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# National Marine Fisheries Service Survey of Trace Elements in the Fishery Resource



R. A. Hall, E. G. Zook, and  
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U.S. DEPARTMENT OF COMMERCE  
National Oceanic and Atmospheric Administration  
National Marine Fisheries Service

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**U.S. DEPARTMENT OF COMMERCE**

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**National Oceanic and Atmospheric Administration**

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**National Marine Fisheries Service**

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# National Marine Fisheries Service Survey of Trace Elements in the Fishery Resource

R. A. HALL, E. G. ZOOK, and G. M. MEABURN<sup>1</sup>

## ABSTRACT

Trace element levels have been determined in tissues of 204 species of finfish, Mollusca, and Crustacea taken from 198 sites around the coastal United States, including Alaska and Hawaii. The survey was undertaken as part of the Microconstituents Program of the National Marine Fisheries Service, and covers the occurrence of 15 elements: antimony, arsenic, cadmium, chromium, copper, lead, manganese, mercury, molybdenum, nickel, selenium, silver, tin, vanadium, and zinc. Total concentrations of each element were determined without regard to chemical form. The species analyzed represent approximately 93% of the volume of the U.S. commercial and sportfish catch. The analytical data are summarized in several ways in order to emphasize different aspects of the trace element distributions. Mean levels of each element are presented in relation to the number of species examined, the U.S. (commercial and sportfish) catch, and the U.S. catch intended for consumption. More detailed analytical data on all 15 elements are given for individual species with reference to tissue analyzed, length and weight of fish, and location of catch. For the most part, experimental results are presented without interpretive comment. Mean levels of mercury, the only element for which a regulatory action level is in force, were found to exceed 0.5 ppm Hg in species representing less than 2% of the U.S. catch intended for consumption.

## INTRODUCTION

A primary goal of the National Marine Fisheries Service (NMFS) is to promote the economic utilization of the Nation's fishery resource, in full recognition of the necessity to safeguard the health of the consumer. The NMFS Microconstituents Program was established with the purpose, among others, of developing information on the occurrence of trace elements in fishes and fishery products intended for human consumption. Over the past decade there has been a growing concern that certain chemical elements and their compounds entering the marine environment, chiefly as a result of industrial and urban pollution, may be accumulating in fishes at levels constituting a public health hazard. It was apparent in 1970, when the U.S. Food and Drug Administration (FDA) established a temporary action level for a permissible mercury content of fish, that there was a lack of information on trace element levels in fishes. Further, it was evident that a thorough assessment of any adverse effects of these microconstituents on the future utilization of the resource would require the availability of a broad data base to which newly acquired measurements of contaminants could be referred. To meet these needs and with the added incentive of reassuring a concerned fishing industry, NMFS undertook a series of surveys to determine, through chemical analysis of fish tissues, trace element levels throughout the U.S. fish supply.

A preliminary survey on the occurrence of five

elements (arsenic, cadmium, chromium, lead, and mercury) was completed in 1974. At least 10 samples each of 29 commonly consumed, domestic and imported, fishes and shellfishes were analyzed in the study. With the exception of Pacific halibut, *Hippoglossus stenolepis*; Pacific rockfish (mixed species); and red snapper, *Lutjanus campechanus*, none of the samples contained mercury above the FDA action level of 0.5 ppm Hg. Details of this study have been published (Zook et al. 1976).

A comprehensive trace element survey, referred to here as the Resource Survey, was initiated in 1971 to cover the occurrence of 15 elements—antimony (Sb), arsenic (As), cadmium (Cd), chromium (Cr), copper (Cu), lead (Pb), manganese (Mn), mercury (Hg), molybdenum (Mo), nickel (Ni), selenium (Se), silver (Ag), tin (Sn), vanadium (V), and zinc (Zn)—in 204 species representing at least 93% of the volume of the U.S. commercial catch (Wheeland 1973) and 93% of the volume of the U.S. sportfish catch (Deuel 1973). The elemental analyses provide baseline data to help identify where there may be a potential problem involving species, elements, or locations. This report presents the experimental data obtained during the course of the Resource Survey.

## MATERIALS AND METHODS

### Fish Collection

For purposes of fish collection and data assembly, U.S. coastal waters were divided into seven areas along natural and traditional boundaries. Each area was then divided into three degree lettered squares, except in Alaska, and subdivided into one degree sites as shown in

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Appendix Figure 1; Alaskan sites measure one by two degrees. Individuals from NMFS laboratories and affiliated agencies involved in fish collection (Appendix Table 1) in each of these areas, were asked to collect designated species of fish and shellfish. Most of the 167 requested species, genera, or families were collected. The original list was augmented by additional species to give a final tally of 204 species. Collectors were provided a protocol for labeling, preparing, storing, and shipping fishes, as well as a supply of Fish Data Labels (Appendix Figure 2).

Collectors were requested to supply enough fish of each assigned species to yield 10 2-lb samples of edible muscle (hereafter referred to as a group) from each of four sites within their area (40 samples per species per area). Fishes were frozen as soon as possible after capture and shipped under dry ice via air freight to the Utilization Research Division, Northwest and Alaska Fisheries Center,<sup>2</sup> Seattle, Wash., from Pacific locations, or to the College Park Laboratory, Southeast Fisheries Center,<sup>3</sup> College Park, Md., from Atlantic and Gulf of Mexico locations. Each fish was stored, as received, at  $-25^{\circ}\text{C}$  until samples were prepared from them.

Wherever possible, collectors were asked to provide the common and scientific names, sex, length, weight, age, and tissue or cut of the fish; the date, depth, and location (latitude and longitude and/or local name) of capture; the number of individual fish; and the name of the boat and captain or market, as appropriate, on the Fish Data Label. If not performed by the collector, individual fish were counted, weighed, and measured at College Park and Seattle; fish were also sexed at Seattle.

Finfishes were received for sample preparation in various forms; whole, headed and gutted, headed only, gutted only, skinless fillets and chunks, with and without skin. Livers were included with about one-fourth of the finfishes. Some milt and roe were also received. Shellfishes were received both whole and prepared; shrimps were whole or headed; lobsters and crabs were in the shell; oysters and abalone were shucked; clams were in the shell or shucked; squid and octopi were whole; most scallops were received as abductor muscle only.

## Sample Preparation

Fish were thawed immediately prior to sample preparation and processed as rapidly as possible to minimize any possible moisture loss, decomposition, or contamination from the laboratory environment. Skinless fillets or their closest equivalent were prepared from most finfishes. Some small species and juveniles of other species were ground whole or as otherwise received. Shrimps were headed, peeled, and, unless too small, deveined. Lobsters were prepared as body, claw, tail, leg, or a combination of claw and tail. Crabs were prepared as body, claw, or as a combination of the two parts. Clams

and oysters were shucked. Except in one case, abductor muscles of scallops were prepared. Squid and octopi were prepared whole or as mantle only. Most samples consisted of raw tissue, although lobsters and some crabs from the Pacific coast were cooked. Each sample was assigned a laboratory reference number and thoroughly ground to provide a homogeneous mixture for analysis. From 1 to 10 subsamples of each sample were packed in polyethylene cups and stored at or below  $-25^{\circ}\text{C}$ .

## Analytical Procedures

All chemical analyses were performed under contract<sup>4</sup> by Omni Research, Inc., San German, Puerto Rico. The concentration levels of 15 elements were determined in each of approximately 15,000 sample cups, including controls and duplicates, by atomic absorption spectrophotometry (AAS). Mercury was analyzed by a flameless (cold vapor) method based on that described by Hatch and Ott (1968) and later applied to analysis of fish tissues (Uthe et al. 1970). Arsenic and selenium were analyzed as their hydrides following procedures based on the arsine generation method of Dalton and Malanoski (1971) and further adapted from a development of this method for analysis of As and Se in fish tissues (Southeast Utilization Research Center 1975<sup>5</sup>). The samples were at first digested for As analysis by dry ashing methods (about 40% of the samples). For the remainder of the As and all of the Se analyses, samples were wet ashed. The remaining elements (Sb, Cd, Cr, Cu, Pb, Mn, Mo, Ni, Ag, Sn, V, and Zn) were analyzed by conventional flame AAS, with direct aspiration of a digested sample after appropriate dilution. For Sb, Mo, Sn, and V analyses, samples were dry ashed only. For the other eight elements, approximately the first third of the 15,000 sample cups were analyzed following wet ashing with a  $\text{HNO}_3\text{-HClO}_4$  mixture; these were reanalyzed along with the remaining samples when the contractor changed to a dry ashing procedure.

Numbered cups of all samples, including randomly interspersed control and replicate samples, were shipped in the frozen state by the College Park Laboratory to Omni at regular intervals. Omni was not aware of the contents of any cup.

Control samples were prepared from the raw muscle of Pacific halibut by grinding and thoroughly mixing the tissue from several large fish. They were packaged identically to the other samples. A minimum of 10 controls was included in each shipment of 300 sample cups. In all, approximately 600 controls were sent to the contractor. Four different control samples were used during consecutive periods of the contract. They were also used at the College Park Laboratory as control samples for in-house analytical experiments and other contractual work. Analytical results for controls were the first items checked

<sup>4</sup>Department of Commerce contract No. 2-35403, June 28, 1972.

<sup>5</sup>Southeast Utilization Research Center, NMFS. 1975. Arsenic and selenium in North American lobster (*Homarus americanus*) including relation to previously determined mercury content. NMFS in-house report, 71 p.

<sup>2</sup>Formerly known as the Pacific Utilization Research Center.

<sup>3</sup>Formerly known as the Southeast Utilization Research Center.

upon receipt of data from Omni. The values reported for each element were followed from shipment to shipment to detect any abnormal trends. Three consecutive high or low values were taken to indicate the existence of an analytical problem. To avoid having all samples in a group analyzed during a period of abnormally high or low values, whenever possible no more than two samples from the same group were sent in the same shipment. Bar graphs of control sample analytical values were constructed to assist in the evaluation and were sent periodically to Omni.

As a method of checking analytical reproducibility over time, in addition to using controls, a minimum of 20% of the samples from each group was to be duplicated in later shipments; overall duplication was about 50%. Single analyses were run on the remainder. Duplication was also used to confirm or reject suspect data.

Frequent contacts were made with Omni to review the status of contract work, including methods of analysis, variations in analytical values, their possible causes, and recommendations for correction.

## Data Management

Collection and physical composition data were assembled from information furnished on the Fish Data Label (Appendix Figure 2) returned by collectors with each fish. Information that the collector failed to provide was added at College Park (e.g., length and weight of a whole fish), or gathered from a phone call or letter, when possible. Not all the information requested was available for all fishes. Depth of catch and age were seldom available; sex was sometimes available; latitude and longitude of catch were available for approximately half the fishes; date of catch, fish length and weight, and the number of fish were usually available; and some description of the catch location was almost always available. When only the weight of a headed, gutted, or headed and gutted fish was provided, that weight was converted to an estimated round weight.

The collection and physical composition data for each group of samples were then entered on a "history" sheet. If the collector did not send enough fish for 10 samples, as requested, samples composed of fish from similar dates of catch, location, and/or size were grouped together on one "history" sheet. These groups represent pages in the "history" sheet files and were a necessary means of checking the computer tapes.

When the analytical data were received from the contractor, they were entered on a coding form (Appendix Figure 3) with the data from the "history" sheet and were keypunched and entered into the computer. For the latter half of the samples, the contractor entered the analytical data directly on the coding forms.

To check that the data were entered correctly, a cycle of: 1) generate computer printout, 2) check printout for accuracy, 3) correct errors and add new data was repeated several times. Once all the data were in the computer, each group was reviewed using Grubbs' outlier test (paragraph 4.1 of Grubbs 1969) to determine if

any values deviated from the group mean more than could be anticipated with normal statistical theory to remove grossly unreasonable lone values as well as to identify periods when values were repeatedly unreasonable. Using this approach, about 1% of the analytical values was determined to be too questionable for use in this report.

The Microconstituent Data Bank, in which the Resource Survey data are stored, is a card-to-tape system with a format similar to the coding form (Appendix Figure 3). It was established in 1973 for the purpose of storage, retrieval, and tabulation of data generated by the Resource Survey and similar studies. Twelve program runs, most with several choices of data breakdown, can be generated with programs presently in the system; Table 5, page 119, is an example of one of these, the MF17 program run. Other programs list species, broken down according to location, and provide a varying depth of detail from 1 to 15 elements. They also provide differing aggregates of history information.

## RESULTS

### Overview

The Resource Survey provides information on the occurrence of 15 elements in the fishery resource. It covers 204 species taken from 198 sites in 7 areas of U.S. coastal waters. Excluding controls, a total of 9,347 unique samples of 13 different tissues or product forms were analyzed.

The contractor returned approximately 220,000 analytical values of element levels, including replicates but excluding controls. Of these, about 2,900 values were rejected according to the criteria established for data checking. Approximately 37,500 analyses were reported by the contractor as "not detected" or "zero" without reference to detection limits and consequently were not used to determine mean trace element levels.

In a project of this magnitude, invariably some information is lost and a degree of uncertainty introduced into the data as a result of logistical and analytical difficulties encountered during various phases of the work. There were periods during this survey when analytical results reported by the contractor reflected problems of this kind. At times, imprecision in the data could be associated with changes in methodology and analytical procedures. During some periods, many of the samples appeared to have been contaminated with one or more elements. At other times, only occasional unreasonably high values were reported.

When checking data, it is relatively simple to find a single deviant value among the results of many analyses on the same sample or even the same species, i.e., when comparing similar fish. It is generally impossible to distinguish between deviant and acceptable values, however, when few analyses are available. Therefore, there is a much higher chance of reporting an inaccurate value of the mean element content of a species

represented by very few samples. Furthermore, if two samples of the same species are analyzed during a period of deviant values, their reported element contents tend to lend credence to each other and, therefore, cannot easily be removed from the data collection, although it is recognized that their inclusion leads to less accurate mean values. Attempts were made, through data checking, to remove all such deviant values.

After reviewing the values received for the control samples as well as the results of the outlier tests, generalizations can be made on the precision of the data. Analytical results on controls for Ag and Mn were very consistent and very few of the values had to be rejected. Controls for Cd were at first reported as zero, but shortly after the contractor changed to a dry ash methodology for this element, the analytical values for controls became very consistent. Very few Cd values were eliminated. Likewise, there were few Hg values discarded; however, there was slightly more variation among the control values for Hg. Zinc showed fairly consistent controls but had occasional abnormally high values overall, with about 1% being rejected, while Ni, Cu, and Se showed more variation in the controls than did Zn but had fewer abnormal values overall. During one short period, Ni and Zn both had a series of abnormal values. Lead and chromium both showed an abundance of zero control values for samples analyzed following wet digestion and erratic standard values for samples that had been dry ashed. There were several periods when almost all of the values for both elements were too high to be included in the mean, based on the outlier test. Approximately 2% of the Pb values and 3% of the Cr values were discarded. The Sn controls showed variability similar to Pb and Cr but with even more periods of high values. About 4% of the Sn values were not used, including almost all of one series of 150 samples. Although only about 1% of the reported As values was discarded, As showed more variation than any other element, with standard deviations approaching the mean value itself. Moreover, As control values became higher shortly after a change from dry ash to wet ash methodology. Results received for Mo, V, and Sb differed greatly within themselves over time. Each had periods when almost all results were reported as zero. When not zero, Sb results showed some degree of reproducibility while Mo and V values were more erratic.

## Explanation of Tables

A list of all species analyzed in the Resource Survey is presented in alphabetical order, by common name, in Table 1. The species numbers are those assigned by the College Park Laboratory for use in the Microconstituent Data Bank and are the same as those used in Tables 2, 4, and 5. The first three digits refer to a fish family; the last three digits refer to a species within that family. The scientific name for each species is also given.

Areas in which the fish were caught, types of tissue analyzed, and the total number of samples of each species in the survey are presented in species number

order in Table 2. Some species were captured in more than one area and more than one tissue was sometimes analyzed for one species. Specific tissues taken from a single species were not necessarily analyzed for fish from all listed areas, e.g., black sea bass livers were analyzed only for fish collected from the South Atlantic, although muscle was analyzed for both North and South Atlantic fish.

Table 3 is in 15 parts. Each part presents a summarized view of the levels of one of the elements measured in the Resource Survey, e.g., the distribution of mean mercury level is shown in Table 3.8. The ranges of mean analytical values are broken out separately for each tissue examined. The number of species, the percent of the U.S. commercial and sportfish catch intended for human consumption represented by those species, based on 1970 figures (Deuel 1973; Wheeland 1973), are listed next to the corresponding range. Because Table 3 does not identify species, data on one tissue may not be compared with data on other tissues; Table 4 should be consulted to determine which species fall in a particular range and how many samples of those species were analyzed.

The 15 parts of Table 4 are alphabetical lists of Resource Survey species, showing the distribution of mean elemental levels in the tissues analyzed for each species. The columns on the right correspond to the ranges of mean analytical values listed in Table 3; the range delineating the mean analytical value for a particular tissue of each species is marked accordingly. The two columns of numbers give the total number of samples analyzed and the number of sample values used in calculating the mean; "not detected" or "zero" values were not used in calculating the mean.

Table 5 is an MF17 computer printout for the entire Resource Survey from the Microconstituent Data Bank. Each species is listed separately in species number order. The species numbers are the same as those listed in Table 1 and are found to the right of the scientific name. Within each species, each tissue is listed separately. Sites are one degree squares from a specific area (one by two in Alaska) designating the location of catch according to the map shown in Appendix Figure 1. The mean analytical value is calculated for each unique species-tissue-site combination. If known, length and weight data are tabulated along with the number of samples for which the fish were measured. The mean, standard deviation and range of these lengths and weights are given in meters and kilograms, respectively. This information is followed by the analytical data for each element. Included are the total number of samples from the site, the number of samples in which none of the element was detected ("N Det."), together with the mean, standard deviation and range of all detected analytical values.

It should be noted that some of the species are represented by very few samples and their mean elemental values may not be as reliable as those found for species more extensively sampled. Where there is a high proportion of "not detected" or "zero" values, their ex-

clusion can also give rise to less reliable data by overestimating mean values.

## Element Levels

The distribution of mean element levels in Resource Survey species is summarized in Table 3 for the 159 species of finfishes whose muscle was analyzed, 82 species whose liver was analyzed, 17 species of whole finfish, 18 species of Mollusca, and 16 species of Crustacea. The main features of the results are outlined below for each of the elements analyzed.

**Antimony (Sb):** The mean Sb levels in most finfish muscles and livers fell in the range 0.5-0.9 ppm. Most species of whole finfishes contained Sb levels between 1.0 and 3.0 ppm. Most shellfish species displayed mean Sb levels between 0.8 and 1.0 ppm.

**Arsenic (As):** The mean As levels showed a wide range of values for finfish muscles and livers, whole finfishes, and Mollusca, with most species falling between 2.0 and 5.0 ppm in each category. Crustacea showed somewhat higher levels, with the largest number of species falling between 4.0 and 5.0 ppm.

**Cadmium (Cd):** Finfish muscles usually contained less than 0.1 ppm Cd, whereas finfish livers ranged in Cd content up to 30.0 ppm with no apparent mode. The whole finfishes examined generally fell in the range 0.1-0.3 ppm Cd as did Mollusca and Crustacea, with Mollusca showing more variation than the other two.

**Chromium (Cr):** Except for whole finfishes, the mean Cr levels for most species fell within the range 0.1-0.4 ppm. A range of 0.2-0.6 ppm Cr was found for the majority of the whole finfishes analyzed.

**Copper (Cu):** There is a significant difference in mean Cu levels between finfish muscles and livers. The muscles ranged from 0.1 to 2.0 ppm Cu, with most species falling between 0.2 and 0.5 ppm. On the other hand, livers ranged from 1.0-110.0 ppm, with no apparent mode. Although no pattern could be discerned for whole finfishes and shellfishes, much higher Cu levels were found in the shellfishes.

**Lead (Pb):** The mean Pb levels in the majority of species were found to fall in the following ranges: finfish muscles, 0.3-0.7 ppm; finfish livers, 0.2-0.6 ppm; Mollusca and Crustacea, 0.5-0.8 ppm. No pattern was observed for mean Pb levels in whole finfishes.

**Manganese (Mn):** Mean Mn levels in finfish muscles and livers ranged up to 2.0 ppm, with muscles usually below 0.3 ppm and livers usually above 0.6 ppm. Whole finfishes exhibited a mode in the range 1.0-2.0 ppm Mn.

**Mercury (Hg):** Most finfish muscles had mean Hg levels below 0.3 ppm and only 31 species were found to contain mean Hg levels above the FDA action level of 0.5 ppm. However, these 31 species represent only one percentage point of the 63.9% of the catch intended for consumption represented by the 159 species analyzed. Extrapolation of these results indicates that, in fact, less than 2% of the U.S. catch intended for consumption may be in excess of the action level. Of the 31 species above 0.5 ppm Hg, 10 are sharks and 4 are billfishes. Livers

generally showed slightly higher Hg levels than muscle samples. All species of whole finfishes had mean Hg levels below 0.3 ppm. Likewise, Crustacea had mean levels less than 0.3 ppm Hg and Mollusca were all below 0.1 ppm.

**Molybdenum (Mo):** The mean Mo levels for the majority of finfish muscles and livers, whole finfishes and Mollusca, and all the Crustacea ranged from < 0.1 to 0.4 ppm Mo.

**Nickel (Ni):** The distributions for Ni are similar to those found for Cr. The mean Ni levels in finfish muscles and livers ranged from 0.1 to 0.3 ppm for most species. The majority of the whole finfishes were between 0.3 and 0.5 ppm Ni. For most of the Crustacea the range of mean Ni levels was 0.2-0.4 ppm.

**Selenium (Se):** With the exception of finfish livers, no mean Se values were greater than 2.0 ppm. For finfish muscles, the mean level in the majority of species ranged from 0.4 to 0.9 ppm Se. Finfish livers showed a greatly extended range of 0.6-30.0 ppm, with the majority between 1.0 and 3.0 ppm.

**Silver (Ag):** Finfish muscles contained mean levels less than 0.1 ppm Ag for all but one specimen examined. The majority of the species in the other categories were likewise below 0.1 ppm Ag, although livers ranged up to 0.6 ppm, whole finfishes to 0.2 ppm, Mollusca to 0.7 ppm, and Crustacea up to 0.5 ppm.

**Tin (Sn):** The ranges of mean Sn levels for most species were 0.4-0.8 ppm for muscles and 0.3-0.7 ppm for livers. Most of the whole finfishes contained 1.0-2.0 ppm Sn.

**Vanadium (V):** The mean V levels of finfish muscles and livers were below 0.5 ppm for most species, although livers tended to be higher than muscles. Most whole finfishes had mean values of V less than 0.8 ppm. Vanadium levels in most shellfishes fell between 0.2 and 0.5 ppm.

**Zinc (Zn):** The distributions for Zn are similar to those found for Cu, although the values are higher. Muscles ranged from 2.0 to 20.0 ppm, with the majority of species falling in the range 3.0-6.0 ppm, whereas livers ranged from 4.0 to 700.0 ppm, with the majority of species in the range 10.0-40.0 ppm Zn.

## CONCLUDING REMARKS

The completion of this data report does not bring the Resource Survey to an end. No attempt has been made here, for example, to compare element levels in a particular species or to investigate possible relationships between element levels and fish location, size, or sex. The analytical values have been summarized by site only for each species and tissue, and very little of the history of the fish has been presented. Many of the data not made available here will be presented in the form of detailed data reports. Two such reports currently in preparation present trace element levels in fishes and shellfishes taken from the New York Bight and adjacent waters, and in sharks caught in U.S. waters. The com-

plete collection of data is available for use in interpretive studies. It is also anticipated that the data will be made available to the public, in the future, through the National Oceanographic Data Center, Environmental Data Service, National Oceanic and Atmospheric Administration, Rockville, Md.

This work represents an essential first step towards a better understanding of possible constraints that may be placed upon the safe and economic utilization of the Nation's fishery resource due to contamination by trace elements. It provides a broad view of the occurrence of 15 elements and contains baseline information that should be of assistance in planning future, more detailed investigations of trace element levels in selected species of fishes and shellfishes. Several such in-depth studies are currently underway on species revealed to be relatively high in one or more elements. Some underutilized species are also being studied in depth because of their potential commercial value, not necessarily because they are known to be high in any element. Other surveys of this kind are being undertaken in locations believed to be polluted. Elements selected for detailed investigations include those found in toxic form and those believed to offset the toxic effects of others through chemical or biochemical interactions. In the long term, the ability to distinguish between toxic and relatively harmless contaminants would be extremely valuable from a public health standpoint and in assisting efficient management of the fishery resource.

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Table 1.—Alphabetical list of species analyzed in the Resource Survey.

Common name	Species number	Scientific name
Abalone, green	187-005	<i>Haliotis fulgens</i>
Abalone, red	187-008	<i>Haliotis rufescens</i>
Alewife	078-005	<i>Alosa pseudoharengus</i>
Anchovy, northern	001-016	<i>Engraulis mordax</i>
Anchovy, striped	001-006	<i>Anchoa hepsetus</i>
Argentine, Atlantic	002-002	<i>Argentina silus</i>
Ballyhoo	062-014	<i>Hemiramphus brasiliensis</i>
Barracuda, Atlantic	005-002	<i>Sphyrna barracuda</i>
Barracuda, Pacific	005-001	<i>Sphyrna argentea</i>
Bass, black sea	006-006	<i>Centropristis striata</i>
Bass, striped	007-004	<i>Morone saxatilis</i>
Bluefish	012-001	<i>Pomatomus saltatrix</i>
Bonito, Atlantic	091-011	<i>Sarda sarda</i>
Bonito, Pacific	091-009	<i>Sarda chiliensis</i>
Bullhead, brown	021-007	<i>Ictalurus nebulosus</i>
Butterfish	018-014	<i>Peprilus triacanthus</i>
Catfish, channel	021-010	<i>Ictalurus punctatus</i>
Catfish, gafftopsail	023-002	<i>Bagre marinus</i>
Catfish, sea	023-001	<i>Arius felis</i>
Catfish, white	021-002	<i>Ictalurus catus</i>
Clam, butter	191-003	<i>Saxidomus gigantea</i>
Clam, hard (quahog)	191-001	<i>Mercenaria mercenaria</i>
Clam, Pacific littleneck	191-008	<i>Protothaca staminea</i>
Clam, razor	243-002	<i>Siliqua patula</i>
Clam, soft	242-001	<i>Mya arenaria</i>
Clam, surf	244-005	<i>Spisula solidissima</i>
Cod, Atlantic	033-008	<i>Gadus morhua</i>
Cod, Pacific (gray)	033-007	<i>Gadus macrocephalus</i>
Crab, blue	196-001	<i>Callinectes sapidus</i>
Crab, Dungeness	196-011	<i>Cancer magister</i>
Crab, king	196-012	<i>Paralithodes camtschatica</i>
Crab, red, deep sea	196-006	<i>Geryon quinquedens</i>
Crab, rock	196-003	<i>Cancer erroratus</i>
Crab, tanner (bairdi)	196-035	<i>Chionoecetes bairdi</i>
Croaker, Atlantic	045-026	<i>Micropogon undulatus</i>
Cusk	033-004	<i>Brosme brosme</i>
Cusk-eel, fawn	037-004	<i>Lepophidium cervinum</i>
Dogfish, smooth	145-018	<i>Mustelus canis</i>
Dogfish, spiny	141-007	<i>Squalus acanthias</i>
Dolphin	040-002	<i>Coryphaena hippurus</i>
Drum, banded	045-019	<i>Larimus fasciatus</i>
Drum, black	045-028	<i>Pogonias cromis</i>
Drum, red	045-030	<i>Sciaenops ocellata</i>
Eel, American	051-001	<i>Anguilla rostrata</i>
Eel, conger	047-002	<i>Conger oceanicus</i>
Eulachon	153-009	<i>Thaleichthys pacificus</i>
Flounder, fourspot	058-028	<i>Paralichthys oblongus</i>
Flounder, Gulf	058-024	<i>Paralichthys albigutta</i>
Flounder, southern	058-027	<i>Paralichthys lethostigma</i>
Flounder, summer (fluke)	058-026	<i>Paralichthys dentatus</i>
Flounder, windowpane (s. dab)	058-030	<i>Scophthalmus aquosus</i>
Flounder, winter	059-030	<i>Pseudopleuronectes americanus</i>
Flounder, witch	059-005	<i>Glyptocephalus cynoglossus</i>
Flounder, yellowtail	059-016	<i>Limanda ferruginea</i>
Gag	006-040	<i>Mycteroperca microlepis</i>
Goatfish	066-009	<i>Mulloidichthys samoensis</i>
Goosefish	068-001	<i>Lophius americanus</i>
Grouper, black	006-037	<i>Mycteroperca bonaci</i>
Grouper, red	006-017	<i>Epinephelus morio</i>
Grouper, yellowmouth	006-038	<i>Mycteroperca interstitialis</i>
Grunt, bluestriped (yellow)	073-015	<i>Haemulon sciurus</i>
Grunt, white	073-014	<i>Haemulon plumieri</i>
Haddock	033-011	<i>Melanogrammus aeglefinus</i>
Hake, Pacific	033-013	<i>Merluccius productus</i>
Hake, red	033-020	<i>Urophycis chuss</i>
Hake, silver (whiting)	033-012	<i>Merluccius bilinearis</i>
Hake, spotted	033-024	<i>Urophycis regius</i>
Hake, white	033-025	<i>Urophycis tenuis</i>
Halibut, Pacific	059-011	<i>Hippoglossus stenolepis</i>
Hammerhead, scalloped	143-001	<i>Sphyrna lewini</i>

Table 1.—Alphabetical list of species analyzed in the Resource Survey.—Continued.

Common name	Species number	Scientific name
Hammerhead, smooth	143-005	<i>Sphyrna zygaena</i>
Harvestfish	018-011	<i>Peprilus alepidotus</i>
Herring, Atlantic	078-011	<i>Clupea harengus harengus</i>
Herring, blueback	078-001	<i>Alosa aestivalis</i>
Herring, Pacific	078-012	<i>Clupea harengus pallasii</i>
Herring, round	078-015	<i>Etrumeus teres</i>
Hind, speckled	006-013	<i>Epinephelus drummondhayi</i>
Jack (mackerel scad)	079-068	<i>Decapterus pinnulatus</i>
Jack, akule	079-053	<i>Trachurops crumenophthalmus</i>
Jack, crevalle	079-005	<i>Caranx hippos</i>
Jack, crevalle (Hawaii)	079-069	<i>Caranx melampygus</i>
Jacksmelt	149-004	<i>Atherinopsis californiensis</i>
Jewfish	006-016	<i>Epinephelus itajara</i>
Kingfish, northern	045-024	<i>Menticirrhus saxatilis</i>
Kingfish, southern	045-021	<i>Menticirrhus americanus</i>
Ladyfish	200-002	<i>Elops saurus</i>
Lingcod	071-005	<i>Ophiodon elongatus</i>
Lobster, northern (American)	194-012	<i>Homarus americanus</i>
Lobster, spiny (Atlantic)	194-002	<i>Panulirus argus</i>
Lobster, spiny (Pacific)	194-003	<i>Panulirus interruptus</i>
Mackerel, Atlantic	091-013	<i>Scomber scombrus</i>
Mackerel, chub	091-012	<i>Scomber japonicus</i>
Mackerel, jack	079-034	<i>Trachurus symmetricus</i>
Mackerel, king	091-014	<i>Scomberomorus cavalla</i>
Mackerel, Spanish	091-016	<i>Scomberomorus maculatus</i>
Mako, shortfin	144-003	<i>Isurus oxyrinchus</i>
Marlin, blue	011-002	<i>Makaira nigricans</i>
Marlin, striped	011-005	<i>Tetrapturus audax</i>
Marlin, white	011-003	<i>Tetrapturus albidus</i>
Mempachi	162-012	<i>Myripristis argyromus</i>
Menhaden, Atlantic	078-010	<i>Brevoortia tyrannus</i>
Menhaden, Gulf	078-008	<i>Brevoortia patronus</i>
Menhaden, yellowfin	078-009	<i>Brevoortia smithi</i>
Milkfish	206-001	<i>Chanos chanos</i>
Mojarra, yellowfin	094-010	<i>Gerres cinereus</i>
Mullet, silver (white)	098-003	<i>Mugil curema</i>
Mullet, striped	098-002	<i>Mugil cephalus</i>
Octopus (marmoratus)	205-001	<i>Polypus marmoratus</i>
Oyster, eastern	189-001	<i>Crassostrea virginica</i>
Oyster, Pacific (giant)	189-002	<i>Crassostrea gigas</i>
Palometas	079-030	<i>Trachinotus goodei</i>
Perch, ocean (Pacific)	131-023	<i>Sebastes alutus</i>
Perch, ocean (redfish)	131-052	<i>Sebastes marinus</i>
Perch, sand	006-010	<i>Diplectrum formosum</i>
Perch, shiner	168-005	<i>Cymatogaster aggregata</i>
Perch, silver	045-003	<i>Bairdiella chrysura</i>
Perch, white	007-001	<i>Morone americana</i>
Permit	079-029	<i>Trachinotus falcatus</i>
Pigfish	073-017	<i>Orthopristis chrysoptera</i>
Pinfish, spottail	114-013	<i>Diplodus holbrookii</i>
Plaice, American (dab)	059-008	<i>Hippoglossoides platessoides</i>
Pollock	033-017	<i>Pollachius virens</i>
Pollock, walleye (Alaska)	033-019	<i>Theragra chalcogramma</i>
Pompano, Florida	079-028	<i>Trachinotus carolinus</i>
Porgy, red	114-014	<i>Pagrus sedecim</i>
Pout, ocean	056-018	<i>Macrozoarces americanus</i>
Rockfish, bocaccio	131-061	<i>Sebastes paucispinis</i>
Rockfish, canary	131-063	<i>Sebastes pinniger</i>
Rockfish, copper	131-031	<i>Sebastes caurinus</i>
Rockfish, yellowtail	131-043	<i>Sebastes flavidus</i>
Runner, blue	079-004	<i>Caranx crysos</i>
Sablefish	126-001	<i>Anoplopoma fimbria</i>
Sailfish	011-001	<i>Istiophorus platypterus</i>
Salmon, chinook (king)	179-020	<i>Oncorhynchus tshawytscha</i>
Salmon, chum (keta)	179-017	<i>Oncorhynchus keta</i>
Salmon, coho (silver)	179-018	<i>Oncorhynchus kisutch</i>
Salmon, pink	179-016	<i>Oncorhynchus gorbuscha</i>
Salmon, sockeye (red)	179-019	<i>Oncorhynchus nerka</i>
Scad, round	079-013	<i>Decapterus punctatus</i>
Scallop, Atlantic bay	190-014	<i>Aequipecten irradians</i>

Table 1.—Alphabetical list of species analyzed in the Resource Survey.—Continued.

