cv | .58 | .8 | .69 | no | no | | 71 |
| CBBI | Charlotte Hrb. | FL | cv | .053 | nd | - | - | - | | - |
| CBFM | Charlotte Hrb. | FL | cv | - | - | .28 | - | - | | 90 |
| TBMK | Tampa Bay | FL | cv | nd | nd | .18 | - | - | | 87 |
| TBCB | Tampa Bay | FL | cv | nd | nd | nd | - | - | | - |
| TBHB | Tampa Bay | FL | cv | .12 | nd | nd | - | - | | - |
| TBPB | Tampa Bay | FL | cv | nd | nd | .09 | - | - | | - |
| TBOT | Tampa Bay | FL | cv | - | - | .18 | - | - | | - |
| CKBP | Cedar Key | FL | cv | nd | nd | .11 | - | - | | - |
| SRWP | Suwannee River | FL | cv | - | - | nd | - | - | | - |
| APCP | Apalachicola Bay | FL | cv | nd | nd | nd | - | - | | - |
| APDB | Apalachicola Bay | FL | cv | nd | nd | .18 | - | - | | 91 |
| PCMP | Panama City | FL | cv | - | - | .36 | - | - | | 42 |
| SAWB | St. Andrew Bay | FL | cv | .073 | .53 | nd | - | - | | - |
| CBSP | Choctawhat. Bay | FL | cv | nd | nd | .08 | - | - | | - |
| CBSR | Choctawhat. Bay | FL | cv | nd | nd | .08 | - | - | | - |
| PBPH | Pensacola Bay | FL | cv | - | - | nd | - | - | | - |
| PBIB | Pensacola Bay | FL | cv | nd | nd | .093 | - | - | | - |
| MBHI | Mobile Bay | AL | cv | - | - | nd | - | - | | - |
| MBCP | Mobile Bay | AL | cv | nd | nd | .067 | - | - | | - |
| MSPB | Miss. Snd. | MS | cv | nd | .17 | nd | - | - | | - |
| MSBB | Miss. Snd. | MS | cv | .23 | .37 | .17 | no | no | | 87 |
| MSPC | Miss. Snd. | MS | cv | nd | nd | nd | - | - | | - |
| LBNO | Lake Borgne | LA | cv | - | - | nd | - | - | | - |
| LBMP | Lake Borgne | LA | cv | nd | nd | nd | - | - | | - |
| BSBG | Breton Snd. | LA | cv | nd | nd | nd | - | - | | - |
| BSSI | Breton Snd. | LA | cv | .073 | .067 | nd | - | - | | - |
| MRTP | Miss. River | LA | cv | - | - | nd | - | - | | - |
| MRPL | Miss. River | LA | cv | - | - | nd | - | - | | - |
| BBSD | Barataria Bay | LA | cv | .053 | nd | nd | - | - | | - |
| BBTB | Barataria Bay | LA | cv | - | - | .067 | - | - | | |
| BBMB | Barataria Bay | LA | cv | nd | nd | nd | - | - | | - |
| TBLF | Terrebonne Bay | LA | cv | .13 | nd | nd | - | - | | - |
| TBLB | Terrebonne Bay | LA | cv | nd | nd | .077 | - | - | | - |
| CLCL | Caillou Lake | LA | cv | nd | nd | nd | - | - | | - |
| ABOB | Atchafalaya Bay | LA | cv | nd | nd | nd | - | - | | - |
| VBSP | Vermillion Bay | LA | cv | .067 | nd | nd | - | - | | - |
| JHJH | J. Hrb. Bayou | LA | cv | .37 | nd | nd | - | - | | - |
| CLLC | Calcasieu Lake | LA | cv | - | - | .16 | - | - | | 90 |
| CLSJ | Calcasieu Lake | LA | cv | nd | nd | .22 | - | - | | 111 |
| SLBB | Sabine Lake | TX | cv | nd | nd | nd | - | - | | - |
| GBHR | Galveston Bay | TX | cv | nd | nd | .12 | - | - | | - |
| GBSC | Galveston Bay | TX | cv | - | - | .15 | - | - | | 89 |
| GBYC | Galveston Bay | TX | cv | nd | .6 | nd | yes | no | | - |
| GBTD | Galveston Bay | TX | cv | nd | .1 | .073 | - | - | | - |
| GBCR | Galveston Bay | TX | cv | nd | nd | .067 | - | - | | - |
| GBOB | Galveston Bay | TX | cv | - | - | .18 | - | - | | 87 |
| BRFS | Brazos River | TX | cv | - | - | .4 | - | - | | - |
| MBEM | Matagorda Bay | TX | cv | nd | nd | nd | - | - | | - |
| MBDI | Matagorda Bay | TX | cv | - | - | nd | - | - | | - |
| MBCB | Matagorda Bay | TX | cv | - | - | .3 | - | - | | 100 |
| MBTP | Matagorda Bay | TX | cv | nd | nd | nd | - | - | | - |
| MBGP | Matagorda Bay | TX | cv | .077 | nd | nd | - | - | | - |
| MBLR | Matagorda Bay | TX | cv | nd | nd | - | - | - | | - |
| ESSP | Espiritu Santo | TX | cv | nd | nd | - | - | - | | - |
| ESBD | Espiritu Santo | TX | cv | - | - | nd | - | - | | - |
| SAMP | San Antonio Bay | TX | cv | nd | nd | - | - | - | | - |
| SAPP | San Antonio Bay | TX | cv | nd | nd | - | - | - | | - |
| MBAR | Mesquite Bay | TX | cv | nd | nd | .23 | - | - | | 87 |

Table B.20 **Tin (Sn)** (Continued)

| SITE | Location | State | Species | 1986 mean | 1987 mean | 1988 mean | Diff | Trend | Overall mean | Overall cv% |
|---|---|---|---|---|---|---|---|---|---|---|
| CBCR | Copano Bay | TX | cv | nd | nd | .1 | - | - | | - |
| ABHI | Aransas Bay | TX | cv | - | - | .11 | - | - | | - |
| ABLR | Aransas Bay | TX | cv | nd | nd | .12 | - | - | | - |
| CCBH | Corpus Christi | TX | cv | - | - | nd | - | - | | - |
| CCIC | Corpus Christi | TX | cv | .11 | - | nd | - | - | | - |
| CCNB | Corpus Christi | TX | cv | nd | nd | .19 | - | - | | 89 |
| LMSB | L. Laguna Madre | TX | cv | nd | nd | nd | - | - | | - |
| LMPI | Laguna Madre | TX | cv | - | - | .4 | - | - | | - |
| IBNJ | Imperial Beach | CA | mc | nd | nd | nd | - | - | | - |
| SDHI | San Diego Bay | CA | me | nd | nd | 1.7 | - | - | | 19 |
| PLLH | Pt. Loma | CA | mc | nd | nd | .15 | - | - | | 8 |
| MBVB | Mission Bay | CA | me | nd | nd | 1.1 | - | - | | 13 |
| LJLJ | La Jolla | CA | mc | nd | nd | nd | - | - | | - |
| OSBJ | Oceanside | CA | me | nd | nd | .22 | - | - | | 45 |
| NBWJ | Newport Bch. | CA | mc | nd | nd | .19 | - | - | | 3 |
| ABWJ | Anaheim Bay | CA | mc | nd | nd | .31 | - | - | | 15 |
| SPFP | San Pedro Hrb. | CA | me | nd | nd | 1.6 | - | - | | 10 |
| PVRP | Palos Verdes | CA | mc | nd | nd | .15 | - | - | | 12 |
| SCBR | S. Catalina Is. | CA | mc | nd | nd | .024 | - | - | | - |
| MDSJ | Marina Del Rey | CA | me | nd | nd | .47 | - | - | | 4 |
| PDPD | Pt. Dume | CA | mc | nd | nd | .033 | - | - | | - |
| SCFP | Santa Cruz Is. | CA | mc | nd | nd | nd | - | - | | - |
| SANM | San Miguel Is. | CA | mc | - | - | nd | - | - | | - |
| SBSB | Pt. S. Barbara | CA | mc | nd | nd | .09 | - | - | | 18 |
| PCPC | Pt. Conception | CA | mc | nd | nd | .026 | - | - | | - |
| SLSL | San Luis Ob. Bay | CA | mc | nd | nd | .19 | - | - | | 13 |
| SSSS | San Simeon Pt. | CA | mc | nd | nd | nd | - | - | | - |
| PGLP | Pacific Grove | CA | mc | nd | nd | .023 | - | - | | - |
| MBSC | Monterey Bay | CA | mc | nd | nd | .06 | - | - | | 92 |
| FIEL | Farallon Is. | CA | mc | - | - | .097 | - | - | | - |
| SFDB | San Fran. Bay | CA | me | nd | nd | nd | - | - | | - |
| SFSM | San Fran. Bay | CA | me | nd | nd | .27 | - | - | | 24 |
| SFEM | San Fran. Bay | CA | me | - | nd | .59 | - | - | | 50 |
| TBSR | Tomales Bay | CA | me | nd | nd | nd | - | - | | - |
| BBBE | Bodega Bay | CA | mc | nd | nd | nd | - | - | | - |
| PALH | Pt. Arena | CA | mc | nd | nd | nd | - | - | | - |
| PDSC | Pt. Delgada | CA | mc | nd | nd | nd | - | - | | - |
| HMBJ | Humboldt Bay | CA | mc | .37 | nd | .44 | - | - | | 96 |
| SGSG | Pt. St. George | CA | mc | nd | nd | .19 | - | - | | 8 |
| CBCH | Coos Bay | OR | mc | .043 | .037 | nd | no | no | | - |
| CBRP | Coos Bay | OR | me | .11 | .011 | .11 | no | no | | 27 |
| YBOP | Yaquina Bay | OR | me | .057 | .041 | nd | no | no | | - |
| YHYH | Yaquina Head | OR | mc | .047 | .015 | nd | yes | no | | - |
| TBHP | Tillamook Bay | OR | me | .014 | .004 | nd | - | - | | - |
| CRSJ | Columbia R. | OR | me | .04 | .005 | nd | - | - | | - |
| GHWJ | Gray's Hrb. | WA | mc | .008 | .034 | .017 | no | no | | - |
| JFCF | S. Juan de Fuca | WA | mc | .046 | .009 | .08 | no | no | | - |
| SSBI | South Puget Snd. | WA | me | .087 | .15 | nd | yes | no | | - |
| CBTP | Comm. Bay | WA | me | .03 | .11 | .075 | no | no | | 1 |
| EBFR | Elliott Bay | WA | me | .14 | .26 | nd | yes | no | | - |
| SIWP | Sinclair Inlet | WA | me | .063 | .1 | .04 | no | no | | 91 |
| WIPP | Whidbey Is. | WA | me | .015 | .023 | nd | no | no | | - |
| BBSM | Bellingham Bay | WA | me | .1 | .43 | .16 | no | no | | 34 |
| PRPR | Pt. Roberts | WA | me | .03 | .015 | nd | no | no | | - |
| PVMC | Port Valdez | AK | me | .053 | .069 | .072 | no | no | | 10 |
| UISB | Unakwit Inlet | AK | me | .01 | .014 | .09 | no | no | | 39 |
| BPBP | Barber's Pt. | HI | os | nd | nd | 2.1 | - | - | | 21 |
| HHKL | Honolulu Hrb. | HI | os | nd | 8.4 | 5.4 | yes | no | | 7 |
| KAUI | Kauai | HI | os | - | - | 1.2 | - | - | | 80 |

Table B.21 Summary of 1986 through 1988 data for **Zinc (Zn)** (µg/g dry) in mollusks.

| SITE | Location | State | Species | 1986 mean | 1987 mean | 1988 mean | Diff | Trend | Overall mean | Overall cv% |
|---|---|---|---|---|---|---|---|---|---|---|
| PBSI | Penobscot Bay | ME | me | 99 | 77 | 95 | yes | no | 90 | 12 |
| PBPI | Penobscot Bay | ME | me | 78 | 59 | 84 | no | no | 74 | 17 |
| MSSP | Merriconeag Snd. | ME | me | - | - | 71 | - | - | 71 | 6 |
| CAGH | Cape Ann | MA | me | - | 110 | 120 | - | - | 120 | 8 |
| SHFP | Salem Harbor | MA | me | - | - | 92 | - | - | 92 | 6 |
| BHDI | Boston Hrb. | MA | me | 140 | 140 | 98 | no | no | 130 | 20 |
| BHDB | Boston Hrb. | MA | me | 140 | 120 | 120 | no | no | 130 | 9 |
| BHHB | Boston Hrb. | MA | me | 110 | 140 | 91 | yes | no | 110 | 19 |
| BHBI | Boston Hrb. | MA | me | 110 | 130 | 140 | yes | no | 130 | 11 |
| BBRH | Buzzards Bay | MA | me | 110 | 85 | 92 | no | no | 95 | 15 |
| BBAR | Buzzards Bay | MA | me | 100 | 120 | 110 | no | no | 110 | 9 |
| BBGN | Buzzards Bay | MA | me | 80 | 110 | 91 | yes | no | 94 | 12 |
| NBDU | Narr. Bay | RI | me | 93 | 94 | - | - | - | 93 | 1 |
| NBDI | Narr. Bay | RI | me | 110 | 100 | 110 | no | no | 110 | 8 |
| BIBI | Block Is. | RI | me | - | 88 | 94 | - | - | 91 | 8 |
| LICR | Long Is. Snd. | CT | me | 150 | 92 | 130 | no | no | 120 | 24 |
| LINH | Long Is. Snd. | CT | me | 110 | 78 | 77 | no | no | 87 | 18 |
| LIHR | Long Is. Snd. | CT | me | 120 | 86 | 80 | yes | d* | 94 | 19 |
| LISI | Long Is. Snd. | CT | me | 97 | 68 | 74 | yes | no | 80 | 17 |
| LIHU | Long Is. Snd. | NY | me | 110 | 78 | 73 | yes | d* | 86 | 19 |
| LIPJ | Long Is. Snd. | NY | me | 110 | 66 | 86 | yes | no | 87 | 25 |
| LIMR | Long Is. Snd. | NY | me | 140 | 110 | 100 | yes | d* | 120 | 18 |
| LIHH | Long Is. Snd. | NY | me | 140 | 130 | 94 | no | no | 120 | 19 |
| LITN | Long Is. Snd. | NY | me | 140 | 130 | 100 | no | no | 120 | 17 |
| MBTH | Moriches Bay | NY | me | 73 | 77 | 76 | no | no | 76 | 3 |
| HRJB | Hud./Rar. Est | NY | me | 84 | 130 | 130 | no | no | 120 | 22 |
| HRUB | Hud./Rar. Est. | NY | me | 130 | 220 | 160 | yes | no | 170 | 24 |
| HRLB | Hud./Rar. Est. | NY | me | 93 | 160 | 100 | yes | no | 120 | 28 |
| NYSH | N.Y. Bight | NJ | me | 140 | 190 | 130 | no | no | 160 | 22 |
| NYLB | N.Y. Bight | NJ | me | 95 | 140 | 120 | yes | no | 120 | 16 |
| NYSR | N.Y. Bight | NJ | me | 90 | 140 | 130 | yes | no | 120 | 20 |
| BIBL | Barnegat Inlet | NJ | me | - | - | 97 | - | - | 97 | 12 |
| AIAC | Absecon Inlet | NJ | me | - | - | 95 | - | - | 95 | 2 |
| DBFE | Delaware Bay | DE | cv | 6000 | 4900 | 4500 | yes | no | 5100 | 15 |
| DBBD | Delaware Bay | DE | cv | 7500 | 5900 | 5600 | no | no | 6300 | 15 |
| DBAP | Delaware Bay | DE | cv | 13000 | 11000 | 9100 | no | no | 11000 | 18 |
| DBKI | Delaware Bay | DE | cv | 7700 | 4500 | 4900 | no | no | 5700 | 30 |
| CBMP | Ches. Bay | MD | cv | 5500 | 3600 | 4300 | yes | no | 4500 | 19 |
| CBHP | Ches. Bay | MD | cv | 4700 | 2900 | 3400 | yes | no | 3700 | 24 |
| CBHG | Ches. Bay | MD | cv | 3700 | 3100 | 2200 | yes | d* | 3000 | 24 |
| CBIB | Ches. Bay | VA | cv | 3100 | 2600 | - | - | - | 2900 | 12 |
| CBCC | Ches. Bay | VA | cv | 1100 | 1300 | 1300 | no | no | 1200 | 9 |
| CBDP | Ches. Bay | VA | cv | 2700 | 3100 | 3000 | no | no | 2900 | 12 |
| CBCI | Chincoteague Bay | VA | cv | 4000 | 2800 | 2900 | no | no | 3200 | 18 |
| QIUB | Quinby Inlet | VA | cv | 4000 | 3800 | 3400 | no | no | 3800 | 8 |
| RSJC | Roanoke Snd. | NC | cv | 3000 | 1700 | 2200 | yes | no | 2300 | 24 |
| PSWB | Pamlico Snd. | NC | cv | 1700 | 1200 | 1500 | no | no | 1400 | 25 |
| CFBI | Cape Fear | NC | cv | 1000 | 1500 | 1200 | yes | no | 1300 | 18 |
| CHFJ | Charleston Hrb. | SC | cv | 1700 | 2000 | 1500 | yes | no | 1700 | 14 |
| CHSF | Charleston Hrb. | SC | cv | 2700 | 2000 | 2000 | no | no | 2200 | 14 |
| SRTI | Savannah R. Est. | GA | cv | 1000 | 1800 | 1500 | yes | no | 1400 | 25 |
| SSSI | Sapelo Snd. | GA | cv | 1000 | 1200 | 890 | yes | no | 1000 | 16 |
| SJCB | St. Johns R. | FL | cv | 3800 | 2100 | 2900 | yes | no | 3000 | 26 |
| MRCB | Matanzas R. | FL | cv | 2000 | 1300 | 900 | yes | d | 1400 | 42 |
| IRSR | Indian River | FL | cv | - | - | 1700 | - | - | 1700 | 3 |
| NMML | North Miami | FL | cv | - | - | 5500 | - | - | 5500 | 2 |
| BBPC | Biscayne Bay | FL | cv | 2700 | 1600 | - | - | - | 2200 | 29 |
| EVFU | Everglades | FL | cv | 930 | 860 | 1200 | no | no | 990 | 34 |
| RBHC | Rookery Bay | FL | cv | 720 | 1400 | 1300 | no | no | 1100 | 34 |

Table B.21 **Zinc (Zn)** (Continued)

| SITE | Location | State | Species | 1986 mean | 1987 mean | 1988 mean | Diff | Trend | Overall mean | Overall cv% |
|---|---|---|---|---|---|---|---|---|---|---|
| NBNB | Naples Bay | FL | cv | 2400 | 2300 | 3400 | no | no | 2700 | 20 |
| CBBI | Charlotte Hrb. | FL | cv | 1300 | 1700 | - | - | - | 1500 | 30 |
| CBFM | Charlotte Hrb. | FL | cv | - | - | 2500 | - | - | 2500 | 77 |
| TBMK | Tampa Bay | FL | cv | 650 | 470 | 240 | yes | d | 450 | 42 |
| TBCB | Tampa Bay | FL | cv | 1300 | 1500 | 2300 | no | no | 1700 | 37 |
| TBHB | Tampa Bay | FL | cv | 3600 | 1900 | 1600 | no | no | 2600 | 36 |
| TBPB | Tampa Bay | FL | cv | 2600 | 1600 | 3000 | yes | no | 2400 | 30 |
| TBOT | Tampa Bay | FL | cv | - | - | 8300 | - | - | 8300 | 4 |
| CKBP | Cedar Key | FL | cv | 300 | 480 | 1400 | yes | i | 730 | 70 |
| SRWP | Suwannee River | FL | cv | - | - | 600 | - | - | 600 | 73 |
| APCP | Apalachicola Bay | FL | cv | 650 | 410 | 630 | no | no | 560 | 22 |
| APDB | Apalachicola Bay | FL | cv | 430 | 270 | 210 | no | no | 310 | 38 |
| PCMP | Panama City | FL | cv | - | - | 2600 | - | - | 2600 | 32 |
| SAWB | St. Andrew Bay | FL | cv | 5400 | 3300 | 3100 | yes | d* | 3800 | 37 |
| CBSP | Choctawhat. Bay | FL | cv | 3000 | 2000 | 3800 | yes | no | 2900 | 29 |
| CBSR | Choctawhat. Bay | FL | cv | 1600 | 2000 | 2900 | no | no | 2200 | 34 |
| PBPH | Pensacola Bay | FL | cv | - | - | 2700 | - | - | 2700 | 10 |
| PBIB | Pensacola Bay | FL | cv | 2100 | 470 | 920 | yes | no | 1200 | 76 |
| MBHI | Mobile Bay | AL | cv | - | - | 3600 | - | - | 3600 | 32 |
| MBCP | Mobile Bay | AL | cv | 920 | 960 | 1000 | no | no | 960 | 18 |
| MSPB | Miss. Snd. | MS | cv | 3200 | 3100 | 2800 | no | no | 3100 | 25 |
| MSBB | Miss. Snd. | MS | cv | 3700 | 3800 | 2900 | no | no | 3500 | 26 |
| MSPC | Miss. Snd. | MS | cv | 1600 | 2900 | 2600 | no | no | 2400 | 26 |
| LBNO | Lake Borgne | LA | cv | - | - | 5000 | - | - | 5000 | 16 |
| LBMP | Lake Borgne | LA | cv | 3400 | 1300 | 2400 | yes | no | 2400 | 40 |
| BSBG | Breton Snd. | LA | cv | 950 | 1000 | 890 | no | no | 940 | 16 |
| BSSI | Breton Snd. | LA | cv | 1200 | 2200 | 1600 | no | no | 1700 | 39 |
| MRTP | Miss. River | LA | cv | - | - | 1600 | - | - | 1600 | 1 |
| MRPL | Miss. River | LA | cv | - | - | 2800 | - | - | 2800 | 24 |
| BBSD | Barataria Bay | LA | cv | 920 | 1800 | 2700 | yes | i | 1800 | 50 |
| BBTB | Barataria Bay | LA | cv | - | - | 1900 | - | - | 1900 | 3 |
| BBMB | Barataria Bay | LA | cv | 1300 | 2400 | 3500 | yes | i | 2400 | 42 |
| TBLF | Terrebonne Bay | LA | cv | 1800 | 1700 | 1900 | no | no | 1800 | 30 |
| TBLB | Terrebonne Bay | LA | cv | 1400 | 1500 | 2300 | no | no | 1700 | 28 |
| CLCL | Caillou Lake | LA | cv | 1300 | 2200 | 1500 | yes | no | 1700 | 26 |
| ABOB | Atchafalaya Bay | LA | cv | 1200 | 2500 | 3000 | no | no | 2200 | 40 |
| VBSP | Vermillion Bay | LA | cv | 2300 | 2900 | 1400 | yes | no | 2200 | 34 |
| JHJH | J. Hrb. Bayou | LA | cv | 1200 | 1300 | 1600 | yes | i* | 1400 | 17 |
| CLLC | Calcasieu Lake | LA | cv | - | - | 4800 | - | - | 4800 | 16 |
| CLSJ | Calcasieu Lake | LA | cv | 2600 | 1900 | 2000 | no | no | 2200 | 21 |
| SLBB | Sabine Lake | TX | cv | 8000 | 6000 | 4100 | yes | d* | 6000 | 32 |
| GBHR | Galveston Bay | TX | cv | 1100 | 2000 | 2500 | no | no | 1900 | 41 |
| GBSC | Galveston Bay | TX | cv | - | - | 4200 | - | - | 4200 | 5 |
| GBYC | Galveston Bay | TX | cv | 4600 | 6900 | 4200 | no | no | 5200 | 28 |
| GBTD | Galveston Bay | TX | cv | 2100 | 1700 | 2000 | no | no | 1900 | 14 |
| GBCR | Galveston Bay | TX | cv | 2200 | 1800 | 1900 | no | no | 2000 | 29 |
| GBOB | Galveston Bay | TX | cv | - | - | 6100 | - | - | 6100 | 17 |
| BRFS | Brazos River | TX | cv | - | - | 4500 | - | - | 4500 | 8 |
| MBEM | Matagorda Bay | TX | cv | 880 | 3100 | 1100 | yes | no | 1700 | 64 |
| MBDI | Matagorda Bay | TX | cv | - | - | 1200 | - | - | 1200 | 22 |
| MBCB | Matagorda Bay | TX | cv | - | - | 1700 | - | - | 1700 | 29 |
| MBTP | Matagorda Bay | TX | cv | 900 | 920 | 1400 | no | no | 1100 | 29 |
| MBGP | Matagorda Bay | TX | cv | 1400 | 1500 | 1800 | no | no | 1600 | 17 |
| MBLR | Matagorda Bay | TX | cv | 1200 | 620 | - | - | - | 890 | 39 |
| ESSP | Espiritu Santo | TX | cv | 870 | 790 | - | - | - | 830 | 30 |
| ESBD | Espiritu Santo | TX | cv | - | - | 920 | - | - | 920 | 9 |
| SAMP | San Antonio Bay | TX | cv | 1600 | 630 | - | - | - | 1100 | 49 |
| SAPP | San Antonio Bay | TX | cv | 730 | 570 | - | - | - | 650 | 16 |
| MBAR | Mesquite Bay | TX | cv | 620 | 490 | 670 | no | no | 590 | 17 |

