2000 annual fish and shellfish report

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FISH AND SHELLFISH REPORT

submitted to

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EXECUTIVE SUMMARY

The Massachusetts Water Resources Authority (MWRA) continued to conduct its biomonitoring program for fish and shellfish in 2000. The 2000 activities represent the latest year in a continuing biomonitoring program that supports evaluation of the MWRA effluent discharged into Massachusetts Bay and also represents the final year of baseline monitoring. All 2000 Fish and Shellfish samples were collected before the outfall went on-line in September 2000. The goal of the biomonitoring program is to obtain data that may be used to assess the potential environmental impact of the effluent discharge on Massachusetts Bay, and to evaluate the facility's compliance against the NPDES effluent discharge permit.

The specific objective of the 2000 fish and shellfish monitoring program was to further define the baseline condition of three indicator species: winter flounder (*Pseudopleuronectes americanus*), lobster (*Homarus americanus*), and blue mussel (*Mytilus edulis*). Flounder and lobster specimens were collected from three core sites in Boston Harbor and the Bays: Deer Island Flats (DIF), the Outfall Site (OS), and East Cape Cod Bay (ECCB). Flounder were collected also at two ancillary sites, Broad Sound (BS) and off Nantasket Beach (NB), to provide information on flounder in the general area of the former Deer Island outfall. Caged mussels, collected from Rockport, MA, were deployed at three sites in Boston Harbor and the Bays to evaluate bioaccumulation potential. All collection and deployment sites are discussed in the 2000 Fish and Shellfish Report in terms of chemical contaminants. Histological parameters are considered in flounder only.

Baseline conditions of the species collected were characterized in terms of biological parameters (*e.g.* length, weight, age); external condition; and concentrations of organic and inorganic compounds in both edible and liver/hepatopancreas tissue. Flounder livers were examined for the extent and severity of lesions. The monitored parameters were examined for spatial distribution among stations in 2000 and inter-annual variations from previous monitoring data. In addition, body burdens of certain pesticides, PCBs, lead and mercury were compared to FDA Action Limits and monitoring program Appreciable Change levels to evaluate potential risk or trends.

Flounder

Winter flounder were collected at the five established monitoring locations in 2000. The mean length of fish collected at DIF was higher than the other stations. Although this is unlikely to be biologically significant, it is consistent with findings from previous years. The external condition of fish indicated few abnormalities. While low at all stations, a fin erosion index was higher at Deer Island than other stations.

Flounder liver histology results indicated that the prevalence of tubular and centrotubular hydropic vacuolation (CHV) was highest at DIF and lowest at ECCB. Inter-annual comparison showed that CHV prevalence has not changed substantially at any of the stations since 1991. However, CHV prevalence at BS, NB, and ECCB fell sharply from 1999 levels and rose slightly at DIF. Neoplasm prevalence at DIF has fallen from elevated levels in the 1980's to undetectable levels during the period 1992-2000.

Fifteen winter flounder were collected at the three core locations (DIF, OS, ECCB) for chemical analysis of edible and liver tissues. The spatial patterns of tissue contaminant levels in winter flounder were examined. Mean 2000 concentrations of organic compounds in fillets were generally highest at DIF and lowest at ECCB. Mean 2000 concentrations of organic compounds in liver tissue were generally highest at DIF and lowest at ECCB. Mercury was highest at OS in fillet tissue and liver tissue than at other sites. Other metals (Ag, Cd, Cr, Cu, Ni, Pb and Zn) measured in liver tissue were generally highest at OS, with levels of Cr, Ni, and Zn being similar at all three stations.

Both tissue and liver organic contaminant levels for 2000 were consistently similar to or lower than those measured in the period 1992-1999 at all stations. The highest concentrations are historically found at DIF and the lowest in ECCB. Mercury concentrations measured in edible tissue and liver were within the measured range of previous years. Concentrations of other metals were variable over the period from 1992-2000. Spatially, levels of most metals appeared to be higher at OS, rather than DIF.

Comparison was made between flounder edible tissue contaminant levels, MWRA Appreciable Change levels, based on the 1992-1999 data, and FDA Action Limits. The 2000 levels (determined on a wet weight basis), like those detected in previous monitoring years (1992-1999), were well below the federal action limits and the 1992-1999 MWRA Appreciable Change Levels.

Lobster

Fifteen lobsters were collected at the three core monitoring stations for the 2000 study (DIF, OS, and ECCB). All lobsters were obtained from commercial traps located within the vicinity of the designated sampling stations. The size, sex, and external appearance (*i.e*. black gill disease, shell erosion, external tumors, etc.) were determined for the collected lobsters. Little difference in length and weight were noted between stations. The ratio of males and females, however, differed greatly between stations, with mostly males found at ECCB and mostly females collected at DIF and OS. No deleterious external conditions were noted.

Mean 2000 concentrations of organic compounds in edible tail meat tissue and the hepatopancreas were generally highest at DIF and lowest in ECCB. Mean mercury concentrations in the meat and hepatopancreas were highest at OS. Comparison of 2000 data with recent years (1992-1999) indicates that most spatial distributions were similar. Concentrations of total PCB in lobster hepatopancreas continued to show an upward trend in 2000 at DIF. Total DDTs and total chlordanes have noticeably decreased compared to recent years and were similar to pre-1995 values at all three locations.

Comparison was made between contaminant levels in lobster edible tissue, MWRA Appreciable Change levels, based on the 1992-1999 data, and FDA Action Limits for pesticides, PCBs and mercury. The 2000 levels, like other monitoring years, were well below the federal action limits and indicate no risk for human consumption.

Mussels

Mussels were collected at one reference site (Rockport) and deployed for up to 60 days in arrays at Deer Island (DI), Boston Inner Harbor (BIH), and OS. A full set of arrays was successfully retrieved at sixty-days from DI, BIH, and OS. Mussel survival within the deployed arrays upon recovery was high (≥96%).

The 2000 data were similar to previous years with the highest body burdens of contaminants observed in mussels deployed in BIH and the lowest concentrations in mussels deployed at OS.

Comparison was made between mussel tissue contaminant levels and MWRA Appreciable Change levels, based on the 1992-1999 data, and FDA Action Limits for Total PCBs, pesticides, Total PAHs, mercury, and lead. The 2000 levels, like other monitoring years, were well below the federal action limits and indicate no risk for human consumption.

Evaluation of Monitoring Thresholds

MWRA has set Caution and Warning Levels to ensure the protection of human health. The MWRA (1997a) developed a Contingency Plan that specifies numerical or qualitative thresholds that may suggest that environmental conditions in the Bay may be changing or might be likely to change. The Plan provides a mechanism to confirm that a threshold has been exceeded, to determine that causes and

significance of the event, and to identify the action necessary to return the trigger parameter to a level below the threshold (if the change resulted from effluent discharge). Fish and shellfish thresholds have been established for tissue contaminant concentrations (organic and inorganic) and liver disease incidence (MWRA 1997).

1.0 INTRODUCTION

The Massachusetts Water Resources Authority (MWRA) has implemented a long-term Harbor and Outfall Monitoring (HOM) Program for Massachusetts and Cape Cod Bays. The objectives of the HOM Program are to test whether the environmental impacts of the MWRA discharge are consistent with SEIS projections and do not exceed any Contingency Plan thresholds (MWRA 1997a). A detailed description of the monitoring and its rationale is provided in the Effluent Outfall Monitoring Plan developed for the baseline period and the post-discharge monitoring plan (MWRA 1997b).

One aspect of the MWRA HOM program is a long-term biomonitoring program for fish and shellfish (MWRA, 1991). The goal of the biomonitoring is to provide data that may be used to assess potential environmental impact of effluent discharge into Massachusetts Bay. This data will be used to ensure that discharge from the new outfall does not result in adverse impacts to fish and shellfish by comparing values with established thresholds (MWRA 1997a).

The objective of the fish and shellfish monitoring is to define the condition of three indicator species: winter flounder (*Pseudopleuronectes americanus),* lobster (*Homarus americanus),* and blue mussel *(Mytilus edulis*). Measured parameters include length, weight, biological condition, the presence of external or internal disease, and inorganic and organic contaminant tissue concentrations. This baseline characterization of the health of winter flounder, lobster, and mussel in Boston Harbor, Massachusetts Bay, and Cape Cod Bay (hereafter: Boston Harbor and the Bays) forms the basis for assessing potential changes resulting from the relocation of the outfall discharge (Figure 1-1).

The scope of the 2000 fish and shellfish report is focused primarily towards providing a compilation of the biomonitoring data collected during 2000 and a comparison of the 2000 data with data collected from 1992 through 1999. 2000 data represent the final year of baseline monitoring prior to the start up of the Massachusetts Bay outfall. The report first provides a summary of the survey and laboratory methods (Section 2). Section 3 presents the results of biomonitoring data from surveys conducted during 2000, as well as selected data from previous studies, and Section 4 presents the conclusions drawn from the 2000 survey results and historical trends. Finally, recommendations for future sampling and analyses are summarized in Section 5.

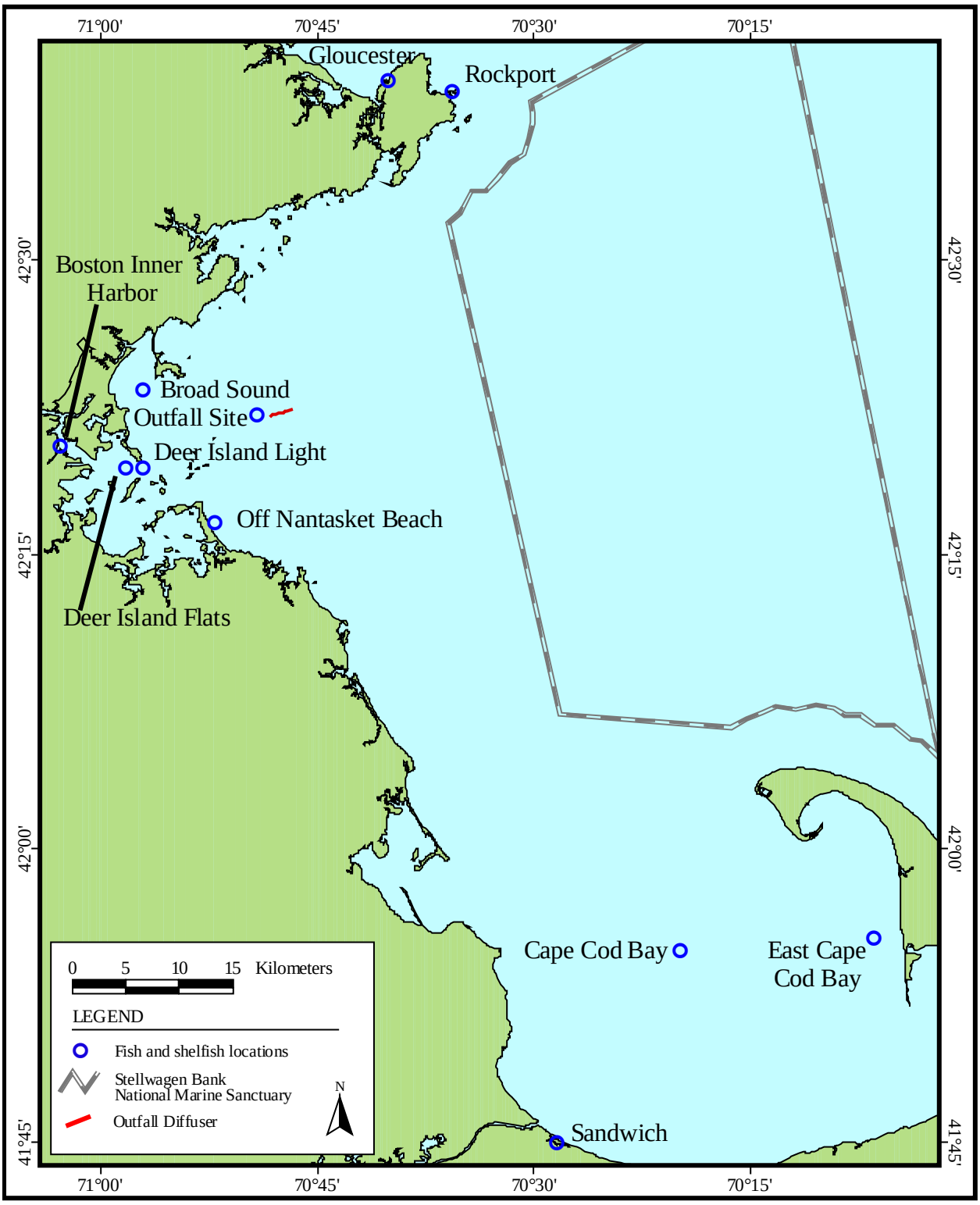


Figure 1-1. Boston Harbor and the Bays with Outfall Site.

2.0 METHODS

This section provides an overview of the methods and protocols used in the three surveys conducted to collect biological specimens. More detailed descriptions of the methods are contained in *Combined Work/Quality Assurance Project Plan (CW/QAPP) for the Fish and Shellfish Monitoring: 1998 ((Fish and Shellfish Monitoring CW/QAPP)* Lefkovitz *et al.*, 1998) and *Fish and Shellfish Monitoring CW/QAPP for the Fish and Shellfish Monitoring 1998-2001* ((*Fish and Shellfish Monitoring CW/QAPP)* Lefkovitz *et al*., 2001).

2.1 Winter Flounder Monitoring

Winter flounder *(Pseudopleuronectes americanus)* were collected from 5 locations in Boston Harbor and the Bays to obtain specimens for age, weight, and length determination, gross examination of health, histology of livers, and chemical analyses of tissues to determine contaminant exposure. Chemical data were used to determine whether contaminant tissue burdens approach human health consumption limits.

2.1.1 Stations and Sampling

The 2000 flounder survey was conducted between April 11, 2000 and April 14, 2000. Five sites were sampled to collect winter flounder for histological and chemical analyses:

- Deer Island Flats (DIF)
- Off Nantasket Beach (NB)
- Broad Sound (BS)
- Outfall Site (OS)
- East Cape Cod Bay (ECCB).

Table 2-1 provides the planned and actual sampling sites and locations for the 2000 flounder sampling. Adjustments in location and time were made to maximize collection efforts in an attempt to collect the required 50 flounder per site. Figure 2-1 shows the monitoring locations.

At each of the five designated sampling sites, otter-trawl tows were conducted from the F/V *Odessa* (captained by Captain William Crossen) to collect 50 sexually mature (4-5 years old) winter flounder. Thirty-five fish (at DIF, OS, and ECCB) and fifty fish (at NB and BS) were assigned unique identification numbers to indicate date, time, and site of collection. These fish were killed at sea by cervical section and used for histological processing. They were examined externally and their external condition noted prior to histological processing. The gonads of each flounder were examined to determine sexual maturity. All specimens were weighed, and total and standard lengths were determined. Scales were then taken from each specimen for age determination.

Of the flounder collected from DIF, OS, and ECCB, 15 were designated for tissue chemical analysis. Because contaminant-free conditions were not available on board the vessel, the fish used for chemical analysis were returned to the laboratory for organ dissection. These fish were maintained alive on-board and transported to Battelle, Duxbury for histological and chemical analysis. These fish were also examined for external condition in the laboratory. Fifteen additional unique sample identification numbers were generated at sea at the time of fish collection, however, actual assignment of IDs to individual fish did not occur until the fish were sacrificed at the laboratory.

2.1.2 Age Determination

Scales from each specimen were collected for age determination. Scales were removed after first removing any mucus, debris, and epidermis from the dorsum of the caudal peduncle by wiping in the direction of the tail with a blunt-edged table knife. Scales were then collected from the cleaned area by applying quick, firm, scraping motions in the direction of the head. The loosened scales were placed in the labeled age-sample envelope by inserting the knife between the liner of the sample envelope and scraping off the scales. The age of each flounder was determined by scientists at the National Marine Fisheries Services (NMFS) in Woods Hole, Massachusetts through analysis of growth rings (annuli).

2.1.3 Dissection of Fish

The flounder tissues were removed in the laboratory under contaminant-free conditions. Tissue processing was conducted in a Class-100 clean room. The fillets (muscle) were removed from the flounder and the skin was removed from the fillet, using a pre-cleaned (*i.e.*, rinsed with 10% HCL, Milli-Q (18 megohm) water, acetone, DCM, and hexane) stainless steel knife.

From each site, three composites were prepared; each composed of approximately equal masses of top and bottom tissue from five randomly chosen fish. Homogenization was performed using a stainless steel TEKMAR® tissuemizer. Each composite was placed in a sample container clearly identified with the unique sample identifier.

Livers from the 15 fish selected for chemical analyses were removed using a titanium knife and analyzed for chemical parameters, after sectioning for histopathology analysis. (Livers from the remaining 35 fish not used for chemical analyses were removed shipboard and processed as described below). Following the processing for histology analysis, the livers were individually homogenized by finely chopping with the titanium knife and divided into three separate composites to correspond to the composites made for the fillets (*e.g.*, the livers of the same five specimens used for each edible tissue composite were combined). This was done to ensure comparability between fillet and liver chemical analyses. Each composite was placed in a sample container clearly identified with the unique sample identifier. This resulted in 18 pooled samples for analysis in 2000 (9 pooled fillets and 9 pooled livers). The homogenized tissue and liver samples were frozen and stored. Any remaining tissue from each specimen was archived frozen in case additional analysis was required.

At least one homogenization blank was carried out for each batch of 20 fish to monitor for sample contamination during the homogenization process. For the blank sample, a known quantity (about 100 ml) of Milli-Q water was transferred to a clear glass jar and "tissuemized" for two minutes. The blank was held for analysis of both PCB/Pesticides and Hg (fillet measurements only).

2.1.4 Histological Processing

After the fish were completely examined and scales removed, the livers were removed (either on-board the ship or in the lab, as described above) and examined for visible gross abnormalities ("Gross Liver Lesion"). The livers were then preserved in 10% neutral buffered formalin for histological analysis. Liver samples from each fish were placed in a separate clearly labeled sample container.

2.1.5 Histological Analysis

Livers of 50 flounder from each site were prepared for histological analysis by Experimental Pathology Laboratories in Herndon, VA. Transverse sections of flounder livers fixed as part of tissue sample processing were removed from the buffered formalin after at least 24 hours, rinsed in running tap water, dehydrated through a series of ethanols, cleared in xylene, and embedded in paraffin. Paraffin-embedded material was sectioned on a rotary microtome at a thickness of 5 μm. Each block contained three liver

slices, resulting in one slide with three slices per slide per fish and a total of 250 slides (50 fish X 5 sites). The sections were stained in hematoxylin and eosin.

Each slide was examined under bright-field illumination at 25x, 100x, and 200x to quantify the presence and extent of:

- Three types of vacuolation (centrotubular, tubular, and focal)
- Macrophage aggregation
- Biliary duct proliferation
- Neoplasia

The severity of each lesion was rated on a scale of 0 to 4, where: 0 = absent; 1 = minor; 2 = moderate; 3 = severe; and 4 = extreme. For each lesion and each fish, a histopathological index was then calculated as a mean of scores from three slices on one slide.

2.1.6 Tissue Processing and Chemical Analyses

Chemical analyses were performed on composite samples of flounder from DIF, OS, and ECCB. Two tissue types (fillet, liver) were analyzed. Flounder fillet and livers were analyzed for PCBs/Pesticides, lipids, and mercury. In addition, flounder livers were analyzed for PAHs, lead, silver, cadmium, chromium, copper, nickel, and zinc. The individual steps involved in the tissue processing and chemical analyses of these samples are detailed in Section 2.4 Chemical Analysis of Tissues.

2.1.7 Data Reduction and Statistical Analyses

Data reduction was conducted as described in the Fish and Shellfish Monitoring CW/QAPP (Lefkovitz *et al.*, 1998; Lefkovitz *et al.*, 2001) and in Section 2.5 of this report. Histopathological indices and prevalence of lesions were compared between classes of flounder by differences in station, age, sex and length. Chemical constituents were presented graphically and compared among stations using ANOVA analysis. Temporal patterns of contaminants in flounder fillet and liver tissue were evaluated through available data from 1992 through 2000.

Histopathological observations of the livers of the winter flounder from all sites were conducted and, where possible, comparisons of the results with those of previous years were made.

In addition to reporting the prevalence and lesion index of hydropic vacuolation, historical data has included several other lesions, including macrophage aggregates, biliary proliferation, neoplasia, and a lesion unreported before 1993, referred to as “balloon hepatocytes” (Hillman & Peven, 1995).

Where relevant, the levels of contaminants measured in edible tissues were compared to Food and Drug Administration (FDA) Action Levels (U.S. EPA, 1989) for those contaminants.

2.1.8 Deviations From the CW/QAPP

Only 26 fish were caught from Deer Island Flats on the morning of April 11, 2000. Trawls performed in the afternoon of April 11, 2000 showed no increase in yield. High winds and rough seas made it impossible to return to the Deer Island Flat site on April 12, 2000. Battelle reported this event to MWRA by e-mail, and it was concluded that the cost of a further day to seek more fish was too great.

2.2 Lobster Monitoring

Lobsters *(Homarus americanus)* were collected from three sampling sites for gross examination (to determine specimen health) and chemical analyses to determine tissue burden of contaminants.

2.2.1 Stations and Sampling

Lobster surveys were conducted on July 19, 2000 (ECCB), August 11, 2000 (DIF), and August 24, 2000 (OS).

Table 2-2 provides the planned and actual sampling sites and locations for the lobster surveys. Figure 2-2 illustrates the sampling locations in Boston Harbor and the Bays. Adjustments in location and time were made to maximize collection efforts and to coincide with the availability of commercial lobstermen.

Lobsters were purchased from commercial lobstermen. The location was verified by placing a Battelle staff member on board during collection operations. Individual lobsters retained for analyses were assigned a unique identification number to indicate date, time, and site of collection. Lobsters were measured for carapace length and width and the gender was determined. Lobster specimens were visually examined and the condition noted. Processing of the hepatopancreas and edible tissue samples was conducted in the laboratory.

2.2.2 Size and Sex Determination

Carapace length was determined with calipers by measuring the distance from the posterior of the eye socket to the midpoint of the posterior of the carapace. Measurements were recorded to the nearest millimeter. Specimen weight was recorded to the nearest gram. Specimens were visually examined for the presence and severity of gross external abnormalities, such as black gill disease, shell erosion, and parasites. Data for each specimen were recorded on a lobster sample collection log.

2.2.3 Dissection of Lobster

The hepatopancreas was removed and frozen for chemical analysis. The tail and claw meat (edible tissue) was stored frozen in the shells until processed in the laboratory. Samples were placed in sample containers that were clearly identified with a conventional label containing the pertinent sample information.

The 15 lobsters collected at each site were randomly divided into three groups of five lobsters each. Within each of the three groups, edible meat (tail and claw) and hepatopancreas from the same five lobsters were pooled by tissue type. Homogenization of lobster meat was performed using a stainless steel TEKMAR® tissuemizer. Hepatopancreas samples were homogenized using a titanium knife to avoid metals contamination. Each composite was placed in a sample container clearly identified with the unique sample identifier. This resulted in 18 pooled samples for analysis in 2000 (nine edible meat samples and nine hepatopancreas samples).

2.2.4 Tissue Processing and Chemical Analyses

Chemical analyses were performed on the composite samples of lobster (edible meat and hepatopancreas). Edible lobster meat and hepatopancreas were analyzed for PCBs/Pesticides, lipids, and mercury. In addition, hepatopancreas samples were analyzed for PAHs, lead, silver, cadmium, chromium, copper, nickel, and zinc. The individual steps involved in the tissue processing and chemical analyses of these samples are detailed in Section 2.4 Chemical Analysis of Tissues.

2.2.5 Data Reduction and Statistical Analyses

Data reduction was conducted as described in the Fish and Shellfish Monitoring CW/QAPP (Lefkovitz *et al.*, 1998; Lefkovitz *et al.*, 2001) and Section 2.5 of this report. Temporal patterns of contaminants in edible lobster tissue and hepatopancreas tissue were evaluated through available data from 1992 through 2000. Spatial distributions were analyzed among stations using ANOVA analysis. Comparisons were made to the FDA Action Limits and other appropriate levels of regulatory concern.

2.2.6 Deviations from the CW/QAPP

No deviations were noted.

2.3 Mussel Bioaccumulation Monitoring

Blue mussels *(Mytilus edulis)* were collected from a reference location and deployed in suspended cages at three sites in Boston Harbor and the Bays. Mussels were recovered for determination of short-term accumulation of anthropogenic contaminants in soft tissues.

2.3.1 Stations and Reference Area

During the 2000 surveys, mussels were collected from a reference site in Rockport, MA and deployed at four sites:

- Off Deer Island Light (DI) (~2 m above bottom)
- Outfall Site (OS)
- Boston Inner Harbor (BIH)

Table 2-3 provides the planned and actual sampling sites and locations. Figure 2-3 illustrates the sampling locations in Boston Harbor and Massachusetts Bay. Adjustments in the Outfall Site location were made to reflect the actual location of the offshore buoy where the mussels are deployed.

2.3.2 Mussel Collection

In late June, approximately 1200 mussels were collected from Rockport, MA to be used for organic and inorganic analyses. Mussels were harvested during low tide and 120 mussels were individually checked for length. The length of the measured mussels ranged from 41 to 68 mm, with 75% of the mussels being smaller than 55 mm. A sub-sample of Rockport mussels were randomly selected and set aside for pre-deployment biological and chemical analyses.

2.3.3 Mussel Deployment

After collection, the mussels were randomly distributed to plastic cages for deployment as an array (*i.e.*, set of cages) in sufficient number to provide the necessary biological material. At least 10% additional mussels were included to account for potential mortality. Mussels were deployed on June 28 and June 29 in replicate arrays at the three sites (Table 2-3 and Figure 2-3). Table 2-4 lists the minimum numbers of mussels and the number of cages and corresponding arrays that were deployed at each location.

At each location, a minimum of four arrays was deployed except for BIH, where three arrays were deployed. Each array was deployed on a separate mooring and each with enough mussels to provide sufficient tissue to complete the study. The locations of the arrays were recorded using Differential Global Positioning System (DGPS).

2.3.4 Mussel Retrieval

Mussel retrieval was planned for two occasions with collection of up to one half of the mussels at 40-days to provide tissue in the event of failure of the 60-day collection. At BIH, OS, and DIF, 60-day mussels were retrieved. Actual mussel recovery is discussed in Section 3.3. The amount of biofouling of the arrays was also assessed at 40 days.

2.3.5 Tissue Processing and Chemical Analyses

Individual mussels were pooled for organic and inorganic analyses separately. For organic analysis, composite groups of 10 mussels were pooled from the 50 Rockport mussels deployed and collected to create five pooled samples per site. At OS, eight pooled samples of 10 each were created from 80 Rockport mussels. For inorganic analysis composites (Hg and Pb), groups of five mussels were pooled from 25 Rockport mussels deployed and collected to create five pooled samples per site. At OS, eight pooled samples were created from 40 Rockport mussels. Rockport pre-deployment mussels were also analyzed for organic and inorganic parameters. Details of actual mussel retrievals are discussed in Section 3.3.

Mussel composites were prepared from individual mussels by cleaning of attached material, removing all byssal threads and placing all soft tissue including fluids directly into the appropriate container (500-ml I-Chem clean bottle for organics and a pre-cleaned 4 ounce plastic jar for metals). Mussel composite samples were prepared for organic chemical analyses by homogenization using a stainless steel Tekmar "tissumizer" rinsed with methanol and de-ionized water prior to use. Mussel composite samples for metal analyses were prepared by freeze drying and subsequent ball milling, to achieve homogenization.

Chemical analyses were performed on composite samples of mussel tissue. The mussel tissue was analyzed for PCBs/Pesticides, PAHs, lipids, mercury, and lead. The individual steps involved in the tissue processing and chemical analyses of these samples are detailed in Section 2.4 Chemical Analysis of Tissue Samples.

2.3.6 Data Reduction and Statistical Analyses

The extent of bioaccumulation of contaminants in the mussels was evaluated. Data reduction was conducted as described in the Fish and Shellfish Monitoring CW/QAPP (Lefkovitz *et al.*, 1998; Lefkovitz *et al.*, 2001) and in Section 2.5 of this report. The 2000 results were compared statistically to initial contaminant levels in the control mussels using two-sample t-tests. Further evaluation focused on spatial and temporal patterns in contaminant accumulation by ANOVA analysis.

2.3.7 Deviations from the CW/QAPP

Mussels collected at Rockport were generally smaller than 55 mm, as specified in the Fish and Shellfish Monitoring CW/QAPP (Lefkovitz *et al.*, 1998; Lefkovitz *et al.*, 2001). Approximately 75% of the collected mussels were less than 55 mm in length. The use of these smaller mussels was discussed with and approved by MWRA. Also, at the discretion of MWRA, mussels were not deployed at the Cape Cod Bay site in 2000.

Due to PAH background contamination in the laboratory, PAH results are presented as blank corrected. Re-extraction of remaining intact mussels from the extra arrays was attempted. However, these mussels appeared to have been exposed to high levels of naphthalene during storage in the freezer, and the analytical results were unusable. One entire sample replicate from DI for PAH analysis was considered suspect and not included in the data analysis.

2.4 Chemical Analyses of Tissue Samples

Table 2-5 summarizes the analyses performed on each type of tissue sample. Table 2-6 lists the analysis methods, units of measurement and method reference. The chemical analytes of interest are listed in Table 2-7. The same analytical methods were used for all tissues.

2.4.1 Organic Tissue Extraction

Tissues were extracted and cleaned following the procedures of Peven and Uhler (1993), as described in Battelle SOP 5-190. Approximately 30-g of tissue homogenate was weighed into a Teflon extraction jar, spiked with the appropriate surrogate internal standard (SIS), combined with 75 mL dichloromethane (DCM) and sodium sulfate, macerated with a Tissumizer, and centrifuged. An aliquot of the original sample was also taken for dry weight determination. The extract was decanted into an Erlenmeyer flask. This process was repeated once using 75 mL DCM. After each maceration, the centrifuged solvent extracts were combined in the Erlenmeyer flask. An additional extraction was performed using 50 mL DCM and shaking techniques, the sample centrifuged a third time, and the extract combined with the other two. A 10-mL aliquot of the combined extracts was removed for lipid weight determination. Lipid results were gravimetrically measured by evaporating the aliquot of organic extract and weighing the remaining residue. Results were reported in percent dry weight.

The combined extract was dried over sodium sulfate, processed through an alumina cleanup column, and concentrated to approximately 900-µL for additional HPLC cleanup. Raw extracts (post-alumina) were fractionated by HPLC (BOS SOP 5-191). The post-HPLC extract was concentrated under nitrogen to approximately 0.5 mL and spiked with recovery internal standard (RIS). Dry weight determinations were performed by oven drying a portion of each composite sample.

Extracts requiring both PCB/Pesticide and PAH analyses were split for analysis, one half remaining in DCM for PAH analysis, and the other half solvent-exchanged with isooctane for PCB and pesticide analysis.

2.4.2 Metals Tissue Digestion

Flounder Liver and Fillet; Lobster Hepatopancreas and Edible Tissue - To prepare flounder and lobster tissue samples for metals analysis, samples were freeze-dried and homogenized in a ball-mill. A 200- to 300-mg aliquot of each dried, homogeneous sample was digested using aqua regia (nitric and hydrochloric acids at a ratio of 5.0 mL: 3.5 mL) according to Battelle SOP MSL-I-006 *Aqua Regia Sediment and Tissue Digestion*. The freeze-dried tissue and digestion acids were combined in a Teflon bomb and heated in an oven at 130 ºC (±10 ºC) overnight. After heating and cooling, deionized water was added to the acid-digested tissue and the digestates were submitted for analysis.

Mussel Tissue - To prepare mussel tissue samples for metals analysis, samples were freeze-dried and homogenized in a ball-mill. An approximately 300-mg aliquot of each dried, homogeneous sample was digested using nitric acid according to Battelle SOP MSL-I-005 *Hot Nitric Acid Digestion of Sediments and Tissues*. The freeze-dried tissue and digestion acid were combined in a glass vial. The vials were loosely capped and heated on a hot plate at a temperature just high enough to boil the acid, without boiling over or evaporating the sample to dryness. After heating and cooling, deionized water was added to the acid-digested tissue and the digestates were submitted for analysis.

2.4.3 Organic Analyses

Organic analyses performed on the flounder, lobster, and mussel tissues included PAHs and PCB/Pesticides as summarized in Table 2-5.

PAH Analysis - Trace level organic compounds (PAH) were identified using electron impact gas chromatography/mass spectrometry (GC/MS). Target compounds were separated using an HP 5890 Series II gas chromatograph, equipped with a 60-m x 0.25-mm-inner diameter (0.25-um film thickness) DB-5 column (J&W Scientific), and measured using a HP 5972a mass selective detector operated in the selective ion monitoring (SIM) mode following Battelle SOP 5-157. Concentrations for all target

analytes were determined by the method of internal standard, using SISs for quantification. All PAH results were reported in ng/g dry wt.

PCB/Pesticide Analysis - Pesticides and PCB congeners were analyzed and quantified using gas chromatography/electron capture detection (GC/ECD) (Hewlett Packard 5890 Series 2 GC) using a 60-m DBS column and hydrogen as the carrier gas following Battelle SOP 5-128, including a second column for confirmation. Concentrations for all target analytes were determined by the method of internal standard, using SISs for quantification. All PCB and pesticide results were reported in ng/g dry wt.

2.4.4 Metals Analyses

Analysis of Hg - Sample digestates were analyzed for Hg using cold-vapor atomic absorption spectroscopy (CVAA) according to Battelle SOP MSL-I-016 *Total Mercury in Tissues and Sediments by Cold Vapor Atomic Absorption*, which is based on EPA Method 245.6 *Determination of Mercury in Tissues by Cold Vapor Atomic Absorption Spectrometry* (EPA 1991a). Results were reported in units of µg/g on a dry-weight basis.

Analysis of Ag, Cd, Cr, Cu, Ni, Pb, and Zn - For analysis of multiple metals simultaneously, sample digestates were analyzed using inductively coupled plasma - mass spectrometry (ICP-MS) or by inductively coupled plasma – atomic emission spectrometry (ICP-AES). For analysis of a single element at a time (except Hg), sample digestates were analyzed by graphite furnace atomic absorption (GFAA).

ICP-MS analysis was conducted according to Battelle SOP MSL-I-022 *Determination of Elements in Aqueous and Digestate Samples by ICP/MS*. This procedure is based on two methods modified and adapted for analysis of solid sample digestates, EPA Method 1638 *Determination of Trace Elements in Ambient Waters by Inductively Coupled Plasma - Mass Spectrometry* (EPA 1996) and EPA Method 1640 *Determination of Trace Elements in Water by Preconcentration and Inductively Coupled Plasma - Mass Spectrometry* (EPA 1997). Results were reported in units of µg/g on a dry-weight basis.

ICP-AES analysis was conducted according to Battelle SOP ML-I-027 *Determination of Metals in Aqueous and Digestate Samples by ICP/AES*. This procedure is based on EPA Method 200.7 *Determination of Metals and Trace Elements by Inductively Coupled Plasma-Atomic Emission Spectrometry* (EPA 1994) and SW-846 Method 6010B *Inductively Coupled Plasma-Atomic Emission Spectrometry* (update 12/96). Results are reported in units of µg/g on a dry-weight basis.

GFAA analysis was conducted according to Battelle SOP MSL-I-029 *Determination of Metals in Aqueous and Digestate Samples by GFAA*. This procedure is based on EPA Method 200.9 *Determination of Trace Elements by Stabilized Temperature Graphite Furnace Atomic Absorption Spectrometry* (EPA 1991b). Results were reported in units of µg/g on a dry-weight basis.

2.4.5 Corrective Actions in Metals Analyses

In some instances, analytical results for certain metals, particularly the analysis of flounder liver tissue for Cr, initially did not meet data quality objectives. This condition was most likely due to chloride interferences in the ICP-MS analysis from the hydrochloric acid used in the sample digestion. In these cases, a portion of the nitric and hydrochloric acid digestates were evaporated to dryness then returned to volume using only nitric acid. The nitric acid digestates were reanalyzed by ICP-MS for Cr and acceptable results were achieved.

2.5 General Data Treatment and Reduction

This section describes the data reduction performed on 2000 Fish and Shellfish data, as well as historical data, as part of the 2000 MWRA Harbor and Outfall Monitoring Project.

Specifics of data handling are as follows:

- All 2000 chemical data were generated at Battelle and loaded directly into the HOM database. During the preparation of the 1999 Fish and Shellfish Annual Report, data issues and inconsistencies in the historical data were identified and corrections were made to the database.
- All fish and shellfish data (2000 and historical) were extracted directly from the HOM database and exported into Excel files, where graphical presentations and statistical analyses were preformed.
- All laboratory duplicates for pre-1998 data were averaged for reporting and calculating. No laboratory duplicate data were entered for 1999 or 2000 data.
- Contaminant data were reported as mean, standard error, and *n* by station and year.
- 1992 flounder collection consisted of 3 individual fish and a composite of seven fish. Results were calculated by treating the composite as seven individual fish and averaging those values with the values of the other three individual fish (i.e., [(7*val1 +val2 + val3 + val4)/10]). MWRA decided that the appropriate standard error and *n* values for this composite are null (Appendix C). This manipulation was done in the script used to query the data from the database and is not reflected in the EM&MS database.
- 1993 lobster selection consisted of two animals collected in June and one in August. Results were calculated by taking the average of these three animals ($n = 3$). The difference in sample collection times was footnoted.
- Total PCB was calculated as the sum of twenty PCB congeners (Table 2-7).
- Total DDT was calculated as the sum of six DDT-related compounds: 2,4'-DDD, 4,4'-DDD, 2,4'-DDE, 4,4'-DDE, 2,4'-DDT, and 4,4'-DDT (Table 2-7).
- Total chlordane was calculated as the sum of four compounds: heptachlor, heptachlorepoxide, cis-chlordane, and trans-nonachlor (Table 2-7).
- For the temporal presentation and analysis of data, the "Historical NOAA List" was used to calculate Total PAHs (Table 3-17). For the spatial presentation and analysis of data, the "Total PAH List" was used to calculate Total PAHs.
- In 1995, the individual five alkylated PAHs on the "Historical NOAA List" were not measured in mussels. Instead, the C1-, C2-, and C3-alkylated napthalene homologue groups were quantified. To make 1995 results more comparable to the "Historical NOAA List", values for the individual alkylated naphthalene compounds were estimated using ratios of the individuals to their respective homologue groups from 1996 and 1997 data sets.
- The "f" qualifier was used to indicate compounds that were quantified but were below the detection limit. "f"-flagged data were included in the graphical presentation of results and the calculations of thresholds and baseline means.
- The "G" qualifier was used to indicate compounds that co-eluted with a second known/unknown compound. The values for "G"-flagged data are estimated values and were included in the graphical presentations of results and the calculations of thresholds and baseline means.

- The "s" qualifier was used to indicate suspect data. "s"-flagged data were not included in any calculations or graphs.
- The 'q" qualifier was used to indicate possibly suspect/invalid data that may not be fit for use. These data are currently under investigation and were not included in any calculations or graphs.
- All non-detects used in calculations and trend analyses in this report were treated as zero.
- All data entered into the database are in dry weight units.
- Wet weight tissue concentrations were calculated from the wet/dry ratio and used in comparison to MWRA Appreciable Change levels and FDA action levels.

2.5.1 Statistical Analyses

Statistical analyses were conducted to evaluate whether the various contaminant concentrations in flounder tissue (fillet and liver), lobster tissue (edible meat and hepatopancreas), and mussel tissue were significantly different between sampling sites. Table 2-8 presents the various chemical contaminant analyses for a given tissue type. A Single Factor Analysis of Variance (ANOVA) was used to evaluate each particular contaminant-tissue type combination (*e.g*., total PCBs in flounder liver; total DDTs in flounder fillet; mercury in lobster meat; etc.).

All ANOVAs were run in SAS version 8.01 (SAS Institute Inc., 1999). Data were tested for normality and homogeneity of variance prior to running each ANOVA. In the few cases where the data were not normal or variances were not equal or both, data were log transformed and the ANOVA run. Following each ANOVA, multiple comparison procedures (between individual sites) were conducted. Tukey's Studentized Range Test was used for the individual comparisons between any two sites (for any particular tissue-contaminant combination). ANOVA results and individual site comparisons are presented by tissue type in Section 3.

Table 2-1. Planned and Actual Sampling and Locations for Flounder Surveys.

Station #	Station Abbrev.	Sampling Site	Number of Tows	Planned Locations		Actual Locations[1]	
				N Latitude	W Longitude	N Latitude	W Longitude
1	DIF	Deer Island Flats	4	42º20.4'	70º58.4'	42º20.8'	70º58.1'
2	NB	Off Nantasket Beach	2	42º17.6'	70º52.2'	42º17.3'	70º51.4'
3	BS	Broad Sound	3	42º24.4'	70º57.2'	42º24.3'	70º57.4'
4	OS	Outfall Site	1	42º23.1'	70º49.3'	42º23.2'	70º49.4'
5	ECCB	East Cape Cod Bay	1	41º56.2'	70º06.6'	41º58.0'	70º07.3'

[1]Based on an average of the Latitude and Longitude of several tows

Table 2-2. Planned and Actual Sampling and Locations for Lobster Surveys.

Station #	Station Abbrev.	Sampling Site	Planned Location		Actual Location	
			N Latitude	W Longitude	N Latitude	W Longitude
1	DIF	Deer Island Flats[a]	42º20.4'	70º58.4'	42º20.3'	70º57.0'
4	OS	Outfall Site[b]	42º23.1'	70º49.3'	42º21.0'	70º48.2'
5	ECCB	East Cape Cod Bay[c]	41º56.2'	70º06.6'	41º55.3'	70º20.7'

[a]August 11, 2000
[b]August 24, 2000
[c]July 19, 2000

Table 2-3. Planned and Actual Sampling and Locations for Mussels Surveys.

Station #	Station Abbrev.	Sampling Site	Planned Location		Actual Location	
			N Latitude	W Longitude	N Latitude	W Longitude
1M	DI	Deer Island Light	42º20.4'	70º57.2'	42º20.4'	70º57.2'
4	OS	Outfall Site	42º23.1'	70º49.3'	42°22.8'	70°47.0'
6	BIH	Boston Inner Harbor	42º21.5'	71º02.9'	42°21.5'	71°02.9'
RP	Rockport	Rockport – Pre-deployment	42º39.6'	70º35.7'	42º39.6'	70º35.7'

Table 2-4. Summary of Mussel Deployment Scheme.

Site	Description/ Location	Water Depth	Cage Height Above Bottom	# Arrays	# Cages/Array	# Mussels/ Cage
DI	Deer Island Light	2-5 m	<1-1.5m	4	2	45
OS	Outfall Site	33m	12m	4	3	48
BIH	Boston Inner Harbor	8-11m	1.5-4.5m[1]	3	2	45

[1] Rise and fall with tide, so that it is at a constant depth below the water surface.

Table 2-5. Summary of Chemical Analyses Performed by Organism.

Sample Type	Number of Samples	Metals (1) (other than Hg and Pb)	Hg	Pb	PCBs	PAHs	Pesticides	Lipids
Flounder Meat	9	NR	*	NR	*	NR	*	*
Flounder Liver	9	*	*	*	*	*	*	*
Lobster Meat	9	NR	*	NR	*	NR	*	*
Lobster Hepatopancreas	9	*	*	*	*	*	*	*
Mussel Tissue	23	NR	*	*	*	*	*	*

*Targeted for Analysis
(1) Additional metals: Ag, Cd, Cr, Cu, Ni, and Zn
NR = Not Required

Table 2-6. Fish and Shellfish Sample Analyses.

Parameter	Unit of Measurement	Method	Reference
Organic Analyses			
Organic Extraction	NA	Tissuemize/Methylene Chloride	Peven and Uhler (1993) Battelle SOP 5-190
Polycyclic Aromatic Hydrocarbons (PAH)	ng/g dry wt.	GC/MS	Peven and Uhler (1993) Battelle SOP 5-157
Polychlorinated Biphenyls (PCB)/Pesticides	ng/g dry wt.	GC/ECD	Peven and Uhler (1993) Battelle SOP 5-128
Metals Analyses			
Digestion: Ag, Cd, Cr, Cu, Ni, Pb	NA	Aqua regia Nitric acid	MSL-I-006 MSL-I-005
Analysis: Cr, Ni, Pb	µg/g dry wt	ICP-MS GFAA (as required)	MSL-I-022 MSL-I-029
Analysis: Ag, Cd, Cu, Zn	µg/g dry wt	ICP AES	MSL-I-027
Analysis: Hg	µg/g dry wt	CVAA-FIAS (Hg)	MSL-I-016
Ancillary Parameters			
Lipids	% by dry weight	Gravimetric	Peven and Uhler (1993)
Dry Weight	% by dry weight	Gravimetric	Peven and Uhler (1993)

Table 2-7. Specific Chemical Analytes Included in Tissue Chemistry Analyses.

Chemical Analytes	
Trace Metals[a]	**Polynuclear Aromatic Hydrocarbons (PAHs)** (continued)
Ag Silver	C_1-Phenanthrenes/anthracene
Cd Cadmium	C_2-Phenanthrenes/anthracene
Cr Chromium	C_3-Phenanthrenes/anthracene
Cu Copper	C_4-Phenanthrenes/anthracene
Hg Mercury[b,d]	Dibenzothiophene
Ni Nickel	C_1-dibenzothiophenes
Pb Lead[d]	C_2-dibenzothiophenes
Zn Zinc	C_3-dibenzothiophenes
Polychlorinated biphenyls (PCBs)[c,d]	Fluoranthene
2,4'-Cl_2(8)	Pyrene
2,2N,5-Cl_3(18)	C_1-fluoranthenes/pyrene
2,4,4N-Cl_3(28)	C_2-fluoranthenes/pyrene
2,2N,3,5N-Cl_4(44)	C_3-fluoranthenes/pyrene
2,2N,5,5N-Cl_4(52)	Benzo[*a*]anthracene
2,3N,4,4N-Cl_4(66)	Chrysene
3,3N,4,4N-Cl_4(77)	C_1-chrysene
2,2N4,5,5N-Cl_5(101)	C_2-chrysene
2,3,3N,4,4N-Cl_5(105)	C_3-chrysene
2,3N,4,4N5-Cl_5(118)	C_4-chrysene
3,3N,4,4N,5-Cl_5(126)	Benzo[*b*]fluoranthene
2,2N,3,3',4,4N-Cl_6(128)	Benzo[*k*]fluoranthene
2,2N,3,4,4N,5-Cl_6(138)	Benzo[*a*]pyrene
2,2N4,4N,5,5N-Cl_6(153)	Dibenzo[*a*,*h*]anthracene
2,2N3,3',4,4N,5-Cl_7(170)	Benzo[g,h,i]perylene
2,2N,3,4,4N,5,5N-Cl_7(180)	Indeno[1,2,3-*c*,*d*]pyrene
2,2N,3,4',5,5N,6-Cl_7(187)	Perylene
2,2N,3,3N,4,4N,5,6-Cl_8(195)	Biphenyl
2,2N,3,3N4,4N,5,5N,6-Cl_9(206)	Benzo[*e*]pyrene
Decachlorobiphenyl-Cl_{10}(209)	Dibenzofuran
Polynuclear Aromatic Hydrocarbons (PAHs)[a,d]	Benzothiazole
Naphthalene	**Pesticides**[c,d]
C_1-naphthalenes	Hexachlorobenzene
C_2-naphthalenes	Lindane
C_3-naphthalenes	Endrin
C_4-naphthalenes	Aldrin
1-methylnaphthalenes[e]	Dieldrin
2-methylnaphthalenes[e]	Mirex
2,6-methylnaphthalenes[e]	Heptachlor
2,3,5-methylnaphthalenes[e]	Heptachlorepoxide
Acenaphthylene	cis-chlordane
Acenaphthene	trans-Nonachlor
Fluorene	2,4N-DDD
C_1-fluorenes	4,4N-DDD
C_2-fluorenes	2,4N-DDE
C_3-fluorenes	4,4N-DDE
Phenanthrene	2,4N-DDT
1-methylphenanthrene[e]	4,4N-DDT
Anthracene	DDMU
	Lipids[c,d]

[a] Flounder liver; lobster hepatopancreas
[b] Flounder and lobster edible tissue
[c] Flounder edible tissue and liver; lobster edible tissue and hepatopancreas
[d] Mussel soft tissue
[e] Measured in mussel tissue in 1992–1994 and 1996–2000

Table 2-8. Statistical Analyses Performed by Tissue Type.

Matrix	Test	Data
Flounder Fillets	ANOVA	Compare 2000 stations for Total PCBs, Pesticides, Total Chlordane, and mercury.
Flounder Liver	ANOVA	Compare 2000 stations for Total PAHs, Total PCBs, Pesticides, Total Chlordane, and select metals.
Lobster Meat	ANOVA	Compare 2000 stations for Total PCBs, Pesticides, Total Chlordane, and mercury.
Lobster Hepatopancreas	ANOVA	Compare 2000 stations for Total PCBs, Total PAHs, Pesticides, Total Chlordane, and select metals.
Mussels	ANOVA	Compare 2000 60 day deployed station data for Total PCBs, Total LMW-PAHs, Total HMW-PAHs, Pesticides, Total Chlordane, lead, and mercury.
Mussels	t-test	Compare background to 60-day data for Total PCBs, Total LMW-PAHs, Total HMW-PAHs, Pesticides, Total Chlordane, lead, and mercury.

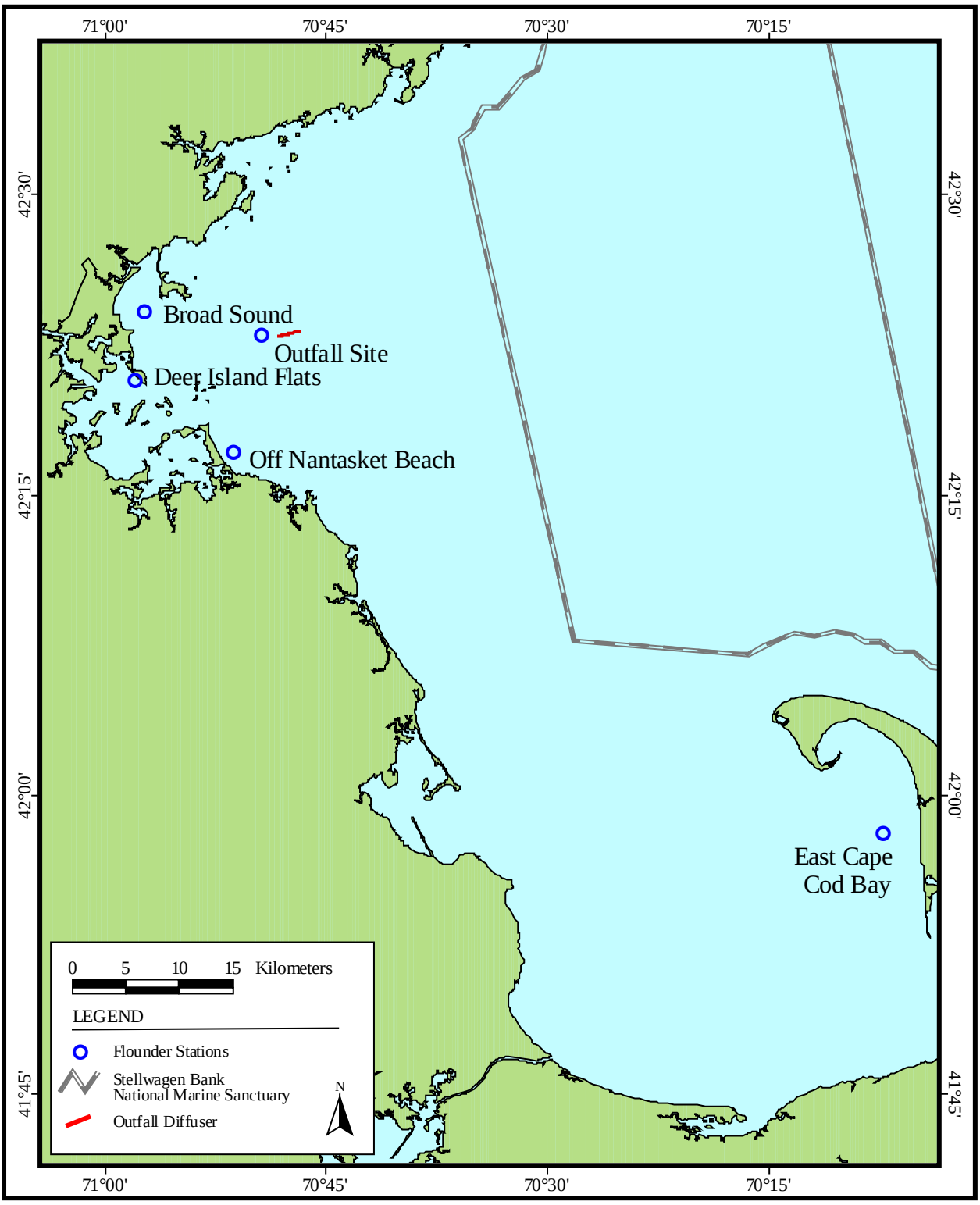


Figure 2-1. Flounder Monitoring Locations.

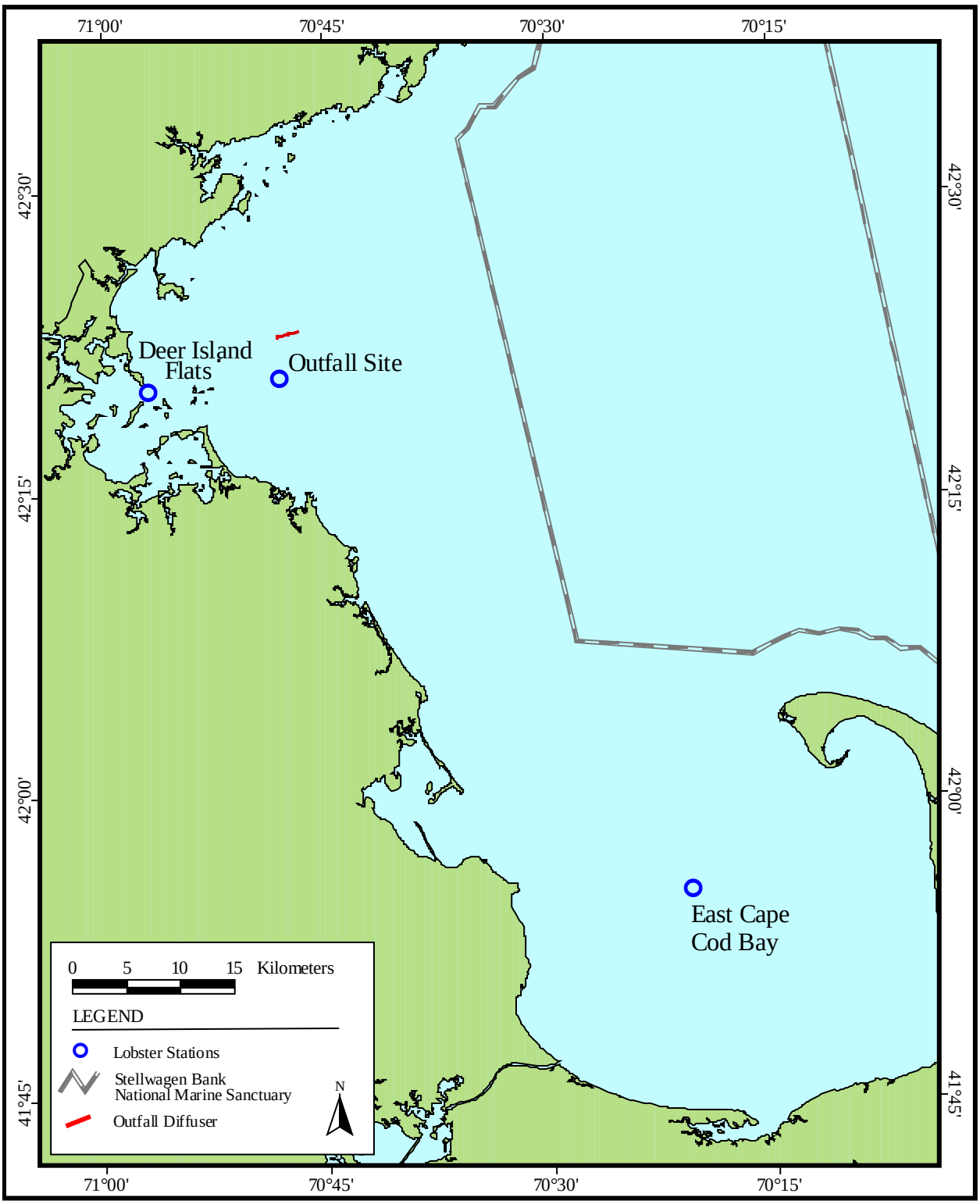


Figure 2-2. Lobster Monitoring Locations.