Common name	Species number	Scientific name
Scallop, calico	190-016	<i>Aequipecten gibbus</i>
Scallop, pink	190-028	<i>Chlamys hericius</i>
Scallop, sea (smooth)	190-013	<i>Placopecten magellanicus</i>
Scamp	006-041	<i>Mycteroperca phenax</i>
Sculpin, longhorn	132-031	<i>Myoxocephalus octodecemspinosus</i>
Scup	114-016	<i>Stenotomus chrysops</i>
Searobin, northern	135-010	<i>Prionotus carolinus</i>
Searobin, striped	135-011	<i>Prionotus evolans</i>
Seatrout, gray (weakfish)	045-012	<i>Cynoscion regalis</i>
Seatrout, sand	045-007	<i>Cynoscion arenarius</i>
Seatrout, silver (white)	045-010	<i>Cynoscion nothus</i>
Seatrout, spotted (speckled)	045-008	<i>Cynoscion nebulosus</i>
Shad, American	078-006	<i>Alosa sapidissima</i>
Shark, Atlantic sharpnose	145-025	<i>Rhizoprionodon terraenovae</i>
Shark, blacktip	145-006	<i>Carcharhinus limbatus</i>
Shark, blue	145-023	<i>Prionace glauca</i>
Shark, dusky	145-010	<i>Carcharhinus obscurus</i>
Shark, sandbar	145-009	<i>Carcharhinus milberti</i>
Shark, white	144-001	<i>Carcharodon carcharias</i>
Sheepshead	114-001	<i>Archosargus probatocephalus</i>
Shrimp, Alaska (sidestripe)	192-012	<i>Pandalopsis dispar</i>
Shrimp, brown	192-005	<i>Penaeus aztecus</i>
Shrimp, ocean	192-007	<i>Pandalus jordani</i>
Shrimp, pink	192-010	<i>Penaeus duorarum</i>
Shrimp, pink (northern)	192-011	<i>Pandalus borealis</i>
Shrimp, royal red	192-003	<i>Hymenopenaeus robustus</i>
Shrimp, white	192-004	<i>Penaeus setiferus</i>
Skate, little	150-005	<i>Raja erinacea</i>
Skate, winter	150-012	<i>Raja ocellata</i>
Snapper, blackfin	155-005	<i>Lutjanus buccanella</i>
Snapper, gray	155-025	<i>Aprion virescens</i>
Snapper, gray (mangrove)	155-008	<i>Lutjanus griseus</i>
Snapper, red	155-006	<i>Lutjanus campechanus</i>
Snapper, red (ehu)	155-024	<i>Etelis marchi</i>
Snapper, vermilion	155-015	<i>Rhomboplites aurorubens</i>
Snapper, yellowtail	155-013	<i>Ocyurus chrysurus</i>
Snook	157-004	<i>Centropomus undecimalis</i>
Sole, Dover	059-021	<i>Microstomus pacificus</i>
Sole, English	059-022	<i>Parophrys vetulus</i>
Sole, petrale	059-004	<i>Eopsetta jordani</i>
Sole, rex	059-006	<i>Glyptocephalus zachirus</i>
Sole, rock	059-014	<i>Lepidopsetta bilineata</i>
Spearfish, shortbill	011-004	<i>Tetrapturus angustirostris</i>
Spot	045-020	<i>Leiostomus xanthurus</i>
Squid, Atlantic longfinned	188-003	<i>Loligo pealii</i>
Squid, Pacific	188-006	<i>Loligo opalescens</i>
Squid, shortfinned	188-014	<i>Illex illecebrosus</i>
Sturgeon, green	166-003	<i>Acipenser medirostris</i>
Surfperch, barred	168-001	<i>Amphistichus argenteus</i>
Tarpon	200-003	<i>Megalops atlantica</i>
Tautog	185-022	<i>Tautoga onitis</i>
Tilefish	174-003	<i>Lopholatilus chamaeleonticeps</i>
Trout, cutthroat	179-028	<i>Salmo clarki</i>
Trout, rainbow (steelhead)	179-029	<i>Salmo gairdneri</i>
Tuna, albacore	091-019	<i>Thunnus alalunga</i>
Tuna, bigeye	091-022	<i>Thunnus obesus</i>
Tuna, blackfin	091-021	<i>Thunnus atlanticus</i>
Tuna, bluefin	091-023	<i>Thunnus thynnus</i>
Tuna, skipjack	091-008	<i>Katsuwonus pelamis</i>
Tuna, yellowfin	091-020	<i>Thunnus albacares</i>
Tunny, little	091-006	<i>Euthynnus alletteratus</i>
Wahoo	091-001	<i>Acanthocybium solanderi</i>
Wolffish, Atlantic	183-002	<i>Anarhichas lupus</i>
Yellowtail	079-023	<i>Seriola dorsalis</i>

Table 2. Resource Survey: Areas of Catch, Tissues Analyzed, and Number of Samples Analyzed; by Species

Species Number	Species Name	Areas of Catch	Tissues Analyzed	No. of Samples
001-006	Anchovy, striped	Gulf of Mexico	headed & gutted	40
001-016	Anchovy, northern	California	whole	40
002-002	Argentine, Atlantic	N. Atlantic	headed & gutted	7
005-001	Barracuda, Pacific	California	muscle	20
005-002	Barracuda, Atlantic	Gulf of Mexico	muscle	7
006-006	Bass, black sea	N. & S. Atlantic	muscle, liver	57
006-010	Perch, sand	S. Atlantic	muscle	1
006-013	Hind, speckled	S. Atlantic	muscle, liver	27
006-016	Jewfish	Gulf of Mexico	muscle	8
006-017	Grouper, red	Gulf of Mexico	muscle	41
006-037	Grouper, black	Gulf of Mexico	muscle	34
006-038	Grouper, yellowmouth	S. Atlantic	muscle, liver	11
006-040	Gag	Gulf of Mexico	muscle	30
006-041	Scamp	S. Atlantic	muscle, liver	11
007-001	Perch, white	N. Atlantic	muscle, headed & gutted	46
007-004	Bass, striped	N. Atlantic, California, Northwest	muscle, liver	120
011-001	Sailfish	N. & S. Atlantic, Gulf of Mexico	muscle, liver	46
011-002	Marlin, blue	N. & S. Atlantic, Hawaii	muscle, liver	44
011-003	Marlin, white	N. & S. Atlantic, Gulf of Mexico	muscle, liver	65
011-004	Spearfish, shortbill	Hawaii	muscle, liver	19
011-005	Marlin, striped	Hawaii	muscle, liver	49
012-001	Bluefish	N. & S. Atlantic, Gulf of Mexico	muscle, liver	77
018-011	Harvestfish	N. & S. Atlantic	muscle, whole	19
018-014	Butterfish	N. Atlantic	muscle, whole, headed & gutted	90
021-002	Catfish, white	N. Atlantic	muscle	1
021-007	Bullhead, brown	N. Atlantic	muscle	4
021-010	Catfish, channel	N. Atlantic	muscle	20
023-001	Catfish, sea	Gulf of Mexico	muscle, liver	53
023-002	Catfish, gafftopsail	Gulf of Mexico	muscle, liver	37
033-004	Cusk	N. Atlantic	muscle, liver	94
033-007	Cod, Pacific (gray)	Northwest, Alaska	muscle, liver	75
033-008	Cod, Atlantic	N. Atlantic	muscle, liver	150
033-011	Haddock	N. Atlantic	muscle, liver, whole	96
033-012	Hake, silver (whiting)	N. Atlantic	muscle, liver	86
033-013	Hake, Pacific	California, Northwest	muscle, liver	50
033-017	Pollock	N. Atlantic	muscle, liver	106
033-019	Pollock, walleye (Alaska)	Northwest, Alaska	muscle, liver	51
033-024	Hake, red	N. Atlantic	muscle	65
033-024	Hake, spotted	N. Atlantic	muscle	65
033-025	Hake, white	N. Atlantic	muscle, liver	101
037-004	Cusk-eel, fawn	N. Atlantic	muscle	2
041-002	Dolphin	S. Atlantic, Gulf of Mexico, Hawaii	muscle, liver	91
045-003	Perch, silver	S. Atlantic	muscle	20
045-007	Seatrout, sand	Gulf of Mexico	muscle	18
045-008	Seatrout, spotted (speckled)	N. & S. Atlantic, Gulf of Mexico	muscle, liver	92
045-010	Seatrout, silver (white)	Gulf of Mexico	muscle, liver	45
045-012	Seatrout, gray (weakfish)	N. & S. Atlantic	muscle, liver, whole	85
045-019	Drum, banded	N. & S. Atlantic	muscle	5
045-020	Spot	N. & S. Atlantic	muscle	54
045-021	Kingfish, southern	Gulf of Mexico	muscle, liver	15
045-024	Kingfish, northern	N. Atlantic	muscle	6
045-026	Croaker, Atlantic	N. & S. Atlantic, Gulf of Mexico	muscle	92
045-028	Drum, black	Gulf of Mexico	muscle, liver	63
045-030	Drum, red	N. & S. Atlantic, Gulf of Mexico	muscle, liver	76
047-002	Eel, conger	N. Atlantic	muscle	1
051-001	Eel, American	N. Atlantic	muscle	30
056-018	Pout, ocean	N. Atlantic	muscle, liver	37
058-024	Flounder, Gulf	Gulf of Mexico	muscle, liver	42
058-026	Flounder, summer (fluke)	S. Atlantic	muscle, liver	44
058-027	Flounder, southern	S. Atlantic, Gulf of Mexico	muscle, liver	44
058-028	Flounder, fourspot	N. Atlantic	muscle	71
058-030	Flounder, windowpane (s. dab)	N. Atlantic	muscle	18
059-004	Sole, petrale	California, Northwest	muscle, liver	64
059-005	Flounder, witch	N. Atlantic	muscle	71
059-006	Sole, rex	California, Northwest	muscle	61
059-008	Plaice, American (dab)	N. Atlantic	muscle	69
059-011	Halibut, Pacific	Northwest, Alaska	muscle, liver	53
059-014	Sole, rock	Northwest	muscle	10
059-016	Flounder, yellowtail	N. Atlantic	muscle, liver	91
059-021	Sole, Dover	California, Northwest	muscle, liver	74
059-022	Sole, English	California, Northwest	muscle, liver	78
059-030	Flounder, winter	N. Atlantic	muscle, liver	125
062-014	Ballyhoo	S. Atlantic	whole	58
066-009	Goatfish	Hawaii	muscle	40
068-001	Goosefish	N. Atlantic	muscle, liver, headed & gutted	92

Table 2. Resource Survey: Areas of Catch, Tissues Analyzed, and Number of Samples Analyzed; by Species (cont'd)

Species Number	Species Name	Areas of Catch	Tissues Analyzed	No. of Samples
071-005	Lingcod	California, Northwest	muscle, liver	91
073-014	Grunt, white	S. Atlantic, Gulf of Mexico	muscle	17
073-015	Grunt, bluestriped (yellow)	S. Atlantic, Gulf of Mexico	muscle	16
073-017	Pigfish	N. & S. Atlantic	muscle	34
078-001	Herring, blueback	N. Atlantic	whole	1
078-005	Alewife	N. Atlantic	muscle, whole	47
078-006	Shad, American	N. Atlantic, Northwest	muscle	60
078-008	Menhaden, Gulf	Gulf of Mexico	muscle, whole, gutted	87
078-009	Menhaden, yellowfin	Gulf of Mexico	whole	13
078-010	Menhaden, Atlantic	N. & S. Atlantic	muscle, whole	111
078-011	Herring, Atlantic	N. Atlantic	muscle, whole, headed, headed & gutted	95
078-012	Herring, Pacific	Northwest, Alaska	muscle, whole	44
078-015	Herring, round	N. Atlantic	headed & gutted	50
079-004	Runner, blue	Gulf of Mexico	muscle, liver	60
079-005	Jack, crevalle	Gulf of Mexico	muscle, liver	53
079-013	Scad, round	S. Atlantic	headed & gutted	3
079-023	Yellowtail	California	muscle	24
079-028	Pompano, Florida	S. Atlantic, Gulf of Mexico	muscle, liver	65
079-029	Permit	S. Atlantic	muscle	9
079-030	Palometa	S. Atlantic	muscle	2
079-034	Mackerel, jack	California	muscle, liver, headed	15
079-053	Jack, akule	Hawaii	muscle	39
079-068	Jack, (mackerel scad)	Hawaii	muscle	40
079-069	Jack, crevalle (Hawaii)	Hawaii	muscle	40
091-001	Wahoo	Gulf of Mexico, Hawaii	muscle, liver	21
091-006	Tunny, little	Gulf of Mexico	muscle, liver	52
091-008	Tuna, skipjack	California, Hawaii, Pacific	muscle, liver	78
091-009	Bonito, Pacific	California	muscle, liver	41
091-011	Bonito, Atlantic	Gulf of Mexico	muscle	15
091-012	Mackerel, chub	California	muscle	30
091-013	Mackerel, Atlantic	N. Atlantic	muscle	80
091-014	Mackerel, king	S. Atlantic, Gulf of Mexico	muscle, liver, milt, roe	129
091-016	Mackerel, Spanish	S. Atlantic, Gulf of Mexico	muscle, liver	113
091-019	Tuna, albacore	California, Northwest	muscle, liver	45
091-020	Tuna, yellowfin	California, Hawaii	muscle, liver	106
091-021	Tuna, blackfin	Gulf of Mexico	muscle	1
091-022	Tuna, bigeye	Hawaii	muscle, liver	61
091-023	Tuna, bluefin	N. Atlantic, California	muscle, liver	12
094-010	Mojarra, yellowfin	S. Atlantic	muscle	10
098-002	Mullet, striped	S. Atlantic, Gulf of Mexico, Hawaii	muscle, liver	163
098-003	Mullet, silver (white)	S. Atlantic, Gulf of Mexico	muscle	36
114-001	Sheepshead	Gulf of Mexico	muscle, liver	62
114-013	Pinfish, spottail	S. Atlantic	muscle, liver	11
114-014	Porgy, red	S. Atlantic	muscle, liver	23
114-016	Scup	N. & S. Atlantic	muscle	72
126-001	Sablefish	California, Northwest, Alaska	muscle, liver	118
131-023	Perch, ocean (Pacific)	Northwest	muscle, liver	48
131-031	Rockfish, copper	Northwest	muscle	10
131-043	Rockfish, yellowtail	Northwest	muscle	20
131-052	Perch, ocean (redfish)	N. Atlantic	muscle, liver	82
131-061	Rockfish, bocaccio	California, Northwest	muscle, liver	52
131-063	Rockfish, canary	California, Northwest	muscle, liver	46
132-031	Sculpin, longhorn	N. Atlantic	muscle	1
135-010	Searobin, northern	N. & S. Atlantic	muscle	78
135-011	Searobin, striped	N. Atlantic	muscle	10
141-007	Dogfish, spiny	N. & S. Atlantic, Northwest	muscle, liver	144
143-001	Hammerhead, scalloped	N. & S. Atlantic	muscle	12
143-005	Hammerhead, smooth	S. Atlantic	muscle, liver	17
144-001	Shark, white	N. Atlantic	muscle	2
144-003	Mako, shortfin	N. Atlantic	muscle, liver	5
145-006	Shark, blacktip	S. Atlantic, Gulf of Mexico	muscle, liver	20
145-009	Shark, sandbar	N. Atlantic, Gulf of Mexico	muscle, liver	20
145-010	Shark, dusky	N. & S. Atlantic, Gulf of Mexico	muscle	4
145-018	Dogfish, smooth	N. Atlantic	muscle	95
145-023	Shark, blue	N. Atlantic	muscle, liver	23
145-025	Shark, Atlantic sharpnose	S. Atlantic	muscle	1
149-004	Jacksmelt	California	whole	20
150-005	Skate, little	N. Atlantic	muscle, liver	56
150-012	Skate, winter	N. Atlantic	muscle, liver	3
153-009	Eulachon	Northwest	whole	33
155-005	Snapper, blackfin	Gulf of Mexico	muscle	13
155-006	Snapper, red	S. Atlantic, Gulf of Mexico	muscle	38
155-008	Snapper, gray (mangrove)	S. Atlantic, Gulf of Mexico	muscle	28
155-013	Snapper, yellowtail	S. Atlantic, Gulf of Mexico	muscle	43
155-015	Snapper, vermilion	S. Atlantic	muscle, liver	38
155-024	Snapper, red (ehu)	Hawaii	muscle	40
155-025	Snapper, gray	Hawaii	muscle	40

Table 2. Resource Survey: Areas of Catch, Tissues Analyzed, and Number of Samples Analyzed; by Species (cont'd)

Species Number	Species Name	Areas of Catch	Tissues Analyzed	No. of Samples
157-004	Snook	Gulf of Mexico	muscle	12
162-012	Mempachi	Hawaii	muscle, liver	21
166-003	Sturgeon, green	Northwest	muscle	10
168-001	Surfperch, barred	California	muscle	20
168-005	Perch, shiner	California	whole	2
174-003	Tilefish	Gulf of Mexico	muscle	60
179-016	Salmon, pink	Alaska	muscle, liver	32
179-017	Salmon, chum (keta)	Northwest, Alaska	muscle, liver	62
179-018	Salmon, coho (silver)	Northwest, Alaska	muscle, liver	76
179-019	Salmon, sockeye (red)	Northwest, Alaska	muscle, liver	66
179-020	Salmon, chinook (king)	California, Northwest, Alaska	muscle, liver	132
179-028	Trout, cutthroat	Northwest	muscle	3
179-029	Trout, rainbow (steelhead)	Northwest	muscle, liver	10
183-002	Wolfish, Atlantic	N. Atlantic	muscle, liver	75
185-022	Tautog	N. Atlantic	muscle	14
187-005	Abalone, green	California	shucked	10
187-008	Abalone, red	California	shucked	10
188-003	Squid, Atlantic longfinned	N. Atlantic	whole, mantle	133
188-006	Squid, Pacific	California	whole	50
188-014	Squid, Atlantic shortfinned	N. Atlantic	mantle	92
189-001	Oyster, eastern	N. & S. Atlantic, Gulf of Mexico	shucked	153
189-002	Oyster, Pacific (giant)	California, Northwest	shucked	70
190-013	Scallop, sea (smooth)	N. Atlantic	adductor muscle	11
190-014	Scallop, Atlantic bay	S. Atlantic	adductor muscle	20
190-016	Scallop, calico	S. Atlantic	shucked, adductor muscle	30
190-028	Scallop, pink	Alaska	adductor muscle	5
191-001	Clam, hard (quahog)	N. & S. Atlantic	shucked	141
191-003	Clam, butter	Northwest	shucked	29
191-008	Clam, Pacific littleneck	Alaska	shucked	1
192-003	Shrimp, royal red	S. Atlantic	peeled tail	12
192-004	Shrimp, white	S. Atlantic, Gulf of Mexico	peeled tail	77
192-005	Shrimp, brown	Gulf of Mexico	peeled tail	53
192-007	Shrimp, ocean	Northwest	peeled tail	10
192-010	Shrimp, pink	Gulf of Mexico	peeled tail	50
192-011	Shrimp, pink (northern)	N. Atlantic, Alaska	peeled tail	64
192-012	Shrimp, Alaska (sidestripe)	Alaska	peeled tail	17
194-002	Lobster, spiny (Atlantic)	S. Atlantic, Gulf of Mexico	tailmeat	40
194-003	Lobster, spiny (Pacific)	California	tailmeat	5
194-012	Lobster, northern (American)	N. Atlantic	body, claw, tail, leg meat	88
196-001	Crab, blue	N. & S. Atlantic, Gulf of Mexico	body meat, claw meat	94
196-003	Crab, rock	N. Atlantic	meat	15
196-006	Crab, red, deep sea	N. Atlantic	meat	25
196-011	Crab, dungeness	California, Northwest, Alaska	meat, claw & body meat	50
196-012	Crab, king	Alaska	meat, claw & body meat	29
196-035	Crab, tanner (bairdi)	Alaska	meat	50
200-002	Ladyfish	Gulf of Mexico	muscle	2
200-003	Tarpon	Gulf of Mexico	muscle, liver	14
205-001	Octopus (marmuratus)	Hawaii	whole, mantle	40
206-001	Milkfish	Hawaii	muscle	40
242-001	Clam, soft	N. Atlantic	shucked	19
243-002	Clam, razor	Northwest, Alaska	shucked	39
244-005	Clam, surf	N. Atlantic	shucked	23

Table 3.1. Summarized Distribution of Mean Antimony Levels  
in Resource Survey Species

Range, ppm <sup>1/</sup>	No. of Species	Percent of <sup>2/</sup> U. S. Catch	Percent of U. S. Catch <sup>2/</sup> Intended for Human Consumption
Finfish, muscle			
< 0.1	5	* <sup>3/</sup>	*
0.1 to 0.2	1	12.5	*
0.3 to 0.4	2	*	*
0.4 to 0.5	2	*	*
0.5 to 0.6	18	2.4	3.6
0.6 to 0.7	51	8.8	17.3
0.7 to 0.8	33	8.7	14.9
0.8 to 0.9	28	36.6	26.0
0.9 to 1.0	9	0.8	1.7
1.0 to 2.0	10	0.7	10.5
TOTAL:	159	70.5	63.9
Finfish, liver			
< 0.1	3	0.4	0.7
0.1 to 0.2	2	0.2	*
0.2 to 0.3	1	0.1	0.2
0.3 to 0.4	5	0.3	0.6
0.4 to 0.5	8	3.3	6.6
0.5 to 0.6	20	8.8	18.2
0.6 to 0.7	9	2.4	4.9
0.7 to 0.8	11	8.7	16.7
0.8 to 0.9	6	1.7	3.6
0.9 to 1.0	6	0.3	0.7
1.0 to 2.0	11	2.0	4.1
TOTAL:	82	28.3	56.3
Finfish, whole			
< 0.1	1	0.5	1.1
0.1 to 0.2	1	*	*
0.3 to 0.4	1	0.1	0.1
1.0 to 2.0	9	3.5	3.0
2.0 to 3.0	5	41.3	*
TOTAL:	17	45.4	4.3

Table 3.1. Summarized Distribution of Mean Antimony Levels  
in Resource Survey Species (continued)

Range, ppm <sup>1/</sup>	No. of Species	Percent of <sup>2/</sup> U. S. Catch	Percent of U. S. Catch <sup>2/</sup> Intended for Human Consumption
Mollusca, edible tissues			
< 0.1	3	1.6	3.4
0.5 to 0.6	2	0.2	0.4
0.6 to 0.7	1	0.5	0.6
0.7 to 0.8	2	0.1	0.1
0.8 to 0.9	2	0.9	1.9
0.9 to 1.0	5	0.5	1.1
1.0 to 2.0	3	* <sup>3/</sup>	*
TOTAL:	18	3.8	7.5
Crustacea, edible tissues			
0.2 to 0.3	2	*	0.1
0.7 to 0.8	1	*	*
0.8 to 0.9	3	4.2	8.7
0.9 to 1.0	7	5.7	11.7
1.0 to 2.0	3	3.8	7.8
TOTAL:	16	13.7	28.4

<sup>1/</sup> Mean analytical values falling on the upper limit of each range are included in the next higher range (e.g. 0.2 is included in the range 0.2 to 0.3 ppm and not 0.1 to 0.2 ppm).

<sup>2/</sup> See page 12 for an explanation of these columns.

<sup>3/</sup> \* denotes less than .05%.

Table 3.2. Summarized Distribution of Mean Arsenic Levels  
in Resource Survey Species

Range, ppm <sup>1/</sup>	No. of Species	Percent of <sup>2/</sup> U. S. Catch	Percent of U. S. Catch <sup>2/</sup> Intended for Human Consumption
Finfish, muscle			
0.6 to 0.7	1	0.1	0.2
1.0 to 2.0	8	1.8	2.6
2.0 to 3.0	47	30.3	35.0
3.0 to 4.0	35	31.4	13.8
4.0 to 5.0	18	2.1	3.0
5.0 to 6.0	7	1.5	2.8
6.0 to 7.0	7	0.2	0.3
7.0 to 8.0	9	2.5	5.0
8.0 to 9.0	7	0.1	0.1
9.0 to 10.0	6	0.1	0.2
10.0 to 20.0	12	0.4	0.7
20.0 to 30.0	2	0.1	0.2
TOTAL:	159	70.5	63.9
Finfish, liver			
0.7 to 0.8	1	* <sup>3/</sup>	*
1.0 to 2.0	9	7.3	15.0
2.0 to 3.0	12	5.4	9.7
3.0 to 4.0	13	0.7	1.0
4.0 to 5.0	14	7.4	15.3
5.0 to 6.0	9	5.4	10.8
6.0 to 7.0	2	*	*
7.0 to 8.0	4	0.3	0.6
8.0 to 9.0	3	0.3	0.6
9.0 to 10.0	4	0.7	1.5
10.0 to 20.0	4	0.2	0.3
20.0 to 30.0	4	0.5	1.1
30.0 to 40.0	1	*	*
40.0 to 50.0	1	*	*
TOTAL:	81	28.1	55.9
Finfish, whole			
1.0 to 2.0	2	0.1	0.2
2.0 to 3.0	6	2.2	2.2
3.0 to 4.0	4	5.1	0.6
4.0 to 5.0	2	36.4	*
5.0 to 6.0	1	0.1	0.2
7.0 to 8.0	1	1.0	*
20.0 to 30.0	1	0.5	1.1
TOTALS:	17	45.4	4.3

Table 3.2. Summarized Distribution of Mean Arsenic Levels  
in Resource Survey Species (continued)

Range, ppm <sup>1/</sup>	No. of Species	Percent of <sup>2/</sup> U. S. Catch	Percent of U. S. Catch <sup>2/</sup> Intended for Human Consumption
<b>Mollusca, edible tissues</b>			
2.0 to 3.0	6	2.2	4.0
3.0 to 4.0	5	1.6	3.2
4.0 to 5.0	3	* <sup>3/</sup>	0.1
7.0 to 8.0	1	*	*
10.0 to 20.0	3	*	0.1
TOTAL:	18	3.8	7.5
<b>Crustacea, edible tissues</b>			
3.0 to 4.0	1	0.9	1.8
4.0 to 5.0	5	6.8	14.2
5.0 to 6.0	1	1.2	2.5
6.0 to 7.0	1	2.8	5.8
9.0 to 10.0	1	1.0	2.0
10.0 to 20.0	4	0.2	0.5
20.0 to 30.0	2	0.7	1.5
40.0 to 50.0	1	*	*
TOTAL:	16	13.7	28.4

<sup>1/</sup> Mean analytical values falling on the upper limit of each range are included in the next higher range (e.g. 0.2 is included in the range 0.2 to 0.3 ppm and not 0.1 to 0.2 ppm).

<sup>2/</sup> See page 12 for an explanation of these columns.

<sup>3/</sup> \* denotes less than .05%.

Table 3.3. Summarized Distribution of Mean Cadmium Levels  
in Resource Survey Species

Range, ppm <sup>1/</sup>	No. of Species	Percent of <sup>2/</sup> U. S. Catch	Percent of U. S. Catch <sup>2/</sup> Intended for Human Consumption
Finfish, muscle			
< 0.1	149	70.4	63.8
0.1 to 0.2	10	0.1	0.1
TOTAL:	159	70.5	63.9
Finfish, liver			
< 0.1	1	0.1	0.2
0.1 to 0.2	5	1.3	2.4
0.2 to 0.3	9	4.3	5.8
0.3 to 0.4	9	2.0	7.1
0.4 to 0.5	8	3.3	6.7
0.5 to 0.6	2	0.9	1.9
0.6 to 0.7	6	3.6	7.0
0.7 to 0.8	2	0.1	0.1
0.8 to 0.9	3	1.3	2.7
0.9 to 1.0	2	0.1	0.3
1.0 to 2.0	13	1.9	3.8
2.0 to 3.0	8	0.6	1.2
3.0 to 4.0	1	* <sup>3/</sup>	*
4.0 to 5.0	4	1.2	2.4
6.0 to 7.0	1	1.7	3.5
7.0 to 8.0	2	0.1	0.2
8.0 to 9.0	3	4.9	10.2
10.0 to 20.0	2	1.0	0.8
20.0 to 30.0	1	*	*
TOTAL:	82	28.3	56.3
Finfish, whole			
< 0.1	2	.8	1.3
0.1 to 0.2	13	28.2	2.9
0.2 to 0.3	1	12.5	*
0.3 to 0.4	1	4.0	*
TOTAL:	17	45.4	4.3

Table 3.3. Summarized Distribution of Mean Cadmium Levels  
in Resource Survey Species (continued)

Range, ppm <sup>1/</sup>	No. of Species	Percent of <sup>2/</sup> U. S. Catch	Percent of U. S. Catch <sup>2/</sup> Intended for Human Consumption
Mollusca, edible tissues			
< 0.1	1	* <sup>3/</sup>	*
0.1 to 0.2	7	1.5	3.0
0.2 to 0.3	3	0.6	1.2
0.3 to 0.4	1	*	*
0.7 to 0.8	1	0.5	0.6
0.9 to 1.0	1	0.9	2.0
1.0 to 2.0	2	0.3	0.6
2.0 to 3.0	2	0.1	0.1
TOTAL:	18	3.8	7.5
Crustacea, edible tissues			
< 0.1	3	4.7	9.8
0.1 to 0.2	9	8.2	17.0
0.2 to 0.3	3	0.7	1.5
0.3 to 0.4	1	*	0.1
TOTAL:	16	13.7	28.4

<sup>1/</sup> Mean analytical values falling on the upper limit of each range are included in the next higher range (e.g. 0.2 is included in the range 0.2 to 0.3 ppm and not 0.1 to 0.2 ppm).

<sup>2/</sup> See page 12 for an explanation of these columns.

<sup>3/</sup> \* denotes less than .05%.

Table 3.4. Summarized Distribution of Mean Chromium Levels  
in Resource Survey Species

Range, ppm <sup>1/</sup>	No. of Species	Percent of <sup>2/</sup> U. S. Catch	Percent of U. S. Catch <sup>2/</sup> Intended for Human Consumption
Finfish, muscle			
<0.1	4	0.1	0.3
0.1 to 0.2	90	27.1	51.0
0.2 to 0.3	56	43.3	12.5
0.3 to 0.4	7	* <sup>3/</sup>	*
0.4 to 0.5	2	*	*
TOTAL:	159	70.6	63.9
Finfish, liver			
<0.1	7	1.7	2.9
0.1 to 0.2	44	13.4	26.4
0.2 to 0.3	16	12.1	25.0
0.3 to 0.4	11	0.9	1.9
0.4 to 0.5	3	0.1	0.1
1.0 to 2.0	1	0.1	0.1
TOTAL:	82	28.3	56.3
Finfish, whole			
<0.1	2	0.8	1.3
0.2 to 0.3	3	1.2	0.7
0.3 to 0.4	6	6.0	2.1
0.4 to 0.5	3	1.0	*
0.5 to 0.6	1	0.1	0.2
0.6 to 0.7	1	12.5	*
0.7 to 0.8	1	23.8	*
TOTAL:	17	45.4	4.3

Table 3.4. Summarized Distribution of Mean Chromium Levels  
in Resource Survey Species (continued)

Range, ppm <sup>1/</sup>	No. of Species	Percent of <sup>2/</sup> U. S. Catch	Percent of U. S. Catch <sup>2/</sup> Intended for Human Consumption
Mollusca, edible tissues			
0.1 to 0.2	3	0.5	0.6
0.2 to 0.3	5	0.4	0.7
0.3 to 0.4	8	3.0	6.1
0.4 to 0.5	1	* <sup>3/</sup>	*
0.5 to 0.6	1	*	*
TOTAL:	18	3.8	7.5
Crustacea, edible tissues			
0.1 to 0.2	7	2.6	5.4
0.2 to 0.3	9	11.1	22.9
TOTAL:	16	13.6	28.3

<sup>1/</sup> Mean analytical values falling on the upper limit of each range are included in the next higher range (e.g. 0.2 is included in the range 0.2 to 0.3 ppm and not 0.1 to 0.2 ppm).

<sup>2/</sup> See page 12 for an explanation of these columns.

<sup>3/</sup> \* denotes less than .05%.

Table 3.5. Summarized Distribution of Mean Copper Levels  
in Resource Survey Species

Range, ppm <sup>1/</sup>	No. of Species	Percent of <sup>2/</sup> U. S. Catch	Percent of U. S. Catch <sup>2/</sup> Intended for Human Consumption
Finfish, muscle			
0.1 to 0.2	13	0.8	1.5
0.2 to 0.3	54	6.8	13.5
0.3 to 0.4	35	5.0	9.8
0.4 to 0.5	22	3.1	4.7
0.5 to 0.6	9	5.5	11.5
0.6 to 0.7	5	5.2	10.8
0.7 to 0.8	7	4.2	5.8
0.8 to 0.9	7	27.1	5.6
0.9 to 1.0	1	0.3	0.5
1.0 to 2.0	6	12.6	0.1
TOTAL:	159	70.5	63.9
Finfish, liver			
1.0 to 2.0	7	0.2	0.4
2.0 to 3.0	10	3.3	5.3
3.0 to 4.0	7	2.3	4.6
4.0 to 5.0	11	3.4	6.8
5.0 to 6.0	5	0.2	0.5
6.0 to 7.0	7	3.2	6.6
7.0 to 8.0	4	0.7	1.1
8.0 to 9.0	5	0.4	0.8
9.0 to 10.0	2	0.1	0.2
10.0 to 20.0	14	6.8	14.1
20.0 to 30.0	4	2.4	5.1
30.0 to 40.0	1	0.2	0.3
40.0 to 50.0	2	1.2	2.4
50.0 to 110.0	3	3.9	8.0
TOTAL:	82	28.3	56.3
Finfish, whole			
0.4 to 0.5	4	0.4	0.7
0.5 to 0.6	1	*3/	*
0.6 to 0.7	2	0.6	1.1
0.7 to 0.8	3	24.8	*
0.8 to 0.9	2	1.4	0.8
0.9 to 1.0	1	*	0.1
1.0 to 2.0	4	18.3	1.7
TOTAL:	17	45.4	4.3

Table 3.5. Summarized Distribution of Mean Copper Levels in Resource Survey Species (continued)

Range, ppm <sup>1/</sup>	No. of Species	Percent of <sup>2/</sup> U. S. Catch	Percent of U. S. Catch <sup>2/</sup> Intended for Human Consumption
Mollusca, edible tissues			
0.1 to 0.2	2	0.1	0.3
0.3 to 0.4	1	* <sup>3/</sup>	0.1
0.6 to 0.7	3	1.4	2.9
0.7 to 0.8	2	*	*
1.0 to 2.0	1	*	*
2.0 to 3.0	2	0.3	0.7
3.0 to 4.0	1	*	*
4.0 to 5.0	1	0.3	0.5
5.0 to 6.0	1	*	*
8.0 to 9.0	1	*	*
10.0 to 20.0	1	0.2	0.3
20.0 to 30.0	1	0.5	0.6
30.0 to 40.0	1	0.9	1.9
TOTAL:	18	3.8	7.5
Crustacea, edible tissues			
1.0 to 2.0	1	0.9	1.8
2.0 to 3.0	3	3.3	6.7
3.0 to 4.0	3	3.0	6.3
4.0 to 5.0	1	*	*
5.0 to 6.0	1	0.5	1.1
6.0 to 7.0	3	4.2	8.7
7.0 to 8.0	1	*	0.1
9.0 to 10.0	2	1.1	2.2
10.0 to 20.0	1	0.7	1.4
TOTAL:	16	13.7	28.4

<sup>1/</sup> Mean analytical values falling on the upper limit of each range are included in the next higher range (e.g. 0.2 is included in the range 0.2 to 0.3 ppm and not 0.1 to 0.2 ppm).

<sup>2/</sup> See page 12 for an explanation of these columns.

<sup>3/</sup> \* denotes less than .05%.

Table 3.6. Summarized Distribution of Mean Lead Levels  
in Resource Survey Species

Range, ppm <sup>1/</sup>	No. of Species	Percent of <sup>2/</sup> U. S. Catch	Percent of U. S. Catch <sup>2/</sup> Intended for Human Consumption
Finfish, muscle			
0.1 to 0.2	1	* <sup>3/</sup>	*
0.2 to 0.3	4	*	*
0.3 to 0.4	33	4.9	9.9
0.4 to 0.5	59	17.7	33.8
0.5 to 0.6	35	19.0	9.4
0.6 to 0.7	16	28.9	10.7
0.7 to 0.8	5	*	*
0.9 to 1.0	2	*	*
1.0 to 2.0	3	*	*
2.0 to 3.0	1	*	*
TOTAL:	159	70.5	63.9
Finfish, liver			
< 0.1	2	0.3	0.6
0.1 to 0.2	3	3.3	6.9
0.2 to 0.3	10	4.0	8.4
0.3 to 0.4	10	0.9	1.8
0.4 to 0.5	17	4.7	9.5
0.5 to 0.6	16	9.2	17.6
0.6 to 0.7	10	2.1	4.4
0.7 to 0.8	3	*	*
0.8 to 0.9	1	1.6	0.1
0.9 to 1.0	5	1.7	6.4
1.0 to 2.0	4	0.2	0.3
2.0 to 3.0	1	0.1	0.2
TOTAL:	82	28.3	56.3
Flatfish, whole			
0.1 to 0.2	1	0.1	0.2
0.3 to 0.4	1	0.5	1.1
0.5 to 0.6	1	0.2	0.2
0.7 to 0.8	2	0.1	0.2
0.8 to 0.9	1	*	*
0.9 to 1.0	1	1.2	0.6
1.0 to 2.0	9	19.5	2.0
2.0 to 3.0	1	23.8	*
TOTAL:	17	45.4	4.3

Table 3.6. Summarized Distribution of Mean Lead Levels  
in Resource Survey Species (continued)

Range, ppm <sup>1/</sup>	No. of Species	Percent of <sup>2/</sup> U. S. Catch	Percent of U. S. Catch <sup>2/</sup> Intended for Human Consumption
<b>Mollusca, edible tissues</b>			
0.2 to 0.3	2	* <sup>3/</sup>	*
0.4 to 0.5	2	0.2	0.4
0.5 to 0.6	5	1.7	3.4
0.6 to 0.7	7	1.7	3.0
0.7 to 0.8	1	0.3	0.7
0.8 to 0.9	1	0.1	0.1
TOTAL:	18	3.8	7.5
<b>Crustacea, edible tissues</b>			
0.4 to 0.5	1	*	*
0.5 to 0.6	4	1.7	3.5
0.6 to 0.7	9	8.9	18.5
0.7 to 0.8	1	3.0	6.2
0.8 to 0.9	1	*	0.1
TOTAL:	16	13.7	28.4

<sup>1/</sup> Mean analytical values falling on the upper limit of each range are included in the next higher range (e.g. 0.2 is included in the range 0.2 to 0.3 ppm and not 0.1 to 0.2 ppm).

<sup>2/</sup> See page 12 for an explanation of these columns.

<sup>3/</sup> \* denotes less than .05%.

Table 3.7. Summarized Distribution of Mean Manganese Levels in Resource Survey Species

Range, ppm <sup>1/</sup>	No. of Species	Percent of <sup>2/</sup> U. S. Catch	Percent of U. S. Catch <sup>2/</sup> Intended for Human Consumption
Finfish, muscle			
<0.1	17	0.4	0.9
0.1 to 0.2	102	28.0	55.9
0.2 to 0.3	24	2.0	3.7
0.3 to 0.4	7	3.1	3.0
0.4 to 0.5	2	0.5	0.1
0.5 to 0.6	2	0.1	0.3
0.6 to 0.7	1	23.8	* <sup>3/</sup>
0.7 to 0.8	2	12.6	*
1.0 to 2.0	2	*	*
TOTAL:	159	70.5	63.9
Finfish, liver			
0.2 to 0.3	1	*	*
0.3 to 0.4	2	*	*
0.4 to 0.5	1	*	*
0.5 to 0.6	6	4.0	8.2
0.6 to 0.7	15	6.4	13.2
0.7 to 0.8	13	3.9	8.1
0.8 to 0.9	11	3.1	6.3
0.9 to 1.0	6	0.5	1.0
1.0 to 2.0	27	10.3	19.5
TOTAL:	82	28.3	56.3
Finfish, whole			
0.2 to 0.3	1	0.1	0.2
0.4 to 0.5	1	0.5	1.1
0.5 to 0.6	2	0.2	0.2
0.6 to 0.7	1	*	*
0.7 to 0.8	1	*	*
1.0 to 2.0	8	4.2	2.7
2.0 to 3.0	1	3.9	*
5.0 to 6.0	1	12.6	*
9.0 to 10.0	1	23.8	*
TOTAL:	17	45.4	4.3

Table 3.7. Summarized Distribution of Mean Manganese Levels in Resource Survey Species (continued)

Range, ppm <sup>1/</sup>	No. of Species	Percent of <sup>2/</sup> U. S. Catch	Percent of U. S. Catch <sup>2/</sup> Intended for Human Consumption
Mollusca, edible tissues			
0.1 to 0.2	1	* <sup>3/</sup>	*
0.2 to 0.3	4	0.2	0.4
0.3 to 0.4	1	*	0.1
0.4 to 0.5	1	0.5	0.6
0.5 to 0.6	1	*	*
0.6 to 0.7	1	*	0.1
0.8 to 0.9	1	*	*
1.0 to 2.0	2	1.4	2.8
2.0 to 3.0	2	0.1	0.1
4.0 to 5.0	1	0.9	1.9
6.0 to 7.0	2	0.6	1.2
7.0 to 8.0	1	0.1	0.3
TOTAL:	18	3.8	7.5
Crustacea, edible tissues			
0.1 to 0.2	1	0.2	0.4
0.2 to 0.3	2	0.9	1.8
0.3 to 0.4	6	3.1	6.5
0.4 to 0.5	1	*	*
0.5 to 0.6	1	0.7	1.5
0.6 to 0.7	2	4.5	9.4
0.7 to 0.8	1	1.2	2.5
1.0 to 2.0	2	3.1	6.3
TOTAL:	16	13.7	28.4

<sup>1/</sup> Mean analytical values falling on the upper limit of each range are included in the next higher range (e.g. 0.2 is included in the range 0.2 to 0.3 ppm and not 0.1 to 0.2 ppm).

<sup>2/</sup> See page 12 for an explanation of these columns.

<sup>3/</sup> \* denotes less than .05%.