Table B.21 **Zinc (Zn)** (Continued)

| SITE | Location | State | Species | 1986 mean | 1987 mean | 1988 mean | Diff | Trend | Overall mean | Overall cv% |
|---|---|---|---|---|---|---|---|---|---|---|
| CBCR | Copano Bay | TX | cv | 1800 | 950 | 2100 | yes | no | 1600 | 32 |
| ABHI | Aransas Bay | TX | cv | - | - | 3700 | - | - | 3700 | 35 |
| ABLR | Aransas Bay | TX | cv | 1600 | 810 | 1600 | no | no | 1300 | 35 |
| CCBH | Corpus Christi | TX | cv | - | - | 6600 | - | - | 6600 | 1 |
| CCIC | Corpus Christi | TX | cv | 2300 | - | 3200 | - | - | 2700 | 22 |
| CCNB | Corpus Christi | TX | cv | 4900 | 3300 | 4600 | no | no | 4300 | 25 |
| LMSB | L. Laguna Madre | TX | cv | 1600 | 1300 | 4500 | yes | no | 2500 | 82 |
| LMPI | Laguna Madre | TX | cv | - | - | 5500 | - | - | 5500 | 17 |
| IBNJ | Imperial Beach | CA | mc | 170 | 160 | 110 | yes | d* | 140 | 18 |
| SDHI | San Diego Bay | CA | me | 270 | 260 | 320 | no | no | 280 | 12 |
| PLLH | Pt. Loma | CA | mc | 200 | 190 | 210 | no | no | 200 | 8 |
| MBVB | Mission Bay | CA | me | 160 | 150 | 130 | no | no | 150 | 15 |
| LJLJ | La Jolla | CA | mc | 180 | 170 | 170 | no | no | 170 | 11 |
| OSBJ | Oceanside | CA | me | 160 | 160 | 130 | no | no | 150 | 14 |
| NBWJ | Newport Bch. | CA | mc | 160 | 120 | 190 | yes | no | 160 | 23 |
| ABWJ | Anaheim Bay | CA | mc | 180 | 170 | 130 | yes | d* | 160 | 18 |
| SPFP | San Pedro Hrb. | CA | me | 180 | 240 | 240 | no | no | 220 | 22 |
| PVRP | Palos Verdes | CA | mc | 160 | 170 | 190 | no | no | 180 | 12 |
| SCBR | S. Catalina Is. | CA | mc | 130 | 170 | 130 | no | no | 140 | 13 |
| MDSJ | Marina Del Rey | CA | me | 310 | 240 | 230 | no | no | 260 | 16 |
| PDPD | Pt. Dume | CA | mc | 190 | 140 | 130 | no | no | 150 | 21 |
| SCFP | Santa Cruz Is. | CA | mc | 150 | 190 | 180 | no | no | 180 | 16 |
| SANM | San Miguel Is. | CA | mc | - | - | 150 | - | - | 150 | 3 |
| SBSB | Pt. S. Barbara | CA | mc | 160 | 140 | 160 | no | no | 150 | 12 |
| PCPC | Pt. Conception | CA | mc | 160 | 140 | 150 | no | no | 150 | 5 |
| SLSL | San Luis Ob. Bay | CA | mc | 150 | 110 | 140 | yes | no | 140 | 13 |
| SSSS | San Simeon Pt. | CA | mc | 170 | 160 | 190 | no | no | 170 | 22 |
| PGLP | Pacific Grove | CA | mc | 150 | 130 | 230 | yes | no | 170 | 30 |
| MBSC | Monterey Bay | CA | mc | 220 | 140 | 240 | no | no | 200 | 26 |
| FIEL | Farallon Is. | CA | mc | - | - | 160 | - | - | 160 | 14 |
| SFDB | San Fran. Bay | CA | me | 77 | 82 | 64 | no | no | 74 | 15 |
| SFSM | San Fran. Bay | CA | me | 76 | 97 | 110 | yes | i* | 94 | 17 |
| SFEM | San Fran. Bay | CA | me | - | 190 | 230 | - | - | 210 | 19 |
| TBSR | Tomales Bay | CA | me | 120 | 65 | 85 | yes | no | 89 | 27 |
| BBBE | Bodega Bay | CA | mc | 160 | 68 | 100 | yes | no | 110 | 37 |
| PALH | Pt. Arena | CA | mc | 160 | 130 | 150 | yes | no | 150 | 12 |
| PDSC | Pt. Delgada | CA | mc | 180 | 130 | 160 | no | no | 160 | 17 |
| HMBJ | Humboldt Bay | CA | mc | 150 | 110 | 140 | yes | no | 130 | 17 |
| SGSG | Pt. St. George | CA | mc | 170 | 110 | 140 | no | no | 140 | 20 |
| CBCH | Coos Bay | OR | mc | 140 | 97 | 110 | yes | no | 120 | 19 |
| CBRP | Coos Bay | OR | me | 230 | 190 | 210 | no | no | 210 | 10 |
| YBOP | Yaquina Bay | OR | me | 160 | 140 | 200 | yes | no | 170 | 19 |
| YHYH | Yaquina Head | OR | mc | 140 | 130 | 150 | no | no | 140 | 10 |
| TBHP | Tillamook Bay | OR | me | 100 | 120 | 110 | no | no | 110 | 11 |
| CRSJ | Columbia R. | OR | me | 130 | 150 | 130 | no | no | 140 | 11 |
| GHWJ | Gray's Hrb. | WA | mc | 150 | 190 | 190 | no | no | 170 | 12 |
| JFCF | S. Juan de Fuca | WA | mc | 150 | 170 | 170 | no | no | 160 | 8 |
| SSBI | South Puget Snd. | WA | me | 140 | 110 | 140 | no | no | 130 | 11 |
| CBTP | Comm. Bay | WA | me | 250 | 140 | 170 | yes | no | 190 | 29 |
| EBFR | Elliott Bay | WA | me | 260 | 220 | 260 | no | no | 250 | 16 |
| SIWP | Sinclair Inlet | WA | me | 170 | 190 | 140 | yes | no | 170 | 14 |
| WIPP | Whidbey Is. | WA | me | 120 | 130 | 100 | yes | no | 120 | 12 |
| BBSM | Bellingham Bay | WA | me | 160 | 210 | 260 | no | no | 210 | 26 |
| PRPR | Pt. Roberts | WA | me | 170 | 150 | 160 | no | no | 160 | 9 |
| PVMC | Port Valdez | AK | me | 100 | 91 | 110 | no | no | 100 | 9 |
| UISB | Unakwit Inlet | AK | me | 84 | 81 | 99 | yes | i* | 88 | 10 |
| BPBP | Barber's Pt. | HI | os | 710 | 860 | 790 | no | no | 790 | 33 |
| HHKL | Honolulu Hrb. | HI | os | 450 | 980 | 1100 | yes | i | 840 | 37 |
| KAUI | Kauai | HI | os | - | - | 620 | - | - | 620 | 10 |

# Appendix C

## Concentration Plots and Rankings of Mussel Watch sites at which Concentrations of Contaminants in Bivalve Mollusks were among the upper 20 Concentrations Determined in 1986, 1987, and 1988.

# APPENDIX C

## Concentration Plots and Rankings of Mussel Watch sites at which Concentrations of Contaminants in Mollusks were among the upper 20 Concentrations Determined in 1986, 1987, or 1988.

Plots are on the right and the corresponding legends are on the facing page. The rankings listed in the legends are the rankings for the concentrations plotted for the years 1986, 1987, and 1988, respectively. The rankings of overall concentrations are also listed but those overall concentration means are not plotted. There are more than twenty sites listed because not all sites ranked among the upper 20 in all years.

The "less-than "symbol (<) as a ranking means that the ranking was not amongthe upper 20 and is therefore not given. A dash (-) means that the site was not sampled in the given year and that could indicate either that the site was added in later years or that mollusks were simply unavailable. The letter "t" following a ranking means that two or more concentrations were equal (after rounding to two significant figures) and were therefore tied in the rankings.

The columns headed "Signif. Diff." and "Trend" mean the same as they do in APPENDIX B. The Kruskal-Wallis test was used to test for the existence of differences among years (at the .05 level) for those sites with three-years of data. A trend is declared possible when there is a significant difference and when the change is monotonic (i.e. when third year [1988] concentration is the highest [or lowest]). Increasing or decreasing trends are indicated as "i" or "d", respectively, and trends of less than twofold in magnitude are noted with an asterisk (*).

Rankings of concentrations of hexachlorobenzene, Mirex and tin have not been used because more than 50% of all analyses for them have resulted in non-detectable levels. Three elements: copper; zinc; and silver, are so heavily preferred by oysters over mussels that the rankings of concentrations in mussels are plotted separately.

SEQUENCE of FIGURES


| Contaminant | Page |
|---|---|
| PCB | C-3 |
| DDT | C-5 |
| Chlordane | C-7 |
| Dieldrin | C-9 |
| Lindane | C-11 |
| LMWpah | C-13 |
| HMWpah | C-15 |
| Arsenic | C-17 |
| Cadmium | C-19 |
| Chromium | C-21 |
| Copper | C-23 |
| Copper(mussel) | C-25 |
| Lead | C-27 |
| Mercury | C-29 |
| Nickel | C-31 |
| Selenium | C-33 |
| Silver | C-35 |
| Silver (mussel) | C-37 |
| Zinc | C-39 |
| Zinc (mussel) | C-41 |


**Errata**

In the bodies of Figures C.1 to C.7 (those for organic contaminants) units should be ng/g - dry wt.

In the body of Figure C.8 (arsenic). units should be µg/g-dry wt.

Figure C.1. Sites ranking among the highest twenty in 1986, 1987, 1988 and overall for concentrations in mollusks of **Total polychlorinated biphenyls (PCBs).**

| | | | | RANKING | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Code | Location | State | Sp. | 1986 | 1987 | 1988 | Overall | Signif. Diff. | Trend |
| BBAR | Buzzards Bay | MA | me | 1 | 1t | 1 | 1 | no | no |
| HRLB | Hud./Rar. Est. | NY | me | 2 | 3 | 3t | 2 | yes | d |
| NYSR | N.Y. Bight | NJ | me | 3 | 17t | 11 | 6 | no | no |
| HRUB | Hud./Rar. Est. | NY | me | 4 | 5t | 2 | 3 | no | no |
| SDHI | San Diego Bay | CA | me | 5 | 4 | 5t | 5 | no | no |
| GBYC | Galveston Bay | TX | cv | 6 | 8t | 16 | 10t | no | no |
| NYSH | N.Y. Bight | NJ | me | 7 | 12 | 5t | 7t | yes | no |
| BHDB | Boston Hrb. | MA | me | 8 | 5t | < | 10t | no | no |
| BBGN | Buzzards Bay | MA | me | 9 | < | < | 14 | no | no |
| BBRH | Buzzards Bay | MA | me | 10 | 1t | 3t | 4 | no | no |
| BHDI | Boston Hrb. | MA | me | 11t | 19 | < | 13 | yes | d |
| LITN | Long Is. Snd. | NY | me | 11t | 8t | 7t | 9 | no | no |
| EBFR | Elliott Bay | WA | me | 13 | < | < | 19t | yes | d |
| BHHB | Boston Hrb. | MA | me | 14 | 13 | < | 18 | no | no |
| HRJB | Hud./Rar. Est | NY | me | 15 | < | 10 | 15t | yes | no |
| LINH | Long Is. Snd. | CT | me | 16 | < | 19t | < | no | no |
| LIMR | Long Is. Snd. | NY | me | 17 | < | 14t | < | no | no |
| SAWB | St. Andrew Bay | FL | cv | 18 | < | 17t | < | no | no |
| LISI | Long Is. Snd. | CT | me | 19 | < | < | < | no | no |
| NYLB | N.Y. Bight | NJ | me | 20 | 15 | 17t | 19t | no | no |
| SFEM | San Fran. Bay | CA | me | - | 5t | 7t | 7t | - | - |
| LIHH | Long Is. Snd. | NY | me | < | 8t | < | 17 | yes | no |
| LIHR | Long Is. Snd. | CT | me | < | 11 | < | 15t | yes | no |
| CBSP | Choctawhat. Bay | FL | cv | < | 14 | < | < | no | no |
| MDSJ | Marina Del Rey | CA | me | < | 16 | < | < | yes | no |
| BHBI | Boston Hrb. | MA | me | < | 17t | < | < | yes | no |
| PBIB | Pensacola Bay | FL | cv | < | 20 | < | < | no | no |
| GBSC | Galveston Bay | TX | cv | - | - | 9 | 12 | - | - |
| APDB | Apalachicola Bay | FL | cv | < | < | 12 | < | yes | no |
| ABWJ | Anaheim Bay | CA | mc | < | < | 13 | < | no | no |
| SFSM | San Fran. Bay | CA | me | < | < | 19t | < | no | no |
| LICR | Long Is. Snd. | CT | me | < | < | 19t | < | no | no |

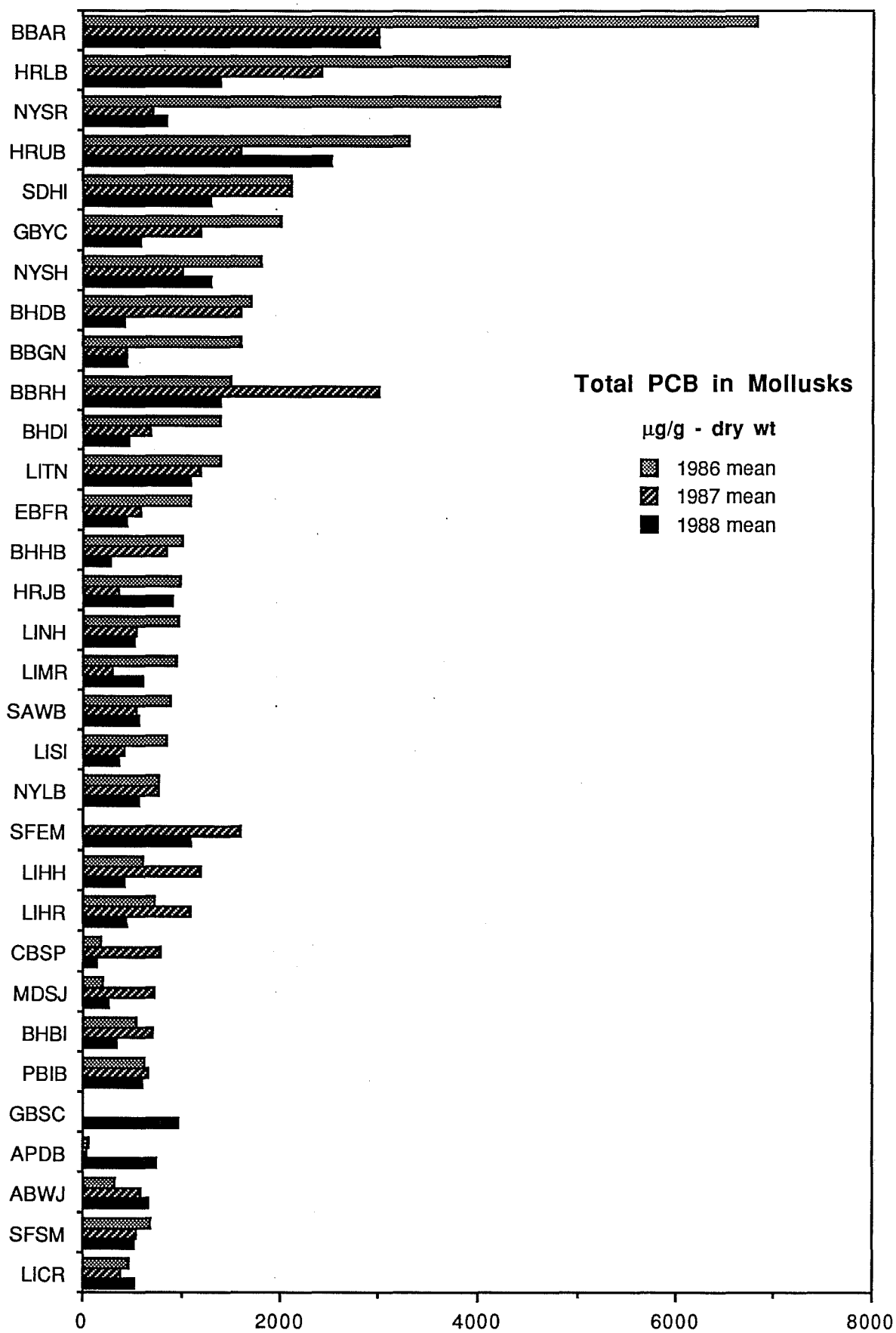

Total PCB in Mollusks
µg/g - dry wt
1986 mean
1987 mean
1988 mean
BBAR
HRLB
NYSR
HRUB
SDHI
GBYC
NYSH
BHDB
BBGN
BBRH
BHDI
LITN
EBFR
BHHB
HRJB
LINH
LIMR
SAWB
LISI
NYLB
SFEM
LIHH
LIHR
CBSP
MDSJ
BHBI
PBIB
GBSC
APDB
ABWJ
SFSM
LICR
0
2000
4000
6000
8000

Figure C.2. Sites ranking among the highest twenty in 1986, 1987, 1988 and overall for concentrations in mollusks of **Total DDT.**

| | | | | RANKING | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Code | Location | State | Sp. | 1986 | 1987 | 1988 | Overall | Signif. Diff. | Trend |
| HRLB | Hud./Rar. Est. | NY | me | 1t | 7 | 10 | 5 | yes | d |
| SPFP | San Pedro Hrb. | CA | me | 1t | 4 | 1 | 2 | no | no |
| PVRP | Palos Verdes | CA | mc | 1t | 1 | 2 | 1 | no | no |
| ABWJ | Anaheim Bay | CA | mc | 4 | 3 | 4 | 4 | yes | no |
| SFDB | San Fran. Bay | CA | me | 5 | 11t | < | 16 | no | no |
| CBSP | Choctawhat. Bay | FL | cv | 6 | 2 | 3 | 3 | no | no |
| BBAR | Buzzards Bay | MA | me | 7t | < | < | < | yes | d |
| NYSH | N.Y. Bight | NJ | me | 7t | 19t | 16t | 14t | no | no |
| IBNJ | Imperial Beach | CA | mc | 9 | 10 | 7 | 10 | no | no |
| NYSR | N.Y. Bight | NJ | me | 10 | < | < | < | no | no |
| LITN | Long Is. Snd. | NY | me | 11 | 11t | < | 17 | yes | no |
| HRUB | Hud./Rar. Est. | NY | me | 12t | 14t | 8 | 11 | no | no |
| CBCC | Ches. Bay | VA | cv | 12t | < | < | < | yes | d |
| SAWB | St. Andrew Bay | FL | cv | 12t | < | < | < | no | no |
| SLSL | San Luis Ob. B. | CA | mc | 12t | < | < | < | no | no |
| HRJB | Hud./Rar. Est | NY | me | 16t | < | 13 | 20 | yes | no |
| DBBD | Delaware Bay | DE | cv | 16t | 8 | < | 12 | no | no |
| PDPD | Pt. Dume | CA | mc | 18 | 6 | 12 | 9 | no | no |
| LIMR | Long Is. Snd. | NY | me | 19t | < | < | < | no | no |
| MBCP | Mobile Bay | AL | cv | 19t | < | 18t | < | no | no |
| GBYC | Galveston Bay | TX | cv | 19t | < | < | < | no | no |
| MBSC | Monterey Bay | CA | mc | 19t | < | < | < | no | no |
| SFEM | San Fran. Bay | CA | me | - | 5 | 9 | 7 | - | - |
| MDSJ | Marina Del Rey | CA | me | < | 9 | 5 | 8 | yes | i |
| DBAP | Delaware Bay | DE | cv | < | 13 | < | < | no | no |
| BHDB | Boston Hrb. | MA | me | < | 14t | < | < | no | no |
| NBWJ | Newport Bch. | CA | mc | < | 14t | < | < | no | no |
| SFSM | San Fran. Bay | CA | me | < | 14t | < | < | no | no |
| SDHI | San Diego Bay | CA | me | < | 15t | < | < | no | no |
| PGLP | Pacific Grove | CA | mc | < | 15t | < | < | no | no |
| DBKI | Delaware Bay | DE | cv | < | 19t | < | < | no | no |
| MBHI | Mobile Bay | AL | cv | - | - | 6 | 6 | - | - |
| OSBJ | Oceanside | CA | me | < | < | 11 | < | yes | i |
| MRPL | Miss. River | LA | cv | - | - | 14 | 13 | - | - |
| GBSC | Galveston Bay | TX | cv | - | - | 15 | 14t | - | - |
| APDB | Apalachicola Bay | FL | cv | < | < | 16t | < | no | no |
| MSPB | Miss. Snd. | MS | cv | < | < | 18t | < | yes | i |
| BRFS | Brazos River | TX | cv | - | - | 18t | 18t | - | - |
| SANM | San Miguel Is. | CA | mc | - | - | 18t | 18t | - | - |

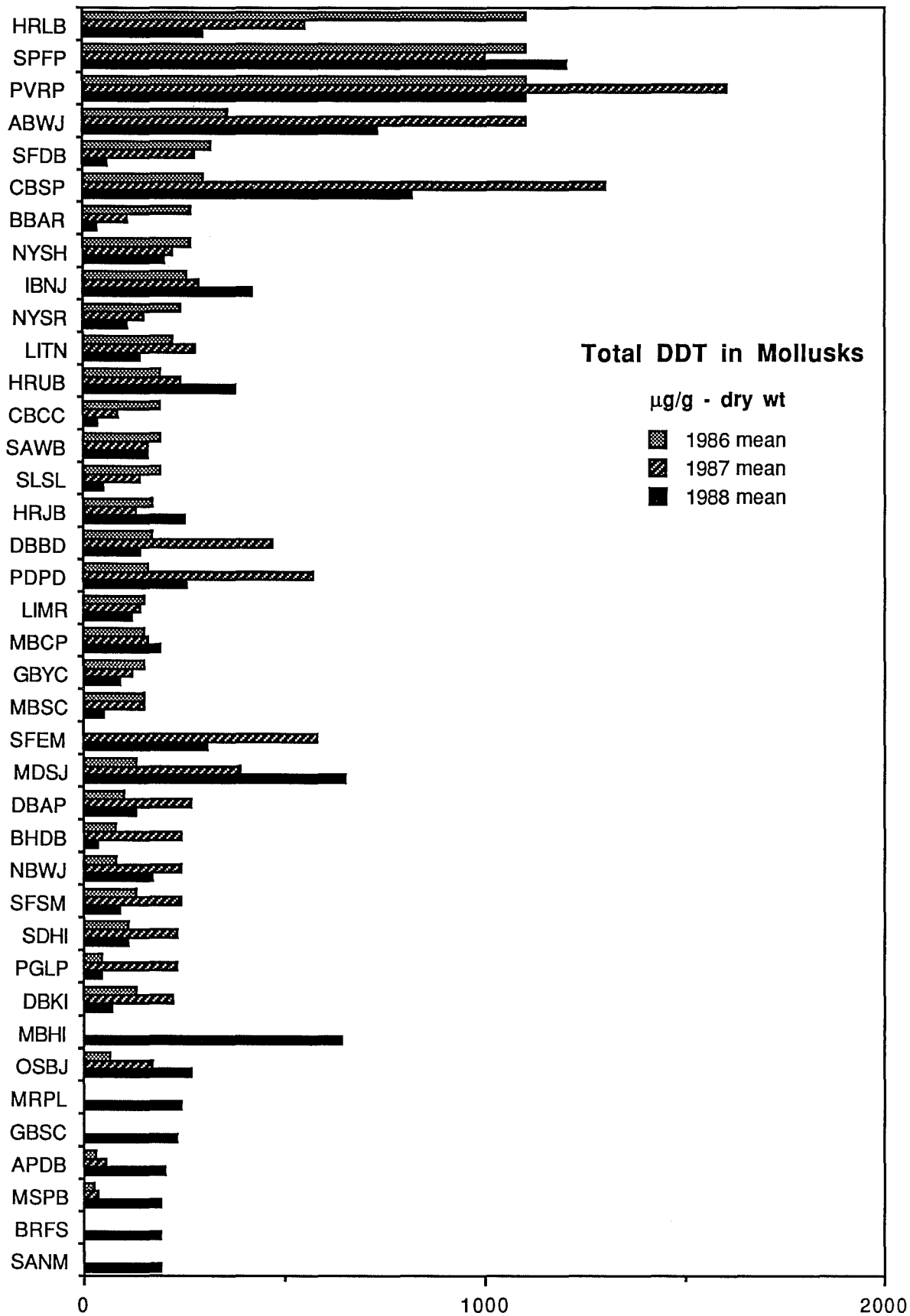

Total DDT in Mollusks
µg/g - dry wt
1986 mean
1987 mean
1988 mean
HRLB
SPFP
PVRP
ABWJ
SFDB
CBSP
BBAR
NYSH
IBNJ
NYSR
LITN
HRUB
CBCC
SAWB
SLSL
HRJB
DBBD
PDPD
LIMR
MBCP
GBYC
MBSC
SFEM
MDSJ
DBAP
BHDB
NBWJ
SFSM
SDHI
PGLP
DBKI
MBHI
OSBJ
MRPL
GBSC
APDB
MSPB
BRFS
SANM
0
1000
2000