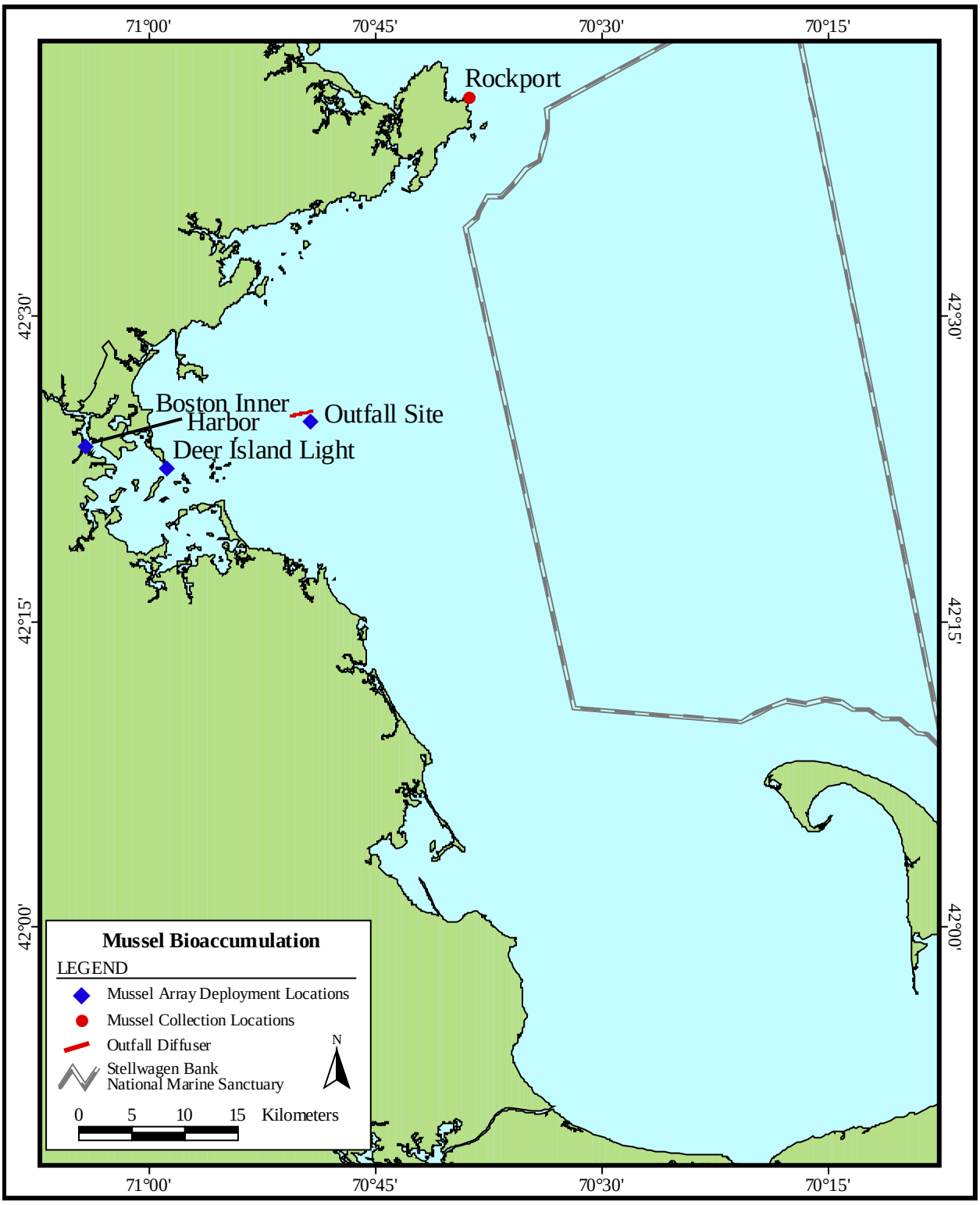


Figure 2-3. Mussel Collection and Deployment Locations.

3.0 RESULTS AND DISCUSSIONS

3.1 Winter Flounder

3.1.1 Fish Collected

Winter flounder, each a minimum 30 cm in length, were collected between April 11 and April 14, 2000 at five stations in the study area (Figure 2-1). Fifty flounder were collected from each station, except at DIF, where 26 fish were collected. All fish were sampled for liver histology and age. Fifteen of the fish from DIF, OS, and ECCB were sampled for chemical analysis of liver and fillet. The catch per unit effort (CPU), defined as the number of fish obtained per minute of bottom trawling time, is reported per station in Table 3-1. The catch at Outfall Site increased the CPU at that station to the highest level seen in this project. CPU values for the other sites were within historical ranges.

3.1.2 Age/Length Parameters

The physical characteristics (*i.e*. mean length, weight, age) of the winter flounder collected in 2000 are given in Table 3-2. Mean length at each station ranged from 33 cm at NB to 37 cm at DIF (Table 3-2). Mean weight ranged from 484.6 gm at NB to 648.5 gm at DIF. Mean age ranged from 4.0 years at NB to 5.0 years at ECCB.

3.1.3 External Condition

The external conditions (*i.e*. fin erosion) of winter flounder collected in 2000 are presented as averages per station in Table 3-2. As described in Section 2.1.5, each of the individual winter flounder collected was assessed for external conditions, and rated on a scale of 0 to 4 (no units), with 0 indicating the absence of the condition and 4 indicating extreme abnormalities (or erosion). As shown in Table 3-2, the incidence and severity of fin erosion continues to be low at all stations.

3.1.4 Inter-station Comparison of Liver Lesion Prevalence

For the second consecutive season, no neoplasms were found in the flounder livers collected from the five stations in 2000 (Table 3-3). Neoplasms have not been reported in the flounder livers from Deer Island since 1996, and only once from Broad Sound since 1995 (Figure 3-1). They have always been rare or absent from the other three sites.

Centrotubular hydropic vacuolation (CHV) is the least severe and most common of the forms of vacuolation monitored. CHV prevalence fell sharply from 1999 to 2000 at BS, NB, and ECCB, and remained relatively unchanged at OS (Figure 3-2). It rose at DIF from its all-time low of 28 percent in 1999 to 46 percent in 2000. We cautioned in the 1999 report that the low level of vacuolation at DIF compared to the levels at the other sites could possibly be related to the May sampling date at DIF as compared to the mid-April sampling at the other sites. An additional factor to be considered in the 2000 sampling period is that only 26 flounder were collected at DIF in 2000. Thus, the increments in percent prevalence are greater per individual fish than they would be if the full complement of 50 fish had been collected.

The mean severity of CHV in 2000 (Figure 3-3) also showed a marked decline from what was recorded in 1999 at BS and NB and has dropped substantially at BS since 1991. It remained at about the same level at ECCB and rose at DIF and OS. The apparent rise at DIF could be influenced by the nearly 50 percent decrease from 1999 in the number of fish examined.

3.1.5 Relationships Between Age, Length and Lesion Prevalence

No obvious relationships between age or length and lesion prevalence were determined, suggesting that lesion prevalence differences among sites are related to environmental conditions at the sites, rather than differences in sampling.

3.1.6 Spatial Comparison of Tissue Contaminant Levels in 2000

The body burdens of contaminants were determined for both edible tissue (fillets) and liver tissue for winter flounder collected in the 2000 survey. Mean values for selected organic compounds and metals were compared and tested for significance using single factor ANOVA followed by multiple comparison procedures. All analyses assume equal sampling distribution and variances (SAS v8.01) (p=0.05). Statistically significant results of the flounder analyses ($p < 0.05$) performed in 2000 are presented in Table 3-4 (for fillets) and Table 3-5 (for livers). All 2000 individual replicate concentrations for each contaminant can be found in Appendix B. Means, standard error, and *n* were determined for all stations and all years, and are presented in Appendix C.

3.1.6.1 Edible Tissue

Comparison of the 2000 mean concentrations of organic compounds in fillets across the study area indicates that the highest concentrations of organic contaminants were found at DIF and the lowest concentrations were found at ECCB (Figures 3-4 and 3-5). Mercury, the only metal measured in edible tissue, was highest in fillet samples from OS and lowest in those from ECCB (Figure 3-6).

Results from the single factor ANOVA evaluating whether contaminants in flounder fillet differ between sampling sites suggest that total PCB, total DDT, total chlordane, and mirex concentrations were significantly different between the sampling sites ($p < 0.05$) (Table 3-4). For total PCB, total DDT, and total chlordane, the concentrations at DIF were significantly higher that at OS and ECCB. Concentrations of total PCB and mirex were significantly lower at ECCB than at DIF and OS. Concentrations of mercury were not significantly different among the three sites.

3.1.6.2 Liver

Comparison of the 2000 mean concentrations of organic compounds in flounder livers across the study area showed a similar trend as that observed for edible tissue. In general, the highest concentrations of organic contaminants were found in samples from DIF and the lowest in those from ECCB (Figures 3-7 and 3-8). In general, metal concentrations in livers were highest at OS and lowest at ECCB (Figures 3-9 and 3-10). The concentrations of chromium, nickel, and zinc were similar at all three stations.

Of the organic contaminants measured, total PCB, total DDT, total chlordane, dieldrin, and mirex were significantly different between the sampling sites in 2000 ($p < 0.05$) (Table 3-5). Total chlordane and dieldrin were significantly higher at DIF than at OS and ECCB. For total PCB, total DDT, and mirex, concentrations in 2000 at ECCB were significantly lower than those at DIF and OS. Of the inorganic contaminants measured, only lead showed a statistically significant difference in liver contaminant concentrations among any of the three sites tested ($p = <0.0001$). Lead levels were significantly higher at OS than at DIF and ECCB and significantly lower at ECCB than at OS and DIF.

3.1.7 Comparison of 2000 Contaminant Levels to Other Baseline Data

Body burdens of selected contaminants have been measured in winter flounder since 1992. This section discusses the temporal trends observed from 1992 through the present. A summary of means and standard errors of the replicate analyses for both 2000 and historical fillet and liver tissues are provided in Appendix C.

3.1.7.1 Edible Tissue

Body burdens of organic compounds monitored in edible tissue in 2000 were consistently similar to or lower than the levels measured in previous years (Figures 3-4 and 3-5).

Mercury was the only metal measured in edible tissue from winter flounder. The 2000 concentrations of mercury at DIF, OS, and ECCB were similar to the concentrations in 1999 (Figure 3-6). Mercury concentrations at all stations have been variable over time, with the lowest concentrations routinely found at ECCB.

3.1.7.2 Liver

Concentrations of organic contaminants (PCBs, chlorinated pesticides, PAHs) in livers from winter flounder in 2000 were generally comparable to or lower than those measured in previous years. Generally, the highest concentrations in all years were detected in livers from fish collected at DIF and the lowest concentrations were observed at ECCB.

The spatial pattern in metals concentrations, for the most part, did not follow that of organic contaminants (Figures 3-9 and 3-10). Metals concentrations tended to be highest at OS and ECCB throughout the baseline period, rather than at DIF, as observed for organic contaminants. Inorganic contaminants showed no clear trends during the baseline period. 2000 concentrations were generally within the established baseline range at DIF and ECCB. At OS, however, lead, mercury, cadmium, copper, and silver were at the upper end of the historical range in 2000. The concentration of lead at DIF was the highest recorded during the baseline period.

3.1.8 Relationship of Contaminant Levels to FDA Action Limits

The U.S. Food and Drug Administration (FDA) has set action limits for the maximum tissue concentrations of specific contaminants in the edible portions of fish and fishery products. For the MWRA biomonitoring program, Appreciable Change levels are set at 2 times the OS baseline mean (1992-1999). Comparisons are also made to 80% of the FDA Limits. These two levels provide reference benchmarks for detecting adverse changes (and their potential human health risks) once the new outfall is on line. The means at DIF and ECCB were also compared for information only. The 2000 mean concentrations of target analytes in flounder edible meat, per station, were compared to the FDA's Action Limits and the MWRA Appreciable Change levels through 1999 for the outfall (Table 3-6). All fillet chemical concentrations were below both FDA and MWRA Appreciable Change levels.

3.2 Lobster

3.2.1 Lobster Collection

The 2000 lobster survey was conducted by purchasing lobster from commercial lobstermen. Fifteen lobsters were collected from each location (DIF, OS, ECCB).

3.2.2 Size, Sex, and External Conditions

The mean length and weight of lobsters collected in 2000 are presented in Table 3-7. Little difference in lobster length or weight was observed between the three sampling sites. The ratio of female to male lobster is also presented in Table 3-7. Mostly males were found at ECCB and mostly females at DIF and OS.

The size, sex, and external conditions (*i.e.* black gill disease, shell erosion, parasites, external tumors, etc.) were determined for the lobsters collected in the 2000 survey. Table 3-8 presents the average values for

general external observations made for the 15 lobsters collected at each station in the 2000 survey. In general, no deleterious conditions were noted in any of the lobsters collected during the survey.

3.2.3 Spatial Comparison of Tissue Contaminant Levels in 2000

The body burdens of contaminants were determined for both edible tissue (tail and claw meat) and liver tissue (hepatopancreas) for lobster collected in the 2000 survey. Mean values for selected organic compounds and metals were compared and tested for significance using single factor ANOVA followed by multiple comparison procedures. All analyses assume equal sampling distribution and variances (SAS v8.01) ($p=0.05$). Statistically significant results ($p < 0.05$) of the lobster analyses performed in 2000 are presented in Table 3-9 (for meat) and Table 3-10 (for hepatopancreas). All 2000 individual replicate concentrations for each contaminant can be found in Appendix B. Means, standard error, and *n* were determined for all stations and all years, and are presented in Appendix C.

3.2.3.1 Edible Tissue

Comparison of the 2000 mean concentrations of organic compounds in lobster meat across the study area indicates that the highest concentrations were found at DIF and the lowest concentrations were found at ECCB (Figures 3-11 and 3-12). However, for mirex and lindane, the lowest concentrations were found at OS. Concentrations of total DDTs were similar at all three stations. Mercury, the only metal measured in lobster meat, was highest in samples from OS and lowest at ECCB (Figure 3-13).

Only total chlordane in lobster edible tissue had a statistically significantly result from the ANOVA analysis (Table 3-9). The concentration at DIF was significantly higher than at OS and ECCB. Concentrations of mercury were not significantly different among the three sites.

3.2.3.2 Hepatopancreas

Comparison of the 2000 mean concentrations of organic compounds in lobster hepatopancreas across the study area showed the same spatial pattern as for edible tissue, with the highest concentrations generally found in samples from DIF and the lowest in samples from ECCB (Figures 3-14 through 3-16). However, the lowest concentrations of total DDTs and mirex were at OS. Metal body burdens were more variable spatially (Figures 3-17 and 3-18). Although there was no clear spatial pattern for the inorganics, a majority of the metals were highest in samples from OS (Hg, Cd, Cr, Cu, Ni, Ag) or from ECCB (Pb, Zn).

Total PAH had a statistically significant difference in contaminant concentration between the sampling sites, with samples from DIF having significantly higher concentrations of total PAH than samples from OS and ECCB (Table 3-10). Of the inorganic contaminants, zinc concentrations were found to be significantly higher at ECCB than at DIF.

3.2.4 Comparison of 2000 Tissue Contaminant Levels to Other Baseline Data

Body burdens of selected contaminants have been measured in lobster since 1992. The data for stations DIF, OS, and ECCB are presented below.

3.2.4.1 Edible Tissues

The general spatial pattern observed in 2000 (*i.e.*, DIF having the highest and ECCB the lowest body burdens of organic contaminants) is consistent with the historical spatial patterns (Figure 3-11 and 3-12). Generally, 2000 concentrations were within the historical range of values, though they were lower than 1999 levels. The concentration of HCB at DIF was the highest ever measured during the baseline period, though the variability among replicates for this compound was very high.

The spatial pattern of mercury body burdens observed in 2000 (*i.e.*, OS generally the highest and ECCB the lowest) was consistent with historical trends (Figure 3-13). 2000 mercury concentrations at all three stations tended to be in the middle of the historical range.

3.2.4.2 Hepatopancreas

In general, the spatial pattern of organic contaminants observed in lobster hepatopancreas in 2000 was consistent with historical patterns (*i.e.*, DIF having the highest and ECCB the lowest body burdens of organic contaminants) (Figures 3-14 through 3-16). At all three stations, the concentrations of organic contaminants measured in 2000, including total DDTs, total PCBs, and total chlordanes, tended to be lower than in recent years. Total PCBs at DIF still appear to be elevated above pre-1995 values, while the other two sites have concentrations that are similar to pre-1995 values. Total PAHs appear to have decreased during the baseline period at OS and ECCB, however, PAH concentrations at DIF were numerically the highest since 1994.

Historically, metal body burdens have been more variable than the organic burdens, with ECCB and OS metals often being as high or higher than those from DIF (Figures 3-17, 3-18, and 3-19). In 2000, tissue concentrations of inorganics were within the historical range, with the exception of zinc at ECCB, which was the highest measured during the baseline period. While silver concentrations at all three stations were lower than in recent years, they remain considerably higher than in the early years of the program.

3.2.5 Relationship of Contaminant Levels to FDA Action Limits

The U.S. Food and Drug Administration (FDA) has set action limits for the maximum tissue concentrations of specific contaminants in the edible portions of fish and fishery products. For the MWRA biomonitoring program, Appreciable Change levels are set at 2 times the OS baseline mean (1992-1999). These two levels provide reference benchmarks for detecting adverse changes (and their potential human health risks) once the new outfall is on line. The means at DIF and ECCB were also compared for information only. The 2000 mean concentrations of target analytes in lobster edible meat, per station, were compared to the FDA's Action Limits and the MWRA Appreciable Change levels through 1999 for the outfall (Table 3-11). To date, no lobster meat tissues have exceeded any of the FDA Action Limits.

3.3 Blue Mussel

3.3.1 Mussels Collected

The 40-day mussel retrieval was performed on August 8, 2000. Samples were successfully collected at BIH, OS, and DIF stations (Table 3-12). The 60-day retrieval was performed on August 28, 2000. Samples were successfully recovered at BIH, OS, and DIF stations (see Table 3-13).

3.3.1.1 Survival

The percent survival observed in the caged mussels was high (*i.e.*, ≥ 96%) for both the 40- and 60-day harvested mussels (Table 3-14). None of the stations showed mortality at the 40-day collection. Survival was high (96 – 99%) at all stations at the 60-day collection.

3.3.2 Spatial Comparison of Tissue Contaminant Levels in 2000

The differences in mussel tissue contaminant levels were examined across the various sampling and deployment locations. Mean values for selected organic compounds and metals were compared and tested for significance using single factor ANOVA followed by multiple comparison procedures. All analyses assume equal sampling distribution and variances (SAS v8.01) ($p=0.05$). Details of the results of the mussel analyses performed in 2000 are presented in Tables 3-15 and 3-16 and discussed below. All

2000 individual replicate concentrations for each contaminant can be found in Appendix B. Means, standard error, and *n* were determined for all stations and all years, and are presented in Appendix C.

3.3.2.1 Mercury and Lead

Mercury tissue concentrations were highest at BIH and lowest at OS (Figure 3-20). The concentration of mercury at OS was significantly lower than at DI and BIH (Table 3-15). Mercury levels at BIH and DI were significantly higher than levels in the Rockport mussels (Table 3-16). There was not a significant difference between the mercury concentrations in mussels from OS and Rockport.

Lead concentrations in mussels at all three deployment sites were significantly different from one another, with concentrations at BIH being significantly higher than at the other two stations and concentrations at OS being significantly lower (Figure 3-21). Mussels at OS had lead concentrations significantly lower than the Rockport mussels. BIH and DI mussel lead concentrations were significantly higher than the pre-deployed values.

3.3.2.2 Polychlorinated Biphenyls

Mussel tissues were analyzed for 20 polychlorinated biphenyl (PCB) congeners. The total concentrations of these 20 PCBs were significantly higher at BIH than at the other stations (Figure 3-22). OS had concentrations of total PCBs that were significantly lower than at the other two stations (Table 3-15). Concentrations of total PCBs in BIH, DI, and OS deployed mussels were significantly higher than the pre-deployed Rockport mussels (Table 3-16).

3.3.2.3 Pesticides

Mussel tissues were analyzed for individual chlorinated pesticides. Most pesticides measured were detected in mussels from at least one location. Only aldrin was not detected in any of the samples, with endrin, mirex, and lindane being detected at low levels in only one of the eight replicates from OS. In general, highest pesticide concentrations were found in mussels deployed at BIH (Figure 3-23). Total DDT, total chlordane, dieldrin, and HCB concentrations were significantly higher in mussels deployed at BIH than at DI and OS (Table 3-15). Concentrations of total DDT, total chlordane, and dieldrin in mussels deployed at OS were significantly lower than in mussels deployed at the other two sites.

The concentrations at BIH, DI, and OS were significantly higher than in the pre-deployed mussels for total DDT, total chlordane, dieldrin, and HCB (Table 3-16).

3.3.2.4 PAH Compounds

Total PAHs, as well as total low and high molecular weight PAHs, have been calculated by different methodologies during the course of this study. For purposes of comparison across multiple study years, the method common to most years was used for evaluating temporal trends (see section 3.3.3). This method is referred to here as the "Historical NOAA List" (see Table 3-17). This list is much less comprehensive than the current list, referred to as the "Total PAH List"(Table 3-17). The historical NOAA list includes primarily parent PAH compounds and only five individual alkylated naphthalenes. The lack of quantitation of additional alklyated groups (*e.g.* alkyl dibenzothiophenes, phenanthrenes, anthracenes, etc.) results in a significantly lower calculated total PAH value. In addition, in 1995, the individual five alkylated "NOAA" PAHs were not measured. Instead, the C1, C2, and C3-napthalene homologue groups were quantified. To make 1995 results more comparable to the NOAA historical list, values for the individual naphthalene compounds were estimated using ratios of the individuals to their respective homologue groups from 1996 and 1997 data sets.

Current data are discussed in terms of the more recent "Total PAH List". Temporal trends, discussed in Section 3.3.3, are presented using the "Historical NOAA List".

The target list of PAH compounds analyzed in 2000 is presented in Table 3-17 and includes all compounds in the "Total PAH List".

Summary tables of total low molecular weight PAHs (LMW-PAH) (defined as those target 2 and 3 ringed compounds) and total high molecular weight PAHs (HMW-PAH) (defined 4, 5 and 6 ringed compounds) for individual mussel composites are included in Appendix B. Mean concentrations of total LMW-PAH and total HMW-PAH are presented in Appendix C, as are the standard errors and *n* values associated with these means for each station. The concentrations of LMW- and HMW-PAHs at all locations are shown in Figure 3-24.

The 2000 average body burdens of total LMW- and HMW-PAH were significantly higher in mussels deployed at BIH, and the concentrations of PAH were significantly different among the three stations (Table 3-15). Concentrations of both LMW- and HMW-PAHs at BIH and DI were significantly higher than the pre-deployed concentrations observed at Rockport (Table 3-16). HMW-PAH concentrations in mussels deployed at OS were also significantly higher than pre-deployment levels.

3.3.2.5 Lipid Results

Lipid concentrations were measured in all mussel composites (Appendix B). Values in 2000 were very similar for DI (7.40 ±0.4% dry) and OS (7.14 ± 0.6% dry), slightly higher for BIH (8.26 ± 0.3% dry), and slightly lower for RP (5.12 ± 0.3% dry). Based on the findings of Mitchell *et al.* (1998), it does not appear that normalization for lipid content elucidates any trends in chemical concentrations. No lipid normalization of mussel data was performed for the trend analyses presented in this report.

3.3.3 Comparison of 2000 Contaminants Levels to Other Baseline Data

Mussel tissue burdens were also compared across the various study years. In the past, when an analyte was reported as not detected, the detection limit value was used in calculations. For consistency with other fish and shellfish data and to avoid the problems introduced by the use of varying magnitudes of reporting/detection limits used over the years, all non-detects were equated with "zero" in this report. The following section provides a discussion of trends observed for the analytes measured. Selected figures are presented to illustrate these trends.

3.3.3.1 Mercury and Lead

Mercury concentrations measured in mussels in 2000 at all sites were within the historical range of concentrations but slightly higher than 1998 and 1999 levels (Figure 3-25). The spatial pattern in 2000 was similar to the spatial pattern observed in 1998 and 1999.

Lead concentrations measured in 2000 at Rockport and OS were among the lowest measured since the beginning of the program (Figure 3-26). Lead concentrations measured at BIH in 2000 were the highest measured during the baseline period, while levels at DI were within the historical range of concentrations.

3.3.3.2 Polychlorinated Biphenyls

Data for 2000 PCBs were within the historical range, with concentrations at BIH and DI being higher than those observed in 1998 and 1999 (Figure 3-27). Rockport mussels had the lowest concentration of PCBs ever measured in pre-deployment mussels during the baseline period. The spatial pattern observed in 2000 was similar to the pattern observed in previous years, with BIH having the highest concentrations and OS the lowest concentrations.

3.3.3.3 Pesticides

2000 concentrations of total DDTs, chlordanes, and dieldrin were similar to or lower than concentrations observed in previous years (Figure 3-28 and Appendix C). Spatial patterns have remained constant over time, with concentrations in BIH mussels higher than at other stations. Pesticide concentrations in the Rockport mussels were at the lower end of the historical range for pre-deployment mussels.

3.3.3.4 PAHs

Pre-deployment total PAHs in mussels collected in 2000 were within the historical range of concentrations, with the levels of HMW-PAHs being the lowest measured in pre-deployment mussels since 1991 (Figure 3-29). Total PAH were within the historical range of values at all locations. While concentrations at BIH have remained relatively constant since 1993, concentrations at DI appear to have shown a general decline. Mussels deployed at DI have always had a higher proportion of LMW PAHs relative to mussels deployed at BIH. 2000 data show a continuing relative decrease in the proportion of LMW PAHs at DI. This observation is not surprising, given the cessation of sludge discharge in 1991, the upgraded primary treatment plant in 1995, the upgraded secondary treatment plant in 1997, and limits on industrial discharges of petroleum products into the MWRA system. The slight increase of total PAH at DI in 2000, relative to the past few years, may be a result of increased boat traffic in the Harbor during July 2000 due to the Tall Ships event that occurred. Slightly higher PAH concentrations may also be attributed to elevated background levels of selected PAHs associated with analysis of 2000 mussels (although subtraction of the background concentrations was performed).

3.3.4 Relationship of Contaminants to FDA Action Limits

The U.S. Food and Drug Administration (FDA) has set action limits for the maximum tissue concentrations of specific contaminants in the edible portions of fish and fishery products. For the MWRA biomonitoring program, Appreciable Change levels are set at 2 times the OS baseline mean (1992-1999). These two levels provide reference benchmarks for detecting adverse changes (and their potential human health risks) once the new outfall is on line. The 2000 mean concentrations of target analytes in mussel tissue, per station, were compared to the FDA's Action Limits and the MWRA Appreciable Change levels through 1999 for the outfall (Table 3-18). In 2000, there were no exceedences of the MWRA Appreciable Change Levels or of the federal limits.

Table 3-1. Catch per Unit Effort (CPU) for Winter Flounder Trawled in April 2000.

Location	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Deer Island	0.38	0.23	0.15	0.16	0.10	0.16	0.16	0.56	1.09	0.18
Nantasket Beach	0.48	1.29	1.52	0.88	0.88	0.77	0.43	0.41	0.21	0.38
Broad Sound	1.26	2.80	0.49	0.46	0.29	0.23	0.59	0.69	0.38	0.26
Outfall Site	0.10	0.48	0.62	0.25	0.60	0.31	0.81	0.42	0.31	1.67
East Cape Cod Bay	0.67	0.49	0.77	0.45	0.50	1.38	0.32	0.50	0.92	0.94

CPU = # fish caught per minute of bottom time
The same vessel and net were used at all times

Table 3-2. Summary of Physical Characteristics of Winter Flounder Collected in 2000.

Station Name		DIF	NB	BS	OS	ECCB
Station Number		**1**	**2**	**3**	**4**	**5**
N		26	50	50	50	50
Total Length (mm)	Mean	371.0	331.9	353.3	353.3	353.2
	Std. Dev.	43.0	25.4	65.7	28.2	39.8
	AVOVA[1,2]	2	1,4,5		2	2
Weight (g)	Mean	648.5	484.6	550.4	562.8	588.0
	Std. Dev.	209.4	107.4	177.9	150.7	205.6
	ANOVA[1,2]	2	1,5			2
Age (years)	Mean	4.8	4.0	4.5	4.7	5.0
	Std. Dev.	1.1	0.7	0.9	0.9	1.0
	ANOVA[1,2]	2	1,4,5	5	2	2,3
Fin erosion (0-4)	Mean	0.4	0.0	0.2	0.1	0.2
	Std. Dev.	0.7	0.1	0.4	0.2	0.4
	ANOVA[2]	2,4	1		1	

[1]Data were transformed to meet ANOVA assumptions of normality and homogeneity of variance.

[2]Differences by ANOVA given as the station(s) that differed significantly from the station in that column.

Table 3-3. Prevalence (%) of Lesions in Winter Flounder Liver from Five Stations in Massachusetts and Cape Cod Bays – 2000.

Station Name		DIF	NB	BS	OS	ECCB
Station Number		**1**	**2**	**3**	**4**	**5**
N		26	50	50	50	50
Lesion type*	Neoplasm	0	0	0	0	0
	Focal HV	4	2	2	2	0
	Tubular HV	27	6	14	16	0
	Centrotubular HV	46	10	16	24	4
	Macrophage Aggregation	81	66	78	72	64
	Biliary Proliferation	4	4	12	4	8

*Prevalence calculated as the percentage of fish from each station showing each lesion type
HV – Hydropic Vacuolation

Table 3-4. ANOVA Results Comparing Contaminant Concentrations in Flounder Fillets in 2000.

Station Name		DIF	OS	ECCB
Station Number		**1**	**4**	**5**
N		3	3	3
Total PCB (p=<0.0001)	Mean	203.29	117.59	39.46
	Std. Dev.	41.97	15.95	3.42
	ANOVA[1,2]	4,5	1,5	1,4
Total DDT (p=0.0049)	Mean	18.30	9.94	6.74
	Std. Dev.	4.51	0.69	0.98
	ANOVA[2]	4,5	1	1
Total Chlordane (p=0.0004)	Mean	10.03	3.25	1.91
	Std. Dev.	3.42	0.82	0.05
	ANOVA[1,2]	4,5	1	1
Mirex (p=0.0093)	Mean	0.34	0.28	0.15
	Std. Dev.	0.12	0.04	0.01
	ANOVA[1,2]	5	5	1,4

[1]Data were transformed to meet ANOVA assumptions of normality and homogeneity of variance.
[2]Differences by ANOVA given as the station(s) that differed significantly from the station in that column.

Table 3-5. ANOVA Results Comparing Contaminant Concentrations in Flounder Livers in 2000.

Station Name		DIF	OS	ECCB
Station Number		**1**	**4**	**5**
N		3	3	3
Lead (p=<0.0001)	Mean	3.65	8.14	1.65
	Std. Dev.	0.99	0.61	0.23
	ANOVA[2]	4,5	1,5	1,4
Total PCB (p=<0.0001)	Mean	1856.14	1140.65	249.87
	Std. Dev.	602.46	96.00	25.11
	ANOVA[1,2]	5	5	1,4
Total DDT (p=0.0012)	Mean	145.93	94.11	42.44
	Std. Dev.	43.30	13.03	2.79
	ANOVA[1,2]	5	5	1,4
Total Chlordane (p=0.0019)	Mean	95.72	30.35	12.39
	Std. Dev.	44.35	6.19	2.30
	ANOVA[1,2]	4,5	1	1
Dieldrin (p=0.0178)	Mean	12.82	4.37	3.99
	Std. Dev.	5.66	1.33	0.38
	ANOVA[1,2]	4,5	1	1
Mirex (p=0.0061)	Mean	2.87	2.33	0.98
	Std. Dev.	1.05	0.04	0.19
	ANOVA[1,2]	5	5	1,4

[1]Data were transformed to meet ANOVA assumptions of normality and homogeneity of variance.
[2]Differences by ANOVA given as the station(s) that differed significantly from the station in that column.

Table 3-6. Comparison of FDA and MWRA Appreciable Change Levels to Mean 2000 Flounder Fillet Concentrations for Selected Parameters.

Station	Total PCB (ng/g wet wt.)			Total DDT (ng/g wet wt.)			Total Chlordane (ng/g wet wt.)			Dieldrin (ng/g wet wt.)			Mercury (µg/g wet wt.)		
	mean	**se**	**n**	**mean**	**se**	**n**	**mean**	**se**	**n**	**mean**	**se**	**n**	**mean**	**se**	**n**
Deer Island Flats	34.82	3.55	3	3.14	0.41	3	1.71	0.30	3	0.26	0.08	3	0.07	0.01	3
Outfall Site	19.74	1.55	3	1.67	0.07	3	0.55	0.08	3	0.10	0.02	3	0.08	0.02	3
ECCB	6.60	0.42	3	1.13	0.10	3	0.32	0.00	3	0.07	0.01	3	0.03	0.00	3
FDA Limit	2000			5000			300			300			1		
MWRA Appreciable Change Level (2x baseline, 1992-1999)	71.99			7.72			2.78			0.67			0.157		
80% of FDA Action Level	1600			4000			240			240			0.8		

Table 3-7. Mean Length, Weight, and Sex Ratio of Lobsters Collected in 2000.

Parameter	N	DIF		OS		ECCB	
		Station Mean	S.D.	Station Mean	S.D.	Station Mean	S.D.
Carapace Length (mm)	15	88.7	3.0	85.5	2.8	91.6	5.1
Weight (g)	15	523.1	70.5	504.2	43.8	516.2	102.8
RATIO Male/Female*	15	6/9	NA	3/12	NA	13/2	NA

S.D. = Standard Deviation
* This value is a ratio, not a mean

Table 3-8. Mean Score – 2000 Lobster External Condition.

Parameter	N	DIF		OS		ECCB	
		Station Mean	S.D.	Station Mean	S.D.	Station Mean	S.D.
Black Gill	15	0	0	0	0	0	0
External Tumors	15	0	0	0	0	0	0
Parasites	15	0	0	0	0	0	0
Shell Erosion	15	0	0	0	0	0	0

Note: Values range from 0 (absent) to 4 (extreme).
S.D. = Standard Deviation

Table 3-9. ANOVA Results Comparing Contaminant Concentrations in Lobster Meat in 2000.

Station Name		DIF	OS	ECCB
Station Number		**1**	**4**	**5**
N		3	3	3
Total Chlordane (p=0.0024)	Mean	2.48	1.41	0.94
	Std. Dev.	0.45	0.20	0.20
	ANOVA[1]	4,5	1	1

[1]Differences by ANOVA given as the station(s) that differed significantly from the station in that column.

Table 3-10. ANOVA Results Comparing Contaminant Concentrations in Lobster Hepatopancreas in 2000.

Station Name		DIF	OS	ECCB
Station Number		**1**	**4**	**5**
N		3	3	3
Zinc (p=0.0219)	Mean	59.33	75.47	129.73
	Std. Dev.	4.50	11.23	43.64
	ANOVA[1,2]	5		1
Total PAH (p=0.0012)	Mean	13051.27	2726.61	1364.43
	Std. Dev.	4829.17	1473.66	227.72
	ANOVA[1,2]	4,5	1	1

[1]Data were transformed to meet ANOVA assumptions of normality and homogeneity of variance.
[2]Differences by ANOVA given as the station(s) that differed significantly from the station in that column.

Table 3-11. Comparison of FDA and MWRA Appreciable Change Levels to Mean 2000 Lobster Meat Concentrations for Selected Parameters.

Station	Total PCB (ng/g wet wt.)			Total DDT (ng/g wet wt.)			Total Chlordane (ng/g wet wt.)			Dieldrin (ng/g wet wt.)			Mercury (µg/g wet wt.)		
	mean	**se**	**n**	**mean**	**se**	**n**	**mean**	**se**	**n**	**mean**	**se**	**n**	**mean**	**se**	**n**
Deer Island Flats	16.66	9.07	3	0.66	0.10	3	0.32	0.04	3	0.42	0.06	3	0.10	0.02	3
Outfall Site	8.81	1.19	3	0.66	0.11	3	0.19	0.01	3	0.40	0.04	3	0.13	0.02	3
ECCB	5.43	0.81	3	0.57	0.13	3	0.14	0.02	3	0.32	0.04	3	0.09	0.02	3
FDA Limit	2000			5000			300			300			1		
MWRA Appreciable Change Level (2x baseline, 1992-1999)	35.13			4.24			0.76			1.75			0.301		
80% of FDA Action Level	1600			4000			240			240			0.8		

Table 3-12. Samples Collected During 40-day Retrieval.

Site	# Cages	Approximate # Mussels/ Cage	Approximate Total # Mussels
DI	2	45	90
OS	3	48	144
BIH	2	45	90

Table 3-13. Samples Collected During 60-day Retrieval.

Site	# Cages	Approximate # Mussels/ Cage	Approximate Total # Mussels
DI	4	45	180
OS	6	48	288
BIH	4	45	180

Table 3-14. 2000 Caged Mussels Survival Data.

Collection	Site	Total Mussels	Dead Mussels	Survival Rate
40-day	DI	90	0	100%
	OS	144	0	100%
	BIH	90	0	100%
60-day	DI	180	7	96%
	OS	288	3	99%
	BIH	180	4	98%

Table 3-15. ANOVA Results Comparing Contaminant Concentrations in Deployed Mussels in 2000.

Station Name		DI	OS	BIH
Station Number		**1M**	**4**	**6**
N		5	8	5
Lead (p=<0.0001)	Mean	6.93	0.94	13.21
	Std. Dev.	2.13	0.17	2.18
	ANOVA[1,2]	4,6	1M,6	1M,4
Mercury (p=<0.0001)	Mean	0.16	0.11	0.18
	Std. Dev.	0.02	0.01	0.02
	ANOVA[2]	4	1M,6	4
Total PCB (p=<0.0001)	Mean	215.25	35.49	592.29
	Std. Dev.	31.27	4.05	75.85
	ANOVA[1,2]	4,6	1M,6	1M,4
Total HMW-PAHs (p=<0.0001)	Mean	501.22	61.10	3241.05
	Std. Dev.	83.90	6.40	472.44
	ANOVA[1,2]	4,6	1M,6	1M,4
Total LMW-PAHs (p=<0.0001)	Mean	506.96	133.68	1816.87
	Std. Dev.	45.91	31.65	352.67
	ANOVA[1,2]	4,6	1M,6	1M,4
Total DDT (p=<0.0001)	Mean	32.68	7.88	100.0
	Std. Dev.	5.56	1.83	15.8
	ANOVA[1,2]	4,6	1M,6	1M,4
Total Chlordane (p=<0.0001)	Mean	13.80	4.96	28.35
	Std. Dev.	1.66	1.05	5.91
	ANOVA[1,2]	4,6	1M,6	1M,4
Dieldrin (p=<0.0001)	Mean	3.55	1.74	9.01
	Std. Dev.	0.23	0.26	1.40
	ANOVA[1,2]	4,6	1M,6	1M,4
HCB (p=<0.0001)	Mean	0.39	0.44	1.04
	Std. Dev.	0.05	0.09	0.15
	ANOVA[2]	6	6	1M,4

[1]Data were transformed to meet ANOVA assumptions of normality and homogeneity of variance.
[2]Differences by ANOVA given as the station(s) that differed significantly from the station in that column.

Table 3-16. T-test Results Comparing Contaminant Levels in Deployed Mussels with Pre-deployed Mussels in 2000.

Station Name		DI	OS	BIH	Pre-deployed
Station Number		**1M**	**4**	**6**	**RP**
N		5	8	5	5
Lead	Mean	6.93	0.94	13.21	1.52
	Std. Dev.	2.13	0.17	2.18	0.13
	Prob.	0.0047	0.0001	0.0003	NA
Mercury	Mean	0.16	0.11	0.18	0.12
	Std. Dev.	0.02	0.01	0.02	0.01
	Prob.	0.0030	0.4413	0.0016	NA
Total PCB	Mean	215.25	35.49	592.29	9.13
	Std. Dev.	31.27	4.05	75.85	1.95
	Prob.	0.0001	0.0001	0.0001	NA
Total HMW-PAHs	Mean	501.22	61.10	3241.05	40.14
	Std. Dev.	83.90	6.40	472.44	8.50
	Prob.	0.0015	0.0004	0.0001	NA
Total LMW-PAHs	Mean	506.96	133.68	1816.87	139.92
	Std. Dev.	45.91	31.65	352.67	20.58
	Prob.	0.0001	0.7048	0.0004	NA
Total DDT	Mean	32.68	7.88	100.0	3.31
	Std. Dev.	5.56	1.83	15.8	0.53
	Prob.	0.0003	0.0001	0.0002	NA
Total Chlordane	Mean	13.80	4.96	28.35	2.61
	Std. Dev.	1.66	1.05	5.91	0.38
	Prob.	0.0001	0.0006	0.0006	NA
Dieldrin	Mean	3.55	1.74	9.01	0
	Std. Dev.	0.23	0.26	1.40	0
	Prob.	0.0001	0.0001	0.0001	NA
HCB	Mean	0.39	0.44	1.04	0
	Std. Dev.	0.05	0.09	0.15	0
	Prob.	0.0001	0.0001	0.0001	NA

Table 3-17. Summary of PAH Lists of Analytes Used for Bioaccumulation Study 1992 - 2000.

Total PAH List	"Historical" NOAA PAH List
Low Molecular Weight PAHs	**Low Molecular Weight PAHs**
1-METHYLNAPHTHALENE*	1-METHYLNAPHTHALENE
1-METHYLPHENANTHRENE*	1-METHYLPHENANTHRENE
2,3,5-TRIMETHYLNAPHTHALENE*	2,3,5-TRIMETHYLNAPHTHALENE
2,6-DIMETHYLNAPHTHALENE*	2,6-DIMETHYLNAPHTHALENE
2-METHYLNAPHTHALENE*	2-METHYLNAPHTHALENE
ACENAPHTHENE	ACENAPHTHENE
ACENAPHTHYLENE	ACENAPHTHYLENE
ANTHRACENE	ANTHRACENE
BENZOTHIAZOLE*	
BIPHENYL	BIPHENYL
C1-DIBENZOTHIOPHENES	
C1-FLUORENES	
C1-NAPHTHALENES	
C1-PHENANTHRENES/ANTHRACENES	
C2-DIBENZOTHIOPHENES	
C2-FLUORENES	
C2-NAPHTHALENES	
C2-PHENANTHRENES/ANTHRACENES	
C3-DIBENZOTHIOPHENES	
C3-FLUORENES	
C3-NAPHTHALENES	
C3-PHENANTHRENES/ANTHRACENES	
C4-NAPHTHALENES	
C4-PHENANTHRENES/ANTHRACENES	
DIBENZOFURAN	
DIBENZOTHIOPHENE	
FLUORENE	FLUORENE
NAPHTHALENE	NAPHTHALENE
PHENANTHRENE	PHENANTHRENE
High Molecular Weight PAHs	**High Molecular Weight PAHs**
BENZ(A)ANTHRACENE	BENZ(A)ANTHRACENE
BENZO(A)PYRENE	BENZO(A)PYRENE
BENZO(B)FLUORANTHENE	BENZO(B)FLUORANTHENE
BENZO(E)PYRENE	BENZO(E)PYRENE
BENZO(G,H,I)PERYLENE	BENZO(G,H,I)PERYLENE
BENZO(K)FLUORANTHENE	BENZO(K)FLUORANTHENE
C1-CHRYSENES	
C1-FLUORANTHRENES/PYRENES	
C2-CHRYSENES	
C2-FLUORANTHENES/PYRENES	
C3-CHRYSENES	
C3-FLUORANTHENES/PYRENES	
C4-CHRYSENES	
CHRYSENE	CHRYSENE
DIBENZO(A,H)ANTHRACENE	DIBENZO(A,H)ANTHRACENE
FLUORANTHENE	FLUORANTHENE
INDENO(1,2,3-C,D)PYRENE	INDENO(1,2,3-C,D)PYRENE
PERYLENE	PERYLENE
PYRENE	PYRENE

*** Not Included in Total PAH**

Table 3-18. Comparison of FDA and MWRA Appreciable Change Levels to Mean 2000 Mussel Concentrations for Selected Parameters.

Station	Total PCB (ng/g wet wt.)			Total DDT (ng/g wet wt.)			Total Chlordane (ng/g wet wt.)			Dieldrin (ng/g wet wt.)			Total PAH[1] (ng/g wet wt.)			Mercury (µg/g wet wt.)			Lead (µg/g wet wt.)		
	mean	se	n	mean	se	n	mean	se	n	mean	se	n	mean	se	n	mean	se	n	mean	se	n
DI	28.35	2.06	5	4.31	0.37	5	1.81	0.10	5	0.47	0.01	5	63.34	5.91	4	0.02	0.00	5	0.79	0.09	5
Outfall Site	4.96	0.27	8	1.11	0.10	8	0.70	0.06	8	0.24	0.01	8	20.67	1.02	8	0.01	0.00	8	0.12	0.01	8
BIH	60.93	3.08	5	10.28	0.66	5	2.91	0.25	5	0.93	0.06	5	252.98	13.98	5	0.02	0.00	5	1.28	0.11	5
FDA Limit	2000			5000			300			300			NA			1.000			3.75		
MWRA Appreciable Change Level (2x baseline, 1992-1999)	24.00			6.48			2.54			0.60			29.06			0.039			0.92		
80% of FDA Action Level	1600			4000			240			240			NA			0.800			3		

[1]Based on NOAA PAHs only

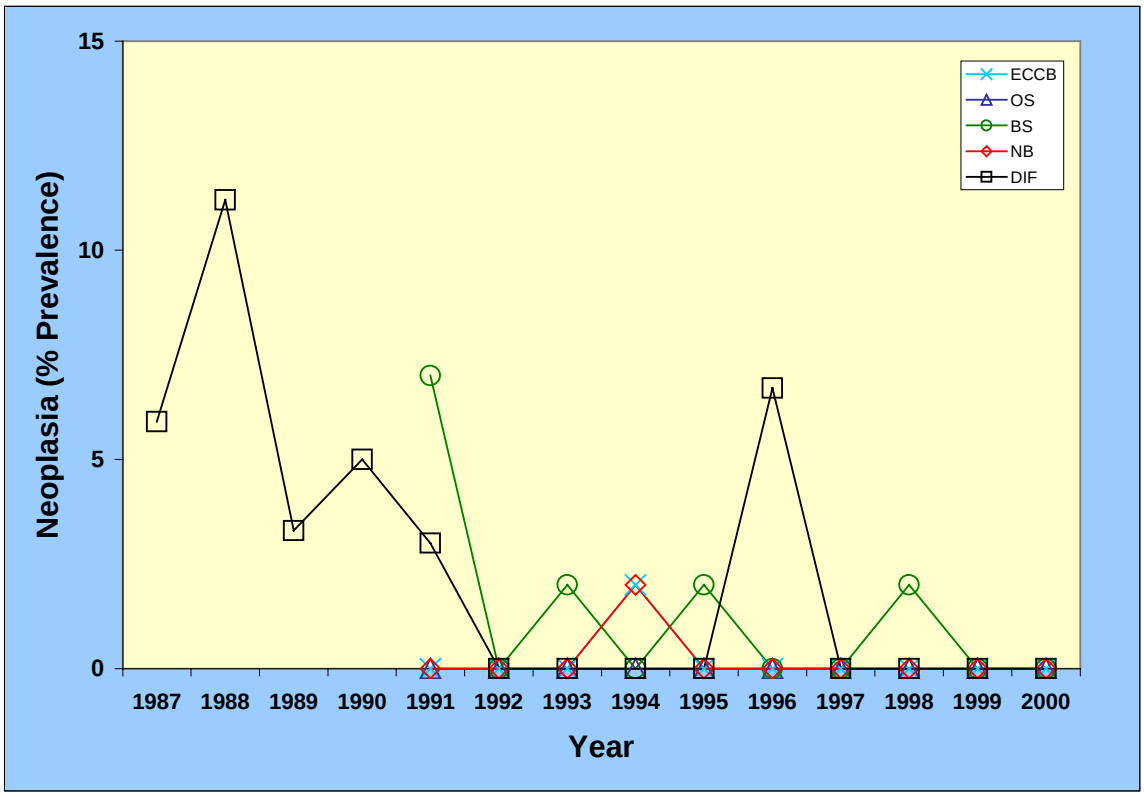


Figure 3-1. Temporal Comparison of Neoplasia Prevalence by Station Over Time.

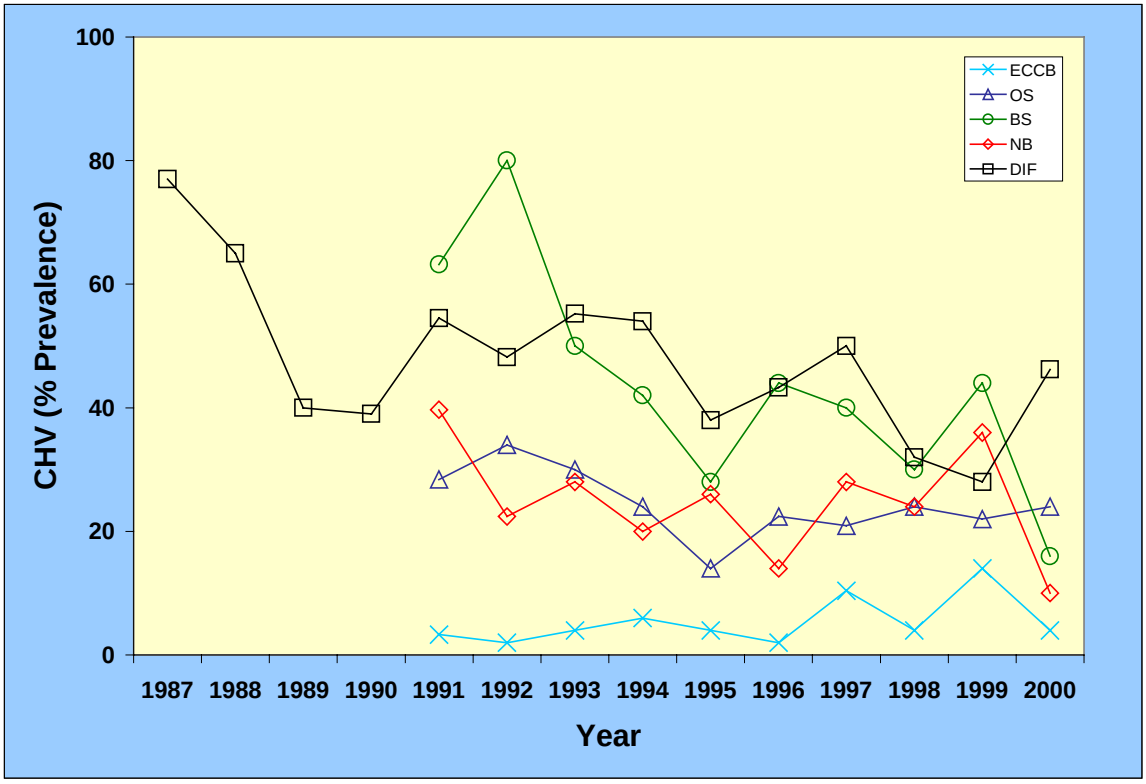


Figure 3-2. Temporal Comparison of Prevalence of Centrotubular Hydropic Vacuolation by Station Over Time.

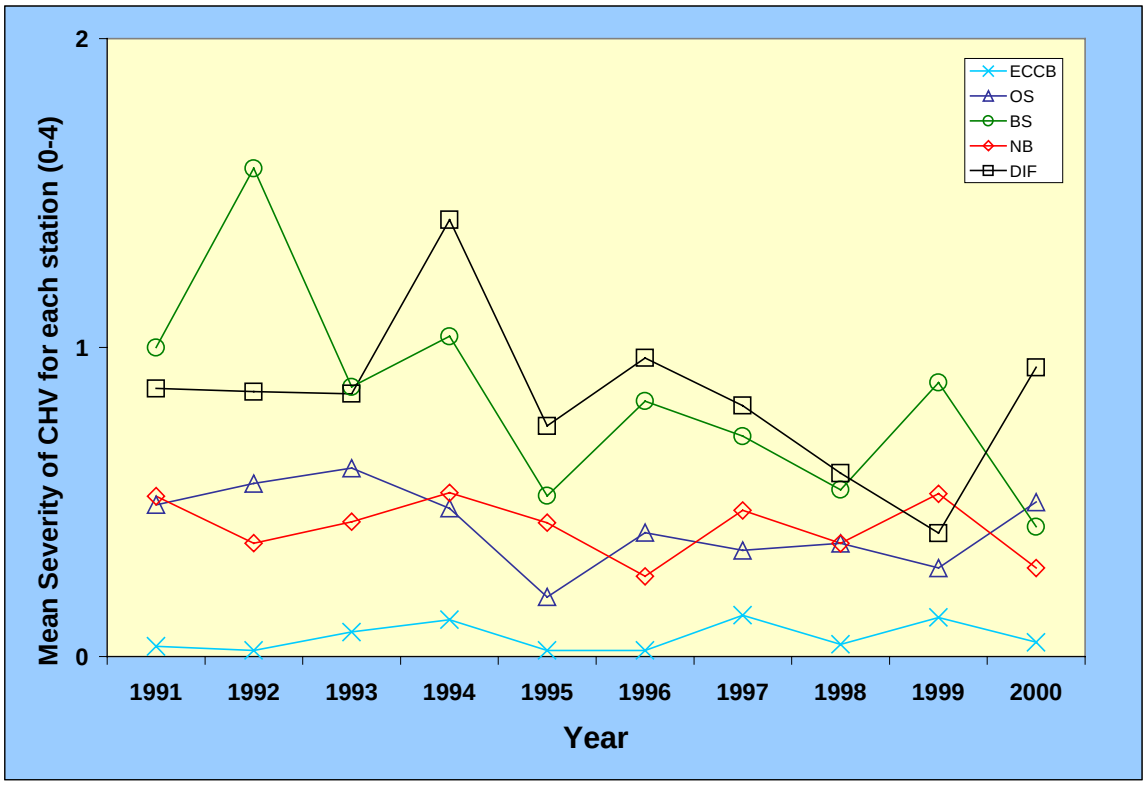


Figure 3-3. Centrotubular Hydropic Vacuolation Severity Compared Between Sites and Years.

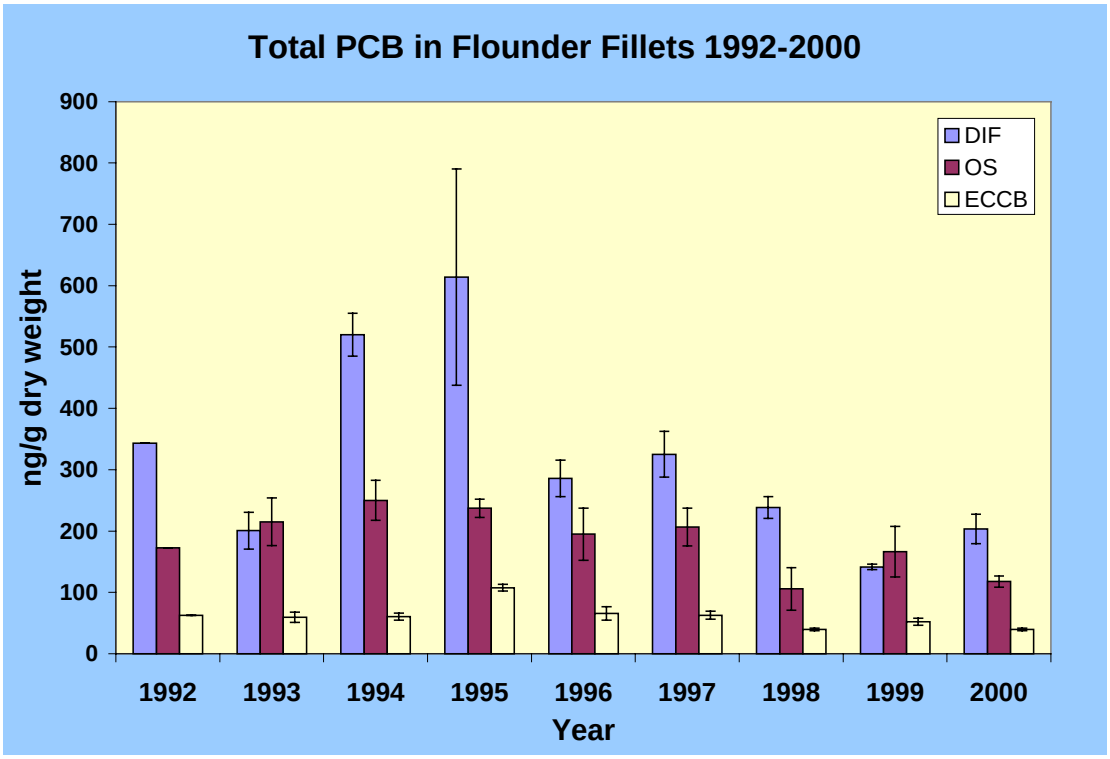


Figure 3-4. Total PCB in Flounder Fillets at the Five Collection Sites from 1992-2000.