Table 3.8. Summarized Distribution of Mean Mercury Levels  
in Resource Survey Species

Range, ppm <sup>1/</sup>	No. of Species	Percent of <sup>2/</sup> U. S. Catch	Percent of U. S. Catch <sup>2/</sup> Intended for Human Consumption
Finfish, muscle			
< 0.1	45	53.6	30.7
0.1 to 0.2	49	12.8	26.1
0.2 to 0.3	18	1.9	3.9
0.3 to 0.4	15	1.7	2.2
0.4 to 0.5	1	* <sup>3/</sup>	*
0.5 to 0.6	8	0.4	0.7
0.6 to 0.7	3	*	*
0.7 to 0.8	4	0.1	0.1
0.8 to 0.9	3	*	*
1.0 to 2.0	8	*	*
2.0 to 3.0	4	*	*
4.0 to 5.0	1	*	*
TOTAL:	159	70.5	63.9
Finfish, liver			
< 0.1	31	13.5	27.1
0.1 to 0.2	17	4.7	9.8
0.2 to 0.3	6	7.0	14.4
0.3 to 0.4	5	1.0	2.1
0.4 to 0.5	1	0.1	0.2
0.5 to 0.6	2	0.3	0.5
0.6 to 0.7	1	0.1	0.3
0.7 to 0.8	2	*	*
0.8 to 0.9	2	1.0	0.8
0.9 to 1.0	4	0.2	0.5
1.0 to 2.0	4	*	*
2.0 to 3.0	3	0.2	0.4
3.0 to 4.0	1	*	*
5.0 to 6.0	1	*	*
7.0 to 8.0	1	*	*
10.0 to 20.0	1	*	*
TOTAL:	82	28.3	56.3
Finfish, whole			
< 0.1	13	31.2	3.7
0.1 to 0.2	3	13.8	0.6
0.2 to 0.3	1	0.4	*
TOTAL:	17	45.4	4.3

Table 3.8. Summarized Distribution of Mean Mercury Levels  
in Resource Survey Species (continued)

Range, ppm <sup>1/</sup>	No. of Species	Percent of <sup>2/</sup> U. S. Catch	Percent of U. S. Catch <sup>2/</sup> Intended for Human Consumption
<b>Mollusca, edible tissues</b>			
< 0.1	18	3.8	7.5
<b>Crustacea, edible tissues</b>			
< 0.1	6	6.6	13.7
0.1 to 0.2	9	6.4	13.2
0.2 to 0.3	1	0.7	1.4
	TOTAL: 16	13.7	28.4

<sup>1/</sup> Mean analytical values falling on the upper limit of each range are included in the next higher range (e.g. 0.2 is included in the range 0.2 to 0.3 ppm and not 0.1 to 0.2 ppm).

<sup>2/</sup> See page 12 for an explanation of these columns.

<sup>3/</sup> \* denotes less than .05%.

Table 3.9. Summarized Distribution of Mean Molybdenum Levels  
in Resource Survey Species

Range, ppm <sup>1/</sup>	No. of Species	Percent of <sup>2/</sup> U. S. Catch	Percent of U. S. Catch <sup>2/</sup> Intended for Human Consumption
Finfish, muscle			
< 0.1	21	0.4	0.8
0.1 to 0.2	48	5.9	9.6
0.2 to 0.3	61	57.2	40.9
0.3 to 0.4	18	5.6	10.7
0.4 to 0.5	7	0.3	0.7
0.5 to 0.6	4	0.5	1.0
TOTAL:	159	70.5	63.8
Finfish, liver			
< 0.1	4	0.3	0.7
0.1 to 0.2	12	1.1	2.2
0.2 to 0.3	27	9.0	18.0
0.3 to 0.4	16	8.3	15.6
0.4 to 0.5	14	8.6	17.8
0.5 to 0.6	6	0.1	0.3
0.6 to 0.7	1	0.2	0.3
0.9 to 1.0	1	0.1	0.1
1.0 to 2.0	1	0.6	1.3
TOTAL:	82	28.3	56.3
Finfish, whole			
< 0.1	2	0.8	1.3
0.1 to 0.2	2	* <u>3/</u>	*
0.2 to 0.3	5	2.1	2.2
0.3 to 0.4	6	14.9	0.8
0.4 to 0.5	1	23.8	*
0.5 to 0.6	1	3.9	*
TOTAL:	17	45.4	4.3

Table 3.9. Summarized Distribution of Mean Molybdenum Levels in Resource Survey Species (continued)

Range, ppm <sup>1/</sup>	No. of Species	Percent of <sup>2/</sup> U. S. Catch	Percent of U. S. Catch <sup>2/</sup> Intended for Human Consumption
Mollusca, edible tissues			
< 0.1	1	* <sup>3/</sup>	*
0.1 to 0.2	2	*	*
0.2 to 0.3	7	1.0	1.6
0.3 to 0.4	2	1.6	3.5
0.4 to 0.5	2	0.9	1.9
0.5 to 0.6	1	*	*
0.7 to 0.8	2	0.1	0.1
3.0 to 4.0	1	0.1	0.3
TOTAL:	18	3.8	7.5
Crustacea, edible tissues			
0.1 to 0.2	11	4.7	9.8
0.2 to 0.3	3	8.7	18.1
0.3 to 0.4	2	0.2	0.4
TOTAL:	16	13.7	28.4

<sup>1/</sup> Mean analytical values falling on the upper limit of each range are included in the next higher range (e.g. 0.2 is included in the range 0.2 to 0.3 ppm and not 0.1 to 0.2 ppm).

<sup>2/</sup> See page 12 for an explanation of these columns.

<sup>3/</sup> \* denotes less than .05%.

Table 3.10. Summarized Distribution of Mean Nickel Levels  
in Resource Survey Species

Range, ppm <sup>1/</sup>	No. of Species	Percent of <sup>2/</sup> U. S. Catch	Percent of U. S. Catch <sup>2/</sup> Intended for Human Consumption
Finfish, muscle			
< 0.1	2	* <sup>3/</sup>	*
0.1 to 0.2	36	4.5	7.8
0.2 to 0.3	111	53.1	55.4
0.3 to 0.4	5	12.9	0.7
0.4 to 0.5	1	*	*
0.6 to 0.7	1	*	*
0.7 to 0.8	1	*	*
0.9 to 1.0	1	*	*
2.0 to 3.0	1	*	*
TOTAL:	159	70.5	63.9
Finfish, liver			
0.1 to 0.2	22	11.7	22.4
0.2 to 0.3	32	9.3	24.7
0.3 to 0.4	9	0.3	0.7
0.4 to 0.5	5	0.7	1.5
0.5 to 0.6	8	6.1	6.5
0.6 to 0.7	1	*	0.5
0.8 to 0.9	2	*	*
1.0 to 2.0	1	*	*
2.0 to 3.0	2	*	*
TOTAL:	82	28.3	56.3
Finfish, whole			
0.2 to 0.3	2	0.8	1.1
0.3 to 0.4	6	3.2	2.9
0.4 to 0.5	2	0.1	0.1
0.5 to 0.6	3	1.0	0.2
0.6 to 0.7	1	*	*
0.7 to 0.8	1	3.9	*
0.8 to 0.9	1	12.6	*
0.9 to 1.0	1	23.8	*
TOTAL:	17	45.4	4.3

Table 3.10. Summarized Distribution of Mean Nickel Levels  
in Resource Survey Species (continued)

Range, ppm <sup>1/</sup>	No. of Species	Percent of <sup>2/</sup> U. S. Catch	Percent of U. S. Catch <sup>2/</sup> Intended for Human Consumption
<b>Mollusca, edible tissues</b>			
0.2 to 0.3	5	0.7	1.0
0.3 to 0.4	3	0.2	0.4
0.4 to 0.5	1	* <sup>3/</sup>	*
0.5 to 0.6	4	2.6	5.4
0.7 to 0.8	2	*	*
1.0 to 2.0	2	0.3	0.7
2.0 to 3.0	1	*	*
TOTAL:	18	3.8	7.5
<b>Crustacea, edible tissues</b>			
0.2 to 0.3	4	3.1	6.4
0.3 to 0.4	8	6.3	13.1
0.4 to 0.5	1	3.0	6.2
0.5 to 0.6	2	1.2	2.5
0.8 to 0.9	1	*	0.1
TOTAL:	16	13.7	28.4

<sup>1/</sup> Mean analytical values falling on the upper limit of each range are included in the next higher range (e.g. 0.2 is included in the range 0.2 to 0.3 ppm and not 0.1 to 0.2 ppm).

<sup>2/</sup> See page 12 for an explanation of these columns.

<sup>3/</sup> \* denotes less than .05%.

Table 3.11. Summarized Distribution of Mean Selenium Levels  
in Resource Survey Species

Range, ppm <sup>1/</sup>	No. of Species	Percent of <sup>2/</sup> U. S. Catch	Percent of U. S. Catch <sup>2/</sup> Intended for Human Consumption
Finfish, muscle			
0.1 to 0.2	2	0.2	0.5
0.2 to 0.3	2	* <sup>3/</sup>	*
0.3 to 0.4	8	1.1	2.3
0.4 to 0.5	23	11.2	21.2
0.5 to 0.6	29	5.4	8.3
0.6 to 0.7	27	26.4	4.9
0.7 to 0.8	19	13.6	2.1
0.8 to 0.9	17	3.3	5.4
0.9 to 1.0	10	0.7	1.5
1.0 to 2.0	22	8.5	17.7
TOTAL:	159	70.5	63.9
Finfish, liver			
0.6 to 0.7	2	0.1	0.1
0.7 to 0.8	1	0.1	0.2
0.8 to 0.9	3	1.2	2.4
0.9 to 1.0	3	2.1	4.2
1.0 to 2.0	32	7.3	14.7
2.0 to 3.0	17	4.3	7.7
3.0 to 4.0	7	1.2	2.5
4.0 to 5.0	1	*	*
5.0 to 6.0	2	0.1	0.3
6.0 to 7.0	1	3.2	6.7
7.0 to 8.0	1	*	*
8.0 to 9.0	2	1.0	0.8
9.0 to 10.0	2	1.7	3.6
10.0 to 20.0	4	6.0	12.4
20.0 to 30.0	1	0.1	0.2
TOTAL:	79	28.1	55.9
Finfish, whole			
0.3 to 0.4	1	0.1	0.2
0.4 to 0.5	1	*	0.1
0.5 to 0.6	3	3.9	0.1
0.6 to 0.7	1	0.2	0.2
0.7 to 0.8	3	1.4	0.9
0.8 to 0.9	4	25.7	1.8
1.0 to 2.0	4	14.1	1.1
TOTAL:	17		4.3

Table 3.11. Summarized Distribution of Mean Selenium Levels  
in Resource Survey Species (continued)

Range, ppm <sup>1/</sup>	No. of Species	Percent of <sup>2/</sup> U. S. Catch	Percent of U. S. Catch <sup>2/</sup> Intended for Human Consumption
Mollusca, edible tissues			
0.1 to 0.2	1	* <sup>3/</sup>	*
0.2 to 0.3	1	*	*
0.3 to 0.4	4	1.6	3.2
0.4 to 0.5	5	0.4	0.8
0.5 to 0.6	4	0.5	0.7
0.7 to 0.8	2	1.1	2.3
0.8 to 0.9	1	0.3	0.5
TOTAL:	18	3.8	7.5
Crustacea, edible tissues			
0.2 to 0.3	1	0.2	0.4
0.3 to 0.4	4	2.5	5.1
0.4 to 0.5	1	1.0	2.1
0.5 to 0.6	1	0.5	1.1
0.6 to 0.7	4	5.7	11.9
0.7 to 0.8	2	3.0	6.2
0.8 to 0.9	1	0.7	1.4
1.0 to 2.0	2	*	0.1
TOTAL:	16	13.7	28.4

<sup>1/</sup> Mean analytical values falling on the upper limit of each range are included in the next higher range (e.g. 0.2 is included in the range 0.2 to 0.3 ppm and not 0.1 to 0.2 ppm).

<sup>2/</sup> See page 12 for an explanation of these columns.

<sup>3/</sup> \* denotes less than .05%.

Table 3.12. Summarized Distribution of Mean Silver Levels  
in Resource Survey Species

Range, ppm <sup>1/</sup>	No. of Species	Percent of <sup>2/</sup> U. S. Catch	Percent of U. S. Catch <sup>2/</sup> Intended for Human Consumption
Finfish, muscle			
0.1	158	70.5	63.9
0.1 to 0.2	1	* <u>3/</u>	*
TOTAL:	159	70.5	63.9
Finfish, liver			
0.1	66	20.5	40.1
0.1 to 0.2	9	1.3	2.9
0.2 to 0.3	3	4.6	9.5
0.3 to 0.4	3	1.2	2.4
0.5 to 0.6	1	0.6	1.3
TOTAL:	82	28.3	56.3
Finfish, whole			
0.1	10	4.0	4.0
0.1 to 0.2	7	41.4	0.4
TOTAL:	17	45.4	4.3
Mollusca, edible tissues			
0.1	10	2.4	4.5
0.1 to 0.2	3	*	*
0.2 to 0.3	2	0.7	1.0
0.3 to 0.4	2	0.9	1.9
0.6 to 0.7	1	*	*
TOTAL:	18	3.8	7.5

Table 3.12. Summarized Distribution of Mean Silver Levels  
in Resource Survey Species (continued)

Range, ppm <sup>1/</sup>	No. of Species	Percent of <sup>2/</sup> U. S. Catch	Percent of U. S. Catch <sup>2/</sup> Intended for Human Consumption
Crustacea, edible tissues			
< 0.1	8	6.9	14.2
0.1 to 0.2	5	3.1	6.3
0.3 to 0.4	2	3.0	6.3
0.4 to 0.5	1	0.7	1.4
TOTAL:	16	13.7	28.2

1/ Mean analytical values falling on the upper limit of each range are included in the next higher range (e.g. 0.2 is included in the range 0.2 to 0.3 ppm and not 0.1 to 0.2 ppm).

2/ See page 12 for an explanation of these columns.

3/ \* denotes less than .05%.

Table 3.13. Summarized Distribution of Mean Tin Levels  
in Resource Survey Species

Range, ppm <sup>1/</sup>	No. of Species	Percent of <sup>2/</sup> U. S. Catch	Percent of U. S. Catch <sup>2/</sup> Intended for Human Consumption
Finfish, muscle			
0.2 to 0.3	2	0.1	0.2
0.3 to 0.4	6	0.3	0.6
0.4 to 0.5	35	4.5	8.0
0.5 to 0.6	75	25.3	24.9
0.6 to 0.7	23	12.0	21.7
0.7 to 0.8	11	28.2	8.2
0.8 to 0.9	4	* <sup>3/</sup>	*
1.0 to 2.0	3	0.1	0.3
TOTAL:	159	70.5	63.9
Finfish, liver			
< 0.1	1	*	*
0.2 to 0.3	8	1.8	2.4
0.3 to 0.4	18	3.5	6.6
0.4 to 0.5	11	5.1	10.3
0.5 to 0.6	14	7.8	16.0
0.6 to 0.7	12	5.3	10.8
0.7 to 0.8	8	3.7	7.6
0.8 to 0.9	3	0.6	1.3
0.9 to 1.0	4	0.2	0.4
1.0 to 2.0	3	0.3	0.7
TOTAL:	82	28.3	56.3
Finfish, whole			
0.3 to 0.4	1	0.5	1.1
0.5 to 0.6	1	0.2	0.2
0.8 to 0.9	1	0.1	0.1
1.0 to 2.0	11	44.1	2.9
2.0 to 3.0	1	0.4	*
4.0 to 5.0	1	*	*
8.0 to 9.0	1	*	*
TOTAL:	17	45.4	4.3

Table 3.13. Summarized Distribution of Mean Tin Levels  
in Resource Survey Species (continued)

Range, ppm <sup>1/</sup>	No. of Species	Percent of <sup>2/</sup> U. S. Catch	Percent of U. S. Catch <sup>2/</sup> Intended for Human Consumption
Mollusca, edible tissues			
0.3 to 0.4	1	* <sup>3/</sup>	*
0.4 to 0.5	2	1.5	3.1
0.5 to 0.6	3	1.2	2.5
0.6 to 0.7	4	0.9	1.4
0.7 to 0.8	2	0.2	0.4
0.8 to 0.9	2	*	*
0.9 to 1.0	1	*	*
1.0 to 2.0	3	*	*
TOTAL:	18	3.8	7.5
Crustacea, edible tissues			
0.6 to 0.7	5	5.4	11.3
0.7 to 0.8	4	1.5	3.0
0.8 to 0.9	4	4.2	10.8
0.9 to 1.0	2	2.6	3.3
1.0 to 2.0	1	*	*
TOTAL:	16	13.7	28.4

<sup>1/</sup> Mean analytical values falling on the upper limit of each range are included in the next higher range (e.g. 0.2 is included in the range 0.2 to 0.3 ppm and not 0.1 to 0.2 ppm).

<sup>2/</sup> See page 12 for an explanation of these columns.

<sup>3/</sup> \* denotes less than .05%.

Table 3.14. Summarized Distribution of Mean Vanadium Levels  
in Resource Survey Species

Range, ppm <sup>1/</sup>	No. of Species	Percent of <sup>2/</sup> U. S. Catch	Percent of U. S. Catch <sup>2/</sup> Intended for Human Consumption
Finfish, muscle			
< 0.1	17	0.6	0.3
0.1 to 0.2	12	0.2	0.3
0.2 to 0.3	56	25.4	22.5
0.3 to 0.4	44	16.2	32.2
0.4 to 0.5	20	27.3	6.8
0.5 to 0.6	4	0.8	1.5
0.6 to 0.7	3	* <sub>3/</sub>	*
0.7 to 0.8	1	0.1	0.3
0.8 to 0.9	1	*	*
1.0 to 2.0	1	*	*
TOTAL:	159	70.5	63.9
Finfish, liver			
< 0.1	18	2.0	3.5
0.1 to 0.2	4	2.8	5.8
0.2 to 0.3	18	6.2	12.5
0.3 to 0.4	8	6.9	14.4
0.4 to 0.5	8	5.2	10.8
0.5 to 0.6	1	0.1	0.3
0.6 to 0.7	4	0.1	0.2
0.7 to 0.8	3	0.7	1.4
0.8 to 0.9	3	1.3	2.7
0.9 to 1.0	2	0.1	0.3
1.0 to 2.0	10	1.7	3.3
2.0 to 3.0	1	*	*
3.0 to 4.0	1	1.0	0.7
5.0 to 6.0	1	0.1	0.2
TOTAL:	82	28.3	56.3

Table 3.14. Summarized Distribution of Mean Vanadium Levels  
in Resource Survey Species (continued)

Range, ppm <sup>1/</sup>	No. of Species	Percent of <sup>2/</sup> U. S. Catch	Percent of U. S. Catch <sup>2/</sup> Intended for Human Consumption
<b>Finfish, whole</b>			
< 0.1	1	0.5	1.1
0.1 to 0.2	1	0.2	0.2
0.2 to 0.3	1	* <sup>3/</sup>	*
0.3 to 0.4	1	*	0.1
0.4 to 0.5	5	3.2	2.6
0.6 to 0.7	2	0.1	0.1
0.7 to 0.8	3	4.1	0.3
1.0 to 2.0	2	13.6	*
2.0 to 3.0	1	23.8	*
TOTAL:	17	45.4	4.3
<b>Mollusca, edible tissues</b>			
< 0.1	1	*	*
0.1 to 0.2	1	*	*
0.2 to 0.3	5	0.6	0.8
0.3 to 0.4	1	0.2	0.3
0.4 to 0.5	5	2.0	4.0
0.5 to 0.6	2	*	0.1
0.6 to 0.7	1	*	*
0.7 to 0.8	1	0.9	1.9
1.0 to 2.0	1	0.2	0.3
TOTAL:	18	3.8	7.5
<b>Crustacea, edible tissues</b>			
0.1 to 0.2	1	0.9	1.8
0.2 to 0.3	2	*	*
0.3 to 0.4	5	3.5	7.4
0.4 to 0.5	8	9.2	19.2
TOTAL:	16	13.7	28.3

<sup>1/</sup> Mean analytical values falling on the upper limit of each range are included in the next higher range (e.g. 0.2 is included in the range 0.2 to 0.3 ppm and not 0.1 to 0.2 ppm).

<sup>2/</sup> See page 12 for an explanation of these columns.

<sup>3/</sup> \* denotes less than .05%.

Table 3.15. Summarized Distribution of Mean Zinc Levels  
in Resource Survey Species

Range, ppm <sup>1/</sup>	No. of Species	Percent of <sup>2/</sup> U. S. Catch	Percent of U. S. Catch <sup>2/</sup> Intended for Human Consumption
Finfish, muscle			
2.0 to 3.0	7	0.3	0.7
3.0 to 4.0	34	6.3	12.4
4.0 to 5.0	48	7.8	14.8
5.0 to 6.0	29	14.2	27.9
6.0 to 7.0	19	38.3	2.0
7.0 to 8.0	8	1.7	2.4
8.0 to 9.0	6	1.7	3.6
9.0 to 10.0	2	*3/	*
10.0 to 20.0	6	0.1	0.1
TOTAL:	159	70.5	63.9
Finfish, liver			
4.0 to 5.0	1	*	*
5.0 to 6.0	1	*	*
8.0 to 9.0	1	*	*
9.0 to 10.0	1	*	*
10.0 to 20.0	16	2.4	5.0
20.0 to 30.0	19	8.2	16.5
30.0 to 40.0	14	8.6	16.3
40.0 to 50.0	7	1.9	4.0
50.0 to 60.0	6	0.9	1.7
60.0 to 70.0	3	1.1	1.9
70.0 to 80.0	2	4.9	10.1
80.0 to 90.0	1	*	*
90.0 to 100.0	2	0.1	0.2
100.0 to 200.0	3	*	*
200.0 to 300.0	3	0.2	0.3
300.0 to 400.0	1	*	*
600.0 to 700.0	1	*	*
TOTAL:	82	28.3	56.3

Table 3.15. Summarized Distribution of Mean Zinc Levels  
in Resource Survey Species (continued)

Range, ppm <sup>1/</sup>	No. of Species	Percent of <sup>2/</sup> U. S. Catch	Percent of U. S. Catch <sup>2/</sup> Intended for Human Consumption
Finfish, whole			
2.0 to 3.0	1	0.5	1.1
6.0 to 7.0	1	0.2	0.2
10.0 to 20.0	10	16.9	3.0
20.0 to 30.0	5	27.8	0.1
TOTAL:	17	45.4	4.3
Mollusca, edible tissues			
5.0 to 6.0	1	* <sup>3/</sup>	*
7.0 to 8.0	1	*	*
8.0 to 9.0	1	*	*
10.0 to 20.0	13	2.7	5.2
100.0 to 200.0	1	0.2	0.3
300.0 to 400.0	1	0.9	1.9
TOTAL:	18	3.8	7.5
Crustacea, edible tissues			
10.0 to 20.0	8	7.5	15.5
20.0 to 30.0	3	0.9	1.9
30.0 to 40.0	2	3.0	6.2
40.0 to 50.0	2	1.2	2.5
50.0 to 60.0	1	1.1	2.2
TOTAL:	16	13.7	28.4

1/ Mean analytical values falling on the upper limit of each range are included in the next higher range (e.g. 0.2 is included in the range 0.2 to 0.3 ppm and not 0.1 to 0.2 ppm).

2/ See page 12 for an explanation of these columns.

3/ \* denotes less than .05%.





Table 4.1. Distribution of Mean Antimony Levels in the Resource Survey, by Species (continued)

Species Number	Species	Tissue <sup>1/</sup>	Total # Samples	# samples in mean	Ranges of Mean Antimony Content, ppm <sup>2/</sup>																								
					< 0.1	0.1 to 0.2	0.2 to 0.3	0.3 to 0.4	0.4 to 0.5	0.5 to 0.6	0.6 to 0.7	0.7 to 0.8	0.8 to 0.9	0.9 to 1.0	1.0 to 2.0	2.0 to 3.0	3.0 to 4.0	4.0 to 5.0	5.0 to 6.0	6.0 to 7.0	7.0 to 8.0	8.0 to 9.0	9.0 to 10.0	10.0 to 20.0	20.0 to 30.0	30.0 to 40.0	40.0 to 50.0	50.0 to 60.0	
Finfish																													
094-010	Mojarra, yellowfin	muscle	10	9																									
098-003	Mullet, silver (white)	muscle	36	36																									
098-002	Mullet, striped	muscle	156	129																									
		liver	5	4																									
079-030	Palometa	muscle	2	0	M																								
131-023	Perch, ocean (Pacific)	muscle	30	22																									
		liver	18	14																									
131-052	Perch, ocean (redfish)	muscle	80	79																									
		liver	2	2																									
006-010	Perch, sand	muscle	1	1	M																								
168-005	Perch, shiner	whole	2	2																									
045-003	Perch, silver	muscle	20	17																									
007-001	Perch, white	muscle	27	26																									
		h & g	19	19																									
079-029	Permit	muscle	9	7																									
073-017	Pigfish	muscle	34	26																									
114-013	Pinfish, spottail	muscle	10	7																									
		liver	1	1																									
059-008	Plaice, American (dab)	muscle	68	66																									
		whole	1	1																									
033-017	Pollock	muscle	73	67																									
		liver	33	23																									
033-019	Pollock, walleye (Alaska)	muscle	48	46																									
		liver	3	3																									
079-028	Pompano, Florida	muscle	60	56																									
		liver	4	3																									
114-014	Porgy, red	muscle	22	21																									
		liver	1	0	L																								
056-018	Pout, ocean	muscle	34	24																									
		liver	3	2																									
131-061	Rockfish, bocaccio	muscle	48	35																									
		liver	4	4																									
131-063	Rockfish, canary	muscle	44	28																									
		liver	1	1																									
131-031	Rockfish, copper	muscle	10	10																									
131-043	Rockfish, yellowtail	muscle	20	15																									
079-004	Runner, blue	muscle	56	52																									
		liver	4	3																									
126-001	Sablefish	muscle	103	87																									
		liver	14	10																									
011-001	Sailfish	muscle	42	37																									
		liver	3	3																									
179-020	Salmon, chinook, (king)	muscle	109	95																									
		liver	22	21																									
179-017	Salmon, chum (keta)	muscle	57	42																									
		liver	5	4																									
179-018	Salmon, coho (silver)	muscle	68	56																									
		liver	7	7																									
179-016	Salmon, pink	muscle	27	22																									
		liver	3	3																									
179-019	Salmon, sockeye (red)	muscle	62	47																									
		liver	4	4																									
079-013	Scad, round	h & g	3	3																									
006-041	Scamp	muscle	10	10																									
		liver	1	1																									
132-031	Sculpin, longhorn	muscle	1	0	M																								
114-016	Scup	muscle	72	45																									
135-010	Searobin, northern	muscle	78	33																									
135-011	Searobin, striped	muscle	10	9																									
045-012	Seatrout, gray (weakfish)	muscle	72	55																									
		liver	3	3																									
		whole	10	10																									
045-007	Seatrout, sand	muscle	18	16																									
045-010	Seatrout, silver (white)	muscle	44	40																									
		liver	1	1																									
045-008	Seatrout, spotted (speckled)	muscle	89	66																									
		liver	3	3																									
078-006	Shad, American	muscle	60	27																									
145-025	Shark, Atlantic, sharpnose	muscle	1	1																									
145-006	Shark, blacktip	muscle	16	16																									
		liver	4	3																									



















Table 4.3. Distribution of Mean Cadmium Levels in the Resource Survey, by Species (continued)

Species Number	Species	Tissue <sup>1/</sup>	Total # Samples	# samples in mean	Ranges of Mean Cadmium Content, ppm <sup>2/</sup>																								
					< 0.1	0.1 to 0.2	0.2 to 0.3	0.3 to 0.4	0.4 to 0.5	0.5 to 0.6	0.6 to 0.7	0.7 to 0.8	0.8 to 0.9	0.9 to 1.0	1.0 to 2.0	2.0 to 3.0	3.0 to 4.0	4.0 to 5.0	5.0 to 6.0	6.0 to 7.0	7.0 to 8.0	8.0 to 9.0	9.0 to 10.0	10.0 to 20.0	20.0 to 30.0	30.0 to 40.0	40.0 to 50.0	50.0 to 60.0	
Finfish																													
094-010	Mojarra, yellowfin	muscle	10	6	M																								
098-003	Mullet, silver (white)	muscle	36	36	M																								
098-002	Mullet, striped	muscle	158	142	M																								
		liver	5	5				L																					
079-030	Palometa	muscle	2	1	M																								
131-023	Perch, ocean (Pacific)	muscle	30	22	M																								
		liver	18	18																									
131-052	Perch, ocean (redfish)	muscle	80	78	M																								
		liver	2	2				L																					
006-010	Perch, sand	muscle	1	1	M																								
168-005	Perch, shiner	whole	2	2	W																								
045-003	Perch, silver	muscle	20	19	M																								
007-001	Perch, white	muscle	27	27	M																								
		b & g	19	18	H																								
079-029	Permit	muscle	9	6	M																								
073-017	Pigfish	muscle	34	32	M																								
114-013	Pinfish, spottail	muscle	10	10	M																								
		liver	1	1																									
059-008	Plaice, American (dab)	muscle	68	67	M																								
		whole	1	1	W																								
033-017	Pollock	muscle	73	68	M																								
		liver	32	32				L																					
033-019	Pollock, walleye (Alaska)	muscle	48	44	M																								
		liver	3	3				L																					
079-028	Pompano, Florida	muscle	60	55	M																								
		liver	4	4																									
114-014	Porgy, red	muscle	22	21	M																								
		liver	1	1																									
056-018	Pout, ocean	muscle	34	34	M																								
		liver	3	3																									
131-061	Rockfish, bocaccio	muscle	48	36	M																								
		liver	4	4				L																					
131-063	Rockfish, canary	muscle	43	30	M																								
		liver	1	1																									
131-031	Rockfish, copper	muscle	10	10	M																								
131-043	Rockfish, yellowtail	muscle	20	10	M																								
079-004	Runner, blue	muscle	55	53	M																								
		liver	4	4																									
126-001	Sablefish	muscle	103	80	M																								
		liver	14	14																									
011-001	Sailfish	muscle	42	40	M																								
		liver	3	3																									
179-020	Salmon, chinook, (king)	muscle	109	104	M																								
		liver	22	22					L																				
179-017	Salmon, chum (keta)	muscle	57	52	M																								
		liver	5	5																									
179-018	Salmon, coho (silver)	muscle	68	64	M																								
		liver	7	7																									
179-016	Salmon, pink	muscle	27	24	M																								
		liver	3	3					L																				
179-019	Salmon, sockeye (red)	muscle	61	57	M																								
		liver	4	4																									
079-013	Scad, round	h & g	3	2	H																								
006-041	Scamp	muscle	10	10	M																								
		liver	1	1																									
132-031	Sculpin, longhorn	muscle	1	1	M																								
114-016	Scup	muscle	72	68	M																								
135-010	Searobin, northern	muscle	78	77	M																								
135-011	Searobin, striped	muscle	10	10	M																								
045-012	SeatROUT, gray (weakfish)	muscle	72	68	M																								
		liver	3	3					L																				
		whole	10	10					W																				
045-007	SeatROUT, sand	muscle	18	17	M																								
045-010	SeatROUT, silver (white)	muscle	44	44	M																								
		liver	1	1																									
045-008	SeatROUT, spotted (speckled)	muscle	89	66	M																								
		liver	3	2					L																				
078-006	Shad, American	muscle	60	56	M																								
145-025	Shark, Atlantic, sharpnose	muscle	1	1	M																								
145-006	Shark, blacktip	muscle	16	16	M																								
		liver	4	4																									





















Table 4.5. Distribution of Mean Copper Levels in the Resource Survey, by Species (continued)

Species Number	Species	Tissue <sup>1/</sup>	Total # Samples	# samples in mean	Ranges of Mean Copper Content, ppm <sup>2/</sup>																							
					< 0.1	0.1 to 0.2	0.2 to 0.3	0.3 to 0.4	0.4 to 0.5	0.5 to 0.6	0.6 to 0.7	0.7 to 0.8	0.8 to 0.9	0.9 to 1.0	1.0 to 2.0	2.0 to 3.0	3.0 to 4.0	4.0 to 5.0	5.0 to 6.0	6.0 to 7.0	7.0 to 8.0	8.0 to 9.0	9.0 to 10.0	10.0 to 20.0	20.0 to 30.0	30.0 to 40.0	40.0 to 50.0	50.0 to 110.0
Finfish																												
145-023	Shark, blue	muscle	13	13																								
		liver	9	9																								
145-010	Shark, dusky	muscle	4	4																								
145-009	Shark, sandbar	muscle	13	13																								
		liver	7	7																								
144-001	Shark, white	muscle	2	2																								
114-001	Sheepshead	muscle	60	60																								
		liver	2	2																								
150-005	Skate, little	muscle	52	52																								
		liver	2	2																								
150-012	Skate, winter	muscle	2	2																								
		liver	1	1																								
155-005	Snapper, blackfin	muscle	13	13																								
155-025	Snapper, gray	muscle	40	40																								
155-008	Snapper, gray (mangrove)	muscle	28	28																								
155-006	Snapper, red	muscle	38	36																								
155-024	Snapper, red (ehu)	muscle	40	40																								
155-015	Snapper, vermilion	muscle	36	36																								
		liver	2	2																								
155-013	Snapper, yellowtail	muscle	43	43																								
157-004	Snook	muscle	12	12																								
059-021	Sole, Dover	muscle	70	68																								
		liver	4	4																								
059-022	Sole, English	muscle	73	71																								
		liver	5	5																								
059-004	Sole, petrale	muscle	57	57																								
		liver	7	7																								
059-006	Sole, rex	muscle	61	59																								
059-014	Sole, rock	muscle	10	10																								
011-004	Spearfish, shortbill	muscle	14	14																								
		liver	4	4																								
045-020	Spot	muscle	54	54																								
166-003	Sturgeon, green	muscle	10	10																								
168-001	Surfperch, barred	muscle	20	20																								
200-003	Tarpon	muscle	12	12																								
		liver	2	2																								
185-022	Tautog	muscle	13	13																								
174-003	Tilefish	muscle	60	60																								
179-028	Trout, cutthroat	muscle	3	3																								
179-029	Trout, rainbow (steelhead)	muscle	9	9																								
		liver	1	1																								
091-019	Tuna, albacore	muscle	40	40																								
		liver	5	5																								
091-022	Tuna, bigeye	muscle	40	39																								
		liver	21	21																								
091-021	Tuna, blackfin	muscle	1	1																								
091-023	Tuna, bluefin	muscle	11	11																								
		liver	1	1																								
091-008	Tuna, skipjack	muscle	69	69																								
		liver	8	8																								
091-020	Tuna, yellowfin	muscle	80	80																								
		liver	26	26																								
091-006	Tunny, little	muscle	50	50																								
		liver	2	2																								
091-001	Wahoo	muscle	18	17																								
		liver	3	3																								
183-002	Wolffish, Atlantic	muscle	58	58																								
		liver	14	14																								
079-023	Yellowtail	muscle	24	24																								
Mollusca																												
187-005	Abalone, green	shucked	10	10																								
187-008	Abalone, red	shucked	10	10																								
191-003	Clam, butter	shucked	27	27																								
191-001	Clam, hard (quahog)	shucked	140	140																								
191-008	Clam, Pacific littleneck	shucked	1	1																								
243-002	Clam, razor	shucked	39	39																								
242-001	Clam, soft	shucked	19	19																								
244-005	Clam, surf	shucked	23	23																								
205-001	Octopus (marmoratus)	whole	4	4																								
		mantle	36	36																								











Table 4.6. Distribution of Mean Lead Levels in the Resource Survey, by Species (continued)