Figure C.3. Sites ranking among the highest twenty in 1986, 1987, 1988 and overall for concentrations in mollusks of **Total Chlordane.**

| | | | | RANKING | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Code | Location | State | Sp. | 1986 | 1987 | 1988 | Overall | Signif. Diff. | Trend |
| HRLB | Hud./Rar. Est. | NY | me | 1 | 5t | 16 | 1 | yes | d |
| NYSR | N.Y. Bight | NJ | me | 2 | < | < | 12t | no | no |
| SFDB | San Fran. Bay | CA | me | 3 | 8 | < | 8t | no | no |
| GBYC | Galveston Bay | TX | cv | 4 | 5t | 11t | 5 | no | no |
| NYSH | N.Y. Bight | NJ | me | 5t | 19 | 19 | 18 | no | no |
| NBNB | Naples Bay | FL | cv | 5t | < | < | < | no | no |
| LITN | Long Is. Snd. | NY | me | 7 | 10 | 9 | 10 | yes | d* |
| MSBB | Miss. Snd. | MS | cv | 8 | 11 | 7t | 11 | no | no |
| LIMR | Long Is. Snd. | NY | me | 9 | 14 | 14 | 14 | no | no |
| BBAR | Buzzards Bay | MA | me | 10 | < | < | < | no | no |
| BHDI | Boston Hrb. | MA | me | 11t | < | < | < | yes | d |
| SAWB | St. Andrew Bay | FL | cv | 11t | < | < | < | no | no |
| HRJB | Hud./Rar. Est | NY | me | 13 | 20 | 7t | 19 | no | no |
| TBCB | Tampa Bay | FL | cv | 14 | < | 3 | 15 | yes | no |
| HRUB | Hud./Rar. Est. | NY | me | 15 | < | 5t | 20 | no | no |
| LINH | Long Is. Snd. | CT | me | 16t | < | < | < | yes | d |
| LISI | Long Is. Snd. | CT | me | 16t | < | < | < | yes | d |
| BHDB | Boston Hrb. | MA | me | 18 | 12 | < | < | yes | no |
| MDSJ | Marina Del Rey | CA | me | 19 | 2 | 1 | 3t | no | no |
| CBMP | Ches. Bay | MD | cv | 20 | 17 | < | < | no | no |
| CBSP | Choctawhat. Bay | FL | cv | < | 1 | 17t | 3t | no | no |
| LIHH | Long Is. Snd. | NY | me | < | 3 | < | 7 | yes | no |
| ABWJ | Anaheim Bay | CA | mc | < | 4 | 10 | 6 | no | no |
| SFEM | San Fran. Bay | CA | me | - | 7 | < | 12t | - | - |
| TBPB | Tampa Bay | FL | cv | < | 9 | 13 | 17 | no | no |
| SFSM | San Fran. Bay | CA | me | < | 13 | < | < | no | no |
| BHHB | Boston Hrb. | MA | me | < | 15 | < | < | no | no |
| MSPC | Miss. Snd. | MS | cv | < | 16 | < | < | no | no |
| LIHR | Long Is. Snd. | CT | me | < | 18 | < | < | no | no |
| GBSC | Galveston Bay | TX | cv | - | - | 2 | 2 | - | - |
| GBOB | Galveston Bay | TX | cv | - | - | 4 | 8t | - | - |
| CBFM | Charlotte Hrb. | FL | cv | - | - | 5t | 16 | - | - |
| MRPL | Miss. River | LA | cv | - | - | 11t | < | - | - |
| APDB | Apalachicola Bay | FL | cv | < | < | 15 | < | yes | i* |
| CLLC | Calcasieu Lake | LA | cv | - | - | 17t | < | - | - |
| HHKL | Honolulu Hrb. | HI | os | < | < | 20 | < | no | no |

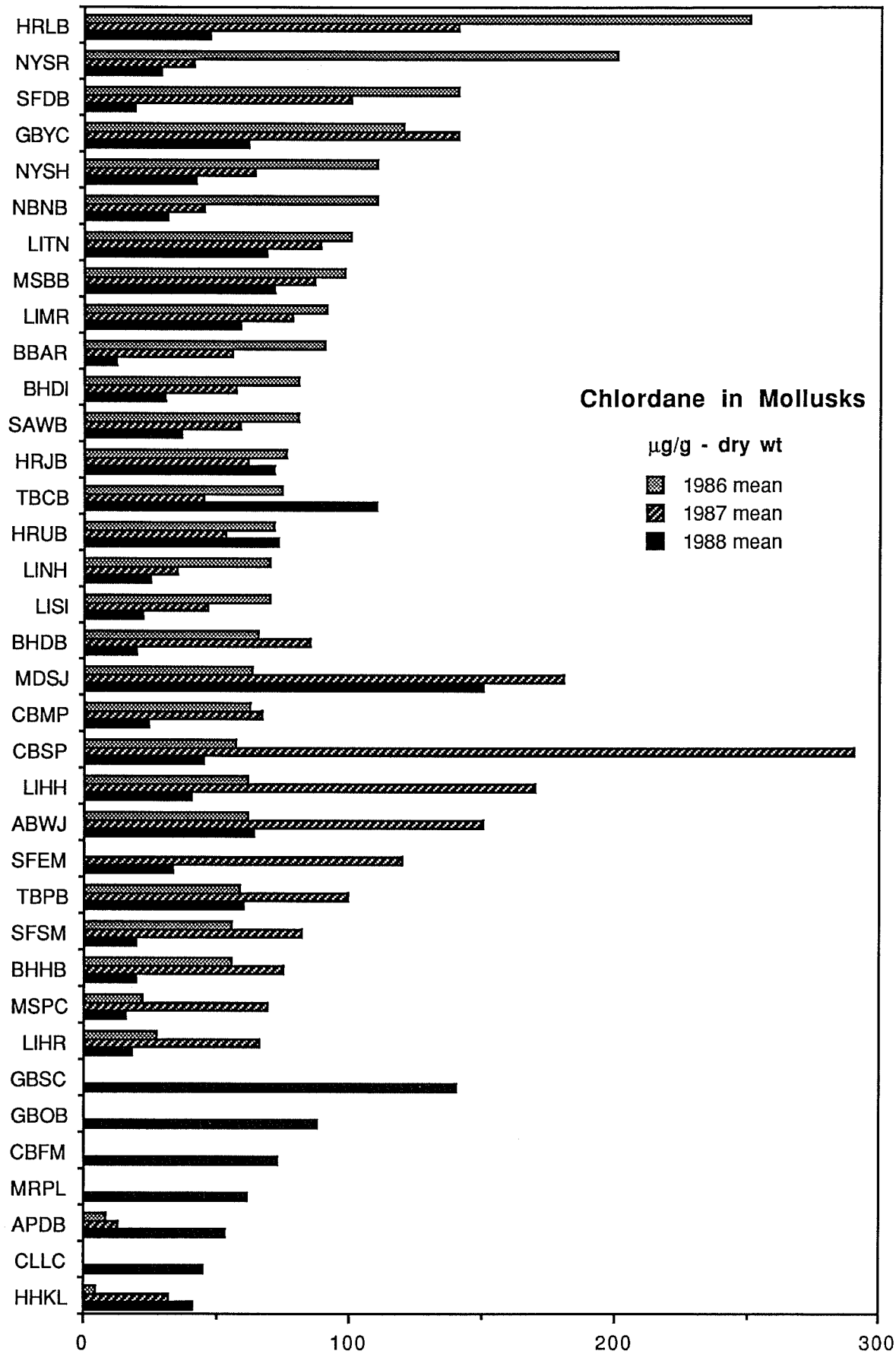

Chlordane in Mollusks
µg/g - dry wt
1986 mean
1987 mean
1988 mean
HRLB
NYSR
SFDB
GBYC
NYSH
NBNB
LITN
MSBB
LIMR
BBAR
BHDI
SAWB
HRJB
TBCB
HRUB
LINH
LISI
BHDB
MDSJ
CBMP
CBSP
LIHH
ABWJ
SFEM
TBPB
SFSM
BHHB
MSPC
LIHR
GBSC
GBOB
CBFM
MRPL
APDB
CLLC
HHKL
0
100
200
300

Figure C.4. Sites ranking among the highest twenty in 1986, 1987, 1988 and overall for concentrations in mollusks of **Dieldrin (+aldrin).**

| | | | | RANKING | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Code | Location | State | Sp. | 1986 | 1987 | 1988 | Overall | Signif. Diff. | Trend |
| HRLB | Hud./Rar. Est. | NY | me | 1 | 6 | < | 1 | yes | d |
| SFDB | San Fran. Bay | CA | me | 2 | 2 | 14t | 2 | no | no |
| NYSH | N.Y. Bight | NJ | me | 3 | 18t | < | 10 | yes | d |
| HRUB | Hud./Rar. Est. | NY | me | 4 | 14 | < | 8t | no | no |
| SFSM | San Fran. Bay | CA | me | 5 | 1 | 9t | 3 | no | no |
| BBAR | Buzzards Bay | MA | me | 6 | 7 | < | 6t | no | no |
| NYSR | N.Y. Bight | NJ | me | 7 | < | < | < | no | no |
| BHDI | Boston Hrb. | MA | me | 8t | < | < | 18t | yes | d |
| LIHR | Long Is. Snd. | CT | me | 8t | < | < | < | no | no |
| BSSI | Breton Snd. | LA | cv | 8t | < | 9t | < | yes | no |
| BHDB | Boston Hrb. | MA | me | 11 | 15 | < | 16t | no | no |
| GBYC | Galveston Bay | TX | cv | 12 | 18t | 8 | 12t | no | no |
| LINH | Long Is. Snd. | CT | me | 13t | < | 7 | 20t | no | no |
| NYLB | N.Y. Bight | NJ | me | 13t | < | < | < | no | no |
| HRJB | Hud./Rar. Est | NY | me | 13t | < | < | < | yes | d |
| MSBB | Miss. Snd. | MS | cv | 13t | < | < | < | no | no |
| DBBD | Delaware Bay | DE | cv | 17 | < | 4t | 12t | no | no |
| CBMP | Ches. Bay | MD | cv | 18t | < | < | < | no | no |
| ABWJ | Anaheim Bay | CA | mc | 18t | 10 | 6 | 8t | no | no |
| MBSC | Monterey Bay | CA | mc | 18t | 12 | 11t | 12t | yes | no |
| LIHH | Long Is. Snd. | NY | me | < | 3 | < | 15 | yes | no |
| SFEM | San Fran. Bay | CA | me | - | 4 | 14t | 4 | - | - |
| LICR | Long Is. Snd. | CT | me | < | 5 | < | 18t | yes | no |
| BBRH | Buzzards Bay | MA | me | < | 8 | < | 11 | yes | no |
| SDHI | San Diego Bay | CA | me | < | 9 | < | < | yes | no |
| DBKI | Delaware Bay | DE | cv | < | 11 | < | 16t | no | no |
| LITN | Long Is. Snd. | NY | me | < | 13 | 15t | < | yes | no |
| LIMR | Long Is. Snd. | NY | me | < | 16t | 4t | < | no | no |
| BHHB | Boston Hrb. | MA | me | < | 16t | < | < | yes | no |
| PGLP | Pacific Grove | CA | mc | < | 18t | < | < | no | no |
| MRPL | Miss. River | LA | cv | - | - | 1 | 5 | - | - |
| GBSC | Galveston Bay | TX | cv | - | - | 2 | 6t | - | - |
| LIHU | Long Is. Snd. | NY | me | < | < | 3 | 20t | no | no |
| BIBL | Barnegat Inlet | NJ | me | - | - | 11t | < | - | - |
| CBFM | Charlotte Hrb. | FL | cv | - | - | 11t | < | - | - |
| CBHP | Ches. Bay | MD | cv | < | < | 14t | < | no | no |
| LIPJ | Long Is. Snd. | NY | me | < | < | 14t | < | no | no |
| PBPH | Pensacola Bay | FL | cv | - | - | 14t | < | - | - |
| MRTP | Miss. River | LA | cv | - | - | 14t | < | - | - |
| SHFP | Salem Hrb. | MA | me | - | - | 15t | < | - | - |

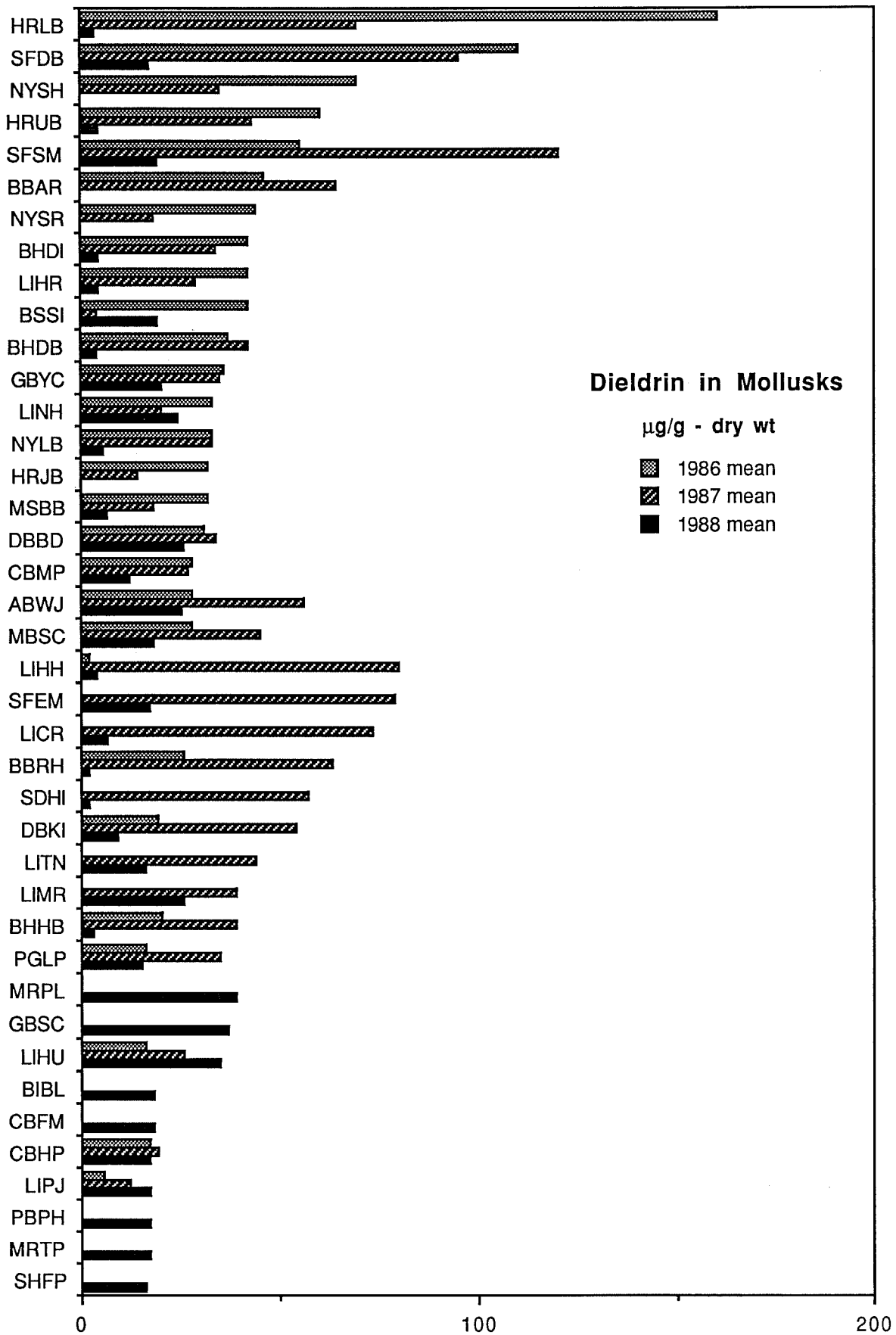

Dieldrin in Mollusks
µg/g - dry wt
1986 mean
1987 mean
1988 mean
HRLB
SFDB
NYSH
HRUB
SFSM
BBAR
NYSR
BHDI
LIHR
BSSI
BHDB
GBYC
LINH
NYLB
HRJB
MSBB
DBBD
CBMP
ABWJ
MBSC
LIHH
SFEM
LICR
BBRH
SDHI
DBKI
LITN
LIMR
BHHB
PGLP
MRPL
GBSC
LIHU
BIBL
CBFM
CBHP
LIPJ
PBPH
MRTP
SHFP
0
100
200

Figure C.5. Sites ranking among the highest twenty in 1986, 1987, 1988 and overall for concentrations in mollusks of **Lindane.**

| | | | | RANKING | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Code | Location | State | Sp. | 1986 | 1987 | 1988 | Overall | Signif. Diff. | Trend |
| NYSR | N.Y. Bight | NJ | me | 1 | < | < | 1 | no | no |
| HRLB | Hud./Rar. Est. | NY | me | 2 | < | < | 3 | yes | d |
| LIMR | Long Is. Snd. | NY | me | 3 | < | 11t | 5 | no | no |
| NBDU | Narr. Bay | RI | me | 4 | < | - | 4 | - | - |
| LISI | Long Is. Snd. | CT | me | 5 | < | < | 17t | yes | d |
| LIHH | Long Is. Snd. | NY | me | 6 | < | 2 | 7 | no | no |
| LITN | Long Is. Snd. | NY | me | 7 | < | < | 14t | no | no |
| LIPJ | Long Is. Snd. | NY | me | 8 | < | < | < | yes | d |
| NYSH | N.Y. Bight | NJ | me | 9 | < | 9t | 16 | no | no |
| CBMP | Ches. Bay | MD | cv | 10 | < | < | < | no | no |
| PDSC | Pt. Delgada | CA | mc | 11 | 4 | < | 8 | yes | no |
| BHDI | Boston Hrb. | MA | me | 12t | - | < | < | no | no |
| GBYC | Galveston Bay | TX | cv | 12t | 5t | 3t | 6 | no | no |
| SFDB | San Fran. Bay | CA | me | 14 | 5t | < | 12 | yes | no |
| CCIC | Corpus Christi | TX | cv | 15 | - | < | < | - | - |
| BBAR | Buzzards Bay | MA | me | 16 | 2 | < | 9 | no | no |
| NYLB | N.Y. Bight | NJ | me | 17 | < | < | < | yes | d |
| BHBI | Boston Hrb. | MA | me | 18 | < | < | < | yes | d |
| DBKI | Delaware Bay | DE | cv | 19 | < | 19 | < | no | no |
| ABWJ | Anaheim Bay | CA | mc | 20 | 3 | < | 13 | yes | no |
| MDSJ | Marina Del Rey | CA | me | < | 1 | < | 11 | yes | no |
| GBTD | Galveston Bay | TX | cv | < | 7 | < | 10 | no | no |
| SFSM | San Fran. Bay | CA | me | < | 8 | < | < | yes | no |
| PLLH | Pt. Loma | CA | mc | < | 9 | < | < | yes | no |
| LINH | Long Is. Snd. | CT | me | < | 10t | < | < | yes | no |
| DBBD | Delaware Bay | DE | cv | < | 10t | < | 17t | no | no |
| PGLP | Pacific Grove | CA | mc | < | 12 | < | < | yes | no |
| BBPC | Biscayne Bay | FL | cv | - | 13 | - | < | - | - |
| LJLJ | La Jolla | CA | mc | < | 14 | < | < | yes | no |
| PBIB | Pensacola Bay | FL | cv | < | 15 | < | < | no | no |
| MBSC | Monterey Bay | CA | mc | < | 16t | < | < | yes | no |
| CBRP | Coos Bay | OR | me | < | 16t | < | < | no | no |
| GBHR | Galveston Bay | TX | cv | < | 18 | < | < | no | no |
| DBAP | Delaware Bay | DE | cv | < | 19 | 6 | 14t | no | no |
| CHSF | Charleston Hrb. | SC | cv | < | 20t | < | < | no | no |
| MRCB | Matanzas R. | FL | cv | < | 20t | < | < | no | no |
| GBSC | Galveston Bay | TX | cv | - | - | 1 | 2 | - | - |
| PRPR | Pt. Roberts | WA | me | < | < | 3t | < | no | no |
| UISB | Unakwit Inlet | AK | me | < | < | 5 | < | yes | no |
| PVMC | Port Valdez | AK | me | < | < | 7 | < | no | no |
| DBFE | Delaware Bay | DE | cv | < | < | 8 | 17t | no | no |
| BBSM | Bellingham Bay | WA | me | < | < | 9t | < | no | no |
| GHWJ | Gray's Hrb. | WA | mc | < | < | 11t | < | no | no |
| SLBB | Sabine Lake | TX | cv | < | < | 13t | < | no | no |
| PBSI | Penobscott Bay | ME | me | < | < | 13t | < | yes | no |
| APCP | Apalachicola Bay | FL | cv | < | < | 15 | < | no | no |
| PBPH | Pensacola Bay | FL | cv | - | - | 16 | 17t | - | - |
| LIHU | Long Is. Snd. | NY | me | < | < | 17t | < | no | no |
| CBHP | Ches. Bay | MD | cv | < | < | 17t | < | no | no |
| MSSP | Merricon. Snd. | ME | me | - | - | 20 | < | - | - |