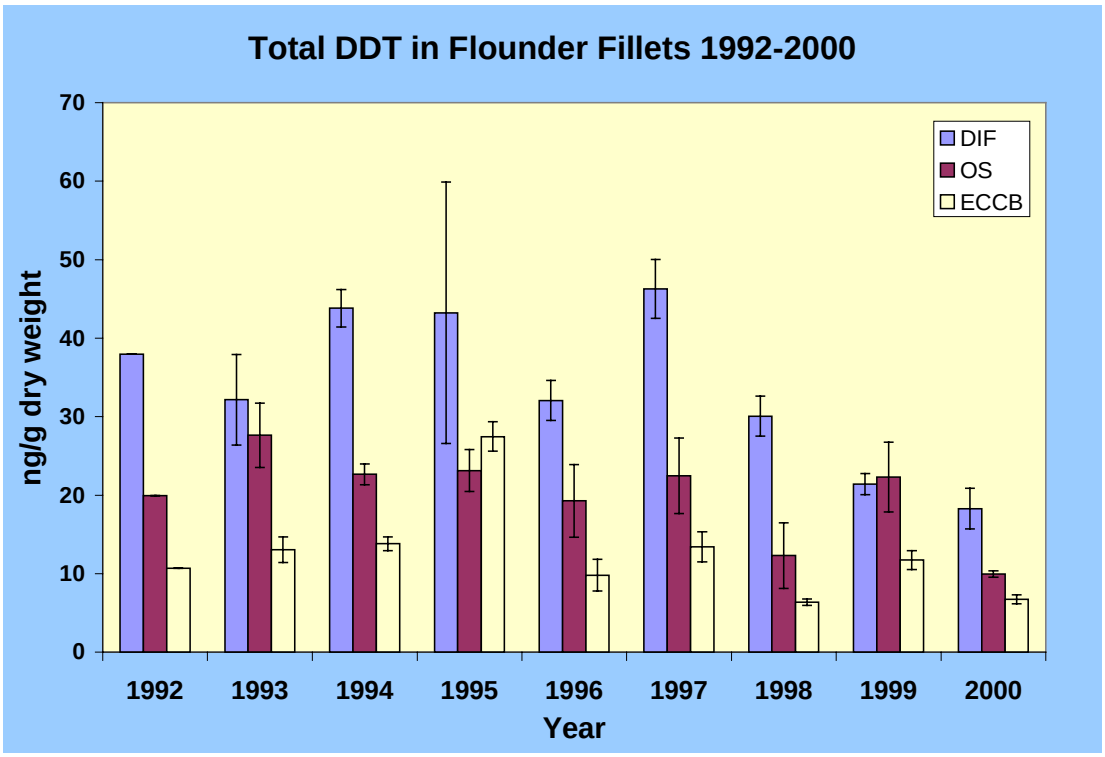


Figure 3-5. Total DDT in Flounder Fillets at the Five Collection Sites from 1992-2000.

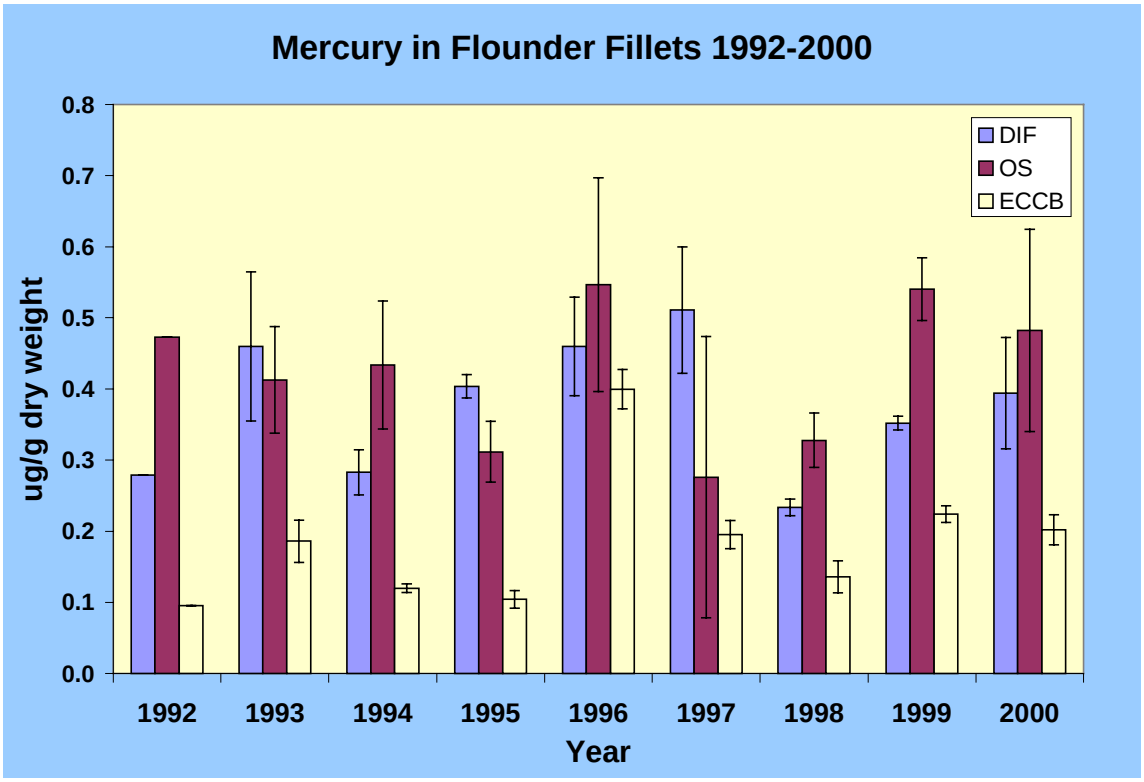


Figure 3-6. Mercury in Flounder Fillets at the Five Collection Sites from 1992-2000.

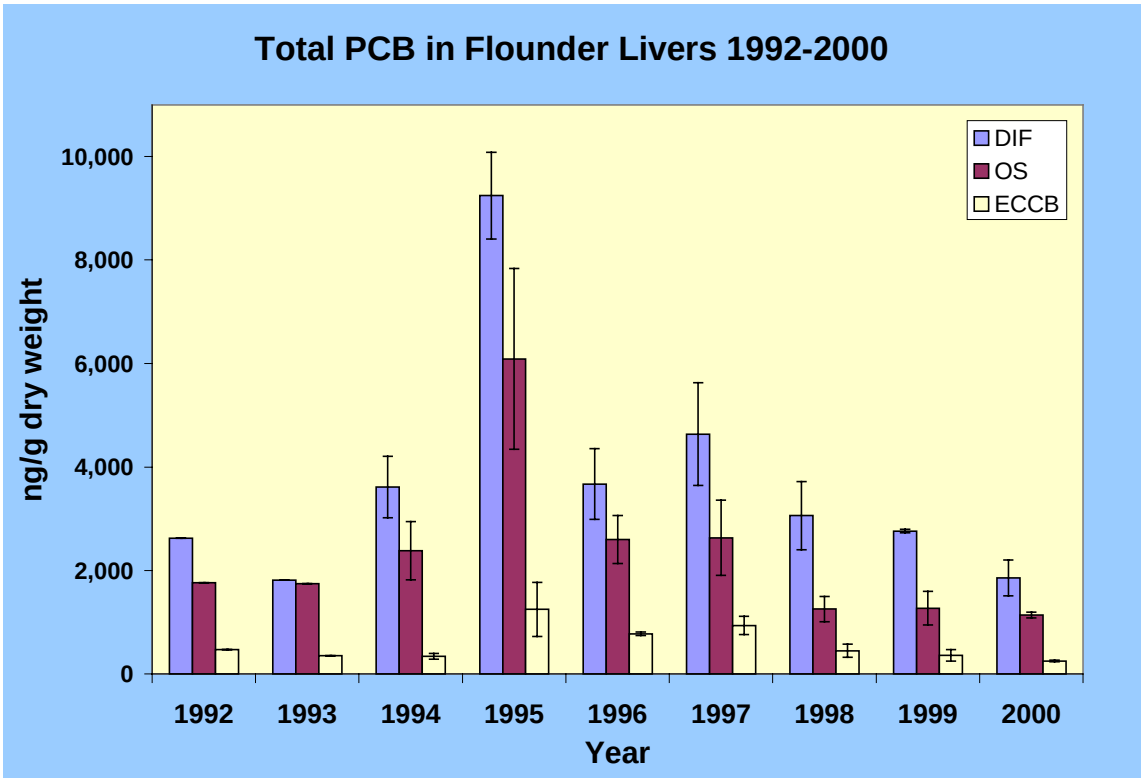


Figure 3-7. Total PCB in Flounder Livers at the Five Collection Sites from 1992-2000.

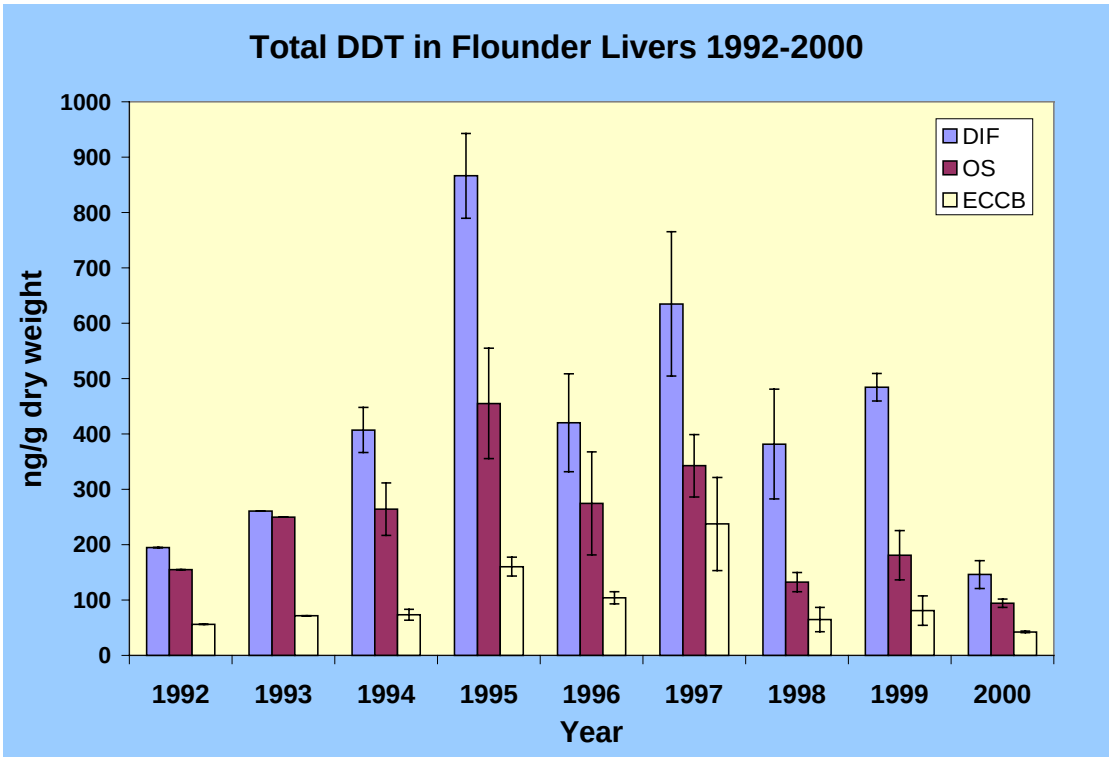


Figure 3-8. Total DDT in Flounder Livers at the Five Collection Sites from 1992-2000.

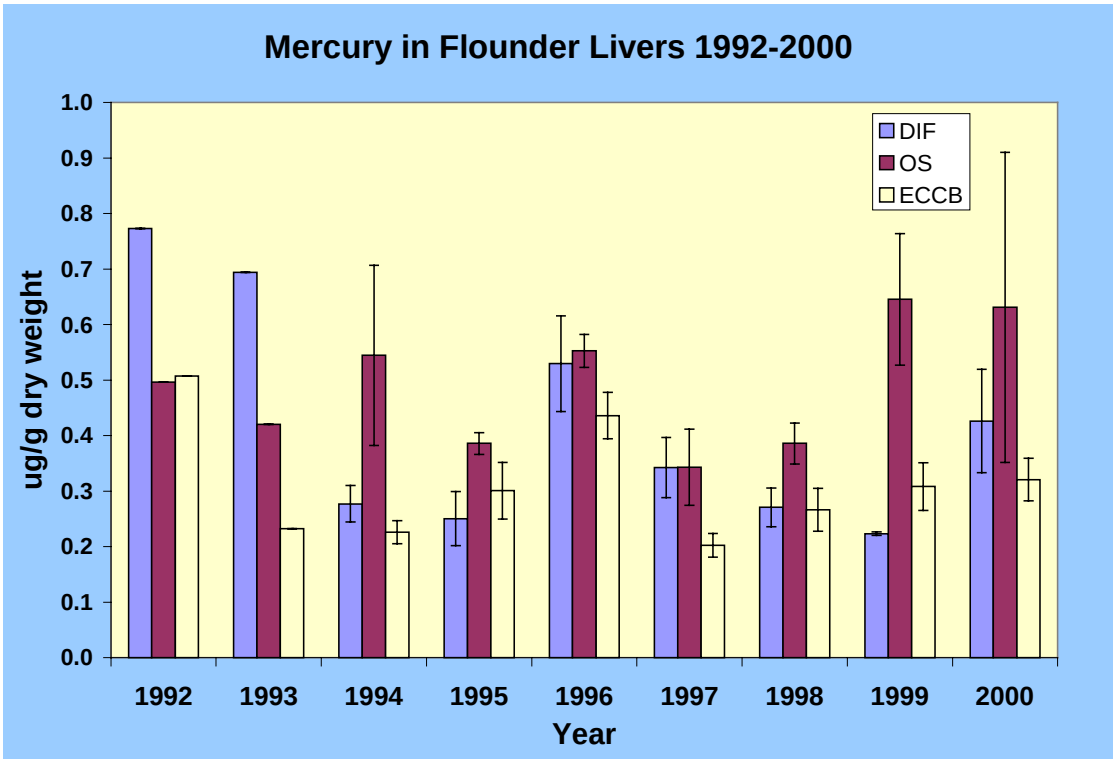


Figure 3-9. Mercury in Flounder Livers at the Five Collection Sites from 1992-2000.

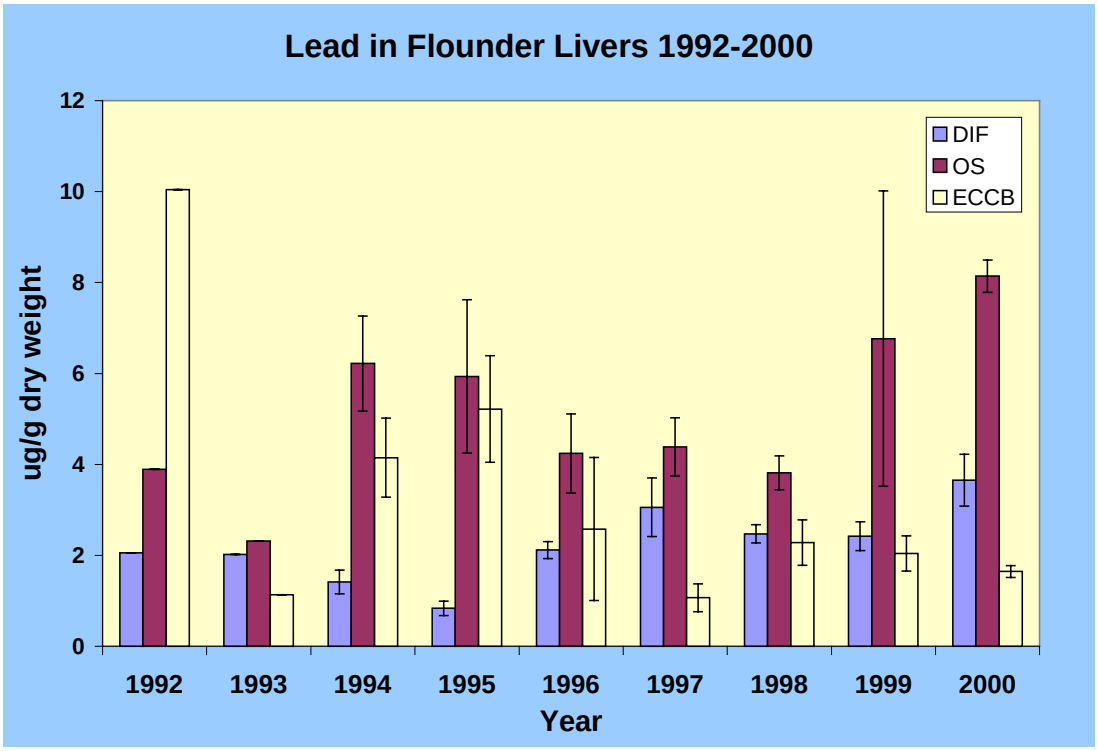


Figure 3-10. Lead in Flounder Livers at the Five Collection Sites from 1992-2000.

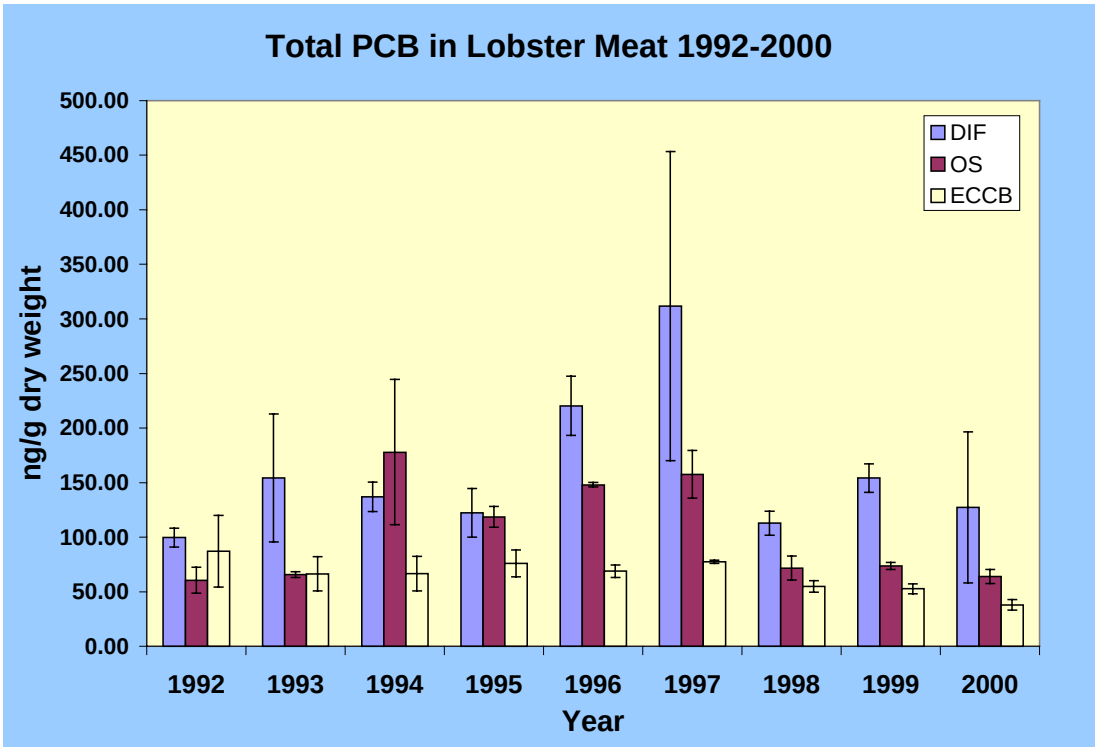


Figure 3-11. Total PCB in Lobster Meat at DIF, OS, and ECCB from 1992-2000.

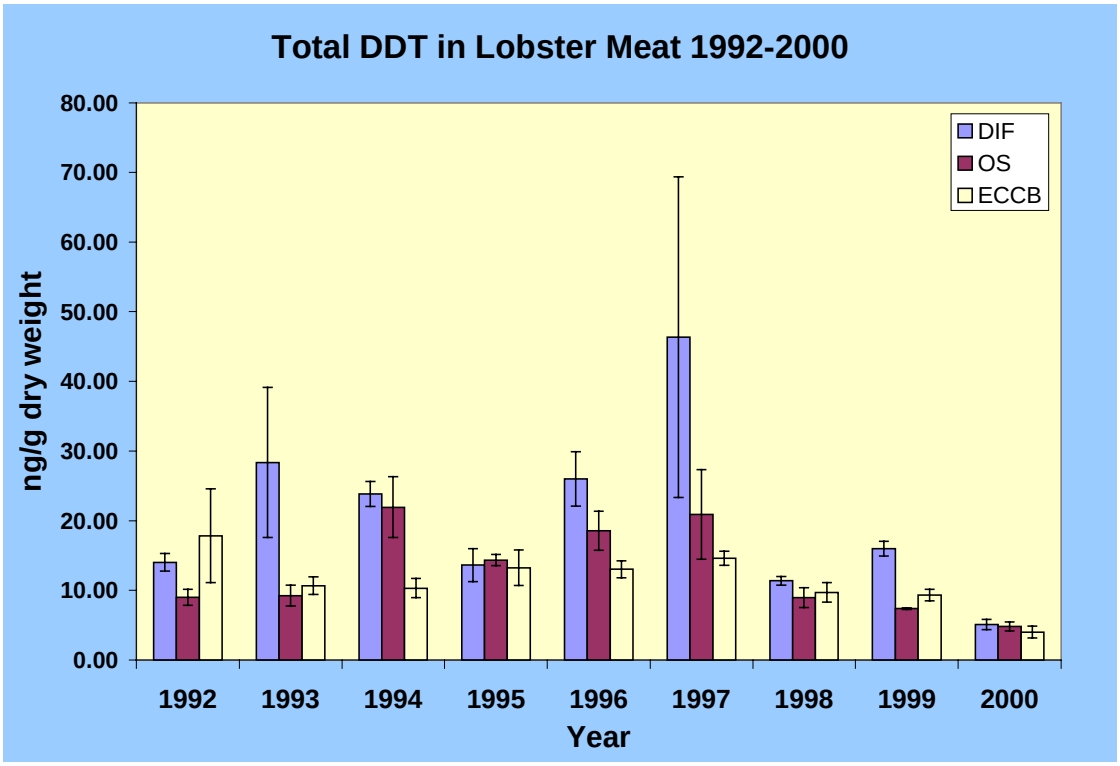


Figure 3-12. Total DDT in Lobster Meat at DIF, OS, and ECCB from 1992-2000.

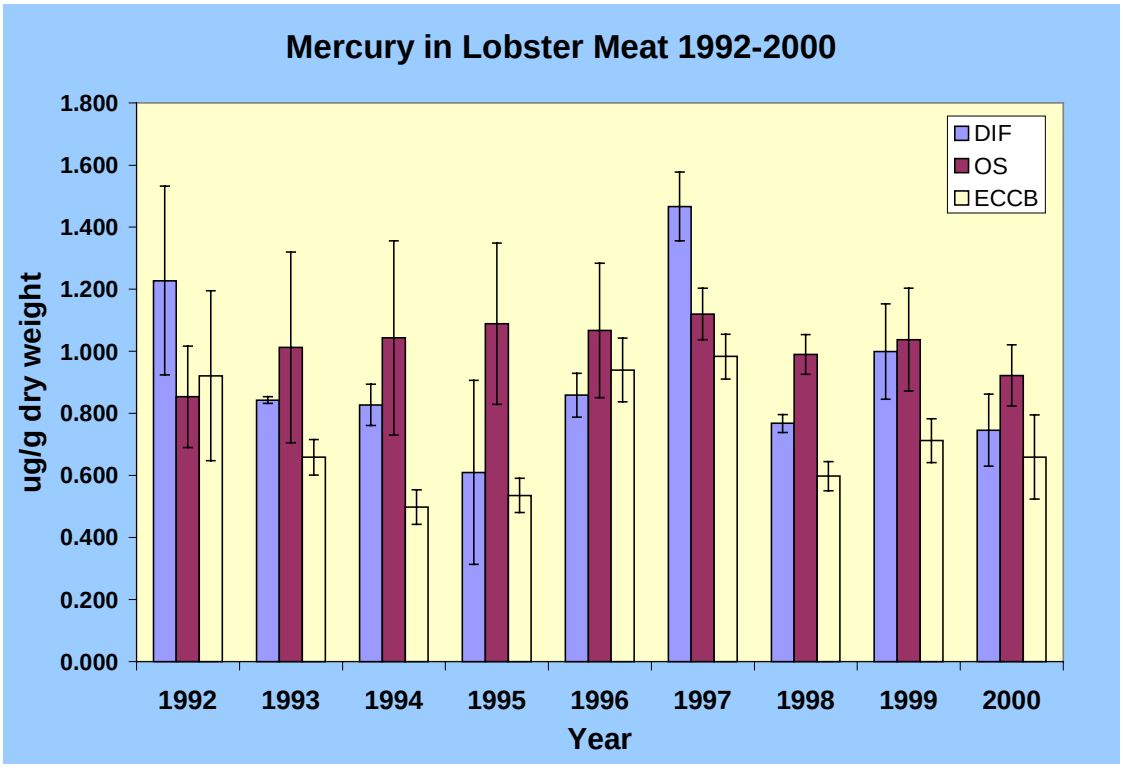


Figure 3-13. Mercury in Lobster Meat at DIF, OS, and ECCB from 1992-2000.

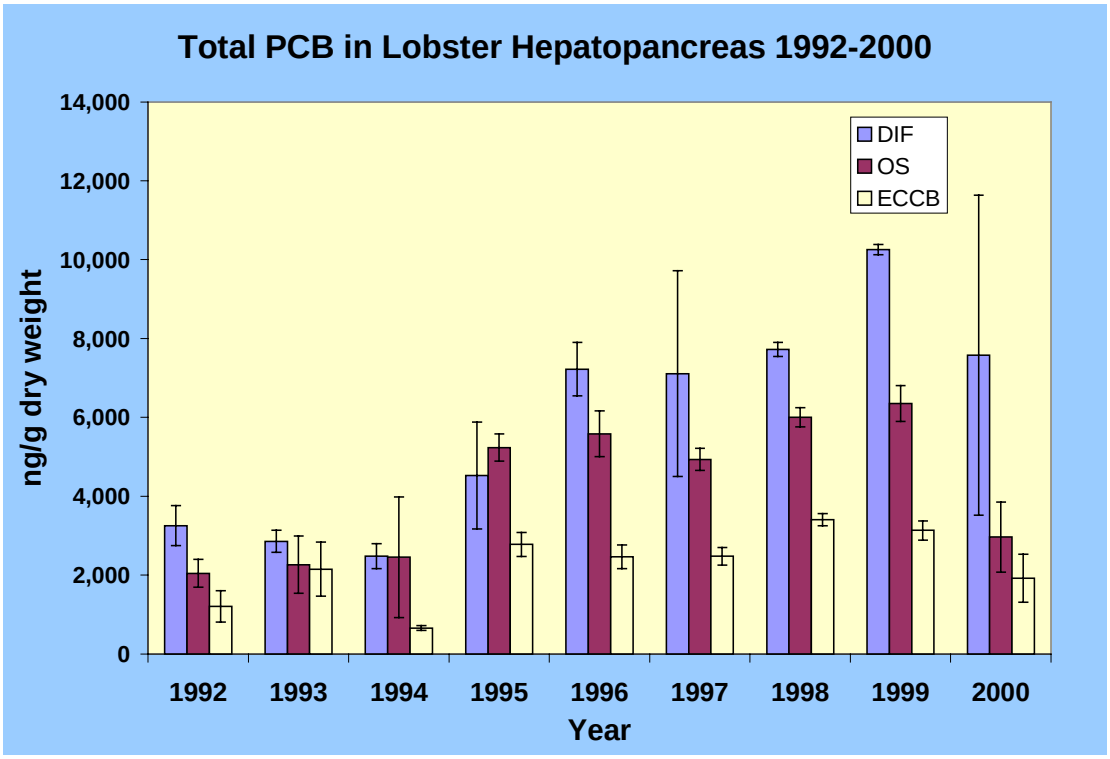


Figure 3-14. Total PCB in Lobster Hepatopancreas at DIF, OS, and ECCB from 1992-2000.

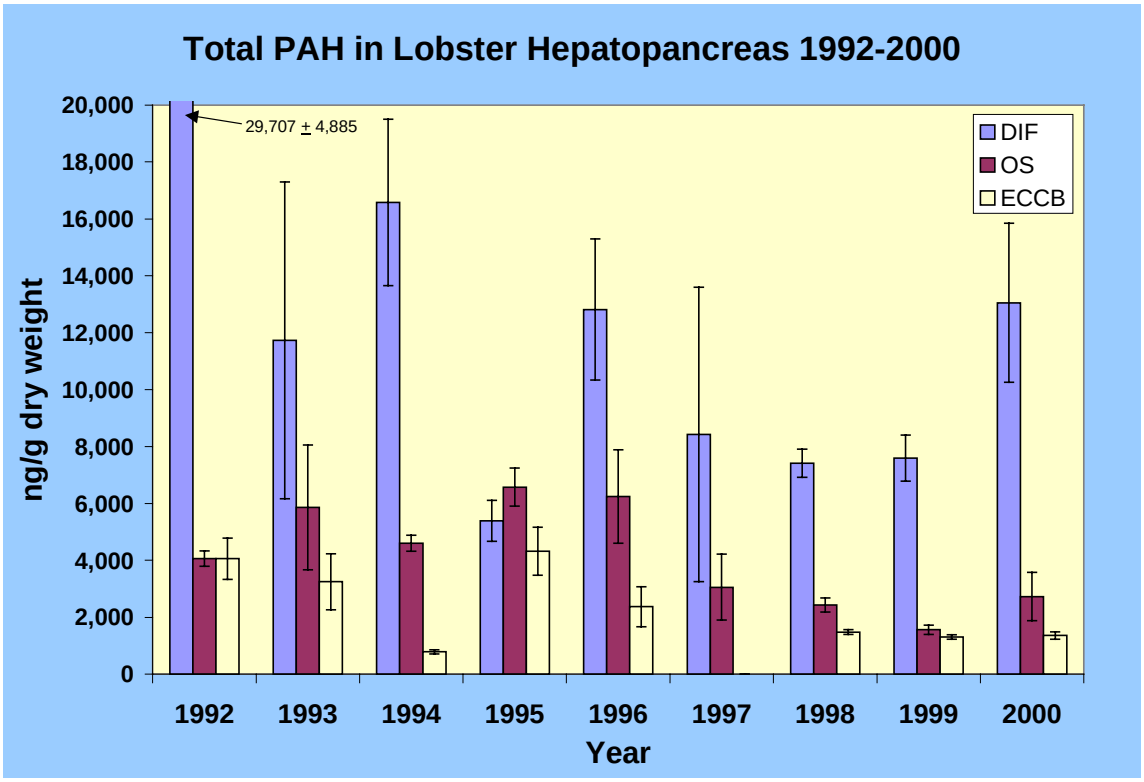


Figure 3-15. Total PAH in Lobster Hepatopancreas at DIF, OS, and ECCB from 1992-2000.

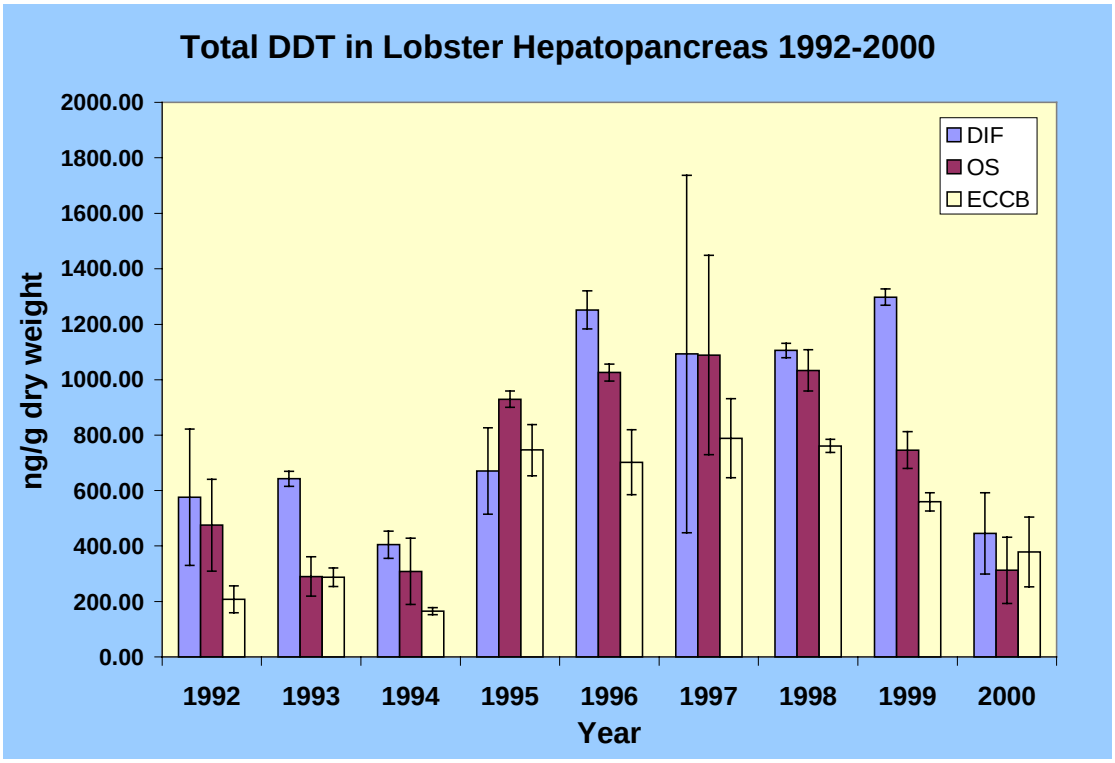


Figure 3-16. Total DDT in Lobster Hepatopancreas at DIF, OS, and ECCB from 1992-2000.

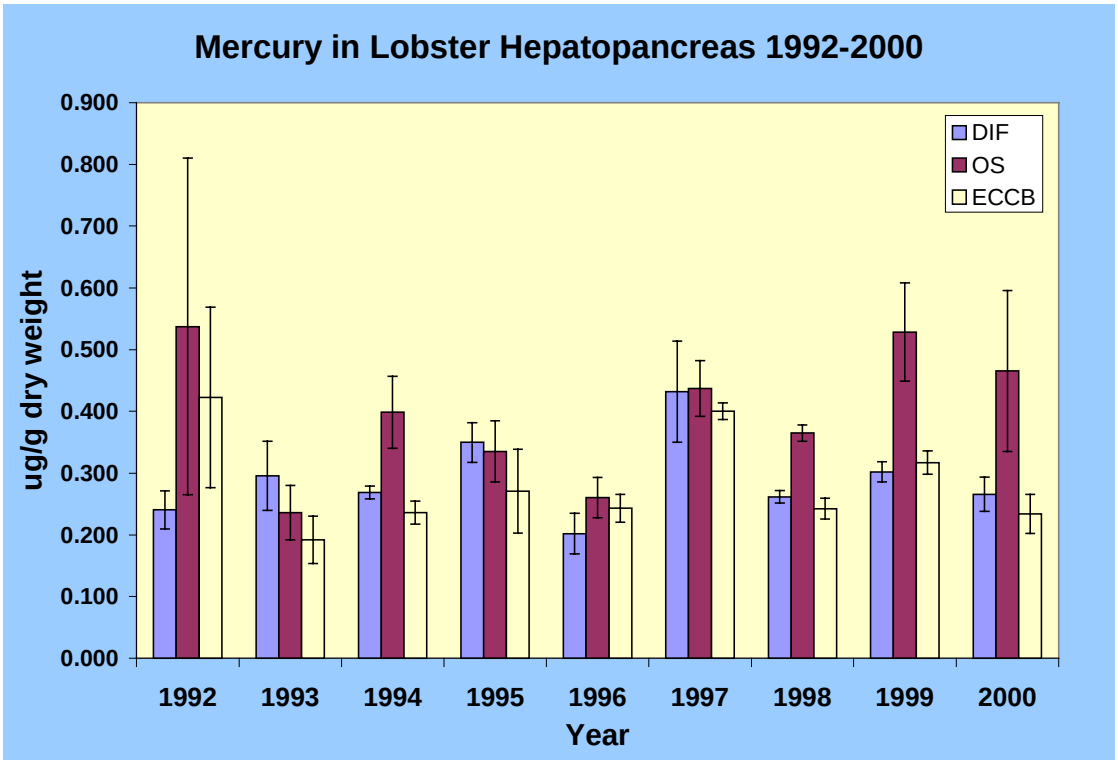


Figure 3-17. Mercury in Lobster Hepatopancreas at DIF, OS, and ECCB from 1992-2000.

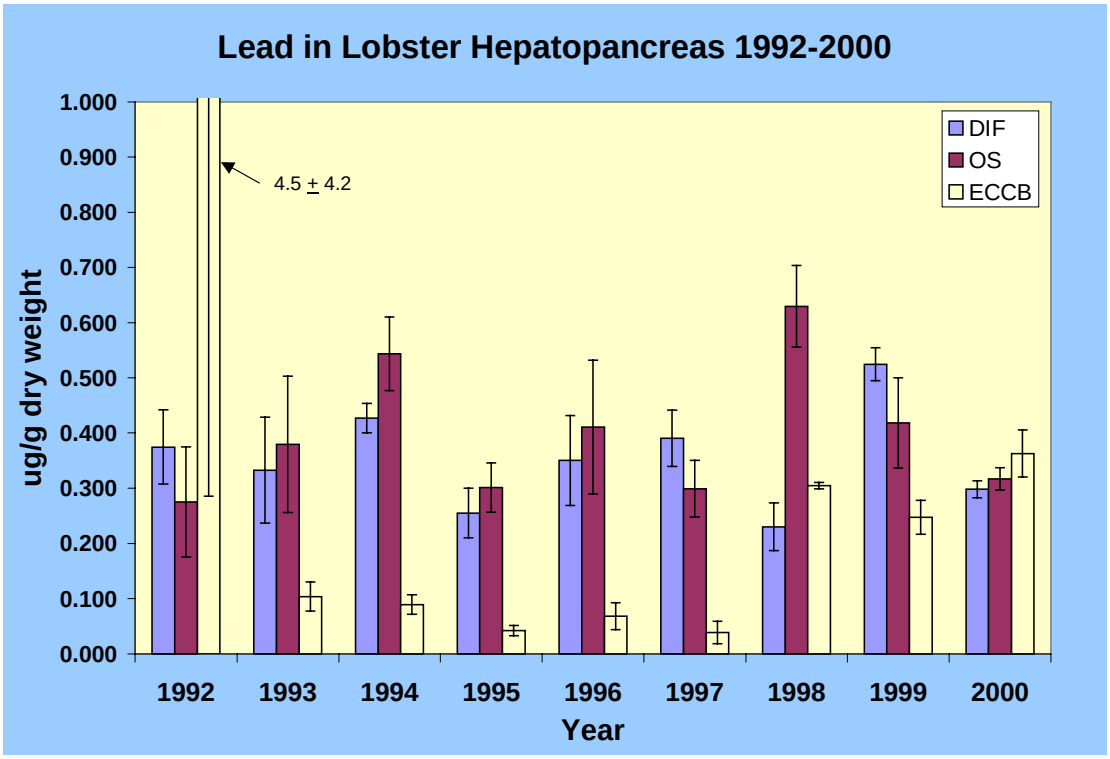


Figure 3-18. Lead in Lobster Hepatopancreas at DIF, OS and ECCB from 1992-2000.

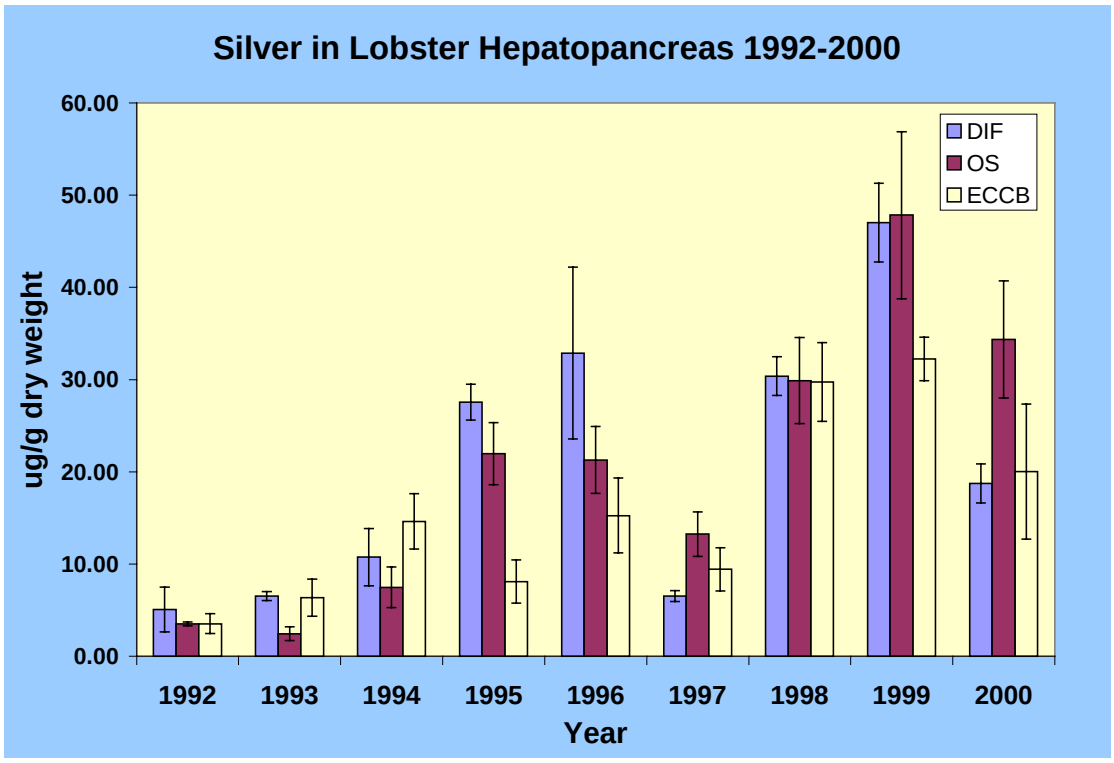


Figure 3-19. Silver in Lobster Hepatopancreas at DIF, OS and ECCB from 1992-2000.

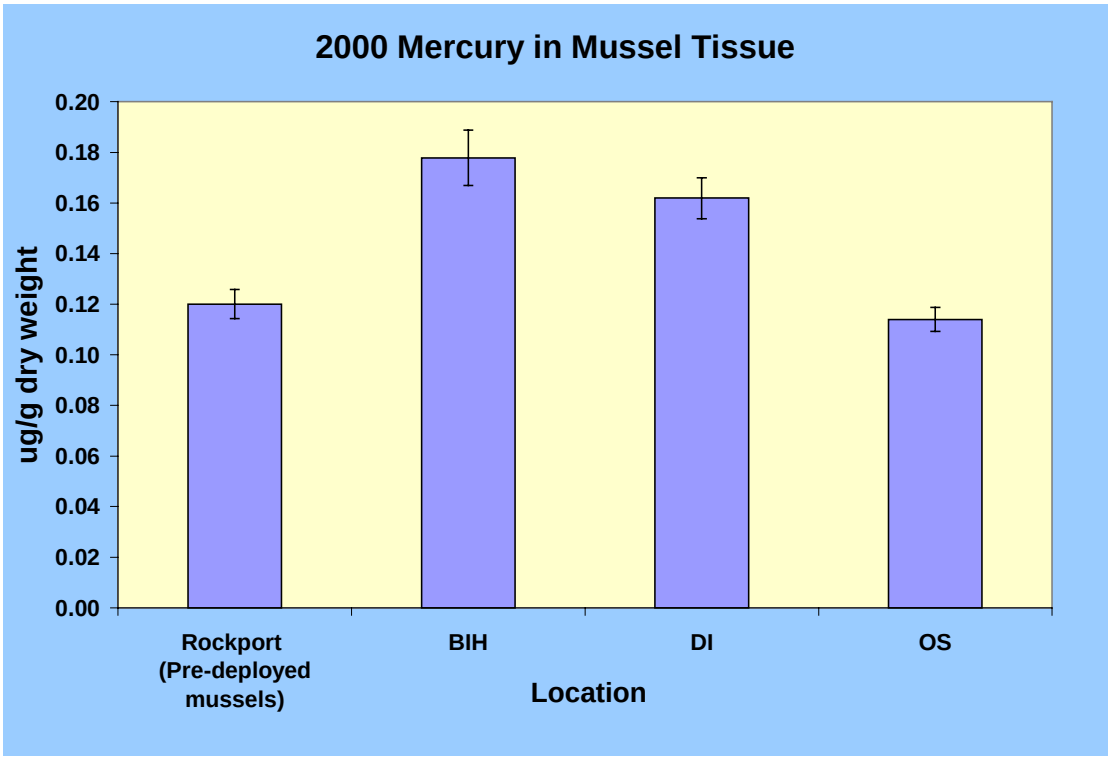


Figure 3-20. Mercury in 2000 Pre-deployed Mussels and Four Deployment Locations.

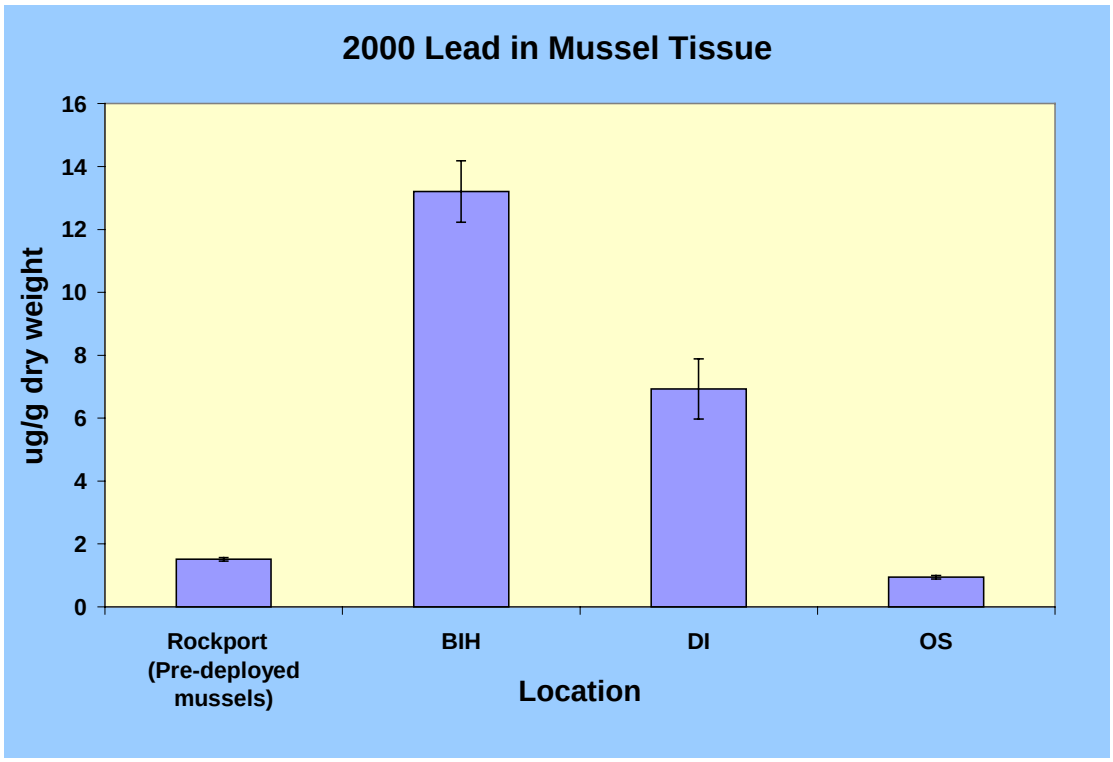


Figure 3-21. Lead in 2000 Pre-deployed Mussels and Four Deployment Locations.

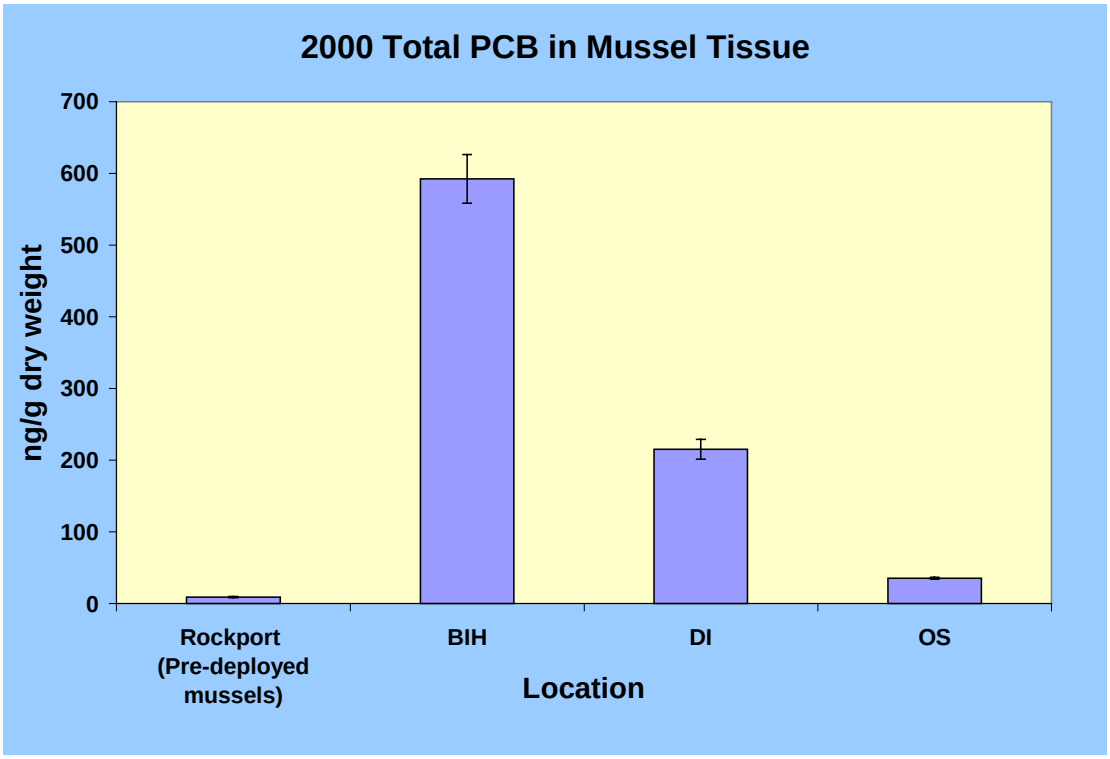


Figure 3-22. Total PCB in 2000 Pre-deployed Mussels and Four Deployment Locations.

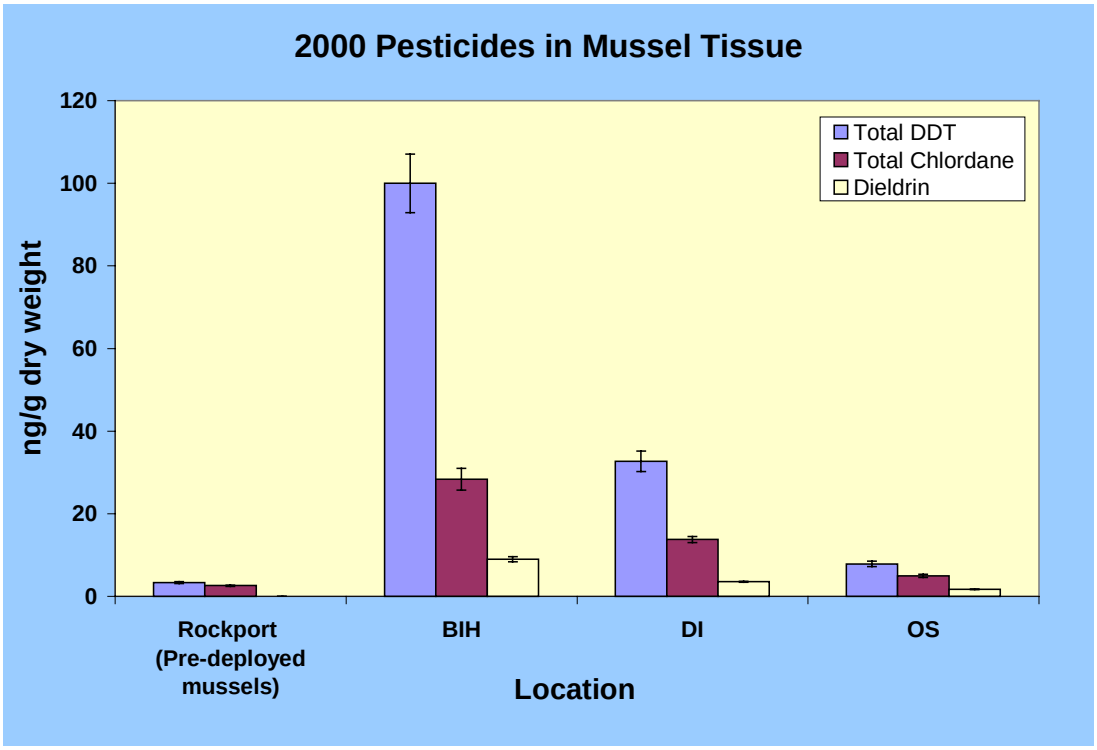


Figure 3-23. Pesticides in 2000 Pre-deployed Mussels and Four Deployment Locations.

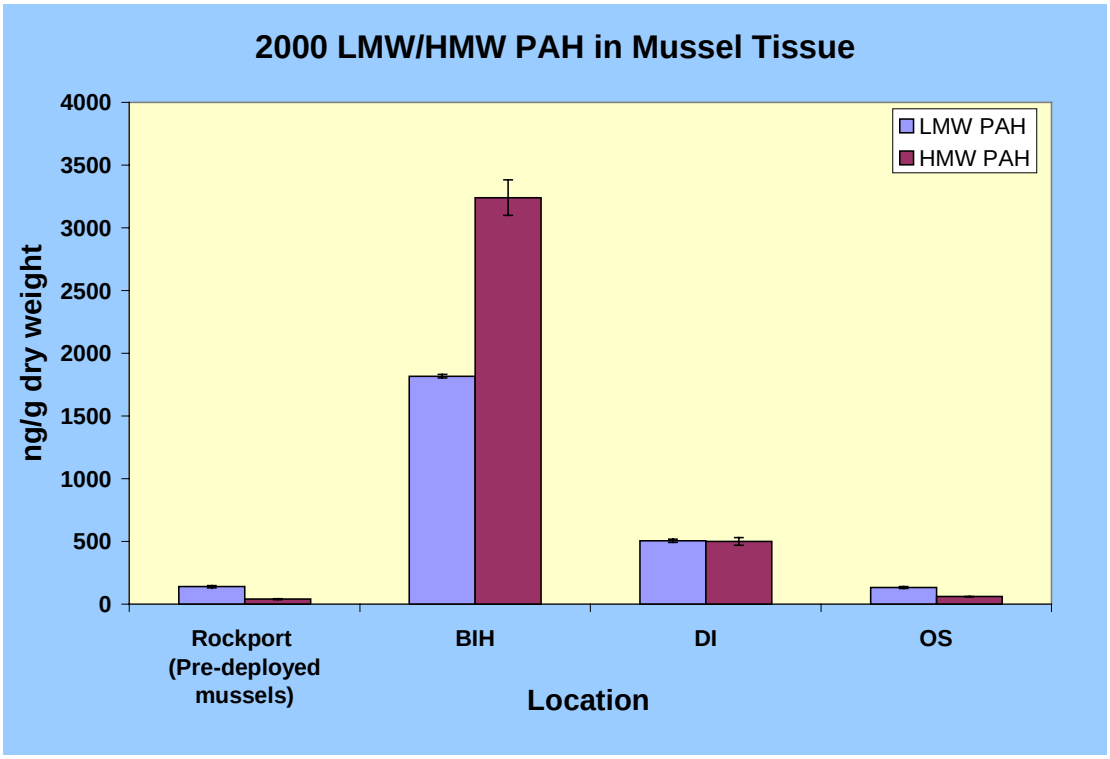


Figure 3-24. Total Low and High Molecular Weight PAHs in 2000 Pre-deployed Mussels and Four Deployment Locations Using the Total PAH List.