Species Number	Species	Tissue <sup>1/</sup>	Total # Samples	# samples in mean	Ranges of Mean Lead Content, ppm <sup>2/</sup>																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
					< 0.1	0.1 to 0.2	0.2 to 0.3	0.3 to 0.4	0.4 to 0.5	0.5 to 0.6	0.6 to 0.7	0.7 to 0.8	0.8 to 0.9	0.9 to 1.0	1.0 to 2.0	2.0 to 3.0	3.0 to 4.0	4.0 to 5.0	5.0 to 6.0	6.0 to 7.0	7.0 to 8.0	8.0 to 9.0	9.0 to 10.0	10.0 to 20.0	20.0 to 30.0	30.0 to 40.0	40.0 to 50.0	50.0 to 60.0																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
Mollusca																												189-001	Oyster, eastern	shucked	151	149										S														189-002	Oyster, Pacific (giant)	shucked	70	64										S														190-014	Scallop, Atlantic bay	adductor muscle	20	20					A																			190-016	Scallop, calico	shucked	10	10																										adductor muscle	19	18											S													190-028	Scallop, pink	adductor muscle	5	5				A																				190-013	Scallop, sea (smooth)	adductor muscle	11	11					A																			188-003	Squid, Atlantic longfinned	whole	22	22							W																			mantle	107	107							N																	188-006	Squid, Pacific	whole	50	49								W																188-014	Squid, shortfinned	mantle	91	91								N																Crustacea																													196-001	Crab, blue	body meat	35	35											B															claw meat	5	5												C														claw & body meat	54	54								K																196-011	Crab, dungeness	meat, unk.	41	40								U																		claw & body meat	8	8										D														196-012	Crab, king	meat, unk.	20	20											U															claw & body meat	8	8						D																		196-006	Crab, red, deep sea	meat, unk.	24	24							U																	196-003	Crab, rock	meat, unk.	15	15											U													196-035	Crab, tanner (bairdi)	meat, unk.	41	41								U																194-012	Lobster, northern (American)	body meat	2	2								B																		claw meat	2	2											C															tail meat	2	2									T																	leg meat	2	2																										claw & tail meat	80	80									K															194-002	Lobster, spiny (Atlantic)	tail meat	40	40										T														194-003	Lobster, spiny (Pacific)	tail meat	5	5										T														192-012	Shrimp, Alaska (sidestripe)	tail, peeled	17	17											P													192-005	Shrimp, brown	tail, peeled	53	52											P													192-007	Shrimp, ocean	tail, peeled	10	10											P													192-010	Shrimp, pink	tail, peeled	49	49											P													192-011	Shrimp, pink (northern)	tail, peeled	64	64									P															192-003	Shrimp, royal red	tail, peeled	12	12										P														192-004	Shrimp, white	tail, peeled	77	73										P													
189-001	Oyster, eastern	shucked	151	149										S														189-002	Oyster, Pacific (giant)	shucked	70	64										S														190-014	Scallop, Atlantic bay	adductor muscle	20	20					A																			190-016	Scallop, calico	shucked	10	10																										adductor muscle	19	18											S													190-028	Scallop, pink	adductor muscle	5	5				A																				190-013	Scallop, sea (smooth)	adductor muscle	11	11					A																			188-003	Squid, Atlantic longfinned	whole	22	22							W																			mantle	107	107							N																	188-006	Squid, Pacific	whole	50	49								W																188-014	Squid, shortfinned	mantle	91	91								N																Crustacea																													196-001	Crab, blue	body meat	35	35											B															claw meat	5	5												C														claw & body meat	54	54								K																196-011	Crab, dungeness	meat, unk.	41	40								U																		claw & body meat	8	8										D														196-012	Crab, king	meat, unk.	20	20											U															claw & body meat	8	8						D																		196-006	Crab, red, deep sea	meat, unk.	24	24							U																	196-003	Crab, rock	meat, unk.	15	15											U													196-035	Crab, tanner (bairdi)	meat, unk.	41	41								U																194-012	Lobster, northern (American)	body meat	2	2								B																		claw meat	2	2											C															tail meat	2	2									T																	leg meat	2	2																										claw & tail meat	80	80									K															194-002	Lobster, spiny (Atlantic)	tail meat	40	40										T														194-003	Lobster, spiny (Pacific)	tail meat	5	5										T														192-012	Shrimp, Alaska (sidestripe)	tail, peeled	17	17											P													192-005	Shrimp, brown	tail, peeled	53	52											P													192-007	Shrimp, ocean	tail, peeled	10	10											P													192-010	Shrimp, pink	tail, peeled	49	49											P													192-011	Shrimp, pink (northern)	tail, peeled	64	64									P															192-003	Shrimp, royal red	tail, peeled	12	12										P														192-004	Shrimp, white	tail, peeled	77	73										P																																									
189-002	Oyster, Pacific (giant)	shucked	70	64										S														190-014	Scallop, Atlantic bay	adductor muscle	20	20					A																			190-016	Scallop, calico	shucked	10	10																										adductor muscle	19	18											S													190-028	Scallop, pink	adductor muscle	5	5				A																				190-013	Scallop, sea (smooth)	adductor muscle	11	11					A																			188-003	Squid, Atlantic longfinned	whole	22	22							W																			mantle	107	107							N																	188-006	Squid, Pacific	whole	50	49								W																188-014	Squid, shortfinned	mantle	91	91								N																Crustacea																													196-001	Crab, blue	body meat	35	35											B															claw meat	5	5												C														claw & body meat	54	54								K																196-011	Crab, dungeness	meat, unk.	41	40								U																		claw & body meat	8	8										D														196-012	Crab, king	meat, unk.	20	20											U															claw & body meat	8	8						D																		196-006	Crab, red, deep sea	meat, unk.	24	24							U																	196-003	Crab, rock	meat, unk.	15	15											U													196-035	Crab, tanner (bairdi)	meat, unk.	41	41								U																194-012	Lobster, northern (American)	body meat	2	2								B																		claw meat	2	2											C															tail meat	2	2									T																	leg meat	2	2																										claw & tail meat	80	80									K															194-002	Lobster, spiny (Atlantic)	tail meat	40	40										T														194-003	Lobster, spiny (Pacific)	tail meat	5	5										T														192-012	Shrimp, Alaska (sidestripe)	tail, peeled	17	17											P													192-005	Shrimp, brown	tail, peeled	53	52											P													192-007	Shrimp, ocean	tail, peeled	10	10											P													192-010	Shrimp, pink	tail, peeled	49	49											P													192-011	Shrimp, pink (northern)	tail, peeled	64	64									P															192-003	Shrimp, royal red	tail, peeled	12	12										P														192-004	Shrimp, white	tail, peeled	77	73										P																																																																					
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190-028	Scallop, pink	adductor muscle	5	5				A																				190-013	Scallop, sea (smooth)	adductor muscle	11	11					A																			188-003	Squid, Atlantic longfinned	whole	22	22							W																			mantle	107	107							N																	188-006	Squid, Pacific	whole	50	49								W																188-014	Squid, shortfinned	mantle	91	91								N																Crustacea																													196-001	Crab, blue	body meat	35	35											B															claw meat	5	5												C														claw & body meat	54	54								K																196-011	Crab, dungeness	meat, unk.	41	40								U																		claw & body meat	8	8										D														196-012	Crab, king	meat, unk.	20	20											U															claw & body meat	8	8						D																		196-006	Crab, red, deep sea	meat, unk.	24	24							U																	196-003	Crab, rock	meat, unk.	15	15											U													196-035	Crab, tanner (bairdi)	meat, unk.	41	41								U																194-012	Lobster, northern (American)	body meat	2	2								B																		claw meat	2	2											C															tail meat	2	2									T																	leg meat	2	2																										claw & tail meat	80	80									K															194-002	Lobster, spiny (Atlantic)	tail meat	40	40										T														194-003	Lobster, spiny (Pacific)	tail meat	5	5										T														192-012	Shrimp, Alaska (sidestripe)	tail, peeled	17	17											P													192-005	Shrimp, brown	tail, peeled	53	52											P													192-007	Shrimp, ocean	tail, peeled	10	10											P													192-010	Shrimp, pink	tail, peeled	49	49											P													192-011	Shrimp, pink (northern)	tail, peeled	64	64									P															192-003	Shrimp, royal red	tail, peeled	12	12										P														192-004	Shrimp, white	tail, peeled	77	73										P																																																																																																																																																																																					
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196-003	Crab, rock	meat, unk.	15	15											U													196-035	Crab, tanner (bairdi)	meat, unk.	41	41								U																194-012	Lobster, northern (American)	body meat	2	2								B																		claw meat	2	2											C															tail meat	2	2									T																	leg meat	2	2																										claw & tail meat	80	80									K															194-002	Lobster, spiny (Atlantic)	tail meat	40	40										T														194-003	Lobster, spiny (Pacific)	tail meat	5	5										T														192-012	Shrimp, Alaska (sidestripe)	tail, peeled	17	17											P													192-005	Shrimp, brown	tail, peeled	53	52											P													192-007	Shrimp, ocean	tail, peeled	10	10											P													192-010	Shrimp, pink	tail, peeled	49	49											P													192-011	Shrimp, pink (northern)	tail, peeled	64	64									P															192-003	Shrimp, royal red	tail, peeled	12	12										P														192-004	Shrimp, white	tail, peeled	77	73										P																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
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192-010	Shrimp, pink	tail, peeled	49	49											P													192-011	Shrimp, pink (northern)	tail, peeled	64	64									P															192-003	Shrimp, royal red	tail, peeled	12	12										P														192-004	Shrimp, white	tail, peeled	77	73										P																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
192-011	Shrimp, pink (northern)	tail, peeled	64	64									P															192-003	Shrimp, royal red	tail, peeled	12	12										P														192-004	Shrimp, white	tail, peeled	77	73										P																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
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<sup>1/</sup> The letters in the boxes correspond to the tissue or cut of fish analyzed, as follows: a, adductor muscle; b, body meat; c, claw meat; d, claw & body meat; e, headed; f, gutted; g, headed and gutted; k, claw & tail meat; l, liver; m, muscle; n, mantle, skinless; p, tail, peeled; q, milt; r, roe; s, shucked; t, tail meat; u, meat, unk.; w, whole.

<sup>2/</sup> Mean analytical values falling on the upper limit of each range are included in the next higher range (e.g., 0.2 is included in the range 0.2 to 0.3 ppm and not 0.1 to 0.2 ppm).

Table 4.7. Distribution of Mean Manganese Levels in the Resource Survey, by Species

Species Number	Species	Tissue <sup>1/</sup>	Total # Samples	# samples in mean	Ranges of Mean Manganese Content, ppm <sup>2/</sup>																						
					< 0.1	0.1 to 0.2	0.2 to 0.3	0.3 to 0.4	0.4 to 0.5	0.5 to 0.6	0.6 to 0.7	0.7 to 0.8	0.8 to 0.9	0.9 to 1.0	1.0 to 2.0	2.0 to 3.0	3.0 to 4.0	4.0 to 5.0	5.0 to 6.0	6.0 to 7.0	7.0 to 8.0	8.0 to 9.0	9.0 to 10.0	10.0 to 20.0	20.0 to 30.0	30.0 to 40.0	40.0 to 50.0
078-005	Alewife	muscle	42	42				M																			
		whole	4	4																							
001-016	Anchovy, northern	whole	40	40																							
001-006	Anchovy, striped	h & g	40	40																							
002-002	Argentine, Atlantic	h & g	7	7																							
062-014	Ballyhoo	whole	57	57																							
005-002	Barracuda, Atlantic	muscle	7	7																							
005-001	Barracuda, Pacific	muscle	20	20																							
006-006	Bass, black sea	muscle	55	53																							
		liver	2	2																							
007-004	Bass, striped	muscle	112	110																							
		liver	3	3																							
012-001	Bluefish	muscle	73	73																							
		liver	4	4																							
091-011	Bonito, Atlantic	muscle	15	15																							
091-009	Bonito, Pacific	muscle	40	40																							
		liver	1	1																							
021-007	Bullhead, brown	muscle	4	4																							
018-014	Butterfish	muscle	71	71																							
		whole	17	17																							
		h & g	1	1																							
021-010	Catfish, channel	muscle	20	20																							
023-002	Catfish, gaftopsail	muscle	34	33																							
		liver	3	3																							
023-001	Catfish, sea	muscle	47	47																							
		liver	6	6																							
021-002	Catfish, white	muscle	1	1																							
033-008	Cod, Atlantic	muscle	113	113																							
		liver	35	35																							
033-007	Cod, Pacific (gray)	muscle	58	54																							
		liver	15	15																							
045-026	Croaker, Atlantic	muscle	92	91																							
033-004	Cusk	muscle	76	76																							
		liver	18	18																							
037-004	Cusk-eel, fawn	muscle	2	2																							
145-018	Dogfish, smooth	muscle	95	95																							
141-007	Dogfish, spiny	muscle	115	114																							
		liver	29	29																							
041-002	Dolphin	muscle	63	62																							
		liver	28	28																							
045-019	Drum, banded	muscle	5	5																							
045-028	Drum, black	muscle	61	59																							
		liver	2	2																							
045-030	Drum, red	muscle	73	73																							
		liver	3	3																							
051-001	Eel, American	muscle	30	30																							
047-002	Eel, conger	muscle	1	1																							
153-009	Eulachon	whole	33	33																							
058-028	Flounder, fourspot	muscle	71	71																							
058-024	Flounder, Gulf	muscle	40	40																							
		liver	1	1																							
058-027	Flounder, southern	muscle	42	42																							
		liver	2	2																							
058-026	Flounder, summer (fluke)	muscle	42	42																							
		liver	2	2																							
058-030	Flounder, windowpane (s.dab)	muscle	18	18																							
059-030	Flounder, winter	muscle	123	123																							
		liver	2	2																							
059-005	Flounder, witch	muscle	70	70																							
059-016	Flounder, yellowtail	muscle	89	89																							
		liver	2	2																							
006-040	Gag	muscle	30	28																							
066-009	Goatfish	muscle	40	40																							
068-001	Goosefish	muscle	79	78																							
		liver	10	10																							
		h & g	1	1																							
006-037	Grouper, black	muscle	34	33																							
006-017	Grouper, red	muscle	41	40																							
006-038	Grouper, yellowmouth	muscle	10	10																							
		liver	1	1																							
073-015	Grunt, bluestriped (yellow)	muscle	16	16																							







Table 4.7. Distribution of Mean Manganese Levels in the Resource Survey, by Species (continued)

Species Number	Species	Tissue <sup>1/</sup>	Total # Samples	# samples in mean	Ranges of Mean Manganese Content, ppm <sup>2/</sup>																						
					< 0.1	0.1 to 0.2	0.2 to 0.3	0.3 to 0.4	0.4 to 0.5	0.5 to 0.6	0.6 to 0.7	0.7 to 0.8	0.8 to 0.9	0.9 to 1.0	1.0 to 2.0	2.0 to 3.0	3.0 to 4.0	4.0 to 5.0	5.0 to 6.0	6.0 to 7.0	7.0 to 8.0	8.0 to 9.0	9.0 to 10.0	10.0 to 20.0	20.0 to 30.0	30.0 to 40.0	40.0 to 50.0
Mollusca																											
189-001	Oyster, eastern	shucked	150	150																S							
189-002	Oyster, Pacific (giant)	shucked	70	70																	S						
190-014	Scallop, Atlantic bay	adductor muscle	20	20											A												
190-016	Scallop, calico	shucked	10	10																	S						
		adductor muscle	20	20																							
190-028	Scallop, pink	adductor muscle	5	5		A																					
190-013	Scallop, sea (smooth)	adductor muscle	11	11			A																				
188-003	Squid, Atlantic longfinned	whole	23	23						W																	
		mantle	110	110			N																				
188-006	Squid, Pacific	whole	50	50																							
188-014	Squid, shortfinned	mantle	92	92				N																			
Crustacea																											
196-001	Crab, blue	body meat	34	34																							
		claw meat	5	5																							
		claw & body meat	54	54																							
196-011	Crab, dungeness	meat, unk.	42	42																							
		claw & body meat	8	8																							
196-012	Crab, king	meat, unk.	20	20																							
		claw & body meat	9	9																							
196-006	Crab, red, deep sea	meat, unk.	25	25																							
196-003	Crab, rock	meat, unk.	15	15																							
196-035	Crab, tanner (bairdi)	meat, unk.	50	50																							
194-012	Lobster, northern (American)	body meat	2	2																							
		claw meat	2	2																							
		tail meat	2	2																							
		leg meat	2	2																							
		claw & tail meat	78	78																							
194-002	Lobster, spiny (Atlantic)	tail meat	40	40																							
194-003	Lobster, spiny (Pacific)	tail meat	5	5																							
192-012	Shrimp, Alaska (sidestripe)	tail, peeled	17	17																							
192-005	Shrimp, brown	tail, peeled	53	53																							
192-007	Shrimp, ocean	tail, peeled	10	10																							
192-010	Shrimp, pink	tail, peeled	50	50																							
192-011	Shrimp, pink (northern)	tail, peeled	64	64																							
192-003	Shrimp, royal red	tail, peeled	12	12																							
192-004	Shrimp, white	tail, peeled	76	76																							

<sup>1/</sup> The letters in the boxes correspond to the tissue or cut of fish analyzed, as follows: a, adductor muscle; b, body meat; c, claw meat; d, claw & body meat; e, headed; f, leg meat; g, gutted; h, headed and gutted; k, claw & tail meat; l, liver; m, muscle; n, mantle, skinless; p, tail, peeled; q, milt; r, roe; s, shucked; t, tail meat; u, meat, unk.; w, whole.

<sup>2/</sup> Mean analytical values falling on the upper limit of each range are included in the next higher range (e.g., 0.2 is included in the range 0.2 to 0.3 ppm and not 0.1 to 0.2 ppm).



Table 4,8. Distribution of Mean Mercury Levels in the Resource Survey, by Species (continued)

Species Number	Species	Tissue <sup>1/</sup>	Total # Samples	# samples in mean	Ranges of Mean Mercury Content, ppm <sup>2/</sup>																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
					< 0.1	0.1 to 0.2	0.2 to 0.3	0.3 to 0.4	0.4 to 0.5	0.5 to 0.6	0.6 to 0.7	0.7 to 0.8	0.8 to 0.9	0.9 to 1.0	1.0 to 2.0	2.0 to 3.0	3.0 to 4.0	4.0 to 5.0	5.0 to 6.0	6.0 to 7.0	7.0 to 8.0	8.0 to 9.0	9.0 to 10.0	10.0 to 20.0	20.0 to 30.0	30.0 to 40.0	40.0 to 50.0	50.0 to 60.0																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
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073-014	Grunt, white	muscle	17	17		M																						033-011	Haddock	muscle	77	69	M																									liver	18	1	L																									whole	1	1	W																							033-013	Hake, Pacific	muscle	49	48		M																								liver	1	0	L																							033-020	Hake, red	muscle	65	59	M																							033-012	Hake, silver (whiting)	muscle	83	60	M																									liver	3	0	L																							033-024	Hake, spotted	muscle	64	45	M																							033-025	Hake, white	muscle	70	60		M																								liver	31	7	L																							059-011	Halibut, Pacific	muscle	37	34		M																								liver	16	8			L																					143-001	Hammerhead, scalloped	muscle	12	12											M													143-005	Hammerhead, smooth	muscle	10	10											M															liver	7	7											L													018-011	Harvestfish	muscle	3	3	M																									whole	16	1	W																							078-011	Herring, Atlantic	muscle	24	5	M																									whole	63	19	W																									headed	6	1	E																									h & g	2	2	H																							078-001	Herring, blueback	whole	1	0	W																							078-012	Herring, Pacific	muscle	14	14	M																									whole	30	1		W																						078-015	Herring, round	h & g	50	12	H																							006-013	Hind, speckled	muscle	20	20	M																									liver	7	7											L													079-068	Jack, (mackerel scad)	muscle	38	19	M																							079-053	Jack, akule	muscle	39	37	M																							079-005	Jack, crevalle	muscle	49	49											M															liver	4	4												L												079-069	Jack, crevalle (Hawaii)	muscle	39	39			M																					149-004	Jacksmelt	whole	20	16	W																							006-016	Jewfish	muscle	8	8			M																					045-024	Kingfish, northern	muscle	5	2	M																							045-021	Kingfish, southern	muscle	14	12	M																									liver	1	1	L																							200-002	Ladyfish	muscle	2	2											M													071-005	Lingcod	muscle	78	78		M																								liver	13	11												L												091-013	Mackerel, Atlantic	muscle	80	45	M																							091-012	Mackerel, chub	muscle	30	28	M																							079-034	Mackerel, jack	muscle	10	10											M															liver	1	1												L														headed	4	1	E																							091-014	Mackerel, king	muscle	107	107												M														liver	10	10																										milt	1	1																										roe	11	9		R																						091-016	Mackerel, Spanish	muscle	109	106												M														liver	4	3			L																					144-003	Mako, shortfin	muscle	3	3																										liver	2	2												L	M											011-002	Marlin, blue	muscle	33	33																										liver	11	11																								011-005	Marlin, striped	muscle	40	30																										liver	9	7		L																						011-003	Marlin, white	muscle	53	52																										liver	11	11												M												162-012	Mempachi	muscle	20	20																										liver	1	1												L												078-010	Menhaden, Atlantic	muscle	10	2	M																									whole	100	27	W																							078-008	Menhaden, Gulf	muscle	50	15	M																									whole	28	19	W																									gutted	8	4	G																							078-009	Menhaden, yellowfin	whole	13	6	W																							206-001	Milkfish	muscle	40	26	M																																																		
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Table 4.8. Distribution of Mean Mercury Levels in the Resource Survey, by Species (continued)

Species Number	Species	Tissue <sup>1/</sup>	Total # Samples	# samples in mean	Ranges of Mean Mercury Content, ppm <sup>2/</sup>																									
					< 0.1	0.1 to 0.2	0.2 to 0.3	0.3 to 0.4	0.4 to 0.5	0.5 to 0.6	0.6 to 0.7	0.7 to 0.8	0.8 to 0.9	0.9 to 1.0	1.0 to 2.0	2.0 to 3.0	3.0 to 4.0	4.0 to 5.0	5.0 to 6.0	6.0 to 7.0	7.0 to 8.0	8.0 to 9.0	9.0 to 10.0	10.0 to 20.0	20.0 to 30.0	30.0 to 40.0	40.0 to 50.0	50.0 to 60.0		
Mollusca																														
189-001	Oyster, eastern	shucked	153	73	S																									
189-002	Oyster, Pacific (giant)	shucked	69	30	S																									
190-014	Scallop, Atlantic bay	adductor muscle	20	12	A																									
190-016	Scallop, calico	shucked	10	4	S																									
		adductor muscle	20	7	A																									
190-028	Scallop, pink	adductor muscle	5	1	A																									
190-013	Scallop, sea (smooth)	adductor muscle	11	4	A																									
188-003	Squid, Atlantic longfinned	whole	23	14	W																									
		mantle	109	51	N																									
188-006	Squid, Pacific	whole	49	27	W																									
188-014	Squid, shortfinned	mantle	92	47	N																									
Crustacea																														
196-001	Crab, blue	body meat	34	34	B																									
		claw meat	5	5	C																									
		claw & body meat	53	48	D																									
196-011	Crab, dungeness	meat, unk.	42	42	U																									
		claw & body meat	8	8	D																									
196-012	Crab, king	meat, unk.	19	16	U																									
		claw & body meat	9	9	D																									
196-006	Crab, red, deep sea	meat, unk.	25	25	U																									
196-003	Crab, rock	meat, unk.	15	13	U																									
196-035	Crab, tanner (bairdi)	meat, unk.	49	35	U																									
194-012	Lobster, northern (American)	body meat	2	2	B																									
		claw meat	2	2	C																									
		tail meat	2	2																										
		leg meat	2	2																										
		claw & tail meat	80	80	K																									
194-002	Lobster, spiny (Atlantic)	tail meat	40	36	T																									
194-003	Lobster, spiny (Pacific)	tail meat	5	5	T																									
192-012	Shrimp, Alaska (sidestripe)	tail, peeled	17	6	P																									
192-005	Shrimp, brown	tail, peeled	53	30	P																									
192-007	Shrimp, ocean	tail, peeled	10	4	P																									
192-010	Shrimp, pink	tail, peeled	48	23	P																									
192-011	Shrimp, pink (northern)	tail, peeled	63	30	P																									
192-003	Shrimp, royal red	tail, peeled	11	11	P																									
192-004	Shrimp, white	tail, peeled	77	51	P																									

1/ The letters in the boxes correspond to the tissue or cut of fish analyzed, as follows: a, adductor muscle; b, body meat; c, claw meat; d, claw & body meat; e, headed; f, leg meat; g, gutted; h, headed and gutted; k, claw & tail meat; l, liver; m, muscle; n, mantle, skinless; p, tail, peeled; q, milt; r, roe; s, shucked; t, tail meat; u, meat, unk.; w, whole.

2/ Mean analytical values falling on the upper limit of each range are included in the next higher range (e.g., 0.2 is included in the range 0.2 to 0.3 ppm and not 0.1 to 0.2 ppm).

Table 4.9. Distribution of Mean Molybdenum Levels in the Resource Survey, by Species

Species Number	Species	Tissue <sup>1/</sup>	Total # Samples	% samples in mean	Ranges of Mean Molybdenum Content, ppm <sup>2/</sup>																								
					< 0.1	0.1 to 0.2	0.2 to 0.3	0.3 to 0.4	0.4 to 0.5	0.5 to 0.6	0.6 to 0.7	0.7 to 0.8	0.8 to 0.9	0.9 to 1.0	1.0 to 2.0	2.0 to 3.0	3.0 to 4.0	4.0 to 5.0	5.0 to 6.0	6.0 to 7.0	7.0 to 8.0	8.0 to 9.0	9.0 to 10.0	10.0 to 20.0	20.0 to 30.0	30.0 to 40.0	40.0 to 50.0	50.0 to 60.0	
078-005	Alewife	muscle	43	9	M																								
		whole	4	3				W																					
001-016	Anchovy, northern	whole	39	37					W																				
001-006	Anchovy, striped	h & g	39	33	H																								
002-002	Argentine, Atlantic	h & g	7	3	H																								
062-014	Ballyhoo	whole	58	52			W																						
005-002	Barracuda, Atlantic	muscle	7	0	M																								
005-001	Barracuda, Pacific	muscle	20	3		M																							
006-006	Bass, black sea	muscle	55	11		M																							
		liver	2	2						L																			
007-004	Bass, striped	muscle	117	15		M																							
		liver	3	3			L																						
012-001	Bluefish	muscle	72	18				M																					
		liver	4	4							L																		
091-011	Bonito, Atlantic	muscle	15	0	M																								
091-009	Bonito, Pacific	muscle	40	9				M																					
		liver	1	1				L																					
021-007	Bullhead, brown	muscle	4	0	M																								
018-014	Butterfish	muscle	72	16		M																							
		whole	17	11			W																						
		h & g	1	1		H																							
021-010	Catfish, channel	muscle	20	4					M																				
023-002	Catfish, gaftopsail	muscle	34	13		M				M																			
		liver	3	2						L																			
023-001	Catfish, sea	muscle	46	10				M																					
		liver	6	5						L																			
021-002	Catfish, white	muscle	1	0	M																								
033-008	Cod, Atlantic	muscle	114	19			M																						
		liver	36	27				L																					
033-007	Cod, Pacific (gray)	muscle	59	12		M																							
		liver	15	14				L																					
045-026	Croaker, Atlantic	muscle	91	22			M																						
033-004	Cusk	muscle	76	9		M																							
		liver	18	4			L																						
037-004	Cusk-eel, fawn	muscle	2	2			M																						
145-018	Dogfish, smooth	muscle	95	11		M																							
141-007	Dogfish, spiny	muscle	114	35		M																							
		liver	29	15				L																					
041-002	Dolphin	muscle	62	24			M																						
		liver	28	22																									
045-019	Drum, banded	muscle	5	1		M																							
045-028	Drum, black	muscle	60	15			M																						
		liver	2	2			L																						
045-030	Drum, red	muscle	73	9				M																					
		liver	3	3					L																				
051-001	Eel, American	muscle	30	3		M																							
047-002	Eel, conger	muscle	1	0	M																								
153-009	Eulachon	whole	33	27			W																						
058-028	Flounder, fourspot	muscle	70	3			M																						
058-024	Flounder, Gulf	muscle	41	7			M																						
		liver	1	0			L																						
058-027	Flounder, southern	muscle	42	7			M																						
		liver	2	1					L																				
058-026	Flounder, summer (fluke)	muscle	42	12				M																					
		liver	2	1					L																				
058-030	Flounder, windowpane (s.dab)	muscle	18	2		M																							
059-030	Flounder, winter	muscle	123	17		M																							
		liver	2	2						L																			
059-005	Flounder, witch	muscle	71	7		M																							
059-016	Flounder, yellowtail	muscle	89	21			M																						
		liver	2	1						L																			
006-040	Gag	muscle	30	5			M																						
066-009	Goatfish	muscle	40	7			M																						
068-001	Goosefish	muscle	81	12			M																						
		liver	10	5					L																				
		h & g	1	0		H																							
006-037	Grouper, black	muscle	33	11			M																						
006-017	Grouper, red	muscle	41	6				M																					
006-038	Grouper, yellowmouth	muscle	10	2				M																					
		liver	1	1										L															
073-015	Grunt, bluestriped (yellow)	muscle	16	5			M																						

Table 4.9. Distribution of Mean Molybdenum Levels in the Resource Survey, by Species (continued)

Species Number	Species	Tissue <sup>1/</sup>	Total # Samples	# samples in mean	Ranges of Mean Molybdenum Content, ppm <sup>2/</sup>																					
					< 0.1	0.1 to 0.2	0.2 to 0.3	0.3 to 0.4	0.4 to 0.5	0.5 to 0.6	0.6 to 0.7	0.7 to 0.8	0.8 to 0.9	1.0 to 2.0	2.0 to 3.0	3.0 to 4.0	4.0 to 5.0	5.0 to 6.0	6.0 to 7.0	7.0 to 8.0	8.0 to 9.0	9.0 to 10.0	10.0 to 20.0	20.0 to 30.0	30.0 to 40.0	40.0 to 50.0
073-014	Grunt, white	muscle	17	2	M																					
033-011	Haddock	muscle	77	20	M																					
		liver	18	14		L																				
		whole	1	0	W																					
033-013	Hake, Pacific	muscle	48	8		M																				
		liver	1	1		L																				
033-020	Hake, red	muscle	65	16		M																				
033-012	Hake, silver (whiting)	muscle	83	26		M																				
		liver	3	3		L																				
033-024	Hake, spotted	muscle	65	3		M																				
033-025	Hake, white	muscle	70	24		M																				
		liver	70	22		L																				
059-011	Halibut, Pacific	muscle	37	11		M																				
		liver	16	10		L																				
143-001	Hammerhead, scalloped	muscle	12	5		M																				
143-005	Hammerhead, smooth	muscle	10	2	M																					
		liver	7	6						L																
018-011	Harvestfish	muscle	3	0	M																					
		whole	16	15		W																				
078-011	Herring, Atlantic	muscle	24	7		M																				
		whole	63	56			W																			
		headed	6	4		E																				
		h & g	2	1		H																				
078-001	Herring, blueback	whole	1	0	W																					
078-012	Herring, Pacific	muscle	14	4			M																			
		whole	30	24			W																			
078-015	Herring, round	h & g	50	35		H																				
006-013	Hind, speckled	muscle	20	1	M																					
		liver	7	7		L																				
079-068	Jack, (mackerel scad)	muscle	40	4		M																				
079-053	Jack, akule	muscle	39	9		M																				
079-005	Jack, crevalle	muscle	49	14			M																			
		liver	4	3					L																	
079-069	Jack, crevalle (Hawaii)	muscle	40	6		M																				
149-004	Jacksmelt	whole	20	15		W																				
006-016	Jewfish	muscle	8	4			M																			
045-024	Kingfish, northern	muscle	6	0	M																					
045-021	Kingfish, southern	muscle	14	4			M																			
		liver	1	1		L																				
200-002	Ladyfish	muscle	2	0	M																					
071-005	Lingcod	muscle	78	20		M																				
		liver	13	12					L																	
091-013	Mackerel, Atlantic	muscle	80	15		M																				
091-012	Mackerel, chub	muscle	30	16		M																				
079-034	Mackerel, jack	muscle	10	2		M																				
		liver	1	1			L																			
		headed	4	3		H																				
091-014	Mackerel, king	muscle	107	20		M																				
		liver	10	9		L																				
		milt	1	0	Q																					
		roe	11	0	R																					
091-016	Mackerel, Spanish	muscle	109	33		M																				
		liver	4	4			L																			
144-003	Mako, shortfin	muscle	3	1	M																					
		liver	2	1		L																				
011-002	Marlin, blue	muscle	33	5		M																				
		liver	11	8					L																	
011-005	Marlin, striped	muscle	40	2			M																			
		liver	9	7					L																	
011-003	Marlin, white	muscle	54	8			M																			
		liver	10	10		L																				
162-012	Mempachi	muscle	19	6		M																				
		liver	1	1		L																				
078-010	Menhaden, Atlantic	muscle	10	3		M																				
		whole	100	96			W																			
078-008	Menhaden, Gulf	muscle	50	11		M																				
		whole	28	27				W																		
		guttled	9	9			G																			
078-009	Menhaden, yellowfin	whole	13	12			W																			
206-001	Milkfish	muscle	40	4		M																				

Table 4.9. Distribution of Mean Molybdenum Levels in the Resource Survey, by Species (continued)

Species Number	Species	Tissue <sup>1/</sup>	Total # Samples	# samples in mean	Ranges of Mean Molybdenum Content, ppm <sup>2/</sup>																								
					< 0.1	0.1 to 0.2	0.2 to 0.3	0.3 to 0.4	0.4 to 0.5	0.5 to 0.6	0.6 to 0.7	0.7 to 0.8	0.8 to 0.9	0.9 to 1.0	1.0 to 2.0	2.0 to 3.0	3.0 to 4.0	4.0 to 5.0	5.0 to 6.0	6.0 to 7.0	7.0 to 8.0	8.0 to 9.0	9.0 to 10.0	10.0 to 20.0	20.0 to 30.0	30.0 to 40.0	40.0 to 50.0	50.0 to 60.0	
Finfish																													
094-010	Mojarra, yellowfin	muscle	10	6																									
098-003	Mullet, silver (white)	muscle	36	2	M																								
098-002	Mullet, striped	muscle	158	34		M																							
		liver	5	4																									
079-030	Palometta	muscle	2	0	M																	L							
131-023	Perch, ocean (Pacific)	muscle	30	6	M																								
		liver	18	15		L																							
131-052	Perch, ocean (redfish)	muscle	80	20		M																							
		liver	2	1						L																			
006-010	Perch, sand	muscle	1	0	M																								
168-005	Perch, shiner	whole	2	2			W																						
045-003	Perch, silver	muscle	20	7		M																							
007-001	Perch, white	muscle	27	8		M																							
		h & g	19	18					H																				
079-029	Permit	muscle	9	2						M																			
073-017	Pigfish	muscle	34	14		M																							
114-013	Pinfish, spottail	muscle	10	4						M																			
		liver	1	1					L																				
059-008	Plaice, American (dab)	muscle	68	9		M																							
		whole	1	1			W																						
033-017	Pollock	muscle	73	13		M																							
		liver	33	22		L																							
033-019	Pollock, walleye (Alaska)	muscle	48	9		M																							
		liver	3	3			L																						
079-028	Pompano, Florida	muscle	60	13		M																							
		liver	4	4						L																			
114-014	Porgy, red	muscle	22	7		M																							
		liver	1	1					L																				
056-018	Pout, ocean	muscle	34	7		M																							
		liver	3	1			L																						
131-061	Rockfish, bocaccio	muscle	48	13		M																							
		liver	4	2		L																							
131-063	Rockfish, canary	muscle	43	17			M																						
		liver	1	0		L																							
131-031	Rockfish, copper	muscle	10	2		M																							
131-043	Rockfish, yellowtail	muscle	20	3		M																							
079-004	Runner, blue	muscle	56	17		M																							
		liver	4	2			L																						
126-001	Sablefish	muscle	103	28			M																						
		liver	14	7		L																							
011-001	Sailfish	muscle	42	4					M																				
		liver	3	3						L																			
179-020	Salmon, chinook, (king)	muscle	110	40		M																							
		liver	22	17			L																						
179-017	Salmon, chum (keta)	muscle	57	17			M																						
		liver	5	4						L																			
179-018	Salmon, coho (silver)	muscle	68	27		M																							
		liver	7	3			L																						
179-016	Salmon, pink	muscle	27	15		M																							
		liver	3	3			L																						
179-019	Salmon, sockeye (red)	muscle	62	21			M																						
		liver	4	4			L																						
079-013	Scad, round	h & g	3	1			H																						
006-041	Scamp	muscle	10	3		M																							
		liver	1	0			L																						
132-031	Sculpin, longhorn	muscle	1	0		M																							
114-016	Scup	muscle	72	21			M																						
135-010	Searobin, northern	muscle	78	13		M																							
135-011	Searobin, striped	muscle	10	0		M																							
045-012	Seatrout, gray (weakfish)	muscle	72	22		M																							
		liver	3	2			L																						
		whole	10	10			W																						
045-007	Seatrout, sand	muscle	18	8		M																							
045-010	Seatrout, silver (white)	muscle	44	8		M																							
		liver	1	1			L																						
045-008	Seatrout, spotted (speckled)	muscle	89	18		M																							
		liver	3	2			L																						
078-006	Shad, American	muscle	60	9		M																							
145-025	Shark, Atlantic, sharpnose	muscle	1	1			M																						
145-006	Shark, blacktip	muscle	16	6			M																						
		liver	4	2			L																						



Table 4.9. Distribution of Mean Molybdenum Levels in the Resource Survey, by Species (continued)