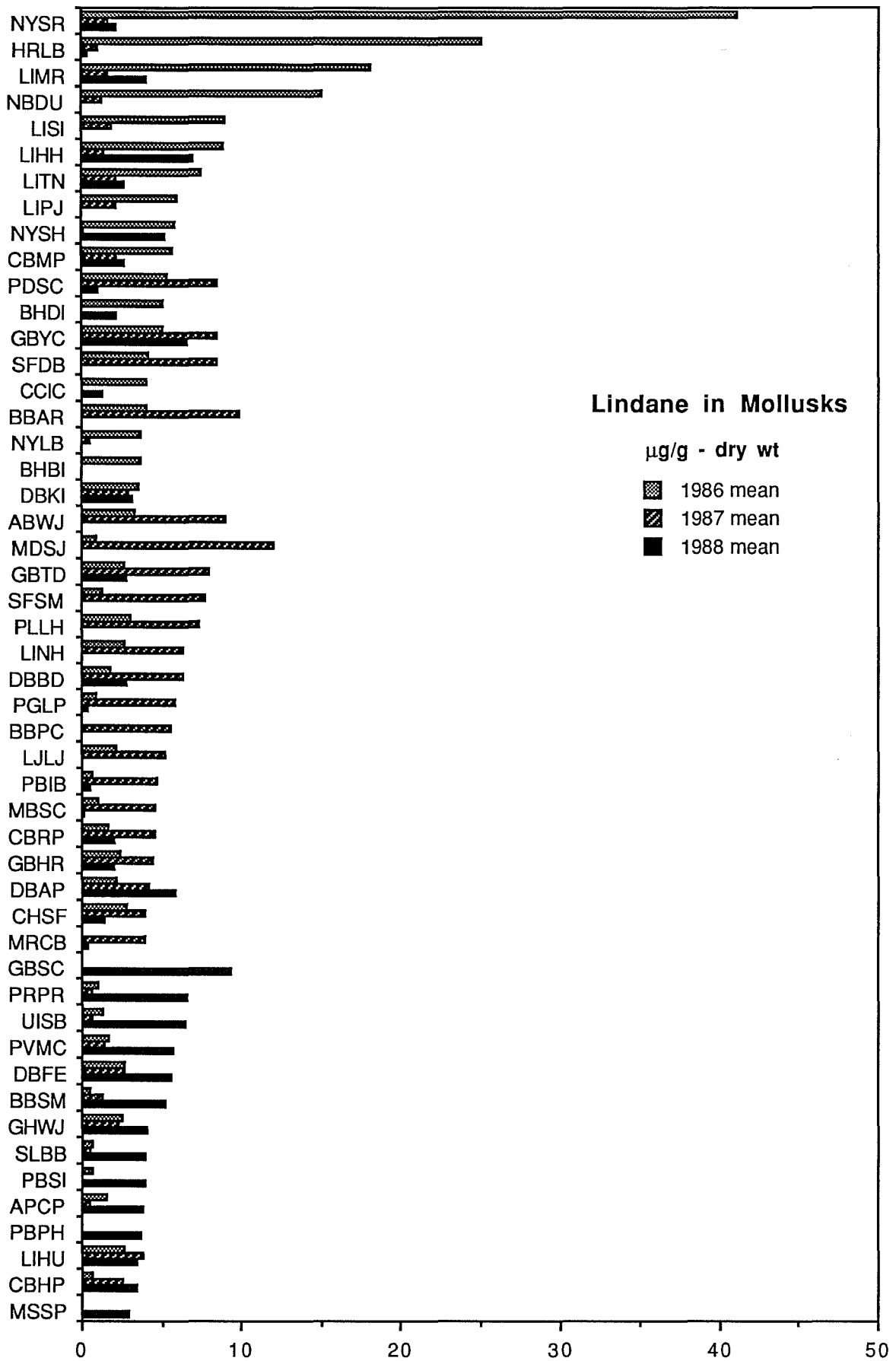

Lindane in Mollusks
µg/g - dry wt
1986 mean
1987 mean
1988 mean
NYSR
HRLB
LIMR
NBDU
LISI
LIHH
LITN
LIPJ
NYSH
CBMP
PDSC
BHDI
GBYC
SFDB
CCIC
BBAR
NYLB
BHBI
DBKI
ABWJ
MDSJ
GBTD
SFSM
PLLH
LINH
DBBD
PGLP
BBPC
LJLJ
PBIB
MBSC
CBRP
GBHR
DBAP
CHSF
MRCB
GBSC
PRPR
UISB
PVMC
DBFE
BBSM
GHWJ
SLBB
PBSI
APCP
PBPH
LIHU
CBHP
MSSP
0
10
20
30
40
50

Figure C.6. Sites ranking among the highest twenty in 1986, 1987, 1988 and overall for concentrations in mollusks of **Low molecular weight polyaromatic hydrocarbons**.

| | | | | RANKING | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Code | Location | State | Sp. | 1986 | 1987 | 1988 | Overall | Signif. Diff. | Trend |
| SAWB | St. Andrew Bay | FL | cv | 1 | 17t | < | 3 | no | no |
| EBFR | Elliott Bay | WA | me | 2 | 13t | 1 | 1 | yes | no |
| HRUB | Hud./Rar. Est. | NY | me | 3 | 2 | < | 4 | yes | d |
| CBRP | Coos Bay | OR | me | 4 | < | < | 9 | yes | no |
| BHDB | Boston Hrb. | MA | me | 5 | 8 | 6 | 6 | no | no |
| LITN | Long Is. Snd. | NY | me | 6 | 10 | 15t | 8 | no | no |
| SGSG | Pt. St. George | OR | mc | 7 | < | < | 16 | yes | d |
| BHDI | Boston Hrb. | MA | me | 8t | 4 | 3 | 5 | yes | no |
| CBCH | Coos Bay | OR | mc | 8t | < | < | 13t | yes | no |
| BHHB | Boston Hrb. | MA | me | 10t | < | < | 15 | yes | no |
| PLLH | Pt. Loma | CA | mc | 10t | - | < | < | yes | no |
| SIWP | Sinclair Inlet | WA | me | 10t | < | < | 19 | yes | no |
| SCFP | Santa Cruz Is. | CA | mc | 13t | < | < | < | yes | no |
| SSSS | San Simeon Pt. | CA | mc | 13t | < | < | < | yes | d |
| SCBR | S. Catalina Is. | CA | mc | 15 | < | < | < | no | no |
| BPBP | Barber's Pt. | HI | os | 16 | < | < | < | no | no |
| HRJB | Hud./Rar. Est | NY | me | 17 | 3 | 4 | 7 | no | no |
| NYSH | N.Y. Bight | NJ | me | 18 | < | < | < | yes | no |
| NYLB | N.Y. Bight | NJ | me | 19t | 15 | < | < | yes | d |
| CFBI | Cape Fear | NC | cv | 19t | < | < | < | no | no |
| CHSF | Charleston Hrb. | SC | cv | 19t | < | < | < | no | no |
| SDHI | San Diego Bay | CA | me | < | 1 | < | 10 | yes | no |
| MSBB | Miss. Snd. | MS | cv | < | 5t | < | 18 | no | no |
| HHKL | Honolulu Hrb. | HI | os | < | 5t | < | < | yes | no |
| SFEM | San Fran. Bay | CA | me | - | 7 | 13 | 11t | - | - |
| BBMB | Barataria Bay | LA | cv | < | 9 | < | < | no | no |
| CBSR | Choctawhat. Bay | FL | cv | < | 11 | < | < | yes | no |
| BHBI | Boston Hrb. | MA | me | < | 12 | 5 | 13t | no | no |
| NYSR | N.Y. Bight | NJ | me | < | 13t | < | < | no | no |
| CBTP | Comm. Bay | WA | me | < | 16 | 9t | < | no | no |
| BBPC | Biscayne Bay | FL | cv | - | 17t | - | < | no | no |
| BBAR | Buzzards Bay | MA | me | < | 19 | 17 | < | yes | i |
| RSJC | Roanoke Snd. | VA | cv | < | 20 | < | < | no | no |
| PCMP | Panama City | FL | cv | - | - | 2 | 2 | no | no |
| NMML | North Miami | FL | cv | - | - | 7t | 11t | no | no |
| APDB | Apalachicola Bay | FL | cv | < | < | 7t | < | no | no |
| CBCI | Chincotgue. Bay | VA | cv | < | < | 9t | < | no | no |
| LICR | Long Is. Snd. | CT | me | < | < | 9t | < | no | no |
| BBSM | Bellingham Bay | WA | me | < | < | 9t | < | yes | i |
| DBAP | Delaware Bay | DE | cv | < | < | 14 | < | no | no |
| IRSR | Indian River | FL | cv | - | - | 15t | 17 | - | - |
| UISB | Unakwit Inlet | AK | me | < | < | 18 | < | yes | i |
| LINH | Long Is. Snd. | CT | me | < | < | 19 | < | yes | i |
| SSBI | Sth. Puget Snd. | WA | me | < | < | 20 | < | yes | no |
| AIAC | Absecon Inlet | NJ | me | - | - | < | 20 | - | - |

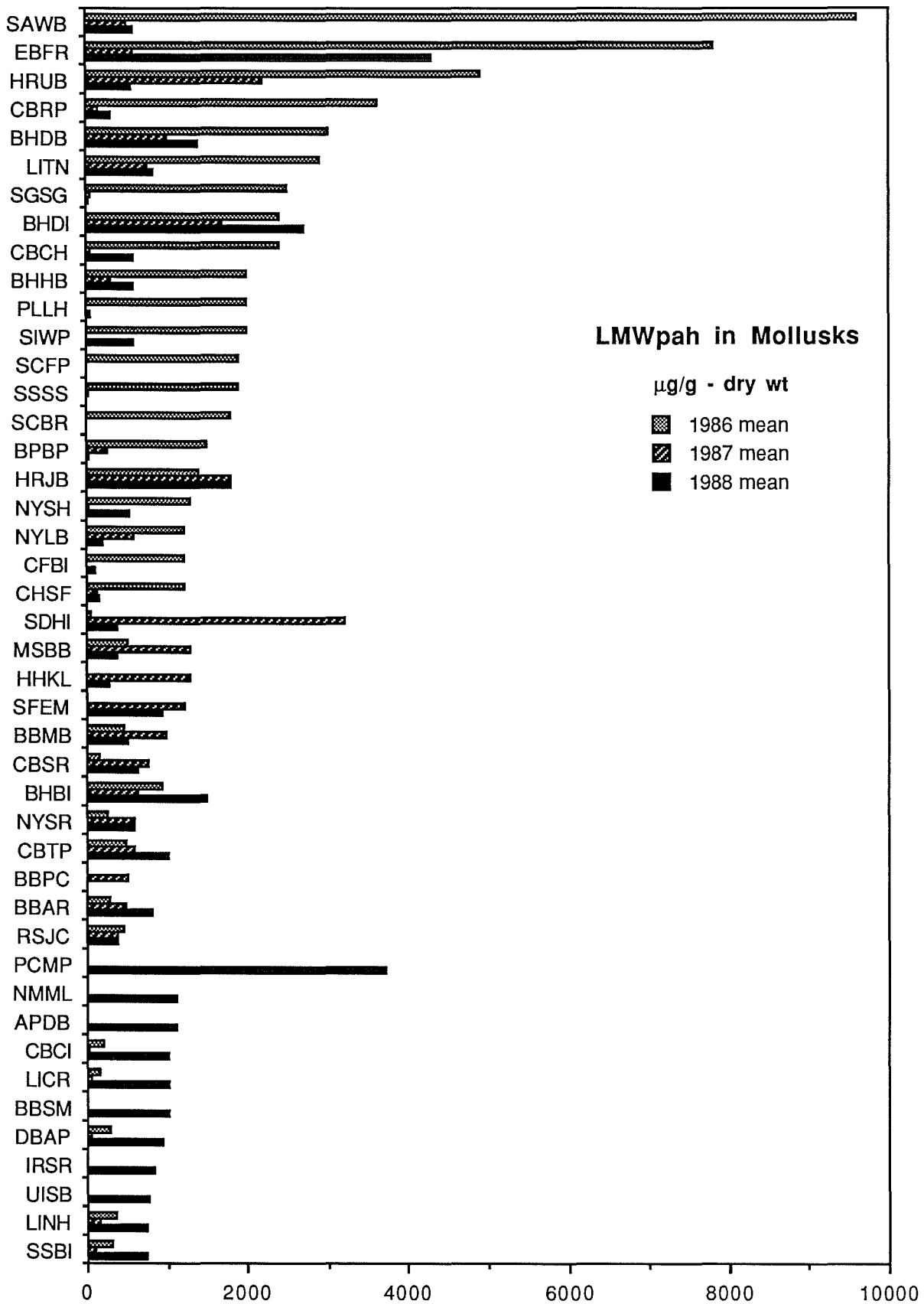

LMWpah in Mollusks
µg/g - dry wt
1986 mean
1987 mean
1988 mean
SAWB
EBFR
HRUB
CBRP
BHDB
LITN
SGSG
BHDI
CBCH
BHHB
PLLH
SIWP
SCFP
SSSS
SCBR
BPBP
HRJB
NYSH
NYLB
CFBI
CHSF
SDHI
MSBB
HHKL
SFEM
BBMB
CBSR
BHBI
NYSR
CBTP
BBPC
BBAR
RSJC
PCMP
NMML
APDB
CBCI
LICR
BBSM
DBAP
IRSR
UISB
LINH
SSBI
0
2000
4000
6000
8000
10000

Figure C.7. Sites ranking among the highest twenty in 1986, 1987, 1988 and overall for concentrations in mollusks of **High molecular weight polyaromatic hydrocarbons**.

| | | | | RANKING | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Code | Location | State | Sp. | 1986 | 1987 | 1988 | Overall | Signif. Diff. | Trend |
| HRUB | Hud./Rar. Est. | NY | me | 1t | 1 | 2 | 1t | yes | d |
| EBFR | Elliott Bay | WA | me | 1t | 2 | 1 | 1t | yes | no |
| BPBP | Barber's Pt. | HI | os | 3 | < | < | 10t | yes | no |
| SAWB | St. Andrew Bay | FL | cv | 4 | 11t | < | 10t | yes | d |
| BHHB | Boston Hrb. | MA | me | 5 | < | < | < | no | no |
| LITN | Long Is. Snd. | NY | me | 6 | 4 | 10t | 4 | no | no |
| BHDB | Boston Hrb. | MA | me | 7 | 13 | < | 10t | no | no |
| LIHU | Long Is. Snd. | NY | me | 8 | < | < | < | no | no |
| HRLB | Hud./Rar. Est. | NY | me | 9 | 3 | 4t | 5 | no | no |
| BHDI | Boston Hrb. | MA | me | 10t | 15t | 12 | 15 | no | no |
| SPFP | San Pedro Hrb. | CA | me | 10t | 6 | 19t | 10t | no | no |
| SSBI | Sth. Puget Snd. | WA | me | 10t | 15t | < | 17t | no | no |
| CBTP | Comm. Bay | WA | me | 10t | 17t | 17 | 16 | no | no |
| HRJB | Hud./Rar. Est | NY | me | 14 | 8t | 8t | 9 | no | no |
| SDHI | San Diego Bay | CA | me | 15 | 8t | 3 | 7 | no | no |
| BBSM | Bellingham Bay | WA | me | 16 | < | 13t | < | no | no |
| CHSF | Charleston Hrb. | SC | cv | 17 | < | < | < | no | no |
| DBKI | Delaware Bay | DE | cv | 18 | < | < | < | no | no |
| LIHH | Long Is. Snd. | NY | me | 19t | 11t | < | < | no | no |
| NYSH | N.Y. Bight | NJ | me | 19t | 19t | 13t | 17t | no | no |
| MDSJ | Marina Del Rey | CA | me | 19t | < | < | < | no | no |
| SFEM | San Fran. Bay | CA | me | - | 5 | 8t | 3 | - | - |
| MSBB | Miss. Snd. | MS | cv | < | 7 | < | 20t | yes | no |
| HHKL | Honolulu Hrb. | HI | os | < | 8t | 6 | 14 | no | no |
| LIMR | Long Is. Snd. | NY | me | < | 14 | < | < | yes | no |
| NYSR | N.Y. Bight | NJ | me | < | 17t | 15t | 20t | no | no |
| CBSR | Choctawhat. Bay | FL | cv | < | 19t | 10t | < | yes | i |
| GBSC | Galveston Bay | TX | cv | - | - | 4t | 6 | - | - |
| LMPI | Laguna Madre | TX | cv | - | - | 7 | 8 | - | - |
| PCMP | Panama City | FL | cv | - | - | 16 | 17t | - | - |
| LINH | Long Is. Snd. | CT | me | < | < | 18 | < | yes | i |
| ABHI | Aransas Bay | TX | cv | - | - | 19t | < | - | - |

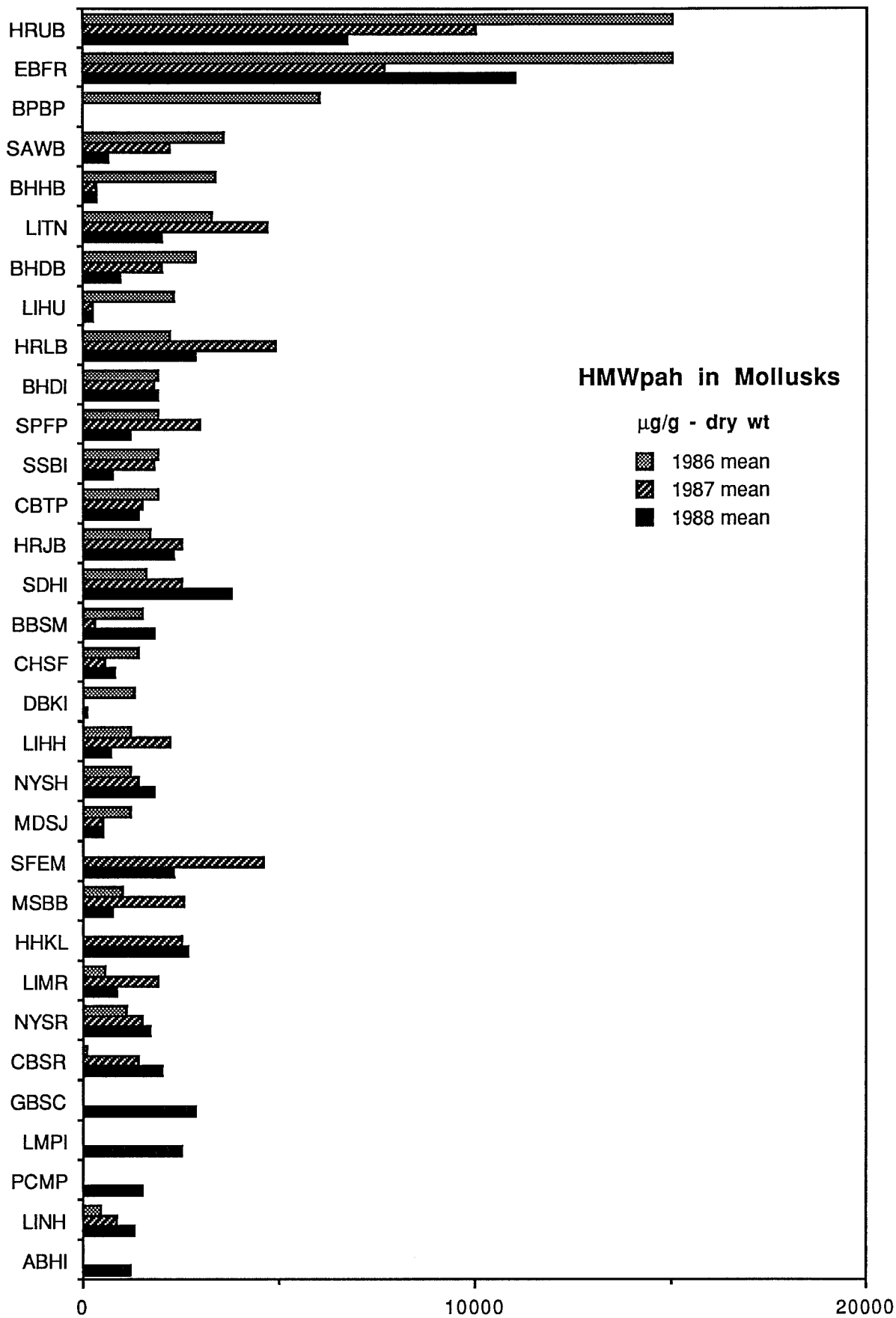

HMWpah in Mollusks
µg/g - dry wt
1986 mean
1987 mean
1988 mean
HRUB
EBFR
BPBP
SAWB
BHHB
LITN
BHDB
LIHU
HRLB
BHDI
SPFP
SSBI
CBTP
HRJB
SDHI
BBSM
CHSF
DBKI
LIHH
NYSH
MDSJ
SFEM
MSBB
HHKL
LIMR
NYSR
CBSR
GBSC
LMPI
PCMP
LINH
ABHI
0
10000
20000

Figure C.8. Sites ranking among the highest twenty in 1986, 1987, 1988 and overall for concentrations in mollusks of **arsenic (As).**

| | | | | RANKING | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Code | Location | State | Sp. | 1986 | 1987 | 1988 | Overall | Signif. Diff. | Trend |
| CFBI | Cape Fear | NC | cv | 1 | 1 | 3 | 1 | no | no |
| CBBI | Charlotte Hrb. | FL | cv | 2 | 3 | - | 2 | - | - |
| CHFJ | Charleston Hrb. | SC | cv | 3 | 5 | 8 | 5 | no | no |
| CHSF | Charleston Hrb. | SC | cv | 4 | 6t | 6t | 6t | no | no |
| RBHC | Rookery Bay | FL | cv | 5 | 4 | 6t | 6t | no | no |
| SSSI | Sapelo Snd. | GA | cv | 6 | 6t | 1t | 4 | yes | no |
| SRTI | Savan. R. Est. | GA | cv | 7 | 10t | 5 | 8 | yes | no |
| NBNB | Naples Bay | FL | cv | 8t | 8 | 5 | 9 | no | no |
| LMSB | L. Laguna M. | TX | cv | 8t | < | < | < | no | no |
| PLLH | Pt. Loma | CA | mc | 8t | 10t | 10t | 10 | no | no |
| HHKL | Honolulu Hrb. | HI | os | 8t | 15t | < | < | no | no |
| TBMK | Tampa Bay | FL | cv | 12t | < | < | < | yes | d* |
| PCPC | Pt. Conception | CA | mc | 12t | < | 13t | 15t | yes | no |
| MBSC | Monterey Bay | CA | mc | 12t | < | < | < | yes | no |
| SCFP | Santa Cruz Is. | CA | mc | 15 | 2 | 1t | 3 | no | no |
| MSBB | Miss. Snd. | MS | cv | 16t | < | < | < | no | no |
| PALH | Pt. Arena | CA | mc | 16t | < | < | < | no | no |
| SSSS | San Simeon Pt. | CA | mc | 18 | 13t | 12 | 11t | no | no |
| CBCC | Ches. Bay | VA | cv | 19t | < | < | < | no | no |
| MSPB | Miss. Snd. | MS | cv | 19t | < | < | < | no | no |
| SBSB | Pt. S. Barbara | CA | mc | 19t | 19t | < | < | no | no |
| CKBP | Cedar Key | FL | cv | < | 9 | < | < | yes | no |
| SCBR | S. Catalina Is. | CA | mc | < | 10t | < | 17t | no | no |
| APCP | Apalachicola Bay | FL | cv | < | 13t | < | < | yes | no |
| BPBP | Barber's Pt. | HI | os | < | 15t | < | < | no | no |
| BBPC | Biscayne Bay | FL | cv | < | 15t | - | < | - | - |
| LJLJ | La Jolla | CA | mc | < | 18 | 13t | 17t | yes | i* |
| PVRP | Palos Verdes | CA | mc | < | 19t | 9 | 11t | no | no |
| MRCB | Matanzas R. | FL | cv | < | < | 10t | 17t | yes | no |
| PGLP | Pacific Grove | CA | mc | < | < | 13t | < | yes | no |
| TBHB | Tampa Bay | FL | cv | < | < | 13t | < | no | no |
| PCMP | Panama City | FL | cv | - | - | 18t | 11t | - | - |
| LMPI | Laguna Madre | TX | cv | - | - | 18t | 11t | - | - |
| SANM | San Miguel Is. | CA | mc | - | - | < | 15t | - | - |

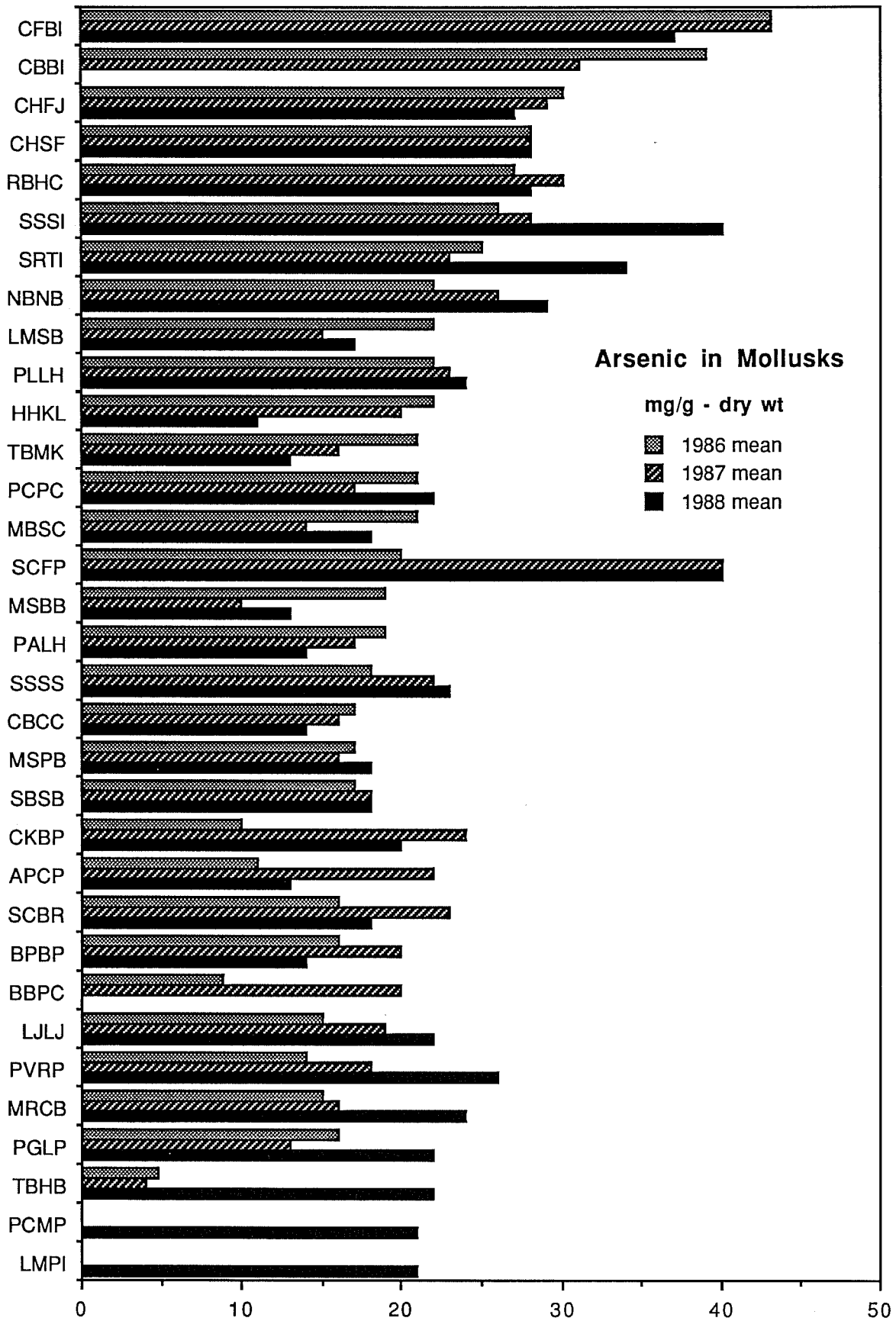

Arsenic in Mollusks
mg/g - dry wt
1986 mean
1987 mean
1988 mean
CFBI
CBBI
CHFJ
CHSF
RBHC
SSSI
SRTI
NBNB
LMSB
PLLH
HHKL
TBMK
PCPC
MBSC
SCFP
MSBB
PALH
SSSS
CBCC
MSPB
SBSB
CKBP
APCP
SCBR
BPBP
BBPC
LJLJ
PVRP
MRCB
PGLP
TBHB
PCMP
LMPI
0
10
20
30
40
50