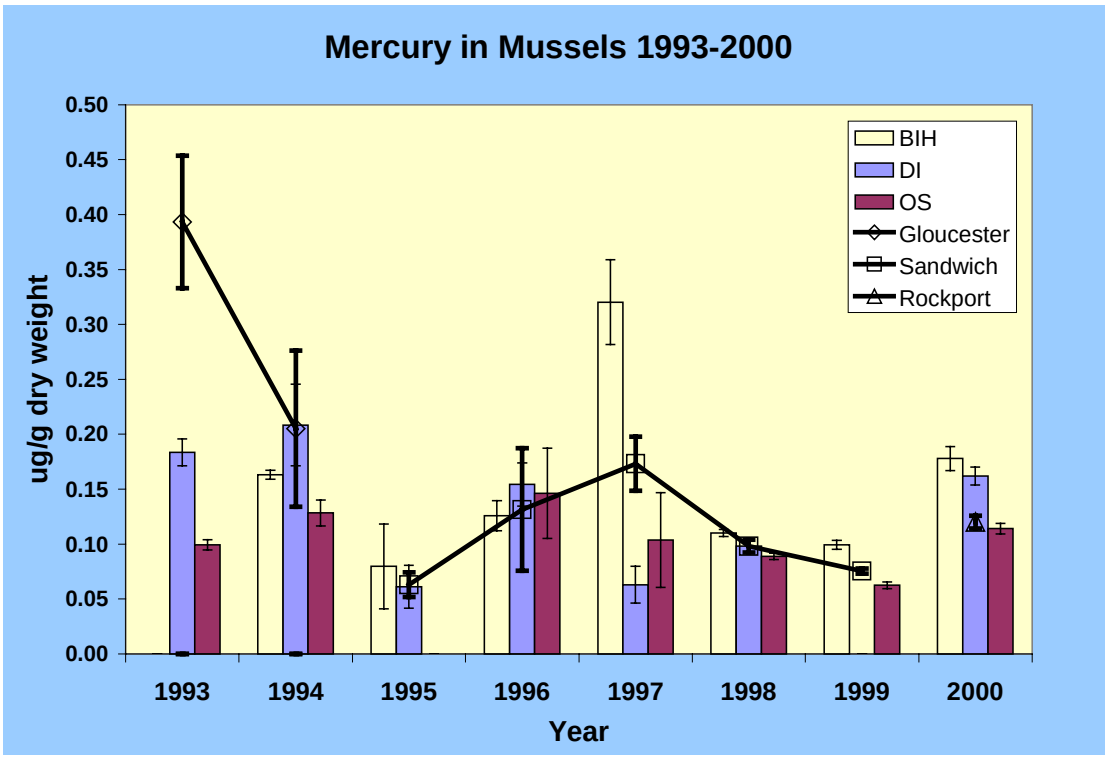


Figure 3-25. Mercury in Pre-deployed and Deployed Mussels from 1993-2000.

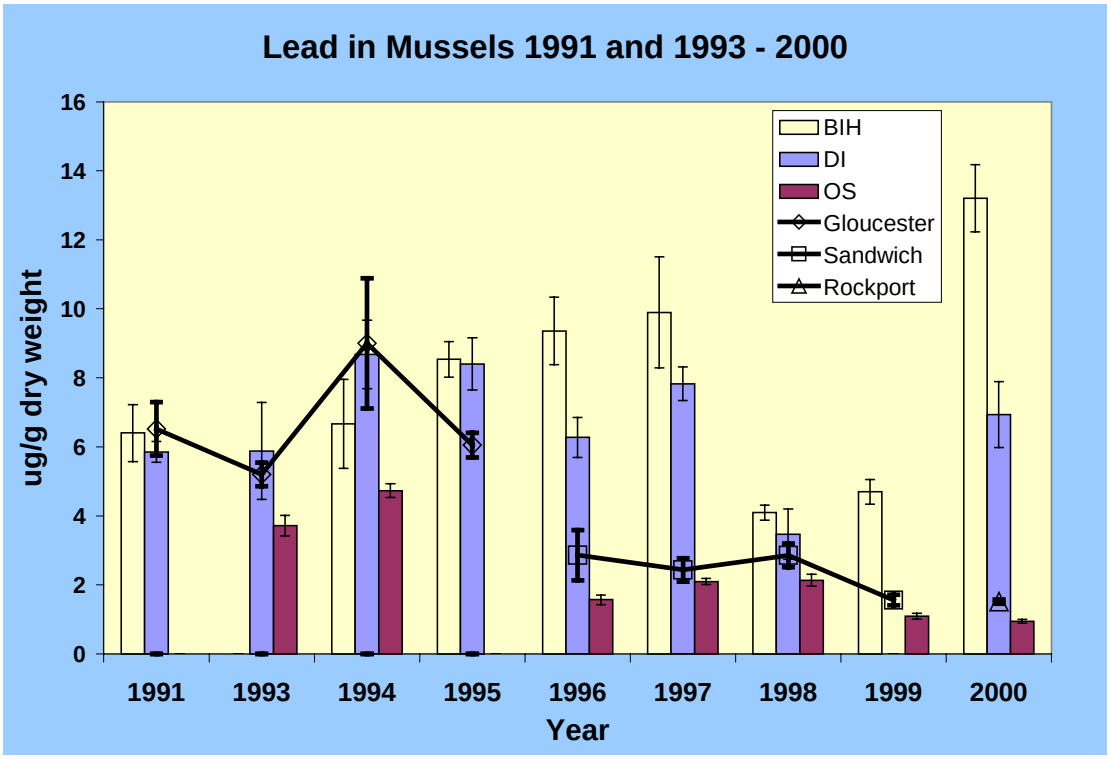


Figure 3-26. Lead in Pre-deployed and Deployed Mussels from 1991 and 1993-2000.

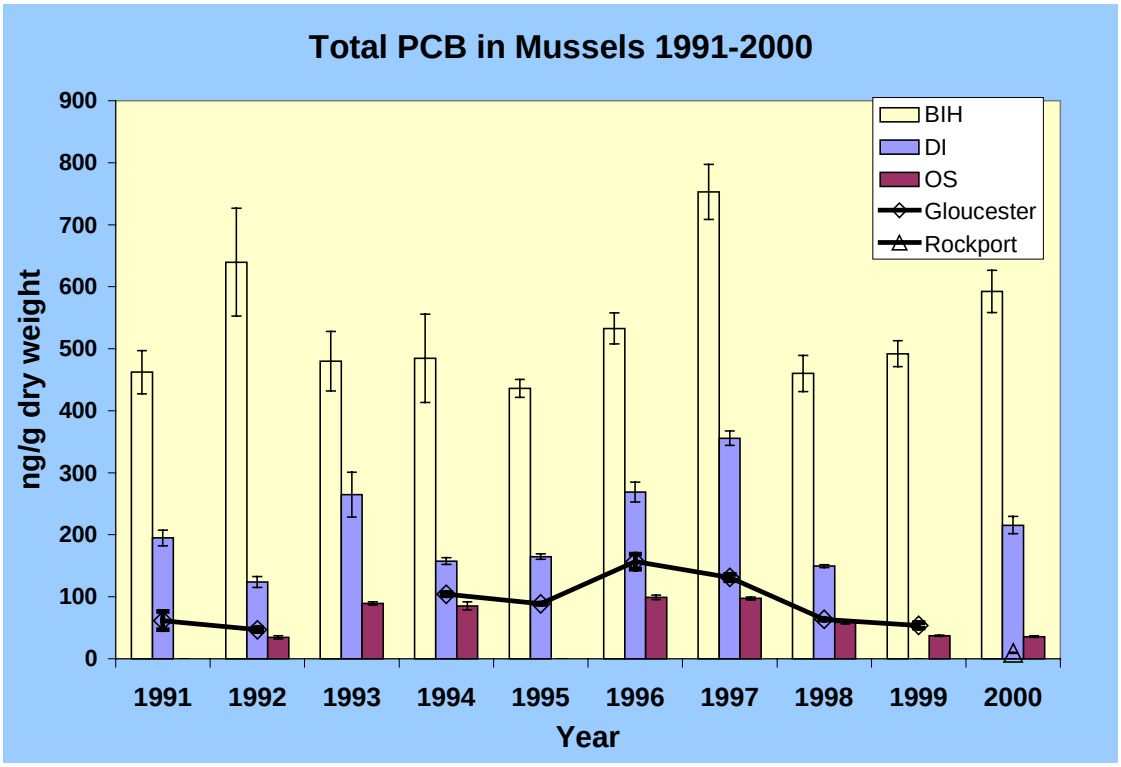


Figure 3-27. Total PCB in Pre-deployed and Deployed Mussels from 1991-2000.

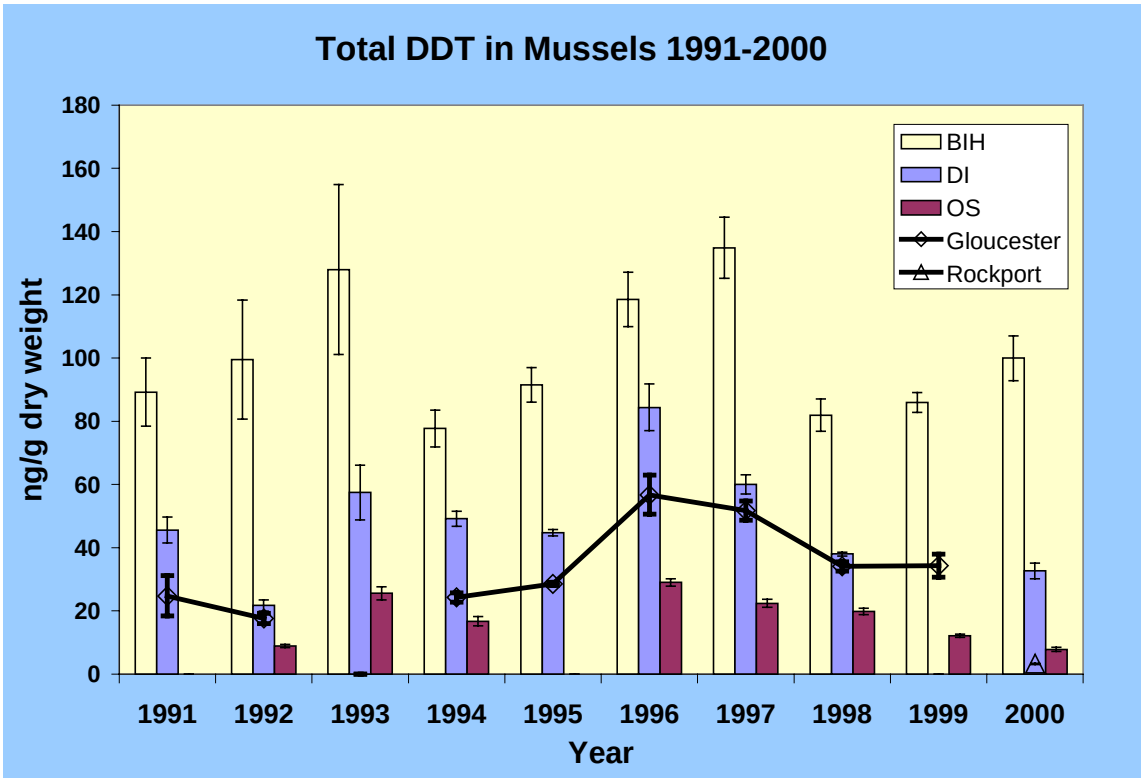
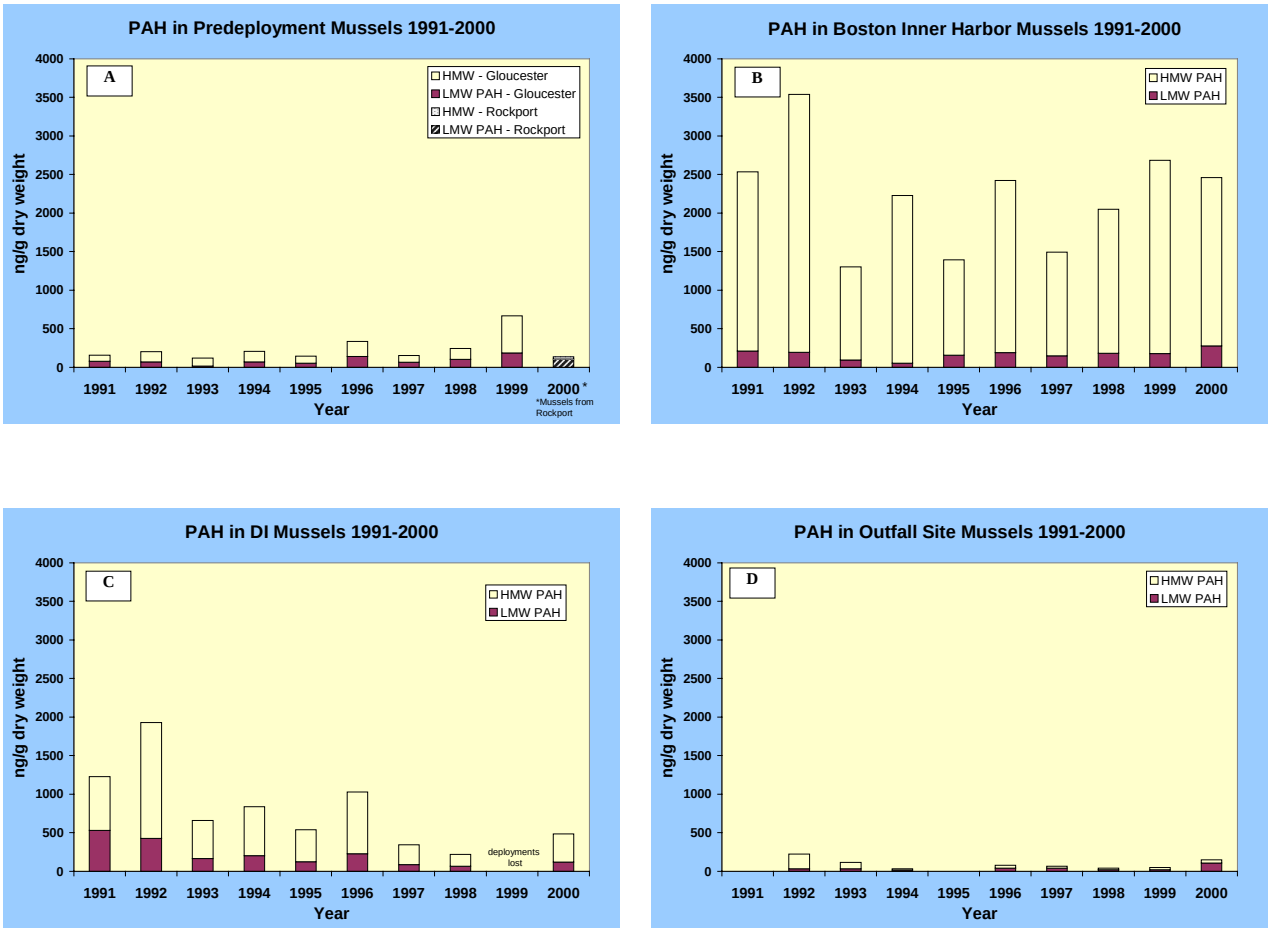


Figure 3-28. Total DDT in Pre-deployed and Deployed Mussels from 1991-2000.



A = Rockport (Pre-deployment), B = BIH (Deployed), C = DI (Deployed), D = OS (Deployed)

Figure 3-29. Total PAHs (Using the "Historical NOAA List") in Pre-deployed and Deployed Mussels from 1991-2000.

4.0 CONCLUSIONS

The 2000 Fish and Shellfish Monitoring Program was completed successfully and generated data consistent with past years. Results provided in this report further document pre-effluent baseline conditions and constitute the final baseline year of data. Biological conditions in all organisms are stable or improving since the beginning of the program in 1992. There are some apparent upward trends in contaminant concentrations since 1996, especially in the lobster hepatopancreas. Conclusions for the various animals from the surveys are given below.

4.1 Winter Flounder

The 2000 Flounder Survey provided samples from three locations (DIF, OS, and ECCB) and was conducted in a manner consistent with previous surveys. Catch per unit effort at OS was the highest of any year since the project began in 1991. Flounder continue to be in reasonably good health from all stations. There is none of the high neoplasm prevalence characteristic of fish from Deer Island Flats in the mid- to late-1980s. The differences between stations continue to be discernible and relatively stable, but at a more subtle level than observed early in the baseline period. East Cape Cod Bay continues to be a useful reference site. The levels of most tissue contaminant concentrations were similar to or lower than those measured in previous years. Highest concentrations are routinely found at DIF and the lowest concentrations are found in ECCB. All fillet chemical concentrations were below both FDA and MWRA Appreciable Change levels.

4.2 Lobster

The 2000 Lobster Survey collected specimens from three sampling locations by direct shipboard collection from commercial lobstermen. The spatial pattern of tissue contaminants was similar to that measured in past years, with the highest concentrations generally found at DIF and the lowest at ECCB reference location. This gradient in lobster tissue concentrations between sampling locations supports the premise that legal-sized lobsters exhibit sufficient fidelity to an area to allow establishment of a predictable trend in tissue body burdens due to relative contaminant exposure. Most organic and metals concentrations in 2000 were similar to or lower than those measured in previous baseline years. However, PAH concentrations in hepatopancreas collected from DIF lobsters were elevated compared to recent years, possibly as a result of increased boat traffic from the July Tall Ships celebration. Concentrations of total PCB in lobster hepatopancreas continued to be elevated in 2000 at DIF while similar trends observed in past years for DDT were not present. Lobster edible tissue contaminant concentrations were below the FDA Action Limits and the Appreciable Change levels set by MWRA.

4.3 Blue Mussel

The 2000 Mussel Bioaccumulation study involved deployment of caged mussels at one offshore location (OS) and two near-shore locations (BIH and DI). Among the stations previously studied, concentrations were routinely highest at BIH and lowest at OS for organics, lead, and mercury. The slight increase of total PAH at DIF in 2000 relative to the past few years may be a result of increased boat traffic in the Harbor during July 2000 due to the Tall Ships event that occurred. Slightly higher PAH concentrations may also be attributed to elevated background levels of selected PAHs associated with analysis of 2000 mussels (although subtraction of the background concentrations was performed). All mussel chemical concentrations were below both FDA and MWRA Appreciable Change levels.

4.4 Recalculation of the Baseline Threshold Incorporating 2000 Data and Evaluation of the Monitoring Threshold

The MWRA (1997a) developed a Contingency Plan that specifies numerical or qualitative thresholds that may suggest that environmental conditions in the Bay may be changing or might be likely to change. The Plan provides a mechanism to confirm that a threshold has been exceeded, to determine the causes and significance of the event, and to identify the action necessary to return the trigger parameter to a level below the threshold (if the change resulted from effluent discharge). Fish and shellfish thresholds have been established for tissue contaminant concentrations and liver disease incidence (Table 4-1; MWRA 1997a). Thresholds are based on 1992 – 2000 station averages for lobsters and mussels (organics only) and 1993 – 2000 station averages for flounder and mussels (metals). In addition, annual comparisons of OS tissue concentrations will be made to Appreciable Change levels based on baseline data and to 80% of the FDA Action Levels. Appreciable Change levels are approximately the equivalent of a "significant increase", as discussed in the 1999 Annual Fish and Shellfish Report (Lefkovitz, *et al*., 2000).

Table 4-1. Comparison of Baseline Mean Concentrations, Significantly Increased Levels and Recalculated Threshold (Incorporating 2000 Data) at the Outfall Site.

Parameter	Thresholds[1]		Appreciable Change Level[4]	80% of the FDA Action Level
	Caution[2]	Warning[3]		
Mercury (ppm wet)				
Flounder	0.5	0.8	0.148	0.8
Lobster	0.5	0.8	0.296	0.8
Mussels	0.5	0.8	0.037	0.8
Lead (ppm wet)				
Mussels	2	3	0.83	3
PCBs (ppb wet)				
Flounder	1000	1600	66.4	1600
Lobster	1000	1600	30.1	1600
Mussels	1000	1600	22.2	1600
PAH[5] (ppb/g lipid)				
Mussels	2160	NA	24.3	NA
Chlordane (ppb/g lipid)				
Flounder	484	NA	2.5	240
Lobster	150	NA	0.7	240
Mussels	205	NA	2.4	240
Dieldrin (ppb/g lipid)				
Flounder	127	NA	0.6	240
Lobster	322	NA	1.6	240
Mussels	50	NA	0.6	240
DDT (ppb/g lipid)				
Flounder	1552	NA	7.1	4000
Lobster	683	NA	3.7	4000
Mussels	483	NA	5.9	4000
CHV Prevalence				
Flounder	44.9	NA	NA	NA

1 Thresholds are based on 1992 – 2000 station averages for lobsters and mussels (organics only) and 1993 – 2000 station averages for flounder and mussels (metals).

[2] Caution Levels for mercury, lead, and PCBs are 50% of the FDA Action Level. Caution Levels for PAH, Chlordane, Dieldrin and DDT are 2 x OS mean baseline lipid normalized concentrations from 1992 – 2000.

[3] Warning Levels for mercury, lead, and PCBs are 80% of the FDA Action Level

[4] Based on "appreciable change from baseline"; (2 x OS mean baseline wet weight concentration from 1992 – 2000).

[5] Representing NOAA PAHs only.

5.0 RECOMMENDATIONS

An evaluation of the 2000 Fish and Shellfish tasks indicates that the program is achieving its monitoring goals. However, refinements to the program may be warranted. Based on the 2000 results, several recommendations for future effort are suggested:

- As recommended in the 1999 Fish and Shellfish Annual Report, collection of flounder at all stations should be conducted in April 2001. Where fish are not available in April, a second collection should be attempted in May;

- Lobster collection should be coordinated with commercial lobstermen both temporally and spatially to maximize collection efficiency. Attempts to collect lobsters in a relatively shorter time period must continue;

- The diffuser at the Outfall Site went on line in September 2000. In future fish and shellfish annual reports, temporal baseline trends should be evaluated statistically, including all baseline years within the Monitoring Program.

6.0 REFERENCES

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EPA (United States Environmental Protection Agency). 1991a. Methods for the Determination of Metals in Environmental Samples. EPA-600/4-91-010. Method 245.6: Determination of Mercury in Tissues by Cold Vapor Atomic Absorption Spectrometry. Environmental Protection Agency, Environmental Services Division, Monitoring Management Branch. Cincinnati, Ohio.

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APPENDIX A

Summary of Measurement Program from 1992 - 2000

There have been a number of changes in fish and shellfish monitoring over the past 8 years of monitoring. The following table summarizes those changes.

Table A-1. Summary of Changes in Fish and Shellfish Monitoring 1992 – 2000.

Organism	Laboratory		Chemistry Composites per Station	Organisms per Composite
Flounder	**Chemistry**	**Histology/Physiology[a]**		
1992	Battelle	M. Moore	4	1
1993	Battelle	M. Moore	9-10	1
1994	Battelle	M. Moore	3	1
1995	ADL/ENVITEC	M. Moore	3	5
1996	ADL/ENVITEC	M. Moore	3	5
1997	ADL/ENVITEC	M. Moore	3	5
1998	Battelle	M. Moore	3	5
1999	Battelle	M. Moore	3	5
2000	Battelle	M. Moore	3	5
Lobster	**Chemistry**	**Physiology**		
1992	Battelle	Battelle	3	1
1993	Battelle	Battelle	2–10	1
1994	Battelle	Battelle	2–3	5
1995	ADL/ENVITEC	ENSR	3	5
1996	ADL/ENVITEC	ENSR	3	5
1997	ADL/ENVITEC	ENSR	3	5
1998	Battelle	Battelle	3	5
1999	Battelle	Battelle	3	5
2000	Battelle	Battelle	3	5
Mussel	**Chemistry**	**Biological Condition**		
1992	Aquatec	Aquatec	5-8	10
1993	Aquatec	Aquatec	3-8	10
1994	Aquatec	Aquatec	3-8	10
1995	ADL/ENVITEC	Aquatec	5	At least 200 g
1996	ADL/ENVITEC	Aquatec	5	At least 200 g
1997	ADL/ENVITEC	Aquatec	5	At least 200 g
1998	Battelle	Battelle	5-8	5
1999	Battelle	Battelle	5-8	5
2000	Battelle	Battelle	5-8	5-10

[a]Individual livers/fish

APPENDIX B

Summary Tables of Lipid (% dry wt.), PCB/Pesticide, PAH and Metals Results for Individual Composites of Flounder, Lobster and Mussels

Table B-1. 2000 Lipid Data - Individual Replicates.

Station	Sample	Bottle	Fraction	Parameter	Value	Val Qual	Unit Code
Flounder Fillet	DIF	FF00110C1	XT83	LIPID	2.5		PCTDRYWT
Flounder Fillet	DIF	FF00110C2	XT84	LIPID	2.8		PCTDRYWT
Flounder Fillet	DIF	FF00110C3	XT85	LIPID	2.2		PCTDRYWT
Flounder Fillet	OS	FF00140C1	XT77	LIPID	2.6		PCTDRYWT
Flounder Fillet	OS	FF00140C2	XT78	LIPID	3.1		PCTDRYWT
Flounder Fillet	OS	FF00140C3	XT79	LIPID	3.1		PCTDRYWT
Flounder Fillet	ECCB	FF00150C1	XU22	LIPID	2.0		PCTDRYWT
Flounder Fillet	ECCB	FF00150C2	XU23	LIPID	3.3		PCTDRYWT
Flounder Fillet	ECCB	FF00150C3	XU24	LIPID	3.0		PCTDRYWT
Flounder Liver	DIF	FF00110C1	XT86	LIPID	41.5		PCTDRYWT
Flounder Liver	DIF	FF00110C2	XT87	LIPID	35.6		PCTDRYWT
Flounder Liver	DIF	FF00110C3	XT88	LIPID	55.5		PCTDRYWT
Flounder Liver	OS	FF00140C1	XT80	LIPID	48.1		PCTDRYWT
Flounder Liver	OS	FF00140C2	XT81	LIPID	48.7		PCTDRYWT
Flounder Liver	OS	FF00140C3	XT82	LIPID	42.2		PCTDRYWT
Flounder Liver	ECCB	FF00150C1	XU25	LIPID	32.1		PCTDRYWT
Flounder Liver	ECCB	FF00150C2	XU26	LIPID	36.2		PCTDRYWT
Flounder Liver	ECCB	FF00150C3	XU27	LIPID	31.8		PCTDRYWT
Lobster Meat	DIF	FL0011C1	YC90	LIPID	1.9		PCTDRYWT
Lobster Meat	DIF	FL0011C2	YC91	LIPID	1.6		PCTDRYWT
Lobster Meat	DIF	FL0011C3	YC92	LIPID	2.1		PCTDRYWT
Lobster Meat	OS	FL0014C1	YC93	LIPID	1.7		PCTDRYWT
Lobster Meat	OS	FL0014C2	YC94	LIPID	1.7		PCTDRYWT
Lobster Meat	OS	FL0014C3	YC95	LIPID	1.7		PCTDRYWT
Lobster Meat	ECCB	FL0015C1	YC87	LIPID	2.0		PCTDRYWT
Lobster Meat	ECCB	FL0015C2	YC88	LIPID	2.3		PCTDRYWT
Lobster Meat	ECCB	FL0015C3	YC89	LIPID	1.9		PCTDRYWT
Lobster Hepatopancreas	DIF	FL0011C1	YC81	LIPID	53.5		PCTDRYWT
Lobster Hepatopancreas	DIF	FL0011C2	YC82	LIPID	57.6		PCTDRYWT
Lobster Hepatopancreas	DIF	FL0011C3	YC83	LIPID	57.7		PCTDRYWT
Lobster Hepatopancreas	OS	FL0014C1	YC84	LIPID	42.7		PCTDRYWT
Lobster Hepatopancreas	OS	FL0014C2	YC85	LIPID	52.9		PCTDRYWT
Lobster Hepatopancreas	OS	FL0014C3	YC86	LIPID	56.8		PCTDRYWT
Lobster Hepatopancreas	ECCB	FL0015C1	YC78	LIPID	51.3		PCTDRYWT
Lobster Hepatopancreas	ECCB	FL0015C2	YC79	LIPID	58.6		PCTDRYWT
Lobster Hepatopancreas	ECCB	FL0015C3	YC80	LIPID	57.3		PCTDRYWT
Mussels	RP	FM001RPYE67	YE67	LIPID	4.9		PCTDRYWT
Mussels	RP	FM001RPYE68	YE68	LIPID	5.4		PCTDRYWT
Mussels	RP	FM001RPYE69	YE69	LIPID	4.7		PCTDRYWT
Mussels	RP	FM001RPYE70	YE70	LIPID	5.2		PCTDRYWT
Mussels	RP	FM001RPYE71	YE71	LIPID	5.4		PCTDRYWT
Mussels	1M	FM0031YE77	YE77	LIPID	6.6		PCTDRYWT
Mussels	1M	FM0031YE78	YE78	LIPID	7.6		PCTDRYWT
Mussels	1M	FM0031YE79	YE79	LIPID	7.5		PCTDRYWT

Table B-1. 2000 Lipid Data - Individual Replicates. (Continued)

Station	Sample	Bottle	Fraction	Parameter	Value	Val Qual	Unit Code
Mussels	1M	FM0031YE80	YE80	LIPID	7.6		PCTDRYWT
Mussels	1M	FM0031YE81	YE81	LIPID	7.7		PCTDRYWT
Mussels	4	FM0034YE82	YE82	LIPID	6.0		PCTDRYWT
Mussels	4	FM0034YE83	YE83	LIPID	7.5		PCTDRYWT
Mussels	4	FM0034YE84	YE84	LIPID	7.1		PCTDRYWT
Mussels	4	FM0034YE85	YE85	LIPID	6.5		PCTDRYWT
Mussels	4	FM0034YE86	YE86	LIPID	7.6		PCTDRYWT
Mussels	4	FM0034YE87	YE87	LIPID	7.4		PCTDRYWT
Mussels	4	FM0034YE88	YE88	LIPID	7.4		PCTDRYWT
Mussels	4	FM0034YE89	YE89	LIPID	7.6		PCTDRYWT
Mussels	6	FM0036YE72	YE72	LIPID	8.6		PCTDRYWT
Mussels	6	FM0036YE73	YE73	LIPID	8.0		PCTDRYWT
Mussels	6	FM0036YE74	YE74	LIPID	7.9		PCTDRYWT
Mussels	6	FM0036YE75	YE75	LIPID	8.2		PCTDRYWT
Mussels	6	FM0036YE76	YE76	LIPID	8.6		PCTDRYWT

Table B-2. 2000 Percent Dry Weight Data - Individual Replicates.

Station	Sample	Bottle	Fraction	Parameter	Value	Val Qual	Unit Code
Flounder Fillet	DIF	FF00110C1	XT83	PCTDRYWT	17.3		PCT
Flounder Fillet	DIF	FF00110C2	XT84	PCTDRYWT	16.6		PCT
Flounder Fillet	DIF	FF00110C3	XT85	PCTDRYWT	17.7		PCT
Flounder Fillet	OS	FF00140C1	XT77	PCTDRYWT	17.0		PCT
Flounder Fillet	OS	FF00140C2	XT78	PCTDRYWT	17.4		PCT
Flounder Fillet	OS	FF00140C3	XT79	PCTDRYWT	16.0		PCT
Flounder Fillet	ECCB	FF00150C1	XU22	PCTDRYWT	17.6		PCT
Flounder Fillet	ECCB	FF00150C2	XU23	PCTDRYWT	16.1		PCT
Flounder Fillet	ECCB	FF00150C3	XU24	PCTDRYWT	16.4		PCT
Flounder Liver	DIF	FF00110C1	XT86	PCTDRYWT	24.8		PCT
Flounder Liver	DIF	FF00110C2	XT87	PCTDRYWT	23.7		PCT
Flounder Liver	DIF	FF00110C3	XT88	PCTDRYWT	22.8		PCT
Flounder Liver	OS	FF00140C1	XT80	PCTDRYWT	23.0		PCT
Flounder Liver	OS	FF00140C2	XT81	PCTDRYWT	23.1		PCT
Flounder Liver	OS	FF00140C3	XT82	PCTDRYWT	22.4		PCT
Flounder Liver	ECCB	FF00150C1	XU25	PCTDRYWT	24.0		PCT
Flounder Liver	ECCB	FF00150C2	XU26	PCTDRYWT	23.2		PCT
Flounder Liver	ECCB	FF00150C3	XU27	PCTDRYWT	23.9		PCT
Lobster Meat	DIF	FL0011C1	YC90	PCTDRYWT	13.1		PCT
Lobster Meat	DIF	FL0011C2	YC91	PCTDRYWT	13.2		PCT
Lobster Meat	DIF	FL0011C3	YC92	PCTDRYWT	12.9		PCT
Lobster Meat	OS	FL0014C1	YC93	PCTDRYWT	13.6		PCT
Lobster Meat	OS	FL0014C2	YC94	PCTDRYWT	14.7		PCT
Lobster Meat	OS	FL0014C3	YC95	PCTDRYWT	12.7		PCT
Lobster Meat	ECCB	FL0015C1	YC87	PCTDRYWT	13.0		PCT
Lobster Meat	ECCB	FL0015C2	YC88	PCTDRYWT	14.8		PCT
Lobster Meat	ECCB	FL0015C3	YC89	PCTDRYWT	15.0		PCT
Lobster Hepatopancreas	DIF	FL0011C1	YC81	PCTDRYWT	30.8		PCT
Lobster Hepatopancreas	DIF	FL0011C2	YC82	PCTDRYWT	35.7		PCT
Lobster Hepatopancreas	DIF	FL0011C3	YC83	PCTDRYWT	30.7		PCT
Lobster Hepatopancreas	OS	FL0014C1	YC84	PCTDRYWT	31.7		PCT
Lobster Hepatopancreas	OS	FL0014C2	YC85	PCTDRYWT	31.2		PCT
Lobster Hepatopancreas	OS	FL0014C3	YC86	PCTDRYWT	32.1		PCT
Lobster Hepatopancreas	ECCB	FL0015C1	YC78	PCTDRYWT	27.4		PCT
Lobster Hepatopancreas	ECCB	FL0015C2	YC79	PCTDRYWT	33.7		PCT
Lobster Hepatopancreas	ECCB	FL0015C3	YC80	PCTDRYWT	23.8		PCT
Mussels	RP	FM001RPYE44	YE44	PCTDRYWT	9.6		PCT
Mussels	RP	FM001RPYE45	YE45	PCTDRYWT	10.3		PCT
Mussels	RP	FM001RPYE46	YE46	PCTDRYWT	10.9		PCT
Mussels	RP	FM001RPYE47	YE47	PCTDRYWT	9.3		PCT
Mussels	RP	FM001RPYE48	YE48	PCTDRYWT	10.6		PCT
Mussels	RP	FM001RPYE67	YE67	PCTDRYWT	9.0		PCT

Table B-2. 2000 Percent Dry Weight Data - Individual Replicates. (Continued)

Station	Sample	Bottle	Fraction	Parameter	Value	Val Qual	Unit Code
Mussels	RP	FM001RPYE68	YE68	PCTDRYWT	8.8		PCT
Mussels	RP	FM001RPYE69	YE69	PCTDRYWT	8.6		PCT
Mussels	RP	FM001RPYE70	YE70	PCTDRYWT	8.5		PCT
Mussels	RP	FM001RPYE71	YE71	PCTDRYWT	8.3		PCT
Mussels	1M	FM0031YE54	YE54	PCTDRYWT	14.6		PCT
Mussels	1M	FM0031YE55	YE55	PCTDRYWT	10.9		PCT
Mussels	1M	FM0031YE56	YE56	PCTDRYWT	9.0		PCT
Mussels	1M	FM0031YE57	YE57	PCTDRYWT	11.2		PCT
Mussels	1M	FM0031YE58	YE58	PCTDRYWT	12.1		PCT
Mussels	1M	FM0031YE77	YE77	PCTDRYWT	13.7		PCT
Mussels	1M	FM0031YE78	YE78	PCTDRYWT	13.6		PCT
Mussels	1M	FM0031YE79	YE79	PCTDRYWT	12.5		PCT
Mussels	1M	FM0031YE80	YE80	PCTDRYWT	12.9		PCT
Mussels	1M	FM0031YE81	YE81	PCTDRYWT	13.0		PCT
Mussels	4	FM0034YE59	YE59	PCTDRYWT	12.4		PCT
Mussels	4	FM0034YE60	YE60	PCTDRYWT	15.1		PCT
Mussels	4	FM0034YE61	YE61	PCTDRYWT	13.1		PCT
Mussels	4	FM0034YE62	YE62	PCTDRYWT	12.7		PCT
Mussels	4	FM0034YE63	YE63	PCTDRYWT	12.2		PCT
Mussels	4	FM0034YE64	YE64	PCTDRYWT	11.2		PCT
Mussels	4	FM0034YE65	YE65	PCTDRYWT	11.4		PCT
Mussels	4	FM0034YE66	YE66	PCTDRYWT	13.3		PCT
Mussels	4	FM0034YE82	YE82	PCTDRYWT	11.8		PCT
Mussels	4	FM0034YE83	YE83	PCTDRYWT	13.5		PCT
Mussels	4	FM0034YE84	YE84	PCTDRYWT	14.2		PCT
Mussels	4	FM0034YE85	YE85	PCTDRYWT	14.4		PCT
Mussels	4	FM0034YE86	YE86	PCTDRYWT	14.5		PCT
Mussels	4	FM0034YE87	YE87	PCTDRYWT	14.4		PCT
Mussels	4	FM0034YE88	YE88	PCTDRYWT	14.6		PCT
Mussels	4	FM0034YE89	YE89	PCTDRYWT	14.0		PCT
Mussels	6	FM0036YE49	YE49	PCTDRYWT	10.1		PCT
Mussels	6	FM0036YE50	YE50	PCTDRYWT	9.3		PCT
Mussels	6	FM0036YE51	YE51	PCTDRYWT	10.3		PCT
Mussels	6	FM0036YE52	YE52	PCTDRYWT	9.4		PCT
Mussels	6	FM0036YE53	YE53	PCTDRYWT	9.3		PCT
Mussels	6	FM0036YE72	YE72	PCTDRYWT	10.2		PCT
Mussels	6	FM0036YE73	YE73	PCTDRYWT	10.5		PCT
Mussels	6	FM0036YE74	YE74	PCTDRYWT	10.5		PCT
Mussels	6	FM0036YE75	YE75	PCTDRYWT	10.3		PCT
Mussels	6	FM0036YE76	YE76	PCTDRYWT	10.1		PCT

Table B-3. 2000 Flounder Fillet Data - Individual Replicates.

Parameter	DI(1)	FOS(4)	ECCB(5)
Mercury	0.354	0.379	0.244
Mercury	0.545	0.305	0.186
Mercury	0.283	0.763	0.176
Total DDT	13.93	10.59	7.07
Total DDT	22.94	9.22	7.51
Total DDT	18.01	10.01	5.63
Total PCB	174.37	134.14	41.57
Total PCB	251.43	102.33	41.30
Total PCB	184.08	116.31	35.51
Total CHLOR	8.32	4.15	1.87
Total CHLOR	13.97	2.55	1.96
Total CHLOR	7.81	3.03	1.91
Aldrin	0.00	0.00	0.00
Aldrin	0.00	0.00	0.00
Aldrin	0.00	0.00	0.00
Dieldrin	0.95	0.70	0.30
Dieldrin	2.47	0.39	0.52
Dieldrin	1.20	0.67	0.47
Endrin	0.00	0.00	0.00
Endrin	0.00	0.00	0.00
Endrin	0.00	0.00	0.00
Hexachlorobenzene	0.49	0.54	0.33
Hexachlorobenzene	0.67	0.45	0.57
Hexachlorobenzene	0.64	0.49	0.32
Mirex	0.26	0.30	0.14
Mirex	0.48	0.24	0.16
Mirex	0.29	0.30	0.15
Lindane	0.00	0.00	0.00
Lindane	0.00	0.00	0.00
Lindane	0.00	0.00	0.00

Table B-4. 2000 Flounder Liver Data - Individual Replicates.

Parameter	DI(1)	FOS(4)	ECCB(5)
Mercury	0.351	0.443	0.269
Mercury	0.611	0.27	0.298
Mercury	0.316	1.18	0.395
Cadmium	1.24	2.68	1.41
Cadmium	2.89	1.42	1.76
Cadmium	0.82	3.93	0.57
Copper	118.00	137.00	97.50
Copper	115.00	137.00	153.00
Copper	120.00	269.00	51.00
Nickel	0.65	0.61	0.63
Nickel	0.73	0.57	0.51
Nickel	0.46	0.72	0.34
Silver	6.05	12.10	6.56
Silver	6.33	7.68	8.18
Silver	6.93	25.20	4.44
Zinc	124.00	135.00	138.00
Zinc	116.00	137.00	139.00
Zinc	143.00	146.00	133.00
Total DDT	160.56	94.96	39.72
Total DDT	180.01	106.69	45.29
Total DDT	97.21	80.67	42.30
Total PCB	2145.02	1214.59	220.97
Total PCB	2259.76	1175.18	262.30
Total PCB	1163.65	1032.16	266.34
Total PAH	115.61	51.14	50.74
Total PAH	95.86	112.11	49.07
Total PAH	102.57	232.70	108.25
Total CHLOR	116.99	35.65	10.37
Total CHLOR	125.44	31.85	11.91
Total CHLOR	44.74	23.55	14.88
Chromium	0.10	0.16	0.10
Chromium	0.14	0.09	0.12
Chromium	0.14	0.15	0.12
Lead	2.86	8.81	1.53
Lead	3.34	7.61	1.91
Lead	4.76	8.00	1.51
Aldrin	0.00	0.00	0.00
Aldrin	0.00	0.00	0.00
Aldrin	0.00	0.00	0.00
Dieldrin	15.03	3.03	3.57
Dieldrin	17.03	4.37	4.06
Dieldrin	6.39	5.69	4.33
Endrin	0.00	0.00	0.00
Endrin	0.00	0.00	0.00
Endrin	0.00	0.00	0.00
Hexachlorobenzene	4.61	3.94	1.91

Table B-4. 2000 Flounder Liver Data - Individual Replicates. (Continued)

Parameter	DI(1)	FOS(4)	ECCB(5)
Hexachlorobenzene	5.32	3.47	3.75
Hexachlorobenzene	3.50	3.09	2.09
Mirex	3.03	2.36	0.76
Mirex	3.83	2.34	1.05
Mirex	1.74	2.28	1.13
Lindane	0.00	0.00	0.00
Lindane	0.00	0.00	0.00
Lindane	0.00	0.00	0.00

Table B-5. 2000 Lobster Meat Data - Individual Composites.

Parameter	DIF (1)	FOS(4)	ECCB(5)
Mercury	0.621	1.040	0.466
Mercury	0.977	1.000	0.590
Mercury	0.639	0.726	0.920
Total DDT	6.49	5.64	4.07
Total DDT	4.05	5.24	2.51
Total DDT	4.70	3.51	5.39
Total PCB	265.26	69.81	36.50
Total PCB	49.09	71.11	30.45
Total PCB	67.89	51.09	46.97
Total CHLOR	3.00	1.57	0.93
Total CHLOR	2.29	1.18	0.76
Total CHLOR	2.15	1.48	1.15
Aldrin	0.00	0.00	0.00
Aldrin	0.00	0.00	0.00
Aldrin	0.00	0.00	0.00
Dieldrin	4.06	3.17	2.10
Dieldrin	2.70	3.16	2.08
Dieldrin	2.80	2.52	2.62
Endrin	0.00	0.00	0.00
Endrin	0.00	0.00	0.00
Endrin	0.00	0.00	0.00
Hexachlorobenzene	1.89	0.54	0.00
Hexachlorobenzene	0.22	0.48	0.51
Hexachlorobenzene	10.32	0.39	0.00
Mirex	0.20	0.00	0.00
Mirex	0.13	0.00	0.10
Mirex	0.32	0.13	0.18
Lindane	0.00	0.00	0.00
Lindane	3.19	0.00	0.00
Lindane	0.00	0.00	2.62

Table B-6. 2000 Lobster Hepatopancreas Data - Individual Composites.

Parameter	DIF (1)	FOS(4)	ECCB(5)
Lead	0.289	0.331	0.446
Lead	0.277	0.343	0.305
Lead	0.328	0.277	0.338
Mercury	0.243	0.350	0.202
Mercury	0.321	0.726	0.203
Mercury	0.233	0.320	0.297
Cadmium	7.27	12.50	6.87
Cadmium	5.78	10.40	8.05
Cadmium	6.19	10.10	13.40
Chromium	0.31	0.36	0.15
Chromium	0.12	0.29	0.11
Chromium	0.16	0.24	0.16
Copper	520.00	878.00	384.00
Copper	336.00	587.00	254.00
Copper	508.00	614.00	628.00
Nickel	0.64	1.17	0.66
Nickel	0.43	1.89	0.62
Nickel	0.37	0.76	0.91
Silver	19.60	46.70	16.00
Silver	14.70	30.90	9.84
Silver	21.90	25.50	34.20
Zinc	63.40	62.60	168.00
Zinc	54.50	83.30	82.20
Zinc	60.10	80.50	139.00
Total DDT	523.30	293.98	298.12
Total DDT	161.97	528.35	212.82
Total DDT	650.68	115.94	625.17
Total PCB	15489.48	2534.13	1432.43
Total PCB	2054.33	4674.59	1201.64
Total PCB	5191.68	1686.05	3128.08
Total PAH	15981.35	1838.43	1608.17
Total PAH	7477.48	4427.69	1327.98
Total PAH	15694.99	1913.71	1157.14
Total CHLOR	138.95	27.64	30.07
Total CHLOR	55.10	67.36	37.52
Total CHLOR	73.69	18.28	32.13
Aldrin	0.00	0.00	0.00
Aldrin	0.00	0.00	0.00
Aldrin	0.00	0.00	0.00
Dieldrin	79.24	23.04	29.24
Dieldrin	37.33	50.57	25.85
Dieldrin	69.25	33.01	21.39
Endrin	0.00	0.00	0.00
Endrin	0.00	0.00	0.00
Endrin	0.00	0.00	0.00
Hexachlorobenzene	19.96	8.11	11.10

Table B-6. 2000 Lobster Hepatopancreas Data - Individual Composites. (Continued)

Parameter	DIF (1)	FOS(4)	ECCB(5)
Hexachlorobenzene	8.10	16.57	7.97
Hexachlorobenzene	NA	8.82	10.44
Mirex	5.04	3.42	3.46
Mirex	4.23	5.43	3.00
Mirex	13.37	2.40	5.61
Lindane	s	s	0.00
Lindane	s	s	1.13
Lindane	s	s	3.45

Table B-7. 2000 Mussel Data - Individual Replicates.

Parameter	DI(1)	OS(4)	BIH(6)	Rockport (RP)
Lead	7.019	1.170	10.950	1.468
Lead	6.565	0.826	14.231	1.329
Lead	10.191	0.894	16.474	1.578
Lead	4.218	0.969	12.313	1.531
Lead	6.653	0.849	12.060	1.671
Lead	NA	0.894	NA	NA
Lead	NA	1.207	NA	NA
Lead	NA	0.736	NA	NA
Mercury	0.152	0.133	0.162	0.126
Mercury	0.184	0.103	0.179	0.114
Mercury	0.174	0.102	0.218	0.114
Mercury	0.137	0.113	0.155	0.140
Mercury	0.163	0.130	0.175	0.106
Mercury	NA	0.101	NA	NA
Mercury	NA	0.126	NA	NA
Mercury	NA	0.105	NA	NA
Total DDT	27.69	3.66	101.36	2.90
Total DDT	42.21	8.31	79.22	3.70
Total DDT	31.15	9.30	89.72	2.61
Total DDT	30.46	7.59	111.33	3.84
Total DDT	31.90	9.32	118.20	3.49
Total DDT	NA	8.24	NA	NA
Total DDT	NA	8.94	NA	NA
Total DDT	NA	7.64	NA	NA
Total PCB	182.66	30.32	593.47	6.70
Total PCB	267.06	36.58	499.07	10.70
Total PCB	203.79	43.14	537.81	7.35
Total PCB	212.84	33.45	647.96	10.70
Total PCB	209.88	38.58	683.16	10.21
Total PCB	NA	34.47	NA	NA
Total PCB	NA	35.59	NA	NA
Total PCB	NA	31.79	NA	NA
Total CHLOR	11.13	3.25	27.33	2.34
Total CHLOR	15.65	4.74	21.15	2.84
Total CHLOR	13.92	6.70	24.64	2.07
Total CHLOR	13.82	4.17	33.35	2.91
Total CHLOR	14.46	5.78	35.30	2.89
Total CHLOR	NA	5.45	NA	NA
Total CHLOR	NA	5.07	NA	NA
Total CHLOR	NA	4.50	NA	NA
Total LMW-PAH	127.54	155.01	282.78	96.54
Total LMW-PAH	s	96.5793	253.715	87.43
Total LMW-PAH	148.20	99.92	244.975	109.27
Total LMW-PAH	90.06	106.43	282.33	142.27
Total LMW-PAH	112.06	87.68	322.20	93.93

Table B-7. 2000 Mussel Data - Individual Replicates. (Continued)

Parameter	DI(1)	OS(4)	BIH(6)	Rockport (RP)
Total LMW-PAH	NA	73.95	NA	NA
Total LMW-PAH	NA	127.39	NA	NA
Total LMW-PAH	NA	104.41	NA	NA
Total HMW-PAH	429.84	53.85	2216.60	23.74
Total HMW-PAH	s	38.45	1895.76	30.09
Total HMW-PAH	404.93	38.25	1872.55	26.02
Total HMW-PAH	300.75	43.41	2293.13	39.47
Total HMW-PAH	326.74	44.20	2634.58	24.84
Total HMW-PAH	NA	41.70	NA	NA
Total HMW-PAH	NA	41.13	NA	NA
Total HMW-PAH	NA	44.41	NA	NA
Aldrin	0.00	0.00	0.00	0.00
Aldrin	0.00	0.00	0.00	0.00
Aldrin	0.00	0.00	0.00	0.00
Aldrin	0.00	0.00	0.00	0.00
Aldrin	0.00	0.00	0.00	0.00
Aldrin	NA	0.00	NA	NA
Aldrin	NA	0.00	NA	NA
Aldrin	NA	0.00	NA	NA
Dieldrin	3.29	1.76	9.31	0.00
Dieldrin	3.47	1.80	7.13	0.00
Dieldrin	3.41	2.19	8.05	0.00
Dieldrin	3.82	1.59	10.31	0.00
Dieldrin	3.75	2.01	10.27	0.00
Dieldrin	NA	1.57	NA	NA
Dieldrin	NA	1.62	NA	NA
Dieldrin	NA	1.37	NA	NA
Endrin	0.00	0.00	0.00	0.00
Endrin	0.00	0.00	0.00	0.00
Endrin	0.00	0.98	0.00	0.00
Endrin	0.00	0.00	0.00	0.00
Endrin	0.00	0.00	0.00	0.00
Endrin	NA	0.00	NA	NA
Endrin	NA	0.00	NA	NA
Endrin	NA	0.00	NA	NA
Hexachlorobenzene	0.35	0.37	1.16	0.00
Hexachlorobenzene	0.31	0.43	0.85	0.00
Hexachlorobenzene	0.42	0.65	0.97	0.00
Hexachlorobenzene	0.40	0.43	0.98	0.00
Hexachlorobenzene	0.45	0.47	1.21	0.00
Hexachlorobenzene	NA	0.42	NA	NA
Hexachlorobenzene	NA	0.38	NA	NA
Hexachlorobenzene	NA	0.36	NA	NA
Mirex	0.00	0.00	0.00	0.00
Mirex	0.00	0.00	0.00	0.00

Table B-7. 2000 Mussel Data - Individual Replicates. (Continued)

Parameter	DI(1)	OS(4)	BIH(6)	Rockport (RP)
Mirex	0.00	0.43	0.00	0.00
Mirex	0.00	0.00	0.00	0.00
Mirex	0.00	0.00	0.00	0.00
Mirex	NA	0.00	NA	NA
Mirex	NA	0.00	NA	NA
Mirex	NA	0.00	NA	NA
Lindane	0.00	0.00	0.00	0.00
Lindane	0.00	0.00	0.00	0.00
Lindane	0.00	0.67	0.00	0.00
Lindane	0.00	0.00	0.00	0.00
Lindane	0.00	0.00	0.00	0.00
Lindane	NA	0.00	NA	NA
Lindane	NA	0.00	NA	NA
Lindane	NA	0.00	NA	NA
Total 97/98 LMW-PAH	504.21	196.53	1921.24	122.85
Total 97/98 LMW-PAH	s	119.34	1401.28	135.07
Total 97/98 LMW-PAH	565.41	123.59	1519.41	141.21
Total 97/98 LMW-PAH	453.16	132.34	1979.44	174.37
Total 97/98 LMW-PAH	505.06	112.56	2262.96	126.08
Total 97/98 LMW-PAH	NA	92.15	NA	NA
Total 97/98 LMW-PAH	NA	157.76	NA	NA
Total 97/98 LMW-PAH	NA	135.17	NA	NA
Total 97/98 HMW-PAH	588.97	74.81	3232.29	30.86
Total 97/98 HMW-PAH	s	54.79	2814.84	39.36
Total 97/98 HMW-PAH	554.18	55.76	2781.77	39.48
Total 97/98 HMW-PAH	411.99	61.83	3464.29	54.00
Total 97/98 HMW-PAH	449.74	62.75	3912.07	37.00
Total 97/98 HMW-PAH	NA	57.10	NA	NA
Total 97/98 HMW-PAH	NA	58.52	NA	NA
Total 97/98 HMW-PAH	NA	63.24	NA	NA

APPENDIX C

Historical Data Tables

Table C-1. Lipid Data - Flounder Fillet 1992 – 2000.