Species Number	Species	Tissueal/	Total # Samples	# samples in mean	Ranges of Mean Molybdenum Content, ppm <sup>2/</sup>																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
					< 0.1	0.1 to 0.2	0.2 to 0.3	0.3 to 0.4	0.4 to 0.5	0.5 to 0.6	0.6 to 0.7	0.7 to 0.8	0.8 to 0.9	0.9 to 1.0	1.0 to 2.0	2.0 to 3.0	3.0 to 4.0	4.0 to 5.0	5.0 to 6.0	6.0 to 7.0	7.0 to 8.0	8.0 to 9.0	9.0 to 10.0	10.0 to 20.0	20.0 to 30.0	30.0 to 40.0	40.0 to 50.0	50.0 to 60.0																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
Mollusca																														189-001	Oyster, eastern	shucked	152	100																										189-002	Oyster, Pacific (giant)	shucked	70	41			S																							190-014	Scallop, Atlantic bay	adductor muscle	20	14		A																								190-016	Scallop, calico	shucked	10	10				S																								adductor muscle	20	13								A																		190-028	Scallop, pink	adductor muscle	5	0	A							A																		190-013	Scallop, sea (smooth)	adductor muscle	11	5																		A								188-003	Squid, Atlantic longfinned	whole	23	8		W																										mantle	110	25			N																							188-006	Squid, Pacific	whole	50	22			W																							188-014	Squid, shortfinned	mantle	92	22		N																								Crustacea																															196-001	Crab, blue	body meat	35	24		B																										claw meat	5	1		C																											claw & body meat	53	34		D																									196-011	Crab, dungeness	meat, unk.	42	17		U																											claw & body meat	8	5		D																									196-012	Crab, king	meat, unk.	20	17		U																											claw & body meat	9	3		D																									196-006	Crab, red, deep sea	meat, unk.	25	11		U																									196-003	Crab, rock	meat, unk.	15	13		U																									196-035	Crab, tanner (bairdi)	meat, unk.	50	8		U																									194-012	Lobster, northern (American)	body meat	2	2				B																									claw meat	2	0		C																											tail meat	2	1			T																										leg meat	2	1		F																											claw & tail meat	80	43		K																									194-002	Lobster, spiny (Atlantic)	tail meat	40	17			T																								194-003	Lobster, spiny (Pacific)	tail meat	5	5		T																									192-012	Shrimp, Alaska (sidestripe)	tail, peeled	17	3		P																									192-005	Shrimp, brown	tail, peeled	53	15			P																								192-007	Shrimp, ocean	tail, peeled	10	3		P																									192-010	Shrimp, pink	tail, peeled	50	25		P																									192-011	Shrimp, pink (northern)	tail, peeled	64	19		P																									192-003	Shrimp, royal red	tail, peeled	12	6		P																									192-004	Shrimp, white	tail, peeled	76	27		P																								
189-001	Oyster, eastern	shucked	152	100																										189-002	Oyster, Pacific (giant)	shucked	70	41			S																							190-014	Scallop, Atlantic bay	adductor muscle	20	14		A																								190-016	Scallop, calico	shucked	10	10				S																								adductor muscle	20	13								A																		190-028	Scallop, pink	adductor muscle	5	0	A							A																		190-013	Scallop, sea (smooth)	adductor muscle	11	5																		A								188-003	Squid, Atlantic longfinned	whole	23	8		W																										mantle	110	25			N																							188-006	Squid, Pacific	whole	50	22			W																							188-014	Squid, shortfinned	mantle	92	22		N																								Crustacea																															196-001	Crab, blue	body meat	35	24		B																										claw meat	5	1		C																											claw & body meat	53	34		D																									196-011	Crab, dungeness	meat, unk.	42	17		U																											claw & body meat	8	5		D																									196-012	Crab, king	meat, unk.	20	17		U																											claw & body meat	9	3		D																									196-006	Crab, red, deep sea	meat, unk.	25	11		U																									196-003	Crab, rock	meat, unk.	15	13		U																									196-035	Crab, tanner (bairdi)	meat, unk.	50	8		U																									194-012	Lobster, northern (American)	body meat	2	2				B																									claw meat	2	0		C																											tail meat	2	1			T																										leg meat	2	1		F																											claw & tail meat	80	43		K																									194-002	Lobster, spiny (Atlantic)	tail meat	40	17			T																								194-003	Lobster, spiny (Pacific)	tail meat	5	5		T																									192-012	Shrimp, Alaska (sidestripe)	tail, peeled	17	3		P																									192-005	Shrimp, brown	tail, peeled	53	15			P																								192-007	Shrimp, ocean	tail, peeled	10	3		P																									192-010	Shrimp, pink	tail, peeled	50	25		P																									192-011	Shrimp, pink (northern)	tail, peeled	64	19		P																									192-003	Shrimp, royal red	tail, peeled	12	6		P																									192-004	Shrimp, white	tail, peeled	76	27		P																																																						
189-002	Oyster, Pacific (giant)	shucked	70	41			S																							190-014	Scallop, Atlantic bay	adductor muscle	20	14		A																								190-016	Scallop, calico	shucked	10	10				S																								adductor muscle	20	13								A																		190-028	Scallop, pink	adductor muscle	5	0	A							A																		190-013	Scallop, sea (smooth)	adductor muscle	11	5																		A								188-003	Squid, Atlantic longfinned	whole	23	8		W																										mantle	110	25			N																							188-006	Squid, Pacific	whole	50	22			W																							188-014	Squid, shortfinned	mantle	92	22		N																								Crustacea																															196-001	Crab, blue	body meat	35	24		B																										claw meat	5	1		C																											claw & body meat	53	34		D																									196-011	Crab, dungeness	meat, unk.	42	17		U																											claw & body meat	8	5		D																									196-012	Crab, king	meat, unk.	20	17		U																											claw & body meat	9	3		D																									196-006	Crab, red, deep sea	meat, unk.	25	11		U																									196-003	Crab, rock	meat, unk.	15	13		U																									196-035	Crab, tanner (bairdi)	meat, unk.	50	8		U																									194-012	Lobster, northern (American)	body meat	2	2				B																									claw meat	2	0		C																											tail meat	2	1			T																										leg meat	2	1		F																											claw & tail meat	80	43		K																									194-002	Lobster, spiny (Atlantic)	tail meat	40	17			T																								194-003	Lobster, spiny (Pacific)	tail meat	5	5		T																									192-012	Shrimp, Alaska (sidestripe)	tail, peeled	17	3		P																									192-005	Shrimp, brown	tail, peeled	53	15			P																								192-007	Shrimp, ocean	tail, peeled	10	3		P																									192-010	Shrimp, pink	tail, peeled	50	25		P																									192-011	Shrimp, pink (northern)	tail, peeled	64	19		P																									192-003	Shrimp, royal red	tail, peeled	12	6		P																									192-004	Shrimp, white	tail, peeled	76	27		P																																																																																				
190-014	Scallop, Atlantic bay	adductor muscle	20	14		A																								190-016	Scallop, calico	shucked	10	10				S																								adductor muscle	20	13								A																		190-028	Scallop, pink	adductor muscle	5	0	A							A																		190-013	Scallop, sea (smooth)	adductor muscle	11	5																		A								188-003	Squid, Atlantic longfinned	whole	23	8		W																										mantle	110	25			N																							188-006	Squid, Pacific	whole	50	22			W																							188-014	Squid, shortfinned	mantle	92	22		N																								Crustacea																															196-001	Crab, blue	body meat	35	24		B																										claw meat	5	1		C																											claw & body meat	53	34		D																									196-011	Crab, dungeness	meat, unk.	42	17		U																											claw & body meat	8	5		D																									196-012	Crab, king	meat, unk.	20	17		U																											claw & body meat	9	3		D																									196-006	Crab, red, deep sea	meat, unk.	25	11		U																									196-003	Crab, rock	meat, unk.	15	13		U																									196-035	Crab, tanner (bairdi)	meat, unk.	50	8		U																									194-012	Lobster, northern (American)	body meat	2	2				B																									claw meat	2	0		C																											tail meat	2	1			T																										leg meat	2	1		F																											claw & tail meat	80	43		K																									194-002	Lobster, spiny (Atlantic)	tail meat	40	17			T																								194-003	Lobster, spiny (Pacific)	tail meat	5	5		T																									192-012	Shrimp, Alaska (sidestripe)	tail, peeled	17	3		P																									192-005	Shrimp, brown	tail, peeled	53	15			P																								192-007	Shrimp, ocean	tail, peeled	10	3		P																									192-010	Shrimp, pink	tail, peeled	50	25		P																									192-011	Shrimp, pink (northern)	tail, peeled	64	19		P																									192-003	Shrimp, royal red	tail, peeled	12	6		P																									192-004	Shrimp, white	tail, peeled	76	27		P																																																																																																																		
190-016	Scallop, calico	shucked	10	10				S																								adductor muscle	20	13								A																		190-028	Scallop, pink	adductor muscle	5	0	A							A																		190-013	Scallop, sea (smooth)	adductor muscle	11	5																		A								188-003	Squid, Atlantic longfinned	whole	23	8		W																										mantle	110	25			N																							188-006	Squid, Pacific	whole	50	22			W																							188-014	Squid, shortfinned	mantle	92	22		N																								Crustacea																															196-001	Crab, blue	body meat	35	24		B																										claw meat	5	1		C																											claw & body meat	53	34		D																									196-011	Crab, dungeness	meat, unk.	42	17		U																											claw & body meat	8	5		D																									196-012	Crab, king	meat, unk.	20	17		U																											claw & body meat	9	3		D																									196-006	Crab, red, deep sea	meat, unk.	25	11		U																									196-003	Crab, rock	meat, unk.	15	13		U																									196-035	Crab, tanner (bairdi)	meat, unk.	50	8		U																									194-012	Lobster, northern (American)	body meat	2	2				B																									claw meat	2	0		C																											tail meat	2	1			T																										leg meat	2	1		F																											claw & tail meat	80	43		K																									194-002	Lobster, spiny (Atlantic)	tail meat	40	17			T																								194-003	Lobster, spiny (Pacific)	tail meat	5	5		T																									192-012	Shrimp, Alaska (sidestripe)	tail, peeled	17	3		P																									192-005	Shrimp, brown	tail, peeled	53	15			P																								192-007	Shrimp, ocean	tail, peeled	10	3		P																									192-010	Shrimp, pink	tail, peeled	50	25		P																									192-011	Shrimp, pink (northern)	tail, peeled	64	19		P																									192-003	Shrimp, royal red	tail, peeled	12	6		P																									192-004	Shrimp, white	tail, peeled	76	27		P																																																																																																																																																
		adductor muscle	20	13								A																		190-028	Scallop, pink	adductor muscle	5	0	A							A																		190-013	Scallop, sea (smooth)	adductor muscle	11	5																		A								188-003	Squid, Atlantic longfinned	whole	23	8		W																										mantle	110	25			N																							188-006	Squid, Pacific	whole	50	22			W																							188-014	Squid, shortfinned	mantle	92	22		N																								Crustacea																															196-001	Crab, blue	body meat	35	24		B																										claw meat	5	1		C																											claw & body meat	53	34		D																									196-011	Crab, dungeness	meat, unk.	42	17		U																											claw & body meat	8	5		D																									196-012	Crab, king	meat, unk.	20	17		U																											claw & body meat	9	3		D																									196-006	Crab, red, deep sea	meat, unk.	25	11		U																									196-003	Crab, rock	meat, unk.	15	13		U																									196-035	Crab, tanner (bairdi)	meat, unk.	50	8		U																									194-012	Lobster, northern (American)	body meat	2	2				B																									claw meat	2	0		C																											tail meat	2	1			T																										leg meat	2	1		F																											claw & tail meat	80	43		K																									194-002	Lobster, spiny (Atlantic)	tail meat	40	17			T																								194-003	Lobster, spiny (Pacific)	tail meat	5	5		T																									192-012	Shrimp, Alaska (sidestripe)	tail, peeled	17	3		P																									192-005	Shrimp, brown	tail, peeled	53	15			P																								192-007	Shrimp, ocean	tail, peeled	10	3		P																									192-010	Shrimp, pink	tail, peeled	50	25		P																									192-011	Shrimp, pink (northern)	tail, peeled	64	19		P																									192-003	Shrimp, royal red	tail, peeled	12	6		P																									192-004	Shrimp, white	tail, peeled	76	27		P																																																																																																																																																																														
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1/ The letters in the boxes correspond to the tissue or cut of fish analyzed, as follows: a, adductor muscle; b, body meat; c, claw meat; d, claw & body meat; e, headed; f, leg meat; g, gutted; h, headed and gutted; k, claw & tail meat; l, liver; m, muscle; n, mantle, skinless; p, tail, peeled; q, milt; r, roe; s, shucked; t, tail meat; u, meat, unk.; w, whole.

2/ Mean analytical values falling on the upper limit of each range are included in the next higher range (e.g., 0.2 is included in the range 0.2 to 0.3 ppm and not 0.1 to 0.2 ppm).









Table 4.10. Distribution of Mean Nickel Levels in the Resource Survey, by Species (continued)

Species Number	Species	Tissue <sup>1/</sup>	Total # Samples	# samples in mean	Ranges of Mean Nickel Content, ppm <sup>2/</sup>																							
					< 0.1	0.1 to 0.2	0.2 to 0.3	0.3 to 0.4	0.4 to 0.5	0.5 to 0.6	0.6 to 0.7	0.7 to 0.8	0.8 to 0.9	0.9 to 1.0	1.0 to 2.0	2.0 to 3.0	3.0 to 4.0	4.0 to 5.0	5.0 to 6.0	6.0 to 7.0	7.0 to 8.0	8.0 to 9.0	9.0 to 10.0	10.0 to 20.0	20.0 to 30.0	30.0 to 40.0	40.0 to 50.0	50.0 to 60.0
Mollusca																												
189-001	Oyster, eastern	shucked	151	148							S																	
189-002	Oyster, Pacific (giant)	shucked	69	64				S																				
190-014	Scallop, Atlantic bay	adductor muscle	20	20		A																						
190-016	Scallop, calico	shucked	10	10									S															
		adductor muscle	20	19		A																						
190-028	Scallop, pink	adductor muscle	5	5		A																						
190-013	Scallop, sea (smooth)	adductor muscle	11	11		A																						
188-003	Squid, Atlantic longfinned	whole	23	23				W																				
		mantle	110	110				N																				
188-006	Squid, Pacific	whole	50	48				W																				
188-014	Squid, shortfinned	mantle	92	92				N																				
Crustacea																												
196-001	Crab, blue	body meat	34	34				B																				
		claw meat	5	5					C																			
		claw & body meat	53	53					D																			
196-011	Crab, dungeness	meat, unk.	42	40							U																	
		claw & body meat	7	6					D																			
196-012	Crab, king	meat, unk.	20	20					U																			
		claw & body meat	9	9					D																			
196-006	Crab, red, deep sea	meat, unk.	24	24							U																	
196-003	Crab, rock	meat, unk.	15	15								U																
196-035	Crab, tanner (bairdi)	meat, unk.	50	50				U																				
194-012	Lobster, northern (American)	body meat	2	2							B																	
		claw meat	2	2					C																			
		tail meat	2	2							T																	
		leg meat	2	2								F																
		claw & tail meat	80	80							K																	
194-002	Lobster, spiny (Atlantic)	tail meat	40	39							T																	
194-003	Lobster, spiny (Pacific)	tail meat	5	5							T																	
192-012	Shrimp, Alaska (sidesripe)	tail, peeled	17	17					P																			
192-005	Shrimp, brown	tail, peeled	52	48							P																	
192-007	Shrimp, ocean	tail, peeled	10	10							P																	
192-010	Shrimp, pink	tail, peeled	49	48							P																	
192-011	Shrimp, pink (northern)	tail, peeled	64	64							P																	
192-003	Shrimp, royal red	tail, peeled	12	12							P																	
192-004	Shrimp, white	tail, peeled	77	70							P																	

<sup>1/</sup> The letters in the boxes correspond to the tissue or cut of fish analyzed, as follows: a, adductor muscle; b, body meat; c, claw meat; d, claw & body meat; e, headed; f, leg meat; g, gutted; h, headed and gutted; k, claw & tail meat; l, liver; m, muscle; n, mantle, skinless; p, tail, peeled; q, milt; r, roe; s, shucked; t, tail meat; u, meat, unk.; w, whole.  
<sup>2/</sup> Mean analytical values falling on the upper limit of each range are included in the next higher range (e.g., 0.2 is included in the range 0.2 to 0.3 ppm and not 0.1 to 0.2 ppm).









Table 4.11. Distribution of Mean Selenium Levels in the Resources Survey, by Species (continued)

		Ranges of Mean Selenium Content, ppm <sup>2/</sup>																														
Species Number	Species	Tissue <sup>1/</sup>	Total # Samples	# samples in mean	< 0.1	0.1 to 0.2	0.2 to 0.3	0.3 to 0.4	0.4 to 0.5	0.5 to 0.6	0.6 to 0.7	0.7 to 0.8	0.8 to 0.9	0.9 to 1.0	1.0 to 2.0	2.0 to 3.0	3.0 to 4.0	4.0 to 5.0	5.0 to 6.0	6.0 to 7.0	7.0 to 8.0	8.0 to 9.0	9.0 to 10.0	10.0 to 20.0	20.0 to 30.0	30.0 to 40.0	40.0 to 50.0	50.0 to 60.0				
Mollusca																																
189-001	Oyster, eastern	shucked	145	144								S																				
189-002	Oyster, Pacific (giant)	shucked	69	69								S																				
190-014	Scallop, Atlantic bay	adductor muscle	19	19				A																								
190-016	Scallop, calico	shucked	10	9			S																									
		adductor muscle	20	20				A																								
190-028	Scallop, pink	adductor muscle	5	5			A																									
190-013	Scallop, sea (smooth)	adductor muscle	11	11				A																								
188-003	Squid, Atlantic longfinned	whole	22	22									W																			
		mantle	109	109																												
188-006	Squid, Pacific	whole	50	50					N																							
188-014	Squid, shortfinned	mantle	90	90					W																							
									N																							
Crustacea																																
196-001	Crab, blue	body meat	30	30								B																				
		claw meat	5	5									C																			
		claw & body meat	50	50									D																			
196-011	Crab, dungeness	meat, unk.	38	38					U																							
		claw & body meat	7	7										D																		
196-012	Crab, king	meat, unk.	20	20				U																								
		claw & body meat	9	9				D																								
196-006	Crab, red, deep sea	meat, unk.	25	25											U																	
196-003	Crab, rock	meat, unk.	15	15										U																		
196-035	Crab, tanner (bairdi)	meat, unk.	50	50						U																						
194-012	Lobster, northern (American)	body meat	2	2									B																			
		claw meat	2	2					C																							
		tail meat	2	2										T																		
		leg meat	1	1							F																					
		claw & tail meat	73	73									K																			
194-002	Lobster, spiny (Atlantic)	tail meat	38	37			T																									
194-003	Lobster, spiny (Pacific)	tail meat	4	4			T																									
192-012	Shrimp, Alaska (sidestripe)	tail, peeled	17	17			P																									
192-005	Shrimp, brown	tail, peeled	49	49								P																				
192-007	Shrimp, ocean	tail, peeled	10	10			P																									
192-010	Shrimp, pink	tail, peeled	48	48					P																							
192-011	Shrimp, pink (northern)	tail, peeled	64	64				P																								
192-003	Shrimp, royal red	tail, peeled	12	12								P																				
192-004	Shrimp, white	tail, peeled	76	75								P																				

1/ The letters in the boxes correspond to the tissue or cut of fish analyzed, as follows: a, adductor muscle; b, body meat; c, claw meat; d, claw & body meat; e, headed; f, leg meat; g, gutted; h, headed and gutted; k, claw & tail meat; l, liver; m, muscle; n, mantle, skinless; p, tail, peeled; q, milt; r, roe; s, shucked; t, tail meat; u, meat, unk.; w, whole.

2/ Mean analytical values falling on the upper limit of each range are included in the next higher range (e.g., 0.2 is included in the range 0.2 to 0.3 ppm and not 0.1 to 0.2 ppm).







Table 4.12. Distribution of Silver Levels in the Resource Survey, by Species (continued)

Species Number	Species	Tissue <sup>1/</sup>	Total # Samples	# samples in mean	Ranges of Mean Silver Content, ppm <sup>2/</sup>																								
					<0.1	0.1 to 0.2	0.2 to 0.3	0.3 to 0.4	0.4 to 0.5	0.5 to 0.6	0.6 to 0.7	0.7 to 0.8	0.8 to 0.9	0.9 to 1.0	1.0 to 2.0	2.0 to 3.0	3.0 to 4.0	4.0 to 5.0	5.0 to 6.0	6.0 to 7.0	7.0 to 8.0	8.0 to 9.0	9.0 to 10.0	10.0 to 20.0	20.0 to 30.0	30.0 to 40.0	40.0 to 50.0	50.0 to 60.0	
Finfish																													
145-023	Shark, blue	muscle	14	13	M																								
		liver	9	7	L																								
145-010	Shark, dusky	muscle	4	3	M																								
145-009	Shark, sandbar	muscle	13	11	M																								
		liver	7	4	L																								
144-001	Shark, white	muscle	2	2	M																								
114-001	Sheepshead	muscle	60	53	M																								
		liver	2	2	L																								
150-005	Skate, little	muscle	54	54	M																								
		liver	2	2	L																								
150-012	Skate, winter	muscle	2	1	M																								
		liver	1	1	L																								
155-005	Snapper, blackfin	muscle	13	12	M																								
155-025	Snapper, gray	muscle	40	38	M																								
155-008	Snapper, gray (mangrove)	muscle	28	25	M																								
155-006	Snapper, red	muscle	38	28	M																								
155-024	Snapper, red (ehu)	muscle	40	36	M																								
155-015	Snapper, vermilion	muscle	36	22	M																								
		liver	2	2	L																								
155-013	Snapper, yellowtail	muscle	43	40	M																								
157-004	Snook	muscle	12	12	M																								
059-021	Sole, Dover	muscle	70	39	M																								
		liver	4	3	L																								
059-022	Sole, English	muscle	73	46	M																								
		liver	5	5	L																								
059-004	Sole, petrale	muscle	57	38	M																								
		liver	7	3	L																								
059-006	Sole, rex	muscle	61	33	M																								
059-014	Sole, rock	muscle	10	10	M																								
011-004	Spearfish, shortbill	muscle	15	14	M																								
		liver	4	4	L																								
045-020	Spot	muscle	54	40	M																								
166-003	Sturgeon, green	muscle	10	7	M																								
168-001	Surfperch, barred	muscle	20	20	M																								
200-003	Tarpon	muscle	12	9	M																								
		liver	2	2	L																								
185-022	Tautog	muscle	14	14	M																								
174-003	Tilefish	muscle	60	45	M																								
179-028	Trout, cutthroat	muscle	3	3	M																								
179-029	Trout, rainbow (steelhead)	muscle	9	9	M																								
		liver	1	1	L																								
091-019	Tuna, albacore	muscle	40	29	M																								
		liver	5	4	L																								
091-022	Tuna, bigeye	muscle	40	29	M																								
		liver	21	19	L																								
091-021	Tuna, blackfin	muscle	1	1	M																								
091-023	Tuna, bluefin	muscle	11	8	M																								
		liver	1	1	L																								
091-008	Tuna, skipjack	muscle	69	55	M																								
		liver	8	6	L																								
091-020	Tuna, yellowfin	muscle	80	65	M																								
		liver	26	25	L																								
091-006	Tunny, little	muscle	50	43	M																								
		liver	2	2	L																								
091-001	Wahoo	muscle	18	14	M																								
		liver	3	3	L																								
183-002	Wolffish, Atlantic	muscle	60	56	M																								
		liver	15	15	L																								
079-023	Yellowtail	muscle	23	21	M																								
Mollusca																													
187-005	Abalone, green	shucked	10	10																									
187-008	Abalone, red	shucked	10	9	S																								
191-003	Clam, butter	shucked	29	29																									
191-001	Clam, hard (quahog)	shucked	140	140																									
191-008	Clam, Pacific littleneck	shucked	1	1	S																								
243-002	Clam, razor	shucked	39	31	S																								
242-001	Clam, soft	shucked	19	19	S																								
244-005	Clam, surf	shucked	23	23	S																								
205-001	Octopus (marmoratus)	whole	4	4																									
		mantle	36	36	N																								

Table 4.12 Distribution of Silver Levels in the Resource Survey, by Species (continued)

Species Number	Species	Tissue <sup>1/</sup>	Total # Samples	# samples in mean	Ranges of Mean Silver Content, ppm <sup>2/</sup>																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
					< 0.1	0.1 to 0.2	0.2 to 0.3	0.3 to 0.4	0.4 to 0.5	0.5 to 0.6	0.6 to 0.7	0.7 to 0.8	0.8 to 0.9	0.9 to 1.0	1.0 to 2.0	2.0 to 3.0	3.0 to 4.0	4.0 to 5.0	5.0 to 6.0	6.0 to 7.0	7.0 to 8.0	8.0 to 9.0	9.0 to 10.0	10.0 to 20.0	20.0 to 30.0	30.0 to 40.0	40.0 to 50.0	50.0 to 60.0																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
Mollusca																												189-001	Oyster, eastern	shucked	151	150																							189-002	Oyster, Pacific (giant)	shucked	70	68			S																				190-014	Scallop, Atlantic bay	adductor muscle	20	20	A																						190-016	Scallop, calico	shucked	10	9		S																							adductor muscle	20	14	A																						190-028	Scallop, pink	adductor muscle	5	5	A																						190-013	Scallop, sea (smooth)	adductor muscle	11	11	A																						186-003	Squid, Atlantic longfinned	whole	23	23		W																							mantle	110	109	N																						188-006	Squid, Pacific	whole	50	50	W																						188-014	Squid, shortfinned	mantle	92	92	N																						Crustacea																											196-001	Crab, blue	body meat	35	35	B																								claw meat	5	5	C																								claw & body meat	54	54				D																			196-011	Crab, dungeness	meat, unk.	42	40	U																								claw & body meat	7	7				D																			196-012	Crab, king	meat, unk.	20	20	U																								claw & body meat	9	9	D																						196-006	Crab, red, deep sea	meat, unk.	24	24		U																					196-003	Crab, rock	meat, unk.	15	15			U																				196-035	Crab, tanner (bairdi)	meat, unk.	50	46	U																						194-012	Lobster, northern (American)	body meat	2	2	B																								claw meat	2	2							C																		tail meat	2	2			T																						leg meat	2	2								F																	claw & tail meat	80	80				K																			194-002	Lobster, spiny (Atlantic)	tail meat	40	32	T																						194-003	Lobster, spiny (Pacific)	tail meat	5	5	T																						192-012	Shrimp, Alaska (sidestripe)	tail, peeled	17	17	P																						192-005	Shrimp, brown	tail, peeled	53	44	P																						192-007	Shrimp, ocean	tail, peeled	10	9	P																						192-010	Shrimp, pink	tail, peeled	50	44	P																						192-011	Shrimp, pink (northern)	tail, peeled	64	64	P																						192-003	Shrimp, royal red	tail, peeled	12	12	P																						192-004	Shrimp, white	tail, peeled	77	61	P																					
189-001	Oyster, eastern	shucked	151	150																							189-002	Oyster, Pacific (giant)	shucked	70	68			S																				190-014	Scallop, Atlantic bay	adductor muscle	20	20	A																						190-016	Scallop, calico	shucked	10	9		S																							adductor muscle	20	14	A																						190-028	Scallop, pink	adductor muscle	5	5	A																						190-013	Scallop, sea (smooth)	adductor muscle	11	11	A																						186-003	Squid, Atlantic longfinned	whole	23	23		W																							mantle	110	109	N																						188-006	Squid, Pacific	whole	50	50	W																						188-014	Squid, shortfinned	mantle	92	92	N																						Crustacea																											196-001	Crab, blue	body meat	35	35	B																								claw meat	5	5	C																								claw & body meat	54	54				D																			196-011	Crab, dungeness	meat, unk.	42	40	U																								claw & body meat	7	7				D																			196-012	Crab, king	meat, unk.	20	20	U																								claw & body meat	9	9	D																						196-006	Crab, red, deep sea	meat, unk.	24	24		U																					196-003	Crab, rock	meat, unk.	15	15			U																				196-035	Crab, tanner (bairdi)	meat, unk.	50	46	U																						194-012	Lobster, northern (American)	body meat	2	2	B																								claw meat	2	2							C																		tail meat	2	2			T																						leg meat	2	2								F																	claw & tail meat	80	80				K																			194-002	Lobster, spiny (Atlantic)	tail meat	40	32	T																						194-003	Lobster, spiny (Pacific)	tail meat	5	5	T																						192-012	Shrimp, Alaska (sidestripe)	tail, peeled	17	17	P																						192-005	Shrimp, brown	tail, peeled	53	44	P																						192-007	Shrimp, ocean	tail, peeled	10	9	P																						192-010	Shrimp, pink	tail, peeled	50	44	P																						192-011	Shrimp, pink (northern)	tail, peeled	64	64	P																						192-003	Shrimp, royal red	tail, peeled	12	12	P																						192-004	Shrimp, white	tail, peeled	77	61	P																																																	
189-002	Oyster, Pacific (giant)	shucked	70	68			S																				190-014	Scallop, Atlantic bay	adductor muscle	20	20	A																						190-016	Scallop, calico	shucked	10	9		S																							adductor muscle	20	14	A																						190-028	Scallop, pink	adductor muscle	5	5	A																						190-013	Scallop, sea (smooth)	adductor muscle	11	11	A																						186-003	Squid, Atlantic longfinned	whole	23	23		W																							mantle	110	109	N																						188-006	Squid, Pacific	whole	50	50	W																						188-014	Squid, shortfinned	mantle	92	92	N																						Crustacea																											196-001	Crab, blue	body meat	35	35	B																								claw meat	5	5	C																								claw & body meat	54	54				D																			196-011	Crab, dungeness	meat, unk.	42	40	U																								claw & body meat	7	7				D																			196-012	Crab, king	meat, unk.	20	20	U																								claw & body meat	9	9	D																						196-006	Crab, red, deep sea	meat, unk.	24	24		U																					196-003	Crab, rock	meat, unk.	15	15			U																				196-035	Crab, tanner (bairdi)	meat, unk.	50	46	U																						194-012	Lobster, northern (American)	body meat	2	2	B																								claw meat	2	2							C																		tail meat	2	2			T																						leg meat	2	2								F																	claw & tail meat	80	80				K																			194-002	Lobster, spiny (Atlantic)	tail meat	40	32	T																						194-003	Lobster, spiny (Pacific)	tail meat	5	5	T																						192-012	Shrimp, Alaska (sidestripe)	tail, peeled	17	17	P																						192-005	Shrimp, brown	tail, peeled	53	44	P																						192-007	Shrimp, ocean	tail, peeled	10	9	P																						192-010	Shrimp, pink	tail, peeled	50	44	P																						192-011	Shrimp, pink (northern)	tail, peeled	64	64	P																						192-003	Shrimp, royal red	tail, peeled	12	12	P																						192-004	Shrimp, white	tail, peeled	77	61	P																																																																												
190-014	Scallop, Atlantic bay	adductor muscle	20	20	A																						190-016	Scallop, calico	shucked	10	9		S																							adductor muscle	20	14	A																						190-028	Scallop, pink	adductor muscle	5	5	A																						190-013	Scallop, sea (smooth)	adductor muscle	11	11	A																						186-003	Squid, Atlantic longfinned	whole	23	23		W																							mantle	110	109	N																						188-006	Squid, Pacific	whole	50	50	W																						188-014	Squid, shortfinned	mantle	92	92	N																						Crustacea																											196-001	Crab, blue	body meat	35	35	B																								claw meat	5	5	C																								claw & body meat	54	54				D																			196-011	Crab, dungeness	meat, unk.	42	40	U																								claw & body meat	7	7				D																			196-012	Crab, king	meat, unk.	20	20	U																								claw & body meat	9	9	D																						196-006	Crab, red, deep sea	meat, unk.	24	24		U																					196-003	Crab, rock	meat, unk.	15	15			U																				196-035	Crab, tanner (bairdi)	meat, unk.	50	46	U																						194-012	Lobster, northern (American)	body meat	2	2	B																								claw meat	2	2							C																		tail meat	2	2			T																						leg meat	2	2								F																	claw & tail meat	80	80				K																			194-002	Lobster, spiny (Atlantic)	tail meat	40	32	T																						194-003	Lobster, spiny (Pacific)	tail meat	5	5	T																						192-012	Shrimp, Alaska (sidestripe)	tail, peeled	17	17	P																						192-005	Shrimp, brown	tail, peeled	53	44	P																						192-007	Shrimp, ocean	tail, peeled	10	9	P																						192-010	Shrimp, pink	tail, peeled	50	44	P																						192-011	Shrimp, pink (northern)	tail, peeled	64	64	P																						192-003	Shrimp, royal red	tail, peeled	12	12	P																						192-004	Shrimp, white	tail, peeled	77	61	P																																																																																																							
190-016	Scallop, calico	shucked	10	9		S																							adductor muscle	20	14	A																						190-028	Scallop, pink	adductor muscle	5	5	A																						190-013	Scallop, sea (smooth)	adductor muscle	11	11	A																						186-003	Squid, Atlantic longfinned	whole	23	23		W																							mantle	110	109	N																						188-006	Squid, Pacific	whole	50	50	W																						188-014	Squid, shortfinned	mantle	92	92	N																						Crustacea																											196-001	Crab, blue	body meat	35	35	B																								claw meat	5	5	C																								claw & body meat	54	54				D																			196-011	Crab, dungeness	meat, unk.	42	40	U																								claw & body meat	7	7				D																			196-012	Crab, king	meat, unk.	20	20	U																								claw & body meat	9	9	D																						196-006	Crab, red, deep sea	meat, unk.	24	24		U																					196-003	Crab, rock	meat, unk.	15	15			U																				196-035	Crab, tanner (bairdi)	meat, unk.	50	46	U																						194-012	Lobster, northern (American)	body meat	2	2	B																								claw meat	2	2							C																		tail meat	2	2			T																						leg meat	2	2								F																	claw & tail meat	80	80				K																			194-002	Lobster, spiny (Atlantic)	tail meat	40	32	T																						194-003	Lobster, spiny (Pacific)	tail meat	5	5	T																						192-012	Shrimp, Alaska (sidestripe)	tail, peeled	17	17	P																						192-005	Shrimp, brown	tail, peeled	53	44	P																						192-007	Shrimp, ocean	tail, peeled	10	9	P																						192-010	Shrimp, pink	tail, peeled	50	44	P																						192-011	Shrimp, pink (northern)	tail, peeled	64	64	P																						192-003	Shrimp, royal red	tail, peeled	12	12	P																						192-004	Shrimp, white	tail, peeled	77	61	P																																																																																																																																		
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192-003	Shrimp, royal red	tail, peeled	12	12	P																						192-004	Shrimp, white	tail, peeled	77	61	P																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
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<sup>1/</sup> The letters in the boxes correspond to the tissue or cut of fish analyzed, as follows: a, adductor muscle; b, body meat; c, claw meat; d, claw & body meat; e, headed; f, leg meat; g, gutted; h, headed and gutted; k, claw & tail meat; l, liver; m, muscle; n, mantle, skinless; p, tail, peeled; q, milt; r, roe; s, shucked; t, tail meat; u, meat, unk.; w, whole.

<sup>2/</sup> Mean analytical values falling on the upper limit of each range are included in the next higher range (e.g., 0.2 is included in the range 0.2 to 0.3 ppm and not 0.1 to 0.2 ppm).

















Table 4.14. Distribution of Mean Vanadium Levels in the Resource Survey, by Species (continued)

Species Number	Species	Tissue <sup>1/</sup>	Total # Samples	# samples in mean	Ranges of Mean Vanadium Content, ppm <sup>2/</sup>																					
					< 0.1	0.1 to 0.2	0.2 to 0.3	0.3 to 0.4	0.4 to 0.5	0.5 to 0.6	0.6 to 0.7	0.7 to 0.8	0.8 to 0.9	0.9 to 1.0	1.0 to 2.0	2.0 to 3.0	3.0 to 4.0	4.0 to 5.0	5.0 to 6.0	6.0 to 7.0	7.0 to 8.0	8.0 to 9.0	9.0 to 10.0	10.0 to 20.0	20.0 to 30.0	30.0 to 40.0
<b>Finfish</b>																										
145-023	Shark, blue	muscle	14	2			M																			
		liver	9	4		L																				
145-010	Shark, dusky	muscle	4	0	M																					
145-009	Shark, sandbar	muscle	13	1			M																			
		liver	6	3			L																			
144-001	Shark, white	muscle	2	0	M																					
114-001	Sheepshead	muscle	59	13				M																		
		liver	2	2					L																	
150-005	Skate, little	muscle	54	22				M																		
		liver	2	2					L																	
150-012	Skate, winter	muscle	2	1						M																
		liver	1	0	L																					
155-005	Snapper, blackfin	muscle	13	5		M																				
155-025	Snapper, gray	muscle	40	4				M																		
155-008	Snapper, gray (mangrove)	muscle	28	4			M																			
155-006	Snapper, red	muscle	38	6			M																			
155-024	Snapper, red (ehu)	muscle	40	7				M																		
155-015	Snapper, vermilion	muscle	36	9			M																			
		liver	2	2								L														
155-013	Snapper, yellowtail	muscle	43	7			M																			
157-004	Snook	muscle	12	5		M																				
059-021	Sole, Dover	muscle	69	19						M																
		liver	4	3											L											
059-022	Sole, English	muscle	72	18			M																			
		liver	5	5							L															
059-004	Sole, petrale	muscle	56	19			M																			
		liver	7	3				L																		
059-006	Sole, rex	muscle	61	16				M																		
059-014	Sole, rock	muscle	10	4			M																			
011-004	Spearfish, shortbill	muscle	15	4				M																		
		liver	4	0	L																					
045-020	Spot	muscle	54	8			M																			
166-003	Sturgeon, green	muscle	10	3			M																			
168-001	Surfperch, barred	muscle	20	15				M																		
200-003	Tarpon	muscle	12	5				M																		
		liver	2	2											L											
185-022	Tautog	muscle	14	3						M																
174-003	Tilefish	muscle	60	11				M																		
179-028	Trout, cutthroat	muscle	3	0	M																					
179-029	Trout, rainbow (steelhead)	muscle	9	1	M																					
		liver	1	0	L																					
091-019	Tuna, albacore	muscle	40	7			M																			
		liver	5	3				L																		
091-022	Tuna, bigeye	muscle	40	7					M																	
		liver	21	8					L																	
091-021	Tuna, blackfin	muscle	1	0	M																					
091-023	Tuna, bluefin	muscle	11	8				M																		
		liver	1	0	L																					
091-008	Tuna, skipjack	muscle	70	15				M																		
		liver	8	2						L																
091-020	Tuna, yellowfin	muscle	80	25				M																		
		liver	26	9					L																	
091-006	Tunny, little	muscle	50	4				M																		
		liver	2	2					L																	
091-001	Wahoo	muscle	18	1							M															
		liver	3	1								L														
183-002	Wolffish, Atlantic	muscle	60	14			M																			
		liver	15	15											L											
079-023	Yellowtail	muscle	24	3			M																			
<b>Mollusca</b>																										
187-005	Abalone, green	shucked	10	8			S																			
187-008	Abalone, red	shucked	9	2																						
191-003	Clam, butter	shucked	29	27						S																
191-001	Clam, hard (quahog)	shucked	138	109							S															
191-008	Clam, Pacific littleneck	shucked	1	1			S																			
243-002	Clam, razor	shucked	39	37																						
242-001	Clam, soft	shucked	19	19						S																
244-005	Clam, surf	shucked	23	8						S																
205-001	Octopus (marmoratus)	whole	4	4			W																			
		mantle	36	5								N														











Table 4.15. Distribution of Mean Zinc Levels in the Resource Survey, by Species (continued)

Species Number	Species	Tissue <sup>1/</sup>	Total # Samples	# samples in mean	Ranges of Mean Zinc Content, ppm <sup>2/</sup>																										
					1.0 to 2.0	2.0 to 3.0	3.0 to 4.0	4.0 to 5.0	5.0 to 6.0	6.0 to 7.0	7.0 to 8.0	8.0 to 9.0	9.0 to 10.0	10.0 to 20.0	20.0 to 30.0	30.0 to 40.0	40.0 to 50.0	50.0 to 60.0	60.0 to 70.0	70.0 to 80.0	80.0 to 90.0	90.0 to 100.0	100.0 to 200.0	200.0 to 300.0	300.0 to 400.0	400.0 to 500.0	500.0 to 600.0	600.0 to 700.0			
Mollusca																															
189-001	Oyster, eastern	shucked	151	151																											
189-002	Oyster, Pacific (giant)	shucked	68	68																					S						
190-014	Scallop, Atlantic bay	adductor muscle	20	20													A														
190-016	Scallop, calico	shucked	10	10																				S							
		adductor muscle	20	20														A													
190-028	Scallop, pink	adductor muscle	5	5														A													
190-013	Scallop, sea (smooth)	adductor muscle	11	11															A												
188-003	Squid, Atlantic longfinned	whole	23	23																W											
		mantle	107	107																	N										
188-006	Squid, Pacific	whole	50	50																	W										
188-014	Squid, shortfinned	mantle	92	92																	N										
Crustacea																															
196-001	Crab, blue	body meat	35	35																											
		claw meat	4	4																											
		claw & body meat	54	54																											
196-011	Crab, dungeness	meat, unk.	40	40																											
		claw & body meat	8	8																											
196-012	Crab, king	meat, unk.	20	20																											
		claw & body meat	9	9																											
196-006	Crab, red, deep sea	meat, unk.	25	25																											
196-003	Crab, rock	meat, unk.	15	15																											
196-035	Crab, tanner (bairdi)	meat, unk.	50	50																											
194-012	Lobster, northern (American)	body meat	2	2																											
		claw meat	2	2																											
		tail meat	2	2																											
		leg meat	2	2																											
		claw & tail meat	78	78																											
194-002	Lobster, spiny (Atlantic)	tail meat	38	38																											
194-003	Lobster, spiny (Pacific)	tail meat	5	5																											
192-012	Shrimp, Alaska (sidesripe)	tail, peeled	16	16																											
192-005	Shrimp, brown	tail, peeled	51	51																											
192-007	Shrimp, ocean	tail, peeled	9	9																											
192-010	Shrimp, pink	tail, peeled	49	49																											
192-011	Shrimp, pink (northern)	tail, peeled	64	64																											
192-003	Shrimp, royal red	tail, peeled	12	12																											
192-004	Shrimp, white	tail, peeled	77	77																											

1/ The letters in the boxes correspond to the tissue or cut of fish analyzed, as follows: a, adductor muscle; b, body meat; c, claw meat; d, claw & body meat; e, headed; f, leg meat; g, gutted; h, headed and gutted; k, claw & tail meat; l, liver; m, muscle; n, mantle, skinless; p, tail, peeled; q, milt; r, roe; s, shucked; t, tail meat; u, meat, unk.; w, whole.

2/ Mean analytical values falling on the upper limit of each range are included in the next higher range (e.g., 0.2 is included in the range 0.2 to 0.3 ppm and not 0.1 to 0.2 ppm).