Figure C.9. Sites ranking among the highest twenty in 1986, 1987, 1988 and overall for concentrations in mollusks of **cadmium (Cd).**

| | | | | RANKING | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Code | Location | State | Sp. | 1986 | 1987 | 1988 | Overall | Signif. Diff. | Trend |
| DBAP | Delaware Bay | DE | cv | 1t | 2t | 6 | 2t | yes | d* |
| CBCR | Copano Bay | TX | cv | 1t | 6 | 3 | 2t | no | no |
| DBKI | Delaware Bay | DE | cv | 2t | < | < | 14 | no | no |
| CBMP | Ches. Bay | MD | cv | 2t | 14t | 5 | 7 | yes | no |
| HRUB | Hud./Rar. Est. | NY | me | 5 | 1 | 8 | 2t | yes | no |
| CCNB | Corpus Christi | TX | cv | 6 | 2t | < | 6 | yes | no |
| MSPC | Miss. Snd. | MS | cv | 7 | 17 | < | 12 | no | no |
| DBBD | Delaware Bay | DE | cv | 8 | 19t | < | 19t | yes | d* |
| PDSC | Pt. Delgada | CA | mc | 9 | 10t | 11t | 10 | no | no |
| VBSP | Vermillion Bay | LA | cv | 10 | 5 | 17t | 9 | no | no |
| MBEM | Matagorda Bay | TX | cv | 11 | 16 | < | 19t | yes | no |
| SFDB | San Fran. Bay | CA | me | 12 | 14t | < | 15t | no | no |
| ESSP | Espiritu Santo | TX | cv | 13 | < | - | < | - | - |
| JFCF | S. Juan de Fuca | WA | mc | 14 | 8t | 4 | 8 | no | no |
| SDHI | San Diego Bay | CA | me | 15 | < | 11t | 17 | no | no |
| BSSI | Breton Snd. | LA | cv | 16t | 4 | 2 | 5 | yes | no |
| ABLR | Aransas Bay | TX | cv | 16t | < | < | < | no | no |
| DBFE | Delaware Bay | DE | cv | 18 | < | < | < | yes | d |
| LIHR | Long Is. Snd. | CT | me | 19t | < | < | < | yes | d |
| CBHP | Ches. Bay | MD | cv | 19t | < | < | < | no | no |
| SFSM | San Fran. Bay | CA | me | 19t | 13 | 10 | 15t | no | no |
| BBBE | Bodega Bay | CA | mc | < | 7 | < | < | no | no |
| PALH | Pt. Arena | CA | mc | < | 9 | 7 | 13 | no | no |
| SLBB | Sabine Lake | TX | cv | < | 10t | < | < | no | no |
| HRLB | Hud./Rar. Est. | NY | me | < | 12 | < | < | no | no |
| ABOB | Atchafalaya Bay | LA | cv | < | 18 | 9 | < | no | no |
| NYSH | N.Y. Bight | NJ | me | < | 19t | < | < | yes | no |
| MRPL | Miss. River | LA | cv | - | - | 1 | 1 | - | - |
| CCBH | Corpus Christi | TX | cv | - | - | 11t | 11 | - | - |
| SCBR | S. Catalina Is. | CA | mc | < | < | 14 | < | no | no |
| CBSR | Choctawhat. Bay | FL | cv | < | < | 15t | < | yes | no |
| SFEM | San Fran. Bay | CA | me | - | < | 15t | < | - | - |
| MBTP | Matagorda Bay | TX | cv | < | < | 17t | < | no | no |
| MBCB | Matagorda Bay | TX | cv | - | - | 19t | 18t | - | - |
| FIEL | Farallon Is. | CA | mc | - | - | 19t | 18t | - | - |

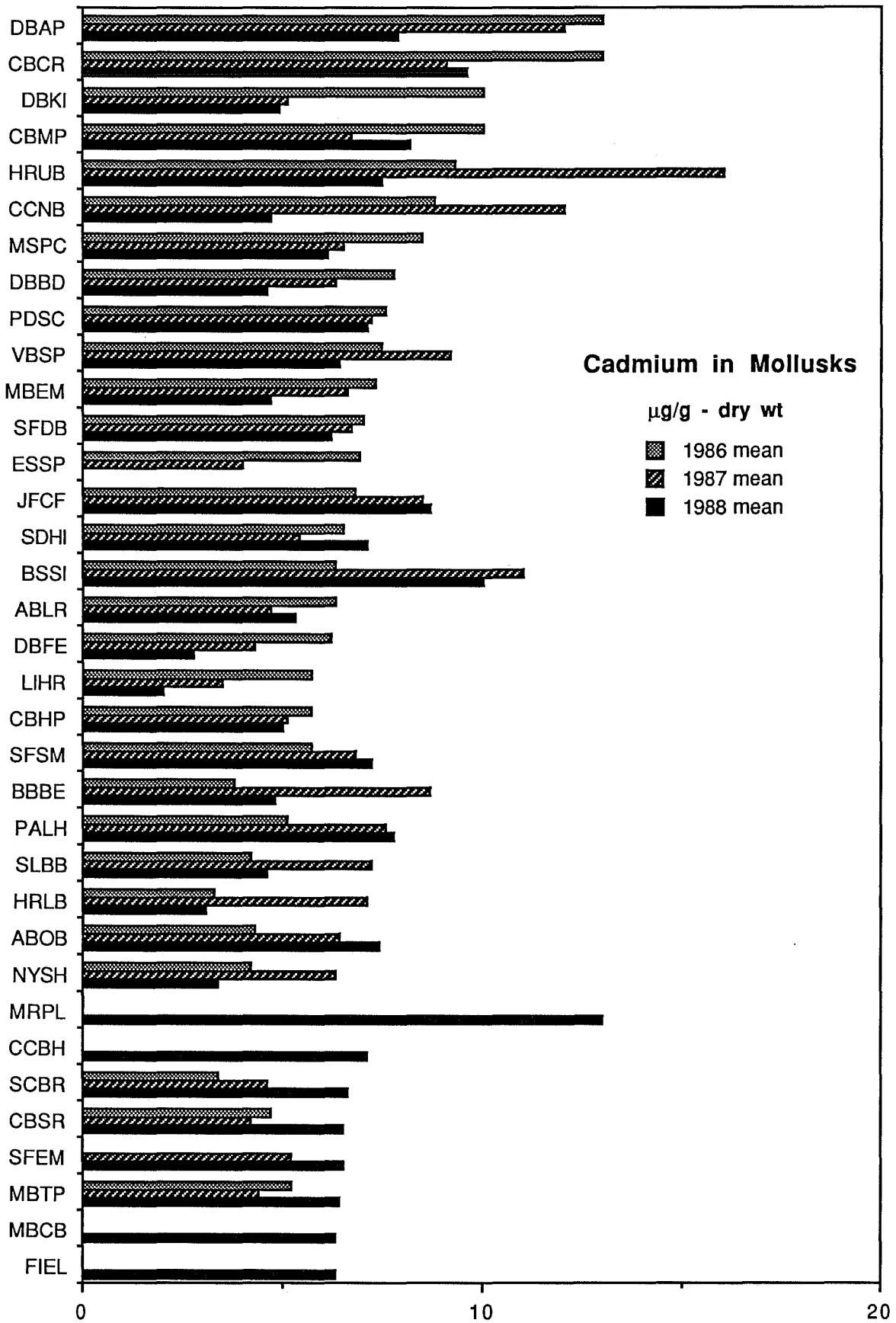

Cadmium in Mollusks
µg/g - dry wt
1986 mean
1987 mean
1988 mean
DBAP
CBCR
DBKI
CBMP
HRUB
CCNB
MSPC
DBBD
PDSC
VBSP
MBEM
SFDB
ESSP
JFCF
SDHI
BSSI
ABLR
DBFE
LIHR
CBHP
SFSM
BBBE
PALH
SLBB
HRLB
ABOB
NYSH
MRPL
CCBH
SCBR
CBSR
SFEM
MBTP
MBCB
FIEL
0
10
20

Figure C.10. Sites ranking among the highest twenty in 1986, 1987, 1988 and overall for concentrations in mollusks of **chromium (Cr).**

| | | | | RANKING | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Code | Location | State | Sp. | 1986 | 1987 | 1988 | Overall | Signif. Diff. | Trend |
| HRUB | Hud./Rar. Est. | NY | me | 1 | 1 | 1 | 1 | yes | no |
| LIHR | Long Is. Snd. | CT | me | 2 | < | < | 7 | no | no |
| SAPP | San Antonio Bay | TX | cv | 3 | < | - | 11t | - | - |
| BBSM | Bellingham Bay | WA | me | 4 | 2t | 12t | 5 | yes | d* |
| HMBJ | Humboldt Bay | CA | mc | 5 | 6t | 9 | 6 | no | no |
| MDSJ | Marina Del Rey | CA | me | 6 | 19t | < | 14t | yes | d |
| SGSG | Pt. St. George | OR | mc | 7 | < | 14 | 9t | no | no |
| TBSR | Tomales Bay | CA | me | 8 | < | < | < | no | no |
| LICR | Long Is. Snd. | CT | me | 9 | < | < | 16t | yes | no |
| BHHB | Boston Hrb. | MA | me | 10t | 19t | < | < | no | no |
| SSSS | San Simeon Pt. | CA | mc | 10t | 4t | < | 14t | no | no |
| WIPP | Whidbey Is. | WA | me | 10t | 13t | 6t | 8 | no | no |
| PVRP | Palos Verdes | CA | mc | 13 | < | < | < | no | no |
| BHDB | Boston Hrb. | MA | me | 14t | 6t | < | 19t | no | no |
| PDPD | Pt. Dume | CA | mc | 14t | < | < | < | yes | d |
| YBOP | Yaquina Bay | OR | me | 14t | < | < | < | yes | no |
| PVMC | Port Valdez | AK | me | 14t | < | 5 | 9t | no | no |
| BHDI | Boston Hrb. | MA | me | 18t | < | < | < | no | no |
| SDHI | San Diego Bay | CA | me | 18t | < | < | < | yes | no |
| SPFP | San Pedro Hrb. | CA | me | 18t | < | < | < | no | no |
| PALH | Pt. Arena | CA | mc | 18t | < | < | < | yes | d* |
| PDSC | Pt. Delgada | CA | mc | 18t | < | < | < | no | no |
| PRPR | Pt. Roberts | WA | me | 18t | < | 18t | < | no | no |
| NYSH | N.Y. Bight | NJ | me | < | 2t | 3 | 4 | yes | i |
| UISB | Unakwit Inlet | AK | me | < | 4t | < | 19t | no | no |
| NYSR | N.Y. Bight | NJ | me | < | 8 | 11 | 18t | no | no |
| PBIB | Pensacola Bay | FL | cv | < | 9t | < | < | yes | no |
| JFCF | S. Juan de Fuca | WA | mc | < | 9t | < | 19t | no | no |
| SFSM | San Fran. Bay | CA | me | < | 9t | < | < | yes | no |
| SFEM | San Fran. Bay | CA | me | - | 9t | 4 | 16t | - | - |
| NYLB | N.Y. Bight | NJ | me | < | 13t | 8 | 11t | yes | i* |
| HRLB | Hud./Rar. Est. | NY | me | < | 13t | 6t | 11t | yes | i |
| BHBI | Boston Hrb. | MA | me | < | 13t | < | < | yes | no |
| HHKL | Honolulu Hrb. | HI | os | < | 13t | 10t | 18t | no | no |
| RBHC | Rookery Bay | FL | cv | < | 18 | < | < | no | no |
| SBSB | Pt. S. Barbara | CA | mc | < | 19t | < | < | yes | no |
| CRSJ | Columbia R. | OR | me | < | 19t | 18t | < | no | no |
| SFDB | San Fran. Bay | CA | me | < | 19t | < | < | no | no |
| KAUI | Kauai | HI | os | - | - | 2 | 2 | - | - |
| SHFP | Salem Harbor | MA | me | - | - | 4 | 3 | - | - |
| GHWJ | Gray's Hrb. | WA | mc | < | < | 12t | < | no | no |
| CBCH | Coos Bay | OR | mc | < | < | 15 | < | yes | no |
| YHYH | Yaquina Head | OR | mc | < | < | 16t | < | yes | no |
| EBFR | Elliott Bay | WA | me | < | < | 16t | < | yes | no |
| HRJB | Hud./Rar. Est | NY | me | < | < | 18t | < | no | no |

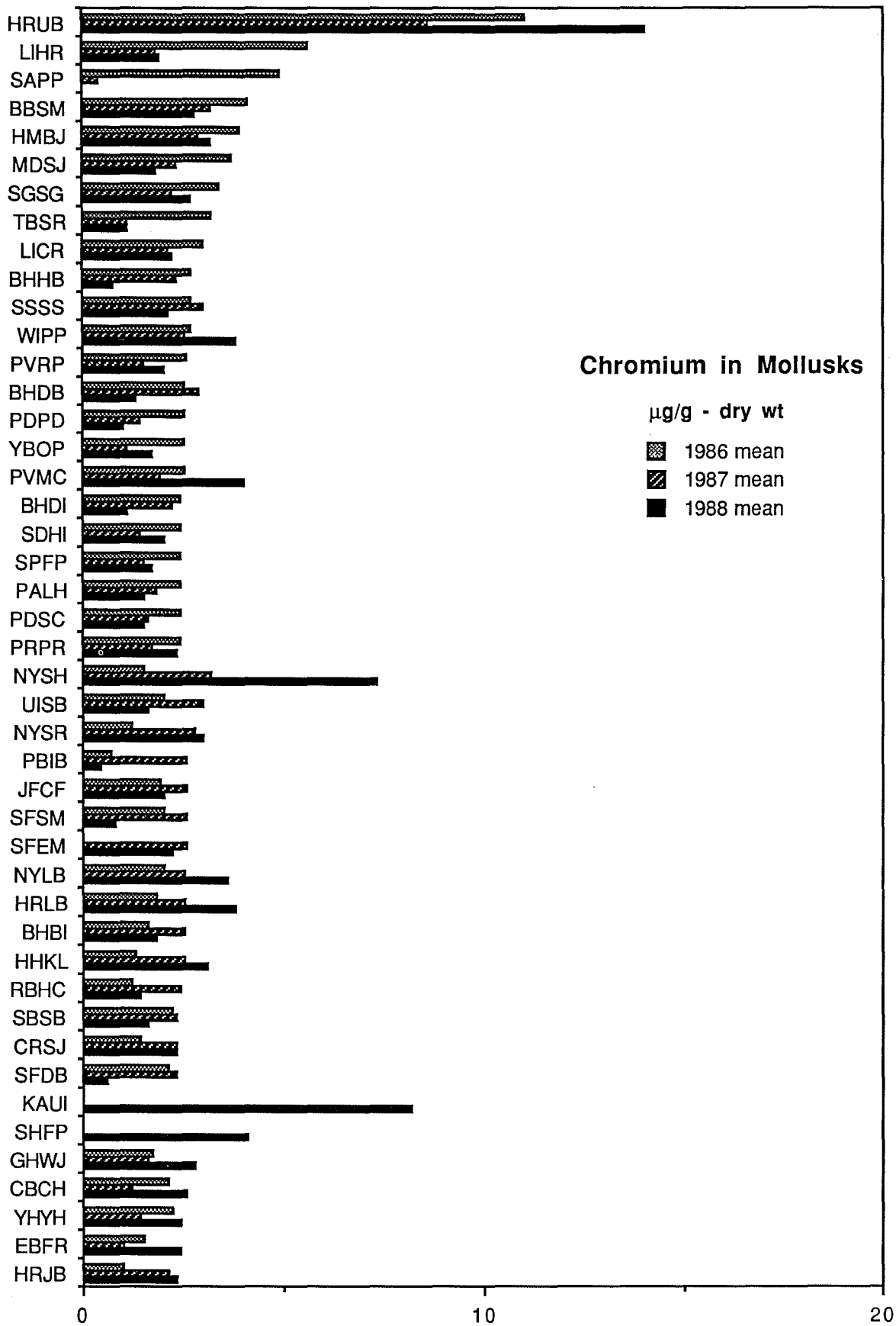

Chromium in Mollusks
µg/g - dry wt
1986 mean
1987 mean
1988 mean
HRUB
LIHR
SAPP
BBSM
HMBJ
MDSJ
SGSG
TBSR
LICR
BHHB
SSSS
WIPP
PVRP
BHDB
PDPD
YBOP
PVMC
BHDI
SDHI
SPFP
PALH
PDSC
PRPR
NYSH
UISB
NYSR
PBIB
JFCF
SFSM
SFEM
NYLB
HRLB
BHBI
HHKL
RBHC
SBSB
CRSJ
SFDB
KAUI
SHFP
GHWJ
CBCH
YHYH
EBFR
HRJB
0
10
20

Figure C.11. Sites ranking among the highest twenty in 1986, 1987, 1988 and overall for concentrations in mollusks of **copper (Cu).**

| | | | | RANKING | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Code | Location | State | Sp. | 1986 | 1987 | 1988 | Overall | Signif. Diff. | Trend |
| BPBP | Barber's Pt. | HI | os | 1 | 2 | 3 | 2 | no | no |
| DBAP | Delaware Bay | DE | cv | 2 | 5 | 5t | 5 | yes | no |
| SAWB | St. Andrew Bay | FL | cv | 3 | 8 | < | 14t | yes | d |
| DBKI | Delaware Bay | DE | cv | 4 | 13t | < | 14t | no | no |
| VBSP | Vermillion Bay | LA | cv | 5 | 3 | 15t | 6t | yes | no |
| DBBD | Delaware Bay | DE | cv | 6t | 10t | < | 14t | no | no |
| CBMP | Ches. Bay | MD | cv | 6t | 12 | 16t | 17t | yes | no |
| NBNB | Naples Bay | FL | cv | 8 | 7 | 8t | 8 | no | no |
| LBMP | Lake Borgne | LA | cv | 9 | < | 16t | < | yes | no |
| CBCR | Copano Bay | TX | cv | 10 | < | 7 | 17t | yes | no |
| SAMP | San Antonio Bay | TX | cv | 11 | < | - | < | - | - |
| HHKL | Honolulu Hrb. | HI | os | 12 | 1 | 1 | 1 | no | no |
| DBFE | Delaware Bay | DE | cv | 13 | < | < | < | no | no |
| CBHP | Ches. Bay | MD | cv | 14 | < | < | < | no | no |
| QIUB | Quinby Inlet | VA | cv | 15 | < | < | < | no | no |
| MBEM | Matagorda Bay | TX | cv | 16 | < | < | < | no | no |
| CLSJ | Calcasieu Lake | LA | cv | 17 | 13t | < | < | no | no |
| JHJH | J. Hrb. Bayou | LA | cv | 18t | 13t | < | < | no | no |
| ESSP | Espiritu Santo | TX | cv | 18t | < | - | < | - | - |
| ABLR | Aransas Bay | TX | cv | 18t | < | < | < | no | no |
| CCNB | Corpus Christi | TX | cv | 18t | 17t | < | < | no | no |
| MSBB | Miss. Snd. | MS | cv | < | 19t | < | < | no | no |
| SLBB | Sabine Lake | TX | cv | < | 4 | 14 | 11t | yes | no |
| GBYC | Galveston Bay | TX | cv | < | 6 | < | < | no | no |
| ABOB | Atchafalaya Bay | LA | cv | < | 9 | 15t | < | no | no |
| BSSI | Breton Snd. | LA | cv | < | 10t | < | < | no | no |
| RBHC | Rookery Bay | FL | cv | < | 16 | < | < | yes | no |
| MSPC | Miss. Snd. | MS | cv | < | 17t | < | < | no | no |
| CBBI | Charlotte Hrb. | FL | cv | < | 19t | - | < | - | - |
| NMML | North Miami | FL | cv | - | - | 2 | 3 | - | - |
| KAUI | Kauai | HI | os | - | - | 4 | 4 | - | - |
| CLLC | Calcasieu Lake | LA | cv | - | - | 5t | 6t | - | - |
| PCMP | Panama City | FL | cv | - | - | 8t | 9t | - | - |
| LBNO | Lake Borgne | LA | cv | - | - | 8t | 9t | - | - |
| BBSD | Barataria Bay | LA | cv | < | < | 11 | < | yes | i |
| ABHI | Aransas Bay | TX | cv | - | - | 12t | 11t | - | - |
| LMPI | Laguna Madre | TX | cv | - | - | 12t | 11t | - | - |
| CCBH | Corpus Christi | TX | cv | - | - | 15t | 17t | - | - |
| MBTP | Matagorda Bay | TX | cv | < | < | 16t | < | yes | no |
| MRPL | Miss. River | LA | cv | - | - | 16t | 20t | - | - |
| BRFS | Brazos River | TX | cv | - | - | 16t | 20t | - | - |