Year	Station	Sample	Bottle	Fraction	Parameter	Value	Val Qual	Unit Code
1992	DIF	92-353	92-353M	FILLET	LIPID	5.4		PCTDRYWT
1992	DIF	92-354	92-354M	FILLET	LIPID	4.3		PCTDRYWT
1992	DIF	92-359	92-359M	FILLET	LIPID	9.1		PCTDRYWT
1992	DIF	92-35C	92-35CM	FILLET	LIPID	5.7		PCTDRYWT
1992	OS	92-400	92-400M	FILLET	LIPID	9.1		PCTDRYWT
1992	OS	92-401	92-401M	FILLET	LIPID	16.5		PCTDRYWT
1992	OS	92-409	92-409M	FILLET	LIPID	4.6		PCTDRYWT
1992	OS	92-40C	92-40CM	FILLET	LIPID	12.9		PCTDRYWT
1992	ECCB	92-451	92-451M	FILLET	LIPID	2.3		PCTDRYWT
1992	ECCB	92-452	92-452M	FILLET	LIPID	4.7		PCTDRYWT
1992	ECCB	92-456	92-456M	FILLET	LIPID	1.8		PCTDRYWT
1992	ECCB	92-45C	92-45CM	FILLET	LIPID	5.7		PCTDRYWT
1993	DIF	F93010465	465SF	FILLET	LIPID	2.3		PCTDRYWT
1993	DIF	F93010466	466SF	FILLET	LIPID	5.8		PCTDRYWT
1993	DIF	F93010467	467SF	FILLET	LIPID	1.8		PCTDRYWT
1993	DIF	F93010468	468SF	FILLET	LIPID	2.4		PCTDRYWT
1993	DIF	F93010469	469SF	FILLET	LIPID	1.6		PCTDRYWT
1993	DIF	F93010470	470SF	FILLET	LIPID	2.6		PCTDRYWT
1993	DIF	F93010471	471SF	FILLET	LIPID	3.4		PCTDRYWT
1993	DIF	F93010472	472SF	FILLET	LIPID	1.9		PCTDRYWT
1993	DIF	F93010473	473SF	FILLET	LIPID	4.8		PCTDRYWT
1993	DIF	F93010474	474SF	FILLET	LIPID	5.4		PCTDRYWT
1993	OS	F93010565	565SF	FILLET	LIPID	3.6		PCTDRYWT
1993	OS	F93010566	566SF	FILLET	LIPID	1.6		PCTDRYWT
1993	OS	F93010567	567SF	FILLET	LIPID	2.6		PCTDRYWT
1993	OS	F93010569	569SF	FILLET	LIPID	3.1		PCTDRYWT
1993	OS	F93010570	570SF	FILLET	LIPID	4.0		PCTDRYWT
1993	OS	F93010571	571SF	FILLET	LIPID	1.5		PCTDRYWT
1993	OS	F93010572	572SF	FILLET	LIPID	1.6		PCTDRYWT
1993	OS	F93010573	573SF	FILLET	LIPID	5.1		PCTDRYWT
1993	OS	F93010574	574SF	FILLET	LIPID	1.6		PCTDRYWT
1993	ECCB	F93010625	625SF	FILLET	LIPID	1.6		PCTDRYWT
1993	ECCB	F93010626	626SF	FILLET	LIPID	3.2		PCTDRYWT
1993	ECCB	F93010627	627SF	FILLET	LIPID	3.4		PCTDRYWT
1993	ECCB	F93010628	628SF	FILLET	LIPID	2.8		PCTDRYWT
1993	ECCB	F93010629	629SF	FILLET	LIPID	4.5		PCTDRYWT
1993	ECCB	F93010630	630SF	FILLET	LIPID	2.3		PCTDRYWT
1993	ECCB	F93010631	631SF	FILLET	LIPID	3.8		PCTDRYWT
1993	ECCB	F93010632	632SF	FILLET	LIPID	4.8		PCTDRYWT
1993	ECCB	F93010633	633SF	FILLET	LIPID	1.6		PCTDRYWT
1993	ECCB	F93010634	634SF	FILLET	LIPID	1.5		PCTDRYWT
1994	DIF	FI101FLNDR	OU28	FILLET	LIPID	4.4		PCTDRYWT
1994	DIF	FI102FLNDR	OU29	FILLET	LIPID	4.7		PCTDRYWT
1994	DIF	FI103FLNDR	OU30	FILLET	LIPID	5.5		PCTDRYWT

Table C-1. Lipid Data - Flounder Fillet 1992 – 2000.
(Continued)

Year	Station	Sample	Bottle	Fraction	Parameter	Value	Val Qual	Unit Code
1994	OS	FI401FLNDR	OU37	FILLET	LIPID	6.5		PCTDRYWT
1994	OS	FI402FLNDR	OU38	FILLET	LIPID	3.6		PCTDRYWT
1994	OS	FI403FLNDR	OU39	FILLET	LIPID	6.3		PCTDRYWT
1994	ECCB	FI501FLNDR	OU40	FILLET	LIPID	6.3		PCTDRYWT
1994	ECCB	FI502FLNDR	OU41	FILLET	LIPID	6.5		PCTDRYWT
1994	ECCB	FI503FLNDR	OU42	FILLET	LIPID	3.5		PCTDRYWT
1995	DIF	P95111000C1	P95111000TC1	FILLET	LIPID	2.3		PCTDRYWT
1995	DIF	P95111000C2	P95111000TC2	FILLET	LIPID	0.9		PCTDRYWT
1995	DIF	P95111000C3	P95111000TC3	FILLET	LIPID	2.5		PCTDRYWT
1995	OS	P95114000C1	P95114000TC1	FILLET	LIPID	2.9		PCTDRYWT
1995	OS	P95114000C2	P95114000TC2	FILLET	LIPID	1.9		PCTDRYWT
1995	OS	P95114000C3	P95114000TC3	FILLET	LIPID	1.8		PCTDRYWT
1995	ECCB	P95115000C1	P95115000TC1	FILLET	LIPID	2.2		PCTDRYWT
1995	ECCB	P95115000C2	P95115000TC2	FILLET	LIPID	2.5		PCTDRYWT
1995	ECCB	P95115000C3	P95115000TC3	FILLET	LIPID	2.8		PCTDRYWT
1996	DIF	P96111000C1	P96111000TC1	FILLET	LIPID	2.6		PCTDRYWT
1996	DIF	P96111000C2	P96111000TC2	FILLET	LIPID	2.0		PCTDRYWT
1996	DIF	P96111000C3	P96111000TC3	FILLET	LIPID	1.8		PCTDRYWT
1996	OS	P96114000C1	P96114000TC1	FILLET	LIPID	1.5		PCTDRYWT
1996	OS	P96114000C2	P96114000TC2	FILLET	LIPID	2.3		PCTDRYWT
1996	OS	P96114000C3	P96114000TC3	FILLET	LIPID	1.9		PCTDRYWT
1996	ECCB	P96115000C1	P96115000TC1	FILLET	LIPID	2.2		PCTDRYWT
1996	ECCB	P96115000C2	P96115000TC2	FILLET	LIPID	2.0		PCTDRYWT
1996	ECCB	P96115000C3	P96115000TC3	FILLET	LIPID	2.6		PCTDRYWT
1997	DIF	P97111000C1	P97111000TC1	FILLET	LIPID	1.4		PCTDRYWT
1997	DIF	P97111000C2	P97111000TC2	FILLET	LIPID	1.5		PCTDRYWT
1997	DIF	P97111000C3	P97111000TC3	FILLET	LIPID	1.3		PCTDRYWT
1997	OS	P97114000C1	P97114000TC1	FILLET	LIPID	1.5		PCTDRYWT
1997	OS	P97114000C2	P97114000TC2	FILLET	LIPID	1.7		PCTDRYWT
1997	OS	P97114000C3	P97114000TC3	FILLET	LIPID	1.7		PCTDRYWT
1997	ECCB	P97115000C1	P97115000TC1	FILLET	LIPID	2.3		PCTDRYWT
1997	ECCB	P97115000C2	P97115000TC2	FILLET	LIPID	1.3		PCTDRYWT
1997	ECCB	P97115000C3	P97115000TC3	FILLET	LIPID	1.0		PCTDRYWT
1998	DIF	VQST11	VQ79	FILLET	LIPID	6.0		PCTDRYWT
1998	DIF	VQST12	VQ80	FILLET	LIPID	14.0		PCTDRYWT
1998	DIF	VQST13	VQ81	FILLET	LIPID	3.0		PCTDRYWT
1998	OS	VQST41	VQ85	FILLET	LIPID	2.0		PCTDRYWT
1998	OS	VQST42	VQ86	FILLET	LIPID	3.0		PCTDRYWT
1998	OS	VQST43	VQ87	FILLET	LIPID	11.0		PCTDRYWT
1998	ECCB	VQST51	VR06	FILLET	LIPID	9.0		PCTDRYWT
1998	ECCB	VQST52	VR07	FILLET	LIPID	5.0		PCTDRYWT
1998	ECCB	VQST53	VR08	FILLET	LIPID	6.0		PCTDRYWT
1999	DIF	FF99110C1	WQ73COMP	FILLET	LIPID	4.7		PCTDRYWT

Table C-1. Lipid Data - Flounder Fillet 1992 – 2000.
(Continued)

Year	Station	Sample	Bottle	Fraction	Parameter	Value	Val Qual	Unit Code
1999	DIF	FF99110C2	WQ74COMP	FILLET	LIPID	3.9		PCTDRYWT
1999	DIF	FF99110C3	WQ75COMP	FILLET	LIPID	3.9		PCTDRYWT
1999	OS	FF99140C1	WM70COMP	FILLET	LIPID	4.8		PCTDRYWT
1999	OS	FF99140C2	WM71COMP	FILLET	LIPID	5.3		PCTDRYWT
1999	OS	FF99140C3	WM72COMP	FILLET	LIPID	4.2		PCTDRYWT
1999	ECCB	FF99150C1	WM90COMP	FILLET	LIPID	3.2		PCTDRYWT
1999	ECCB	FF99150C2	WM91COMP	FILLET	LIPID	3.1		PCTDRYWT
1999	ECCB	FF99150C3	WM92COMP	FILLET	LIPID	3.0		PCTDRYWT
2000	DIF	FF00110C1	XT83	FILLET	LIPID	2.5		PCTDRYWT
2000	DIF	FF00110C2	XT84	FILLET	LIPID	2.8		PCTDRYWT
2000	DIF	FF00110C3	XT85	FILLET	LIPID	2.2		PCTDRYWT
2000	OS	FF00140C1	XT77	FILLET	LIPID	2.6		PCTDRYWT
2000	OS	FF00140C2	XT78	FILLET	LIPID	3.1		PCTDRYWT
2000	OS	FF00140C3	XT79	FILLET	LIPID	3.1		PCTDRYWT
2000	ECCB	FF00150C1	XU22	FILLET	LIPID	2.0		PCTDRYWT
2000	ECCB	FF00150C2	XU23	FILLET	LIPID	3.3		PCTDRYWT
2000	ECCB	FF00150C3	XU24	FILLET	LIPID	3.0		PCTDRYWT

Table C-2. Lipid Data - Flounder Liver 1992 – 2000.

Year	Station	Sample	Bottle	Fraction	Parameter	Value	Val Qual	Unit Code
1992	DIF	92-353	92-353L	LIVER	LIPID	21.1		PCTDRYWT
1992	DIF	92-354	92-354L	LIVER	LIPID	13.0		PCTDRYWT
1992	DIF	92-359	92-359L	LIVER	LIPID	74.0		PCTDRYWT
1992	DIF	92-35C	92-35CL	LIVER	LIPID	22.7		PCTDRYWT
1992	OS	92-400	92-400L	LIVER	LIPID	25.5		PCTDRYWT
1992	OS	92-401	92-401L	LIVER	LIPID	52.4		PCTDRYWT
1992	OS	92-409	92-409L	LIVER	LIPID	20.2		PCTDRYWT
1992	OS	92-40C	92-40CL	LIVER	LIPID	22.5		PCTDRYWT
1992	ECCB	92-451	92-451L	LIVER	LIPID	15.9		PCTDRYWT
1992	ECCB	92-452	92-452L	LIVER	LIPID	18.5		PCTDRYWT
1992	ECCB	92-456	92-456L	LIVER	LIPID	29.9		PCTDRYWT
1992	ECCB	92-45C	92-45CL	LIVER	LIPID	22.1		PCTDRYWT
1993	DIF	FI1-04	FI1-04CL	LIVER	LIPID	34.0		PCTDRYWT
1993	OS	FI4-05	FI4-05CL	LIVER	LIPID	22.6		PCTDRYWT
1993	ECCB	FI5-06	FI5-06CL	LIVER	LIPID	20.0		PCTDRYWT
1994	DIF	FI101FLNDR	OV83	LIVER	LIPID	98.5		PCTDRYWT
1994	DIF	FI102FLNDR	OV84	LIVER	LIPID	75.1		PCTDRYWT
1994	DIF	FI103FLNDR	OV85	LIVER	LIPID	84.3		PCTDRYWT
1994	OS	FI401FLNDR	OV92	LIVER	LIPID	37.4		PCTDRYWT
1994	OS	FI402FLNDR	OV93	LIVER	LIPID	35.6		PCTDRYWT
1994	OS	FI403FLNDR	OV94	LIVER	LIPID	31.4		PCTDRYWT
1994	ECCB	FI501FLNDR	OV95	LIVER	LIPID	34.2		PCTDRYWT
1994	ECCB	FI502FLNDR	OV96	LIVER	LIPID	14.7		PCTDRYWT
1994	ECCB	FI503FLNDR	OV97	LIVER	LIPID	50.0		PCTDRYWT
1995	DIF	P95111000C1	P95111000LC1	LIVER	LIPID	28.5		PCTDRYWT
1995	DIF	P95111000C2	P95111000LC2	LIVER	LIPID	44.9		PCTDRYWT
1995	DIF	P95111000C3	P95111000LC3	LIVER	LIPID	25.7		PCTDRYWT
1995	OS	P95114000C1	P95114000LC1	LIVER	LIPID	24.0		PCTDRYWT
1995	OS	P95114000C2	P95114000LC2	LIVER	LIPID	20.6		PCTDRYWT
1995	OS	P95114000C3	P95114000LC3	LIVER	LIPID	25.0		PCTDRYWT
1995	ECCB	P95115000C1	P95115000LC1	LIVER	LIPID	11.2		PCTDRYWT
1995	ECCB	P95115000C2	P95115000LC2	LIVER	LIPID	15.2		PCTDRYWT
1995	ECCB	P95115000C3	P95115000LC3	LIVER	LIPID	16.4		PCTDRYWT
1996	DIF	P96111000C1	P96111000LC1	LIVER	LIPID	28.3		PCTDRYWT
1996	DIF	P96111000C2	P96111000LC2	LIVER	LIPID	22.6		PCTDRYWT
1996	DIF	P96111000C3	P96111000LC3	LIVER	LIPID	20.2		PCTDRYWT
1996	OS	P96114000C1	P96114000LC1	LIVER	LIPID	24.1		PCTDRYWT
1996	OS	P96114000C2	P96114000LC2	LIVER	LIPID	27.2		PCTDRYWT
1996	OS	P96114000C3	P96114000LC3	LIVER	LIPID	21.4		PCTDRYWT
1996	ECCB	P96115000C1	P96115000LC1	LIVER	LIPID	28.9		PCTDRYWT
1996	ECCB	P96115000C2	P96115000LC2	LIVER	LIPID	26.3		PCTDRYWT
1996	ECCB	P96115000C3	P96115000LC3	LIVER	LIPID	20.2		PCTDRYWT
1997	DIF	P97111000C1	P97111000LC1	LIVER	LIPID	13.3		PCTDRYWT
1997	DIF	P97111000C2	P97111000LC2	LIVER	LIPID	15.0		PCTDRYWT
1997	DIF	P97111000C3	P97111000LC3	LIVER	LIPID	11.2		PCTDRYWT
1997	OS	P97114000C1	P97114000LC1	LIVER	LIPID	16.3		PCTDRYWT

Table C-2. Lipid Data - Flounder Liver 1992 – 2000.
(Continued)

Year	Station	Sample	Bottle	Fraction	Parameter	Value	Val Qual	Unit Code
1997	OS	P97114000C2	P97114000LC2	LIVER	LIPID	14.0		PCTDRYWT
1997	OS	P97114000C3	P97114000LC3	LIVER	LIPID	14.1		PCTDRYWT
1997	ECCB	P97115000C1	P97115000LC1	LIVER	LIPID	15.4		PCTDRYWT
1997	ECCB	P97115000C2	P97115000LC2	LIVER	LIPID	17.7		PCTDRYWT
1997	ECCB	P97115000C3	P97115000LC3	LIVER	LIPID	23.2		PCTDRYWT
1998	DIF	VQST11	VQ82	LIVER	LIPID	51.0		PCTDRYWT
1998	DIF	VQST12	VQ83	LIVER	LIPID	54.0		PCTDRYWT
1998	DIF	VQST13	VQ84	LIVER	LIPID	57.0		PCTDRYWT
1998	OS	VQST41	VQ88	LIVER	LIPID	65.0		PCTDRYWT
1998	OS	VQST42	VQ89	LIVER	LIPID	42.0		PCTDRYWT
1998	OS	VQST43	VQ90	LIVER	LIPID	29.0		PCTDRYWT
1998	ECCB	VQST51	VR09	LIVER	LIPID	42.0		PCTDRYWT
1998	ECCB	VQST52	VR10	LIVER	LIPID	25.0		PCTDRYWT
1998	ECCB	VQST53	VR11	LIVER	LIPID	20.0		PCTDRYWT
1999	DIF	FF99110C1	WQ76COMP	LIVER	LIPID	50.2		PCTDRYWT
1999	DIF	FF99110C2	WQ77COMP	LIVER	LIPID	38.8		PCTDRYWT
1999	DIF	FF99110C3	WQ78COMP	LIVER	LIPID	43.5		PCTDRYWT
1999	OS	FF99140C1	WM73COMP	LIVER	LIPID	30.5		PCTDRYWT
1999	OS	FF99140C2	WM74COMP	LIVER	LIPID	24.7		PCTDRYWT
1999	OS	FF99140C3	WM75COMP	LIVER	LIPID	27.8		PCTDRYWT
1999	ECCB	FF99150C1	WM93COMP	LIVER	LIPID	87.3		PCTDRYWT
1999	ECCB	FF99150C2	WM94COMP	LIVER	LIPID	27.2		PCTDRYWT
1999	ECCB	FF99150C3	WM95COMP	LIVER	LIPID	35.1		PCTDRYWT
2000	DIF	FF00110C1	XT86	LIVER	LIPID	41.5		PCTDRYWT
2000	DIF	FF00110C2	XT87	LIVER	LIPID	35.6		PCTDRYWT
2000	DIF	FF00110C3	XT88	LIVER	LIPID	55.5		PCTDRYWT
2000	OS	FF00140C1	XT80	LIVER	LIPID	48.1		PCTDRYWT
2000	OS	FF00140C2	XT81	LIVER	LIPID	48.7		PCTDRYWT
2000	OS	FF00140C3	XT82	LIVER	LIPID	42.2		PCTDRYWT
2000	ECCB	FF00150C1	XU25	LIVER	LIPID	32.1		PCTDRYWT
2000	ECCB	FF00150C2	XU26	LIVER	LIPID	36.2		PCTDRYWT
2000	ECCB	FF00150C3	XU27	LIVER	LIPID	31.8		PCTDRYWT

Table C-3. Lipid Data - Lobster Meat 1992 – 2000.

Year	Station	Sample	Bottle	Fraction	Parameter	Value	Val Qual	Unit Code
1992	DIF	92-467	92-467M	MEAT	LIPID	16.2		PCTDRYWT
1992	DIF	92-469	92-469M	MEAT	LIPID	19.6		PCTDRYWT
1992	DIF	92-482	92-482M	MEAT	LIPID	21.8		PCTDRYWT
1992	OS	92-460	92-460M	MEAT	LIPID	14.8		PCTDRYWT
1992	OS	92-463	92-463M	MEAT	LIPID	13.2		PCTDRYWT
1992	OS	92-464	92-464M	MEAT	LIPID	12.6		PCTDRYWT
1992	ECCB	92-465	92-465M	MEAT	LIPID	13.6		PCTDRYWT
1992	ECCB	92-466	92-466M	MEAT	LIPID	26.9		PCTDRYWT
1992	ECCB	92-476	92-476M	MEAT	LIPID	8.3		PCTDRYWT
1993	DIF	F93010KG34	KG34SM	MEAT	LIPID	3.2		PCTDRYWT
1993	DIF	S93030KI06	KI06SM	MEAT	LIPID	1.6		PCTDRYWT
1993	DIF	S93030KI07	KI07SM	MEAT	LIPID	2.7		PCTDRYWT
1993	OS	S93030KH97	KH97SM	MEAT	LIPID	3.5		PCTDRYWT
1993	OS	S93030KH98	KH98SM	MEAT	LIPID	3.8		PCTDRYWT
1993	ECCB	LOB-F0KH99	KH99SM	MEAT	LIPID	6.8		PCTDRYWT
1993	ECCB	LOB-F0KI01	KI01SM	MEAT	LIPID	4.8		PCTDRYWT
1993	ECCB	LOB-F0KI02	KI02SM	MEAT	LIPID	4.5		PCTDRYWT
1993	ECCB	LOB-F0KI03	KI03SM	MEAT	LIPID	2.8		PCTDRYWT
1993	ECCB	LOB-F0KI04	KI04SM	MEAT	LIPID	7.6		PCTDRYWT
1993	ECCB	LOB-F0KI05	KI05SM	MEAT	LIPID	2.1		PCTDRYWT
1993	ECCB	LOB-F0KI21	KI21SM	MEAT	LIPID	0.4		PCTDRYWT
1993	ECCB	LOB-F0KI22	KI22SM	MEAT	LIPID	7.1		PCTDRYWT
1993	ECCB	LOB-F0KI23	KI23SM	MEAT	LIPID	4.1		PCTDRYWT
1993	ECCB	LOB-F0KI24	KI24SM	MEAT	LIPID	1.6		PCTDRYWT
1994	DIF	FI101LOBST	OV31	MEAT	LIPID	10.9		PCTDRYWT
1994	DIF	FI102LOBST	OV32	MEAT	LIPID	9.7		PCTDRYWT
1994	DIF	FI103LOBST	OV33	MEAT	LIPID	6.2		PCTDRYWT
1994	OS	FI401LOBST	OV34	MEAT	LIPID	13.4		PCTDRYWT
1994	OS	FI402LOBST	OV35	MEAT	LIPID	9.4		PCTDRYWT
1994	ECCB	FI501LOBST	OV36	MEAT	LIPID	5.0		PCTDRYWT
1994	ECCB	FI502LOBST	OV37	MEAT	LIPID	4.8		PCTDRYWT
1994	ECCB	FI503LOBST	OV38	MEAT	LIPID	4.9		PCTDRYWT
1995	DIF	L95111000C1	L95111000TC1	MEAT	LIPID	4.4		PCTDRYWT
1995	DIF	L95111000C2	L95111000TC2	MEAT	LIPID	5.5		PCTDRYWT
1995	DIF	L95111000C3	L95111000TC3	MEAT	LIPID	4.9		PCTDRYWT
1995	OS	L95114000C1	L95114000TC1	MEAT	LIPID	5.2		PCTDRYWT
1995	OS	L95114000C2	L95114000TC2	MEAT	LIPID	4.3		PCTDRYWT
1995	OS	L95114000C3	L95114000TC3	MEAT	LIPID	3.3		PCTDRYWT
1995	ECCB	L95115000C1	L95115000TC1	MEAT	LIPID	5.1		PCTDRYWT
1995	ECCB	L95115000C2	L95115000TC2	MEAT	LIPID	4.4		PCTDRYWT
1995	ECCB	L95115000C3	L95115000TC3	MEAT	LIPID	4.5		PCTDRYWT
1996	DIF	L96111000C1	L96111000TC1	MEAT	LIPID	3.8		PCTDRYWT
1996	DIF	L96111000C2	L96111000TC2	MEAT	LIPID	3.4		PCTDRYWT
1996	DIF	L96111000C3	L96111000TC3	MEAT	LIPID	4.2		PCTDRYWT
1996	OS	L96114000C1	L96114000TC1	MEAT	LIPID	3.3		PCTDRYWT

Table C-3. Lipid Data - Lobster Meat 1992 – 2000.
(Continued)

Year	Station	Sample	Bottle	Fraction	Parameter	Value	Val Qual	Unit Code
1996	OS	L96114000C2	L96114000TC2	MEAT	LIPID	3.3		PCTDRYWT
1996	OS	L96114000C3	L96114000TC3	MEAT	LIPID	3.4		PCTDRYWT
1996	ECCB	L96115000C1	L96115000TC1	MEAT	LIPID	3.3		PCTDRYWT
1996	ECCB	L96115000C2	L96115000TC2	MEAT	LIPID	3.2		PCTDRYWT
1996	ECCB	L96115000C3	L96115000TC3	MEAT	LIPID	3.0		PCTDRYWT
1997	DIF	L97111000C1	L97111000TC1	MEAT	LIPID	4.0		PCTDRYWT
1997	DIF	L97111000C2	L97111000TC2	MEAT	LIPID	3.1		PCTDRYWT
1997	DIF	L97111000C3	L97111000TC3	MEAT	LIPID	3.1		PCTDRYWT
1997	OS	L97114000C1	L97114000TC1	MEAT	LIPID	3.2		PCTDRYWT
1997	OS	L97114000C2	L97114000TC2	MEAT	LIPID	3.6		PCTDRYWT
1997	OS	L97114000C3	L97114000TC3	MEAT	LIPID	3.3		PCTDRYWT
1997	ECCB	L97115000C1	L97115000TC1	MEAT	LIPID	3.4		PCTDRYWT
1997	ECCB	L97115000C2	L97115000TC2	MEAT	LIPID	3.0		PCTDRYWT
1997	ECCB	L97115000C3	L97115000TC3	MEAT	LIPID	3.5		PCTDRYWT
1998	DIF	VZST11	VZ35COMP	MEAT	LIPID	4.0		PCTDRYWT
1998	DIF	VZST12	VZ36COMP	MEAT	LIPID	3.0		PCTDRYWT
1998	DIF	VZST13	VZ37COMP	MEAT	LIPID	6.0		PCTDRYWT
1998	OS	VZST41	VZ23COMP	MEAT	LIPID	2.0		PCTDRYWT
1998	OS	VZST42	VZ24COMP	MEAT	LIPID	5.0		PCTDRYWT
1998	OS	VZST43	VZ25COMP	MEAT	LIPID	5.0		PCTDRYWT
1998	ECCB	VZST91	VZ29COMP	MEAT	LIPID	4.0		PCTDRYWT
1998	ECCB	VZST92	VZ30COMP	MEAT	LIPID	4.0		PCTDRYWT
1998	ECCB	VZST93	VZ31COMP	MEAT	LIPID	3.0		PCTDRYWT
1999	DIF	FL9911C1	XJ42	MEAT	LIPID	2.2		PCTDRYWT
1999	DIF	FL9911C2	XJ43	MEAT	LIPID	1.6		PCTDRYWT
1999	DIF	FL9911C3	XJ44	MEAT	LIPID	1.9		PCTDRYWT
1999	OS	FL9914C1	XJ45	MEAT	LIPID	1.7		PCTDRYWT
1999	OS	FL9914C2	XJ46	MEAT	LIPID	1.3		PCTDRYWT
1999	OS	FL9914C3	XJ47	MEAT	LIPID	1.5		PCTDRYWT
1999	ECCB	FL9915C1	XJ48	MEAT	LIPID	2.6		PCTDRYWT
1999	ECCB	FL9915C2	XJ49	MEAT	LIPID	1.7		PCTDRYWT
1999	ECCB	FL9915C3	XJ50	MEAT	LIPID	1.8		PCTDRYWT
2000	DIF	FL0011C1	YC90	MEAT	LIPID	1.9		PCTDRYWT
2000	DIF	FL0011C2	YC91	MEAT	LIPID	1.6		PCTDRYWT
2000	DIF	FL0011C3	YC92	MEAT	LIPID	2.1		PCTDRYWT
2000	OS	FL0014C1	YC93	MEAT	LIPID	1.7		PCTDRYWT
2000	OS	FL0014C2	YC94	MEAT	LIPID	1.7		PCTDRYWT
2000	OS	FL0014C3	YC95	MEAT	LIPID	1.7		PCTDRYWT
2000	ECCB	FL0015C1	YC87	MEAT	LIPID	2.0		PCTDRYWT
2000	ECCB	FL0015C2	YC88	MEAT	LIPID	2.3		PCTDRYWT
2000	ECCB	FL0015C3	YC89	MEAT	LIPID	1.9		PCTDRYWT

Table C-4. Lipid Data - Lobster Hepatopancreas 1992 – 2000.

Year	Station	Sample	Bottle	Fraction	Parameter	Value	Val Qual	Unit Code
1992	DIF	92-467	92-467L	HEPATOPANC	LIPID	65.8		PCTDRYWT
1992	DIF	92-469	92-469L	HEPATOPANC	LIPID	73.7		PCTDRYWT
1992	DIF	92-482	92-482L	HEPATOPANC	LIPID	66.3		PCTDRYWT
1992	OS	92-460	92-460L	HEPATOPANC	LIPID	57.0		PCTDRYWT
1992	OS	92-463	92-463L	HEPATOPANC	LIPID	47.1		PCTDRYWT
1992	OS	92-464	92-464L	HEPATOPANC	LIPID	79.2		PCTDRYWT
1992	ECCB	92-465	92-465L	HEPATOPANC	LIPID	18.8		PCTDRYWT
1992	ECCB	92-466	92-466L	HEPATOPANC	LIPID	82.5		PCTDRYWT
1992	ECCB	92-476	92-476L	HEPATOPANC	LIPID	30.1		PCTDRYWT
1993	DIF	F93010KG34	KG34SH	HEPATOPANC	LIPID	34.3		PCTDRYWT
1993	DIF	S93030KI06	KI06SH	HEPATOPANC	LIPID	35.2		PCTDRYWT
1993	DIF	S93030KI07	KI07SH	HEPATOPANC	LIPID	55.8		PCTDRYWT
1993	OS	S93030KH97	KH97SH	HEPATOPANC	LIPID	56.2		PCTDRYWT
1993	OS	S93030KH98	KH98SH	HEPATOPANC	LIPID	45.3		PCTDRYWT
1993	ECCB	LOB-F0KH99	KH99SH	HEPATOPANC	LIPID	72.9		PCTDRYWT
1993	ECCB	LOB-F0KI01	KI01SH	HEPATOPANC	LIPID	33.6		PCTDRYWT
1993	ECCB	LOB-F0KI02	KI02SH	HEPATOPANC	LIPID	57.9		PCTDRYWT
1993	ECCB	LOB-F0KI03	KI03SH	HEPATOPANC	LIPID	43.5		PCTDRYWT
1993	ECCB	LOB-F0KI04	KI04SH	HEPATOPANC	LIPID	65.5		PCTDRYWT
1993	ECCB	LOB-F0KI05	KI05SH	HEPATOPANC	LIPID	33.7		PCTDRYWT
1993	ECCB	LOB-F0KI21	KI21SH	HEPATOPANC	LIPID	39.4		PCTDRYWT
1993	ECCB	LOB-F0KI22	KI22SH	HEPATOPANC	LIPID	40.3		PCTDRYWT
1993	ECCB	LOB-F0KI23	KI23SH	HEPATOPANC	LIPID	56.4		PCTDRYWT
1993	ECCB	LOB-F0KI24	KI24SH	HEPATOPANC	LIPID	67.2		PCTDRYWT
1994	DIF	FI101LOBST	OV42	HEPATOPANC	LIPID	72.4		PCTDRYWT
1994	DIF	FI102LOBST	OV43	HEPATOPANC	LIPID	71.5		PCTDRYWT
1994	DIF	FI103LOBST	OV44	HEPATOPANC	LIPID	67.5		PCTDRYWT
1994	OS	FI401LOBST	OV45	HEPATOPANC	LIPID	59.2		PCTDRYWT
1994	OS	FI402LOBST	OV46	HEPATOPANC	LIPID	56.5		PCTDRYWT
1994	ECCB	FI501LOBST	OV47	HEPATOPANC	LIPID	79.0		PCTDRYWT
1994	ECCB	FI502LOBST	OV48	HEPATOPANC	LIPID	67.3		PCTDRYWT
1994	ECCB	FI503LOBST	OV49	HEPATOPANC	LIPID	61.7		PCTDRYWT
1995	DIF	L95111000C1	L95111000HC1	HEPATOPANC	LIPID	70.8		PCTDRYWT
1995	DIF	L95111000C2	L95111000HC2	HEPATOPANC	LIPID	64.3		PCTDRYWT
1995	DIF	L95111000C3	L95111000HC3	HEPATOPANC	LIPID	55.9		PCTDRYWT
1995	OS	L95114000C1	L95114000HC1	HEPATOPANC	LIPID	70.9		PCTDRYWT
1995	OS	L95114000C2	L95114000HC2	HEPATOPANC	LIPID	60.4		PCTDRYWT
1995	OS	L95114000C3	L95114000HC3	HEPATOPANC	LIPID	61.8		PCTDRYWT
1995	ECCB	L95115000C1	L95115000HC1	HEPATOPANC	LIPID	57.7		PCTDRYWT
1995	ECCB	L95115000C2	L95115000HC2	HEPATOPANC	LIPID	64.7		PCTDRYWT
1995	ECCB	L95115000C3	L95115000HC3	HEPATOPANC	LIPID	79.6		PCTDRYWT
1996	DIF	L96111000C1	L96111000HC1	HEPATOPANC	LIPID	49.5		PCTDRYWT
1996	DIF	L96111000C2	L96111000HC2	HEPATOPANC	LIPID	60.1		PCTDRYWT
1996	DIF	L96111000C3	L96111000HC3	HEPATOPANC	LIPID	59.4		PCTDRYWT
1996	OS	L96114000C1	L96114000HC1	HEPATOPANC	LIPID	47.4		PCTDRYWT

Table C-4. Lipid Data - Lobster Hepatopancreas 1992 – 2000. (Continued)

Year	Station	Sample	Bottle	Fraction	Parameter	Value	Val Qual	Unit Code
1996	OS	L96114000C2	L96114000HC2	HEPATOPANC	LIPID	54.1		PCTDRYWT
1996	OS	L96114000C3	L96114000HC3	HEPATOPANC	LIPID	52.4		PCTDRYWT
1996	ECCB	L96115000C1	L96115000HC1	HEPATOPANC	LIPID	59.1		PCTDRYWT
1996	ECCB	L96115000C2	L96115000HC2	HEPATOPANC	LIPID	65.1		PCTDRYWT
1996	ECCB	L96115000C3	L96115000HC3	HEPATOPANC	LIPID	60.6		PCTDRYWT
1997	DIF	L97111000C1	L97111000HC1	HEPATOPANC	LIPID	46.3		PCTDRYWT
1997	DIF	L97111000C2	L97111000HC2	HEPATOPANC	LIPID	56.5		PCTDRYWT
1997	DIF	L97111000C3	L97111000HC3	HEPATOPANC	LIPID	44.5		PCTDRYWT
1997	OS	L97114000C1	L97114000HC1	HEPATOPANC	LIPID	64.2		PCTDRYWT
1997	OS	L97114000C2	L97114000HC2	HEPATOPANC	LIPID	62.8		PCTDRYWT
1997	OS	L97114000C3	L97114000HC3	HEPATOPANC	LIPID	44.7		PCTDRYWT
1997	ECCB	L97115000C1	L97115000HC1	HEPATOPANC	LIPID	58.6		PCTDRYWT
1997	ECCB	L97115000C2	L97115000HC2	HEPATOPANC	LIPID	61.0		PCTDRYWT
1997	ECCB	L97115000C3	L97115000HC3	HEPATOPANC	LIPID	57.7		PCTDRYWT
1998	DIF	VZST11	VZ38COMP	HEPATOPANC	LIPID	104.0		PCTDRYWT
1998	DIF	VZST12	VZ39COMP	HEPATOPANC	LIPID	66.0		PCTDRYWT
1998	DIF	VZST13	VZ40COMP	HEPATOPANC	LIPID	68.0		PCTDRYWT
1998	OS	VZST41	VZ26COMP	HEPATOPANC	LIPID	68.0		PCTDRYWT
1998	OS	VZST42	VZ27COMP	HEPATOPANC	LIPID	70.0		PCTDRYWT
1998	OS	VZST43	VZ28COMP	HEPATOPANC	LIPID	60.0		PCTDRYWT
1998	ECCB	VZST91	VZ32COMP	HEPATOPANC	LIPID	59.0		PCTDRYWT
1998	ECCB	VZST92	VZ33COMP	HEPATOPANC	LIPID	60.0		PCTDRYWT
1998	ECCB	VZST93	VZ34COMP	HEPATOPANC	LIPID	59.0		PCTDRYWT
1999	DIF	FL9911C1	XJ51	HEPATOPANC	LIPID	32.3		PCTDRYWT
1999	DIF	FL9911C2	XJ52	HEPATOPANC	LIPID	30.0		PCTDRYWT
1999	DIF	FL9911C3	XJ53	HEPATOPANC	LIPID	31.8		PCTDRYWT
1999	OS	FL9914C1	XJ54	HEPATOPANC	LIPID	30.2		PCTDRYWT
1999	OS	FL9914C2	XJ55	HEPATOPANC	LIPID	58.7		PCTDRYWT
1999	OS	FL9914C3	XJ56	HEPATOPANC	LIPID	40.8		PCTDRYWT
1999	ECCB	FL9915C1	XJ57	HEPATOPANC	LIPID	35.2		PCTDRYWT
1999	ECCB	FL9915C2	XJ58	HEPATOPANC	LIPID	37.3		PCTDRYWT
1999	ECCB	FL9915C3	XJ59	HEPATOPANC	LIPID	43.4		PCTDRYWT
2000	DIF	FL0011C1	YC81	HEPATOPANC	LIPID	53.5		PCTDRYWT
2000	DIF	FL0011C2	YC82	HEPATOPANC	LIPID	57.6		PCTDRYWT
2000	DIF	FL0011C3	YC83	HEPATOPANC	LIPID	57.7		PCTDRYWT
2000	OS	FL0014C1	YC84	HEPATOPANC	LIPID	42.7		PCTDRYWT
2000	OS	FL0014C2	YC85	HEPATOPANC	LIPID	52.9		PCTDRYWT
2000	OS	FL0014C3	YC86	HEPATOPANC	LIPID	56.8		PCTDRYWT
2000	ECCB	FL0015C1	YC78	HEPATOPANC	LIPID	51.3		PCTDRYWT
2000	ECCB	FL0015C2	YC79	HEPATOPANC	LIPID	58.6		PCTDRYWT
2000	ECCB	FL0015C3	YC80	HEPATOPANC	LIPID	57.3		PCTDRYWT

Table C-5. Lipid Data - Mussels 1991 – 2000.

Year	Station	Sample	Bottle	Fraction	Parameter	Value	Val Qual	Unit Code
1991	1M	M91143957	M91143957	SOFT_TISSUE	LIPID	2.1		PCTDRYWT
1991	1M	M91143958	M91143958	SOFT_TISSUE	LIPID	4.5		PCTDRYWT
1991	1M	M91143959	M91143959	SOFT_TISSUE	LIPID	4.0		PCTDRYWT
1991	1M	M91143960	M91143960	SOFT_TISSUE	LIPID	3.2		PCTDRYWT
1991	1M	M91143961	M91143961	SOFT_TISSUE	LIPID	2.8		PCTDRYWT
1991	1M	M91143962	M91143962	SOFT_TISSUE	LIPID	3.4		PCTDRYWT
1991	1M	M91143963	M91143963	SOFT_TISSUE	LIPID	3.1		PCTDRYWT
1991	1M	M91143964	M91143964	SOFT_TISSUE	LIPID	3.0		PCTDRYWT
1991	6	M91143739	M91143739	SOFT_TISSUE	LIPID	7.9		PCTDRYWT
1991	6	M91143740	M91143740	SOFT_TISSUE	LIPID	4.2		PCTDRYWT
1991	6	M91143741	M91143741	SOFT_TISSUE	LIPID	6.8		PCTDRYWT
1991	6	M91143742	M91143742	SOFT_TISSUE	LIPID	5.2		PCTDRYWT
1991	6	M91143743	M91143743	SOFT_TISSUE	LIPID	4.7		PCTDRYWT
1991	7	M91143626	M91143626	SOFT_TISSUE	LIPID	4.4		PCTDRYWT
1991	7	M91143627	M91143627	SOFT_TISSUE	LIPID	8.1		PCTDRYWT
1991	7	M91143628	M91143628	SOFT_TISSUE	LIPID	4.7		PCTDRYWT
1991	7	M91143629	M91143629	SOFT_TISSUE	LIPID	1.8		PCTDRYWT
1991	7	M91143630	M91143630	SOFT_TISSUE	LIPID	3.9		PCTDRYWT
1991	7	M91143631	M91143631	SOFT_TISSUE	LIPID	1.8		PCTDRYWT
1991	7	M91143632	M91143632	SOFT_TISSUE	LIPID	2.4		PCTDRYWT
1991	7	M91143633	M91143633	SOFT_TISSUE	LIPID	3.9		PCTDRYWT
1991	7	M91143634	M91143634	SOFT_TISSUE	LIPID	8.4		PCTDRYWT
1991	7	M91143635	M91143635	SOFT_TISSUE	LIPID	4.8		PCTDRYWT
1992	1M	M92164479	M92164479	SOFT_TISSUE	LIPID	4.4		PCTDRYWT
1992	1M	M92164480	M92164480	SOFT_TISSUE	LIPID	5.5		PCTDRYWT
1992	1M	M92164481	M92164481	SOFT_TISSUE	LIPID	4.8		PCTDRYWT
1992	1M	M92164482	M92164482	SOFT_TISSUE	LIPID	5.8		PCTDRYWT
1992	1M	M92164483	M92164483	SOFT_TISSUE	LIPID	4.8		PCTDRYWT
1992	1M	M92164484	M92164484	SOFT_TISSUE	LIPID	3.6		PCTDRYWT
1992	1M	M92164485	M92164485	SOFT_TISSUE	LIPID	4.6		PCTDRYWT
1992	1M	M92164486	M92164486	SOFT_TISSUE	LIPID	7.5		PCTDRYWT
1992	4	M92164492	M92164492	SOFT_TISSUE	LIPID	5.4		PCTDRYWT
1992	4	M92164493	M92164493	SOFT_TISSUE	LIPID	3.8		PCTDRYWT
1992	4	M92164494	M92164494	SOFT_TISSUE	LIPID	4.7		PCTDRYWT
1992	4	M92164495	M92164495	SOFT_TISSUE	LIPID	3.3		PCTDRYWT
1992	4	M92164496	M92164496	SOFT_TISSUE	LIPID	5.0		PCTDRYWT
1992	4	M92164497	M92164497	SOFT_TISSUE	LIPID	3.5		PCTDRYWT
1992	4	M92164498	M92164498	SOFT_TISSUE	LIPID	3.1		PCTDRYWT
1992	4	M92164499	M92164499	SOFT_TISSUE	LIPID	5.0		PCTDRYWT
1992	6	M92164487	M92164487	SOFT_TISSUE	LIPID	5.7		PCTDRYWT
1992	6	M92164488	M92164488	SOFT_TISSUE	LIPID	5.2		PCTDRYWT
1992	6	M92164489	M92164489	SOFT_TISSUE	LIPID	4.1		PCTDRYWT
1992	6	M92164490	M92164490	SOFT_TISSUE	LIPID	5.8		PCTDRYWT

Table C-5. Lipid Data - Mussels 1991 – 2000.
(Continued)

Year	Station	Sample	Bottle	Fraction	Parameter	Value	Val Qual	Unit Code
1992	6	M92164491	M92164491	SOFT_TISSUE	LIPID	4.6		PCTDRYWT
1992	7	M92162679	M92162679	SOFT_TISSUE	LIPID	4.5		PCTDRYWT
1992	7	M92162680	M92162680	SOFT_TISSUE	LIPID	3.6		PCTDRYWT
1992	7	M92162681	M92162681	SOFT_TISSUE	LIPID	4.0		PCTDRYWT
1992	7	M92162682	M92162682	SOFT_TISSUE	LIPID	4.4		PCTDRYWT
1992	7	M92162683	M92162683	SOFT_TISSUE	LIPID	7.5		PCTDRYWT
1993	1M	M93196384	M93196384	SOFT_TISSUE	LIPID	6.5	j	PCTDRYWT
1993	1M	M93196385	M93196385	SOFT_TISSUE	LIPID	6.5	j	PCTDRYWT
1993	1M	M93196386	M93196386	SOFT_TISSUE	LIPID	6.5	j	PCTDRYWT
1993	1M	M93196387	M93196387	SOFT_TISSUE	LIPID	6.5	j	PCTDRYWT
1993	1M	M93196388	M93196388	SOFT_TISSUE	LIPID	6.5	j	PCTDRYWT
1993	4	M93196376	M93196376	SOFT_TISSUE	LIPID	7.1	j	PCTDRYWT
1993	4	M93196377	M93196377	SOFT_TISSUE	LIPID	7.1	j	PCTDRYWT
1993	4	M93196378	M93196378	SOFT_TISSUE	LIPID	7.1	j	PCTDRYWT
1993	4	M93196379	M93196379	SOFT_TISSUE	LIPID	7.1	j	PCTDRYWT
1993	4	M93196380	M93196380	SOFT_TISSUE	LIPID	7.1	j	PCTDRYWT
1993	4	M93196381	M93196381	SOFT_TISSUE	LIPID	7.1	j	PCTDRYWT
1993	4	M93196382	M93196382	SOFT_TISSUE	LIPID	7.1	j	PCTDRYWT
1993	4	M93196383	M93196383	SOFT_TISSUE	LIPID	7.1	j	PCTDRYWT
1993	6	M93196389	M93196389	SOFT_TISSUE	LIPID	5.3	j	PCTDRYWT
1993	6	M93196390	M93196390	SOFT_TISSUE	LIPID	5.3	j	PCTDRYWT
1993	6	M93196391	M93196391	SOFT_TISSUE	LIPID	5.3	j	PCTDRYWT
1993	6	M93196392	M93196392	SOFT_TISSUE	LIPID	5.3	j	PCTDRYWT
1993	7	M93188933	M93188933	SOFT_TISSUE	LIPID	8.0	j	PCTDRYWT
1993	7	M93188934	M93188934	SOFT_TISSUE	LIPID	8.0	j	PCTDRYWT
1993	7	M93188936	M93188936	SOFT_TISSUE	LIPID	8.0	j	PCTDRYWT
1993	7	M93188937	M93188937	SOFT_TISSUE	LIPID	8.0	j	PCTDRYWT
1993	7	M93188941	M93188941	SOFT_TISSUE	LIPID	8.0	j	PCTDRYWT
1994	1M	M94233366	M94233366	SOFT_TISSUE	LIPID	4.4		PCTDRYWT
1994	1M	M94233367	M94233367	SOFT_TISSUE	LIPID	5.2		PCTDRYWT
1994	1M	M94233368	M94233368	SOFT_TISSUE	LIPID	5.2		PCTDRYWT
1994	1M	M94233369	M94233369	SOFT_TISSUE	LIPID	5.2		PCTDRYWT
1994	4	M94233376	M94233376	SOFT_TISSUE	LIPID	3.6		PCTDRYWT
1994	4	M94233377	M94233377	SOFT_TISSUE	LIPID	4.7		PCTDRYWT
1994	4	M94233378	M94233378	SOFT_TISSUE	LIPID	5.2		PCTDRYWT
1994	4	M94233379	M94233379	SOFT_TISSUE	LIPID	4.1		PCTDRYWT
1994	4	M94233381	M94233381	SOFT_TISSUE	LIPID	6.5		PCTDRYWT
1994	4	M94233382	M94233382	SOFT_TISSUE	LIPID	6.4		PCTDRYWT

Table C-5. Lipid Data - Mussels 1991 – 2000.
(Continued)

Year	Station	Sample	Bottle	Fraction	Parameter	Value	Val Qual	Unit Code
1994	4	M94233383	M94233383	SOFT_TISSUE	LIPID	8.1		PCTDRYWT
1994	4	M94233384	M94233384	SOFT_TISSUE	LIPID	5.7		PCTDRYWT
1994	6	M94233371	M94233371	SOFT_TISSUE	LIPID	4.8		PCTDRYWT
1994	6	M94233372	M94233372	SOFT_TISSUE	LIPID	6.6		PCTDRYWT
1994	6	M94233373	M94233373	SOFT_TISSUE	LIPID	5.1		PCTDRYWT
1994	7	M94225475	M94225475	SOFT_TISSUE	LIPID	3.3		PCTDRYWT
1994	7	M94225476	M94225476	SOFT_TISSUE	LIPID	4.6		PCTDRYWT
1994	7	M94225477	M94225477	SOFT_TISSUE	LIPID	5.0		PCTDRYWT
1994	7	M94225478	M94225478	SOFT_TISSUE	LIPID	4.0		PCTDRYWT
1995	1M	M9511D1H7TC1	M9511D1H7TC1	SOFT_TISSUE	LIPID	10.2		PCTDRYWT
1995	1M	M9511D1H7TC2	M9511D1H7TC2	SOFT_TISSUE	LIPID	11.9		PCTDRYWT
1995	1M	M9511D1H7TC3	M9511D1H7TC3	SOFT_TISSUE	LIPID	11.6		PCTDRYWT
1995	1M	M9511D1H7TC4	M9511D1H7TC4	SOFT_TISSUE	LIPID	11.0		PCTDRYWT
1995	1M	M9511D1H7TC5	M9511D1H7TC5	SOFT_TISSUE	LIPID	11.5		PCTDRYWT
1995	6	M9511D6H7TC1	M9511D6H7TC1	SOFT_TISSUE	LIPID	10.0		PCTDRYWT
1995	6	M9511D6H7TC2	M9511D6H7TC2	SOFT_TISSUE	LIPID	10.1		PCTDRYWT
1995	6	M9511D6H7TC3	M9511D6H7TC3	SOFT_TISSUE	LIPID	10.4		PCTDRYWT
1995	6	M9511D6H7TC4	M9511D6H7TC4	SOFT_TISSUE	LIPID	10.2		PCTDRYWT
1995	6	M9511D6H7TC5	M9511D6H7TC5	SOFT_TISSUE	LIPID	8.5		PCTDRYWT
1995	7	M9511H7TC1	M9511H7TC1	SOFT_TISSUE	LIPID	9.2		PCTDRYWT
1995	7	M9511H7TC2	M9511H7TC2	SOFT_TISSUE	LIPID	8.1		PCTDRYWT
1995	7	M9511H7TC3	M9511H7TC3	SOFT_TISSUE	LIPID	8.6		PCTDRYWT
1995	7	M9511H7TC4	M9511H7TC4	SOFT_TISSUE	LIPID	8.2		PCTDRYWT
1995	7	M9511H7TC5	M9511H7TC5	SOFT_TISSUE	LIPID	9.6		PCTDRYWT
1996	1M	M9611D1H7TC1	M9611D1H7TC1	SOFT_TISSUE	LIPID	9.0		PCTDRYWT
1996	1M	M9611D1H7TC2	M9611D1H7TC2	SOFT_TISSUE	LIPID	15.0		PCTDRYWT
1996	1M	M9611D1H7TC3	M9611D1H7TC3	SOFT_TISSUE	LIPID	13.4		PCTDRYWT
1996	1M	M9611D1H7TC4	M9611D1H7TC4	SOFT_TISSUE	LIPID	14.9		PCTDRYWT
1996	1M	M9611D1H7TC5	M9611D1H7TC5	SOFT_TISSUE	LIPID	16.7		PCTDRYWT
1996	6	M9611D6H7TC1	M9611D6H7TC1	SOFT_TISSUE	LIPID	8.7		PCTDRYWT
1996	6	M9611D6H7TC2	M9611D6H7TC2	SOFT_TISSUE	LIPID	10.3		PCTDRYWT
1996	6	M9611D6H7TC3	M9611D6H7TC3	SOFT_TISSUE	LIPID	10.9		PCTDRYWT
1996	6	M9611D6H7TC4	M9611D6H7TC4	SOFT_TISSUE	LIPID	8.9		PCTDRYWT
1996	6	M9611D6H7TC5	M9611D6H7TC5	SOFT_TISSUE	LIPID	11.4		PCTDRYWT
1996	7	M9611H7TC1	M9611H7TC1	SOFT_TISSUE	LIPID	7.1		PCTDRYWT
1996	7	M9611H7TC2	M9611H7TC2	SOFT_TISSUE	LIPID	11.6		PCTDRYWT
1996	7	M9611H7TC3	M9611H7TC3	SOFT_TISSUE	LIPID	6.0		PCTDRYWT
1996	M4	M9611D4H7TC1	M9611D4H7TC1	SOFT_TISSUE	LIPID	8.8		PCTDRYWT
1996	M4	M9611D4H7TC2	M9611D4H7TC2	SOFT_TISSUE	LIPID	10.5		PCTDRYWT
1996	M4	M9611D4H7TC3	M9611D4H7TC3	SOFT_TISSUE	LIPID	12.2		PCTDRYWT
1996	M4	M9611D4H7TC4	M9611D4H7TC4	SOFT_TISSUE	LIPID	10.4		PCTDRYWT
1996	M4	M9611D4H7TC5	M9611D4H7TC5	SOFT_TISSUE	LIPID	10.9		PCTDRYWT

Table C-5. Lipid Data - Mussels 1991 – 2000.
(Continued)

Year	Station	Sample	Bottle	Fraction	Parameter	Value	Val Qual	Unit Code
1997	1M	M9711D1H7TC1	M9711D1H7TC1	SOFT_TISSUE	LIPID	9.3		PCTDRYWT
1997	1M	M9711D1H7TC2	M9711D1H7TC2	SOFT_TISSUE	LIPID	9.7		PCTDRYWT
1997	1M	M9711D1H7TC3	M9711D1H7TC3	SOFT_TISSUE	LIPID	7.8		PCTDRYWT
1997	1M	M9711D1H7TC4	M9711D1H7TC4	SOFT_TISSUE	LIPID	8.6		PCTDRYWT
1997	1M	M9711D1H7TC5	M9711D1H7TC5	SOFT_TISSUE	LIPID	9.1		PCTDRYWT
1997	6	M9711D6H7TC1	M9711D6H7TC1	SOFT_TISSUE	LIPID	8.8		PCTDRYWT
1997	6	M9711D6H7TC2	M9711D6H7TC2	SOFT_TISSUE	LIPID	7.7		PCTDRYWT
1997	6	M9711D6H7TC3	M9711D6H7TC3	SOFT_TISSUE	LIPID	7.5		PCTDRYWT
1997	6	M9711D6H7TC4	M9711D6H7TC4	SOFT_TISSUE	LIPID	7.8		PCTDRYWT
1997	6	M9711D6H7TC5	M9711D6H7TC5	SOFT_TISSUE	LIPID	7.5		PCTDRYWT
1997	7	M9711H7TC1	M9711H7TC1	SOFT_TISSUE	LIPID	8.2		PCTDRYWT
1997	7	M9711H7TC2	M9711H7TC2	SOFT_TISSUE	LIPID	8.1		PCTDRYWT
1997	7	M9711H7TC3	M9711H7TC3	SOFT_TISSUE	LIPID	8.6		PCTDRYWT
1997	7	M9711H7TC4	M9711H7TC4	SOFT_TISSUE	LIPID	8.6		PCTDRYWT
1997	7	M9711H7TC5	M9711H7TC5	SOFT_TISSUE	LIPID	9.1		PCTDRYWT
1997	M4	M9711D4H7TC1	M9711D4H7TC1	SOFT_TISSUE	LIPID	7.2		PCTDRYWT
1997	M4	M9711D4H7TC2	M9711D4H7TC2	SOFT_TISSUE	LIPID	8.9		PCTDRYWT
1997	M4	M9711D4H7TC3	M9711D4H7TC3	SOFT_TISSUE	LIPID	9.6		PCTDRYWT
1997	M4	M9711D4H7TC4	M9711D4H7TC4	SOFT_TISSUE	LIPID	8.0		PCTDRYWT
1997	M4	M9711D4H7TC5	M9711D4H7TC5	SOFT_TISSUE	LIPID	9.0		PCTDRYWT
1998	7	FM9812GVX01	VX01	SOFT_TISSUE	LIPID	6.0		PCTDRYWT
1998	7	FM9812GVX02	VX02	SOFT_TISSUE	LIPID	6.0		PCTDRYWT
1998	7	FM9812GVX03	VX03	SOFT_TISSUE	LIPID	5.0		PCTDRYWT
1998	7	FM9812GVX04	VX04	SOFT_TISSUE	LIPID	6.0		PCTDRYWT
1998	7	FM9812GVX05	VX05	SOFT_TISSUE	LIPID	6.0		PCTDRYWT
1998	8	FM9811SVX06	VX06	SOFT_TISSUE	LIPID	8.6		PCTDRYWT
1998	1M	FM9821GVX17	VX17	SOFT_TISSUE	LIPID	7.0		PCTDRYWT
1998	1M	FM9821GVX18	VX18	SOFT_TISSUE	LIPID	8.0		PCTDRYWT
1998	1M	FM9821GVX19	VX19	SOFT_TISSUE	LIPID	6.0		PCTDRYWT
1998	1M	FM9821GVX20	VX20	SOFT_TISSUE	LIPID	7.0		PCTDRYWT
1998	1M	FM9821GVX21	VX21	SOFT_TISSUE	LIPID	7.0		PCTDRYWT
1998	M4	FM9822GVX22	VX22	SOFT_TISSUE	LIPID	7.0		PCTDRYWT
1998	M4	FM9822GVX23	VX23	SOFT_TISSUE	LIPID	7.0		PCTDRYWT
1998	M4	FM9822GVX24	VX24	SOFT_TISSUE	LIPID	8.0		PCTDRYWT
1998	M4	FM9822GVX25	VX25	SOFT_TISSUE	LIPID	9.0		PCTDRYWT
1998	M4	FM9822GVX26	VX26	SOFT_TISSUE	LIPID	6.0		PCTDRYWT
1998	M4	FM9822GVX27	VX27	SOFT_TISSUE	LIPID	7.0		PCTDRYWT
1998	M4	FM9822GVX28	VX28	SOFT_TISSUE	LIPID	8.0		PCTDRYWT
1998	M4	FM9822GVX29	VX29	SOFT_TISSUE	LIPID	7.0		PCTDRYWT
1998	6	FM9832GVX12	VX12	SOFT_TISSUE	LIPID	6.0		PCTDRYWT
1998	6	FM9832GVX13	VX13	SOFT_TISSUE	LIPID	6.0		PCTDRYWT
1998	6	FM9832GVX14	VX14	SOFT_TISSUE	LIPID	6.0		PCTDRYWT

Table C-5. Lipid Data - Mussels 1991 – 2000.
(Continued)

Year	Station	Sample	Bottle	Fraction	Parameter	Value	Val Qual	Unit Code
1998	6	FM9832GVX15	VX15	SOFT_TISSUE	LIPID	8.0		PCTDRYWT
1998	6	FM9832GVX16	VX16	SOFT_TISSUE	LIPID	6.0		PCTDRYWT
1998	9	FM9833GVX30	VX30	SOFT_TISSUE	LIPID	8.0		PCTDRYWT
1998	9	FM9833GVX31	VX31	SOFT_TISSUE	LIPID	9.0		PCTDRYWT
1998	9	FM9833GVX32	VX32	SOFT_TISSUE	LIPID	8.0		PCTDRYWT
1998	9	FM9833GVX33	VX33	SOFT_TISSUE	LIPID	8.0		PCTDRYWT
1998	9	FM9833GVX34	VX34	SOFT_TISSUE	LIPID	8.0		PCTDRYWT
1998	9	FM9833GVX35	VX35	SOFT_TISSUE	LIPID	9.0		PCTDRYWT
1998	9	FM9833GVX36	VX36	SOFT_TISSUE	LIPID	8.0		PCTDRYWT
1998	9	FM9833GVX37	VX37	SOFT_TISSUE	LIPID	8.0		PCTDRYWT
1998	M7	FM9831SVX07	VX07	SOFT_TISSUE	LIPID	7.0		PCTDRYWT
1998	M7	FM9831SVX08	VX08	SOFT_TISSUE	LIPID	7.0		PCTDRYWT
1998	M7	FM9831SVX09	VX09	SOFT_TISSUE	LIPID	7.0		PCTDRYWT
1998	M7	FM9831SVX10	VX10	SOFT_TISSUE	LIPID	7.0		PCTDRYWT
1998	M7	FM9831SVX11	VX11	SOFT_TISSUE	LIPID	8.0		PCTDRYWT
1999	7	FM9912GXD74	XD74	SOFT_TISSUE	LIPID	7.8		PCTDRYWT
1999	7	FM9912GXD75	XD75	SOFT_TISSUE	LIPID	5.6		PCTDRYWT
1999	7	FM9912GXD76	XD76	SOFT_TISSUE	LIPID	7.5		PCTDRYWT
1999	7	FM9912GXD77	XD77	SOFT_TISSUE	LIPID	6.4		PCTDRYWT
1999	7	FM9912GXD78	XD78	SOFT_TISSUE	LIPID	5.6		PCTDRYWT
1999	4	FM9932GXD84	XD84	SOFT_TISSUE	LIPID	8.7		PCTDRYWT
1999	4	FM9932GXD85	XD85	SOFT_TISSUE	LIPID	7.8		PCTDRYWT
1999	4	FM9932GXD86	XD86	SOFT_TISSUE	LIPID	6.9		PCTDRYWT
1999	4	FM9932GXD87	XD87	SOFT_TISSUE	LIPID	7.9		PCTDRYWT
1999	4	FM9932GXD88	XD88	SOFT_TISSUE	LIPID	9.0		PCTDRYWT
1999	4	FM9932GXD89	XD89	SOFT_TISSUE	LIPID	8.4		PCTDRYWT
1999	4	FM9932GXD90	XD90	SOFT_TISSUE	LIPID	8.3		PCTDRYWT
1999	4	FM9932GXD91	XD91	SOFT_TISSUE	LIPID	8.0		PCTDRYWT
1999	6	FM9931GXD79	XD79	SOFT_TISSUE	LIPID	5.6		PCTDRYWT
1999	6	FM9931GXD80	XD80	SOFT_TISSUE	LIPID	6.2		PCTDRYWT
1999	6	FM9931GXD81	XD81	SOFT_TISSUE	LIPID	6.0		PCTDRYWT
1999	6	FM9931GXD82	XD82	SOFT_TISSUE	LIPID	6.4		PCTDRYWT
1999	6	FM9931GXD83	XD83	SOFT_TISSUE	LIPID	6.5		PCTDRYWT
1999	9	FM9933GXD92	XD92	SOFT_TISSUE	LIPID	11.3		PCTDRYWT
1999	9	FM9933GXD93	XD93	SOFT_TISSUE	LIPID	13.8		PCTDRYWT
1999	9	FM9933GXD94	XD94	SOFT_TISSUE	LIPID	12.1		PCTDRYWT
1999	9	FM9933GXD95	XD95	SOFT_TISSUE	LIPID	10.5		PCTDRYWT
1999	9	FM9933GXD96	XD96	SOFT_TISSUE	LIPID	10.0		PCTDRYWT
1999	9	FM9933GXD97	XD97	SOFT_TISSUE	LIPID	11.5		PCTDRYWT
1999	9	FM9933GXD98	XD98	SOFT_TISSUE	LIPID	11.9		PCTDRYWT
1999	9	FM9933GXD99	XD99	SOFT_TISSUE	LIPID	14.2		PCTDRYWT
2000	RP	FM001RPYE67	YE67	SOFT_TISSUE	LIPID	4.9		PCTDRYWT

Table C-5. Lipid Data - Mussels 1991 – 2000.
(Continued)

Year	Station	Sample	Bottle	Fraction	Parameter	Value	Val Qual	Unit Code
2000	RP	FM001RPYE68	YE68	SOFT_TISSUE	LIPID	5.4		PCTDRYWT
2000	RP	FM001RPYE69	YE69	SOFT_TISSUE	LIPID	4.7		PCTDRYWT
2000	RP	FM001RPYE70	YE70	SOFT_TISSUE	LIPID	5.2		PCTDRYWT
2000	RP	FM001RPYE71	YE71	SOFT_TISSUE	LIPID	5.4		PCTDRYWT
2000	1M	FM0031YE77	YE77	SOFT_TISSUE	LIPID	6.6		PCTDRYWT
2000	1M	FM0031YE78	YE78	SOFT_TISSUE	LIPID	7.6		PCTDRYWT
2000	1M	FM0031YE79	YE79	SOFT_TISSUE	LIPID	7.5		PCTDRYWT
2000	1M	FM0031YE80	YE80	SOFT_TISSUE	LIPID	7.6		PCTDRYWT
2000	1M	FM0031YE81	YE81	SOFT_TISSUE	LIPID	7.7		PCTDRYWT
2000	4	FM0034YE82	YE82	SOFT_TISSUE	LIPID	6.0		PCTDRYWT
2000	4	FM0034YE83	YE83	SOFT_TISSUE	LIPID	7.5		PCTDRYWT
2000	4	FM0034YE84	YE84	SOFT_TISSUE	LIPID	7.1		PCTDRYWT
2000	4	FM0034YE85	YE85	SOFT_TISSUE	LIPID	6.5		PCTDRYWT
2000	4	FM0034YE86	YE86	SOFT_TISSUE	LIPID	7.6		PCTDRYWT
2000	4	FM0034YE87	YE87	SOFT_TISSUE	LIPID	7.4		PCTDRYWT
2000	4	FM0034YE88	YE88	SOFT_TISSUE	LIPID	7.4		PCTDRYWT
2000	4	FM0034YE89	YE89	SOFT_TISSUE	LIPID	7.6		PCTDRYWT
2000	6	FM0036YE72	YE72	SOFT_TISSUE	LIPID	8.6		PCTDRYWT
2000	6	FM0036YE73	YE73	SOFT_TISSUE	LIPID	8.0		PCTDRYWT
2000	6	FM0036YE74	YE74	SOFT_TISSUE	LIPID	7.9		PCTDRYWT
2000	6	FM0036YE75	YE75	SOFT_TISSUE	LIPID	8.2		PCTDRYWT
2000	6	FM0036YE76	YE76	SOFT_TISSUE	LIPID	8.6		PCTDRYWT

Table C-6. Percent Dry Weight - Flounder Fillet 1992 – 2000.