TABLE 5. SUMMARY OF TRACE ELEMENT LEVELS  
IN RESOURCE SURVEY SPECIES;  
BY TISSUE AND LOCATION

REPORT MF17

LOCATION LEVEL 5

BASS, BLACK SEA			CENTROPRISTIS STRIATA					006006	AREA- SOUTH ATLANTIC			SITE- C2		MUSCLE	
LENGTH WEIGHT	NUM	22	MEAN	0.319	S. D.	0.055	LOW	0.264	HIGH	0.376	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM	
	NUM	22	MEAN	0.451	S. D.	0.127	LOW	0.323	HIGH	0.640					
	MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM				
NUMBER	0021	0022	0022	0021	0021	0022	0022	0021	0021	0022	0022	0022	0022	0021	
N DET.	0000	0002	0004	0000	0000	0010	0002	0001	0000	0001	0019	0018	0001	0005	
MEAN	0.193	0.379	0.059	11.681	0.568	0.040	0.166	0.145	3.97	0.269	0.230	0.288	0.139	0.592	
S. D.	0.118	0.151	0.030	5.797	0.193	0.013	0.091	0.069	1.59	0.133	0.185	0.145	0.070	0.277	
LOW	0.030	0.170	0.030	4.058	0.215	0.030	0.060	0.040	1.43	0.080	0.090	0.120	0.040	0.060	
HIGH	0.575	0.750	0.140	26.000	1.060	0.070	0.380	0.320	9.64	0.710	0.440	0.470	0.290	1.220	

BASS, BLACK SEA			CENTROPRISTIS STRIATA					006006	AREA- SOUTH ATLANTIC			SITE- C2		LIVER	
LENGTH WEIGHT	NUM	1	MEAN	0.376	S. D.	0.000	LOW	0.376	HIGH	0.376	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM	
	NUM	1	MEAN	0.567	S. D.	0.000	LOW	0.567	HIGH	0.567					
	MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM				
NUMBER	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	
N DET.	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	
MEAN	0.470	1.810	1.790	12.800	1.700	0.060	0.190	5.310	22.94	0.320	0.190	0.310	1.160	0.630	
S. D.	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.000	0.000	0.000	0.000	0.000	
LOW	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.000	0.000	0.000	0.000	0.000	
HIGH	0.470	1.810	1.790	12.800	1.700	0.060	0.190	5.310	22.94	0.320	0.190	0.310	1.160	0.630	

BASS, BLACK SEA			CENTROPRISTIS STRIATA					006006	AREA- SOUTH ATLANTIC			SITE- J1		MUSCLE	
LENGTH WEIGHT	NUM	4	MEAN	0.262	S. D.	0.008	LOW	0.257	HIGH	0.274	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM	
	NUM	4	MEAN	0.343	S. D.	0.047	LOW	0.307	HIGH	0.409					
	MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM				
NUMBER	0015	0016	0016	0016	0016	0016	0016	0016	0016	0016	0016	0016	0016	0016	
N DET.	0000	0000	0001	0000	0000	0003	0001	0000	0000	0001	0014	0013	0001	0001	
MEAN	0.094	0.404	0.080	9.216	0.484	0.034	0.184	0.133	3.76	0.210	0.195	0.227	0.124	0.728	
S. D.	0.047	0.197	0.045	3.094	0.146	0.012	0.148	0.056	0.73	0.137	0.120	0.064	0.046	0.310	
LOW	0.050	0.080	0.045	4.850	0.250	0.010	0.060	0.020	2.14	0.040	0.110	0.190	0.070	0.310	
HIGH	0.210	0.740	0.210	16.500	0.695	0.060	0.560	0.255	5.25	0.625	0.280	0.300	0.230	1.630	

PERCH, SAND			DIPLECTRUM FORMOSUM					006010	AREA- SOUTH ATLANTIC			SITE- J4		MUSCLE	
LENGTH WEIGHT	NUM	1	MEAN	0.226	S. D.	0.000	LOW	0.226	HIGH	0.226	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM	
	NUM	1	MEAN	0.375	S. D.	0.000	LOW	0.375	HIGH	0.375					
	MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM				
NUMBER	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	
N DET.	0000	0000	0000	0000	0000	0000	0000	0000	0000	0001	0001	0001	0000	0000	
MEAN	0.620	0.100	0.040	2.125	0.510	0.130	0.090	0.190	6.40	0.000	0.000	0.000	0.125	0.150	
S. D.	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.000	0.000	0.000	0.000	0.000	
LOW	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.000	0.000	0.000	0.000	0.000	
HIGH	0.620	0.100	0.040	2.125	0.510	0.130	0.090	0.190	6.40	0.000	0.000	0.000	0.125	0.150	

HIND, SPECKLED			EPINEPHELUS DRUMMONDHAYI					006013	AREA- SOUTH ATLANTIC			SITE- C2		MUSCLE	
LENGTH WEIGHT	NUM	20	MEAN	0.627	S. D.	0.130	LOW	0.460	HIGH	0.825	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM	
	NUM	20	MEAN	6.221	S. D.	3.960	LOW	2.315	HIGH	16.458					
	MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM				
NUMBER	0020	0020	0020	0020	0020	0020	0020	0019	0020	0019	0020	0020	0019	0020	
N DET.	0000	0000	0000	0000	0000	0005	0001	0000	0000	0000	0019	0019	0000	0000	
MEAN	0.179	0.453	0.069	2.798	0.907	0.032	0.163	0.340	5.31	0.169	0.060	0.310	0.071	0.630	
S. D.	0.140	0.243	0.019	1.478	0.311	0.012	0.241	0.195	0.73	0.047	0.000	0.000	0.015	0.179	
LOW	0.040	0.170	0.040	0.820	0.450	0.010	0.040	0.090	4.19	0.080	0.000	0.000	0.040	0.375	
HIGH	0.610	1.250	0.110	7.250	1.890	0.060	1.125	0.815	7.12	0.240	0.060	0.310	0.090	1.190	

HIND, SPECKLED			EPINEPHELUS DRUMMONDHAYI					006013	AREA- SOUTH ATLANTIC			SITE- C2		LIVER	
LENGTH WEIGHT	NUM	7	MEAN	0.674	S. D.	0.137	LOW	0.508	HIGH	0.825	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM	
	NUM	7	MEAN	7.222	S. D.	3.799	LOW	2.894	HIGH	11.486					
	MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM				
NUMBER	0007	0006	0007	0006	0005	0007	0007	0007	0007	0007	0007	0007	0007	0007	
N DET.	0000	0000	0000	0000	0000	0000	0002	0000	0000	0000	0000	0005	0000	0000	
MEAN	0.941	0.308	0.612	4.997	4.864	0.036	0.121	7.034	25.40	0.185	0.246	0.220	0.468	0.514	
S. D.	0.590	0.085	0.335	4.801	2.754	0.011	0.108	5.077	8.32	0.065	0.134	0.226	0.221	0.162	
LOW	0.300	0.190	0.210	0.800	2.700	0.020	0.060	2.630	18.75	0.120	0.060	0.060	0.200	0.310	
HIGH	2.050	0.440	1.060	14.225	9.135	0.050	0.310	17.310	42.19	0.275	0.380	0.380	0.810	0.750	

JEWFISH			EPINEPHELUS ITAJARA					006016	AREA- GULF			SITE- B8		MUSCLE	
LENGTH WEIGHT	NUM	2	MEAN	0.477	S. D.	0.009	LOW	0.470	HIGH	0.483	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM	
	NUM	2	MEAN	2.270	S. D.	0.000	LOW	2.270	HIGH	2.270					
	MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM				
NUMBER	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	
N DET.	0000	0000	0002	0000	0000	0001	0000	0000	0000	0000	0002	0002	0000	0000	
MEAN	0.165	0.471	0.000	5.480	0.690	0.070	0.227	0.090	3.93	0.160	0.000	0.000	0.055	0.960	
S. D.	0.042	0.134	0.000	6.675	0.099	0.000	0.108	0.028	0.50	0.127	0.000	0.000	0.028	0.166	
LOW	0.135	0.376	0.000	0.760	0.620	0.000	0.150	0.070	3.57	0.070	0.000	0.000	0.035	0.290	
HIGH	0.195	0.565	0.000	10.200	0.760	0.070	0.303	0.110	4.28	0.250	0.000	0.000	0.075	1.630	









TABLE 5. SUMMARY OF TRACE ELEMENT LEVELS  
IN RESOURCE SURVEY SPECIES:  
BY TISSUE AND LOCATION

LOCATION LEVEL 5

BASS, STRIPED				MORONE SAXATILIS				007004	AREA- PACIFIC NORTHWEST				SITE- R5	MUSCLE		
LENGTH WEIGHT	NUM	MEAN	LOW	0.750	S. D.	0.176	LOW	0.460	HIGH	1.150			MANG PPM	ANTIMONY PPM	TIN PPM	
	40	MEAN	40	6.738	S. D.	5.837	LOW	1.105	HIGH	22.870	COPPER PPM	ZINC PPM				NICKEL PPM
NUMBER	0040	0040	0040	0038	0039	0040	0040	0039	0040	0040	0040	0040	0038	0040	0038	0038
N DET.	0001	0000	0000	0000	0000	0015	0003	0000	0000	0000	0000	0035	0038	0000	0002	0000
MEAN	0.858	0.442	0.062	2.289	0.464	0.028	0.151	0.204	4.23	0.181	0.130	0.315	0.111	0.604	0.460	
S. D.	0.429	0.334	0.020	1.055	0.213	0.011	0.155	0.085	0.84	0.048	0.049	0.092	0.036	0.193	0.131	
LOW	0.320	0.190	0.030	0.300	0.080	0.010	0.060	0.040	3.25	0.050	0.060	0.250	0.050	0.185	0.190	
HIGH	2.000	2.190	0.140	4.500	1.045	0.050	0.875	0.375	7.44	0.260	0.190	0.380	0.200	1.060	0.780	

SAILFISH				ISTIOPHORUS PLATYPTERUS				011001	AREA- NORTH ATLANTIC				SITE- H9	MUSCLE		
LENGTH WEIGHT	NUM	MEAN	LOW	1.610	S. D.	0.000	LOW	1.610	HIGH	1.610			MANG PPM	ANTIMONY PPM	TIN PPM	
	1	MEAN	1	19.976	S. D.	0.000	LOW	19.976	HIGH	19.976	COPPER PPM	ZINC PPM				NICKEL PPM
NUMBER	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001
N DET.	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0001	0001	0000	0000	0000	0000
MEAN	0.245	0.405	0.085	3.025	0.640	0.020	0.250	0.350	4.66	0.190	0.000	0.000	0.085	0.750	0.410	
S. D.	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.000	0.000	0.000	0.000	0.000	0.000	
LOW	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.000	0.000	0.000	0.000	0.000	0.000	
HIGH	0.245	0.405	0.085	3.025	0.640	0.020	0.250	0.350	4.66	0.190	0.000	0.000	0.085	0.750	0.410	

SAILFISH				ISTIOPHORUS PLATYPTERUS				011001	AREA- NORTH ATLANTIC				SITE- R6	MUSCLE		
LENGTH WEIGHT	NUM	MEAN	LOW	1.500	S. D.	0.000	LOW	1.500	HIGH	1.500			MANG PPM	ANTIMONY PPM	TIN PPM	
	1	MEAN	1	14.061	S. D.	0.000	LOW	14.061	HIGH	14.061	COPPER PPM	ZINC PPM				NICKEL PPM
NUMBER	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001
N DET.	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0001	0001	0000	0000	0000	0000
MEAN	0.135	0.595	0.090	3.266	0.390	0.025	0.130	0.305	4.93	0.210	0.000	0.000	0.090	0.595	0.280	
S. D.	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.000	0.000	0.000	0.000	0.000	0.000	
LOW	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.000	0.000	0.000	0.000	0.000	0.000	
HIGH	0.135	0.595	0.090	3.266	0.390	0.025	0.130	0.305	4.93	0.210	0.000	0.000	0.090	0.595	0.280	

SAILFISH				ISTIOPHORUS PLATYPTERUS				011001	AREA- NORTH ATLANTIC				SITE- R9	MUSCLE		
LENGTH WEIGHT	NUM	MEAN	LOW	1.540	S. D.	0.078	LOW	1.440	HIGH	1.660			MANG PPM	ANTIMONY PPM	TIN PPM	
	9	MEAN	9	15.775	S. D.	1.679	LOW	13.154	HIGH	18.597	COPPER PPM	ZINC PPM				NICKEL PPM
NUMBER	0009	0008	0008	0009	0009	0008	0008	0008	0008	0008	0008	0008	0008	0008	0008	0006
N DET.	0000	0000	0000	0000	0000	0004	0000	0000	0000	0008	0007	0000	0000	0000	0000	0000
MEAN	0.687	0.438	0.071	3.657	0.806	0.030	0.188	0.221	6.43	0.172	0.000	0.250	0.131	0.615	0.568	
S. D.	0.446	0.243	0.018	1.349	0.266	0.014	0.170	0.136	0.63	0.073	0.000	0.000	0.022	0.199	0.219	
LOW	0.150	0.155	0.050	2.200	0.440	0.010	0.060	0.080	5.62	0.060	0.000	0.000	0.105	0.440	0.440	
HIGH	1.610	0.830	0.100	5.875	1.250	0.040	0.560	0.505	7.50	0.310	0.000	0.250	0.170	1.060	1.000	

SAILFISH				ISTIOPHORUS PLATYPTERUS				011001	AREA- SOUTH ATLANTIC				SITE- C2	MUSCLE		
LENGTH WEIGHT	NUM	MEAN	LOW	1.590	S. D.	0.071	LOW	1.540	HIGH	1.640			MANG PPM	ANTIMONY PPM	TIN PPM	
	2	MEAN	2	15.195	S. D.	2.886	LOW	13.154	HIGH	17.236	COPPER PPM	ZINC PPM				NICKEL PPM
NUMBER	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002
N DET.	0000	0000	0000	0000	0000	0001	0000	0000	0000	0000	0000	0002	0002	0000	0000	0000
MEAN	0.345	0.455	0.075	3.113	0.790	0.030	0.095	0.210	6.49	0.108	0.000	0.000	0.105	0.535	0.415	
S. D.	0.332	0.502	0.021	1.715	0.000	0.000	0.049	0.198	0.06	0.053	0.000	0.000	0.035	0.134	0.035	
LOW	0.110	0.100	0.060	1.900	0.790	0.000	0.060	0.070	6.44	0.070	0.000	0.000	0.080	0.440	0.390	
HIGH	0.580	0.810	0.090	4.325	0.790	0.030	0.130	0.350	6.53	0.145	0.000	0.000	0.130	0.630	0.440	

SAILFISH				ISTIOPHORUS PLATYPTERUS				011001	AREA- SOUTH ATLANTIC				SITE- M1	MUSCLE		
LENGTH WEIGHT	NUM	MEAN	LOW	1.673	S. D.	0.115	LOW	1.490	HIGH	1.900			MANG PPM	ANTIMONY PPM	TIN PPM	
	11	MEAN	11	22.845	S. D.	4.587	LOW	13.608	HIGH	29.938	COPPER PPM	ZINC PPM				NICKEL PPM
NUMBER	0011	0011	0011	0011	0011	0011	0011	0011	0011	0010	0011	0011	0011	0011	0009	
N DET.	0000	0000	0000	0000	0000	0001	0000	0000	0000	0000	0007	0008	0000	0002	0000	
MEAN	0.555	0.314	0.145	3.145	0.771	0.024	0.145	0.725	6.95	0.212	0.425	0.680	0.165	0.581	0.511	
S. D.	0.315	0.142	0.101	1.863	0.180	0.011	0.076	0.466	2.58	0.045	0.474	0.659	0.103	0.328	0.188	
LOW	0.050	0.143	0.050	0.400	0.535	0.010	0.060	0.130	0.50	0.140	0.060	0.130	0.080	0.220	0.190	
HIGH	1.120	0.630	0.350	6.650	1.130	0.040	0.295	1.630	9.78	0.285	1.120	1.410	0.440	1.190	0.750	

SAILFISH				ISTIOPHORUS PLATYPTERUS				011001	AREA- SOUTH ATLANTIC				SITE- M1	LIVER		
LENGTH WEIGHT	NUM	MEAN	LOW	1.845	S. D.	0.078	LOW	1.790	HIGH	1.900			MANG PPM	ANTIMONY PPM	TIN PPM	
	2	MEAN	2	27.897	S. D.	2.887	LOW	25.855	HIGH	29.938	COPPER PPM	ZINC PPM				NICKEL PPM
NUMBER	0002	0002	0002	0001	0001	0002	0002	0002	0002	0002	0002	0002	0002	0002	0001	
N DET.	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0002	0000	0000	
MEAN	0.435	0.315	2.910	2.355	2.900	0.015	0.250	6.455	60.91	0.290	0.640	0.000	0.700	1.235	0.750	
S. D.	0.035	0.177	1.329	0.000	0.000	0.007	0.212	1.124	56.16	0.057	0.679	0.000	0.212	0.191	0.000	
LOW	0.410	0.190	1.970	0.000	0.000	0.010	0.100	5.660	21.20	0.250	0.160	0.000	0.550	1.100	0.000	
HIGH	0.460	0.440	3.850	2.355	2.900	0.020	0.400	7.250	100.62	0.330	1.120	0.000	0.850	1.370	0.750	







TABLE 5. SUMMARY OF TRACE ELEMENT LEVELS IN RESOURCE SURVEY SPECIES: BY TISSUE AND LOCATION

LOCATION LEVEL 5

MARLIN, WHITE			TETRAPTURUS ALBIDUS					011003 AREA- SOUTH ATLANTIC			SITE- M1			MUSCLE	
LENGTH WEIGHT	NUM	MEAN	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIM PPM
	NUM	MEAN													
MEAN	3	0.415	0.122	3.080	0.895	0.038	0.095	0.318	5.93	0.195	0.493	0.203	0.098	0.714	0.663
S. D.		0.312	0.234	1.059	0.175	0.023	0.048	0.700	2.13	0.163	0.333	0.018	0.035	0.328	0.328
LOW		0.215	0.160	0.056	1.312	0.670	0.010	0.120	3.12	0.100	0.240	0.019	0.055	0.380	0.450
HIGH		1.150	0.880	0.360	4.600	1.170	0.080	0.630	9.94	0.560	0.870	0.215	0.150	1.310	1.380

MARLIN, WHITE			TETRAPTURUS ALBIDUS					011003 AREA- SOUTH ATLANTIC			SITE- M1			LIVER	
LENGTH WEIGHT	NUM	MEAN	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIM PPM
	NUM	MEAN													
MEAN	2	0.886	9.534	3.787	2.100	0.080	0.226	16.042	42.56	0.428	0.286	0.303	0.784	1.044	0.620
S. D.		1.212	0.301	8.143	3.530	0.000	0.059	6.493	16.59	0.208	0.102	0.086	0.142	0.380	0.685
LOW		0.260	0.500	3.100	1.625	0.000	0.030	6.380	28.13	0.190	0.160	0.190	0.630	0.390	0.060
HIGH		3.450	1.180	18.750	7.860	2.100	0.160	20.630	70.31	0.970	0.180	0.470	0.900	1.380	0.900

MARLIN, WHITE			TETRAPTURUS ALBIDUS					011003 AREA- SOUTH ATLANTIC			SITE- M1			MUSCLE	
LENGTH WEIGHT	NUM	MEAN	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIM PPM
	NUM	MEAN													
MEAN	1	0.690	0.180	4.100	0.580	0.040	0.120	0.690	5.31	0.240	0.300	0.000	0.190	0.810	0.200
S. D.		0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
LOW		0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
HIGH		0.870	0.180	4.100	0.580	0.040	0.120	0.690	5.31	0.240	0.300	0.000	0.190	0.810	0.200

MARLIN, WHITE			TETRAPTURUS ALBIDUS					011003 AREA- GULF			SITE- D6			MUSCLE	
LENGTH WEIGHT	NUM	MEAN	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIM PPM
	NUM	MEAN													
MEAN	1	0.810	2.610	8.250	1.470	0.060	0.180	2.000	14.25	0.250	0.200	0.090	0.250	1.380	0.000
S. D.		0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
LOW		0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
HIGH		0.500	0.810	2.610	8.250	1.470	0.060	2.000	14.25	0.250	0.200	0.090	0.250	1.380	0.000

MARLIN, WHITE			TETRAPTURUS ALBIDUS					011003 AREA- GULF			SITE- D6			LIVER	
LENGTH WEIGHT	NUM	MEAN	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIM PPM
	NUM	MEAN													
MEAN	1	0.060	2.520	4.790	0.000	0.020	0.050	9.810	104.37	0.220	0.180	0.000	0.860	1.060	0.560
S. D.		0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
LOW		0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
HIGH		0.270	0.060	2.520	4.790	0.020	0.050	9.810	104.37	0.220	0.180	0.000	0.860	1.060	0.560

MARLIN, WHITE			TETRAPTURUS ALBIDUS					011003 AREA- GULF			SITE- E4			MUSCLE	
LENGTH WEIGHT	NUM	MEAN	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIM PPM
	NUM	MEAN													
MEAN	7	0.306	0.076	3.721	1.086	0.024	0.136	0.141	5.91	0.129	0.000	0.000	0.103	0.458	0.643
S. D.		0.784	0.119	0.010	2.024	0.301	0.009	0.059	0.66	0.053	0.000	0.000	0.016	0.149	0.113
LOW		0.360	0.010	0.060	1.800	0.740	0.060	0.060	5.19	0.040	0.000	0.000	0.080	0.310	0.360
HIGH		2.640	0.500	0.090	8.000	1.640	0.030	0.240	6.81	0.190	0.000	0.000	0.120	0.720	0.660

SPEARFISH, SHORTBILL			TETRAPTURUS ANGSTIROSTRIS					011004 AREA- HAWAII			SITE- D5			MUSCLE	
LENGTH WEIGHT	NUM	MEAN	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIM PPM
	NUM	MEAN													
MEAN	0	0.420	0.050	2.274	0.668	0.050	0.140	0.578	6.65	0.270	0.160	0.265	0.140	0.800	0.570
S. D.		0.014	0.198	0.014	0.214	0.060	0.028	0.202	1.04	0.170	0.000	0.000	0.000	0.113	0.339
LOW		0.330	0.280	0.040	2.123	0.625	0.030	0.435	5.91	0.150	0.000	0.000	0.140	0.720	0.330
HIGH		0.350	0.560	0.060	2.425	0.710	0.070	0.720	7.38	0.390	0.160	0.265	0.140	0.880	0.810

**TABLE 5. SUMMARY OF TRACE ELEMENT LEVELS  
IN RESOURCE SURVEY SPECIES:  
BY TISSUE AND LOCATION**

**LOCATION LEVEL 5**

SPEARFISH, SHORTBILL				TETRAPTURUS ANGUSTIROSTRIS				011004 AREA- HAWAII			SITE- 05		LIVER		
LENGTH WEIGHT	NUM NUM	0 MEAN	1 MEAN	0.000 18.221	S. D. S. D.	0.000 0.000	LOW LOW	0.000 18.221	HIGH HIGH	0.000 18.221	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM	
MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM	
NUMBER N DET. MEAN S. D. LOW HIGH	0001 0000 0.120 0.000 0.000 0.120	0001 0000 0.190 0.000 0.000 0.190	0001 0000 1.710 0.000 0.000 1.710	0001 0000 7.650 0.000 0.000 7.650	0001 0000 2.280 0.000 0.000 2.280	0001 0000 0.040 0.000 0.000 0.040	0001 0000 0.120 0.000 0.000 0.120	0001 0000 1.880 0.000 0.000 1.880	0001 0000 31.25 0.00 0.00 31.25	0001 0000 0.260 0.260 0.000 0.260	0001 0000 0.220 0.220 0.000 0.220	0001 0001 0.000 0.000 0.000 0.000	0001 0000 1.180 0.000 0.000 1.180	0001 0000 0.500 0.000 0.000 0.500	0001 0000 0.630 0.000 0.000 0.630
SPEARFISH, SHORTBILL				TETRAPTURUS ANGUSTIROSTRIS				011004 AREA- HAWAII			SITE- 06		MUSCLE		
LENGTH WEIGHT	NUM NUM	0 MEAN	3 MEAN	0.000 20.687	S. D. S. D.	0.000 3.853	LOW LOW	0.000 16.761	HIGH HIGH	0.000 24.462	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM	
MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM	
NUMBER N DET. MEAN S. D. LOW HIGH	0003 0000 0.287 0.126 0.170 0.420	0003 0000 0.460 0.161 0.310 0.630	0003 0000 0.037 0.025 0.010 0.060	0003 0000 1.312 0.352 1.012 1.700	0003 0000 0.640 0.217 0.410 0.840	0003 0001 0.050 0.014 0.040 0.060	0003 0000 0.127 0.065 0.060 0.190	0003 0000 0.417 0.097 0.310 0.500	0003 0000 7.36 2.87 4.88 10.50	0003 0000 0.143 0.015 0.130 0.160	0003 0003 0.000 0.190 0.000 0.190	0003 0002 0.113 0.021 0.090 0.130	0003 0000 0.503 0.110 0.440 0.630	0002 0000 0.530 0.042 0.500 0.560	
SPEARFISH, SHORTBILL				TETRAPTURUS ANGUSTIROSTRIS				011004 AREA- HAWAII			SITE- 09		MUSCLE		
LENGTH WEIGHT	NUM NUM	0 MEAN	1 MEAN	0.000 14.043	S. D. S. D.	0.000 0.000	LOW LOW	0.000 14.043	HIGH HIGH	0.000 14.043	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM	
MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM	
NUMBER N DET. MEAN S. D. LOW HIGH	0001 0001 0.000 0.000 0.000 0.000	0001 0000 0.500 0.000 0.000 0.500	0001 0000 0.080 0.000 0.000 0.080	0001 0000 1.100 0.000 0.000 1.100	0001 0000 0.630 0.000 0.000 0.630	0001 0000 0.010 0.000 0.000 0.010	0001 0000 0.060 0.000 0.000 0.060	0001 0000 0.110 0.000 0.000 0.110	0001 0000 4.19 0.00 4.19 4.19	0001 0000 0.160 0.000 0.000 0.160	0001 0001 0.000 0.000 0.000 0.000	0001 0000 0.070 0.000 0.000 0.070	0001 0000 1.130 0.000 0.000 1.130	0001 0000 0.870 0.000 0.000 0.870	
SPEARFISH, SHORTBILL				TETRAPTURUS ANGUSTIROSTRIS				011004 AREA- HAWAII			SITE- 05		MUSCLE		
LENGTH WEIGHT	NUM NUM	0 MEAN	3 MEAN	0.000 22.095	S. D. S. D.	0.000 0.524	LOW LOW	0.000 21.792	HIGH HIGH	0.000 22.700	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM	
MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM	
NUMBER N DET. MEAN S. D. LOW HIGH	0003 0000 0.233 0.121 0.140 0.370	0002 0000 0.750 0.622 0.310 1.190	0003 0000 0.080 0.020 0.060 0.100	0003 0000 3.567 1.504 2.000 5.000	0003 0000 1.177 0.206 0.980 1.390	0003 0000 0.030 0.010 0.020 0.040	0003 0000 0.333 0.414 0.060 0.810	0003 0000 0.413 0.171 0.300 0.610	0003 0000 6.94 1.14 6.25 8.25	0003 0000 0.210 0.030 0.180 0.240	0003 0003 0.000 0.000 0.000 0.000	0003 0003 0.123 0.031 0.090 0.150	0003 0000 0.683 0.170 0.490 0.810	0003 0000 0.440 0.260 0.380 0.500	
SPEARFISH, SHORTBILL				TETRAPTURUS ANGUSTIROSTRIS				011004 AREA- HAWAII			SITE- 05		LIVER		
LENGTH WEIGHT	NUM NUM	0 MEAN	3 MEAN	0.000 22.095	S. D. S. D.	0.000 0.524	LOW LOW	0.000 21.792	HIGH HIGH	0.000 22.700	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM	
MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM	
NUMBER N DET. MEAN S. D. LOW HIGH	0003 0000 0.143 0.121 0.050 0.280	0003 0000 0.523 0.526 0.190 1.130	0003 0000 1.563 3.606 0.500 2.200	0003 0001 5.950 3.606 3.400 8.500	0003 0000 4.307 2.096 1.920 5.850	0003 0000 0.027 0.015 0.010 0.040	0003 0000 0.440 0.271 0.130 0.630	0003 0000 6.367 2.107 4.750 8.750	0003 0000 33.36 7.40 28.50 41.88	0003 0002 0.190 0.000 0.000 0.190	0003 0003 0.000 0.000 0.000 0.000	0003 0.983 0.307 0.700 1.310	0003 0000 0.630 0.000 0.000 0.630	0003 0002 1.380 0.589 0.440 1.600	
SPEARFISH, SHORTBILL				TETRAPTURUS ANGUSTIROSTRIS				011004 AREA- HAWAII			SITE- H2		MUSCLE		
LENGTH WEIGHT	NUM NUM	0 MEAN	2 MEAN	0.000 13.847	S. D. S. D.	0.000 0.963	LOW LOW	0.000 13.166	HIGH HIGH	0.000 14.528	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM	
MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM	
NUMBER N DET. MEAN S. D. LOW HIGH	0002 0000 0.293 0.124 0.205 0.380	0002 0000 0.145 0.021 0.130 0.160	0002 0000 0.058 0.004 0.055 0.060	0002 0000 1.683 0.683 1.200 2.166	0002 0000 0.710 0.141 0.610 0.810	0002 0000 0.020 0.000 0.020 0.020	0002 0000 0.268 0.110 0.190 0.345	0002 0000 0.820 0.014 0.810 0.830	0002 0000 6.67 0.74 6.15 7.19	0002 0000 0.220 0.000 0.220 0.220	0002 0002 0.000 0.000 0.000 0.000	0002 0.000 0.393 0.018 0.080 0.105	0002 0000 0.470 0.311 0.250 0.690	0002 0000 0.538 0.074 0.455 0.560	
SPEARFISH, SHORTBILL				TETRAPTURUS ANGUSTIROSTRIS				011004 AREA- HAWAII			SITE- H6		MUSCLE		
LENGTH WEIGHT	NUM NUM	0 MEAN	1 MEAN	0.000 21.291	S. D. S. D.	0.000 0.000	LOW LOW	0.000 21.291	HIGH HIGH	0.000 21.291	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM	
MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM	
NUMBER N DET. MEAN S. D. LOW HIGH	0001 0000 0.165 0.000 0.000 0.165	0001 0000 0.495 0.000 0.000 0.495	0001 0000 0.060 0.000 0.000 0.060	0001 0000 2.600 0.000 0.000 2.600	0001 0000 0.670 0.000 0.000 0.670	0001 0000 0.040 0.000 0.000 0.040	0001 0000 0.010 0.000 0.000 0.010	0001 0000 0.155 0.000 0.000 0.155	0001 0000 3.95 0.00 0.00 3.95	0001 0000 0.120 0.300 0.300 0.120	0001 0001 0.000 0.300 0.300 0.000	0001 0.115 0.300 0.300 0.115	0001 0000 0.590 0.300 0.300 0.590	0001 0000 0.300 0.300 0.300 0.300	







**TABLE 5. SUMMARY OF TRACE ELEMENT LEVELS  
IN RESOURCE SURVEY SPECIES:  
BY TISSUE AND LOCATION**

**LOCATION LEVEL 5**

BLUEFISH		POMATOMUS SALTATRIX							012001 AREA- SOUTH ATLANTIC			SITE- F6 MUSCLE				
LENGTH WEIGHT	NUM NUM	2 2	MEAN MEAN	0.282 0.285	S. D. S. D.	0.003 0.000	LOW LOW	0.280 0.285	HIGH HIGH	0.284 0.285						
	MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM	
NUMBER	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002
N DET.	0000	0000	0000	0000	0000	0001	0001	0000	0000	0001	0001	0002	0000	0000	0000	0000
MEAN	0.203	0.145	0.085	2.713	0.985	0.020	0.050	0.373	5.10	0.490	0.250	0.000	0.123	1.010	0.390	
S. D.	0.011	0.148	0.035	1.290	0.219	0.000	0.000	0.124	2.38	0.300	0.000	0.000	0.018	0.990	0.085	
LOW	0.195	0.040	0.060	1.800	0.830	0.000	0.000	0.285	3.41	0.300	0.000	0.000	0.110	0.310	0.330	
HIGH	0.210	0.250	0.110	3.625	1.140	0.020	0.050	0.460	6.78	0.490	0.250	0.000	0.135	1.710	0.450	

BLUEFISH		POMATOMUS SALTATRIX							012001 AREA- GULF			SITE- E5 MUSCLE			
LENGTH WEIGHT	NUM NUM	20 20	MEAN MEAN	0.431 0.804	S. D. S. D.	0.037 0.249	LOW LOW	0.397 0.577	HIGH HIGH	0.509 1.335					
	MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM
NUMBER	0020	0020	0020	0018	0018	0020	0020	0020	0020	0020	0020	0020	0020	0020	0020
N DET.	0000	0000	0002	0000	0000	0007	0001	0000	0000	0000	0016	0016	0000	0003	0000
MEAN	0.536	0.401	0.056	2.499	0.976	0.035	0.141	0.448	7.50	0.224	0.388	0.170	0.164	0.708	0.560
S. D.	0.148	0.175	0.020	1.008	0.241	0.012	0.091	0.161	2.19	0.063	0.370	0.107	0.052	0.539	0.299
LOW	0.370	0.190	0.010	0.320	0.550	0.020	0.030	0.140	0.63	0.110	0.060	0.060	0.100	0.120	0.253
HIGH	0.945	0.770	0.100	4.150	1.450	0.065	0.380	0.710	10.63	0.390	0.870	0.310	0.290	2.190	1.470

BLUEFISH		POMATOMUS SALTATRIX							012001 AREA- GULF			SITE- E5 LIVER			
LENGTH WEIGHT	NUM NUM	2 2	MEAN MEAN	0.430 0.795	S. D. S. D.	0.035 0.238	LOW LOW	0.405 0.626	HIGH HIGH	0.454 0.963					
	MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM
NUMBER	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002
N DET.	0000	0000	0000	0000	0000	0001	0000	0000	0000	0000	0000	0001	0000	0000	0000
MEAN	1.010	0.708	0.210	4.275	2.490	0.040	0.305	5.115	86.31	0.183	0.473	1.630	1.048	1.103	1.445
S. D.	0.255	0.053	0.099	1.662	0.014	0.000	0.276	1.831	8.25	0.304	0.223	0.000	0.187	0.746	1.497
LOW	0.830	0.670	0.140	3.100	2.480	0.000	0.110	3.820	80.47	0.180	0.315	0.000	0.915	0.575	0.390
HIGH	1.190	0.745	0.280	5.450	2.500	0.040	0.500	6.410	92.14	0.185	0.630	1.630	1.180	1.630	2.500

HARVESTFISH		PEPRILUS ALEPIDOTUS							018011 AREA- NORTH ATLANTIC			SITE- R9 WHOLE			
LENGTH WEIGHT	NUM NUM	16 16	MEAN MEAN	0.089 0.030	S. D. S. D.	0.003 0.002	LOW LOW	0.083 0.028	HIGH HIGH	0.097 0.236					
	MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM
NUMBER	0016	0015	0016	0016	0016	0016	0016	0016	0016	0016	0016	0016	0016	0016	0015
N DET.	0005	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000
MEAN	0.160	0.845	0.123	3.341	1.018	0.089	0.323	4.421	15.97	0.404	0.199	0.248	1.447	0.175	1.119
S. D.	0.000	0.229	0.022	1.054	0.315	0.016	0.118	0.154	1.21	0.387	0.050	0.090	0.646	0.264	0.260
LOW	0.000	0.500	0.080	2.250	0.620	0.060	0.130	0.160	13.13	0.220	0.130	0.130	0.160	0.130	0.210
HIGH	0.160	1.190	0.180	5.600	1.950	0.115	0.500	0.690	17.38	0.510	0.310	0.410	0.290	0.270	1.600

HARVESTFISH		PEPRILUS ALEPIDOTUS							018011 AREA- SOUTH ATLANTIC			SITE- R2 MUSCLE			
LENGTH WEIGHT	NUM NUM	1 1	MEAN MEAN	0.154 0.143	S. D. S. D.	0.000 0.000	LOW LOW	0.154 0.143	HIGH HIGH	0.154 0.143					
	MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM
NUMBER	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001
N DET.	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0001	0001	0000	0000	0000
MEAN	0.040	0.190	0.070	0.565	0.920	0.030	0.250	0.260	5.88	0.250	0.300	0.000	0.190	0.300	0.471
S. D.	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.300	0.300	0.300	0.300	0.300	0.300	0.300
LOW	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
HIGH	0.040	0.190	0.070	0.565	0.920	0.030	0.250	0.260	5.88	0.250	0.300	0.300	0.190	0.300	0.470

HARVESTFISH		PEPRILUS ALEPIDOTUS							018011 AREA- SOUTH ATLANTIC			SITE- F6 MUSCLE			
LENGTH WEIGHT	NUM NUM	2 2	MEAN MEAN	0.162 0.202	S. D. S. D.	0.009 0.093	LOW LOW	0.155 0.136	HIGH HIGH	0.168 0.267					
	MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM
NUMBER	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002
N DET.	0000	0000	0000	0000	0000	0002	0000	0000	0000	0000	0000	0000	0000	0000	0000
MEAN	0.118	0.268	0.073	1.725	0.775	0.000	0.065	0.285	8.26	0.313	0.300	0.000	0.163	0.800	0.511
S. D.	0.124	0.103	0.046	1.768	0.028	0.000	0.007	0.028	2.84	0.067	0.300	0.000	0.124	0.566	0.194
LOW	0.030	0.195	0.040	5.875	0.755	0.000	0.060	0.265	6.25	0.265	0.300	0.000	0.071	0.640	0.400
HIGH	0.205	0.340	0.105	8.375	0.795	0.000	0.070	0.305	10.26	0.360	0.300	0.000	0.240	1.240	0.600

BUTTERFISH		PEPRILUS TRIACANTHUS							018014 AREA- NORTH ATLANTIC			SITE- W8 MUSCLE			
LENGTH WEIGHT	NUM NUM	6 6	MEAN MEAN	0.156 0.144	S. D. S. D.	0.011 0.098	LOW LOW	0.142 0.074	HIGH HIGH	0.170 0.333					
	MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM
NUMBER	0006	0006	0006	0006	0006	0006	0006	0006	0006	0006	0006	0006	0006	0006	0006
N DET.	0002	0001	0001	0000	0000	0003	0000	0000	0000	0000	0000	0000	0000	0000	0000
MEAN	0.039	0.332	0.066	3.367	0.654	0.037	0.161	0.469	6.10	0.189	0.347	0.260	0.218	0.609	0.600
S. D.	0.022	0.145	0.019	2.236	0.162	0.006	0.170	0.111	1.55	0.337	0.454	0.000	0.100	0.311	0.300
LOW	0.020	0.150	0.040	1.066	0.490	0.030	0.050	0.330	4.24	0.140	0.360	0.000	0.090	0.490	0.200
HIGH	0.060	0.530	0.090	5.840	0.950	0.040	0.500	0.610	8.52	0.224	0.670	0.260	0.290	0.600	0.600