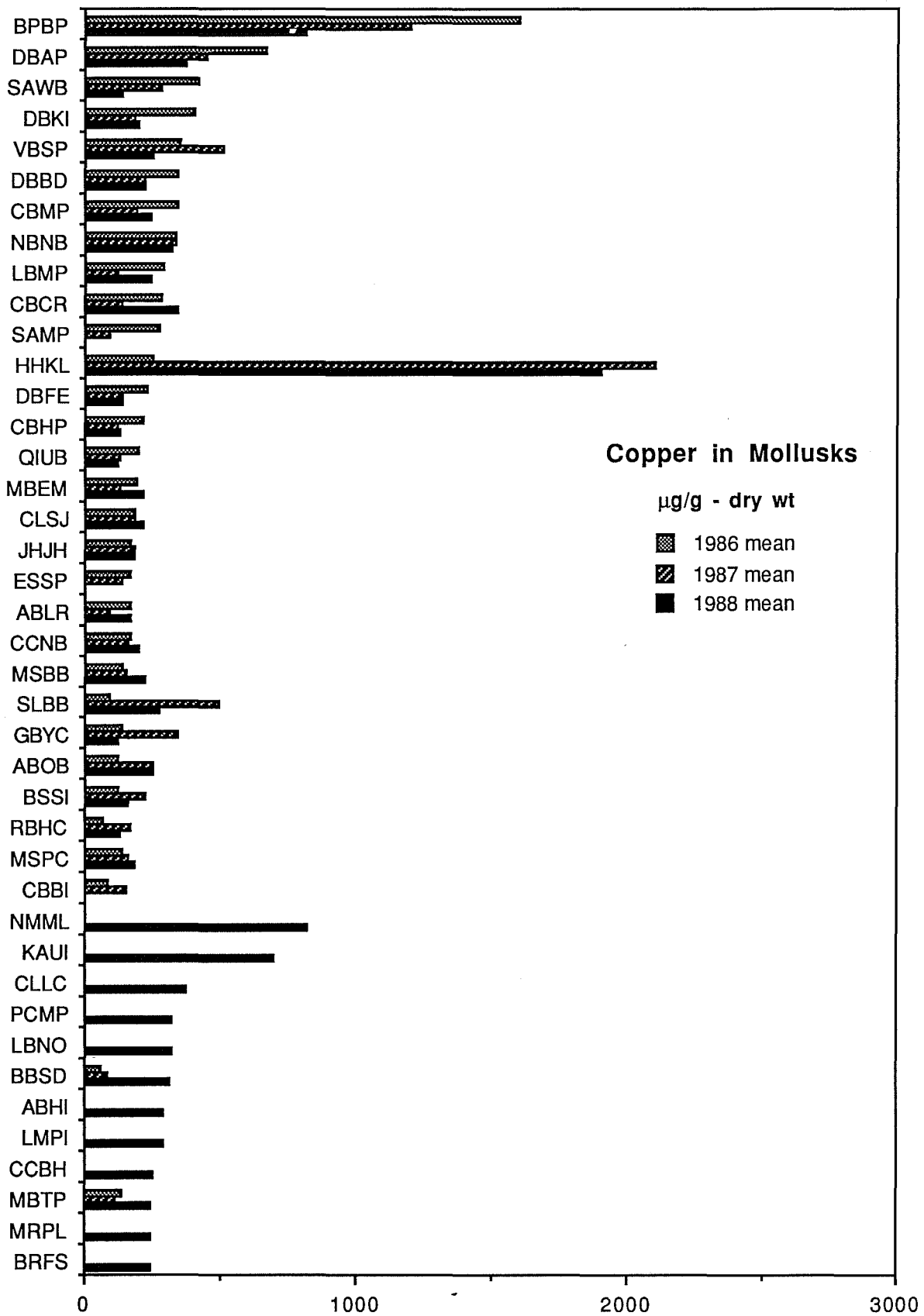

Copper in Mollusks
µg/g - dry wt
1986 mean
1987 mean
1988 mean
BPBP
DBAP
SAWB
DBKI
VBSP
DBBD
CBMP
NBNB
LBMP
CBCR
SAMP
HHKL
DBFE
CBHP
QIUB
MBEM
CLSJ
JHJH
ESSP
ABLR
CCNB
MSBB
SLBB
GBYC
ABOB
BSSI
RBHC
MSPC
CBBI
NMML
KAUI
CLLC
PCMP
LBNO
BBSD
ABHI
LMPI
CCBH
MBTP
MRPL
BRFS
0
1000
2000
3000

Figure C.12. Sites ranking among the highest twenty in 1986, 1987, 1988 and overall for concentrations in mussels of **copper (Cu).**

| | | | | RANKING | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Code | Location | State | Sp. | 1986 | 1987 | 1988 | Overall | Signif. Diff. | Trend |
| LIHR | Long Is. Snd. | CT | me | 1 | 9t | 15t | 5t | yes | d* |
| HRUB | Hud./Rar. Est. | NY | me | 2t | 1 | 1 | 1t | yes | i* |
| LITN | Long Is. Snd. | NY | me | 2t | 5t | 8t | 5t | no | no |
| SDHI | San Diego Bay | CA | me | 2t | 11t | 2 | 3 | no | no |
| LICR | Long Is. Snd. | CT | me | 5 | < | 15t | 12t | yes | no |
| NBDI | Narr. Bay | RI | me | 6t | 2t | 5t | 5t | no | no |
| LIMR | Long Is. Snd. | NY | me | 6t | 5t | 8t | 8t | yes | no |
| BHDB | Boston Hrb. | MA | me | 8t | 2t | 14t | 8t | yes | no |
| NYSH | N.Y. Bight | NJ | me | 8t | 4 | 3 | 4 | yes | i* |
| LIHH | Long Is. Snd. | NY | me | 8t | 5t | 14t | 10t | no | no |
| SPFP | San Pedro Hrb. | CA | me | 8t | 11t | 14t | 12t | no | no |
| BHDI | Boston Hrb. | MA | me | 8t | 11t | < | 12t | no | no |
| EBFR | Elliott Bay | WA | me | 13t | < | 15t | < | no | no |
| LIHU | Long Is. Snd. | NY | me | 13t | < | < | < | no | no |
| LIPJ | Long Is. Snd. | NY | me | 13t | < | < | < | yes | d* |
| BHHB | Boston Hrb. | MA | me | 16t | 5t | < | 12t | no | no |
| NYLB | N.Y. Bight | NJ | me | 16t | 9t | 8t | 12t | yes | no |
| NBDU | Narr. Bay | RI | me | 16t | 11t | - | 12t | - | - |
| PVMC | Port Valdez | AK | me | 16t | 12t | 5t | 12t | no | no |
| MDSJ | Marina Del Rey | CA | me | 16t | < | 8t | < | no | no |
| PLLH | Pt. Loma | CA | mc | 16t | < | 14t | 12t | no | no |
| BBSM | Bellingham Bay | WA | me | 16t | < | 14t | < | no | no |
| LINH | Long Is. Snd. | CT | me | 16t | < | < | < | no | no |
| LISI | Long Is. Snd. | CT | me | 16t | < | < | < | no | no |
| PDPD | Pt. Dume | CA | mc | 16t | < | < | < | yes | d* |
| CBRP | Coos Bay | OR | me | 16t | < | < | < | no | no |
| YHYH | Yaquina Head | OR | mc | 16t | < | < | < | yes | no |
| HRJB | Hud./Rar. Est | NY | me | < | 11t | 8t | 12t | yes | i* |
| HRLB | Hud./Rar. Est. | NY | me | < | 11t | 4 | 10t | yes | i* |
| NYSR | N.Y. Bight | NJ | me | < | 11t | 5t | 12t | yes | i* |
| BHBI | Boston Hrb. | MA | me | < | 12t | 15t | < | no | no |
| BBRH | Buzzards Bay | MA | me | < | 12t | 15t | < | no | no |
| ABWJ | Anaheim Bay | CA | mc | < | 12t | < | < | yes | no |
| SFSM | San Fran. Bay | CA | me | < | 12t | < | < | no | no |
| GHWJ | Gray's Hrb. | WA | mc | < | < | 8t | < | yes | no |
| BBAR | Buzzards Bay | MA | me | < | < | 15t | < | no | no |
| CBCH | Coos Bay | OR | mc | < | < | 15t | < | no | no |
| SHFP | Salem Harbor | MA | me | - | - | 15t | < | - | - |
| AIAC | Absecon Inlet | NJ | me | - | - | 15t | < | - | - |

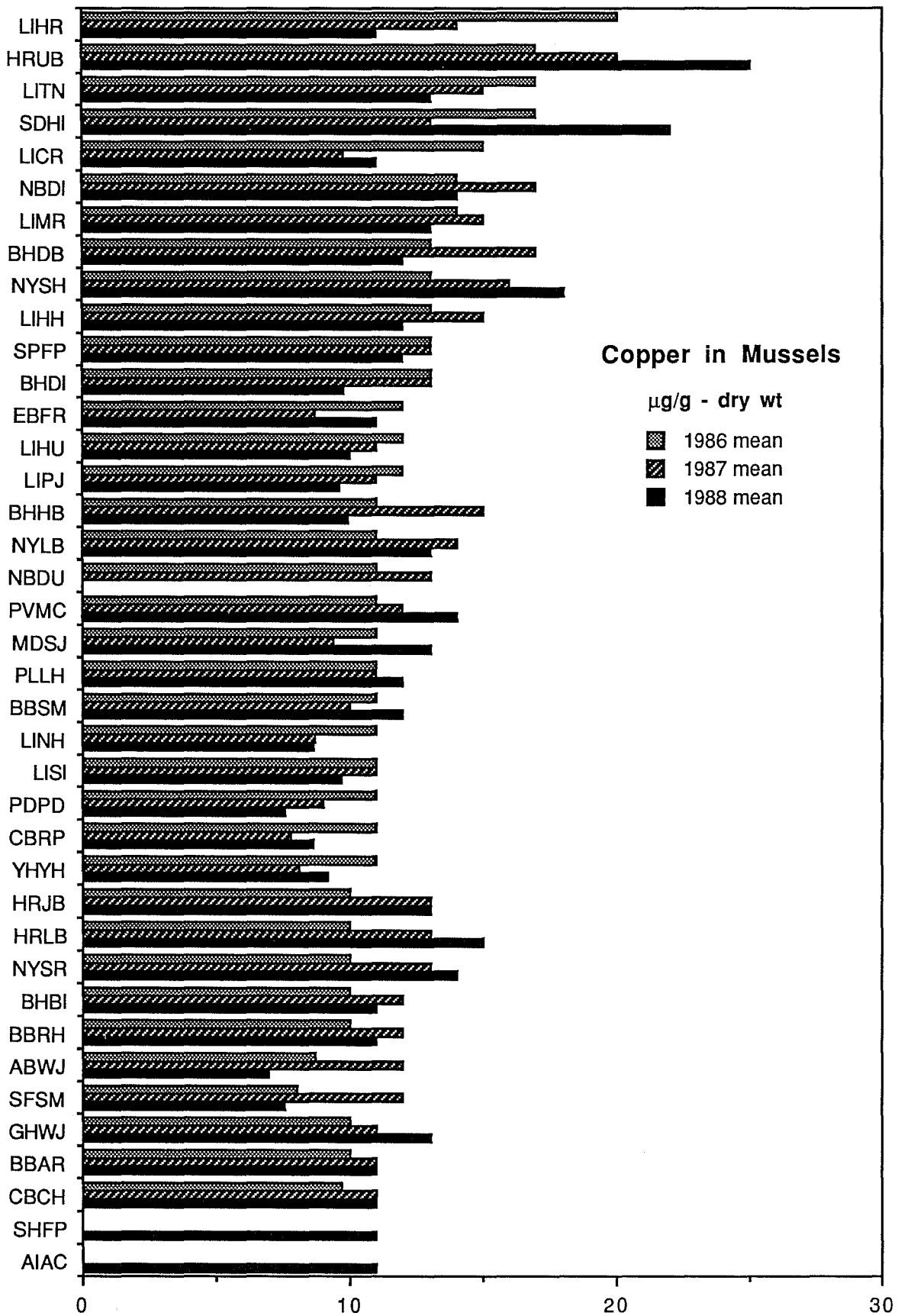

Copper in Mussels
µg/g - dry wt
1986 mean
1987 mean
1988 mean
LIHR
HRUB
LITN
SDHI
LICR
NBDI
LIMR
BHDB
NYSH
LIHH
SPFP
BHDI
EBFR
LIHU
LIPJ
BHHB
NYLB
NBDU
PVMC
MDSJ
PLLH
BBSM
LINH
LISI
PDPD
CBRP
YHYH
HRJB
HRLB
NYSR
BHBI
BBRH
ABWJ
SFSM
GHWJ
BBAR
CBCH
SHFP
AIAC
0
10
20
30

Figure C.13. Sites ranking among the highest twenty in 1986, 1987, 1988 and overall for concentrations in mollusks of **lead (Pb).**

| | | | | RANKING | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Code | Location | State | Sp. | 1986 | 1987 | 1988 | Overall | Signif. Diff. | Trend |
| MDSJ | Marina Del Rey | CA | me | 1 | 1 | 3 | 1 | yes | no |
| HRUB | Hud./Rar. Est. | NY | me | 2t | 2 | 1t | 3 | no | no |
| ABWJ | Anaheim Bay | CA | mc | 2t | 4 | 8 | 5 | no | no |
| BHDB | Boston Hrb. | MA | me | 4 | 3 | 4 | 4 | yes | no |
| BHHB | Boston Hrb. | MA | me | 5 | 5 | 11 | 6 | yes | no |
| BHDI | Boston Hrb. | MA | me | 6 | 8 | 16 | 9 | yes | no |
| LITN | Long Is. Snd. | NY | me | 7 | 6 | 15 | 8 | yes | no |
| NBDI | Narr. Bay | RI | me | 8 | 13 | 13 | 13 | no | no |
| NYSH | N.Y. Bight | NJ | me | 9 | 7 | 5 | 7 | yes | no |
| LJLJ | La Jolla | CA | mc | 10t | 19 | 20 | 17t | no | no |
| PGLP | Pacific Grove | CA | mc | 10t | 15t | 7 | 11 | no | no |
| NBWJ | Newport Bch. | CA | mc | 12 | < | 9 | 14t | yes | no |
| BPBP | Barber's Pt. | HI | os | 13 | < | < | < | no | no |
| LIMR | Long Is. Snd. | NY | me | 14t | < | 17 | 20t | yes | no |
| MBSC | Monterey Bay | CA | mc | 14t | < | < | < | yes | no |
| BBAR | Buzzards Bay | MA | me | 16 | 14 | < | 19 | yes | no |
| BHBI | Boston Hrb. | MA | me | 17t | 10 | 10 | 10 | yes | no |
| SDHI | San Diego Bay | CA | me | 17t | 18 | < | 20t | no | no |
| EBFR | Elliott Bay | WA | me | 17t | < | < | < | yes | no |
| LIHR | Long Is. Snd. | CT | me | 20 | < | < | < | no | no |
| HRLB | Hud./Rar. Est. | NY | me | < | 9 | 18 | 12 | yes | no |
| HHKL | Honolulu Hrb. | HI | os | < | 11 | 12 | 17t | no | no |
| HRJB | Hud./Rar. Est | NY | me | < | 12 | 14 | 14t | no | no |
| SIWP | Sinclair Inlet | WA | me | < | 15t | < | < | no | no |
| CBSP | Choctawhat. Bay | FL | cv | < | 17 | 6 | 16 | yes | i |
| NYLB | N.Y. Bight | NJ | me | < | 20 | < | < | no | no |
| SHFP | Salem Harbor | MA | me | - | - | 1t | 2 | - | - |
| NYSR | N.Y. Bight | NJ | me | < | < | 19 | < | no | no |

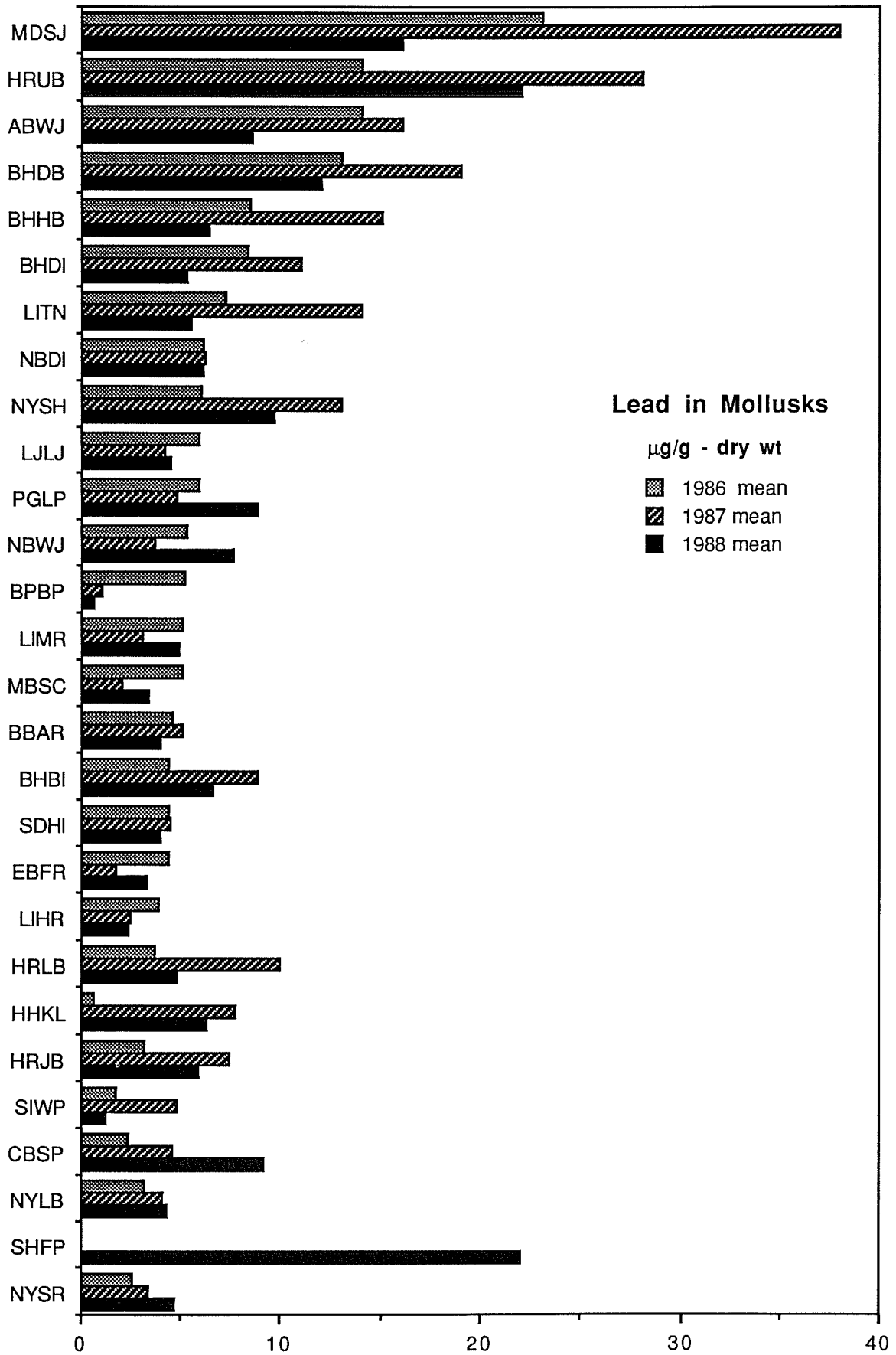

Lead in Mollusks
µg/g - dry wt
1986 mean
1987 mean
1988 mean
MDSJ
HRUB
ABWJ
BHDB
BHHB
BHDI
LITN
NBDI
NYSH
LJLJ
PGLP
NBWJ
BPBP
LIMR
MBSC
BBAR
BHBI
SDHI
EBFR
LIHR
HRLB
HHKL
HRJB
SIWP
CBSP
NYLB
SHFP
NYSR
0
10
20
30
40

Figure C.14. Sites ranking among the highest twenty in 1986, 1987, 1988 and overall for concentrations in mollusks of **mercury (Hg).**

| | | | | RANKING | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Code | Location | State | Sp. | 1986 | 1987 | 1988 | Overall | Signif. Diff. | Trend |
| TBPB | Tampa Bay | FL | cv | 1 | 12t | 5 | 5 | no | no |
| HRUB | Hud./Rar. Est. | NY | me | 2 | 1 | 1 | 2 | yes | i* |
| BPBP | Barber's Pt. | HI | os | 3 | < | < | < | yes | i |
| MBGP | Matagorda Bay | TX | cv | 4 | 8 | 6 | 6 | no | no |
| BHDI | Boston Hrb. | MA | me | 5 | 2t | < | 7t | yes | no |
| MBTH | Moriches Bay | NY | me | 6 | 19 | 7t | 7t | no | no |
| CBBI | Charlotte Hrb. | FL | cv | 7 | 12t | - | 12t | - | - |
| HRLB | Hud./Rar. Est. | NY | me | 8t | 12t | 7t | 7t | no | no |
| SFDB | San Fran. Bay | CA | me | 8t | 9 | 17t | 15t | no | no |
| TBSR | Tomales Bay | CA | me | 8t | < | < | < | yes | no |
| BBSM | Bellingham Bay | WA | me | 8t | < | < | < | yes | no |
| HHKL | Honolulu Hrb. | HI | os | 8t | 2t | 18t | 7t | no | no |
| PBSI | Penobscott Bay | ME | me | 13t | < | 17t | 20t | no | no |
| CBSP | Choctawhat. Bay | FL | cv | 13t | < | < | < | no | no |
| PLLH | Pt. Loma | CA | mc | 13t | < | 11t | 17t | no | no |
| SFSM | San Fran. Bay | CA | me | 13t | 10t | 10 | 11 | no | no |
| EVFU | Everglades | FL | cv | 17t | < | < | < | yes | d* |
| CBSR | Choctawhat. Bay | FL | cv | 17t | 2t | < | 12t | no | no |
| NYSH | N.Y. Bight | NJ | me | 19t | 20t | 11t | 17t | yes | i* |
| NYSR | N.Y. Bight | NJ | me | 19t | < | < | < | no | no |
| TBCB | Tampa Bay | FL | cv | 19t | 6t | 17t | 12t | no | no |
| PBIB | Pensacola Bay | FL | cv | 19t | < | < | < | yes | no |
| BHBI | Boston Hrb. | MA | me | < | 5 | 18t | 15t | yes | no |
| SFEM | San Fran. Bay | CA | me | - | 6t | 4 | 4 | - | - |
| CBCR | Copano Bay | TX | cv | < | 10t | < | < | no | no |
| HRJB | Hud./Rar. Est | NY | me | < | 15t | 15t | 19 | no | no |
| BHDB | Boston Hrb. | MA | me | < | 15t | < | < | no | no |
| RBHC | Rookery Bay | FL | cv | < | 15t | < | < | no | no |
| SSSS | San Simeon Pt. | CA | mc | < | 18 | 9 | 20t | yes | i |
| GBHR | Galveston Bay | TX | cv | < | 20t | < | < | yes | no |
| TBOT | Tampa Bay | FL | cv | - | - | 2 | 1 | - | - |
| SANM | San Miguel Is. | CA | mc | - | - | 3 | 3 | - | - |
| LJLJ | La Jolla | CA | mc | < | < | 13t | < | yes | no |
| MBSC | Monterey Bay | CA | mc | < | < | 15t | < | no | no |
| PBPI | Penobscot Bay | ME | me | < | < | 13t | < | no | no |

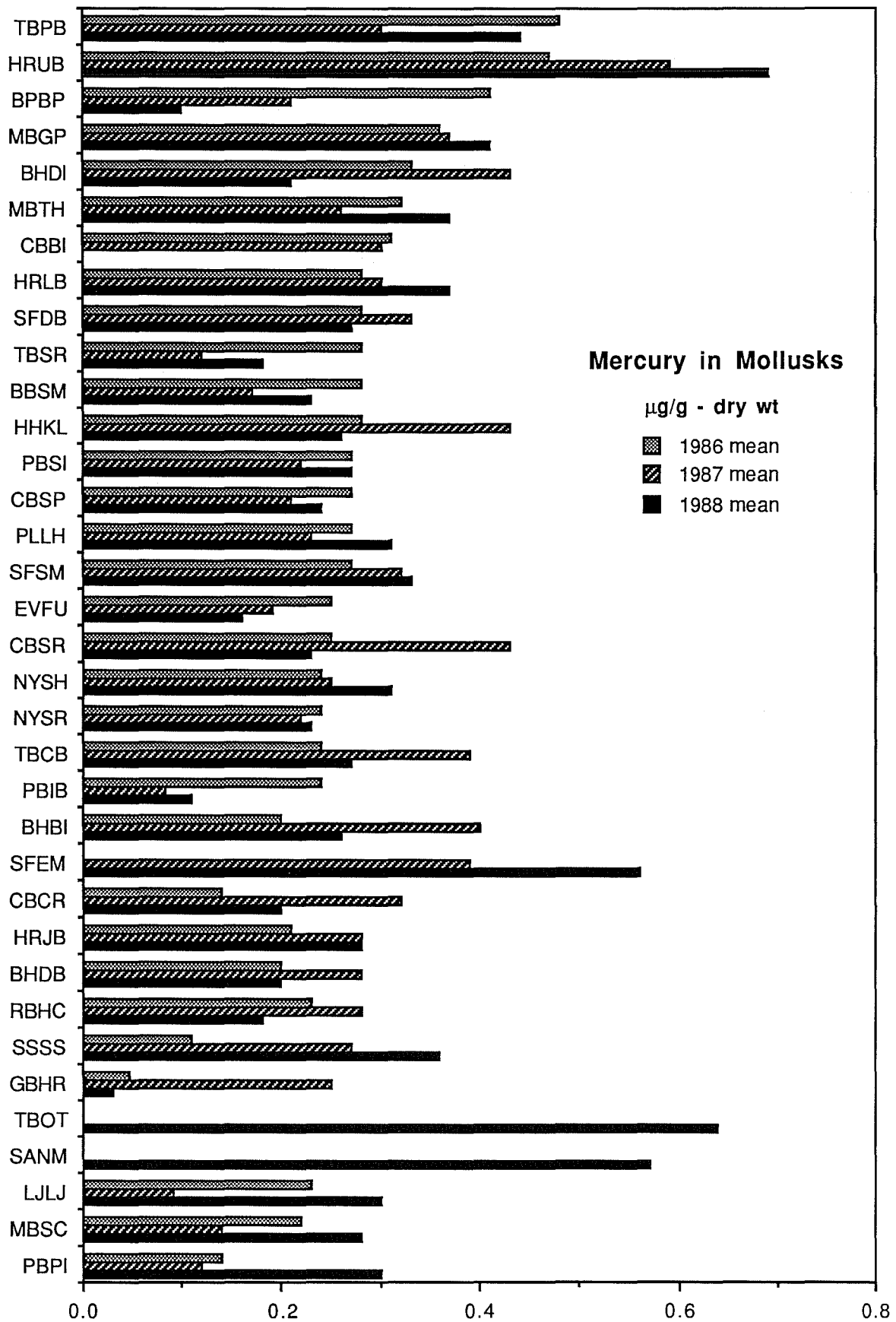

Mercury in Mollusks
µg/g - dry wt
1986 mean
1987 mean
1988 mean
TBPB
HRUB
BPBP
MBGP
BHDI
MBTH
CBBI
HRLB
SFDB
TBSR
BBSM
HHKL
PBSI
CBSP
PLLH
SFSM
EVFU
CBSR
NYSH
NYSR
TBCB
PBIB
BHBI
SFEM
CBCR
HRJB
BHDB
RBHC
SSSS
GBHR
TBOT
SANM
LJLJ
MBSC
PBPI
0.0
0.2
0.4
0.6
0.8