Year	Station	Sample	Bottle	Fraction	Parameter	Value	Val Qual	Unit Code
1992	DIF	92-353	92-353M	FILLET	PCTDRYWT	18.1		PCT
1992	DIF	92-354	92-354M	FILLET	PCTDRYWT	18.5		PCT
1992	DIF	92-359	92-359M	FILLET	PCTDRYWT	21.3		PCT
1992	DIF	92-35C	92-35CM	FILLET	PCTDRYWT	20.6		PCT
1992	OS	92-400	92-400M	FILLET	PCTDRYWT	17.3		PCT
1992	OS	92-401	92-401M	FILLET	PCTDRYWT	21.0		PCT
1992	OS	92-409	92-409M	FILLET	PCTDRYWT	18.9		PCT
1992	OS	92-40C	92-40CM	FILLET	PCTDRYWT	20.3		PCT
1992	ECCB	92-451	92-451M	FILLET	PCTDRYWT	18.4		PCT
1992	ECCB	92-452	92-452M	FILLET	PCTDRYWT	22.2		PCT
1992	ECCB	92-456	92-456M	FILLET	PCTDRYWT	19.8		PCT
1992	ECCB	92-45C	92-45CM	FILLET	PCTDRYWT	20.3		PCT
1993	DIF	F93010465	465SF	FILLET	PCTDRYWT	20.5		PCT
1993	DIF	F93010466	466SF	FILLET	PCTDRYWT	21.3		PCT
1993	DIF	F93010467	467SF	FILLET	PCTDRYWT	15.3		PCT
1993	DIF	F93010468	468SF	FILLET	PCTDRYWT	17.5		PCT
1993	DIF	F93010469	469SF	FILLET	PCTDRYWT	18.8		PCT
1993	DIF	F93010470	470SF	FILLET	PCTDRYWT	20.4		PCT
1993	DIF	F93010471	471SF	FILLET	PCTDRYWT	12.6		PCT
1993	DIF	F93010472	472SF	FILLET	PCTDRYWT	16.1		PCT
1993	DIF	F93010473	473SF	FILLET	PCTDRYWT	17.9		PCT
1993	DIF	F93010474	474SF	FILLET	PCTDRYWT	21.1		PCT
1993	OS	F93010565	565SF	FILLET	PCTDRYWT	19.4		PCT
1993	OS	F93010566	566SF	FILLET	PCTDRYWT	16.7		PCT
1993	OS	F93010567	567SF	FILLET	PCTDRYWT	21.2		PCT
1993	OS	F93010569	569SF	FILLET	PCTDRYWT	18.7		PCT
1993	OS	F93010570	570SF	FILLET	PCTDRYWT	18.3		PCT
1993	OS	F93010571	571SF	FILLET	PCTDRYWT	16.4		PCT
1993	OS	F93010572	572SF	FILLET	PCTDRYWT	17.2		PCT
1993	OS	F93010573	573SF	FILLET	PCTDRYWT	16.0		PCT
1993	OS	F93010574	574SF	FILLET	PCTDRYWT	17.6		PCT
1993	ECCB	F93010625	625SF	FILLET	PCTDRYWT	14.7		PCT
1993	ECCB	F93010626	626SF	FILLET	PCTDRYWT	16.0		PCT
1993	ECCB	F93010627	627SF	FILLET	PCTDRYWT	19.2		PCT
1993	ECCB	F93010628	628SF	FILLET	PCTDRYWT	17.8		PCT
1993	ECCB	F93010629	629SF	FILLET	PCTDRYWT	17.4		PCT
1993	ECCB	F93010630	630SF	FILLET	PCTDRYWT	16.9		PCT
1993	ECCB	F93010631	631SF	FILLET	PCTDRYWT	19.5		PCT

Table C-6. Percent Dry Weight - Flounder Fillet 1992 – 2000.
(Continued)

Year	Station	Sample	Bottle	Fraction	Parameter	Value	Val Qual	Unit Code
1993	ECCB	F93010632	632SF	FILLET	PCTDRYWT	19.7		PCT
1993	ECCB	F93010633	633SF	FILLET	PCTDRYWT	16.3		PCT
1993	ECCB	F93010634	634SF	FILLET	PCTDRYWT	20.2		PCT
1994	DIF	FI101FLNDR	OU28	FILLET	PCTDRYWT	17.4		PCT
1994	DIF	FI102FLNDR	OU29	FILLET	PCTDRYWT	17.4		PCT
1994	DIF	FI103FLNDR	OU30	FILLET	PCTDRYWT	17.1		PCT
1994	OS	FI401FLNDR	OU37	FILLET	PCTDRYWT	18.6		PCT
1994	OS	FI402FLNDR	OU38	FILLET	PCTDRYWT	17.7		PCT
1994	OS	FI403FLNDR	OU39	FILLET	PCTDRYWT	17.1		PCT
1994	ECCB	FI501FLNDR	OU40	FILLET	PCTDRYWT	19.0		PCT
1994	ECCB	FI502FLNDR	OU41	FILLET	PCTDRYWT	17.7		PCT
1994	ECCB	FI503FLNDR	OU42	FILLET	PCTDRYWT	17.7		PCT
1995	DIF	P95111000C1	P95111000TC1	FILLET	PCTDRYWT	17.1		PCT
1995	DIF	P95111000C2	P95111000TC2	FILLET	PCTDRYWT	16.6		PCT
1995	DIF	P95111000C3	P95111000TC3	FILLET	PCTDRYWT	17.4		PCT
1995	OS	P95114000C1	P95114000TC1	FILLET	PCTDRYWT	17.9		PCT
1995	OS	P95114000C2	P95114000TC2	FILLET	PCTDRYWT	16.8		PCT
1995	OS	P95114000C3	P95114000TC3	FILLET	PCTDRYWT	17.5		PCT
1995	ECCB	P95115000C1	P95115000TC1	FILLET	PCTDRYWT	17.4		PCT
1995	ECCB	P95115000C2	P95115000TC2	FILLET	PCTDRYWT	18.0		PCT
1995	ECCB	P95115000C3	P95115000TC3	FILLET	PCTDRYWT	18.1		PCT
1996	DIF	P96111000C1	P96111000TC1	FILLET	PCTDRYWT	18.4		PCT
1996	DIF	P96111000C2	P96111000TC2	FILLET	PCTDRYWT	16.1		PCT
1996	DIF	P96111000C3	P96111000TC3	FILLET	PCTDRYWT	20.3		PCT
1996	OS	P96114000C1	P96114000TC1	FILLET	PCTDRYWT	18.4		PCT
1996	OS	P96114000C2	P96114000TC2	FILLET	PCTDRYWT	17.2		PCT
1996	OS	P96114000C3	P96114000TC3	FILLET	PCTDRYWT	21.9		PCT
1996	ECCB	P96115000C1	P96115000TC1	FILLET	PCTDRYWT	16.7		PCT
1996	ECCB	P96115000C2	P96115000TC2	FILLET	PCTDRYWT	20.1		PCT
1996	ECCB	P96115000C3	P96115000TC3	FILLET	PCTDRYWT	18.0		PCT
1997	DIF	P97111000C1	P97111000TC1	FILLET	PCTDRYWT	17.9		PCT
1997	DIF	P97111000C2	P97111000TC2	FILLET	PCTDRYWT	17.7		PCT
1997	DIF	P97111000C3	P97111000TC3	FILLET	PCTDRYWT	17.6		PCT

Table C-6. Percent Dry Weight - Flounder Fillet 1992 – 2000.
(Continued)

Year	Station	Sample	Bottle	Fraction	Parameter	Value	Val Qual	Unit Code
1997	OS	P97114000C1	P97114000TC1	FILLET	PCTDRYWT	18.3		PCT
1997	OS	P97114000C2	P97114000TC2	FILLET	PCTDRYWT	17.6		PCT
1997	OS	P97114000C3	P97114000TC3	FILLET	PCTDRYWT	17.0		PCT
1997	ECCB	P97115000C1	P97115000TC1	FILLET	PCTDRYWT	17.4		PCT
1997	ECCB	P97115000C2	P97115000TC2	FILLET	PCTDRYWT	18.1		PCT
1997	ECCB	P97115000C3	P97115000TC3	FILLET	PCTDRYWT	17.7		PCT
1998	DIF	VQST11	VQ79	FILLET	PCTDRYWT	16.9		PCT
1998	DIF	VQST12	VQ80	FILLET	PCTDRYWT	18.1		PCT
1998	DIF	VQST13	VQ81	FILLET	PCTDRYWT	20.8		PCT
1998	OS	VQST41	VQ85	FILLET	PCTDRYWT	18.5		PCT
1998	OS	VQST42	VQ86	FILLET	PCTDRYWT	23.0		PCT
1998	OS	VQST43	VQ87	FILLET	PCTDRYWT	21.2		PCT
1998	ECCB	VQST51	VR06	FILLET	PCTDRYWT	22.7		PCT
1998	ECCB	VQST52	VR07	FILLET	PCTDRYWT	22.8		PCT
1998	ECCB	VQST53	VR08	FILLET	PCTDRYWT	20.4		PCT
1999	DIF	FF99110C1	WQ73COMP	FILLET	PCTDRYWT	17.9		PCT
1999	DIF	FF99110C2	WQ74COMP	FILLET	PCTDRYWT	17.3		PCT
1999	DIF	FF99110C3	WQ75COMP	FILLET	PCTDRYWT	17.6		PCT
1999	OS	FF99140C1	WM70COMP	FILLET	PCTDRYWT	15.8		PCT
1999	OS	FF99140C2	WM71COMP	FILLET	PCTDRYWT	16.8		PCT
1999	OS	FF99140C3	WM72COMP	FILLET	PCTDRYWT	14.8		PCT
1999	ECCB	FF99150C1	WM90COMP	FILLET	PCTDRYWT	16.5		PCT
1999	ECCB	FF99150C2	WM91COMP	FILLET	PCTDRYWT	17.0		PCT
1999	ECCB	FF99150C3	WM92COMP	FILLET	PCTDRYWT	16.6		PCT
2000	DIF	FF00110C1	XT83	FILLET	PCTDRYWT	17.3		PCT
2000	DIF	FF00110C2	XT84	FILLET	PCTDRYWT	16.6		PCT
2000	DIF	FF00110C3	XT85	FILLET	PCTDRYWT	17.7		PCT
2000	OS	FF00140C1	XT77	FILLET	PCTDRYWT	17.0		PCT
2000	OS	FF00140C2	XT78	FILLET	PCTDRYWT	17.4		PCT
2000	OS	FF00140C3	XT79	FILLET	PCTDRYWT	16.0		PCT
2000	ECCB	FF00150C1	XU22	FILLET	PCTDRYWT	17.6		PCT
2000	ECCB	FF00150C2	XU23	FILLET	PCTDRYWT	16.1		PCT
2000	ECCB	FF00150C3	XU24	FILLET	PCTDRYWT	16.4		PCT

Table C-7. Percent Dry Weight - Flounder Liver 1992 – 2000.

Year	Station	Sample	Bottle	Fraction	Parameter	Value	Val Qual	Unit Code
1992	DIF	92-353	92-353L	LIVER	PCTDRYWT	20.4		PCT
1992	DIF	92-354	92-354L	LIVER	PCTDRYWT	21.5		PCT
1992	DIF	92-359	92-359L	LIVER	PCTDRYWT	24.5		PCT
1992	DIF	92-35C	92-35CL	LIVER	PCTDRYWT	23.1		PCT
1992	OS	92-400	92-400L	LIVER	PCTDRYWT	24.1		PCT
1992	OS	92-401	92-401L	LIVER	PCTDRYWT	25.7		PCT
1992	OS	92-409	92-409L	LIVER	PCTDRYWT	22.1		PCT
1992	OS	92-40C	92-40CL	LIVER	PCTDRYWT	24.7		PCT
1992	ECCB	92-451	92-451L	LIVER	PCTDRYWT	20.7		PCT
1992	ECCB	92-452	92-452L	LIVER	PCTDRYWT	22.2		PCT
1992	ECCB	92-456	92-456L	LIVER	PCTDRYWT	25.7		PCT
1992	ECCB	92-45C	92-45CL	LIVER	PCTDRYWT	23.3		PCT
1993	DIF	FI1-04	FI1-04CL	LIVER	PCTDRYWT	20.2		PCT
1993	OS	FI4-05	FI4-05CL	LIVER	PCTDRYWT	20.5		PCT
1993	ECCB	FI5-06	FI5-06CL	LIVER	PCTDRYWT	20.3		PCT
1994	DIF	FI101FLNDR	OV83	LIVER	PCTDRYWT	15.9		PCT
1994	DIF	FI102FLNDR	OV84	LIVER	PCTDRYWT	23.7		PCT
1994	DIF	FI103FLNDR	OV85	LIVER	PCTDRYWT	22.7		PCT
1994	OS	FI401FLNDR	OV92	LIVER	PCTDRYWT	18.4		PCT
1994	OS	FI402FLNDR	OV93	LIVER	PCTDRYWT	26.9		PCT
1994	OS	FI403FLNDR	OV94	LIVER	PCTDRYWT	19.8		PCT
1994	ECCB	FI501FLNDR	OV95	LIVER	PCTDRYWT	22.0		PCT
1994	ECCB	FI502FLNDR	OV96	LIVER	PCTDRYWT	17.8		PCT
1994	ECCB	FI503FLNDR	OV97	LIVER	PCTDRYWT	20.6		PCT
1995	DIF	P95111000C1	P95111000LC1	LIVER	PCTDRYWT	20.3		PCT
1995	DIF	P95111000C2	P95111000LC2	LIVER	PCTDRYWT	19.4		PCT
1995	DIF	P95111000C3	P95111000LC3	LIVER	PCTDRYWT	18.7		PCT
1995	OS	P95114000C1	P95114000LC1	LIVER	PCTDRYWT	20.5		PCT
1995	OS	P95114000C2	P95114000LC2	LIVER	PCTDRYWT	21.1		PCT
1995	OS	P95114000C3	P95114000LC3	LIVER	PCTDRYWT	19.4		PCT
1995	ECCB	P95115000C1	P95115000LC1	LIVER	PCTDRYWT	20.3		PCT

Table C-7. Percent Dry Weight - Flounder Liver 1992 – 2000.
(Continued)

Year	Station	Sample	Bottle	Fraction	Parameter	Value	Val Qual	Unit Code
1995	ECCB	P95115000C2	P95115000LC2	LIVER	PCTDRYWT	18.6		PCT
1995	ECCB	P95115000C3	P95115000LC3	LIVER	PCTDRYWT	19.6		PCT
1996	DIF	P96111000C1	P96111000LC1	LIVER	PCTDRYWT	20.7		PCT
1996	DIF	P96111000C2	P96111000LC2	LIVER	PCTDRYWT	21.4		PCT
1996	DIF	P96111000C3	P96111000LC3	LIVER	PCTDRYWT	22.7		PCT
1996	OS	P96114000C1	P96114000LC1	LIVER	PCTDRYWT	18.2		PCT
1996	OS	P96114000C2	P96114000LC2	LIVER	PCTDRYWT	23.1		PCT
1996	OS	P96114000C3	P96114000LC3	LIVER	PCTDRYWT	19.0		PCT
1996	ECCB	P96115000C1	P96115000LC1	LIVER	PCTDRYWT	19.7		PCT
1996	ECCB	P96115000C2	P96115000LC2	LIVER	PCTDRYWT	22.0		PCT
1996	ECCB	P96115000C3	P96115000LC3	LIVER	PCTDRYWT	21.4		PCT
1997	DIF	P97111000C1	P97111000LC1	LIVER	PCTDRYWT	21.5		PCT
1997	DIF	P97111000C2	P97111000LC2	LIVER	PCTDRYWT	21.2		PCT
1997	DIF	P97111000C3	P97111000LC3	LIVER	PCTDRYWT	23.3		PCT
1997	OS	P97114000C1	P97114000LC1	LIVER	PCTDRYWT	21.4		PCT
1997	OS	P97114000C2	P97114000LC2	LIVER	PCTDRYWT	22.3		PCT
1997	OS	P97114000C3	P97114000LC3	LIVER	PCTDRYWT	21.3		PCT
1997	ECCB	P97115000C1	P97115000LC1	LIVER	PCTDRYWT	24.1		PCT
1997	ECCB	P97115000C2	P97115000LC2	LIVER	PCTDRYWT	23.5		PCT
1997	ECCB	P97115000C3	P97115000LC3	LIVER	PCTDRYWT	25.4		PCT
1998	DIF	VQST11	VQ82	LIVER	PCTDRYWT	21.4		PCT
1998	DIF	VQST12	VQ83	LIVER	PCTDRYWT	21.7		PCT
1998	DIF	VQST13	VQ84	LIVER	PCTDRYWT	18.5		PCT
1998	OS	VQST41	VQ88	LIVER	PCTDRYWT	20.6		PCT
1998	OS	VQST42	VQ89	LIVER	PCTDRYWT	27.7		PCT
1998	OS	VQST43	VQ90	LIVER	PCTDRYWT	29.1		PCT
1998	ECCB	VQST51	VR09	LIVER	PCTDRYWT	22.9		PCT
1998	ECCB	VQST52	VR10	LIVER	PCTDRYWT	31.5		PCT
1998	ECCB	VQST53	VR11	LIVER	PCTDRYWT	48.6		PCT
1999	DIF	FF99110C1	WQ76COMP	LIVER	PCTDRYWT	28.0		PCT
1999	DIF	FF99110C2	WQ77COMP	LIVER	PCTDRYWT	26.5		PCT
1999	DIF	FF99110C3	WQ78COMP	LIVER	PCTDRYWT	30.5		PCT

Table C-7. Percent Dry Weight - Flounder Liver 1992 – 2000.
(Continued)

Year	Station	Sample	Bottle	Fraction	Parameter	Value	Val Qual	Unit Code
1999	OS	FF99140C2	WM74COMP	LIVER	PCTDRYWT	22.1		PCT
1999	OS	FF99140C1	WM73COMP	LIVER	PCTDRYWT	22.4		PCT
1999	OS	FF99140C3	WM75COMP	LIVER	PCTDRYWT	21.6		PCT
1999	ECCB	FF99150C1	WM93COMP	LIVER	PCTDRYWT	13.7		PCT
1999	ECCB	FF99150C2	WM94COMP	LIVER	PCTDRYWT	22.3		PCT
1999	ECCB	FF99150C3	WM95COMP	LIVER	PCTDRYWT	21.0		PCT
2000	DIF	FF00110C1	XT86	LIVER	PCTDRYWT	24.8		PCT
2000	DIF	FF00110C2	XT87	LIVER	PCTDRYWT	23.7		PCT
2000	DIF	FF00110C3	XT88	LIVER	PCTDRYWT	22.8		PCT
2000	OS	FF00140C1	XT80	LIVER	PCTDRYWT	23.0		PCT
2000	OS	FF00140C2	XT81	LIVER	PCTDRYWT	23.1		PCT
2000	OS	FF00140C3	XT82	LIVER	PCTDRYWT	22.4		PCT
2000	ECCB	FF00150C1	XU25	LIVER	PCTDRYWT	24.0		PCT
2000	ECCB	FF00150C2	XU26	LIVER	PCTDRYWT	23.2		PCT
2000	ECCB	FF00150C3	XU27	LIVER	PCTDRYWT	23.9		PCT

Table C-8. Percent Dry Weight - Lobster Meat 1992 – 2000.

Year	Station	Sample	Bottle	Fraction	Parameter	Value	Val Qual	Unit Code
1992	DIF	92-467	92-467M	MEAT	PCTDRYWT	22.1		PCT
1992	DIF	92-469	92-469M	MEAT	PCTDRYWT	23.1		PCT
1992	DIF	92-482	92-482M	MEAT	PCTDRYWT	20.0		PCT
1992	OS	92-460	92-460M	MEAT	PCTDRYWT	17.3		PCT
1992	OS	92-463	92-463M	MEAT	PCTDRYWT	16.6		PCT
1992	OS	92-464	92-464M	MEAT	PCTDRYWT	21.3		PCT
1992	ECCB	92-465	92-465M	MEAT	PCTDRYWT	16.3		PCT
1992	ECCB	92-466	92-466M	MEAT	PCTDRYWT	21.7		PCT
1992	ECCB	92-476	92-476M	MEAT	PCTDRYWT	17.2		PCT
1993	DIF	F93010KG34	KG34SM	MEAT	PCTDRYWT	14.3		PCT
1993	DIF	S93030KI06	KI06SM	MEAT	PCTDRYWT	12.5		PCT
1993	DIF	S93030KI07	KI07SM	MEAT	PCTDRYWT	13.5		PCT
1993	OS	S93030KH97	KH97SM	MEAT	PCTDRYWT	12.9		PCT
1993	OS	S93030KH98	KH98SM	MEAT	PCTDRYWT	18.9		PCT
1993	ECCB	LOB-F0KH99	KH99SM	MEAT	PCTDRYWT	12.2		PCT
1993	ECCB	LOB-F0KI01	KI01SM	MEAT	PCTDRYWT	18.8		PCT
1993	ECCB	LOB-F0KI02	KI02SM	MEAT	PCTDRYWT	14.4		PCT
1993	ECCB	LOB-F0KI03	KI03SM	MEAT	PCTDRYWT	12.8		PCT
1993	ECCB	LOB-F0KI04	KI04SM	MEAT	PCTDRYWT	19.6		PCT
1993	ECCB	LOB-F0KI05	KI05SM	MEAT	PCTDRYWT	13.7		PCT
1993	ECCB	LOB-F0KI21	KI21SM	MEAT	PCTDRYWT	12.5		PCT
1993	ECCB	LOB-F0KI22	KI22SM	MEAT	PCTDRYWT	14.7		PCT
1993	ECCB	LOB-F0KI23	KI23SM	MEAT	PCTDRYWT	20.2		PCT
1993	ECCB	LOB-F0KI24	KI24SM	MEAT	PCTDRYWT	15.3		PCT
1994	DIF	FI101LOBST	OV31	MEAT	PCTDRYWT	10.7		PCT
1994	DIF	FI102LOBST	OV32	MEAT	PCTDRYWT	12.5		PCT
1994	DIF	FI103LOBST	OV33	MEAT	PCTDRYWT	11.5		PCT
1994	OS	FI401LOBST	OV34	MEAT	PCTDRYWT	16.9		PCT
1994	OS	FI402LOBST	OV35-MEAN	MEAT	PCTDRYWT	13.3		PCT
1994	ECCB	FI501LOBST	OV36	MEAT	PCTDRYWT	16.9		PCT
1994	ECCB	FI502LOBST	OV37	MEAT	PCTDRYWT	16.2		PCT
1994	ECCB	FI503LOBST	OV38	MEAT	PCTDRYWT	15.5		PCT
1995	DIF	L95111000C1	L95111000TC1	MEAT	PCTDRYWT	11.4		PCT
1995	DIF	L95111000C2	L95111000TC2	MEAT	PCTDRYWT	12.3		PCT
1995	DIF	L95111000C3	L95111000TC3	MEAT	PCTDRYWT	12.5		PCT
1995	OS	L95114000C1	L95114000TC1	MEAT	PCTDRYWT	13.6		PCT
1995	OS	L95114000C2	L95114000TC2	MEAT	PCTDRYWT	12.6		PCT
1995	OS	L95114000C3	L95114000TC3	MEAT	PCTDRYWT	11.4		PCT
1995	ECCB	L95115000C1	L95115000TC1	MEAT	PCTDRYWT	14.0		PCT
1995	ECCB	L95115000C2	L95115000TC2	MEAT	PCTDRYWT	14.6		PCT
1995	ECCB	L95115000C3	L95115000TC3	MEAT	PCTDRYWT	15.0		PCT
1996	DIF	L96111000C1	L96111000TC1	MEAT	PCTDRYWT	15.6		PCT
1996	DIF	L96111000C2	L96111000TC2	MEAT	PCTDRYWT	15.0		PCT
1996	DIF	L96111000C3	L96111000TC3	MEAT	PCTDRYWT	15.3		PCT
1996	OS	L96114000C1	L96114000TC1	MEAT	PCTDRYWT	14.4		PCT
1996	OS	L96114000C2	L96114000TC2	MEAT	PCTDRYWT	15.2		PCT

Table C-8. Percent Dry Weight - Lobster Meat 1992 – 2000.
(Continued)

Year	Station	Sample	Bottle	Fraction	Parameter	Value	Val Qual	Unit Code
1996	OS	L96114000C3	L96114000TC3	MEAT	PCTDRYWT	15.5		PCT
1996	ECCB	L96115000C1	L96115000TC1	MEAT	PCTDRYWT	17.6		PCT
1996	ECCB	L96115000C2	L96115000TC2	MEAT	PCTDRYWT	21.0		PCT
1996	ECCB	L96115000C3	L96115000TC3	MEAT	PCTDRYWT	19.6		PCT
1997	DIF	L97111000C1	L97111000TC1	MEAT	PCTDRYWT	15.3		PCT
1997	DIF	L97111000C2	L97111000TC2	MEAT	PCTDRYWT	13.2		PCT
1997	DIF	L97111000C3	L97111000TC3	MEAT	PCTDRYWT	12.4		PCT
1997	OS	L97114000C1	L97114000TC1	MEAT	PCTDRYWT	18.4		PCT
1997	OS	L97114000C2	L97114000TC2	MEAT	PCTDRYWT	10.7		PCT
1997	OS	L97114000C3	L97114000TC3	MEAT	PCTDRYWT	12.4		PCT
1997	ECCB	L97115000C1	L97115000TC1	MEAT	PCTDRYWT	14.2		PCT
1997	ECCB	L97115000C2	L97115000TC2	MEAT	PCTDRYWT	17.1		PCT
1997	ECCB	L97115000C3	L97115000TC3	MEAT	PCTDRYWT	16.2		PCT
1998	DIF	VZST11	VZ35COMP	MEAT	PCTDRYWT	14.1		PCT
1998	DIF	VZST12	VZ36COMP	MEAT	PCTDRYWT	15.5		PCT
1998	DIF	VZST13	VZ37COMP	MEAT	PCTDRYWT	14.7		PCT
1998	OS	VZST41	VZ23COMP	MEAT	PCTDRYWT	13.5		PCT
1998	OS	VZST42	VZ24COMP	MEAT	PCTDRYWT	13.7		PCT
1998	OS	VZST43	VZ25COMP	MEAT	PCTDRYWT	13.6		PCT
1998	ECCB	VZST91	VZ29COMP	MEAT	PCTDRYWT	15.1		PCT
1998	ECCB	VZST92	VZ30COMP	MEAT	PCTDRYWT	13.4		PCT
1998	ECCB	VZST93	VZ31COMP	MEAT	PCTDRYWT	14.7		PCT
1999	DIF	FL9911C1	XJ42	MEAT	PCTDRYWT	13.0		PCT
1999	DIF	FL9911C2	XJ43	MEAT	PCTDRYWT	15.4		PCT
1999	DIF	FL9911C3	XJ44	MEAT	PCTDRYWT	18.1		PCT
1999	OS	FL9914C1	XJ45	MEAT	PCTDRYWT	14.1		PCT
1999	OS	FL9914C2	XJ46	MEAT	PCTDRYWT	13.0		PCT
1999	OS	FL9914C3	XJ47	MEAT	PCTDRYWT	13.6		PCT
1999	ECCB	FL9915C1	XJ48	MEAT	PCTDRYWT	13.5		PCT
1999	ECCB	FL9915C2	XJ49	MEAT	PCTDRYWT	12.7		PCT
1999	ECCB	FL9915C3	XJ50	MEAT	PCTDRYWT	12.7		PCT
2000	DIF	FL0011C1	YC90	MEAT	PCTDRYWT	13.1		PCT
2000	DIF	FL0011C2	YC91	MEAT	PCTDRYWT	13.2		PCT
2000	DIF	FL0011C3	YC92	MEAT	PCTDRYWT	12.9		PCT
2000	OS	FL0014C1	YC93	MEAT	PCTDRYWT	13.6		PCT
2000	OS	FL0014C2	YC94	MEAT	PCTDRYWT	14.7		PCT
2000	OS	FL0014C3	YC95	MEAT	PCTDRYWT	12.7		PCT
2000	ECCB	FL0015C1	YC87	MEAT	PCTDRYWT	13.0		PCT
2000	ECCB	FL0015C2	YC88	MEAT	PCTDRYWT	14.8		PCT
2000	ECCB	FL0015C3	YC89	MEAT	PCTDRYWT	15.0		PCT

Table C-9. Percent Dry Weight - Lobster Hepatopancreas 1992 – 2000.

Year	Station	Sample	Bottle	Fraction	Parameter	Value	Val Qual	Unit Code
1992	DIF	92-467	92-467L	HEPATOPANC	PCTDRYWT	38.5		PCT
1992	DIF	92-469	92-469L	HEPATOPANC	PCTDRYWT	50.8		PCT
1992	DIF	92-482	92-482L	HEPATOPANC	PCTDRYWT	40.5		PCT
1992	OS	92-460	92-460L	HEPATOPANC	PCTDRYWT	35.4		PCT
1992	OS	92-463	92-463L	HEPATOPANC	PCTDRYWT	31.9		PCT
1992	OS	92-464	92-464L	HEPATOPANC	PCTDRYWT	51.9		PCT
1992	ECCB	92-465	92-465L	HEPATOPANC	PCTDRYWT	18.9		PCT
1992	ECCB	92-466	92-466L	HEPATOPANC	PCTDRYWT	54.5		PCT
1992	ECCB	92-476	92-476L	HEPATOPANC	PCTDRYWT	22.7		PCT
1993	DIF	F93010KG34	KG34SH	HEPATOPANC	PCTDRYWT	18.1		PCT
1993	DIF	S93030KI06	KI06SH	HEPATOPANC	PCTDRYWT	25.6		PCT
1993	DIF	S93030KI07	KI07SH	HEPATOPANC	PCTDRYWT	18.8		PCT
1993	OS	S93030KH97	KH97SH	HEPATOPANC	PCTDRYWT	20.0		PCT
1993	OS	S93030KH98	KH98SH	HEPATOPANC	PCTDRYWT	30.1		PCT
1993	ECCB	LOB-F0KH99	KH99SH	HEPATOPANC	PCTDRYWT	28.5		PCT
1993	ECCB	LOB-F0KI01	KI01SH	HEPATOPANC	PCTDRYWT	35.9		PCT
1993	ECCB	LOB-F0KI02	KI02SH	HEPATOPANC	PCTDRYWT	32.2		PCT
1993	ECCB	LOB-F0KI03	KI03SH	HEPATOPANC	PCTDRYWT	13.4		PCT
1993	ECCB	LOB-F0KI04	KI04SH	HEPATOPANC	PCTDRYWT	40.4		PCT
1993	ECCB	LOB-F0KI05	KI05SH	HEPATOPANC	PCTDRYWT	20.8		PCT
1993	ECCB	LOB-F0KI21	KI21SH	HEPATOPANC	PCTDRYWT	14.0		PCT
1993	ECCB	LOB-F0KI22	KI22SH	HEPATOPANC	PCTDRYWT	17.8		PCT
1993	ECCB	LOB-F0KI23	KI23SH	HEPATOPANC	PCTDRYWT	34.6		PCT
1993	ECCB	LOB-F0KI24	KI24SH	HEPATOPANC	PCTDRYWT	20.7		PCT
1994	DIF	FI101LOBST	OV42	HEPATOPANC	PCTDRYWT	29.9		PCT
1994	DIF	FI102LOBST	OV43	HEPATOPANC	PCTDRYWT	28.6		PCT
1994	DIF	FI103LOBST	OV44	HEPATOPANC	PCTDRYWT	24.3		PCT
1994	OS	FI401LOBST	OV45	HEPATOPANC	PCTDRYWT	27.6		PCT
1994	OS	FI402LOBST	OV46	HEPATOPANC	PCTDRYWT	30.3		PCT
1994	ECCB	FI501LOBST	OV47	HEPATOPANC	PCTDRYWT	29.0		PCT
1994	ECCB	FI502LOBST	OV48	HEPATOPANC	PCTDRYWT	30.6		PCT
1994	ECCB	FI503LOBST	OV49	HEPATOPANC	PCTDRYWT	25.0		PCT
1995	DIF	L95111000C1	L95111000HC1	HEPATOPANC	PCTDRYWT	37.4		PCT
1995	DIF	L95111000C2	L95111000HC2	HEPATOPANC	PCTDRYWT	38.2		PCT
1995	DIF	L95111000C3	L95111000HC3	HEPATOPANC	PCTDRYWT	31.0		PCT
1995	OS	L95114000C1	L95114000HC1	HEPATOPANC	PCTDRYWT	37.6		PCT
1995	OS	L95114000C2	L95114000HC2	HEPATOPANC	PCTDRYWT	28.9		PCT
1995	OS	L95114000C3	L95114000HC3	HEPATOPANC	PCTDRYWT	28.5		PCT
1995	ECCB	L95115000C1	L95115000HC1	HEPATOPANC	PCTDRYWT	29.3		PCT
1995	ECCB	L95115000C2	L95115000HC2	HEPATOPANC	PCTDRYWT	35.3		PCT
1995	ECCB	L95115000C3	L95115000HC3	HEPATOPANC	PCTDRYWT	35.8		PCT
1996	DIF	L96111000C1	L96111000HC1	HEPATOPANC	PCTDRYWT	29.7		PCT
1996	DIF	L96111000C2	L96111000HC2	HEPATOPANC	PCTDRYWT	35.4		PCT
1996	DIF	L96111000C3	L96111000HC3	HEPATOPANC	PCTDRYWT	38.6		PCT

Table C-9. Percent Dry Weight - Lobster Hepatopancreas 1992 – 2000. (Continued)

Year	Station	Sample	Bottle	Fraction	Parameter	Value	Val Qual	Unit Code
1996	OS	L96114000C1	L96114000HC1	HEPATOPANC	PCTDRYWT	35.2		PCT
1996	OS	L96114000C2	L96114000HC2	HEPATOPANC	PCTDRYWT	31.2		PCT
1996	OS	L96114000C3	L96114000HC3	HEPATOPANC	PCTDRYWT	34.3		PCT
1996	ECCB	L96115000C1	L96115000HC1	HEPATOPANC	PCTDRYWT	38.3		PCT
1996	ECCB	L96115000C2	L96115000HC2	HEPATOPANC	PCTDRYWT	43.4		PCT
1996	ECCB	L96115000C3	L96115000HC3	HEPATOPANC	PCTDRYWT	42.8		PCT
1997	DIF	L97111000C1	L97111000HC1	HEPATOPANC	PCTDRYWT	30.0		PCT
1997	DIF	L97111000C2	L97111000HC2	HEPATOPANC	PCTDRYWT	31.3		PCT
1997	DIF	L97111000C3	L97111000HC3	HEPATOPANC	PCTDRYWT	27.1		PCT
1997	OS	L97114000C1	L97114000HC1	HEPATOPANC	PCTDRYWT	41.3		PCT
1997	OS	L97114000C2	L97114000HC2	HEPATOPANC	PCTDRYWT	25.8		PCT
1997	OS	L97114000C3	L97114000HC3	HEPATOPANC	PCTDRYWT	25.8		PCT
1997	ECCB	L97115000C1	L97115000HC1	HEPATOPANC	PCTDRYWT	33.8		PCT
1997	ECCB	L97115000C2	L97115000HC2	HEPATOPANC	PCTDRYWT	33.9		PCT
1997	ECCB	L97115000C3	L97115000HC3	HEPATOPANC	PCTDRYWT	35.7		PCT
1998	DIF	VZST11	VZ38COMP	HEPATOPANC	PCTDRYWT	36.9		PCT
1998	DIF	VZST12	VZ39COMP	HEPATOPANC	PCTDRYWT	33.5		PCT
1998	DIF	VZST13	VZ40COMP	HEPATOPANC	PCTDRYWT	33.5		PCT
1998	OS	VZST41	VZ26COMP	HEPATOPANC	PCTDRYWT	29.0		PCT
1998	OS	VZST42	VZ27COMP	HEPATOPANC	PCTDRYWT	34.0		PCT
1998	OS	VZST43	VZ28COMP	HEPATOPANC	PCTDRYWT	34.2		PCT
1998	ECCB	VZST91	VZ32COMP	HEPATOPANC	PCTDRYWT	28.7		PCT
1998	ECCB	VZST92	VZ33COMP	HEPATOPANC	PCTDRYWT	29.3		PCT
1998	ECCB	VZST93	VZ34COMP	HEPATOPANC	PCTDRYWT	31.3		PCT
1999	DIF	FL9911C1	XJ51	HEPATOPANC	PCTDRYWT	45.8		PCT
1999	DIF	FL9911C2	XJ52	HEPATOPANC	PCTDRYWT	32.7		PCT
1999	DIF	FL9911C3	XJ53	HEPATOPANC	PCTDRYWT	36.2		PCT
1999	OS	FL9914C1	XJ54	HEPATOPANC	PCTDRYWT	29.1		PCT
1999	OS	FL9914C2	XJ55	HEPATOPANC	PCTDRYWT	31.2		PCT
1999	OS	FL9914C3	XJ56	HEPATOPANC	PCTDRYWT	28.6		PCT
1999	ECCB	FL9915C1	XJ57	HEPATOPANC	PCTDRYWT	26.0		PCT
1999	ECCB	FL9915C2	XJ58	HEPATOPANC	PCTDRYWT	26.0		PCT
1999	ECCB	FL9915C3	XJ59	HEPATOPANC	PCTDRYWT	24.1		PCT
2000	DIF	FL0011C1	YC81	HEPATOPANC	PCTDRYWT	30.8		PCT
2000	DIF	FL0011C2	YC82	HEPATOPANC	PCTDRYWT	35.7		PCT
2000	DIF	FL0011C3	YC83	HEPATOPANC	PCTDRYWT	30.7		PCT
2000	OS	FL0014C1	YC84	HEPATOPANC	PCTDRYWT	31.7		PCT
2000	OS	FL0014C2	YC85	HEPATOPANC	PCTDRYWT	31.2		PCT
2000	OS	FL0014C3	YC86	HEPATOPANC	PCTDRYWT	32.1		PCT
2000	ECCB	FL0015C1	YC78	HEPATOPANC	PCTDRYWT	27.4		PCT
2000	ECCB	FL0015C2	YC79	HEPATOPANC	PCTDRYWT	33.7		PCT
2000	ECCB	FL0015C3	YC80	HEPATOPANC	PCTDRYWT	23.8		PCT

Table C-10. Percent Dry Weight - Mussels 1991 – 2000.

Year	Station	Sample	Bottle	Fraction	Parameter	Value	Val Qual	Unit Code
1991	1M	M91143957	M91143957	SOFT_TISSUE	PCTDRYWT	13.6		PCT
1991	1M	M91143958	M91143958	SOFT_TISSUE	PCTDRYWT	14.1		PCT
1991	1M	M91143959	M91143959	SOFT_TISSUE	PCTDRYWT	10.8		PCT
1991	1M	M91143960	M91143960	SOFT_TISSUE	PCTDRYWT	12.0		PCT
1991	1M	M91143961	M91143961	SOFT_TISSUE	PCTDRYWT	12.9		PCT
1991	1M	M91143962	M91143962	SOFT_TISSUE	PCTDRYWT	12.4		PCT
1991	1M	M91143963	M91143963	SOFT_TISSUE	PCTDRYWT	13.8		PCT
1991	1M	M91143964	M91143964	SOFT_TISSUE	PCTDRYWT	14.0		PCT
1991	6	M91143739	M91143739	SOFT_TISSUE	PCTDRYWT	14.7		PCT
1991	6	M91143740	M91143740	SOFT_TISSUE	PCTDRYWT	8.0		PCT
1991	6	M91143741	M91143741	SOFT_TISSUE	PCTDRYWT	12.2		PCT
1991	6	M91143742	M91143742	SOFT_TISSUE	PCTDRYWT	11.1		PCT
1991	6	M91143743	M91143743	SOFT_TISSUE	PCTDRYWT	9.8		PCT
1991	7	M91143626	M91143626	SOFT_TISSUE	PCTDRYWT	13.5		PCT
1991	7	M91143627	M91143627	SOFT_TISSUE	PCTDRYWT	14.1		PCT
1991	7	M91143628	M91143628	SOFT_TISSUE	PCTDRYWT	12.7		PCT
1991	7	M91143629	M91143629	SOFT_TISSUE	PCTDRYWT	13.4		PCT
1991	7	M91143630	M91143630	SOFT_TISSUE	PCTDRYWT	13.1		PCT
1991	7	M91143631	M91143631	SOFT_TISSUE	PCTDRYWT	9.7		PCT
1991	7	M91143632	M91143632	SOFT_TISSUE	PCTDRYWT	8.4		PCT
1991	7	M91143633	M91143633	SOFT_TISSUE	PCTDRYWT	9.0		PCT
1991	7	M91143634	M91143634	SOFT_TISSUE	PCTDRYWT	8.1		PCT
1991	7	M91143635	M91143635	SOFT_TISSUE	PCTDRYWT	8.0		PCT
1992	1M	M92164479	M92164479	SOFT_TISSUE	PCTDRYWT	12.4		PCT
1992	1M	M92164480	M92164480	SOFT_TISSUE	PCTDRYWT	16.8		PCT
1992	1M	M92164481	M92164481	SOFT_TISSUE	PCTDRYWT	11.7		PCT
1992	1M	M92164482	M92164482	SOFT_TISSUE	PCTDRYWT	10.5		PCT
1992	1M	M92164483	M92164483	SOFT_TISSUE	PCTDRYWT	10.8		PCT
1992	1M	M92164484	M92164484	SOFT_TISSUE	PCTDRYWT	11.9		PCT
1992	1M	M92164485	M92164485	SOFT_TISSUE	PCTDRYWT	11.6		PCT
1992	1M	M92164486	M92164486	SOFT_TISSUE	PCTDRYWT	11.7		PCT
1992	4	M92164492	M92164492	SOFT_TISSUE	PCTDRYWT	14.5		PCT
1992	4	M92164493	M92164493	SOFT_TISSUE	PCTDRYWT	16.6		PCT
1992	4	M92164494	M92164494	SOFT_TISSUE	PCTDRYWT	15.3		PCT
1992	4	M92164495	M92164495	SOFT_TISSUE	PCTDRYWT	15.5		PCT
1992	4	M92164496	M92164496	SOFT_TISSUE	PCTDRYWT	15.2		PCT
1992	4	M92164497	M92164497	SOFT_TISSUE	PCTDRYWT	16.9		PCT
1992	4	M92164498	M92164498	SOFT_TISSUE	PCTDRYWT	16.1		PCT
1992	4	M92164499	M92164499	SOFT_TISSUE	PCTDRYWT	16.0		PCT
1992	6	M92164487	M92164487	SOFT_TISSUE	PCTDRYWT	5.7		PCT
1992	6	M92164488	M92164488	SOFT_TISSUE	PCTDRYWT	9.6		PCT
1992	6	M92164489	M92164489	SOFT_TISSUE	PCTDRYWT	11.0		PCT
1992	6	M92164490	M92164490	SOFT_TISSUE	PCTDRYWT	10.0		PCT

Table C-10. Percent Dry Weight - Mussels 1991 – 2000.