TABLE 5. SUMMARY OF TRACE ELEMENT LEVELS  
IN RESOURCE SURVEY SPECIES;  
BY TISSUE AND LOCATION

LOCATION LEVEL 5

BUTTERFISH				PEPRILUS TRIACANTHUS				018014 AREA- NORTH ATLANTIC			SITE- 02		MUSCLE	
LENGTH WEIGHT	NUM NUM	1 MEAN MEAN	MEAN	0.141 0.060	S. D. S. D.	0.000 0.000	LOW LOW	0.141 0.060	HIGH HIGH	0.141 0.060	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM
	MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM			
NUMBER	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001
N DET.	0001	0000	0000	0000	0000	0000	0000	0000	0000	0000	0001	0001	0000	0000
MEAN	0.000	0.320	0.110	4.000	0.630	0.070	0.182	0.655	9.28	0.320	0.000	0.000	0.250	1.250
S. D.	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
LOW	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
HIGH	0.000	0.320	0.110	4.000	0.630	0.070	0.182	0.655	9.28	0.320	0.000	0.000	0.250	1.250

BUTTERFISH				PEPRILUS TRIACANTHUS				018014 AREA- NORTH ATLANTIC			SITE- 03		MUSCLE	
LENGTH WEIGHT	NUM NUM	3 MEAN MEAN	MEAN	0.169 0.115	S. D. S. D.	0.015 0.030	LOW LOW	0.154 0.086	HIGH HIGH	0.184 0.145	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM
	MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM			
NUMBER	0003	0003	0003	0003	0003	0003	0002	0003	0003	0003	0003	0003	0003	0003
N DET.	0002	0000	0000	0000	0000	0000	0000	0000	0000	0000	0302	0002	0000	0000
MEAN	0.240	0.353	0.052	3.070	0.517	0.042	0.378	0.527	6.92	0.260	0.060	0.060	0.145	0.783
S. D.	0.000	0.094	0.008	0.893	0.206	0.026	0.004	0.088	0.54	0.062	0.000	0.000	0.022	0.220
LOW	0.000	0.250	0.045	2.487	0.320	0.020	0.375	0.440	6.44	0.210	0.000	0.000	0.130	0.630
HIGH	0.240	0.435	0.060	4.098	0.730	0.070	0.380	0.615	7.50	0.330	0.060	0.060	0.170	1.035

BUTTERFISH				PEPRILUS TRIACANTHUS				018014 AREA- NORTH ATLANTIC			SITE- 06		MUSCLE	
LENGTH WEIGHT	NUM NUM	4 MEAN MEAN	MEAN	0.183 0.141	S. D. S. D.	0.020 0.038	LOW LOW	0.157 0.094	HIGH HIGH	0.201 0.174	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM
	MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM			
NUMBER	0004	0003	0004	0004	0004	0004	0004	0004	0004	0004	0004	0004	0004	0004
N DET.	0002	0000	0000	0000	0000	0000	0000	0000	0000	0000	0003	0002	0000	0000
MEAN	0.040	0.407	0.081	1.844	0.524	0.040	0.239	0.340	7.02	0.199	0.060	0.155	0.131	0.888
S. D.	0.028	0.325	0.059	0.791	0.116	0.021	0.150	0.032	2.21	0.042	0.000	0.134	0.051	0.061
LOW	0.020	0.190	0.045	1.225	0.390	0.020	0.120	0.305	5.19	0.155	0.000	0.060	0.085	0.815
HIGH	0.060	0.780	0.170	3.000	0.650	0.065	0.455	0.380	10.00	0.255	0.060	0.250	0.200	0.940

BUTTERFISH				PEPRILUS TRIACANTHUS				018014 AREA- NORTH ATLANTIC			SITE- P1		MUSCLE	
LENGTH WEIGHT	NUM NUM	19 MEAN MEAN	MEAN	0.152 0.079	S. D. S. D.	0.013 0.020	LOW LOW	0.132 0.056	HIGH HIGH	0.179 0.127	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM
	MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM			
NUMBER	0019	0018	0019	0018	0018	0019	0018	0019	0019	0019	0019	0019	0019	0019
N DET.	0013	0000	0001	0001	0000	0002	0000	0000	0000	0000	0012	0011	0000	0001
MEAN	0.032	0.453	0.081	2.844	0.461	0.041	0.190	0.526	7.44	0.220	0.150	0.296	0.155	0.886
S. D.	0.018	0.192	0.029	1.168	0.164	0.010	0.178	0.197	2.13	0.084	0.077	0.216	0.038	0.256
LOW	0.010	0.225	0.050	1.300	0.180	0.020	0.030	0.215	4.72	0.370	0.060	0.060	0.095	0.480
HIGH	0.060	0.940	0.170	5.725	0.716	0.060	0.830	1.000	14.28	0.450	0.280	0.630	0.230	1.580

BUTTERFISH				PEPRILUS TRIACANTHUS				018014 AREA- NORTH ATLANTIC			SITE- R3		MUSCLE	
LENGTH WEIGHT	NUM NUM	5 MEAN MEAN	MEAN	0.130 0.046	S. D. S. D.	0.016 0.020	LOW LOW	0.116 0.032	HIGH HIGH	0.155 0.081	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM
	MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM			
NUMBER	0005	0005	0005	0005	0005	0005	0005	0005	0005	0005	0005	0005	0005	0005
N DET.	0003	0000	0000	0000	0000	0000	0000	0000	0000	0000	0005	0005	0000	0000
MEAN	0.065	0.547	0.075	2.588	0.608	0.040	0.119	0.591	8.01	0.181	0.000	0.000	0.269	0.606
S. D.	0.035	0.317	0.010	0.810	0.177	0.016	0.054	0.077	0.68	0.059	0.000	0.000	0.056	0.139
LOW	0.040	0.315	0.065	1.375	0.335	0.020	0.060	0.480	7.19	0.090	0.000	0.000	0.180	0.440
HIGH	0.090	1.100	0.090	3.400	0.735	0.060	0.190	0.690	9.00	0.240	0.000	0.000	0.320	0.750

BUTTERFISH				PEPRILUS TRIACANTHUS				018014 AREA- NORTH ATLANTIC			SITE- S4		MUSCLE	
LENGTH WEIGHT	NUM NUM	1 MEAN MEAN	MEAN	0.156 0.087	S. D. S. D.	0.000 0.000	LOW LOW	0.156 0.087	HIGH HIGH	0.156 0.087	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM
	MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM			
NUMBER	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001
N DET.	0001	0000	0000	0000	0000	0000	0000	0000	0000	0000	0301	0001	0000	0000
MEAN	0.000	0.190	0.120	0.510	0.080	0.040	0.060	0.750	3.25	0.380	0.000	0.000	0.310	0.560
S. D.	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.000	0.000	0.000	0.000	0.000
LOW	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.000	0.000	0.000	0.000	0.000
HIGH	0.000	0.190	0.120	0.510	0.080	0.040	0.060	0.750	3.25	0.380	0.000	0.000	0.310	0.560

CATFISH, WHITE				ICTALURUS CATUS				021002 AREA- NORTH ATLANTIC			SITE- M8		MUSCLE	
LENGTH WEIGHT	NUM NUM	1 MEAN MEAN	MEAN	0.205 0.000	S. D. S. D.	0.000 0.000	LOW LOW	0.205 0.000	HIGH HIGH	0.205 0.000	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM
	MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM			
NUMBER	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001
N DET.	0000	0000	0000	0000	0000	0000	0000	0000	0000	0300	0001	0000	0000	0000
MEAN	0.145	0.315	0.045	0.666	0.170	0.070	0.060	0.415	7.78	0.120	0.000	0.240	0.250	0.540
S. D.	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.000	0.000	0.000	0.000	0.000
LOW	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.000	0.000	0.000	0.000	0.000
HIGH	0.145	0.315	0.045	0.666	0.170	0.070	0.060	0.415	7.78	0.120	0.000	0.240	0.250	0.540

TABLE 5. SUMMARY OF TRACE ELEMENT LEVELS  
IN RESOURCE SURVEY SPECIES  
BY TISSUE AND LOCATION

LOCATION LEVEL 5

BULLHEAD, BROWN			ICTALURUS NEBULOSUS						021007 AREA- NORTH ATLANTIC			SITE- M6			MUSCLE		
LENGTH WEIGHT	NUM NUM	MEAN MEAN	0.187 S. D.	0.013 S. D.	LOW LOW	0.176 HIGH	0.206 HIGH	0.270 HIGH	0.270 HIGH	0.270 HIGH	0.206 HIGH	0.270 HIGH	0.004	0.004	0.004	0.004	0.004
	MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM		
NUMBER	0004	0004	0004	0004	0004	0004	0004	0004	0004	0004	0004	0004	0004	0004	0004		
N DET.	0003	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000		
MEAN	0.040	0.650	0.051	1.425	0.184	0.042	0.189	0.653	6.73	0.169	0.200	0.000	0.525	0.600	0.389		
S. D.	0.000	0.133	0.009	0.927	0.091	0.003	0.072	0.467	1.17	0.245	0.200	0.000	0.267	0.238	0.181		
LOW	0.000	0.470	0.040	0.300	0.050	0.040	0.130	0.300	5.50	0.130	0.000	0.000	0.300	0.310	0.190		
HIGH	0.040	0.750	0.060	2.550	0.250	0.045	0.290	1.300	8.31	0.230	0.200	0.000	0.680	0.810	0.610		
CATFISH, CHANNEL			ICTALURUS PUNCTATUS						021010 AREA- NORTH ATLANTIC			SITE- B5			MUSCLE		
LENGTH WEIGHT	NUM NUM	MEAN MEAN	0.532 S. D.	0.006 S. D.	LOW LOW	0.526 HIGH	0.938 HIGH	0.526 HIGH	1.406 HIGH	0.938 HIGH	1.816 HIGH	0.532	0.532	0.532	0.532	0.532	
	MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM		
NUMBER	0020	0020	0020	0020	0020	0020	0020	0020	0019	0020	0020	0020	0020	0020	0020		
N DET.	0000	0000	0001	0001	0000	0010	0001	0000	0000	0000	0016	0018	0000	0004	0000		
MEAN	0.172	0.398	0.060	1.725	0.322	0.030	0.143	0.115	5.94	0.252	0.563	0.540	0.184	0.559	0.503		
S. D.	0.109	0.216	0.022	1.201	0.283	0.008	0.098	0.169	0.81	0.260	0.510	0.240	0.056	0.210	0.172		
LOW	0.040	0.060	0.007	0.125	0.080	0.020	0.060	0.125	4.42	0.080	0.130	0.370	0.105	0.221	0.253		
HIGH	0.380	0.996	0.110	4.596	1.315	0.040	0.346	0.855	7.25	1.250	1.120	0.710	0.350	1.120	0.680		
CATFISH, SEA			ARIUS FELIS						023001 AREA- GULF			SITE- B8			MUSCLE		
LENGTH WEIGHT	NUM NUM	MEAN MEAN	0.225 S. D.	0.000 S. D.	LOW LOW	0.225 HIGH	0.740 HIGH	0.225 HIGH	0.340 HIGH	0.225 HIGH	0.740 HIGH	0.225	0.225	0.225	0.225	0.225	
	MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM		
NUMBER	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002		
N DET.	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000		
MEAN	0.153	0.426	0.038	8.977	0.517	0.053	0.093	0.500	18.99	0.244	0.145	0.213	0.529	0.613	0.733		
S. D.	0.046	0.013	0.003	1.211	0.004	0.025	0.032	0.328	3.32	0.143	0.148	0.053	0.048	0.513	0.725		
LOW	0.120	0.416	0.036	8.120	0.510	0.035	0.070	0.480	16.64	0.143	0.140	0.175	0.495	0.250	0.220		
HIGH	0.185	0.435	0.040	9.833	0.523	0.070	0.114	0.520	21.34	0.345	0.250	0.250	0.563	0.976	1.245		
CATFISH, SEA			ARIUS FELIS						023001 AREA- GULF			SITE- E5			MUSCLE		
LENGTH WEIGHT	NUM NUM	MEAN MEAN	0.363 S. D.	0.022 S. D.	LOW LOW	0.331 HIGH	0.788 HIGH	0.331 HIGH	0.345 HIGH	0.331 HIGH	0.788 HIGH	0.331	0.331	0.331	0.331	0.331	
	MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM		
NUMBER	0020	0019	0020	0019	0019	0020	0020	0020	0020	0020	0020	0020	0020	0020	0020		
N DET.	0000	0001	0003	0000	0000	0004	0000	0000	0000	0001	0016	0012	0000	0004	0000		
MEAN	0.468	0.426	0.099	17.391	0.447	0.041	0.146	0.301	13.90	0.262	0.343	0.270	0.211	0.784	0.536		
S. D.	0.090	0.211	0.057	9.871	0.180	0.012	0.115	0.092	4.00	0.133	0.163	0.203	0.084	0.273	0.147		
LOW	0.290	0.110	0.040	3.800	0.120	0.025	0.040	0.380	5.66	0.080	0.160	0.130	0.385	0.440	0.286		
HIGH	0.640	0.660	0.210	39.750	0.745	0.070	0.560	0.665	23.47	0.595	0.670	0.750	0.400	1.560	0.790		
CATFISH, SEA			ARIUS FELIS						023001 AREA- GULF			SITE- E5			LIVER		
LENGTH WEIGHT	NUM NUM	MEAN MEAN	0.361 S. D.	0.015 S. D.	LOW LOW	0.347 HIGH	0.388 HIGH	0.347 HIGH	0.388 HIGH	0.347 HIGH	0.785 HIGH	0.347	0.347	0.347	0.347	0.347	
	MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM		
NUMBER	0004	0004	0004	0004	0004	0004	0004	0004	0004	0004	0004	0004	0004	0004	0004		
N DET.	0000	0000	0000	0000	0000	0000	0000	0000	0000	0001	0001	0000	0000	0000	0000		
MEAN	1.964	1.071	0.595	6.258	3.008	0.058	0.486	6.040	305.73	0.308	0.550	3.708	1.076	0.949	0.361		
S. D.	1.166	0.268	0.284	1.374	1.435	0.015	0.377	3.328	44.02	0.106	0.217	3.156	0.706	0.556	0.069		
LOW	1.100	0.810	0.335	4.750	1.410	0.040	0.080	2.615	260.94	0.235	0.410	1.500	0.300	0.370	0.300		
HIGH	3.650	1.310	0.890	8.016	4.450	0.070	0.940	10.440	365.18	0.430	0.800	8.300	2.000	1.700	0.650		
CATFISH, SEA			ARIUS FELIS						023001 AREA- GULF			SITE- G3			MUSCLE		
LENGTH WEIGHT	NUM NUM	MEAN MEAN	0.225 S. D.	0.000 S. D.	LOW LOW	0.225 HIGH	0.340 HIGH	0.225 HIGH	0.340 HIGH	0.225 HIGH	0.340 HIGH	0.225	0.225	0.225	0.225	0.225	
	MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM		
NUMBER	0008	0008	0008	0008	0008	0008	0007	0008	0008	0008	0008	0008	0008	0008	0008		
N DET.	0000	0000	0001	0000	0000	0003	0000	0000	0000	0000	0007	0007	0000	0004	0000		
MEAN	0.181	0.489	0.090	5.894	0.468	0.028	0.154	0.452	12.80	0.280	0.380	0.780	0.249	0.993	0.458		
S. D.	0.044	0.312	0.040	3.724	0.310	0.011	0.106	0.117	5.32	0.130	0.000	0.000	0.107	0.219	0.080		
LOW	0.100	0.250	0.040	2.900	0.180	0.010	0.070	0.280	4.94	0.120	0.000	0.000	0.060	0.810	0.380		
HIGH	0.240	1.190	0.130	13.400	1.100	0.040	0.370	0.605	21.43	0.570	0.880	0.780	0.390	1.250	0.590		
CATFISH, SEA			ARIUS FELIS						023001 AREA- GULF			SITE- G5			MUSCLE		
LENGTH WEIGHT	NUM NUM	MEAN MEAN	0.330 S. D.	0.009 S. D.	LOW LOW	0.321 HIGH	0.340 HIGH	0.321 HIGH	0.340 HIGH	0.321 HIGH	0.482 HIGH	0.321	0.321	0.321	0.321	0.321	
	MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM		
NUMBER	0006	0006	0006	0006	0006	0006	0006	0006	0006	0006	0006	0006	0006	0006	0006		
N DET.	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0006	0006	0006	0006	0006		
MEAN	0.244	0.606	0.118	8.203	0.351	0.025	0.278	0.458	13.95	0.173	0.000	0.310	0.188	0.678	0.483		
S. D.	0.106	0.289	0.073	4.360	0.137	0.008	0.154	0.114	2.53	0.111	0.000	0.000	0.036	0.191	0.106		
LOW	0.130	0.285	0.045	3.750	0.210	0.010	0.130	0.265	11.94	0.060	0.000	0.000	0.140	0.440	0.380		
HIGH	0.410	1.060	0.060	14.750	0.590	0.030	0.560	0.580	18.75	0.340	0.000	0.310	0.230	0.940	0.630		

TABLE 5. SUMMARY OF TRACE ELEMENT LEVELS  
IN RESOURCE SURVEY SPECIES;  
BY TISSUE AND LOCATION

REPORT MF17

LOCATION LEVEL 5

CATFISH, SEA				ARIUS FELIS				023001 AREA- GULF			SITE- L5		MUSCLE		
LENGTH	NUM	11	MEAN	0.301	S. D.	0.016	LOW	0.283	HIGH	0.329					
WEIGHT	NUM	11	MEAN	0.530	S. D.	0.107	LOW	0.385	HIGH	0.729					
	MERCURY	LEAD	CADMIUM	ARSENIC	SELENIUM	SILVER	CHROM	COPPER	ZINC	NICKEL	MOLYB	VANADIUM	MANG	ANTIMONY	TIN
	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM
NUMBER	0011	0011	0011	0010	0010	0011	0011	0011	0010	0011	0010	0011	0011	0011	0011
N DET.	0000	0001	0004	0000	0002	0003	0001	0000	0000	0002	0007	0006	0000	0005	0000
MEAN	0.240	0.421	0.056	15.306	0.353	0.033	0.249	0.406	17.09	0.309	0.470	0.372	0.209	0.707	0.539
S. D.	0.051	0.169	0.025	10.786	0.121	0.016	0.234	0.063	6.23	0.129	0.236	0.356	0.079	0.295	0.309
LOW	0.150	0.200	0.025	2.480	0.190	0.010	0.060	0.290	8.39	0.180	0.250	0.090	0.130	0.370	0.250
HIGH	0.310	0.725	0.090	39.500	0.540	0.060	0.730	0.526	29.14	0.610	0.720	0.940	0.390	1.160	1.315

CATFISH, SEA				ARIUS FELIS				023001 AREA- GULF			SITE- L5		LIVER		
LENGTH	NUM	2	MEAN	0.297	S. D.	0.003	LOW	0.295	HIGH	0.299					
WEIGHT	NUM	2	MEAN	0.510	S. D.	0.004	LOW	0.507	HIGH	0.512					
	MERCURY	LEAD	CADMIUM	ARSENIC	SELENIUM	SILVER	CHROM	COPPER	ZINC	NICKEL	MOLYB	VANADIUM	MANG	ANTIMONY	TIN
	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM
NUMBER	0001	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002
N DET.	0000	0000	0000	0001	0001	0000	0000	0000	0000	0000	0000	0000	0000	0001	0000
MEAN	0.640	1.023	0.505	6.550	1.870	0.055	0.145	2.580	293.61	0.350	0.325	0.795	1.470	0.250	0.425
S. D.	0.000	0.378	0.049	0.000	0.000	0.035	0.134	0.071	332.28	0.212	0.177	0.049	0.552	0.000	0.035
LOW	0.000	0.755	0.470	0.000	0.000	0.030	0.050	2.530	58.65	0.200	0.200	0.760	1.080	0.000	0.400
HIGH	0.640	1.290	0.540	6.550	1.870	0.080	0.240	2.630	528.57	0.500	0.450	0.830	1.860	0.250	0.450

CATFISH, GAFFTOPSAIL				BAGRE MARINUS				023002 AREA- GULF			SITE- B8		MUSCLE		
LENGTH	NUM	7	MEAN	0.393	S. D.	0.046	LOW	0.350	HIGH	0.470					
WEIGHT	NUM	6	MEAN	1.262	S. D.	0.455	LOW	1.006	HIGH	2.155					
	MERCURY	LEAD	CADMIUM	ARSENIC	SELENIUM	SILVER	CHROM	COPPER	ZINC	NICKEL	MOLYB	VANADIUM	MANG	ANTIMONY	TIN
	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM
NUMBER	0008	0008	0008	0008	0007	0008	0008	0008	0008	0008	0008	0008	0008	0008	0008
N DET.	0000	0000	0002	0000	0000	0005	0000	0000	0000	0002	0004	0005	0000	0002	0000
MEAN	0.301	0.455	0.077	7.572	0.210	0.045	0.241	0.351	12.81	0.243	0.240	0.467	0.177	1.174	0.547
S. D.	0.100	0.207	0.053	4.200	0.073	0.015	0.151	0.079	4.12	0.078	0.185	0.444	0.140	0.347	0.202
LOW	0.173	0.200	0.040	2.100	0.100	0.030	0.055	0.195	6.78	0.150	0.050	0.060	0.030	0.640	0.300
HIGH	0.430	0.750	0.180	15.950	0.310	0.060	0.550	0.436	18.13	0.360	0.440	0.940	0.466	1.536	0.870

CATFISH, GAFFTOPSAIL				BAGRE MARINUS				023002 AREA- GULF			SITE- E5		MUSCLE		
LENGTH	NUM	20	MEAN	0.506	S. D.	0.017	LOW	0.475	HIGH	0.548					
WEIGHT	NUM	20	MEAN	1.229	S. D.	0.172	LOW	0.895	HIGH	1.655					
	MERCURY	LEAD	CADMIUM	ARSENIC	SELENIUM	SILVER	CHROM	COPPER	ZINC	NICKEL	MOLYB	VANADIUM	MANG	ANTIMONY	TIN
	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM
NUMBER	0020	0019	0020	0020	0020	0020	0019	0020	0020	0020	0020	0020	0020	0020	0020
N DET.	0000	0000	0002	0000	0000	0004	0000	0000	0000	0002	0013	0016	0001	0002	0000
MEAN	0.624	0.379	0.066	12.470	0.284	0.041	0.166	0.319	13.53	0.193	0.189	0.235	0.191	0.887	0.570
S. D.	0.196	0.204	0.026	6.432	0.094	0.014	0.107	0.101	7.32	0.089	0.156	0.175	0.129	0.395	0.172
LOW	0.350	0.020	0.010	2.900	0.130	0.020	0.045	0.125	4.44	0.040	0.050	0.060	0.040	0.440	0.250
HIGH	1.200	0.810	0.120	25.500	0.470	0.060	0.440	0.560	30.63	0.380	0.440	0.470	0.530	1.880	1.000

CATFISH, GAFFTOPSAIL				BAGRE MARINUS				023002 AREA- GULF			SITE- E5		LIVER		
LENGTH	NUM	2	MEAN	0.506	S. D.	0.013	LOW	0.496	HIGH	0.515					
WEIGHT	NUM	2	MEAN	1.220	S. D.	0.102	LOW	1.148	HIGH	1.292					
	MERCURY	LEAD	CADMIUM	ARSENIC	SELENIUM	SILVER	CHROM	COPPER	ZINC	NICKEL	MOLYB	VANADIUM	MANG	ANTIMONY	TIN
	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM
NUMBER	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002
N DET.	0000	0000	0001	0000	0000	0001	0000	0000	0000	0000	0001	0000	0000	0000	0000
MEAN	1.310	0.375	0.340	4.750	3.745	0.030	0.165	1.180	815.00	0.300	0.350	1.565	0.315	0.900	0.765
S. D.	0.467	0.177	0.000	1.061	2.553	0.000	0.049	0.806	1145.51	0.085	0.000	1.506	0.290	0.566	0.191
LOW	0.980	0.250	0.000	4.000	1.940	0.000	0.130	0.610	5.00	0.240	0.000	0.500	0.110	0.500	0.630
HIGH	1.640	0.500	0.340	5.500	5.550	0.030	0.200	1.750	1625.00	0.360	0.350	2.630	0.520	1.300	0.900

CATFISH, GAFFTOPSAIL				BAGRE MARINUS				023002 AREA- GULF			SITE- H1		MUSCLE		
LENGTH	NUM	4	MEAN	0.494	S. D.	0.015	LOW	0.475	HIGH	0.510					
WEIGHT	NUM	4	MEAN	1.029	S. D.	0.140	LOW	0.908	HIGH	1.163					
	MERCURY	LEAD	CADMIUM	ARSENIC	SELENIUM	SILVER	CHROM	COPPER	ZINC	NICKEL	MOLYB	VANADIUM	MANG	ANTIMONY	TIN
	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM
NUMBER	0004	0004	0004	0004	0004	0004	0004	0004	0003	0004	0004	0004	0004	0004	0003
N DET.	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0003	0003	0000	0000	0000
MEAN	0.610	0.324	0.060	8.213	0.281	0.034	0.104	0.341	13.25	0.166	0.160	0.190	0.196	0.653	0.480
S. D.	0.322	0.163	0.009	4.728	0.076	0.005	0.034	0.255	1.04	0.059	0.000	0.000	0.044	0.164	0.075
LOW	0.280	0.160	0.050	2.827	0.180	0.030	0.060	0.080	12.28	0.090	0.000	0.000	0.165	0.500	0.410
HIGH	1.020	0.540	0.070	14.300	0.360	0.040	0.130	0.690	14.34	0.215	0.160	0.190	0.260	0.880	0.560

CATFISH, GAFFTOPSAIL				BAGRE MARINUS				023002 AREA- GULF			SITE- H1		LIVER		
LENGTH	NUM	1	MEAN	0.495	S. D.	0.000	LOW	0.495	HIGH	0.495					
WEIGHT	NUM	1	MEAN	1.078	S. D.	0.000	LOW	1.078	HIGH	1.378					
	MERCURY	LEAD	CADMIUM	ARSENIC	SELENIUM	SILVER	CHROM	COPPER	ZINC	NICKEL	MOLYB	VANADIUM	MANG	ANTIMONY	TIN
	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM
NUMBER	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001
N DET.	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000
MEAN	1.220	0.630	0.460	3.650	2.500	0.030	0.060	2.440	184.38	0.260	0.340	1.630	1.330	0.560	0.500
S. D.	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.000	0.000	0.000	0.000	0.000	0.000
LOW	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.000	0.000	0.000	0.000	0.000	0.000
HIGH	1.220	0.630	0.460	3.650	2.500	0.030	0.060	2.440	184.38	0.260	0.340	1.630	1.330	0.560	0.500

TABLE 5. SUMMARY OF TRACE ELEMENT LEVELS  
IN RESOURCE SURVEY SPECIES;  
BY TISSUE AND LOCATION

LOCATION LEVEL 5

CATFISH, GAFFTOPSAIL					BAGRE MARINUS				023002 AREA- GULF			SITE- L5			MUSCLE	
LENGTH WEIGHT	NUM NUM	2 MEAN	MEAN	0.288 S. D.	S. D.	0.013 0.098	LOW	0.279 0.400	HIGH	0.297 0.539	VANADIUM	MANG	ANTIMONY	TIN		
MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM	PPM	PPM	PPM	PPM		
NUMBER	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002
N DET.	0000	0000	0001	0000	0000	0001	0000	0000	0000	0001	0001	0000	0000	0000	0000	0000
MEAN	0.458	0.350	0.075	62.325	0.378	0.030	0.216	0.488	9.02	0.320	0.100	0.325	0.178	0.850	0.545	0.545
S. D.	0.145	0.057	0.000	13.895	0.152	0.000	0.211	0.011	1.90	0.255	0.000	0.000	0.074	0.566	0.042	0.042
LOW	0.355	0.310	0.000	52.500	0.270	0.000	0.066	0.480	7.67	0.140	0.000	0.000	0.125	0.450	0.515	0.515
HIGH	0.560	0.390	0.075	72.150	0.485	0.030	0.365	0.495	10.36	0.500	0.100	0.325	0.230	1.250	0.575	0.575

CUSK					BROSME BROSME				033004 AREA- NRTH ATLANTIC			SITE- E8			MUSCLE	
LENGTH WEIGHT	NUM NUM	2 MEAN	MEAN	0.885 S. D.	S. D.	0.035 0.000	LOW	0.860 0.000	HIGH	0.910 0.000	VANADIUM	MANG	ANTIMONY	TIN		
MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM	PPM	PPM	PPM	PPM		
NUMBER	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002
N DET.	0000	0000	0000	0000	0000	0000	0000	0000	0000	0002	0002	0000	0000	0000	0001	0000
MEAN	0.325	0.470	0.075	1.085	0.425	0.025	0.145	0.165	4.57	0.175	0.000	0.000	0.150	0.310	0.645	0.645
S. D.	0.007	0.226	0.007	0.516	0.035	0.021	0.021	0.021	1.15	0.049	0.000	0.000	0.085	0.000	0.375	0.375
LOW	0.320	0.310	0.070	0.720	0.400	0.010	0.130	0.150	3.75	0.140	0.000	0.000	0.090	0.000	0.380	0.380
HIGH	0.330	0.630	0.080	1.450	0.450	0.040	0.160	0.180	5.38	0.210	0.000	0.000	0.210	0.310	0.910	0.910

CUSK					BROSME BROSME				033004 AREA- NRTH ATLANTIC			SITE- E9			MUSCLE	
LENGTH WEIGHT	NUM NUM	3 MEAN	MEAN	0.553 S. D.	S. D.	0.040 0.411	LOW	0.510 1.313	HIGH	0.590 2.109	VANADIUM	MANG	ANTIMONY	TIN		
MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM	PPM	PPM	PPM	PPM		
NUMBER	0003	0003	0003	0003	0003	0003	0003	0003	0003	0003	0003	0003	0003	0003	0003	0003
N DET.	0000	0000	0000	0000	0000	0000	0000	0000	0000	0003	0003	0000	0000	0000	0002	0000
MEAN	0.153	0.325	0.078	1.693	0.222	0.032	0.128	0.172	3.46	0.228	0.000	0.000	0.213	0.500	0.608	0.608
S. D.	0.067	0.067	0.028	0.990	0.164	0.014	0.090	0.083	0.98	0.070	0.000	0.000	0.095	0.000	0.080	0.080
LOW	0.110	0.250	0.060	1.055	0.090	0.015	0.060	0.080	2.67	0.150	0.000	0.000	0.115	0.000	0.520	0.520
HIGH	0.230	0.380	0.110	2.833	0.406	0.040	0.230	0.240	4.56	0.285	0.000	0.000	0.305	0.500	0.675	0.675

CUSK					BROSME BROSME				033004 AREA- NRTH ATLANTIC			SITE- I5			MUSCLE	
LENGTH WEIGHT	NUM NUM	6 MEAN	MEAN	0.590 S. D.	S. D.	0.107 1.422	LOW	0.480 1.040	HIGH	0.730 4.080	VANADIUM	MANG	ANTIMONY	TIN		
MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM	PPM	PPM	PPM	PPM		
NUMBER	0006	0006	0006	0006	0005	0006	0006	0006	0006	0006	0006	0006	0006	0006	0006	0006
N DET.	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0005	0005	0000	0000	0003	0000
MEAN	0.278	0.288	0.053	2.415	0.659	0.036	0.134	0.135	3.45	0.198	0.190	0.310	0.126	0.385	0.511	0.511
S. D.	0.166	0.050	0.012	1.388	0.113	0.011	0.105	0.051	0.32	0.068	0.000	0.000	0.031	0.080	0.071	0.071
LOW	0.130	0.250	0.035	0.580	0.500	0.025	0.060	0.060	3.00	0.090	0.000	0.000	0.090	0.310	0.410	0.410
HIGH	0.585	0.375	0.065	4.400	0.780	0.055	0.340	0.190	3.81	0.265	0.190	0.310	0.180	0.470	0.590	0.590

CUSK					BROSME BROSME				033004 AREA- NRTH ATLANTIC			SITE- I9			MUSCLE	
LENGTH WEIGHT	NUM NUM	3 MEAN	MEAN	0.517 S. D.	S. D.	0.067 0.675	LOW	0.460 1.036	HIGH	0.590 2.294	VANADIUM	MANG	ANTIMONY	TIN		
MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM	PPM	PPM	PPM	PPM		
NUMBER	0003	0003	0003	0003	0003	0003	0003	0003	0003	0003	0003	0003	0003	0003	0003	0002
N DET.	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0003	0003	0000	0000	0000	0000
MEAN	1.205	0.303	0.053	1.848	0.543	0.037	0.088	0.212	3.31	0.143	0.000	0.000	0.135	0.470	0.495	0.495
S. D.	1.101	0.068	0.012	0.185	0.073	0.013	0.045	0.044	0.33	0.047	0.000	0.000	0.005	0.330	0.120	0.120
LOW	0.090	0.250	0.040	1.635	0.460	0.025	0.060	0.175	2.97	0.090	0.000	0.000	0.130	0.250	0.410	0.410
HIGH	0.280	0.380	0.060	1.963	0.595	0.050	0.140	0.260	3.63	0.180	0.000	0.000	0.140	0.850	0.580	0.580

CUSK					BROSME BROSME				033004 AREA- NRTH ATLANTIC			SITE- J2			MUSCLE	
LENGTH WEIGHT	NUM NUM	3 MEAN	MEAN	0.877 S. D.	S. D.	0.047 0.000	LOW	0.840 0.000	HIGH	0.930 0.000	VANADIUM	MANG	ANTIMONY	TIN		
MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM	PPM	PPM	PPM	PPM		
NUMBER	0003	0002	0003	0003	0003	0003	0003	0003	0003	0003	0003	0003	0003	0003	0003	0003
N DET.	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0003	0003	0000	0000	0000	0000
MEAN	1.040	0.313	0.065	1.710	0.577	0.017	0.147	0.147	4.00	0.158	0.000	0.000	0.148	0.562	0.322	0.322
S. D.	0.392	0.088	0.030	1.060	0.023	0.006	0.096	0.038	0.10	0.028	0.000	0.000	0.038	0.003	0.020	0.020
LOW	0.770	0.250	0.045	0.592	0.550	0.010	0.060	0.120	3.94	0.130	0.000	0.000	0.110	0.560	0.310	0.310
HIGH	1.490	0.375	0.100	2.700	0.590	0.020	0.250	0.190	4.12	0.185	0.000	0.000	0.185	0.565	0.345	0.345

CUSK					BROSME BROSME				033004 AREA- NRTH ATLANTIC			SITE- J2			LIVER	
LENGTH WEIGHT	NUM NUM	3 MEAN	MEAN	0.877 S. D.	S. D.	0.047 0.000	LOW	0.840 0.000	HIGH	0.930 0.000	VANADIUM	MANG	ANTIMONY	TIN		
MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM	PPM	PPM	PPM	PPM		
NUMBER	0003	0003	0003	0003	0002	0003	0003	0003	0002	0003	0003	0003	0003	0003	0003	0000
N DET.	0000	0000	0000	0000	0000	0001	0001	0000	0000	0000	0001	0000	0000	0000	0000	0000
MEAN	2.443	0.377	0.068	5.093	3.435	0.023	0.093	1.723	16.15	0.275	0.188	1.040	1.083	0.417	0.202	0.202
S. D.	2.320	0.305	0.273	1.572	0.997	0.004	0.046	0.417	2.62	0.058	0.088	0.749	0.631	0.050	0.030	0.030
LOW	0.900	0.310	0.045	3.280	2.730	0.020	0.060	1.330	14.30	0.215	0.125	0.440	0.430	0.370	0.250	0.250
HIGH	4.710	0.640	0.060	6.075	4.140	0.025	0.125	2.160	18.00	0.330	0.250	1.880	1.690	0.470	0.310	0.310

TABLE 5. SUMMARY OF TRACE ELEMENT LEVELS  
IN RESOURCE SURVEY SPECIES;  
BY TISSUE AND LOCATION

LOCATION LEVEL 5

CUSK		BROSME BROSME							033004 AREA- NORTH ATLANTIC			SITE- J3		MUSCLE		
LENGTH WEIGHT	NUM NUM	1 MEAN	MEAN	0.680	S. D.	0.000	LOW	0.680	HIGH	0.680						
	MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM	
NUMBER	0001	0001	0001	0001	0001	0001	0001	0001	0001	0301	0001	0001	0301	0001	0001	
N DET.	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0001	0001	0000	0000	0000	
MEAN	0.100	0.500	0.040	2.675	0.910	0.000	0.090	0.260	3.75	0.190	0.300	0.000	0.110	0.340	0.220	
S. D.	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
LOW	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.300	0.000	0.000	0.000	0.000	
HIGH	0.100	0.500	0.040	2.675	0.910	0.000	0.090	0.260	3.75	0.190	0.000	0.000	0.110	0.340	0.220	

CUSK		BROSME BROSME							033004 AREA- NORTH ATLANTIC			SITE- J4		MUSCLE	
LENGTH WEIGHT	NUM NUM	14 MEAN	MEAN	0.621	S. D.	0.137	LOW	0.395	HIGH	0.810					
	MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM
NUMBER	0014	0013	0014	0014	0014	0014	0013	0014	0014	0014	0014	0014	0014	0014	0014
N DET.	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0012	0013	0000	0007	0000
MEAN	0.397	0.385	0.073	2.703	0.510	0.034	0.168	0.168	3.48	0.217	0.060	0.060	0.160	0.599	0.433
S. D.	0.231	0.130	0.035	2.415	0.194	0.018	0.059	0.073	0.54	0.035	0.000	0.000	0.048	0.236	0.145
LOW	0.145	0.185	0.040	0.690	0.060	0.020	0.095	0.060	2.87	0.160	0.060	0.000	0.090	0.310	0.190
HIGH	0.920	0.630	0.150	9.500	0.900	0.090	0.310	0.340	4.75	0.290	0.060	0.060	0.250	0.940	0.750

CUSK		BROSME BROSME							033004 AREA- NORTH ATLANTIC			SITE- J4		LIVER	
LENGTH WEIGHT	NUM NUM	2 MEAN	MEAN	0.718	S. D.	0.088	LOW	0.655	HIGH	0.780					
	MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM
NUMBER	0002	0002	0002	0001	0001	0002	0002	0002	0002	0302	0002	0002	0002	0002	0002
N DET.	0001	0001	0000	0000	0000	0000	0001	0000	0000	0000	0002	0000	0000	0000	0000
MEAN	0.100	0.440	0.430	1.925	2.150	0.035	0.060	1.720	13.25	0.365	0.000	0.160	0.535	0.190	0.330
S. D.	0.000	0.000	0.495	0.000	0.000	0.007	0.000	0.834	8.65	0.389	0.000	0.042	0.361	0.000	0.156
LOW	0.000	0.000	0.080	0.000	0.000	0.030	0.000	1.130	7.13	0.090	0.300	0.130	0.280	0.000	0.220
HIGH	0.100	0.440	0.780	1.925	2.150	0.040	0.060	2.310	19.37	0.640	0.000	0.190	0.790	0.190	0.440