Figure C.15. Sites ranking among the highest twenty in 1986, 1987, 1988 and overall for concentrations in mollusks of **nickel (Ni).**

| | | | | RANKING | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Code | Location | State | Sp. | 1986 | 1987 | 1988 | Overall | Signif. Diff. | Trend |
| MBLR | Matagorda Bay | TX | cv | 1 | < | - | 2 | - | - |
| CBMP | Ches. Bay | MD | cv | 2t | 6 | 3 | 3 | no | no |
| TBSR | Tomales Bay | CA | me | 2t | 19t | < | 17 | yes | d |
| SGSG | Pt. St. George | OR | mc | 4 | 10t | 4 | 5t | no | no |
| CBHP | Ches. Bay | MD | cv | 5 | 4t | 5 | 5t | yes | i* |
| SSSS | San Simeon Pt. | CA | mc | 6 | 2 | 14 | 8 | no | no |
| DBAP | Delaware Bay | DE | cv | 7 | 3 | 7 | 7 | no | no |
| HRUB | Hud./Rar. Est. | NY | me | 8t | 1 | 2 | 4 | yes | no |
| BBSM | Bellingham Bay | WA | me | 8t | 7 | 15t | 9 | no | no |
| DBBD | Delaware Bay | DE | cv | 10 | 8t | 13 | 10 | no | no |
| LICR | Long Is. Snd. | CT | me | 11t | < | < | < | no | no |
| DBFE | Delaware Bay | DE | cv | 11t | 10t | 15t | 12 | no | no |
| DBKI | Delaware Bay | DE | cv | 11t | < | 9 | 11 | no | no |
| CBHG | Ches. Bay | MD | cv | 14t | 12 | 18 | 13t | no | no |
| BBBE | Bodega Bay | CA | mc | 14t | < | < | < | yes | d |
| PALH | Pt. Arena | CA | mc | 14t | < | < | < | no | no |
| YHYH | Yaquina Head | OR | mc | 14t | < | < | < | no | no |
| SFDB | San Fran. Bay | CA | me | 18 | 8t | < | 18t | yes | no |
| CBCR | Copano Bay | TX | cv | 19t | < | < | < | no | no |
| MBSC | Monterey Bay | CA | mc | 19t | < | < | < | yes | no |
| SFSM | San Fran. Bay | CA | me | < | 4t | < | 18t | yes | no |
| NYSH | N.Y. Bight | NJ | me | < | 13t | 10 | 16t | yes | i |
| NBDU | Narr. Bay | RI | me | < | 13t | - | 16t | - | - |
| SFEM | San Fran. Bay | CA | me | - | 15 | 20t | 15 | - | - |
| CRSJ | Columbia R. | OR | me | < | 16 | < | < | yes | no |
| LIHH | Long Is. Snd. | NY | me | < | 17 | < | < | yes | no |
| NBDI | Narr. Bay | RI | me | < | 18 | < | < | yes | no |
| LITN | Long Is. Snd. | NY | me | < | 19t | < | < | no | no |
| NYLB | N.Y. Bight | NJ | me | < | 19t | < | < | yes | no |
| KAUI | Kauai | HI | os | - | - | 1 | 1 | - | - |
| SCBR | S. Catalina Is. | CA | mc | < | < | 6 | 18t | yes | no |
| WIPP | Whidbey Is. | WA | me | < | < | 8 | 13t | no | no |
| CBCH | Coos Bay | OR | mc | < | < | 11 | < | yes | no |
| PVMC | Port Valdez | AK | me | < | < | 12 | < | yes | no |
| PSWB | Pamlico Snd. | NC | cv | < | < | 17 | < | yes | no |
| CBRP | Coos Bay | OR | me | < | < | 19 | < | yes | no |
| SRTI | Savan. R. Est. | GA | cv | < | < | 20t | < | yes | i |

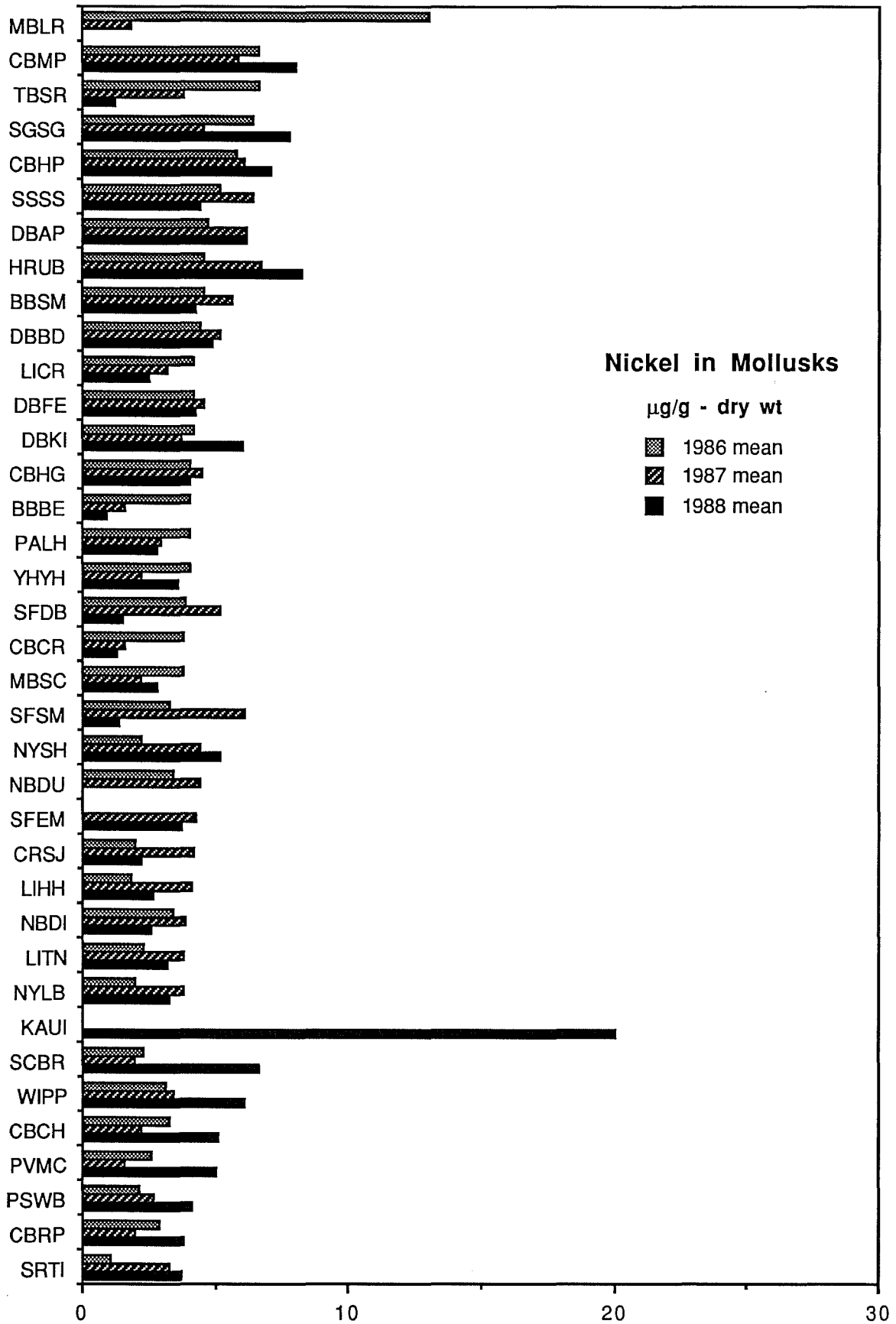

Nickel in Mollusks
µg/g - dry wt
1986 mean
1987 mean
1988 mean
MBLR
CBMP
TBSR
SGSG
CBHP
SSSS
DBAP
HRUB
BBSM
DBBD
LICR
DBFE
DBKI
CBHG
BBBE
PALH
YHYH
SFDB
CBCR
MBSC
SFSM
NYSH
NBDU
SFEM
CRSJ
LIHH
NBDI
LITN
NYLB
KAUI
SCBR
WIPP
CBCH
PVMC
PSWB
CBRP
SRTI
0
10
20
30

Figure C.16. Sites ranking among the highest twenty in 1986, 1987, 1988 and overall for concentrations in mollusks of **selenium (Se).**

| | | | | RANKING | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Code | Location | State | Sp. | 1986 | 1987 | 1988 | Overall | Signif. Diff. | Trend |
| HHKL | Honolulu Hrb. | HI | os | 1 | 1 | < | 2 | yes | d |
| BPBP | Barber's Pt. | HI | os | 2 | 5 | < | 3 | no | no |
| ABLR | Aransas Bay | TX | cv | 3 | < | < | < | yes | no |
| ESSP | Espiritu Santo | TX | cv | 4 | < | - | 17t | - | - |
| MDSJ | Marina Del Rey | CA | me | 5 | 3t | < | 13 | yes | no |
| PCPC | Pt. Conception | CA | mc | 6t | < | < | < | no | no |
| UISB | Unakwit Inlet | AK | me | 6t | < | < | 18t | no | no |
| CBCR | Copano Bay | TX | cv | 8 | 18t | 4 | 11t | yes | no |
| MBSC | Monterey Bay | CA | mc | 9 | < | < | < | no | no |
| MBEM | Matagorda Bay | TX | cv | 10 | < | < | 18t | yes | no |
| PDSC | Pt. Delgada | CA | mc | 11 | < | < | < | no | no |
| CBSR | Choctawhat. Bay | FL | cv | 12t | 13t | 6 | 14t | no | no |
| SCBR | S. Catalina Is. | CA | mc | 12t | 2 | < | 16 | no | no |
| NYSH | N.Y. Bight | NJ | me | 14t | < | < | < | no | no |
| CBIB | Ches. Bay | VA | cv | 14t | < | - | < | - | - |
| SAMP | San Antonio Bay | TX | cv | 14t | 13t | - | < | - | - |
| BBBE | Bodega Bay | CA | mc | 14t | < | < | < | yes | no |
| LJLJ | La Jolla | CA | mc | 18t | 13t | < | < | yes | no |
| PVRP | Palos Verdes | CA | mc | 18t | < | < | < | no | no |
| PVMC | Port Valdez | AK | me | 18t | < | < | < | no | no |
| SFDB | San Fran. Bay | CA | me | < | 3t | < | 18t | yes | no |
| SFSM | San Fran. Bay | CA | me | < | 6 | 11t | 18t | yes | i |
| VBSP | Vermillion Bay | LA | cv | < | 7 | 8t | < | yes | i |
| IBNJ | Imperial Beach | CA | mc | < | 8 | < | < | yes | no |
| SSSS | San Simeon Pt. | CA | mc | < | 9 | < | < | no | no |
| SCFP | Santa Cruz Is. | CA | mc | < | 10t | < | < | yes | no |
| HRUB | Hud./Rar. Est. | NY | me | < | 10t | < | < | no | no |
| SAPP | San Antonio Bay | TX | cv | < | 12 | - | < | - | - |
| PLLH | Pt. Loma | CA | mc | < | 13t | < | < | yes | no |
| GBYC | Galveston Bay | TX | cv | < | 13t | < | < | no | no |
| SPFP | San Pedro Hrb. | CA | me | < | 18t | < | < | yes | no |
| OSBJ | Oceanside | CA | me | < | 18t | < | < | yes | no |
| CCBH | Corpus Christi | TX | cv | - | - | 1 | 1 | - | - |
| MBAR | Mesquite Bay | TX | cv | < | < | 2 | 14t | no | no |
| TBLF | Terrebonne Bay | LA | cv | < | < | 3 | < | no | no |
| CBSP | Choctawhat. Bay | FL | cv | < | < | 5 | 18t | yes | i |
| ABHI | Aransas Bay | TX | cv | - | - | 7 | 4 | - | - |
| MBCB | Matagorda Bay | TX | cv | - | - | 8t | 5t | - | - |
| KAUI | Kauai | HI | os | - | - | 8t | 5t | - | - |
| MBGP | Matagorda Bay | TX | cv | < | < | 11t | < | yes | i |
| LMPI | Laguna Madre | TX | cv | - | - | 13 | 7 | - | - |
| ESBD | Espiritu Santo | TX | cv | - | - | 14 | 8 | - | - |
| GBHR | Galveston Bay | TX | cv | < | < | 15t | < | no | no |
| MRTP | Miss. River | LA | cv | - | - | 15t | 9t | - | - |
| BRFS | Brazos River | TX | cv | - | - | 15t | 9t | - | - |
| GBSC | Galveston Bay | TX | cv | - | - | 18t | 11t | - | - |
| MBTP | Matagorda Bay | TX | cv | < | < | 18t | < | no | no |
| LBNO | Lake Borgne | LA | cv | - | - | < | 17t | - | - |

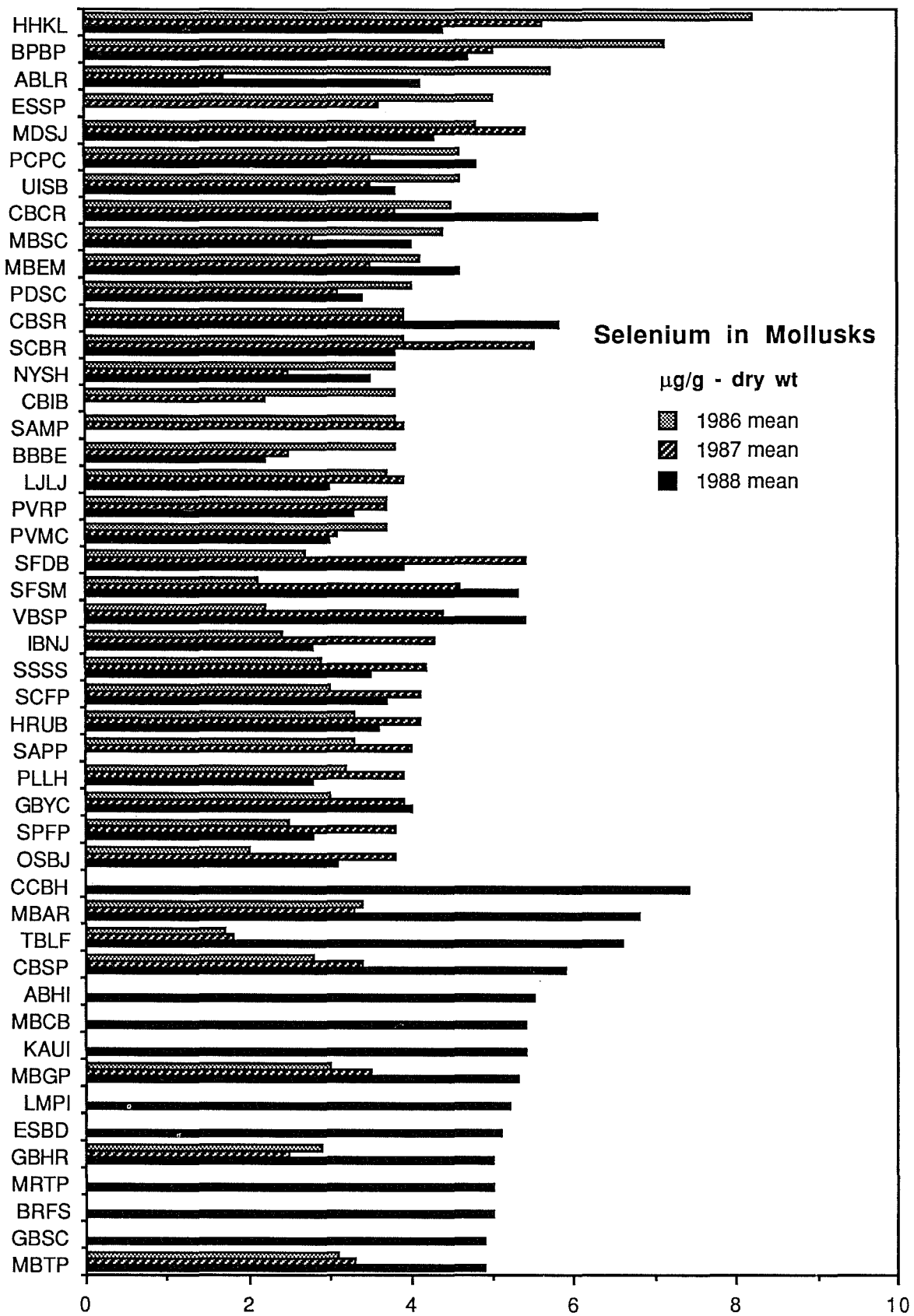

Selenium in Mollusks
µg/g - dry wt
1986 mean
1987 mean
1988 mean
HHKL
BPBP
ABLR
ESSP
MDSJ
PCPC
UISB
CBCR
MBSC
MBEM
PDSC
CBSR
SCBR
NYSH
CBIB
SAMP
BBBE
LJLJ
PVRP
PVMC
SFDB
SFSM
VBSP
IBNJ
SSSS
SCFP
HRUB
SAPP
PLLH
GBYC
SPFP
OSBJ
CCBH
MBAR
TBLF
CBSP
ABHI
MBCB
KAUI
MBGP
LMPI
ESBD
GBHR
MRTP
BRFS
GBSC
MBTP
0
2
4
6
8
10

Figure C.17. Sites ranking among the highest twenty in 1986, 1987, 1988 and overall for concentrations in mollusks of **silver (Ag).**

| | | | | RANKING | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Code | Location | State | Sp. | 1986 | 1987 | 1988 | Overall | Signif. Diff. | Trend |
| CBCR | Copano Bay | TX | cv | 1t | 9 | 9 | 2 | no | no |
| HHKL | Honolulu Hrb. | HI | os | 1t | 7t | 1 | 1 | no | no |
| CBMP | Ches. Bay | MD | cv | 3 | 14t | < | 13 | yes | d |
| DBKI | Delaware Bay | DE | cv | 4 | 6 | < | 6 | no | no |
| SAMP | San Antonio Bay | TX | cv | 5 | < | - | 14 | - | - |
| ESSP | Espiritu Santo | TX | cv | 6 | < | - | 12 | - | - |
| VBSP | Vermillion Bay | LA | cv | 7 | 4t | 13t | 7 | no | no |
| CBHP | Ches. Bay | MD | cv | 8t | < | < | < | no | no |
| QIUB | Quinby Inlet | VA | cv | 8t | < | < | < | no | no |
| MBEM | Matagorda Bay | TX | cv | 10t | 2 | < | 8t | no | no |
| ABLR | Aransas Bay | TX | cv | 10t | < | < | 19t | yes | no |
| CBSP | Choctawhat. Bay | FL | cv | 12 | 3 | 7 | 5 | no | no |
| DBBD | Delaware Bay | DE | cv | 13 | 18 | < | 19t | yes | d |
| DBFE | Delaware Bay | DE | cv | 14 | 19t | < | < | no | no |
| CBCI | Chincotgue. Bay | VA | cv | 15t | < | < | < | yes | no |
| CHFJ | Charleston Hrb. | SC | cv | 15t | < | < | < | yes | no |
| NBNB | Naples Bay | FL | cv | 15t | 7t | 8 | 8t | no | no |
| DBAP | Delaware Bay | DE | cv | 18t | 11t | < | 17t | no | no |
| MSPC | Miss. Snd. | MS | cv | 18t | < | < | < | no | no |
| CBSR | Choctawhat. Bay | FL | cv | 20t | < | < | < | yes | no |
| SAPP | San Antonio Bay | TX | cv | 20t | < | - | < | - | - |
| SLBB | Sabine Lake | TX | cv | < | 1 | 6 | 3t | yes | no |
| GBCR | Galveston Bay | TX | cv | < | 4t | 3t | 8t | no | no |
| CBBI | Charlotte Hrb. | FL | cv | < | 10 | - | < | - | - |
| BPBP | Barber's Pt. | HI | os | < | 11t | 2 | 15 | yes | i |
| JHJH | J. Hrb. Bayou | LA | cv | < | 13 | 19 | < | no | no |
| BSSI | Breton Snd. | LA | cv | < | 14t | 13t | < | no | no |
| APDB | Apalachicola Bay | FL | cv | < | 14t | < | < | yes | no |
| PBIB | Pensacola Bay | FL | cv | < | 17 | < | < | yes | no |
| GBYC | Galveston Bay | TX | cv | < | 19t | < | < | no | no |
| MBTP | Matagorda Bay | TX | cv | < | < | 3t | < | no | no |
| KAUI | Kauai | HI | os | - | - | 5 | 3t | - | - |
| MRPL | Miss. River | LA | cv | - | - | 10 | 11 | - | - |
| MBGP | Matagorda Bay | TX | cv | < | < | 11t | < | yes | i |
| BBSD | Barataria Bay | LA | cv | < | < | 11t | < | yes | i |
| ABOB | Atchafalaya Bay | LA | cv | < | < | 15 | < | yes | i |
| ABHI | Aransas Bay | TX | cv | - | - | 16 | 16 | - | - |
| MBDI | Matagorda Bay | TX | cv | - | - | 17t | 19t | - | - |
| MBCB | Matagorda Bay | TX | cv | - | - | 17t | 19t | - | - |
| CLLC | Calcasieu Lake | LA | cv | - | - | 20 | < | - | - |

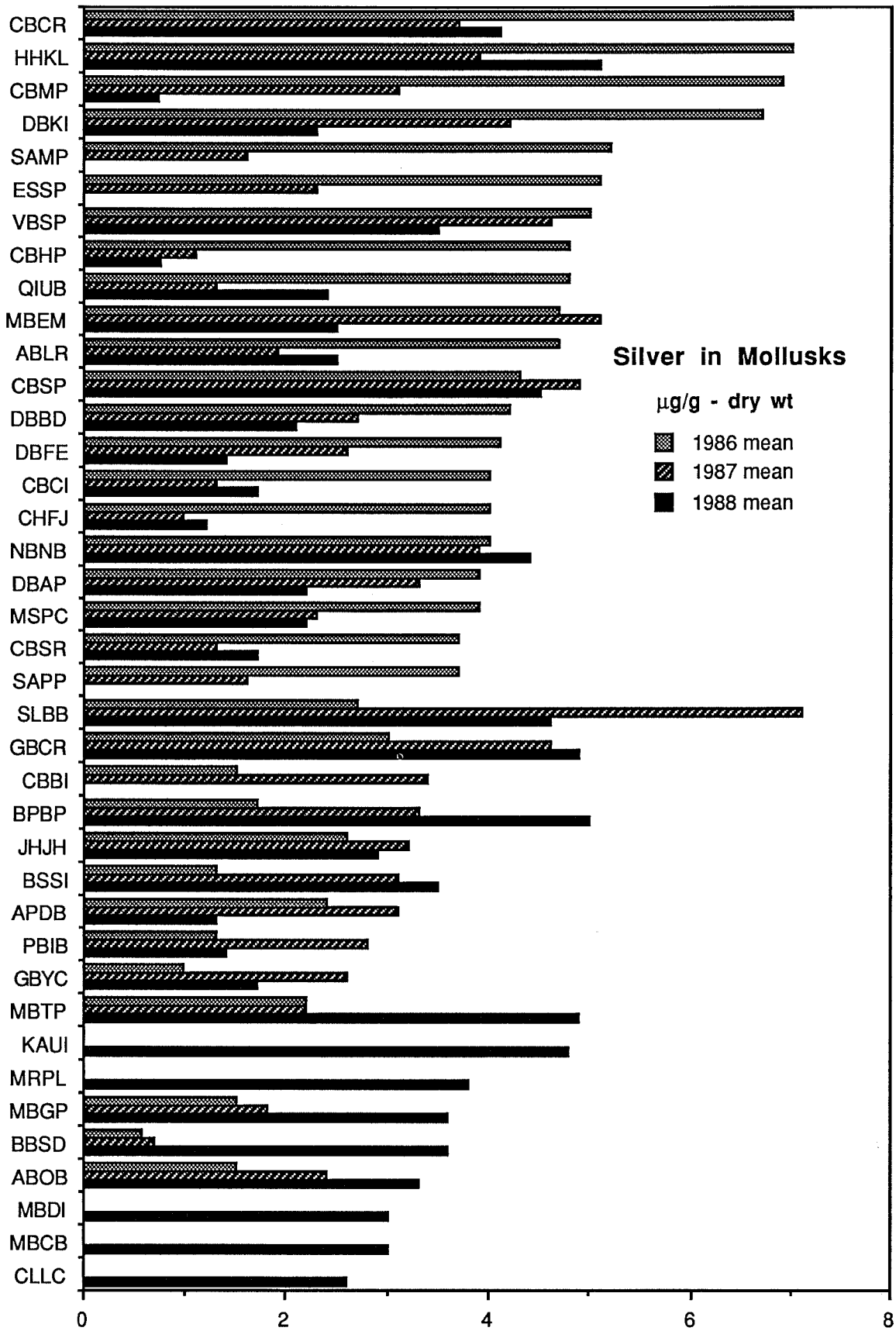

Silver in Mollusks
µg/g - dry wt
1986 mean
1987 mean
1988 mean
CBCR
HHKL
CBMP
DBKI
SAMP
ESSP
VBSP
CBHP
QIUB
MBEM
ABLR
CBSP
DBBD
DBFE
CBCI
CHFJ
NBNB
DBAP
MSPC
CBSR
SAPP
SLBB
GBCR
CBBI
BPBP
JHJH
BSSI
APDB
PBIB
GBYC
MBTP
KAUI
MRPL
MBGP
BBSD
ABOB
MBDI
MBCB
CLLC
0
2
4
6
8