(Continued)

Year	Station	Sample	Bottle	Fraction	Parameter	Value	Val Qual	Unit Code
1992	6	M92164491	M92164491	SOFT_TISSUE	PCTDRYWT	10.6		PCT
1992	7	M92162679	M92162679	SOFT_TISSUE	PCTDRYWT	14.7		PCT
1992	7	M92162680	M92162680	SOFT_TISSUE	PCTDRYWT	12.8		PCT
1992	7	M92162681	M92162681	SOFT_TISSUE	PCTDRYWT	15.9		PCT
1992	7	M92162682	M92162682	SOFT_TISSUE	PCTDRYWT	13.5		PCT
1992	7	M92162683	M92162683	SOFT_TISSUE	PCTDRYWT	14.4		PCT
1993	1M	M93196384	M93196384	SOFT_TISSUE	PCTDRYWT	14.5		PCT
1993	1M	M93196385	M93196385	SOFT_TISSUE	PCTDRYWT	13.5		PCT
1993	1M	M93196386	M93196386	SOFT_TISSUE	PCTDRYWT	14.4		PCT
1993	1M	M93196387	M93196387	SOFT_TISSUE	PCTDRYWT	14.9		PCT
1993	1M	M93196388	M93196388	SOFT_TISSUE	PCTDRYWT	14.5		PCT
1993	4	M93196376	M93196376	SOFT_TISSUE	PCTDRYWT	19.1		PCT
1993	4	M93196377	M93196377	SOFT_TISSUE	PCTDRYWT	17.5		PCT
1993	4	M93196378	M93196378	SOFT_TISSUE	PCTDRYWT	18.4		PCT
1993	4	M93196379	M93196379	SOFT_TISSUE	PCTDRYWT	18.4		PCT
1993	4	M93196380	M93196380	SOFT_TISSUE	PCTDRYWT	18.3		PCT
1993	4	M93196381	M93196381	SOFT_TISSUE	PCTDRYWT	17.9		PCT
1993	4	M93196382	M93196382	SOFT_TISSUE	PCTDRYWT	18.9		PCT
1993	4	M93196383	M93196383	SOFT_TISSUE	PCTDRYWT	19.7		PCT
1993	6	M93196389	M93196389	SOFT_TISSUE	PCTDRYWT	10.3		PCT
1993	6	M93196390	M93196390	SOFT_TISSUE	PCTDRYWT	11.0		PCT
1993	6	M93196391	M93196391	SOFT_TISSUE	PCTDRYWT	10.5		PCT
1993	6	M93196392	M93196392	SOFT_TISSUE	PCTDRYWT	11.1		PCT
1993	7	M93188933	M93188933	SOFT_TISSUE	PCTDRYWT	10.6		PCT
1993	7	M93188934	M93188934	SOFT_TISSUE	PCTDRYWT	9.8		PCT
1993	7	M93188936	M93188936	SOFT_TISSUE	PCTDRYWT	11.8		PCT
1993	7	M93188937	M93188937	SOFT_TISSUE	PCTDRYWT	14.7		PCT
1993	7	M93188941	M93188941	SOFT_TISSUE	PCTDRYWT	12.5		PCT
1994	1M	M94233366	M94233366	SOFT_TISSUE	PCTDRYWT	13.3		PCT
1994	1M	M94233367	M94233367	SOFT_TISSUE	PCTDRYWT	12.8		PCT
1994	1M	M94233368	M94233368	SOFT_TISSUE	PCTDRYWT	13.1		PCT
1994	1M	M94233369	M94233369	SOFT_TISSUE	PCTDRYWT	12.7		PCT
1994	4	M94233376	M94233376	SOFT_TISSUE	PCTDRYWT	16.0		PCT
1994	4	M94233377	M94233377	SOFT_TISSUE	PCTDRYWT	16.5		PCT
1994	4	M94233378	M94233378	SOFT_TISSUE	PCTDRYWT	16.8		PCT
1994	4	M94233379	M94233379	SOFT_TISSUE	PCTDRYWT	17.0		PCT
1994	4	M94233381	M94233381	SOFT_TISSUE	PCTDRYWT	16.4		PCT
1994	4	M94233382	M94233382	SOFT_TISSUE	PCTDRYWT	16.3		PCT
1994	4	M94233383	M94233383	SOFT_TISSUE	PCTDRYWT	17.2		PCT

Table C-10. Percent Dry Weight - Mussels 1991 – 2000.
(Continued)

Year	Station	Sample	Bottle	Fraction	Parameter	Value	Val Qual	Unit Code
1994	4	M94233384	M94233384	SOFT_TISSUE	PCTDRYWT	17.6		PCT
1994	6	M94233371	M94233371	SOFT_TISSUE	PCTDRYWT	14.3		PCT
1994	6	M94233372	M94233372	SOFT_TISSUE	PCTDRYWT	11.7		PCT
1994	6	M94233373	M94233373	SOFT_TISSUE	PCTDRYWT	14.8		PCT
1994	7	M94225475	M94225475	SOFT_TISSUE	PCTDRYWT	13.5		PCT
1994	7	M94225476	M94225476	SOFT_TISSUE	PCTDRYWT	13.1		PCT
1994	7	M94225477	M94225477	SOFT_TISSUE	PCTDRYWT	13.7		PCT
1994	7	M94225478	M94225478	SOFT_TISSUE	PCTDRYWT	14.8		PCT
1995	1M	M9511D1H7TC1	M9511D1H7TC1	SOFT_TISSUE	PCTDRYWT	11.6		PCT
1995	1M	M9511D1H7TC2	M9511D1H7TC2	SOFT_TISSUE	PCTDRYWT	12.4		PCT
1995	1M	M9511D1H7TC3	M9511D1H7TC3	SOFT_TISSUE	PCTDRYWT	13.6		PCT
1995	1M	M9511D1H7TC4	M9511D1H7TC4	SOFT_TISSUE	PCTDRYWT	11.2		PCT
1995	1M	M9511D1H7TC5	M9511D1H7TC5	SOFT_TISSUE	PCTDRYWT	10.7		PCT
1995	1M	M9511D1H8TC1	M9511D1H8TC1	SOFT_TISSUE	PCTDRYWT	0.0	e	PCT
1995	1M	M9511D1H8TC2	M9511D1H8TC2	SOFT_TISSUE	PCTDRYWT	0.0	e	PCT
1995	1M	M9511D1H8TC3	M9511D1H8TC3	SOFT_TISSUE	PCTDRYWT	0.0	e	PCT
1995	1M	M9511D1H8TC4	M9511D1H8TC4	SOFT_TISSUE	PCTDRYWT	0.0	e	PCT
1995	1M	M9511D1H8TC5	M9511D1H8TC5	SOFT_TISSUE	PCTDRYWT	0.0	e	PCT
1995	6	M9511D6H7TC1	M9511D6H7TC1	SOFT_TISSUE	PCTDRYWT	12.3		PCT
1995	6	M9511D6H7TC2	M9511D6H7TC2	SOFT_TISSUE	PCTDRYWT	14.7		PCT
1995	6	M9511D6H7TC3	M9511D6H7TC3	SOFT_TISSUE	PCTDRYWT	13.7		PCT
1995	6	M9511D6H7TC4	M9511D6H7TC4	SOFT_TISSUE	PCTDRYWT	12.9		PCT
1995	6	M9511D6H7TC5	M9511D6H7TC5	SOFT_TISSUE	PCTDRYWT	11.9		PCT
1995	6	M9511D6H8TC1	M9511D6H8TC1	SOFT_TISSUE	PCTDRYWT	0.0	e	PCT
1995	6	M9511D6H8TC2	M9511D6H8TC2	SOFT_TISSUE	PCTDRYWT	0.0	e	PCT
1995	6	M9511D6H8TC3	M9511D6H8TC3	SOFT_TISSUE	PCTDRYWT	0.0	e	PCT
1995	6	M9511D6H8TC4	M9511D6H8TC4	SOFT_TISSUE	PCTDRYWT	0.0	e	PCT
1995	6	M9511D6H8TC5	M9511D6H8TC5	SOFT_TISSUE	PCTDRYWT	0.0	e	PCT
1995	7	M9511H7TC1	M9511H7TC1	SOFT_TISSUE	PCTDRYWT	12.4		PCT
1995	7	M9511H7TC2	M9511H7TC2	SOFT_TISSUE	PCTDRYWT	10.8		PCT
1995	7	M9511H7TC3	M9511H7TC3	SOFT_TISSUE	PCTDRYWT	11.3		PCT
1995	7	M9511H7TC4	M9511H7TC4	SOFT_TISSUE	PCTDRYWT	11.6		PCT
1995	7	M9511H7TC5	M9511H7TC5	SOFT_TISSUE	PCTDRYWT	11.8		PCT
1995	8	M9511H8TC1	M9511H8TC1	SOFT_TISSUE	PCTDRYWT	0.0	e	PCT
1995	8	M9511H8TC2	M9511H8TC2	SOFT_TISSUE	PCTDRYWT	0.0	e	PCT
1995	8	M9511H8TC3	M9511H8TC3	SOFT_TISSUE	PCTDRYWT	0.0	e	PCT
1995	8	M9511H8TC4	M9511H8TC4	SOFT_TISSUE	PCTDRYWT	0.0	e	PCT
1995	8	M9511H8TC5	M9511H8TC5	SOFT_TISSUE	PCTDRYWT	0.0	e	PCT
1996	1M	M9611D1H7TC1	M9611D1H7TC1	SOFT_TISSUE	PCTDRYWT	9.7		PCT
1996	1M	M9611D1H7TC2	M9611D1H7TC2	SOFT_TISSUE	PCTDRYWT	11.4		PCT

Table C-10. Percent Dry Weight - Mussels 1991 – 2000.
(Continued)

Year	Station	Sample	Bottle	Fraction	Parameter	Value	Val Qual	Unit Code
1996	1M	M9611D1H7TC3	M9611D1H7TC3	SOFT_TISSUE	PCTDRYWT	13.2		PCT
1996	1M	M9611D1H7TC4	M9611D1H7TC4	SOFT_TISSUE	PCTDRYWT	13.3		PCT
1996	1M	M9611D1H7TC5	M9611D1H7TC5	SOFT_TISSUE	PCTDRYWT	12.0		PCT
1996	1M	M9611D1H8TC1	M9611D1H8TC1	SOFT_TISSUE	PCTDRYWT	14.2	j	PCT
1996	1M	M9611D1H8TC2	M9611D1H8TC2	SOFT_TISSUE	PCTDRYWT	14.2	j	PCT
1996	1M	M9611D1H8TC3	M9611D1H8TC3	SOFT_TISSUE	PCTDRYWT	14.2	j	PCT
1996	1M	M9611D1H8TC4	M9611D1H8TC4	SOFT_TISSUE	PCTDRYWT	14.2	j	PCT
1996	1M	M9611D1H8TC5	M9611D1H8TC5	SOFT_TISSUE	PCTDRYWT	14.2	j	PCT
1996	6	M9611D6H7TC1	M9611D6H7TC1	SOFT_TISSUE	PCTDRYWT	9.6		PCT
1996	6	M9611D6H7TC2	M9611D6H7TC2	SOFT_TISSUE	PCTDRYWT	16.9		PCT
1996	6	M9611D6H7TC3	M9611D6H7TC3	SOFT_TISSUE	PCTDRYWT	14.7		PCT
1996	6	M9611D6H7TC4	M9611D6H7TC4	SOFT_TISSUE	PCTDRYWT	16.4		PCT
1996	6	M9611D6H7TC5	M9611D6H7TC5	SOFT_TISSUE	PCTDRYWT	13.2		PCT
1996	6	M9611D6H8TC1	M9611D6H8TC1	SOFT_TISSUE	PCTDRYWT	16.3	j	PCT
1996	6	M9611D6H8TC2	M9611D6H8TC2	SOFT_TISSUE	PCTDRYWT	16.3	j	PCT
1996	6	M9611D6H8TC3	M9611D6H8TC3	SOFT_TISSUE	PCTDRYWT	16.3	j	PCT
1996	7	M9611H7TC1	M9611H7TC1	SOFT_TISSUE	PCTDRYWT	8.8		PCT
1996	7	M9611H7TC2	M9611H7TC2	SOFT_TISSUE	PCTDRYWT	14.1		PCT
1996	7	M9611H7TC3	M9611H7TC3	SOFT_TISSUE	PCTDRYWT	14.6		PCT
1996	8	M9611H8TC1	M9611H8TC1	SOFT_TISSUE	PCTDRYWT	17.8	j	PCT
1996	8	M9611H8TC2	M9611H8TC2	SOFT_TISSUE	PCTDRYWT	17.8	j	PCT
1996	8	M9611H8TC3	M9611H8TC3	SOFT_TISSUE	PCTDRYWT	17.8	j	PCT
1996	8	M9611H8TC4	M9611H8TC4	SOFT_TISSUE	PCTDRYWT	17.8	j	PCT
1996	8	M9611H8TC5	M9611H8TC5	SOFT_TISSUE	PCTDRYWT	17.8	j	PCT
1996	M4	M9611D4H7TC1	M9611D4H7TC1	SOFT_TISSUE	PCTDRYWT	13.9		PCT
1996	M4	M9611D4H7TC2	M9611D4H7TC2	SOFT_TISSUE	PCTDRYWT	17.4		PCT
1996	M4	M9611D4H7TC3	M9611D4H7TC3	SOFT_TISSUE	PCTDRYWT	16.8		PCT
1996	M4	M9611D4H7TC4	M9611D4H7TC4	SOFT_TISSUE	PCTDRYWT	16.5		PCT
1996	M4	M9611D4H7TC5	M9611D4H7TC5	SOFT_TISSUE	PCTDRYWT	17.7		PCT
1996	M4	M9611D4H8TC1	M9611D4H8TC1	SOFT_TISSUE	PCTDRYWT	19.1	j	PCT
1996	M4	M9611D4H8TC2	M9611D4H8TC2	SOFT_TISSUE	PCTDRYWT	19.1	j	PCT
1996	M4	M9611D4H8TC3	M9611D4H8TC3	SOFT_TISSUE	PCTDRYWT	19.1	j	PCT
1996	M4	M9611D4H8TC4	M9611D4H8TC4	SOFT_TISSUE	PCTDRYWT	19.1	j	PCT
1996	M4	M9611D4H8TC5	M9611D4H8TC5	SOFT_TISSUE	PCTDRYWT	19.1	j	PCT
1997	1M	M9711D1H7TC1	M9711D1H7TC1	SOFT_TISSUE	PCTDRYWT	13.0		PCT
1997	1M	M9711D1H7TC2	M9711D1H7TC2	SOFT_TISSUE	PCTDRYWT	11.9		PCT
1997	1M	M9711D1H7TC3	M9711D1H7TC3	SOFT_TISSUE	PCTDRYWT	11.1		PCT
1997	1M	M9711D1H7TC4	M9711D1H7TC4	SOFT_TISSUE	PCTDRYWT	11.9		PCT
1997	1M	M9711D1H7TC5	M9711D1H7TC5	SOFT_TISSUE	PCTDRYWT	13.0		PCT
1997	1M	M9711D1H8TC1	M9711D1H8TC1	SOFT_TISSUE	PCTDRYWT	16.6	j	PCT
1997	1M	M9711D1H8TC2	M9711D1H8TC2	SOFT_TISSUE	PCTDRYWT	16.6	j	PCT
1997	1M	M9711D1H8TC3	M9711D1H8TC3	SOFT_TISSUE	PCTDRYWT	16.6	j	PCT

Table C-10. Percent Dry Weight - Mussels 1991 – 2000.
(Continued)

Year	Station	Sample	Bottle	Fraction	Parameter	Value	Val Qual	Unit Code
1997	1M	M9711D1H8TC4	M9711D1H8TC4	SOFT_TISSUE	PCTDRYWT	16.6	j	PCT
1997	1M	M9711D1H8TC5	M9711D1H8TC5	SOFT_TISSUE	PCTDRYWT	16.6	j	PCT
1997	6	M9711D6H7TC1	M9711D6H7TC1	SOFT_TISSUE	PCTDRYWT	16.1		PCT
1997	6	M9711D6H7TC2	M9711D6H7TC2	SOFT_TISSUE	PCTDRYWT	13.6		PCT
1997	6	M9711D6H7TC3	M9711D6H7TC3	SOFT_TISSUE	PCTDRYWT	12.4		PCT
1997	6	M9711D6H7TC4	M9711D6H7TC4	SOFT_TISSUE	PCTDRYWT	13.2		PCT
1997	6	M9711D6H7TC5	M9711D6H7TC5	SOFT_TISSUE	PCTDRYWT	12.9		PCT
1997	6	M9711D6H8TC1	M9711D6H8TC1	SOFT_TISSUE	PCTDRYWT	17.4	j	PCT
1997	6	M9711D6H8TC2	M9711D6H8TC2	SOFT_TISSUE	PCTDRYWT	17.4	j	PCT
1997	6	M9711D6H8TC3	M9711D6H8TC3	SOFT_TISSUE	PCTDRYWT	17.4	j	PCT
1997	6	M9711D6H8TC4	M9711D6H8TC4	SOFT_TISSUE	PCTDRYWT	17.4	j	PCT
1997	6	M9711D6H8TC5	M9711D6H8TC5	SOFT_TISSUE	PCTDRYWT	17.4	j	PCT
1997	7	M9711H7TC1	M9711H7TC1	SOFT_TISSUE	PCTDRYWT	16.0		PCT
1997	7	M9711H7TC2	M9711H7TC2	SOFT_TISSUE	PCTDRYWT	16.9		PCT
1997	7	M9711H7TC3	M9711H7TC3	SOFT_TISSUE	PCTDRYWT	17.9		PCT
1997	7	M9711H7TC4	M9711H7TC4	SOFT_TISSUE	PCTDRYWT	17.1		PCT
1997	7	M9711H7TC5	M9711H7TC5	SOFT_TISSUE	PCTDRYWT	17.7		PCT
1997	8	M9711H8TC1	M9711H8TC1	SOFT_TISSUE	PCTDRYWT	22.1	j	PCT
1997	8	M9711H8TC2	M9711H8TC2	SOFT_TISSUE	PCTDRYWT	22.1	j	PCT
1997	8	M9711H8TC3	M9711H8TC3	SOFT_TISSUE	PCTDRYWT	22.1	j	PCT
1997	8	M9711H8TC4	M9711H8TC4	SOFT_TISSUE	PCTDRYWT	22.1	j	PCT
1997	8	M9711H8TC5	M9711H8TC5	SOFT_TISSUE	PCTDRYWT	22.1	j	PCT
1997	M4	M9711D4H7TC1	M9711D4H7TC1	SOFT_TISSUE	PCTDRYWT	15.5		PCT
1997	M4	M9711D4H7TC2	M9711D4H7TC2	SOFT_TISSUE	PCTDRYWT	15.7		PCT
1997	M4	M9711D4H7TC3	M9711D4H7TC3	SOFT_TISSUE	PCTDRYWT	15.7		PCT
1997	M4	M9711D4H7TC4	M9711D4H7TC4	SOFT_TISSUE	PCTDRYWT	15.0		PCT
1997	M4	M9711D4H7TC5	M9711D4H7TC5	SOFT_TISSUE	PCTDRYWT	16.8		PCT
1997	M4	M9711D4H8TC1	M9711D4H8TC1	SOFT_TISSUE	PCTDRYWT	19.6	j	PCT
1997	M4	M9711D4H8TC2	M9711D4H8TC2	SOFT_TISSUE	PCTDRYWT	19.6	j	PCT
1997	M4	M9711D4H8TC3	M9711D4H8TC3	SOFT_TISSUE	PCTDRYWT	19.6	j	PCT
1997	M4	M9711D4H8TC4	M9711D4H8TC4	SOFT_TISSUE	PCTDRYWT	19.6	j	PCT
1997	M4	M9711D4H8TC5	M9711D4H8TC5	SOFT_TISSUE	PCTDRYWT	19.6	j	PCT
1998	7	FM9812GVX01	VX01	SOFT_TISSUE	PCTDRYWT	12.3		PCT
1998	7	FM9812GVX02	VX02	SOFT_TISSUE	PCTDRYWT	10.6		PCT
1998	7	FM9812GVX03	VX03	SOFT_TISSUE	PCTDRYWT	11.1		PCT
1998	7	FM9812GVX04	VX04	SOFT_TISSUE	PCTDRYWT	10.4		PCT
1998	7	FM9812GVX05	VX05	SOFT_TISSUE	PCTDRYWT	11.3		PCT
1998	8	FM9811SVW64	VW64	SOFT_TISSUE	PCTDRYWT	18.4		PCT
1998	8	FM9811SVW65	VW65	SOFT_TISSUE	PCTDRYWT	14.3		PCT
1998	8	FM9811SVW66	VW66	SOFT_TISSUE	PCTDRYWT	15.9		PCT
1998	8	FM9811SVW67	VW67	SOFT_TISSUE	PCTDRYWT	15.5		PCT
1998	8	FM9811SVW68	VW68	SOFT_TISSUE	PCTDRYWT	14.2		PCT

Table C-10. Percent Dry Weight - Mussels 1991 – 2000.
(Continued)

Year	Station	Sample	Bottle	Fraction	Parameter	Value	Val Qual	Unit Code
1998	8	FM9811SVX06	VX06	SOFT_TISSUE	PCTDRYWT	13.3		PCT
1998	1M	FM9821GVX17	VX17	SOFT_TISSUE	PCTDRYWT	14.9		PCT
1998	1M	FM9821GVX18	VX18	SOFT_TISSUE	PCTDRYWT	13.9		PCT
1998	1M	FM9821GVX19	VX19	SOFT_TISSUE	PCTDRYWT	15.2		PCT
1998	1M	FM9821GVX20	VX20	SOFT_TISSUE	PCTDRYWT	14.1		PCT
1998	1M	FM9821GVX21	VX21	SOFT_TISSUE	PCTDRYWT	15.7		PCT
1998	1M	FM9821SVW79	VW79	SOFT_TISSUE	PCTDRYWT	18.0		PCT
1998	1M	FM9821SVW80	VW80	SOFT_TISSUE	PCTDRYWT	16.7		PCT
1998	1M	FM9821SVW81	VW81	SOFT_TISSUE	PCTDRYWT	14.6		PCT
1998	1M	FM9821SVW82	VW82	SOFT_TISSUE	PCTDRYWT	15.8		PCT
1998	1M	FM9821SVW83	VW83	SOFT_TISSUE	PCTDRYWT	17.3		PCT
1998	M4	FM9822GVX22	VX22	SOFT_TISSUE	PCTDRYWT	14.3		PCT
1998	M4	FM9822GVX23	VX23	SOFT_TISSUE	PCTDRYWT	14.5		PCT
1998	M4	FM9822GVX24	VX24	SOFT_TISSUE	PCTDRYWT	15.2		PCT
1998	M4	FM9822GVX25	VX25	SOFT_TISSUE	PCTDRYWT	16.2		PCT
1998	M4	FM9822GVX26	VX26	SOFT_TISSUE	PCTDRYWT	18.2		PCT
1998	M4	FM9822GVX27	VX27	SOFT_TISSUE	PCTDRYWT	16.8		PCT
1998	M4	FM9822GVX28	VX28	SOFT_TISSUE	PCTDRYWT	14.9		PCT
1998	M4	FM9822GVX29	VX29	SOFT_TISSUE	PCTDRYWT	16.1		PCT
1998	M4	FM9822SVW84	VW84	SOFT_TISSUE	PCTDRYWT	14.8		PCT
1998	M4	FM9822SVW85	VW85	SOFT_TISSUE	PCTDRYWT	17.1		PCT
1998	M4	FM9822SVW86	VW86	SOFT_TISSUE	PCTDRYWT	14.8		PCT
1998	M4	FM9822SVW87	VW87	SOFT_TISSUE	PCTDRYWT	16.6		PCT
1998	M4	FM9822SVW88	VW88	SOFT_TISSUE	PCTDRYWT	20.0		PCT
1998	M4	FM9822SVW89	VW89	SOFT_TISSUE	PCTDRYWT	16.9		PCT
1998	M4	FM9822SVW90	VW90	SOFT_TISSUE	PCTDRYWT	17.1		PCT
1998	M4	FM9822SVW91	VW91	SOFT_TISSUE	PCTDRYWT	18.0		PCT
1998	6	FM9832GVX12	VX12	SOFT_TISSUE	PCTDRYWT	11.7		PCT
1998	6	FM9832GVX13	VX13	SOFT_TISSUE	PCTDRYWT	10.5		PCT
1998	6	FM9832GVX14	VX14	SOFT_TISSUE	PCTDRYWT	10.0		PCT
1998	6	FM9832GVX15	VX15	SOFT_TISSUE	PCTDRYWT	14.1		PCT
1998	6	FM9832GVX16	VX16	SOFT_TISSUE	PCTDRYWT	13.5		PCT
1998	6	FM9832SVW74	VW74	SOFT_TISSUE	PCTDRYWT	13.2		PCT
1998	6	FM9832SVW75	VW75	SOFT_TISSUE	PCTDRYWT	15.7		PCT
1998	6	FM9832SVW76	VW76	SOFT_TISSUE	PCTDRYWT	12.1		PCT
1998	6	FM9832SVW77	VW77	SOFT_TISSUE	PCTDRYWT	16.1		PCT
1998	6	FM9832SVW78	VW78	SOFT_TISSUE	PCTDRYWT	14.1		PCT
1998	9	FM9833GVX30	VX30	SOFT_TISSUE	PCTDRYWT	17.0		PCT
1998	9	FM9833GVX31	VX31	SOFT_TISSUE	PCTDRYWT	17.7		PCT
1998	9	FM9833GVX32	VX32	SOFT_TISSUE	PCTDRYWT	17.5		PCT
1998	9	FM9833GVX33	VX33	SOFT_TISSUE	PCTDRYWT	18.1		PCT
1998	9	FM9833GVX34	VX34	SOFT_TISSUE	PCTDRYWT	18.1		PCT

Table C-10. Percent Dry Weight - Mussels 1991 – 2000.
(Continued)

Year	Station	Sample	Bottle	Fraction	Parameter	Value	Val Qual	Unit Code
1998	9	FM9833GVX35	VX35	SOFT_TISSUE	PCTDRYWT	19.4		PCT
1998	9	FM9833GVX36	VX36	SOFT_TISSUE	PCTDRYWT	19.9		PCT
1998	9	FM9833GVX37	VX37	SOFT_TISSUE	PCTDRYWT	19.0		PCT
1998	9	FM9833SVW92	VW92	SOFT_TISSUE	PCTDRYWT	18.8		PCT
1998	9	FM9833SVW93	VW93	SOFT_TISSUE	PCTDRYWT	18.2		PCT
1998	9	FM9833SVW94	VW94	SOFT_TISSUE	PCTDRYWT	21.4		PCT
1998	9	FM9833SVW95	VW95	SOFT_TISSUE	PCTDRYWT	18.0		PCT
1998	9	FM9833SVW96	VW96	SOFT_TISSUE	PCTDRYWT	25.6		PCT
1998	9	FM9833SVW97	VW97	SOFT_TISSUE	PCTDRYWT	17.4		PCT
1998	9	FM9833SVW98	VW98	SOFT_TISSUE	PCTDRYWT	22.0		PCT
1998	9	FM9833SVW99	VW99	SOFT_TISSUE	PCTDRYWT	21.8		PCT
1998	M7	FM9831SVW69	VW69	SOFT_TISSUE	PCTDRYWT	15.9		PCT
1998	M7	FM9831SVW70	VW70	SOFT_TISSUE	PCTDRYWT	16.8		PCT
1998	M7	FM9831SVW71	VW71	SOFT_TISSUE	PCTDRYWT	15.4		PCT
1998	M7	FM9831SVW72	VW72	SOFT_TISSUE	PCTDRYWT	15.4		PCT
1998	M7	FM9831SVW73	VW73	SOFT_TISSUE	PCTDRYWT	15.8		PCT
1998	M7	FM9831SVX07	VX07	SOFT_TISSUE	PCTDRYWT	15.6		PCT
1998	M7	FM9831SVX08	VX08	SOFT_TISSUE	PCTDRYWT	15.1		PCT
1998	M7	FM9831SVX09	VX09	SOFT_TISSUE	PCTDRYWT	15.9		PCT
1998	M7	FM9831SVX10	VX10	SOFT_TISSUE	PCTDRYWT	15.6		PCT
1998	M7	FM9831SVX11	VX11	SOFT_TISSUE	PCTDRYWT	14.6		PCT
1999	7	FM9912GXD74	XD74	SOFT_TISSUE	PCTDRYWT	14.0		PCT
1999	7	FM9912GXD75	XD75	SOFT_TISSUE	PCTDRYWT	12.6		PCT
1999	7	FM9912GXD76	XD76	SOFT_TISSUE	PCTDRYWT	12.8		PCT
1999	7	FM9912GXD77	XD77	SOFT_TISSUE	PCTDRYWT	12.5		PCT
1999	7	FM9912GXD78	XD78	SOFT_TISSUE	PCTDRYWT	12.4		PCT
1999	8	FM9911SXE01	XE01	SOFT_TISSUE	PCTDRYWT	11.4		PCT
1999	8	FM9911SXE02	XE02	SOFT_TISSUE	PCTDRYWT	23.8		PCT
1999	8	FM9911SXE03	XE03	SOFT_TISSUE	PCTDRYWT	20.8		PCT
1999	8	FM9911SXE04	XE04	SOFT_TISSUE	PCTDRYWT	22.8		PCT
1999	8	FM9911SXE05	XE05	SOFT_TISSUE	PCTDRYWT	20.5		PCT
1999	4	FM9932GXD84	XD84	SOFT_TISSUE	PCTDRYWT	16.8		PCT
1999	4	FM9932GXD85	XD85	SOFT_TISSUE	PCTDRYWT	18.5		PCT
1999	4	FM9932GXD86	XD86	SOFT_TISSUE	PCTDRYWT	18.2		PCT
1999	4	FM9932GXD87	XD87	SOFT_TISSUE	PCTDRYWT	18.5		PCT
1999	4	FM9932GXD88	XD88	SOFT_TISSUE	PCTDRYWT	19.0		PCT
1999	4	FM9932GXD89	XD89	SOFT_TISSUE	PCTDRYWT	18.7		PCT
1999	4	FM9932GXD90	XD90	SOFT_TISSUE	PCTDRYWT	19.9		PCT
1999	4	FM9932GXD91	XD91	SOFT_TISSUE	PCTDRYWT	18.9		PCT
1999	4	FM9932SXE11	XE11	SOFT_TISSUE	PCTDRYWT	19.8		PCT
1999	4	FM9932SXE12	XE12	SOFT_TISSUE	PCTDRYWT	21.6		PCT
1999	4	FM9932SXE13	XE13	SOFT_TISSUE	PCTDRYWT	20.6		PCT

Table C-10. Percent Dry Weight - Mussels 1991 – 2000.
(Continued)

Year	Station	Sample	Bottle	Fraction	Parameter	Value	Val Qual	Unit Code
1999	4	FM9932SXE14	XE14	SOFT_TISSUE	PCTDRYWT	20.8		PCT
1999	4	FM9932SXE15	XE15	SOFT_TISSUE	PCTDRYWT	20.7		PCT
1999	4	FM9932SXE16	XE16	SOFT_TISSUE	PCTDRYWT	19.4		PCT
1999	4	FM9932SXE17	XE17	SOFT_TISSUE	PCTDRYWT	21.6		PCT
1999	4	FM9932SXE18	XE18	SOFT_TISSUE	PCTDRYWT	20.8		PCT
1999	6	FM9931GXD79	XD79	SOFT_TISSUE	PCTDRYWT	9.4		PCT
1999	6	FM9931GXD80	XD80	SOFT_TISSUE	PCTDRYWT	10.7		PCT
1999	6	FM9931GXD81	XD81	SOFT_TISSUE	PCTDRYWT	11.9		PCT
1999	6	FM9931GXD82	XD82	SOFT_TISSUE	PCTDRYWT	13.6		PCT
1999	6	FM9931GXD83	XD83	SOFT_TISSUE	PCTDRYWT	12.9		PCT
1999	6	FM9931SXE06	XE06	SOFT_TISSUE	PCTDRYWT	18.8		PCT
1999	6	FM9931SXE07	XE07	SOFT_TISSUE	PCTDRYWT	18.1		PCT
1999	6	FM9931SXE08	XE08	SOFT_TISSUE	PCTDRYWT	20.0		PCT
1999	6	FM9931SXE09	XE09	SOFT_TISSUE	PCTDRYWT	19.6		PCT
1999	6	FM9931SXE10	XE10	SOFT_TISSUE	PCTDRYWT	19.2		PCT
1999	9	FM9933GXD92	XD92	SOFT_TISSUE	PCTDRYWT	21.6		PCT
1999	9	FM9933GXD93	XD93	SOFT_TISSUE	PCTDRYWT	18.8		PCT
1999	9	FM9933GXD94	XD94	SOFT_TISSUE	PCTDRYWT	20.3		PCT
1999	9	FM9933GXD95	XD95	SOFT_TISSUE	PCTDRYWT	21.7		PCT
1999	9	FM9933GXD96	XD96	SOFT_TISSUE	PCTDRYWT	17.1		PCT
1999	9	FM9933GXD97	XD97	SOFT_TISSUE	PCTDRYWT	20.7		PCT
1999	9	FM9933GXD98	XD98	SOFT_TISSUE	PCTDRYWT	20.6		PCT
1999	9	FM9933GXD99	XD99	SOFT_TISSUE	PCTDRYWT	20.0		PCT
1999	9	FM9933SXE19	XE19	SOFT_TISSUE	PCTDRYWT	23.1		PCT
1999	9	FM9933SXE20	XE20	SOFT_TISSUE	PCTDRYWT	23.2		PCT
1999	9	FM9933SXE21	XE21	SOFT_TISSUE	PCTDRYWT	21.3		PCT
1999	9	FM9933SXE22	XE22	SOFT_TISSUE	PCTDRYWT	23.9		PCT
1999	9	FM9933SXE23	XE23	SOFT_TISSUE	PCTDRYWT	22.1		PCT
1999	9	FM9933SXE24	XE24	SOFT_TISSUE	PCTDRYWT	23.2		PCT
1999	9	FM9933SXE25	XE25	SOFT_TISSUE	PCTDRYWT	23.6		PCT
1999	9	FM9933SXE26	XE26	SOFT_TISSUE	PCTDRYWT	25.4		PCT
2000	RP	FM001RPYE44	YE44	SOFT_TISSUE	PCTDRYWT	9.6		PCT
2000	RP	FM001RPYE45	YE45	SOFT_TISSUE	PCTDRYWT	10.3		PCT
2000	RP	FM001RPYE46	YE46	SOFT_TISSUE	PCTDRYWT	10.9		PCT
2000	RP	FM001RPYE47	YE47	SOFT_TISSUE	PCTDRYWT	9.3		PCT
2000	RP	FM001RPYE48	YE48	SOFT_TISSUE	PCTDRYWT	10.6		PCT
2000	RP	FM001RPYE67	YE67	SOFT_TISSUE	PCTDRYWT	9.0		PCT
2000	RP	FM001RPYE68	YE68	SOFT_TISSUE	PCTDRYWT	8.8		PCT

Table C-10. Percent Dry Weight - Mussels 1991 – 2000.
(Continued)

Year	Station	Sample	Bottle	Fraction	Parameter	Value	Val Qual	Unit Code
2000	RP	FM001RPYE69	YE69	SOFT_TISSUE	PCTDRYWT	8.6		PCT
2000	RP	FM001RPYE70	YE70	SOFT_TISSUE	PCTDRYWT	8.5		PCT
2000	RP	FM001RPYE71	YE71	SOFT_TISSUE	PCTDRYWT	8.3		PCT
2000	1M	FM0031YE54	YE54	SOFT_TISSUE	PCTDRYWT	14.56177		PCT
2000	1M	FM0031YE55	YE55	SOFT_TISSUE	PCTDRYWT	10.90343		PCT
2000	1M	FM0031YE56	YE56	SOFT_TISSUE	PCTDRYWT	8.99731		PCT
2000	1M	FM0031YE57	YE57	SOFT_TISSUE	PCTDRYWT	11.1651		PCT
2000	1M	FM0031YE58	YE58	SOFT_TISSUE	PCTDRYWT	12.11707		PCT
2000	1M	FM0031YE77	YE77	SOFT_TISSUE	PCTDRYWT	13.73		PCT
2000	1M	FM0031YE78	YE78	SOFT_TISSUE	PCTDRYWT	13.62		PCT
2000	1M	FM0031YE79	YE79	SOFT_TISSUE	PCTDRYWT	12.5		PCT
2000	1M	FM0031YE80	YE80	SOFT_TISSUE	PCTDRYWT	12.9		PCT
2000	1M	FM0031YE81	YE81	SOFT_TISSUE	PCTDRYWT	13.0		PCT
2000	4	FM0034YE59	YE59	SOFT_TISSUE	PCTDRYWT	12.4		PCT
2000	4	FM0034YE60	YE60	SOFT_TISSUE	PCTDRYWT	15.1		PCT
2000	4	FM0034YE61	YE61	SOFT_TISSUE	PCTDRYWT	13.1		PCT
2000	4	FM0034YE62	YE62	SOFT_TISSUE	PCTDRYWT	12.7		PCT
2000	4	FM0034YE63	YE63	SOFT_TISSUE	PCTDRYWT	12.2		PCT
2000	4	FM0034YE64	YE64	SOFT_TISSUE	PCTDRYWT	11.2		PCT
2000	4	FM0034YE65	YE65	SOFT_TISSUE	PCTDRYWT	11.4		PCT
2000	4	FM0034YE66	YE66	SOFT_TISSUE	PCTDRYWT	13.3		PCT
2000	4	FM0034YE82	YE82	SOFT_TISSUE	PCTDRYWT	11.8		PCT
2000	4	FM0034YE83	YE83	SOFT_TISSUE	PCTDRYWT	13.5		PCT
2000	4	FM0034YE84	YE84	SOFT_TISSUE	PCTDRYWT	14.2		PCT
2000	4	FM0034YE85	YE85	SOFT_TISSUE	PCTDRYWT	14.4		PCT
2000	4	FM0034YE86	YE86	SOFT_TISSUE	PCTDRYWT	14.5		PCT
2000	4	FM0034YE87	YE87	SOFT_TISSUE	PCTDRYWT	14.4		PCT
2000	4	FM0034YE88	YE88	SOFT_TISSUE	PCTDRYWT	14.6		PCT
2000	4	FM0034YE89	YE89	SOFT_TISSUE	PCTDRYWT	14.0		PCT
2000	6	FM0036YE49	YE49	SOFT_TISSUE	PCTDRYWT	10.1		PCT
2000	6	FM0036YE50	YE50	SOFT_TISSUE	PCTDRYWT	9.3		PCT
2000	6	FM0036YE51	YE51	SOFT_TISSUE	PCTDRYWT	10.3		PCT
2000	6	FM0036YE52	YE52	SOFT_TISSUE	PCTDRYWT	9.4		PCT
2000	6	FM0036YE53	YE53	SOFT_TISSUE	PCTDRYWT	9.3		PCT
2000	6	FM0036YE72	YE72	SOFT_TISSUE	PCTDRYWT	10.2		PCT
2000	6	FM0036YE73	YE73	SOFT_TISSUE	PCTDRYWT	10.5		PCT
2000	6	FM0036YE74	YE74	SOFT_TISSUE	PCTDRYWT	10.5		PCT
2000	6	FM0036YE75	YE75	SOFT_TISSUE	PCTDRYWT	10.3		PCT
2000	6	FM0036YE76	YE76	SOFT_TISSUE	PCTDRYWT	10.1		PCT

Table C-11. Flounder Fillet Chemistry Data, 1991 – 2000.

			Means			SE			N		
Parameter	**Tissue**	**Year**	**DIF(1)**	**OS(4)**	**ECCB(5)**	**DIF(1)**	**OS(4)**	**ECCB(5)**	**DIF(1)**	**FOS(4)**	**ECCB(5)**
Mercury	Fillets	1992	0.279	0.473	0.096	NA	NA	NA	NA	NA	NA
Mercury	Fillets	1993	0.460	0.413	0.186	0.105	0.075	0.030	10	9	10
Mercury	Fillets	1994	0.283	0.434	0.120	0.032	0.090	0.006	3	3	3
Mercury	Fillets	1995	0.404	0.312	0.104	0.016	0.043	0.012	3	3	3
Mercury	Fillets	1996	0.460	0.547	0.400	0.069	0.150	0.028	3	3	3
Mercury	Fillets	1997	0.511	0.276	0.195	0.089	0.198	0.020	3	3	3
Mercury	Fillets	1998	0.234	0.328	0.136	0.012	0.038	0.023	3	3	3
Mercury	Fillets	1999	0.352	0.540	0.224	0.010	0.044	0.012	3	3	3
Mercury	Fillets	2000	0.394	0.482	0.202	0.078	0.142	0.021	3	3	3
Total DDT	Fillets	1992	37.96	19.91	10.68	NA	NA	NA	NA	NA	NA
Total DDT	Fillets	1993	32.17	27.64	13.05	5.78	4.10	1.62	10	9	10
Total DDT	Fillets	1994	43.83	22.66	13.82	2.38	1.33	0.88	3	3	3
Total DDT	Fillets	1995	43.23	23.13	27.47	16.63	2.66	1.88	3	3	3
Total DDT	Fillets	1996	32.07	19.28	9.81	2.53	4.62	2.01	3	3	3
Total DDT	Fillets	1997	46.27	22.47	13.41	3.75	4.80	1.93	3	3	3
Total DDT	Fillets	1998	30.06	12.30	6.37	2.54	4.18	0.41	3	3	3
Total DDT	Fillets	1999	21.40	22.31	11.74	1.33	4.45	1.20	3	3	3
Total DDT	Fillets	2000	18.30	9.94	6.74	2.60	0.40	0.57	3	3	3
Total PCB	Fillets	1992	343.21	172.72	62.49	NA	NA	NA	NA	NA	NA
Total PCB	Fillets	1993	200.39	215.05	59.24	29.93	38.81	8.20	10	9	10
Total PCB	Fillets	1994	520.05	249.88	60.23	34.98	32.54	5.75	3	3	3
Total PCB	Fillets	1995	613.88	237.16	107.61	176.48	15.01	5.60	3	3	3
Total PCB	Fillets	1996	285.76	194.68	65.69	29.69	42.59	10.86	3	3	3
Total PCB	Fillets	1997	325.09	206.67	62.78	37.38	30.71	6.70	3	3	3
Total PCB	Fillets	1998	238.43	105.61	39.42	17.85	34.73	2.09	3	3	3
Total PCB	Fillets	1999	141.52	166.19	51.70	4.43	41.14	5.80	3	3	3
Total PCB	Fillets	2000	203.29	117.59	39.46	24.23	9.21	1.98	3	3	3
Total CHLOR	Fillets	1992	22.11	6.94	2.91	NA	NA	NA	NA	NA	NA
Total CHLOR	Fillets	1993	16.04	17.01	5.54	2.58	3.91	0.87	10	9	10
Total CHLOR	Fillets	1994	18.78	7.55	2.93	1.71	0.74	0.03	3	3	3
Total CHLOR	Fillets	1995	15.47	5.77	4.63	3.32	0.47	0.19	3	3	3
Total CHLOR	Fillets	1996	11.30	3.67	1.08	0.31	0.47	0.55	3	3	3
Total CHLOR	Fillets	1997	13.93	5.66	1.66	1.27	0.68	0.20	3	3	3
Total CHLOR	Fillets	1998	13.86	5.54	1.29	1.15	1.93	0.09	3	3	3
Total CHLOR	Fillets	1999	9.73	7.12	2.34	0.34	2.79	0.49	3	3	3
Total CHLOR	Fillets	2000	10.03	3.25	1.91	1.97	0.47	0.03	3	3	3
Aldrin	Fillets	1992	0.00	0.00	0.00	NA	NA	NA	NA	NA	NA
Aldrin	Fillets	1993	0.36	0.34	0.39	0.02	0.03	0.02	10	9	10
Aldrin	Fillets	1994	0.00	0.00	0.00	0.00	0.00	0.00	3	3	3
Aldrin	Fillets	1995	0.00	0.00	0.00	0.00	0.00	0.00	3	3	3
Aldrin	Fillets	1996	0.00	0.00	0.00	0.00	0.00	0.00	3	3	3
Aldrin	Fillets	1997	0.00	0.00	0.00	0.00	0.00	0.00	3	3	3
Aldrin	Fillets	1998	0.00	0.00	0.00	0.00	0.00	0.00	3	3	3
Aldrin	Fillets	1999	0.00	0.00	0.00	0.00	0.00	0.00	3	3	3
Aldrin	Fillets	2000	0.00	0.00	0.00	0.00	0.00	0.00	3	3	3

Table C-11. Flounder Fillet Chemistry Data, 1991 – 2000. (Continued)

			Means			SE			N		
Parameter	**Tissue**	**Year**	**DIF(1)**	**OS(4)**	**ECCB(5)**	**DIF(1)**	**OS(4)**	**ECCB(5)**	**DIF(1)**	**FOS(4)**	**ECCB(5)**
Dieldrin	Fillets	1992	2.40	1.14	1.04	NA	NA	NA	NA	NA	NA
Dieldrin	Fillets	1993	3.30	2.96	2.02	0.34	0.64	0.17	10	9	10
Dieldrin	Fillets	1994	3.56	1.37	1.33	0.44	0.14	0.05	3	3	3
Dieldrin	Fillets	1995	3.00	1.10	0.00	1.61	0.55	0.00	3	3	3
Dieldrin	Fillets	1996	2.00	1.07	1.03	0.62	0.29	0.04	3	3	3
Dieldrin	Fillets	1997	2.97	1.73	1.08	0.24	0.09	0.11	3	3	3
Dieldrin	Fillets	1998	2.49	1.16	0.68	0.14	0.32	0.03	3	3	3
Dieldrin	Fillets	1999	3.72	4.79	0.74	1.10	1.72	0.18	3	3	3
Dieldrin	Fillets	2000	1.54	0.59	0.43	0.47	0.10	0.07	3	3	3
Endrin	Fillets	1992	0.00	0.00	0.00	NA	NA	NA	NA	NA	NA
Endrin	Fillets	1993	0.45	0.43	0.50	0.02	0.04	0.02	10	9	10
Endrin	Fillets	1994	0.00	0.00	0.00	0.00	0.00	0.00	3	3	3
Endrin	Fillets	1995	0.00	0.00	0.00	0.00	0.00	0.00	3	3	3
Endrin	Fillets	1996	0.00	0.00	0.00	0.00	0.00	0.00	3	3	3
Endrin	Fillets	1997	0.00	0.00	0.00	0.00	0.00	0.00	3	3	3
Endrin	Fillets	1998	0.38	0.11	0.00	0.04	0.06	0.00	3	3	3
Endrin	Fillets	1999	0.00	0.00	0.00	0.00	0.00	0.00	3	3	3
Endrin	Fillets	2000	0.00	0.00	0.00	0.00	0.00	0.00	3	3	3
Hexachlorobenzene	Fillets	1992	0.74	0.55	0.38	NA	NA	NA	NA	NA	NA
Hexachlorobenzene	Fillets	1993	0.98	0.71	0.65	0.17	0.05	0.10	10	9	10
Hexachlorobenzene	Fillets	1994	0.83	0.59	0.60	0.05	0.04	0.16	3	3	3
Hexachlorobenzene	Fillets	1995	0.71	0.52	0.55	0.04	0.04	0.01	3	3	3
Hexachlorobenzene	Fillets	1996	0.70	0.69	0.76	0.09	0.16	0.04	3	3	3
Hexachlorobenzene	Fillets	1997	0.68	0.63	0.32	0.03	0.10	0.16	3	3	3
Hexachlorobenzene	Fillets	1998	0.66	0.44	0.38	0.02	0.11	0.05	3	3	3
Hexachlorobenzene	Fillets	1999	0.49	0.60	0.53	0.01	0.02	0.05	3	3	3
Hexachlorobenzene	Fillets	2000	0.60	0.49	0.41	0.06	0.02	0.08	3	3	3
Mirex	Fillets	1992	0.59	0.40	0.17	NA	NA	NA	NA	NA	NA
Mirex	Fillets	1993	0.50	0.52	0.31	0.08	0.08	0.03	10	9	10
Mirex	Fillets	1994	0.72	0.45	0.18	0.13	0.03	0.02	3	3	3
Mirex	Fillets	1995	0.36	0.28	0.16	0.05	0.03	0.08	3	3	3
Mirex	Fillets	1996	0.12	0.11	0.00	0.12	0.11	0.00	3	3	3
Mirex	Fillets	1997	0.00	0.00	0.00	0.00	0.00	0.00	3	3	3
Mirex	Fillets	1998	0.29	0.21	0.02	0.05	0.07	0.02	3	3	3
Mirex	Fillets	1999	0.00	0.00	0.00	0.00	0.00	0.00	3	3	3
Mirex	Fillets	2000	0.34	0.28	0.15	0.07	0.02	0.01	3	3	3
Lindane	Fillets	1992	0.09	0.10	0.08	NA	NA	NA	NA	NA	NA
Lindane	Fillets	1993	0.53	0.53	0.61	0.05	0.04	0.03	10	9	10
Lindane	Fillets	1994	0.12	0.00	0.00	0.02	0.00	0.00	3	3	3
Lindane	Fillets	1995	0.00	0.00	0.00	0.00	0.00	0.00	3	3	3
Lindane	Fillets	1996	0.05	0.04	0.00	0.05	0.04	0.00	3	3	3
Lindane	Fillets	1997	0.00	0.11	0.23	0.00	0.06	0.16	3	3	3
Lindane	Fillets	1998	0.15	0.08	0.06	0.01	0.04	0.03	3	3	3
Lindane	Fillets	1999	0.00	0.00	0.00	0.00	0.00	0.00	3	3	3
Lindane	Fillets	2000	0.00	0.00	0.00	0.00	0.00	0.00	3	3	3

Table C-12. Flounder Liver Chemistry Data, 1991 – 2000.

			Means			SE			N		
Parameter	**Tissue**	**Year**	**DIF(1)**	**OS(4)**	**ECCB(5)**	**DIF(1)**	**OS(4)**	**ECCB(5)**	**DIF(1)**	**FOS(4)**	**ECCB(5)**
Lead	Liver	1992	2.056	3.891	10.041	NA	NA	NA	NA	NA	NA
Lead	Liver	1993	2.020	2.320	1.140	0.000	0.000	0.000	1	1	1
Lead	Liver	1994	1.417	6.220	4.150	0.257	1.042	0.870	3	3	3
Lead	Liver	1995	0.840	5.938	5.219	0.160	1.688	1.172	3	3	3
Lead	Liver	1996	2.120	4.241	2.581	0.187	0.868	1.573	3	3	3
Lead	Liver	1997	3.059	4.386	1.071	0.643	0.644	0.309	3	3	3
Lead	Liver	1998	2.474	3.818	2.283	0.201	0.374	0.502	3	3	3
Lead	Liver	1999	2.424	6.767	2.044	0.319	3.250	0.389	3	3	3
Lead	Liver	2000	3.653	8.140	1.650	0.570	0.353	0.130	3	3	3
Mercury	Liver	1992	0.773	0.497	0.507	NA	NA	NA	NA	NA	NA
Mercury	Liver	1993	0.694	0.420	0.232	0.000	0.000	0.000	1	1	1
Mercury	Liver	1994	0.277	0.545	0.226	0.033	0.162	0.021	3	3	3
Mercury	Liver	1995	0.250	0.386	0.301	0.049	0.020	0.051	3	3	3
Mercury	Liver	1996	0.530	0.553	0.436	0.086	0.030	0.042	3	3	3
Mercury	Liver	1997	0.343	0.343	0.202	0.054	0.069	0.021	3	3	3
Mercury	Liver	1998	0.271	0.386	0.266	0.035	0.037	0.039	3	3	3
Mercury	Liver	1999	0.223	0.645	0.308	0.003	0.119	0.043	3	3	3
Mercury	Liver	2000	0.426	0.631	0.321	0.093	0.279	0.038	3	3	3
Cadmium	Liver	1992	3.04	2.39	1.02	NA	NA	NA	NA	NA	NA
Cadmium	Liver	1993	0.91	0.85	0.42	0.00	0.00	0.00	1	1	1
Cadmium	Liver	1994	0.98	2.16	0.97	0.44	0.89	0.21	3	3	3
Cadmium	Liver	1995	0.44	1.42	0.66	0.07	0.09	0.01	3	3	3
Cadmium	Liver	1996	0.90	3.33	1.09	0.30	0.79	0.20	3	3	3
Cadmium	Liver	1997	2.25	1.04	1.83	1.50	0.10	0.49	3	3	3
Cadmium	Liver	1998	0.66	1.22	1.65	0.10	0.29	0.51	3	3	3
Cadmium	Liver	1999	0.59	3.18	1.64	0.13	1.05	0.47	3	3	3
Cadmium	Liver	2000	1.65	2.68	1.25	0.63	0.72	0.35	3	3	3
Copper	Liver	1992	35.39	94.05	113.65	NA	NA	NA	NA	NA	NA
Copper	Liver	1993	82.70	50.60	26.40	0.00	0.00	0.00	1	1	1
Copper	Liver	1994	51.81	112.20	121.30	6.84	29.95	5.67	3	3	3
Copper	Liver	1995	55.86	121.40	64.52	22.31	12.89	4.16	3	3	3
Copper	Liver	1996	42.28	125.51	65.55	19.58	34.36	7.73	3	3	3
Copper	Liver	1997	54.92	75.07	87.01	1.71	11.75	17.91	3	3	3
Copper	Liver	1998	42.55	91.60	138.85	9.30	19.57	29.87	3	3	3
Copper	Liver	1999	33.51	129.94	70.88	2.77	18.52	16.26	3	3	3
Copper	Liver	2000	117.67	181.00	100.50	1.45	44.00	29.48	3	3	3
Nickel	Liver	1992	0.49	0.94	0.45	NA	NA	NA	NA	NA	NA
Nickel	Liver	1993	0.62	0.65	0.40	0.00	0.00	0.00	1	1	1
Nickel	Liver	1994	0.24	0.60	0.37	0.01	0.04	0.05	3	3	3
Nickel	Liver	1995	0.14	0.44	0.46	0.02	0.11	0.05	3	3	3
Nickel	Liver	1996	0.00	0.17	0.00	0.00	0.10	0.00	3	3	3
Nickel	Liver	1997	0.41	0.38	0.42	0.12	0.03	0.07	3	3	3
Nickel	Liver	1998	0.58	0.64	0.66	0.29	0.07	0.15	3	3	3
Nickel	Liver	1999	0.17	0.58	0.38	0.05	0.14	0.12	3	3	3
Nickel	Liver	2000	0.61	0.63	0.49	0.08	0.04	0.08	3	3	3

Table C-12. Flounder Liver Chemistry Data, 1991 – 2000. (Continued)

			Means			SE			N		
Parameter	**Tissue**	**Year**	**DIF(1)**	**OS(4)**	**ECCB(5)**	**DIF(1)**	**OS(4)**	**ECCB(5)**	**DIF(1)**	**FOS(4)**	**ECCB(5)**
Silver	Liver	1992	1.60	5.66	4.92	NA	NA	NA	NA	NA	NA
Silver	Liver	1993	5.46	4.78	1.41	0.00	0.00	0.00	1	1	1
Silver	Liver	1994	3.76	10.11	6.11	0.32	4.11	0.81	3	3	3
Silver	Liver	1995	3.42	9.89	4.55	1.88	2.60	0.39	3	3	3
Silver	Liver	1996	4.47	22.40	4.16	1.53	6.42	0.22	3	3	3
Silver	Liver	1997	5.47	9.17	8.02	0.10	1.36	1.22	3	3	3
Silver	Liver	1998	2.55	7.02	6.90	0.78	1.33	1.93	3	3	3
Silver	Liver	1999	2.37	11.57	4.53	0.20	1.88	0.53	3	3	3
Silver	Liver	2000	6.44	14.99	6.39	0.26	5.26	1.08	3	3	3
Zinc	Liver	1992	118.50	158.30	161.70	NA	NA	NA	NA	NA	NA
Zinc	Liver	1993	86.70	85.30	82.30	0.00	0.00	0.00	1	1	1
Zinc	Liver	1994	112.27	154.00	176.67	0.37	9.02	15.59	3	3	3
Zinc	Liver	1995	105.68	151.65	138.12	1.38	6.49	11.65	3	3	3
Zinc	Liver	1996	87.07	120.99	126.28	24.87	5.77	2.45	3	3	3
Zinc	Liver	1997	127.46	141.24	137.22	2.55	6.67	7.10	3	3	3
Zinc	Liver	1998	106.26	113.63	147.75	1.59	10.19	6.29	3	3	3
Zinc	Liver	1999	101.54	108.54	112.21	4.63	7.42	4.36	3	3	3
Zinc	Liver	2000	127.67	139.33	136.67	8.01	3.38	1.86	3	3	3
Total DDT	Liver	1992	194.71	154.56	55.79	NA	NA	NA	NA	NA	NA
Total DDT	Liver	1993	260.49	249.57	71.81	0.00	0.00	0.00	1	1	1
Total DDT	Liver	1994	407.31	264.11	73.53	40.82	47.22	9.79	3	3	3
Total DDT	Liver	1995	866.33	455.23	160.30	76.78	100.00	17.05	3	3	3
Total DDT	Liver	1996	420.00	274.33	104.00	88.49	93.20	11.02	3	3	3
Total DDT	Liver	1997	635.20	342.40	237.37	130.23	56.21	84.22	3	3	3
Total DDT	Liver	1998	381.80	132.43	64.66	99.23	17.19	22.04	3	3	3
Total DDT	Liver	1999	484.47	181.02	80.56	24.62	44.79	26.59	3	3	3
Total DDT	Liver	2000	145.93	94.11	42.44	25.00	7.53	1.61	3	3	3
Total PCB	Liver	1992	2624.96	1762.19	468.91	NA	NA	NA	NA	NA	NA
Total PCB	Liver	1993	1812.43	1746.52	350.85	0.00	0.00	0.00	1	1	1
Total PCB	Liver	1994	3614.88	2381.50	343.67	595.95	561.77	52.94	3	3	3
Total PCB	Liver	1995	9242.98	6090.63	1249.36	839.25	1747.82	520.59	3	3	3
Total PCB	Liver	1996	3672.27	2600.57	778.10	687.72	463.19	33.60	3	3	3
Total PCB	Liver	1997	4637.97	2629.27	938.43	992.24	727.44	177.43	3	3	3
Total PCB	Liver	1998	3060.53	1256.03	448.36	659.52	246.76	128.01	3	3	3
Total PCB	Liver	1999	2761.07	1270.92	360.31	32.38	326.53	111.33	3	3	3
Total PCB	Liver	2000	1856.14	1140.65	249.87	347.83	55.42	14.50	3	3	3
Total PAH	Liver	1992	q	q	q	q	q	q	q	q	q
Total PAH	Liver	1993	q	q	q	q	q	q	q	q	q
Total PAH	Liver	1994	217.68	243.83	148.17	27.81	72.81	39.85	3	3	3
Total PAH	Liver	1995	240.23	61.53	48.63	40.11	11.62	7.96	3	3	3
Total PAH	Liver	1996	268.63	339.23	284.70	37.22	81.93	38.27	3	3	3
Total PAH	Liver	1997	233.03	140.80	103.89	20.09	3.29	12.26	3	3	3
Total PAH	Liver	1998	76.31	49.42	34.29	13.20	9.08	8.59	3	3	3
Total PAH	Liver	1999	104.65	88.59	126.72	12.60	23.58	58.68	3	3	3
Total PAH	Liver	2000	104.68	131.99	69.35	5.80	53.35	19.45	3	3	3

Table C-12. Flounder Liver Chemistry Data, 1991 – 2000. (Continued)

			Means			SE			N		
Parameter	**Tissue**	**Year**	**DIF(1)**	**OS(4)**	**ECCB(5)**	**DIF(1)**	**OS(4)**	**ECCB(5)**	**DIF(1)**	**FOS(4)**	**ECCB(5)**
Total CHLOR	Liver	1992	201.92	80.20	14.15	NA	NA	NA	NA	NA	NA
Total CHLOR	Liver	1993	125.26	94.47	28.73	0.00	0.00	0.00	1	1	1
Total CHLOR	Liver	1994	207.94	112.99	19.39	22.57	34.53	2.83	3	3	3
Total CHLOR	Liver	1995	283.00	96.00	39.73	42.88	16.29	16.74	3	3	3
Total CHLOR	Liver	1996	169.87	86.33	20.23	36.87	10.99	3.40	3	3	3
Total CHLOR	Liver	1997	243.67	78.67	32.70	54.73	15.94	4.64	3	3	3
Total CHLOR	Liver	1998	176.10	51.33	11.87	54.99	6.82	3.39	3	3	3
Total CHLOR	Liver	1999	225.85	47.80	15.42	10.52	15.29	6.15	3	3	3
Total CHLOR	Liver	2000	95.72	30.35	12.39	25.61	3.57	1.33	3	3	3
Chromium	Liver	1992	0.34	0.07	0.05	NA	NA	NA	NA	NA	NA
Chromium	Liver	1993	0.74	0.92	0.02	0.00	0.00	0.00	1	1	1
Chromium	Liver	1994	0.19	0.14	0.10	0.05	0.00	0.01	3	3	3
Chromium	Liver	1995	0.14	0.09	0.09	0.01	0.02	0.02	3	3	3
Chromium	Liver	1996	0.08	0.12	0.04	0.00	0.03	0.01	3	3	3
Chromium	Liver	1997	0.42	0.30	0.33	0.23	0.29	0.32	3	3	3
Chromium	Liver	1998	0.36	0.19	0.08	0.14	0.04	0.01	3	3	3
Chromium	Liver	1999	0.26	0.16	0.14	0.15	0.03	0.00	3	3	3
Chromium	Liver	2000	0.13	0.13	0.12	0.01	0.02	0.01	3	3	3
Aldrin	Liver	1992	0.00	2.01	1.46	NA	NA	NA	NA	NA	NA
Aldrin	Liver	1993	1.57	1.38	1.46	0.00	0.00	0.00	1	1	1
Aldrin	Liver	1994	8.24	11.20	13.01	1.67	1.94	3.65	3	3	3
Aldrin	Liver	1995	0.00	0.00	0.00	0.00	0.00	0.00	3	3	3
Aldrin	Liver	1996	0.40	0.00	0.00	0.40	0.00	0.00	3	3	3
Aldrin	Liver	1997	0.00	0.00	0.00	0.00	0.00	0.00	3	3	3
Aldrin	Liver	1998	0.00	0.00	0.00	0.00	0.00	0.00	3	3	3
Aldrin	Liver	1999	0.00	0.00	0.00	0.00	0.00	0.00	3	3	3
Aldrin	Liver	2000	0.00	0.00	0.00	0.00	0.00	0.00	3	3	3
Dieldrin	Liver	1992	21.46	10.83	9.51	NA	NA	NA	NA	NA	NA
Dieldrin	Liver	1993	23.37	20.25	11.20	0.00	0.00	0.00	1	1	1
Dieldrin	Liver	1994	30.27	13.82	5.64	4.73	3.11	1.48	3	3	3
Dieldrin	Liver	1995	52.67	0.00	7.00	4.48	0.00	7.00	3	3	3
Dieldrin	Liver	1996	30.00	8.33	9.80	13.58	4.41	1.72	3	3	3
Dieldrin	Liver	1997	36.67	18.33	14.33	7.22	3.33	1.45	3	3	3
Dieldrin	Liver	1998	24.12	9.92	4.89	3.50	0.67	1.58	3	3	3
Dieldrin	Liver	1999	38.87	18.49	6.76	14.84	4.38	3.36	3	3	3
Dieldrin	Liver	2000	12.82	4.37	3.99	3.27	0.77	0.22	3	3	3
Endrin	Liver	1992	0.00	0.00	0.00	NA	NA	NA	NA	NA	NA
Endrin	Liver	1993	1.99	1.74	1.85	0.00	0.00	0.00	1	1	1
Endrin	Liver	1994	0.00	0.00	0.00	0.00	0.00	0.00	3	3	3
Endrin	Liver	1995	0.00	0.00	0.00	0.00	0.00	0.00	3	3	3
Endrin	Liver	1996	0.00	0.00	0.00	0.00	0.00	0.00	3	3	3
Endrin	Liver	1997	0.00	0.00	0.00	0.00	0.00	0.00	3	3	3
Endrin	Liver	1998	5.51	1.75	0.00	0.86	0.14	0.00	3	3	3
Endrin	Liver	1999	0.00	0.00	0.00	0.00	0.00	0.00	3	3	3
Endrin	Liver	2000	0.00	0.00	0.00	0.00	0.00	0.00	3	3	3

Table C-12. Flounder Liver Chemistry Data, 1991 – 2000. (Continued)

			Means			SE			N		
Parameter	**Tissue**	**Year**	**DIF(1)**	**OS(4)**	**ECCB(5)**	**DIF(1)**	**OS(4)**	**ECCB(5)**	**DIF(1)**	**FOS(4)**	**ECCB(5)**
Hexachlorobenzene	Liver	1992	5.49	4.22	2.51	NA	NA	NA	NA	NA	NA
Hexachlorobenzene	Liver	1993	6.60	4.70	4.78	0.00	0.00	0.00	1	1	1
Hexachlorobenzene	Liver	1994	9.02	7.03	5.26	1.05	0.77	0.63	3	3	3
Hexachlorobenzene	Liver	1995	6.70	3.63	2.27	0.44	1.86	2.27	3	3	3
Hexachlorobenzene	Liver	1996	5.93	3.13	0.00	3.20	3.13	0.00	3	3	3
Hexachlorobenzene	Liver	1997	7.47	6.27	5.20	0.64	1.17	0.35	3	3	3
Hexachlorobenzene	Liver	1998	6.53	4.69	3.73	0.69	0.78	1.63	3	3	3
Hexachlorobenzene	Liver	1999	6.53	3.84	3.49	0.25	0.27	1.20	3	3	3
Hexachlorobenzene	Liver	2000	4.48	3.50	2.58	0.53	0.24	0.58	3	3	3
Mirex	Liver	1992	0.57	1.45	1.04	NA	NA	NA	NA	NA	NA
Mirex	Liver	1993	2.98	4.25	1.47	0.00	0.00	0.00	1	1	1
Mirex	Liver	1994	5.87	4.44	0.00	1.65	0.95	0.00	3	3	3
Mirex	Liver	1995	4.90	3.80	1.39	0.29	0.35	0.89	3	3	3
Mirex	Liver	1996	1.80	0.00	0.00	1.80	0.00	0.00	3	3	3
Mirex	Liver	1997	11.77	6.77	3.40	2.62	0.15	0.21	3	3	3
Mirex	Liver	1998	3.49	2.87	0.46	0.60	1.52	0.23	3	3	3
Mirex	Liver	1999	0.00	0.00	0.00	0.00	0.00	0.00	3	3	3
Mirex	Liver	2000	2.87	2.33	0.98	0.61	0.02	0.11	3	3	3
Lindane	Liver	1992	0.00	0.00	0.00	NA	NA	NA	NA	NA	NA
Lindane	Liver	1993	2.42	2.12	2.25	0.00	0.00	0.00	1	1	1
Lindane	Liver	1994	0.00	0.00	0.00	0.00	0.00	0.00	3	3	3
Lindane	Liver	1995	1.40	0.97	0.00	0.15	0.49	0.00	3	3	3
Lindane	Liver	1996	0.87	0.00	0.00	0.87	0.00	0.00	3	3	3
Lindane	Liver	1997	0.00	0.00	0.00	0.00	0.00	0.00	3	3	3
Lindane	Liver	1998	0.67	0.00	0.13	0.09	0.00	0.07	3	3	3
Lindane	Liver	1999	0.00	0.00	0.00	0.00	0.00	0.00	3	3	3
Lindane	Liver	2000	0.00	0.00	0.00	0.00	0.00	0.00	3	3	3

Table C-13. Lobster Meat Chemistry Data, 1992 – 2000.