Figure C.18. Sites ranking among the highest twenty in 1986, 1987, 1988 and overall for concentrations in mussels of **silver (Ag).**

| | | | | RANKING | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Code | Location | State | Sp. | 1986 | 1987 | 1988 | Overall | Signif. Diff. | Trend |
| HRUB | Hud./Rar. Est. | NY | me | 1 | 6 | 4 | 4t | no | no |
| PDPD | Pt. Dume | CA | mc | 2 | 1 | 2 | 1 | no | no |
| BHDI | Boston Hrb. | MA | me | 3 | 10t | < | 8 | yes | d |
| LJLJ | La Jolla | CA | mc | 4 | 4 | 5 | 4t | no | no |
| PVRP | Palos Verdes | CA | mc | 5t | 5 | 12t | 6t | no | no |
| BHBI | Boston Hrb. | MA | me | 5t | < | < | 15 | no | no |
| BHDB | Boston Hrb. | MA | me | 7t | 14 | 18 | 12 | yes | d |
| NBWJ | Newport Bch. | CA | mc | 7t | 10t | 8 | 6t | no | no |
| HRLB | Hud./Rar. Est. | NY | me | 9 | 8t | 17 | 9 | no | no |
| PLLH | Pt. Loma | CA | mc | 10t | 2 | 3 | 2t | yes | no |
| BHHB | Boston Hrb. | MA | me | 10t | 8t | 20 | 10t | no | no |
| IBNJ | Imperial Beach | CA | mc | 12 | 3 | 1 | 2t | no | no |
| MBSC | Monterey Bay | CA | mc | 13 | < | 6t | 13 | yes | no |
| MDSJ | Marina Del Rey | CA | me | 14 | 13 | 10 | 14 | no | no |
| NYSH | N.Y. Bight | NJ | me | 15 | 17 | 19 | 20 | no | no |
| OSBJ | Oceanside | CA | me | 16 | < | < | < | no | no |
| PCPC | Pt. Conception | CA | mc | 17 | < | 15 | 19 | no | no |
| EBFR | Elliott Bay | WA | me | 18 | < | < | < | yes | no |
| SCBR | S. Catalina Is. | CA | mc | 19t | 7 | 9 | 10t | no | no |
| SBSB | Pt. S. Barbara | CA | mc | 19t | 18 | 11 | 18 | no | no |
| ABWJ | Anaheim Bay | CA | mc | < | 12 | 12t | 17 | no | no |
| MBTH | Moriches Bay | NY | me | < | 15 | < | < | yes | no |
| NYSR | N.Y. Bight | NJ | me | < | 16 | < | < | yes | no |
| LIHH | Long Is. Snd. | NY | me | < | 19 | < | < | yes | no |
| SFDB | San Fran. Bay | CA | me | < | 20 | 14 | < | no | no |
| SFSM | San Fran. Bay | CA | me | < | < | 6t | 16 | yes | i |
| BIBL | Barnegat Inlet | NJ | me | - | - | 16 | < | - | - |

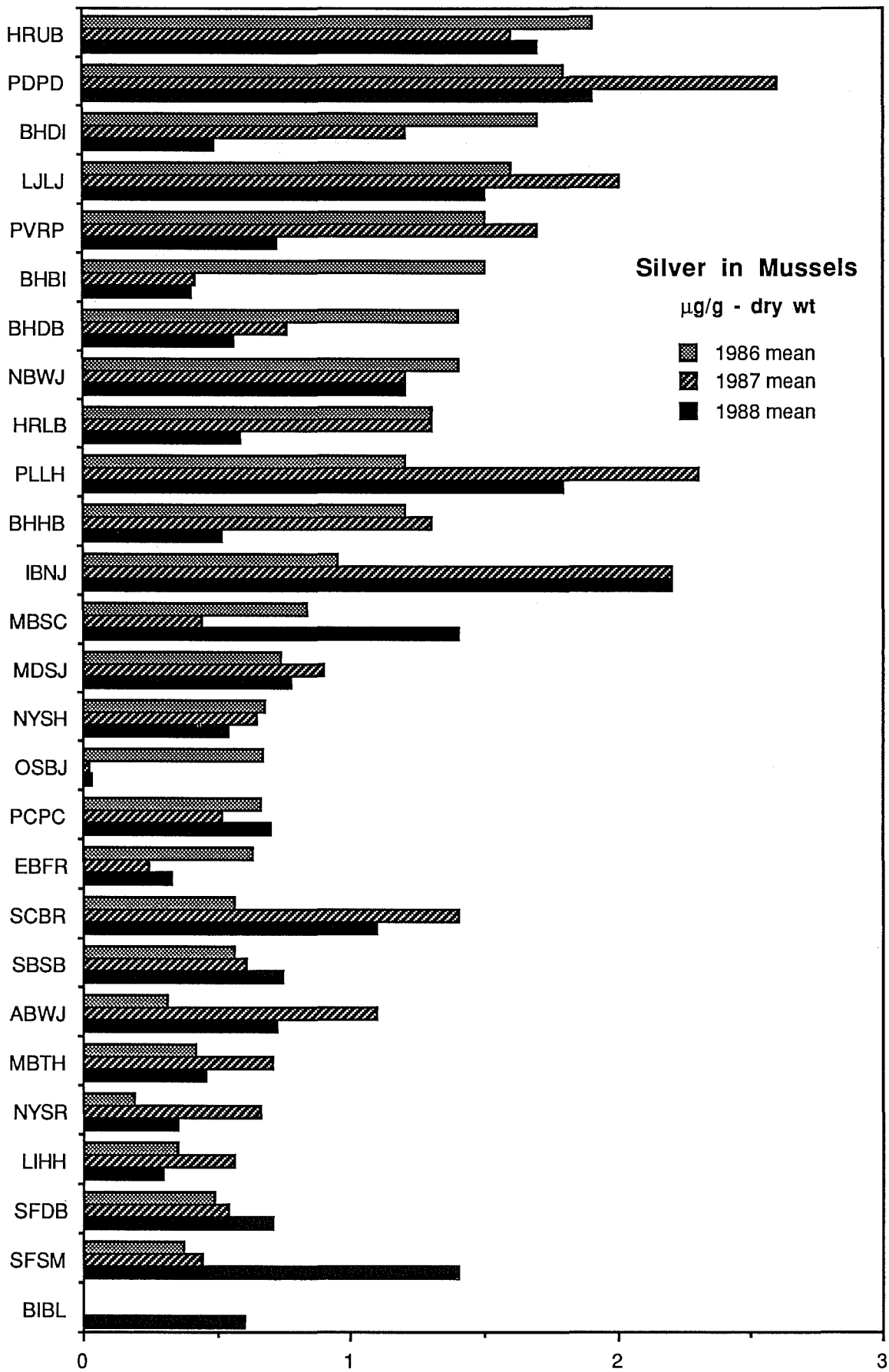

Silver in Mussels
µg/g - dry wt
1986 mean
1987 mean
1988 mean
HRUB
PDPD
BHDI
LJLJ
PVRP
BHBI
BHDB
NBWJ
HRLB
PLLH
BHHB
IBNJ
MBSC
MDSJ
NYSH
OSBJ
PCPC
EBFR
SCBR
SBSB
ABWJ
MBTH
NYSR
LIHH
SFDB
SFSM
BIBL
0
1
2
3

Figure C.19. Sites ranking among the highest twenty in 1986, 1987, 1988 and overall for concentrations in mollusks of **zinc (Zn).**

| | | | | RANKING | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Code | Location | State | Sp. | 1986 | 1987 | 1988 | Overall | Signif. Diff. | Trend |
| DBAP | Delaware Bay | DE | cv | 1 | 1 | 1 | 1 | no | no |
| SLBB | Sabine Lake | TX | cv | 2 | 3 | 18 | 6 | yes | d* |
| DBKI | Delaware Bay | DE | cv | 3 | 6 | 9 | 7 | no | no |
| DBBD | Delaware Bay | DE | cv | 4 | 4 | 5 | 4 | no | no |
| DBFE | Delaware Bay | DE | cv | 5 | 5 | 12t | 11 | yes | no |
| CBMP | Ches. Bay | MD | cv | 6 | 9 | 15 | 14t | yes | no |
| SAWB | St. Andrew Bay | FL | cv | 7 | 10t | < | 18t | yes | d* |
| CCNB | Corpus Christi | TX | cv | 8 | 10t | 11 | 16 | no | no |
| CBHP | Ches. Bay | MD | cv | 9 | 16t | < | 20t | yes | no |
| GBYC | Galveston Bay | TX | cv | 10 | 2 | 16t | 10 | no | no |
| CBCI | Chincotgue. Bay | VA | cv | 11t | 19 | < | < | no | no |
| QIUB | Quinby Inlet | VA | cv | 11t | 7t | < | < | no | no |
| SJCB | St. Johns R. | FL | cv | 13 | < | < | < | yes | no |
| CBHG | Ches. Bay | MD | cv | 14t | 12t | < | < | yes | d* |
| MSBB | Miss. Snd. | MS | cv | 14t | 7t | < | < | no | no |
| TBHB | Tampa Bay | FL | cv | 16 | < | < | < | no | no |
| LBMP | Lake Borgne | LA | cv | 17 | < | < | < | yes | no |
| MSPB | Miss. Snd. | MS | cv | 18 | 12t | < | < | no | no |
| CBIB | Ches. Bay | VA | cv | 19 | 20 | - | < | - | - |
| RSJC | Roanoke Snd. | VA | cv | 20t | < | < | < | yes | no |
| CBSP | Choctawhat. Bay | FL | cv | 20t | < | 19 | < | yes | no |
| MBEM | Matagorda Bay | TX | cv | < | 12t | < | < | yes | no |
| CBDP | Ches. Bay | VA | cv | < | 12t | < | < | no | no |
| VBSP | Vermillion Bay | LA | cv | < | 16t | < | < | yes | no |
| MSPC | Miss. Snd. | MS | cv | < | 16t | < | < | no | no |
| TBOT | Tampa Bay | FL | cv | - | - | 2 | 2 | - | - |
| CCBH | Corpus Christi | TX | cv | - | - | 3 | 3 | - | - |
| GBOB | Galveston Bay | TX | cv | - | - | 4 | 5 | - | - |
| LMPI | Laguna Madre | TX | cv | - | - | 6t | 8t | - | - |
| NMML | North Miami | FL | cv | - | - | 6t | 8t | - | - |
| LBNO | Lake Borgne | LA | cv | - | - | 8 | 12 | - | - |
| CLLC | Calcasieu Lake | LA | cv | - | - | 10 | 13 | - | - |
| LMSB | L. Laguna M. | TX | cv | < | < | 12t | < | yes | no |
| BRFS | Brazos River | TX | cv | - | - | 13t | 14t | - | - |
| GBSC | Galveston Bay | TX | cv | - | - | 16t | 17 | - | - |
| ABHI | Aransas Bay | TX | cv | - | - | 20 | 20t | - | - |

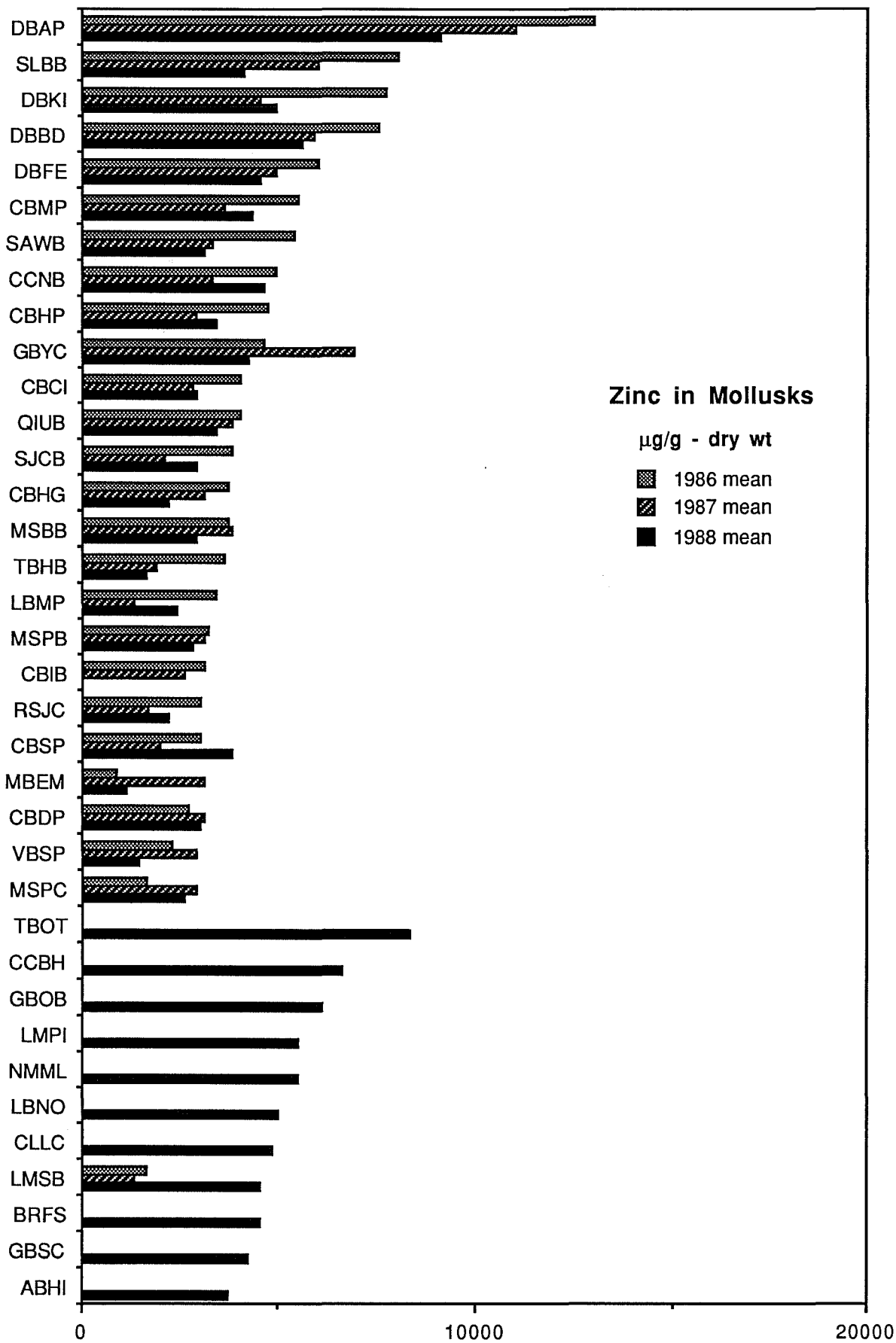
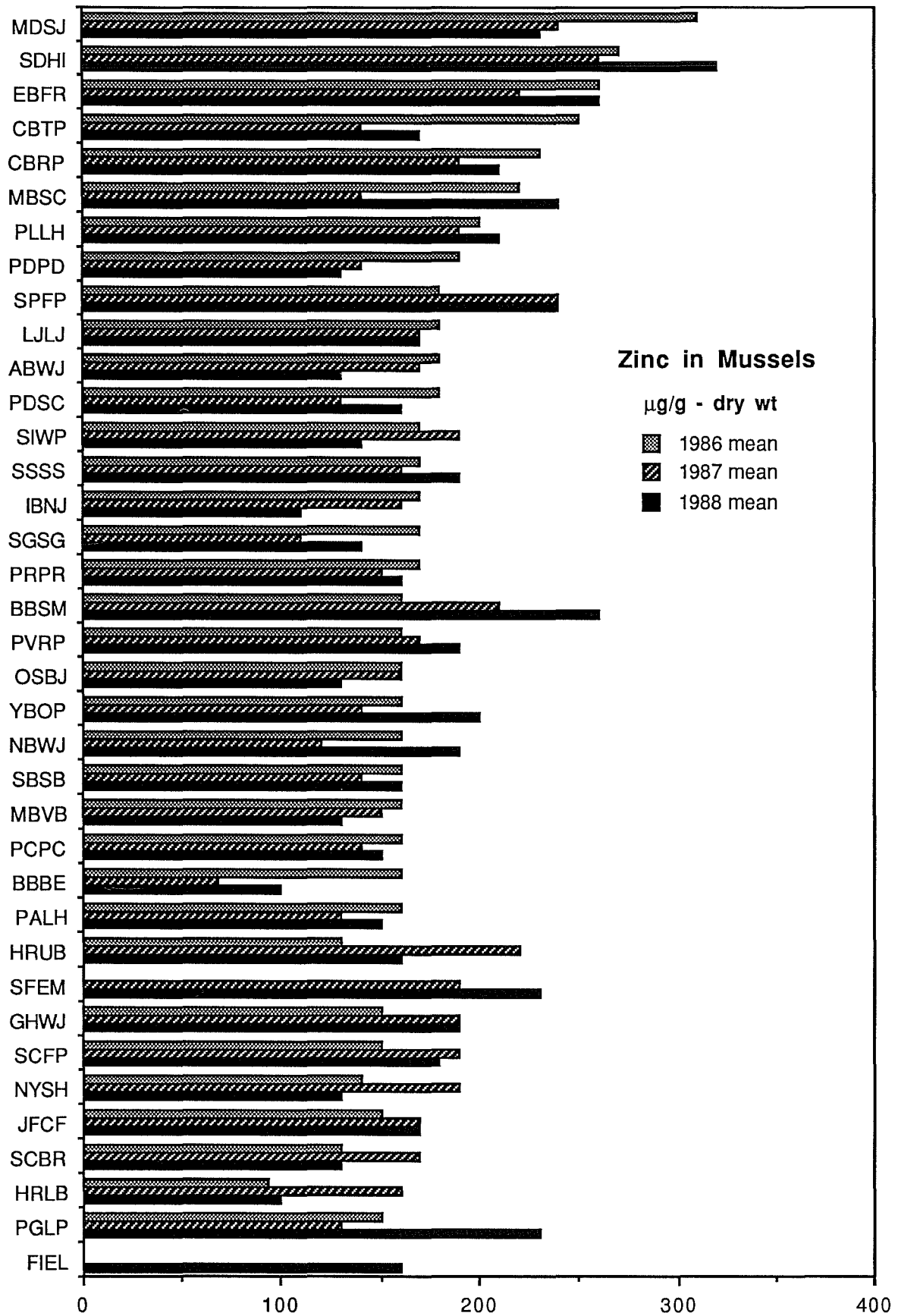

Zinc in Mollusks
µg/g - dry wt
1986 mean
1987 mean
1988 mean
DBAP
SLBB
DBKI
DBBD
DBFE
CBMP
SAWB
CCNB
CBHP
GBYC
CBCI
QIUB
SJCB
CBHG
MSBB
TBHB
LBMP
MSPB
CBIB
RSJC
CBSP
MBEM
CBDP
VBSP
MSPC
TBOT
CCBH
GBOB
LMPI
NMML
LBNO
CLLC
LMSB
BRFS
GBSC
ABHI
0
10000
20000

Figure C.20. Sites ranking among the highest twenty in 1986, 1987, 1988 and overall for concentrations in mussels of **zinc (Zn).**

| | | | | RANKING | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Code | Location | State | Sp. | 1986 | 1987 | 1988 | Overall | Signif. Diff. | Trend |
| MDSJ | Marina Del Rey | CA | me | 1 | 2t | 6t | 2 | no | no |
| SDHI | San Diego Bay | CA | me | 2 | 1 | 1 | 1 | no | no |
| EBFR | Elliott Bay | WA | me | 3 | 4t | 2t | 3 | no | no |
| CBTP | Comm. Bay | WA | me | 4 | < | 17t | 10 | yes | no |
| CBRP | Coos Bay | OR | me | 5 | 7t | 9t | 5t | no | no |
| MBSC | Monterey Bay | CA | mc | 6 | < | 4t | 8t | no | no |
| PLLH | Pt. Loma | CA | mc | 7 | 7t | 9t | 8t | no | no |
| PDPD | Pt. Dume | CA | mc | 8 | < | < | < | no | no |
| SPFP | San Pedro Hrb. | CA | me | 9t | 2t | 4t | 4 | no | no |
| LJLJ | La Jolla | CA | mc | 9t | 14t | 17t | 13t | no | no |
| ABWJ | Anaheim Bay | CA | mc | 9t | 14t | < | 20t | yes | no |
| PDSC | Pt. Delgada | CA | mc | 9t | < | 20t | 20t | no | no |
| SIWP | Sinclair Inlet | WA | me | 13t | 7t | < | 13t | yes | no |
| SSSS | San Simeon Pt. | CA | mc | 13t | 19t | 12t | 13t | yes | no |
| IBNJ | Imperial Beach | CA | mc | 13t | 19t | < | < | yes | d* |
| SGSG | Pt. St. George | OR | mc | 13t | < | < | < | no | no |
| PRPR | Pt. Roberts | WA | me | 13t | < | 20t | 20t | no | no |
| BBSM | Bellingham Bay | WA | me | 18t | 6 | 2t | 5t | no | no |
| PVRP | Palos Verdes | CA | mc | 18t | 14t | 12t | 11t | no | no |
| OSBJ | Oceanside | CA | me | 18t | 19t | < | < | no | no |
| YBOP | Yaquina Bay | OR | me | 18t | < | 11 | 13t | yes | no |
| NBWJ | Newport Bch. | CA | mc | 18t | < | 12t | 20t | yes | no |
| SBSB | Pt. S. Barbara | CA | mc | 18t | < | 20t | < | no | no |
| MBVB | Mission Bay | CA | me | 18t | < | < | < | no | no |
| PCPC | Pt. Conception | CA | mc | 18t | < | < | < | no | no |
| BBBE | Bodega Bay | CA | mc | 18t | < | < | < | yes | no |
| PALH | Pt. Arena | CA | mc | 18t | < | < | < | yes | no |
| HRUB | Hud./Rar. Est. | NY | me | < | 4t | 20t | 13t | yes | no |
| SFEM | San Fran. Bay | CA | me | - | 7t | 6t | 5t | - | - |
| GHWJ | Gray's Hrb. | WA | mc | < | 7t | 12t | 13t | no | no |
| SCFP | Santa Cruz Is. | CA | mc | < | 7t | 16 | 11 | no | no |
| NYSH | N.Y. Bight | NJ | me | < | 7t | < | 20t | no | no |
| JFCF | S. Juan de Fuca | WA | mc | < | 14t | 17t | 20t | no | no |
| SCBR | S. Catalina Is. | CA | mc | < | 14t | < | < | no | no |
| HRLB | Hud./Rar. Est. | NY | me | < | 19t | < | < | yes | no |
| PGLP | Pacific Grove | CA | mc | < | < | 6t | 13t | yes | no |
| FIEL | Farallon Is. | CA | mc | - | - | 20t | 20t | - | - |






*U.S. GOVERNMENT PRINTING OFFICE: 1989-0-694-460/00076