			Means			SE			N		
Parameter	**Tissue**	**Year**	**DIF(1)**	**OS(4)**	**ECCB(5)**	**DIF(1)**	**OS(4)**	**ECCB(5)**	**DIF(1)**	**OS(4)**	**ECCB(5)**
Mercury	Meat	1992	1.228	0.854	0.921	0.304	0.164	0.274	3	3	3
Mercury	Meat	1993	0.842	1.013	0.659	0.011	0.308	0.057	3	2	10
Mercury	Meat	1994	0.827	1.043	0.498	0.067	0.313	0.055	3	2	3
Mercury	Meat	1995	0.610	1.089	0.535	0.297	0.260	0.055	3	3	3
Mercury	Meat	1996	0.858	1.067	0.939	0.071	0.216	0.102	3	3	3
Mercury	Meat	1997	1.467	1.120	0.983	0.111	0.083	0.072	3	3	3
Mercury	Meat	1998	0.767	0.990	0.598	0.029	0.064	0.047	3	3	3
Mercury	Meat	1999	0.999	1.038	0.712	0.153	0.165	0.070	3	3	3
Mercury	Meat	2000	0.746	0.922	0.659	0.116	0.099	0.135	3	3	3
Total DDT	Meat	1992	14.00	8.98	17.83	1.27	1.17	6.73	3	3	3
Total DDT	Meat	1993	28.36	9.24	10.65	10.76	1.49	1.26	3	2	10
Total DDT	Meat	1994	23.83	21.93	10.30	1.79	4.36	1.38	3	2	3
Total DDT	Meat	1995	13.62	14.34	13.22	2.36	0.79	2.55	3	3	3
Total DDT	Meat	1996	25.98	18.53	13.01	3.90	2.81	1.21	3	3	3
Total DDT	Meat	1997	46.34	20.90	14.61	23.02	6.43	1.01	3	3	3
Total DDT	Meat	1998	11.37	8.91	9.69	0.62	1.42	1.39	3	3	3
Total DDT	Meat	1999	15.98	7.36	9.32	1.06	0.10	0.83	3	3	3
Total DDT	Meat	2000	5.08	4.80	3.99	0.73	0.65	0.83	3	3	3
Total PCB	Meat	1992	99.61	60.60	87.27	8.72	11.86	32.85	3	3	3
Total PCB	Meat	1993	154.21	65.79	66.46	58.62	2.64	15.62	3	2	10
Total PCB	Meat	1994	137.15	177.93	66.80	13.44	66.57	15.81	3	2	3
Total PCB	Meat	1995	122.31	118.76	76.08	22.28	9.56	12.45	3	3	3
Total PCB	Meat	1996	220.41	148.09	68.88	27.17	2.00	5.82	3	3	3
Total PCB	Meat	1997	311.83	157.62	77.55	141.59	21.88	1.47	3	3	3
Total PCB	Meat	1998	112.96	71.83	54.90	10.94	11.01	5.35	3	3	3
Total PCB	Meat	1999	154.22	73.73	52.91	12.97	3.18	4.50	3	3	3
Total PCB	Meat	2000	127.41	64.00	37.98	69.13	6.47	4.82	3	3	3
Total CHLOR	Meat	1992	3.73	1.49	1.57	0.40	0.16	0.05	3	3	3
Total CHLOR	Meat	1993	6.73	2.11	2.41	1.13	0.07	0.61	3	2	10
Total CHLOR	Meat	1994	5.19	5.13	1.36	0.67	1.55	0.19	3	2	3
Total CHLOR	Meat	1995	0.39	0.59	0.06	0.20	0.21	0.05	3	3	3
Total CHLOR	Meat	1996	5.63	3.80	1.52	0.70	0.32	0.06	3	3	3
Total CHLOR	Meat	1997	6.41	3.59	1.83	1.32	1.07	0.29	3	3	3
Total CHLOR	Meat	1998	4.16	2.95	1.68	0.47	0.70	0.04	3	3	3
Total CHLOR	Meat	1999	5.47	2.30	1.49	0.09	0.23	0.04	3	3	3
Total CHLOR	Meat	2000	2.48	1.41	0.94	0.26	0.12	0.11	3	3	3
Aldrin	Meat	1992	0.00	0.00	0.00	0.00	0.00	0.00	3	3	3
Aldrin	Meat	1993	0.40	0.35	0.56	0.01	0.09	0.20	3	2	10
Aldrin	Meat	1994	0.65	0.42	0.50	0.21	0.02	0.02	3	2	3
Aldrin	Meat	1995	0.00	0.00	0.00	0.00	0.00	0.00	3	3	3
Aldrin	Meat	1996	0.00	0.00	0.00	0.00	0.00	0.00	3	3	3
Aldrin	Meat	1997	0.00	0.00	0.61	0.00	0.00	0.50	3	3	3
Aldrin	Meat	1998	0.00	0.00	0.00	0.00	0.00	0.00	3	3	3
Aldrin	Meat	1999	0.00	0.00	0.00	0.00	0.00	0.00	3	3	3
Aldrin	Meat	2000	0.00	0.00	0.00	0.00	0.00	0.00	3	3	3
Dieldrin	Meat	1992	5.51	3.95	3.52	0.33	0.21	0.45	3	3	3

Table C-13. Lobster Meat Chemistry Data, 1992 – 2000.
(Continued)

			Means			SE			N		
Parameter	**Tissue**	**Year**	**DIF(1)**	**OS(4)**	**ECCB(5)**	**DIF(1)**	**OS(4)**	**ECCB(5)**	**DIF(1)**	**OS(4)**	**ECCB(5)**
Dieldrin	Meat	1993	9.02	4.66	3.52	1.08	0.44	0.21	3	2	10
Dieldrin	Meat	1994	11.52	6.43	3.73	4.07	1.40	0.32	3	2	3
Dieldrin	Meat	1995	6.50	5.77	3.93	0.15	0.23	0.33	3	3	3
Dieldrin	Meat	1996	8.53	9.50	3.77	0.74	1.83	0.32	3	3	3
Dieldrin	Meat	1997	6.80	6.27	4.23	0.76	1.07	0.34	3	3	3
Dieldrin	Meat	1998	3.75	3.81	2.38	0.25	0.06	0.09	3	3	3
Dieldrin	Meat	1999	6.79	5.15	4.26	0.06	0.15	0.17	3	3	3
Dieldrin	Meat	2000	3.19	2.95	2.27	0.44	0.22	0.18	3	3	3
Endrin	Meat	1992	0.00	0.00	0.00	0.00	0.00	0.00	3	3	3
Endrin	Meat	1993	0.51	0.44	0.46	0.02	0.11	0.03	3	2	10
Endrin	Meat	1994	0.00	0.00	0.00	0.00	0.00	0.00	3	2	3
Endrin	Meat	1995	0.00	0.00	0.00	0.00	0.00	0.00	3	3	3
Endrin	Meat	1996	0.00	0.00	0.00	0.00	0.00	0.00	3	3	3
Endrin	Meat	1997	0.00	0.40	0.56	0.00	0.40	0.08	3	3	3
Endrin	Meat	1998	0.00	0.00	0.00	0.00	0.00	0.00	3	3	3
Endrin	Meat	1999	0.00	0.00	0.00	0.00	0.00	0.00	3	3	3
Endrin	Meat	2000	0.00	0.00	0.00	0.00	0.00	0.00	3	3	3
Hexachlorobenzene	Meat	1992	0.36	0.20	0.35	0.04	0.11	0.07	3	3	3
Hexachlorobenzene	Meat	1993	0.47	0.39	0.31	0.04	0.10	0.03	3	2	10
Hexachlorobenzene	Meat	1994	0.79	0.74	0.63	0.08	0.04	0.02	3	2	3
Hexachlorobenzene	Meat	1995	0.00	0.21	0.25	0.00	0.21	0.25	3	3	3
Hexachlorobenzene	Meat	1996	0.59	1.00	0.52	0.05	0.10	0.08	3	3	3
Hexachlorobenzene	Meat	1997	0.42	0.63	0.53	0.06	0.08	0.06	3	3	3
Hexachlorobenzene	Meat	1998	0.42	0.69	0.53	0.02	0.13	0.01	3	3	3
Hexachlorobenzene	Meat	1999	0.47	0.46	0.33	0.02	0.01	0.03	3	3	3
Hexachlorobenzene	Meat	2000	4.15	0.47	0.17	3.13	0.04	0.17	3	3	3
Mirex	Meat	1992	0.27	0.24	0.29	0.06	0.02	0.11	3	3	3
Mirex	Meat	1993	0.39	0.27	0.31	0.06	0.05	0.05	3	2	10
Mirex	Meat	1994	0.26	0.16	0.29	0.05	0.16	0.05	3	2	3
Mirex	Meat	1995	0.00	0.00	0.00	0.00	0.00	0.00	3	3	3
Mirex	Meat	1996	0.27	0.36	0.23	0.05	0.06	0.03	3	3	3
Mirex	Meat	1997	0.32	0.00	0.35	0.32	0.00	0.06	3	3	3
Mirex	Meat	1998	0.00	0.15	0.10	0.00	0.07	0.05	3	3	3
Mirex	Meat	1999	0.56	0.31	0.23	0.10	0.04	0.02	3	3	3
Mirex	Meat	2000	0.22	0.04	0.10	0.05	0.04	0.05	3	3	3
Lindane	Meat	1992	0.80	0.00	0.00	0.80	0.00	0.00	3	3	3
Lindane	Meat	1993	4.95	4.93	4.70	0.62	0.30	0.97	3	2	10
Lindane	Meat	1994	0.00	0.00	0.00	0.00	0.00	0.00	3	2	3
Lindane	Meat	1995	0.00	0.00	0.00	0.00	0.00	0.00	3	3	3
Lindane	Meat	1996	2.00	0.73	0.00	2.00	0.73	0.00	3	3	3
Lindane	Meat	1997	0.00	0.00	0.00	0.00	0.00	0.00	3	3	3
Lindane	Meat	1998	0.00	0.87	0.89	0.00	0.87	0.89	3	3	3
Lindane	Meat	1999	0.00	0.00	0.00	0.00	0.00	0.00	3	3	3
Lindane	Meat	2000	1.06	0.00	0.87	1.06	0.00	0.87	3	3	3

Table C-14. Lobster Hepatopancreas Chemistry Data, 1992 – 2000.

			Means			SE			N		
Parameter	**Tissue**	**Year**	**DIF(1)**	**OS(4)**	**ECCB(5)**	**DIF(1)**	**OS(4)**	**ECCB(5)**	**DIF(1)**	**OS(4)**	**ECCB(5)**
Lead	Hepatopancreas	1992	0.375	0.275	4.492	0.067	0.100	4.206	3	3	3
Lead	Hepatopancreas	1993	0.333	0.380	0.104	0.096	0.124	0.027	3	2	10
Lead	Hepatopancreas	1994	0.427	0.544	0.089	0.027	0.067	0.018	3	2	3
Lead	Hepatopancreas	1995	0.255	0.301	0.042	0.045	0.045	0.009	3	3	3
Lead	Hepatopancreas	1996	0.350	0.411	0.068	0.081	0.121	0.024	3	3	3
Lead	Hepatopancreas	1997	0.391	0.299	0.039	0.051	0.052	0.020	3	3	3
Lead	Hepatopancreas	1998	0.230	0.629	0.305	0.043	0.074	0.006	3	3	3
Lead	Hepatopancreas	1999	0.525	0.418	0.247	0.030	0.082	0.031	3	3	3
Lead	Hepatopancreas	2000	0.298	0.317	0.363	0.015	0.020	0.043	3	3	3
Mercury	Hepatopancreas	1992	0.240	0.537	0.423	0.031	0.273	0.146	3	3	3
Mercury	Hepatopancreas	1993	0.296	0.236	0.192	0.056	0.044	0.038	3	2	10
Mercury	Hepatopancreas	1994	0.269	0.399	0.236	0.010	0.059	0.019	3	2	3
Mercury	Hepatopancreas	1995	0.350	0.335	0.271	0.032	0.050	0.068	3	3	3
Mercury	Hepatopancreas	1996	0.202	0.260	0.243	0.033	0.033	0.023	3	3	3
Mercury	Hepatopancreas	1997	0.432	0.437	0.400	0.082	0.045	0.013	3	3	3
Mercury	Hepatopancreas	1998	0.262	0.365	0.243	0.010	0.013	0.017	3	3	3
Mercury	Hepatopancreas	1999	0.302	0.528	0.317	0.016	0.079	0.019	3	3	3
Mercury	Hepatopancreas	2000	0.266	0.465	0.234	0.028	0.131	0.032	3	3	3
Cadmium	Hepatopancreas	1992	6.15	12.97	27.12	2.65	2.60	11.22	3	3	3
Cadmium	Hepatopancreas	1993	3.33	13.26	10.92	0.68	4.24	1.62	3	2	10
Cadmium	Hepatopancreas	1994	8.31	12.30	16.14	1.63	2.31	3.56	3	2	3
Cadmium	Hepatopancreas	1995	5.29	5.32	7.94	0.25	0.59	0.22	3	3	3
Cadmium	Hepatopancreas	1996	3.32	9.30	14.44	0.33	1.20	0.47	3	3	3
Cadmium	Hepatopancreas	1997	6.98	11.89	13.71	1.06	1.89	0.98	3	3	3
Cadmium	Hepatopancreas	1998	3.98	17.32	7.56	0.95	3.60	0.36	3	3	3
Cadmium	Hepatopancreas	1999	4.58	15.53	12.42	0.35	3.85	1.51	3	3	3
Cadmium	Hepatopancreas	2000	6.41	11.00	9.44	0.44	0.75	2.01	3	3	3
Chromium	Hepatopancreas	1992	2.91	3.36	2.09	0.38	1.06	0.27	3	3	3
Chromium	Hepatopancreas	1993	1.46	1.27	1.09	0.05	0.06	0.11	3	2	10
Chromium	Hepatopancreas	1994	0.25	0.49	0.19	0.03	0.29	0.04	3	2	3
Chromium	Hepatopancreas	1995	0.24	0.18	0.09	0.04	0.03	0.03	3	3	3
Chromium	Hepatopancreas	1996	0.15	0.12	0.08	0.03	0.01	0.01	3	3	3
Chromium	Hepatopancreas	1997	0.26	0.30	0.10	0.02	0.07	0.02	3	3	3
Chromium	Hepatopancreas	1998	0.09	0.23	0.15	0.02	0.02	0.03	3	3	3
Chromium	Hepatopancreas	1999	0.19	0.17	0.22	0.02	0.06	0.08	3	3	3
Chromium	Hepatopancreas	2000	0.20	0.29	0.14	0.06	0.03	0.01	3	3	3
Copper	Hepatopancreas	1992	261.37	440.77	1014.40	193.14	372.74	496.44	3	3	3
Copper	Hepatopancreas	1993	642.00	309.00	463.51	162.25	178.00	126.55	3	2	10
Copper	Hepatopancreas	1994	537.00	557.51	283.67	93.83	63.51	88.99	3	2	3
Copper	Hepatopancreas	1995	324.73	314.35	125.24	60.19	35.15	33.84	3	3	3
Copper	Hepatopancreas	1996	485.11	371.03	166.57	98.85	70.86	43.40	3	3	3
Copper	Hepatopancreas	1997	641.20	513.48	294.48	106.74	202.59	40.56	3	3	3
Copper	Hepatopancreas	1998	612.43	610.80	572.67	42.08	89.83	53.69	3	3	3
Copper	Hepatopancreas	1999	895.20	830.47	477.97	16.91	103.16	71.31	3	3	3
Copper	Hepatopancreas	2000	454.67	693.00	422.00	59.43	92.83	109.62	3	3	3

Table C-14. Lobster Hepatopancreas Chemistry Data, 1992 – 2000. (Continued)

			Means			SE			N		
Parameter	**Tissue**	**Year**	**DIF(1)**	**OS(4)**	**ECCB(5)**	**DIF(1)**	**OS(4)**	**ECCB(5)**	**DIF(1)**	**OS(4)**	**ECCB(5)**
Nickel	Hepatopancreas	1992	0.80	1.60	0.95	0.42	0.99	0.33	3	3	3
Nickel	Hepatopancreas	1993	0.65	0.47	1.31	0.19	0.03	0.21	3	2	10
Nickel	Hepatopancreas	1994	0.44	0.97	1.19	0.05	0.20	0.07	3	2	3
Nickel	Hepatopancreas	1995	0.42	0.43	0.45	0.09	0.04	0.04	3	3	3
Nickel	Hepatopancreas	1996	0.13	0.39	0.68	0.02	0.02	0.04	3	3	3
Nickel	Hepatopancreas	1997	0.57	1.26	0.89	0.07	0.23	0.24	3	3	3
Nickel	Hepatopancreas	1998	0.36	1.21	0.73	0.01	0.03	0.11	3	3	3
Nickel	Hepatopancreas	1999	0.65	0.69	1.33	0.07	0.03	0.16	3	3	3
Nickel	Hepatopancreas	2000	0.48	1.27	0.73	0.08	0.33	0.09	3	3	3
Silver	Hepatopancreas	1992	5.07	3.52	3.53	2.44	0.20	1.08	3	3	3
Silver	Hepatopancreas	1993	6.53	2.43	6.35	0.47	0.75	2.01	3	2	10
Silver	Hepatopancreas	1994	10.74	7.47	14.63	3.11	2.21	3.00	3	2	3
Silver	Hepatopancreas	1995	27.55	21.99	8.10	1.95	3.37	2.35	3	3	3
Silver	Hepatopancreas	1996	32.89	21.28	15.25	9.31	3.63	4.06	3	3	3
Silver	Hepatopancreas	1997	6.52	13.23	9.42	0.58	2.41	2.33	3	3	3
Silver	Hepatopancreas	1998	30.38	29.90	29.75	2.10	4.66	4.28	3	3	3
Silver	Hepatopancreas	1999	47.03	47.84	32.24	4.28	9.05	2.37	3	3	3
Silver	Hepatopancreas	2000	18.73	34.37	20.01	2.12	6.36	7.31	3	3	3
Zinc	Hepatopancreas	1992	76.60	110.77	100.63	15.35	24.93	31.79	3	3	3
Zinc	Hepatopancreas	1993	74.80	83.55	49.73	34.54	33.45	6.90	3	2	10
Zinc	Hepatopancreas	1994	79.67	97.44	82.70	5.57	6.44	2.91	3	2	3
Zinc	Hepatopancreas	1995	43.94	51.60	54.44	2.24	3.18	1.30	3	3	3
Zinc	Hepatopancreas	1996	53.82	73.86	50.33	9.46	11.34	5.12	3	3	3
Zinc	Hepatopancreas	1997	84.09	80.33	57.92	23.69	13.78	3.42	3	3	3
Zinc	Hepatopancreas	1998	82.94	112.99	89.77	16.24	38.68	7.74	3	3	3
Zinc	Hepatopancreas	1999	88.07	47.37	75.73	7.41	5.39	3.06	3	3	3
Zinc	Hepatopancreas	2000	59.33	75.47	129.73	2.60	6.48	25.20	3	3	3
Total DDT	Hepatopancreas	1992	576.56	475.34	207.87	245.92	165.46	48.12	3	3	3
Total DDT	Hepatopancreas	1993	642.21	290.29	287.68	27.61	70.86	33.33	3	2	10
Total DDT	Hepatopancreas	1994	404.87	308.72	165.56	49.21	118.94	12.76	3	2	3
Total DDT	Hepatopancreas	1995	670.50	929.90	745.93	155.45	29.58	92.05	3	3	3
Total DDT	Hepatopancreas	1996	1251.00	1025.80	702.17	68.59	30.50	117.10	3	3	3
Total DDT	Hepatopancreas	1997	1093.03	1088.70	788.87	644.25	359.71	142.08	3	3	3
Total DDT	Hepatopancreas	1998	1105.64	1033.51	761.26	26.17	74.84	23.37	3	3	3
Total DDT	Hepatopancreas	1999	1297.83	745.89	559.12	28.87	66.67	33.46	3	3	3
Total DDT	Hepatopancreas	2000	445.32	312.76	378.70	146.37	119.42	125.67	3	3	3
Total PCB	Hepatopancreas	1992	3253.52	2046.37	1205.90	509.59	356.67	394.22	3	3	3
Total PCB	Hepatopancreas	1993	2857.83	2262.60	2151.32	282.59	726.95	683.77	3	2	10
Total PCB	Hepatopancreas	1994	2482.48	2452.34	657.09	318.88	1527.20	60.81	3	2	3
Total PCB	Hepatopancreas	1995	4524.95	5234.00	2779.17	1354.20	342.50	305.36	3	3	3
Total PCB	Hepatopancreas	1996	7225.17	5582.57	2465.19	677.31	579.67	298.96	3	3	3
Total PCB	Hepatopancreas	1997	7109.33	4935.30	2477.73	2612.85	285.52	225.11	3	3	3
Total PCB	Hepatopancreas	1998	7722.70	6003.53	3409.83	178.89	240.69	154.81	3	3	3

Table C-14. Lobster Hepatopancreas Chemistry Data, 1992 – 2000. (Continued)

			Means			SE			N		
Parameter	**Tissue**	**Year**	**DIF(1)**	**OS(4)**	**ECCB(5)**	**DIF(1)**	**OS(4)**	**ECCB(5)**	**DIF(1)**	**OS(4)**	**ECCB(5)**
Total PCB	Hepatopancreas	1999	10255.41	6353.51	3132.17	125.72	452.04	241.29	3	3	3
Total PCB	Hepatopancreas	2000	7578.50	2964.92	1920.72	4057.85	889.20	607.35	3	3	3
Total PAH	Hepatopancreas	1992	29707.65	4060.10	4055.21	4885.54	272.53	731.12	3	3	3
Total PAH	Hepatopancreas	1993	11727.19	5862.35	3248.79	5567.15	2193.93	988.66	3	2	10
Total PAH	Hepatopancreas	1994	16577.81	4602.39	786.94	2921.49	280.45	75.12	3	2	3
Total PAH	Hepatopancreas	1995	5386.28	6576.33	4321.43	716.50	669.94	836.64	3	3	3
Total PAH	Hepatopancreas	1996	12816.17	6243.43	2372.37	2478.38	1642.45	701.95	3	3	3
Total PAH	Hepatopancreas	1997	8424.20	3059.50	q	5170.05	1153.71	q	3	3	q
Total PAH	Hepatopancreas	1998	7413.13	2429.48	1478.32	500.61	249.53	84.87	3	3	3
Total PAH	Hepatopancreas	1999	7597.25	1562.97	1309.69	810.43	165.05	78.11	3	3	3
Total PAH	Hepatopancreas	2000	13051.28	2726.61	1364.43	2788.12	850.82	131.47	3	3	3
Total CHLOR	Hepatopancreas	1992	196.70	50.75	18.63	106.73	22.64	8.93	3	3	3
Total CHLOR	Hepatopancreas	1993	194.42	48.56	76.12	5.15	4.93	25.54	3	2	10
Total CHLOR	Hepatopancreas	1994	116.33	21.42	13.21	19.70	6.91	2.08	3	2	3
Total CHLOR	Hepatopancreas	1995	38.67	73.67	65.00	13.57	37.02	22.72	3	3	3
Total CHLOR	Hepatopancreas	1996	199.00	156.67	81.20	16.26	22.88	19.00	3	3	3
Total CHLOR	Hepatopancreas	1997	137.63	57.87	41.59	24.88	11.20	6.95	3	3	3
Total CHLOR	Hepatopancreas	1998	233.81	93.87	42.02	4.66	6.03	2.84	3	3	3
Total CHLOR	Hepatopancreas	1999	138.04	57.94	31.85	14.51	6.75	3.22	3	3	3
Total CHLOR	Hepatopancreas	2000	89.25	37.76	33.24	25.43	15.05	2.22	3	3	3
Aldrin	Hepatopancreas	1992	2.53	0.00	0.00	2.53	0.00	0.00	3	3	3
Aldrin	Hepatopancreas	1993	1.52	1.25	1.37	0.19	0.20	0.18	3	2	10
Aldrin	Hepatopancreas	1994	0.00	0.00	0.00	0.00	0.00	0.00	3	2	3
Aldrin	Hepatopancreas	1995	0.00	2.80	0.00	0.00	1.49	0.00	3	3	3
Aldrin	Hepatopancreas	1996	5.53	2.37	1.00	0.90	1.19	0.50	3	3	3
Aldrin	Hepatopancreas	1997	1.50	0.00	0.00	0.76	0.00	0.00	3	3	3
Aldrin	Hepatopancreas	1998	0.00	0.00	0.00	0.00	0.00	0.00	3	3	3
Aldrin	Hepatopancreas	1999	0.00	0.00	0.00	0.00	0.00	0.00	3	3	3
Aldrin	Hepatopancreas	2000	0.00	0.00	0.00	0.00	0.00	0.00	3	3	3
Endrin	Hepatopancreas	1992	0.00	0.00	11.80	0.00	0.00	11.80	3	3	3
Endrin	Hepatopancreas	1993	1.93	1.58	1.74	0.24	0.25	0.23	3	2	10
Endrin	Hepatopancreas	1994	0.00	0.00	6.45	0.00	0.00	3.84	3	2	3
Endrin	Hepatopancreas	1995	0.00	0.00	0.00	0.00	0.00	0.00	3	3	3
Endrin	Hepatopancreas	1996	0.00	0.00	0.00	0.00	0.00	0.00	3	3	3
Endrin	Hepatopancreas	1997	0.00	0.00	0.00	0.00	0.00	0.00	3	3	3
Endrin	Hepatopancreas	1998	0.00	0.00	0.00	0.00	0.00	0.00	3	3	3
Endrin	Hepatopancreas	1999	0.00	0.00	0.00	0.00	0.00	0.00	3	3	3
Endrin	Hepatopancreas	2000	0.00	0.00	0.00	0.00	0.00	0.00	3	3	3
Hexachlorobenzene	Hepatopancreas	1992	11.79	7.64	40.62	4.80	1.50	36.18	3	3	3
Hexachlorobenzene	Hepatopancreas	1993	9.03	8.26	8.83	1.66	1.39	1.66	3	2	10
Hexachlorobenzene	Hepatopancreas	1994	7.03	5.46	26.60	0.77	3.08	13.46	3	2	3
Hexachlorobenzene	Hepatopancreas	1995	10.13	11.67	8.80	0.75	0.33	0.90	3	3	3

Table C-14. Lobster Hepatopancreas Chemistry Data, 1992 – 2000.
(Continued)

			Means			SE			N		
Parameter	**Tissue**	**Year**	**DIF(1)**	**OS(4)**	**ECCB(5)**	**DIF(1)**	**OS(4)**	**ECCB(5)**	**DIF(1)**	**OS(4)**	**ECCB(5)**
Hexachlorobenzene	Hepatopancreas	1996	17.00	17.33	13.67	1.00	0.33	1.20	3	3	3
Hexachlorobenzene	Hepatopancreas	1997	9.13	13.27	11.30	0.93	3.37	0.91	3	3	3
Hexachlorobenzene	Hepatopancreas	1998	7.75	9.79	6.97	2.15	0.36	0.02	3	3	3
Hexachlorobenzene	Hepatopancreas	1999	6.97	8.81	7.04	0.34	0.67	0.38	3	3	3
Hexachlorobenzene	Hepatopancreas	2000	14.03	11.17	9.83	5.93	2.71	0.95	3	3	3
Mirex	Hepatopancreas	1992	8.39	6.52	2.68	1.25	3.27	1.99	3	3	3
Mirex	Hepatopancreas	1993	6.27	7.63	6.10	0.19	2.12	1.18	3	2	10
Mirex	Hepatopancreas	1994	0.00	0.00	0.00	0.00	0.00	0.00	3	2	3
Mirex	Hepatopancreas	1995	7.05	8.57	6.10	0.73	0.59	0.51	3	3	3
Mirex	Hepatopancreas	1996	7.90	10.37	8.03	0.20	0.63	0.69	3	3	3
Mirex	Hepatopancreas	1997	8.00	10.37	7.83	1.00	2.89	1.06	3	3	3
Mirex	Hepatopancreas	1998	0.00	0.00	0.00	0.00	0.00	0.00	3	3	3
Mirex	Hepatopancreas	1999	11.43	9.76	6.92	3.59	0.54	0.37	3	3	3
Mirex	Hepatopancreas	2000	7.55	3.75	4.02	2.92	0.89	0.81	3	3	3
Lindane	Hepatopancreas	1992	1.10	0.79	0.00	1.10	0.79	0.00	3	3	3
Lindane	Hepatopancreas	1993	6.86	4.95	10.32	0.48	2.73	1.84	3	2	10
Lindane	Hepatopancreas	1994	0.00	0.00	0.00	0.00	0.00	0.00	3	2	3
Lindane	Hepatopancreas	1995	5.50	5.13	2.67	0.26	0.90	0.32	3	3	3
Lindane	Hepatopancreas	1996	7.10	6.13	0.00	3.63	0.69	0.00	3	3	3
Lindane	Hepatopancreas	1997	3.27	2.33	0.00	0.52	0.12	0.00	3	3	3
Lindane	Hepatopancreas	1998	4.09	2.99	3.61	0.31	0.10	0.41	3	3	3
Lindane	Hepatopancreas	1999	0.00	1.80	2.52	0.00	0.90	0.04	3	3	3
Lindane	Hepatopancreas	2000	s	s	1.53	s	s	1.01	s	s	3

Table C-15. Mussel Chemistry Data, 1991 – 2000.

		Means						SE						N					
Parameter	Year	Gloucester(7)	Sandwich(8)	Rockport (RP)	BIH(6)	DI(1)	OS(4)	Glouc.	Sand.	RP	BIH	DI	OS	Glouc.	Sand.	RP	BIH	DI	OS
Lead	1991	6.520	NA	NA	6.400	5.850	NA	0.774	NA	NA	0.827	0.301	NA	5	NA	NA	5	8	NA
Lead	1992	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	1993	5.200	NA	NA	NA	5.880	3.713	0.343	NA	NA	NA	1.401	0.297	6	NA	NA	NA	5	8
Lead	1994	9.000	NA	NA	6.667	8.680	4.733	1.886	NA	NA	1.288	0.993	0.203	4	NA	NA	3	5	9
Lead	1995	6.048	NA	NA	8.535	8.402	NA	0.358	NA	NA	0.514	0.756	NA	5	NA	NA	5	5	NA
Lead	1996	NA	2.858	NA	9.360	6.272	1.567	NA	0.732	NA	0.977	0.583	0.141	NA	5	NA	3	5	5
Lead	1997	NA	2.436	NA	9.893	7.831	2.093	NA	0.342	NA	1.607	0.487	0.089	NA	5	NA	5	5	5
Lead	1998	NA	2.852	NA	4.092	3.470	2.135	NA	0.346	NA	0.218	0.726	0.170	NA	5	NA	5	5	8
Lead	1999	NA	1.560	NA	4.694	NA	1.089	NA	0.152	NA	0.356	NA	0.081	NA	5	NA	5	NA	8
Lead	2000	NA	NA	1.515	13.205	6.929	0.943	NA	NA	0.057	0.973	0.954	0.059	NA	NA	5	5	5	8
Mercury	1991	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	1992	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	1993	0.393	NA	NA	NA	0.183	0.099	0.060	NA	NA	NA	0.012	0.005	6	NA	NA	NA	5	8
Mercury	1994	0.205	NA	NA	0.163	0.208	0.128	0.071	NA	NA	0.004	0.037	0.012	4	NA	NA	3	4	9
Mercury	1995	NA	0.063	NA	0.080	0.061	NA	NA	0.011	NA	0.039	0.020	NA	NA	5	NA	5	5	NA
Mercury	1996	NA	0.131	NA	0.126	0.154	0.146	NA	0.056	NA	0.014	0.020	0.041	NA	5	NA	3	5	5
Mercury	1997	NA	0.173	NA	0.320	0.063	0.104	NA	0.025	NA	0.039	0.017	0.043	NA	5	NA	5	5	5
Mercury	1998	NA	0.098	NA	0.110	0.098	0.089	NA	0.006	NA	0.003	0.006	0.003	NA	5	NA	5	5	8
Mercury	1999	NA	0.075	NA	0.099	NA	0.063	NA	0.002	NA	0.004	NA	0.003	NA	5	NA	5	NA	8
Mercury	2000	NA	NA	0.120	0.178	0.162	0.114	NA	NA	0.006	0.011	0.008	0.005	NA	NA	5	5	5	8
Total DDT	1991	24.78	NA	NA	89.18	45.64	NA	6.36	NA	NA	10.77	4.13	NA	5	NA	NA	5	8	NA
Total DDT	1992	17.63	NA	NA	99.48	21.73	8.91	1.63	NA	NA	18.82	1.78	0.54	5	NA	NA	5	7	8
Total DDT	1993	NA	NA	NA	127.98	57.50	25.58	NA	NA	NA	26.87	8.67	2.12	NA	NA	NA	4	5	8
Total DDT	1994	24.31	NA	NA	77.72	49.17	16.78	1.49	NA	NA	5.83	2.41	1.47	3	NA	NA	3	3	7
Total DDT	1995	28.56	NA	NA	91.48	44.80	NA	0.55	NA	NA	5.47	1.03	NA	5	NA	NA	5	5	NA
Total DDT	1996	56.77	NA	NA	118.50	84.40	29.02	6.20	NA	NA	8.60	7.37	1.16	3	NA	NA	5	5	5
Total DDT	1997	51.76	NA	NA	134.86	60.04	22.42	3.05	NA	NA	9.61	3.04	1.23	5	NA	NA	5	5	5
Total DDT	1998	34.08	NA	NA	81.95	38.04	19.91	1.45	NA	NA	5.12	0.63	1.03	4	NA	NA	5	5	8
Total DDT	1999	34.34	NA	NA	85.90	NA	12.19	3.65	NA	NA	3.14	NA	0.47	5	NA	NA	5	NA	8
Total DDT	2000	NA	NA	3.31	99.97	32.68	7.88	NA	NA	0.24	7.07	2.49	0.65	NA	NA	5	5	5	8
Total PCB	1991	61.46	NA	NA	462.04	194.73	NA	14.91	NA	NA	34.85	12.93	NA	5	NA	NA	5	8	NA
Total PCB	1992	46.72	NA	NA	639.43	123.76	34.30	3.22	NA	NA	87.00	8.73	2.72	5	NA	NA	5	7	8
Total PCB	1993	NA	NA	NA	480.00	264.34	89.05		NA	NA	47.98	36.12	2.68	NA	NA	NA	4	5	8
Total PCB	1994	104.03	NA	NA	484.36	157.46	85.14	2.73	NA	NA	71.34	5.65	6.22	3	NA	NA	3	3	7
Total PCB	1995	88.65	NA	NA	436.02	164.75	NA	1.01	NA	NA	14.49	4.43	NA	5	NA	NA	5	5	NA

Table C-15. Mussel Chemistry Data, 1991 – 2000. (Continued)

		Means						SE						N					
Parameter	Year	Gloucester(7)	Sandwich(8)	Rockport (RP)	BIH(6)	DI(1)	OS(4)	Glouc.	Sand.	RP	BIH	DI	OS	Glouc.	Sand.	RP	BIH	DI	OS
Total PCB	1996	156.59	NA	NA	532.56	268.68	98.78	12.04	NA	NA	25.31	16.16	3.62	3	NA	NA	5	5	5
Total PCB	1997	131.09	NA	NA	752.68	355.57	97.34	5.18	NA	NA	44.53	11.67	2.23	5	NA	NA	5	5	5
Total PCB	1998	63.16	NA	NA	460.02	149.18	58.81	1.15	NA	NA	29.22	2.24	2.75	5	NA	NA	5	5	8
Total PCB	1999	53.73	NA	NA	491.80	NA	36.87	4.62	NA	NA	20.94	NA	1.07	5	NA	NA	5	NA	8
Total PCB	2000	NA	NA	9.13	592.29	215.25	35.49	NA	NA	0.87	33.92	13.99	1.43	NA	NA	5	5	5	8
LMW-PAH	1991	78.00	NA	NA	209.00	528.25	NA	23.18	NA	NA	21.43	88.49	NA	5	NA	NA	4	8	NA
LMW-PAH	1992	70.14	NA	NA	194.78	426.01	31.80	6.43	NA	NA	44.15	48.37	4.67	5	NA	NA	5	8	8
LMW-PAH	1993	16.17	NA	NA	92.00	163.67	33.25	6.50	NA	NA	15.13	22.41	4.37	6	NA	NA	6	6	8
LMW-PAH	1994	71.67	NA	NA	53.33	203.67	14.71	3.18	NA	NA	4.37	8.41	1.87	3	NA	NA	3	3	7
LMW-PAH	1995	51.60	NA	NA	155.60	122.85	NA	1.66	NA	NA	3.03	2.70	NA	5	NA	NA	5	5	NA
LMW-PAH	1996	138.70	NA	NA	189.62	226.68	41.48	17.92	NA	NA	6.36	41.08	4.14	3	NA	NA	5	5	5
LMW-PAH	1997	65.70	NA	NA	147.50	83.46	40.75	8.75	NA	NA	12.21	2.00	12.20	5	NA	NA	5	5	5
LMW-PAH	1998	104.27	NA	NA	181.76	63.40	18.75	12.40	NA	NA	21.55	4.77	1.11	5	NA	NA	5	5	8
LMW-PAH	1999	184.80	NA	NA	175.70	NA	21.46	24.22	NA	NA	16.20	NA	0.47	5	NA	NA	5	NA	8
LMW-PAH	2000	NA	NA	105.89	277.20	119.46	106.42	NA	NA	9.76	13.55	12.28	8.81	NA	NA	5	5	4	8
HMW-PAH	1991	78.40	NA	NA	2324.50	699.56	NA	25.23	NA	NA	206.77	74.42	NA	5	NA	NA	4	8	NA
HMW-PAH	1992	132.42	NA	NA	3343.44	1504.43	190.13	21.20	NA	NA	404.89	127.36	145.17	5	NA	NA	5	8	8
HMW-PAH	1993	105.00	NA	NA	1210.33	495.17	83.63	25.67	NA	NA	73.10	54.30	12.45	6	NA	NA	6	6	8
HMW-PAH	1994	132.33	NA	NA	2175.67	632.67	18.29	59.88	NA	NA	230.57	68.81	5.06	3	NA	NA	3	3	7
HMW-PAH	1995	93.08	NA	NA	1238.00	415.30	NA	6.15	NA	NA	29.54	19.52	NA	5	NA	NA	5	5	NA
HMW-PAH	1996	195.13	NA	NA	2232.80	799.36	37.13	19.05	NA	NA	127.27	129.11	1.65	3	NA	NA	5	5	5
HMW-PAH	1997	88.47	NA	NA	1345.36	260.98	23.67	3.82	NA	NA	96.48	13.91	1.67	5	NA	NA	5	5	5
HMW-PAH	1998	138.57	NA	NA	1865.23	154.32	19.75	6.45	NA	NA	107.36	2.69	0.66	5	NA	NA	5	5	8
HMW-PAH	1999	481.22	NA	NA	2506.05	NA	25.13	110.08	NA	NA	107.20	NA	0.74	5	NA	NA	5	NA	8
HMW-PAH	2000	NA	NA	28.83	2182.52	365.56	43.17	NA	NA	2.87	140.72	30.81	1.74	NA	NA	5	5	4	8
Total CHLOR	1991	2.48	NA	NA	20.86	18.24	NA	1.37	NA	NA	2.27	1.68	NA	5	NA	NA	5	8	NA
Total CHLOR	1992	2.85	NA	NA	45.53	17.97	4.92	0.57	NA	NA	6.16	1.43	0.44	5	NA	NA	5	7	8
Total CHLOR	1993	NA	NA	NA	22.23	19.38	7.85	NA	NA	NA	2.57	2.20	0.25	NA	NA	NA	4	5	8
Total CHLOR	1994	9.82	NA	NA	25.23	26.69	8.22	0.70	NA	NA	1.92	1.81	0.39	3	NA	NA	3	3	7
Total CHLOR	1995	3.18	NA	NA	20.78	11.70	NA	0.18	NA	NA	1.23	0.22	NA	5	NA	NA	5	5	NA
Total CHLOR	1996	9.77	NA	NA	31.22	40.96	7.25	0.94	NA	NA	2.30	3.43	0.44	3	NA	NA	5	5	5
Total CHLOR	1997	8.80	NA	NA	29.04	20.43	6.18	0.26	NA	NA	2.23	1.06	0.28	5	NA	NA	5	5	5
Total CHLOR	1998	6.79	NA	NA	25.76	24.97	10.47	0.21	NA	NA	1.77	0.56	0.74	5	NA	NA	5	5	8
Total CHLOR	1999	7.63	NA	NA	22.50	NA	7.72	0.98	NA	NA	1.05	NA	0.25	5	NA	NA	5	NA	8
Total CHLOR	2000	NA	NA	2.61	28.35	13.80	4.96	NA	NA	0.17	2.64	0.74	0.37	NA	NA	5	5	5	8

Table C-15. Mussel Chemistry Data, 1991 – 2000. (Continued)

		Means						SE						N					
Parameter	Year	Gloucester(7)	Sandwich(8)	Rockport (RP)	BIH(6)	DI(1)	OS(4)	Glouc.	Sand.	RP	BIH	DI	OS	Glouc.	Sand.	RP	BIH	DI	OS
Aldrin	1991	0.00	NA	NA	0.00	0.00	NA	0.00	NA	NA	0.00	0.00	NA	5	NA	NA	5	8	NA
Aldrin	1992	0.00	NA	NA	0.00	0.00	0.00	0.00	NA	NA	0.00	0.00	0.00	5	NA	NA	5	7	8
Aldrin	1993	NA	NA	NA	0.00	0.00	0.00	NA	NA	NA	0.00	0.00	0.00	NA	NA	NA	4	5	8
Aldrin	1994	1.22	NA	NA	0.00	0.00	0.38	1.22	NA	NA	0.00	0.00	0.38	3	NA	NA	3	3	7
Aldrin	1995	0.00	NA	NA	0.00	0.00	NA	0.00	NA	NA	0.00	0.00	NA	5	NA	NA	5	5	NA
Aldrin	1996	0.00	NA	NA	0.00	0.00	NA	0.00	NA	NA	0.00	0.00	NA	3	NA	NA	5	5	NA
Aldrin	1997	0.00	NA	NA	0.00	0.00	NA	0.00	NA	NA	0.00	0.00	NA	5	NA	NA	5	5	NA
Aldrin	1998	0.00	NA	NA	0.00	0.00	NA	0.00	NA	NA	0.00	0.00	NA	5	NA	NA	5	5	NA
Aldrin	1999	0.00	NA	NA	0.00	NA	0.00	0.00	NA	NA	0.00	NA	0.00	5	NA	NA	5	NA	8
Aldrin	2000	NA	NA	0.00	0.00	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	NA	NA	5	5	5	8
Dieldrin	1991	0.00	NA	NA	9.00	2.92	NA	0.00	NA	NA	0.84	0.25	NA	5	NA	NA	5	8	NA
Dieldrin	1992	0.15	NA	NA	6.73	2.66	1.09	0.15	NA	NA	1.03	0.25	0.18	5	NA	NA	5	7	8
Dieldrin	1993	NA	NA	NA	4.53	3.16	2.24		NA	NA	0.82	0.91	0.07	NA	NA	NA	4	5	8
Dieldrin	1994	0.73	NA	NA	14.57	10.35	1.97	0.73	NA	NA	9.87	0.42	0.13	3	NA	NA	3	3	7
Dieldrin	1995	1.54	NA	NA	6.94	3.15	NA	0.06	NA	NA	0.35	0.09	NA	5	NA	NA	5	5	NA
Dieldrin	1996	0.00	NA	NA	9.28	5.60	1.36	0.00	NA	NA	0.96	0.60	0.84	3	NA	NA	5	5	5
Dieldrin	1997	2.28	NA	NA	7.14	3.40	2.02	0.08	NA	NA	0.29	0.25	0.10	5	NA	NA	5	5	5
Dieldrin	1998	2.83	NA	NA	7.61	4.10	2.25	0.13	NA	NA	0.40	0.08	0.09	5	NA	NA	5	5	8
Dieldrin	1999	1.44	NA	NA	9.06	NA	1.47	0.12	NA	NA	0.51	NA	0.04	5	NA	NA	5	NA	8
Dieldrin	2000	NA	NA	0.00	9.01	3.55	1.74	NA	NA	0.00	0.63	0.10	0.09	NA	NA	5	5	5	8
Endrin	1991	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin	1992	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin	1993	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin	1994	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin	1995	0.00	NA	NA	0.00	0.00	NA	0.00	NA	NA	0.00	0.00	NA	5	NA	NA	5	5	NA
Endrin	1996	0.00	NA	NA	0.00	0.00	0.00	0.00	NA	NA	0.00	0.00	0.00	3	NA	NA	5	5	5
Endrin	1997	0.00	NA	NA	0.00	0.00	0.00	0.00	NA	NA	0.00	0.00	0.00	5	NA	NA	5	5	5
Endrin	1998	0.00	NA	NA	0.00	0.00	0.00	0.00	NA	NA	0.00	0.00	0.00	5	NA	NA	5	5	8
Endrin	1999	0.00	NA	NA	0.00	NA	0.00	0.00	NA	NA	0.00	NA	0.00	5	NA	NA	5	NA	8
Endrin	2000	NA	NA	0.00	0.00	0.00	0.12	NA	NA	0.00	0.00	0.00	0.12	NA	NA	5	5	5	8
Hexachlorobenzene	1991	0.00	NA	NA	0.00	0.00	NA	0.00	NA	NA	0.00	0.00	NA	5	NA	NA	5	8	NA
Hexachlorobenzene	1992	0.00	NA	NA	0.00	0.00	0.00	0.00	NA	NA	0.00	0.00	0.00	5	NA	NA	5	8	8
Hexachlorobenzene	1993	NA	NA	NA	14.20	2.66	0.06	NA	NA	NA	5.93	0.88	0.06	NA	NA	NA	4	5	8
Hexachlorobenzene	1994	0.91	NA	NA	0.00	0.00	0.10	0.58	NA	NA	0.00	0.00	0.10	3	NA	NA	3	4	7
Hexachlorobenzene	1995	0.24	NA	NA	0.74	0.63	NA	0.09	NA	NA	0.09	0.09	NA	5	NA	NA	5	5	NA

Table C-15. Mussel Chemistry Data, 1991 – 2000. (Continued)

		Means						SE						N					
Parameter	Year	Gloucester(7)	Sandwich(8)	Rockport (RP)	BIH(6)	DI(1)	OS(4)	Glouc.	Sand.	RP	BIH	DI	OS	Glouc.	Sand.	RP	BIH	DI	OS
Hexachlorobenzene	1996	0.98	NA	NA	1.48	0.72	0.65	0.28	NA	NA	0.11	0.19	0.05	3	NA	NA	5	5	5
Hexachlorobenzene	1997	0.53	NA	NA	0.68	0.44	0.23	0.04	NA	NA	0.02	0.05	0.01	5	NA	NA	5	5	5
Hexachlorobenzene	1998	0.00	NA	NA	0.00	0.00	0.00	0.00	NA	NA	0.00	0.00	0.00	5	NA	NA	5	5	8
Hexachlorobenzene	1999	0.38	NA	NA	0.45	NA	0.22	0.08	NA	NA	0.03	NA	0.03	5	NA	NA	5	NA	8
Hexachlorobenzene	2000	NA	NA	0.00	1.04	0.39	0.44	NA	NA	0.00	0.07	0.02	0.03	NA	NA	5	5	5	8
Mirex	1991	0.00	NA	NA	0.00	0.00	NA	0.00	NA	NA	0.00	0.00	NA	5	NA	NA	5	8	NA
Mirex	1992	0.00	NA	NA	0.00	0.00	0.00	0.00	NA	NA	0.00	0.00	0.00	5	NA	NA	5	8	8
Mirex	1993	NA	NA	NA	0.00	0.00	0.00	NA	NA	NA	0.00	0.00	0.00	NA	NA	NA	4	5	8
Mirex	1994	1.98	NA	NA	0.00	0.00	0.00	0.40	NA	NA	0.00	0.00	0.00	3	NA	NA	3	4	8
Mirex	1995	0.00	NA	NA	0.21	0.07	NA	0.00	NA	NA	0.08	0.03	NA	5	NA	NA	5	5	NA
Mirex	1996	0.78	NA	NA	0.26	0.64	0.70	0.07	NA	NA	0.02	0.06	0.18	3	NA	NA	5	5	5
Mirex	1997	0.07	NA	NA	0.24	0.50	0.26	0.07	NA	NA	0.15	0.03	0.06	5	NA	NA	5	5	5
Mirex	1998	0.00	NA	NA	0.09	0.00	0.00	0.00	NA	NA	0.09	0.00	0.00	5	NA	NA	5	5	8
Mirex	1999	0.15	NA	NA	0.41	NA	0.05	0.02	NA	NA	0.01	NA	0.01	5	NA	NA	5	NA	8
Mirex	2000	NA	NA	0.00	0.00	0.00	0.05	NA	NA	0.00	0.00	0.00	0.05	NA	NA	5	5	5	8
Lindane	1991	0.00	NA	NA	0.00	0.00	NA	0.00	NA	NA	0.00	0.00	NA	5	NA	NA	5	8	NA
Lindane	1992	0.00	NA	NA	0.00	0.16	0.00	0.00	NA	NA	0.00	0.16	0.00	5	NA	NA	5	7	8
Lindane	1993	NA	NA	NA	2.33	2.22	0.35	NA	NA	NA	0.41	0.57	0.18	NA	NA	NA	4	5	8
Lindane	1994	0.42	NA	NA	0.00	0.19	0.00	0.42	NA	NA	0.00	1.56	0.00	3	NA	NA	3	3	7
Lindane	1995	0.65	NA	NA	0.88	0.03	NA	0.06	NA	NA	0.04	1.01	NA	5	NA	NA	5	5	NA
Lindane	1996	0.00	NA	NA	0.00	0.00	0.36	0.00	NA	NA	0.00	0.00	0.36	3	NA	NA	5	5	5
Lindane	1997	0.00	NA	NA	0.00	0.00	0.00	0.00	NA	NA	0.00	0.00	0.00	5	NA	NA	5	5	5
Lindane	1998	0.42	NA	NA	0.61	0.75	0.46	0.01	NA	NA	0.05	0.03	0.08	5	NA	NA	5	5	8
Lindane	1999	0.30	NA	NA	0.28	NA	0.36	0.02	NA	NA	0.02	NA	0.01	5	NA	NA	5	NA	8
Lindane	2000	NA	NA	0.00	0.00	0.00	0.08	NA	NA	0.00	0.00	0.00	0.08	NA	NA	5	5	5	8
Total 97/98 LMW-PAH	2000	NA	NA	139.92	1,816.87	506.96	133.68	NA	NA	9.21	157.72	22.95	11.19	NA	NA	5	5	4	8
Total 97/98 HMW-PAH	2000	NA	NA	40.14	3,241.05	501.22	61.10	NA	NA	3.80	211.28	41.95	2.26	NA	NA	5	5	4	8

APPENDIX D

Results of Statistical Analyses

Table D-1. ANOVA Results Determining Whether Chemical Concentrations in Flounder Tissues Differ Significantly Between Sampling Stations.

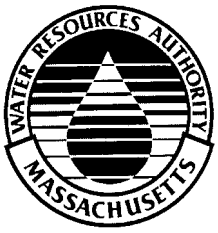
Parameter	Probability	
	Fillet	Liver
Cadmium	NA	0.2859
Chromium	NA	0.8137
Copper	NA	0.2266
Lead	NA	<0.0001
Mercury	0.1807	0.4733
Nickel	NA	0.3698
Silver	NA	0.0933
Zinc	NA	0.3129
Total PCB	<0.0001	<0.0001
Total PAH	NA	0.4249
Total DDT	0.0049	0.0012
Total Chlordane	0.0004	0.0019
Dieldrin	0.0607	0.0178
HCB	0.1388	0.0806
Mirex	0.0093	0.0061

Table D-2. ANOVA Results Determining Whether Chemical Concentrations in Lobster Tissues Differ Significantly between Sampling Stations.

Parameter	Probability	
	Meat	Hepatopancreas
Cadmium	NA	0.1032
Chromium	NA	0.0908
Copper	NA	0.1445
Lead	NA	0.3255
Mercury	0.3393	0.0955
Nickel	NA	0.0774
Silver	NA	0.1818
Zinc	NA	0.0219
Total PCB	0.1838	0.2880
Total PAH	NA	0.0012
Total DDT	0.5908	0.7822
Total Chlordane	0.0024	0.0868
Dieldrin	0.1603	0.0608
HCB	0.1885	0.6636
Mirex	0.1200	0.3280

Table D-3. ANOVA Results Determining Whether Chemical Concentrations in Mussel Tissue Differ Significantly between Sampling Stations.

Parameter	Probability
Lead	<0.0001
Mercury	<0.0001
Total PCB	<0.0001
Total LMW-PAH	<0.0001
Total HMW-PAH	<0.0001
Total DDT	<0.0001
Total Chlordane	<0.0001
Dieldrin	<0.0001
HCB	<0.0001



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