CUSK		BROSME BROSME							033004 AREA- NORTH ATLANTIC			SITE- J5		MUSCLE	
LENGTH WEIGHT	NUM NUM	16 MEAN	MEAN	0.635	S. D.	0.113	LOW	0.400	HIGH	0.800					
	MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM
NUMBER	0015	0016	0016	0016	0015	0016	0016	0015	0016	0016	0016	0016	0016	0016	0015
N DET.	0000	0000	0002	0000	0000	0000	0001	0000	0000	0000	0012	0013	0000	0003	0000
MEAN	0.393	0.485	0.065	3.411	0.567	0.027	0.166	0.178	3.70	0.219	0.106	0.347	0.199	0.602	0.461
S. D.	0.370	0.252	0.023	1.956	0.202	0.011	0.118	0.099	0.95	0.065	0.067	0.232	0.096	0.118	0.151
LOW	0.140	0.155	0.030	0.675	0.210	0.010	0.060	0.060	2.06	0.130	0.030	0.100	0.095	0.440	0.225
HIGH	1.650	1.000	0.110	7.400	0.920	0.060	0.500	0.460	5.69	0.370	0.190	0.560	0.390	0.815	0.880

CUSK		BROSME BROSME							033004 AREA- NORTH ATLANTIC			SITE- J5		LIVER	
LENGTH WEIGHT	NUM NUM	6 MEAN	MEAN	0.757	S. D.	0.055	LOW	0.690	HIGH	0.820					
	MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM
NUMBER	0006	0006	0006	0006	0006	0006	0006	0005	0006	0006	0006	0006	0006	0006	0006
N DET.	0002	0000	0000	0001	0000	0003	0002	0000	0000	0000	0006	0001	0000	0000	0000
MEAN	0.183	0.437	0.233	4.606	1.392	0.040	0.088	1.383	12.79	0.181	0.000	0.715	0.462	0.278	0.194
S. D.	0.092	0.338	0.141	1.786	0.550	0.026	0.069	0.448	4.57	0.109	0.000	0.920	0.117	0.201	0.251
LOW	0.070	0.120	0.080	2.575	0.750	0.010	0.040	0.785	8.44	0.030	0.300	0.060	0.350	0.090	0.030
HIGH	0.280	1.060	0.470	7.315	2.300	0.060	0.190	1.880	20.60	0.330	0.000	2.340	0.690	0.535	0.630

CUSK		BROSME BROSME							033004 AREA- NORTH ATLANTIC			SITE- J6		MUSCLE	
LENGTH WEIGHT	NUM NUM	5 MEAN	MEAN	0.752	S. D.	0.108	LOW	0.600	HIGH	0.900					
	MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM
NUMBER	0006	0006	0006	0005	0006	0006	0006	0006	0006	0006	0006	0006	0006	0006	0006
N DET.	0000	0000	0000	0000	0000	0000	0000	0000	0000	0300	0006	0005	0000	0000	0000
MEAN	0.508	0.513	0.064	2.608	0.391	0.023	0.170	0.198	3.86	0.163	0.000	0.040	0.131	0.582	0.402
S. D.	0.185	0.279	0.030	1.171	0.121	0.005	0.107	0.066	1.31	0.057	0.300	0.000	0.049	0.249	0.205
LOW	0.305	0.155	0.030	1.010	0.195	0.020	0.070	0.145	2.00	0.110	0.000	0.000	0.070	0.375	0.060
HIGH	0.780	0.880	0.110	4.000	0.535	0.030	0.380	0.325	5.25	0.250	0.300	0.040	0.215	0.965	0.590

CUSK		BROSME BROSME							033004 AREA- NORTH ATLANTIC			SITE- J6		LIVER	
LENGTH WEIGHT	NUM NUM	1 MEAN	MEAN	0.730	S. D.	0.000	LOW	0.730	HIGH	0.730					
	MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM
NUMBER	0002	0002	0002	0002	0002	0002	0002	0002	0002	0302	0002	0002	0002	0002	0002
N DET.	0001	0000	0000	0000	0000	0001	0000	0000	0000	0000	0002	0001	0000	0000	0000
MEAN	0.260	0.310	0.300	5.100	1.645	0.020	0.060	2.185	8.56	0.235	0.300	1.340	0.705	0.315	0.425
S. D.	0.000	0.085	0.339	0.000	0.742	0.000	0.000	0.445	1.50	0.007	0.000	0.000	0.643	0.092	0.290
LOW	0.000	0.250	0.060	5.100	1.120	0.000	0.060	1.870	7.50	0.230	0.000	0.000	0.250	0.250	0.220
HIGH	0.260	0.370	0.540	5.100	2.170	0.020	0.060	2.500	9.62	0.240	0.300	1.340	1.160	0.380	0.630

TABLE 5. SUMMARY OF TRACE ELEMENT LEVELS  
IN RESOURCE SURVEY SPECIES;  
BY TISSUE AND LOCATION

REPORT RPT

LOCATION LEVEL 5

CUSK				BROSME BROSME				033004		AREA- NJRTH ATLANTIC		SITE- J7		MUSCLE	
LENGTH WEIGHT	NUM NUM	4 2	MEAN MEAN	0.743 3.039	S. D. S. D.	0.153 0.1059	LOW LOW	0.600 2.290	HIGH HIGH	0.960 3.787					
	MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM
NUMBER N DET.	0004 0000	0004 0000	0004 0000	0004 0000	0004 0000	0004 0000	0004 0000	0004 0000	0004 0000	0004 0000	0004 0003	0004 0003	0004 0000	0004 0000	0004 0000
MEAN	0.343	0.408	0.073	2.994	0.452	0.036	0.186	0.188	4.11	0.210	0.060	0.280	0.228	0.555	0.571
S. D.	0.175	0.188	0.022	2.827	0.166	0.016	0.166	0.082	0.99	0.061	0.000	0.000	0.088	0.199	0.336
LOW	0.130	0.250	0.050	0.260	0.250	0.025	0.060	0.080	3.28	0.150	0.000	0.000	0.130	0.280	0.229
HIGH	0.540	0.625	0.100	5.450	0.620	0.060	0.430	0.280	5.31	0.280	0.060	0.280	0.320	0.750	1.015

CUSK				BROSME BROSME				033004		AREA- NJRTH ATLANTIC		SITE- J7		LIVER	
LENGTH WEIGHT	NUM NUM	1 0	MEAN MEAN	0.780 0.000	S. D. S. D.	0.000 0.000	LOW LOW	0.780 0.000	HIGH HIGH	0.780 0.000					
	MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM
NUMBER N DET.	0001 0000	0001 0000	0001 0000	0001 0000	0001 0000	0001 0000	0001 0000	0001 0000	0001 0000	0001 0000	0001 0001	0001 0000	0001 0000	0001 0000	0001 0000
MEAN	0.060	0.310	0.170	4.955	1.480	0.010	0.060	1.190	11.94	0.250	0.000	0.090	0.640	0.630	0.530
S. D.	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.000	0.000	0.000	0.000	0.000	0.000
LOW	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.000	0.000	0.000	0.000	0.000	0.000
HIGH	0.060	0.310	0.170	4.955	1.480	0.010	0.060	1.190	11.94	0.250	0.000	0.090	0.640	0.630	0.530

CUSK				BROSME BROSME				033004		AREA- NJRTH ATLANTIC		SITE- J8		MUSCLE	
LENGTH WEIGHT	NUM NUM	1 1	MEAN MEAN	0.700 4.190	S. D. S. D.	0.000 0.000	LOW LOW	0.700 4.190	HIGH HIGH	0.700 4.190					
	MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM
NUMBER N DET.	0001 0000	0001 0000	0001 0000	0001 0000	0001 0000	0001 0000	0001 0000	0001 0000	0001 0000	0001 0000	0001 0001	0001 0001	0001 0000	0001 0000	0001 0000
MEAN	0.520	0.440	0.060	1.300	0.750	0.010	0.130	0.420	5.81	0.370	0.000	0.000	0.110	0.630	0.500
S. D.	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.300	0.000	0.000	0.000	0.000	0.000
LOW	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.300	0.000	0.000	0.000	0.000	0.000
HIGH	0.520	0.440	0.060	1.300	0.750	0.010	0.130	0.420	5.81	0.370	0.000	0.000	0.110	0.630	0.500

CUSK				BROSME BROSME				033004		AREA- NJRTH ATLANTIC		SITE- K4		MUSCLE	
LENGTH WEIGHT	NUM NUM	8 4	MEAN MEAN	0.673 3.018	S. D. S. D.	0.100 1.310	LOW LOW	0.500 1.310	HIGH HIGH	0.790 4.502					
	MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM
NUMBER N DET.	0010 0000	0009 0000	0010 0000	0010 0000	0009 0000	0010 0000	0010 0000	0009 0000	0010 0000	0010 0000	0010 0009	0010 0007	0010 0000	0010 0001	0010 0000
MEAN	0.275	0.424	0.064	2.660	0.607	0.029	0.106	0.211	4.65	0.165	0.130	0.360	0.151	0.595	0.518
S. D.	0.136	0.202	0.020	0.973	0.210	0.011	0.046	0.096	0.92	0.057	0.000	0.236	0.054	0.170	0.164
LOW	0.110	0.190	0.040	1.337	0.263	0.010	0.050	0.090	3.50	0.085	0.000	0.190	0.090	0.375	0.340
HIGH	0.540	0.760	0.100	4.600	0.900	0.050	0.190	0.370	6.31	0.240	0.130	0.630	0.280	0.970	0.910

CUSK				BROSME BROSME				033004		AREA- NJRTH ATLANTIC		SITE- K4		LIVER	
LENGTH WEIGHT	NUM NUM	2 1	MEAN MEAN	0.740 3.139	S. D. S. D.	0.071 0.000	LOW LOW	0.690 3.139	HIGH HIGH	0.790 3.139					
	MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM
NUMBER N DET.	0002 0001	0002 0000	0002 0000	0002 0000	0002 0000	0002 0000	0002 0000	0002 0000	0002 0000	0002 0000	0002 0001	0002 0001	0002 0000	0002 0001	0002 0001
MEAN	0.120	0.470	0.475	4.475	4.175	0.020	0.130	1.435	10.47	0.140	0.190	0.880	0.560	0.750	0.390
S. D.	0.000	0.311	0.488	2.652	1.308	0.014	0.000	0.007	6.24	0.000	0.000	0.000	0.453	0.000	0.000
LOW	0.000	0.250	0.130	2.600	3.250	0.010	0.130	1.430	6.06	0.140	0.000	0.000	0.240	0.000	0.000
HIGH	0.120	0.690	0.820	6.350	5.100	0.030	0.130	1.440	14.88	0.140	0.190	0.880	0.880	0.750	0.390

CUSK				BROSME BROSME				033004		AREA- NJRTH ATLANTIC		SITE- K5		MUSCLE	
LENGTH WEIGHT	NUM NUM	4 0	MEAN MEAN	0.678 0.000	S. D. S. D.	0.050 0.000	LOW LOW	0.610 0.000	HIGH HIGH	0.730 0.000					
	MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM
NUMBER N DET.	0004 0000	0004 0000	0004 0000	0004 0000	0004 0000	0004 0000	0004 0001	0004 0000	0004 0000	0004 0000	0004 0004	0004 0003	0004 0000	0004 0000	0004 0000
MEAN	0.273	0.353	0.056	2.478	0.508	0.016	0.125	0.170	3.47	0.145	0.300	0.440	0.139	0.409	0.629
S. D.	0.129	0.139	0.005	0.691	0.076	0.006	0.056	0.041	0.32	0.055	0.000	0.000	0.010	0.128	0.083
LOW	0.110	0.190	0.050	1.608	0.400	0.010	0.060	0.130	3.18	0.080	0.000	0.000	0.125	0.310	0.345
HIGH	0.390	0.530	0.060	3.300	0.575	0.025	0.160	0.225	3.87	0.195	0.000	0.440	0.150	0.590	0.500

CUSK				BROSME BROSME				033004		AREA- NJRTH ATLANTIC		SITE- K5		LIVER	
LENGTH WEIGHT	NUM NUM	2 0	MEAN MEAN	0.710 0.000	S. D. S. D.	0.028 0.000	LOW LOW	0.690 0.000	HIGH HIGH	0.730 0.000					
	MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM
NUMBER N DET.	0002 0001	0002 0000	0002 0000	0002 0000	0000 0000	0001 0000	0002 0002	0001 0000	0002 0000	0002 0000	0002 0001	0002 0001	0002 0000	0002 0000	0002 0000
MEAN	0.170	0.130	0.540	1.675	0.000	0.010	0.000	0.490	15.53	0.180	0.190	0.810	0.510	0.575	0.170
S. D.	0.000	0.000	0.552	1.732	0.000	0.000	0.000	0.000	1.46	0.085	0.300	0.000	0.467	0.332	0.028
LOW	0.000	0.130	0.150	0.450	0.000	0.000	0.000	0.000	14.50	0.120	0.000	0.000	0.180	0.340	0.150
HIGH	0.170	0.130	0.930	2.900	0.000	0.010	0.000	0.490	16.56	0.240	0.190	0.810	0.840	0.810	0.190



TABLE 5. SUMMARY OF TRACE ELEMENT LEVELS  
IN RESOURCE SURVEY SPECIES:  
BY TISSUE AND LOCATION

REPORT

LOCATION LEVEL 5

COD, PAC. (GRAY)			GADUS MACROCEPHALUS					033007 AREA- PACIFIC NORTHWEST					SITE- N1			MUSCLE	
LENGTH WEIGHT	NUM NUM	10 0 MEAN MEAN	0.526 0.000	S. D. S. D.	0.040 0.000	LOW LOW	0.450 0.000	HIGH HIGH	0.370 0.000	COPPER	ZINC	NICKEL	MOLYB	VANADIUM	MANG	ANTIMONY	TIN
	MERCURY	LEAD	CADMIUM	ARSENIC	SELENIUM	SILVER	CHROM		PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM
NUMBER	0010	0010	0010	0008	0008	0010	0010	0010	0010	0010	0010	0010	0010	0010	0010	0010	0000
N DET.	0000	0001	0003	0000	0000	0005	0002	0000	0000	0000	0004	0008	0009	0000	0002	0000	0000
MEAN	0.261	0.615	0.055	10.200	0.401	0.037	0.127	0.173	3.73	0.199	0.105	0.100	1.020	0.159	0.086	0.420	
S. D.	0.089	0.555	0.014	8.614	0.174	0.010	0.065	0.040	0.88	0.097	0.064	0.000	0.000	0.077	0.666	0.361	
LOW	0.163	0.150	0.040	3.322	0.120	0.025	0.050	0.125	2.68	0.070	0.060	0.000	0.000	0.070	0.250	0.350	
HIGH	0.400	1.780	0.070	30.250	0.620	0.050	0.225	0.253	5.33	0.320	0.150	1.020	0.325	1.750	0.976	0.678	

COD, PAC. (GRAY)			GADUS MACROCEPHALUS					033007 AREA- PACIFIC NORTHWEST					SITE- N1			LIVER	
LENGTH WEIGHT	NUM NUM	2 0 MEAN MEAN	0.460 0.000	S. D. S. D.	0.014 0.000	LOW LOW	0.450 0.000	HIGH HIGH	0.470 0.300	COPPER	ZINC	NICKEL	MOLYB	VANADIUM	MANG	ANTIMONY	TIN
	MERCURY	LEAD	CADMIUM	ARSENIC	SELENIUM	SILVER	CHROM		PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM
NUMBER	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002
N DET.	0000	0000	0001	0000	0000	0000	0000	0000	0000	0000	0001	0000	0002	0000	0000	0000	0000
MEAN	0.098	0.268	0.110	8.538	3.643	0.873	0.170	10.565	25.25	0.360	0.160	0.000	1.638	0.000	1.638	0.150	0.153
S. D.	0.110	0.350	0.000	0.053	2.790	0.180	0.099	0.714	3.69	0.000	0.057	0.000	0.000	0.357	0.161	0.009	0.009
LOW	0.020	0.020	0.000	8.500	1.670	0.745	0.100	10.060	22.64	0.000	0.120	0.000	0.000	1.365	0.050	0.125	0.125
HIGH	0.175	0.515	0.110	8.575	5.616	1.000	0.240	11.070	27.86	0.360	0.200	0.000	1.890	0.250	0.180	0.636	0.636

COD, PAC. (GRAY)			GADUS MACROCEPHALUS					033007 AREA- ALASKA					SITE- K7			MUSCLE	
LENGTH WEIGHT	NUM NUM	9 0 MEAN MEAN	0.666 0.000	S. D. S. D.	0.065 0.000	LOW LOW	0.600 0.000	HIGH HIGH	0.760 0.000	COPPER	ZINC	NICKEL	MOLYB	VANADIUM	MANG	ANTIMONY	TIN
	MERCURY	LEAD	CADMIUM	ARSENIC	SELENIUM	SILVER	CHROM		PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM
NUMBER	0009	0009	0009	0009	0008	0009	0009	0009	0009	0009	0009	0009	0009	0009	0009	0009	0000
N DET.	0000	0000	0000	0000	0000	0006	0000	0000	0000	0000	0000	0000	0008	0009	0000	0000	0000
MEAN	0.130	0.323	0.055	4.536	0.291	0.025	0.163	0.251	4.04	0.144	0.060	0.000	0.000	0.000	0.087	0.483	0.477
S. D.	0.086	0.056	0.012	1.998	0.156	0.009	0.124	0.070	0.48	0.056	0.300	0.000	0.000	0.009	0.075	0.075	0.009
LOW	0.020	0.230	0.040	0.750	0.140	0.020	0.060	0.160	3.38	0.070	0.000	0.000	0.000	0.075	0.370	0.395	0.395
HIGH	0.310	0.380	0.075	7.000	0.630	0.035	0.345	0.355	4.81	0.225	0.060	0.000	0.000	0.100	0.595	0.636	0.636

COD, PAC. (GRAY)			GADUS MACROCEPHALUS					033007 AREA- ALASKA					SITE- N6			MUSCLE	
LENGTH WEIGHT	NUM NUM	10 10 MEAN MEAN	0.666 2.778	S. D. S. D.	0.058 0.586	LOW LOW	0.590 2.155	HIGH HIGH	0.750 3.629	COPPER	ZINC	NICKEL	MOLYB	VANADIUM	MANG	ANTIMONY	TIN
	MERCURY	LEAD	CADMIUM	ARSENIC	SELENIUM	SILVER	CHROM		PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM
NUMBER	0009	0010	0010	0010	0009	0010	0010	0010	0010	0010	0010	0010	0010	0010	0009	0010	0010
N DET.	0000	0000	0000	0000	0000	0001	0000	0000	0000	0000	0000	0000	0006	0007	0000	0000	0000
MEAN	0.154	0.423	0.049	7.798	0.620	0.034	0.206	0.280	4.27	0.187	0.213	0.302	0.171	0.615	0.539	0.539	0.539
S. D.	0.095	0.161	0.014	3.300	0.290	0.006	0.122	0.121	1.53	0.055	0.145	0.223	0.062	0.264	0.166	0.166	0.166
LOW	0.020	0.250	0.030	3.250	0.330	0.030	0.095	0.060	2.75	0.060	0.360	0.060	0.105	0.130	0.250	0.250	0.250
HIGH	0.315	0.785	0.075	12.960	1.205	0.045	0.500	0.500	8.12	0.270	0.410	0.500	0.320	0.940	0.750	0.750	0.750

COD, PAC. (GRAY)			GADUS MACROCEPHALUS					033007 AREA- ALASKA					SITE- N6			LIVER	
LENGTH WEIGHT	NUM NUM	5 5 MEAN MEAN	0.707 3.221	S. D. S. D.	0.042 0.485	LOW LOW	0.645 2.381	HIGH HIGH	0.750 3.629	COPPER	ZINC	NICKEL	MOLYB	VANADIUM	MANG	ANTIMONY	TIN
	MERCURY	LEAD	CADMIUM	ARSENIC	SELENIUM	SILVER	CHROM		PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM
NUMBER	0005	0005	0005	0005	0000	0005	0005	0005	0005	0005	0005	0005	0004	0005	0004	0005	0000
N DET.	0002	0000	0000	0000	0000	0000	0000	0001	0000	0000	0000	0000	0000	0005	0000	0000	0000
MEAN	0.047	0.506	0.376	3.729	0.000	0.066	0.192	3.075	22.54	0.252	0.383	0.000	2.010	0.550	0.442	0.442	0.442
S. D.	0.038	0.188	0.212	2.058	0.000	0.079	0.130	2.154	4.72	0.116	0.356	0.000	0.860	0.326	0.269	0.269	0.269
LOW	0.020	0.310	0.150	2.600	0.000	0.010	0.010	0.880	15.00	0.090	0.310	0.000	1.130	0.130	0.260	0.260	0.260
HIGH	0.090	0.750	0.700	7.400	0.000	0.190	0.330	5.090	26.72	0.410	0.440	0.000	3.190	0.940	0.690	0.690	0.690

COD, ATL.			GADUS MORHUA					033008 AREA- NORT ATLANTIC					SITE- 12			MUSCLE	
LENGTH WEIGHT	NUM NUM	7 1 MEAN MEAN	0.871 0.925	S. D. S. D.	0.220 0.000	LOW LOW	0.410 0.925	HIGH HIGH	1.040 0.925	COPPER	ZINC	NICKEL	MOLYB	VANADIUM	MANG	ANTIMONY	TIN
	MERCURY	LEAD	CADMIUM	ARSENIC	SELENIUM	SILVER	CHROM		PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM
NUMBER	0007	0007	0007	0007	0007	0007	0007	0007	0007	0007	0007	0007	0007	0007	0007	0007	0007
N DET.	0000	0000	0000	0000	0000	0001	0000	0000	0000	0000	0000	0000	0007	0006	0000	0000	0000
MEAN	0.222	0.409	0.061	5.374	0.501	0.034	0.174	0.212	3.84	0.169	0.000	0.190	0.124	0.563	0.431	0.431	0.431
S. D.	0.133	0.176	0.019	2.519	0.114	0.015	0.154	0.034	0.43	0.037	0.000	0.000	0.035	0.177	0.178	0.178	0.178
LOW	0.040	0.190	0.040	3.375	0.375	0.015	0.060	0.180	2.97	0.120	0.000	0.000	0.090	0.300	0.220	0.220	0.220
HIGH	0.430	0.750	0.090	9.300	0.720	0.060	0.440	0.270	4.38	0.210	0.000	0.190	0.180	0.750	0.690	0.690	0.690

COD, ATL.			GADUS MORHUA					033008 AREA- NORTH ATLANTIC					SITE- 12			LIVER	
LENGTH WEIGHT	NUM NUM	6 0 MEAN MEAN	0.948 0.000	S. D. S. D.	0.091 0.000	LOW LOW	0.800 0.000	HIGH HIGH	1.040 0.000	COPPER	ZINC	NICKEL	MOLYB	VANADIUM	MANG	ANTIMONY	TIN
	MERCURY	LEAD	CADMIUM	ARSENIC	SELENIUM	SILVER	CHROM		PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM
NUMBER	0006	0006	0006	0006	0005	0006	0006	0006	0006	0006	0006	0006	0006	0006	0006	0006	0000
N DET.	0005	0000	0000	0000	0000	0000	0001	0000	0000	0000	0000	0000	0003	0005	0000	0000	0000
MEAN	0.110	0.488	0.097	7.988	1.234	0.202	0.202	3.770	13.92	0.178	0.167	0.310	0.698	0.312	0.260	0.260	0.260
S. D.	0.000	0.313	0.067	5.882	0.851	0.231	0.242	2.829	5.50	0.082	0.072	0.000	0.478	0.171	0.190	0.190	0.190
LOW	0.000	0.060	0.050	2.300	0.600	0.010	0.060	0.970	6.50	0.090	0.120	0.000	0.210	0.120	0.060	0.060	0.060
HIGH	0.110	1.000	0.230	16.550	2.440	0.510	0.630	9.060	21.88	0.300	0.250	0.310	1.330	0.630	0.560	0.560	0.560

TABLE 5. SUMMARY OF TRACE ELEMENT LEVELS  
IN RESOURCE SURVEY SPECIES;  
BY TISSUE AND LOCATION

LOCATION LEVEL 5

COD, ATL.		GADUS MORHUA							033008 AREA- NORTH ATLANTIC			SITE- I3		MUSCLE	
LENGTH WEIGHT	NUM NUM	2 0	MEAN MEAN	0.920 0.000	S. D. S. D.	0.198 0.000	LOW LOW	0.780 0.000	HIGH HIGH	1.060 0.000	VANADIUM	MANG	ANTIMONY	TIN	
	MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM	PPM	PPM	PPM	
NUMBER	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	
N DET.	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0002	0002	0000	0000	
MEAN	0.333	0.360	0.048	12.369	0.493	0.035	0.158	0.223	4.67	0.240	0.000	0.000	0.090	0.658	
S. D.	0.364	0.156	0.004	11.588	0.110	0.007	0.039	0.138	0.41	0.000	0.000	0.000	0.042	0.131	
LOW	0.075	0.250	0.045	4.175	0.415	0.030	0.130	0.125	4.38	0.240	0.000	0.000	0.060	0.565	
HIGH	0.590	0.670	0.050	20.563	0.570	0.040	0.185	0.320	4.96	0.240	0.000	0.000	0.120	0.750	

COD, ATL.		GADUS MORHUA							033008 AREA- NORTH ATLANTIC			SITE- I3		LIVER	
LENGTH WEIGHT	NUM NUM	2 0	MEAN MEAN	0.920 0.000	S. D. S. D.	0.198 0.000	LOW LOW	0.780 0.000	HIGH HIGH	1.060 0.000	VANADIUM	MANG	ANTIMONY	TIN	
	MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM	PPM	PPM	PPM	
NUMBER	0002	0002	0002	0001	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	
N DET.	0001	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0001	0000	0000	
MEAN	0.210	0.375	0.125	1.960	1.905	0.265	0.285	3.220	19.38	0.190	0.190	0.310	1.175	0.345	
S. D.	0.000	0.346	0.021	0.000	0.375	0.262	0.134	2.079	6.19	0.071	0.042	0.000	1.039	0.403	
LOW	0.000	0.130	0.110	0.000	1.640	0.080	0.190	1.750	15.00	0.140	0.160	0.000	0.440	0.060	
HIGH	0.210	0.620	0.140	1.960	2.170	0.450	0.380	4.690	23.75	0.240	0.220	0.310	1.910	0.630	

COD, ATL.		GADUS MORHUA							033008 AREA- NORTH ATLANTIC			SITE- I7		MUSCLE	
LENGTH WEIGHT	NUM NUM	11 11	MEAN MEAN	0.446 0.839	S. D. S. D.	0.101 0.136	LOW LOW	0.416 0.798	HIGH HIGH	0.750 1.249	VANADIUM	MANG	ANTIMONY	TIN	
	MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM	PPM	PPM	PPM	
NUMBER	0010	0011	0011	0011	0011	0011	0011	0011	0011	0011	0011	0011	0011	0011	
N DET.	0000	0000	0000	0000	0000	0002	0001	0000	0000	0000	0006	0006	0000	0001	
MEAN	0.066	0.557	0.076	6.545	0.395	0.031	0.216	0.247	3.82	0.194	0.176	0.393	0.144	0.610	
S. D.	0.033	0.523	0.047	2.297	0.198	0.007	0.139	0.090	1.30	0.056	0.073	0.215	0.040	0.206	
LOW	0.020	0.130	0.020	4.282	0.150	0.020	0.060	0.060	2.25	0.100	0.060	0.185	0.070	0.310	
HIGH	0.120	1.880	0.170	11.090	0.715	0.040	0.500	0.360	6.56	0.315	0.250	0.630	0.190	0.905	

COD, ATL.		GADUS MORHUA							033008 AREA- NORTH ATLANTIC			SITE- I7		LIVER	
LENGTH WEIGHT	NUM NUM	2 1	MEAN MEAN	0.583 0.798	S. D. S. D.	0.236 0.000	LOW LOW	0.416 0.798	HIGH HIGH	0.750 0.798	VANADIUM	MANG	ANTIMONY	TIN	
	MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM	PPM	PPM	PPM	
NUMBER	0002	0002	0002	0002	0002	0002	0002	0001	0002	0002	0002	0002	0002	0002	
N DET.	0002	0000	0000	0000	0000	0000	0001	0000	0000	0000	0000	0002	0000	0000	
MEAN	0.000	0.375	0.285	5.494	1.000	0.210	0.500	4.310	19.07	0.225	0.345	0.000	0.690	0.410	
S. D.	0.000	0.177	0.177	1.636	0.325	0.085	0.000	0.000	5.75	0.007	0.049	0.000	0.141	0.042	
LOW	0.000	0.250	0.160	4.337	0.770	0.150	0.000	0.000	15.00	0.220	0.310	0.000	0.590	0.380	
HIGH	0.000	0.500	0.410	6.650	1.230	0.270	0.500	4.310	23.13	0.230	0.380	0.000	0.790	0.440	

COD, ATL.		GADUS MORHUA							033008 AREA- NORTH ATLANTIC			SITE- I9		MUSCLE	
LENGTH WEIGHT	NUM NUM	1 0	MEAN MEAN	0.770 0.000	S. D. S. D.	0.000 0.000	LOW LOW	0.770 0.000	HIGH HIGH	0.770 0.000	VANADIUM	MANG	ANTIMONY	TIN	
	MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM	PPM	PPM	PPM	
NUMBER	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	
N DET.	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0001	0001	0000	0000	
MEAN	0.190	0.310	0.040	4.850	0.140	0.025	0.535	0.310	3.97	0.355	0.000	0.000	0.100	0.655	
S. D.	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.000	0.000	0.000	0.000	0.425	
LOW	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.000	0.000	0.000	0.000	0.000	
HIGH	0.190	0.310	0.040	4.850	0.140	0.025	0.535	0.310	3.97	0.355	0.000	0.000	0.100	0.655	

COD, ATL.		GADUS MORHUA							033008 AREA- NORTH ATLANTIC			SITE- I9		LIVER	
LENGTH WEIGHT	NUM NUM	1 0	MEAN MEAN	0.605 0.000	S. D. S. D.	0.000 0.000	LOW LOW	0.605 0.000	HIGH HIGH	0.605 0.000	VANADIUM	MANG	ANTIMONY	TIN	
	MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM	PPM	PPM	PPM	
NUMBER	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	
N DET.	0001	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0001	0000	0000	
MEAN	0.000	0.500	0.640	5.750	0.980	0.050	0.060	5.000	16.25	0.120	0.210	0.000	0.540	0.250	
S. D.	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.000	0.000	0.000	0.000	0.000	
LOW	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.000	0.000	0.000	0.000	0.000	
HIGH	0.000	0.500	0.640	5.750	0.980	0.050	0.060	5.000	16.25	0.120	0.210	0.000	0.540	0.250	

COD, ATL.		GADUS MORHUA							033008 AREA- NORTH ATLANTIC			SITE- J4		LIVER	
LENGTH WEIGHT	NUM NUM	1 1	MEAN MEAN	0.910 9.072	S. D. S. D.	0.000 0.000	LOW LOW	0.910 9.072	HIGH HIGH	0.910 0.072	VANADIUM	MANG	ANTIMONY	TIN	
	MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM	PPM	PPM	PPM	
NUMBER	0001	0001	0001	0000	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	
N DET.	0001	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0001	0000	0000	
MEAN	0.000	0.430	0.140	0.000	0.950	0.360	0.080	6.430	15.36	0.820	0.150	0.000	0.530	0.280	
S. D.	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.000	0.000	0.000	0.000	0.000	
LOW	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.000	0.000	0.000	0.000	0.000	
HIGH	0.000	0.430	0.140	0.000	0.950	0.360	0.080	6.430	15.36	0.820	0.150	0.000	0.530	0.280	

TABLE 5. SUMMARY OF TRACE ELEMENT LEVELS  
IN RESOURCE SURVEY SPECIES:  
BY TISSUE AND LOCATION

REPORT

LOCATION LEVEL 5

COD, ATL.		GADUS MORHUA							033008 AREA- NORTH ATLANTIC			SITE- J5			MUSCLE	
LENGTH WEIGHT	NUM NUM	1 MEAN	0.543	S. D.	0.000	LOW	0.543	HIGH	0.543	0.000	0.543	VANADIUM	MANG	ANTIMONY	TIN	
	MERCURY	LEAD	CADMIUM	ARSENIC	SELENIUM	SILVER	CHROM	COPPER	ZINC	NICKEL	MOLYB	PPM	PPM	PPM	PPM	
NUMBER	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	
N DET.	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	
MEAN	0.113	1.038	0.185	7.166	0.363	0.040	0.262	0.120	4.05	0.315	0.000	0.000	0.106	0.325	0.920	
S. D.	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
LOW	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
HIGH	0.113	1.038	0.185	7.166	0.363	0.040	0.262	0.120	4.05	0.315	0.000	0.000	0.106	0.325	0.920	

COD, ATL.		GADUS MORHUA							033008 AREA- NORTH ATLANTIC			SITE- J5			LIVER	
LENGTH WEIGHT	NUM NUM	1 MEAN	0.543	S. D.	0.000	LOW	0.543	HIGH	0.543	0.000	0.543	VANADIUM	MANG	ANTIMONY	TIN	
	MERCURY	LEAD	CADMIUM	ARSENIC	SELENIUM	SILVER	CHROM	COPPER	ZINC	NICKEL	MOLYB	PPM	PPM	PPM	PPM	
NUMBER	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	
N DET.	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	
MEAN	0.080	0.360	0.370	5.760	1.050	0.810	0.115	10.000	31.87	0.810	0.270	0.000	1.190	0.300	0.000	
S. D.	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
LOW	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
HIGH	0.080	0.360	0.370	5.760	1.050	0.810	0.115	10.000	31.87	0.810	0.270	0.000	1.190	0.300	0.000	

COD, ATL.		GADUS MORHUA							033008 AREA- NORTH ATLANTIC			SITE- J6			MUSCLE	
LENGTH WEIGHT	NUM NUM	14 MEAN	0.641	S. D.	0.122	LOW	0.520	HIGH	0.920	0.920	VANADIUM	MANG	ANTIMONY	TIN		
	MERCURY	LEAD	CADMIUM	ARSENIC	SELENIUM	SILVER	CHROM	COPPER	ZINC	NICKEL	MOLYB	PPM	PPM	PPM	PPM	
NUMBER	0014	0014	0014	0014	0013	0014	0014	0014	0014	0014	0014	0014	0014	0014	0014	
N DET.	0000	0000	0002	0000	0000	0003	0001	0000	0000	0001	0014	0012	0000	0000	0000	
MEAN	0.105	0.452	0.052	4.755	0.444	0.030	0.198	0.325	3.42	0.222	0.000	0.295	0.134	0.657	0.456	
S. D.	0.056	0.235	0.020	2.192	0.081	0.011	0.212	0.259	0.26	0.372	0.000	0.064	0.042	0.234	0.175	
LOW	0.020	0.180	0.030	0.750	0.325	0.010	0.060	0.130	3.06	0.120	0.000	0.250	0.040	0.120	0.100	
HIGH	0.230	1.050	0.100	8.650	0.575	0.050	0.756	1.110	3.78	0.390	0.300	0.340	0.215	1.200	0.620	

COD, ATL.		GADUS MORHUA							033008 AREA- NORTH ATLANTIC			SITE- J6			LIVER	
LENGTH WEIGHT	NUM NUM	3 MEAN	0.801	S. D.	0.143	LOW	0.643	HIGH	0.920	0.920	VANADIUM	MANG	ANTIMONY	TIN		
	MERCURY	LEAD	CADMIUM	ARSENIC	SELENIUM	SILVER	CHROM	COPPER	ZINC	NICKEL	MOLYB	PPM	PPM	PPM	PPM	
NUMBER	0003	0003	0003	0002	0002	0003	0003	0003	0003	0003	0003	0003	0003	0003	0002	
N DET.	0002	0000	0000	0000	0000	0000	0001	0000	0000	0000	0001	0002	0000	0000	0001	
MEAN	0.040	0.404	0.623	4.098	0.845	0.113	0.155	6.972	16.20	0.157	0.395	0.190	0.648	0.542	0.250	
S. D.	0.000	0.137	0.715	1.128	0.346	0.121	0.148	4.725	8.14	0.127	0.318	0.000	0.302	0.477	0.000	
LOW	0.000	0.253	0.110	3.300	0.600	0.020	0.050	3.260	8.62	0.010	0.170	0.000	0.340	0.090	0.000	
HIGH	0.040	0.520	1.440	4.895	1.090	0.250	0.260	12.290	24.80	0.240	0.620	0.190	0.935	1.040	0.250	

COD, ATL.		GADUS MORHUA							033008 AREA- NORTH ATLANTIC			SITE- J7			MUSCLE	
LENGTH WEIGHT	NUM NUM	15 MEAN	0.430	S. D.	0.042	LOW	0.324	HIGH	0.480	0.480	VANADIUM	MANG	ANTIMONY	TIN		
	MERCURY	LEAD	CADMIUM	ARSENIC	SELENIUM	SILVER	CHROM	COPPER	ZINC	NICKEL	MOLYB	PPM	PPM	PPM	PPM	
NUMBER	0015	0014	0014	0015	0015	0015	0014	0014	0014	0015	0015	0015	0015	0015	0015	
N DET.	0006	0000	0000	0000	0000	0001	0000	0000	0000	0000	0014	0014	0000	0002	0000	
MEAN	0.121	0.336	0.078	3.979	0.316	0.033	0.142	0.258	3.77	0.239	0.190	0.380	0.210	0.743	0.519	
S. D.	0.104	0.146	0.042	1.822	0.080	0.010	0.055	0.127	0.55	0.085	0.000	0.000	0.197	0.227	0.197	
LOW	0.020	0.080	0.030	0.900	0.150	0.020	0.060	0.080	2.81	0.100	0.000	0.000	0.060	0.470	0.300	
HIGH	0.300	0.595	0.210	7.066	0.470	0.050	0.285	0.510	4.59	0.380	0.190	0.380	0.700	1.190	1.130	

COD, ATL.		GADUS MORHUA							033008 AREA- NORTH ATLANTIC			SITE- J7			LIVER	
LENGTH WEIGHT	NUM NUM	1 MEAN	1.050	S. D.	0.000	LOW	1.050	HIGH	1.050	1.050	VANADIUM	MANG	ANTIMONY	TIN		
	MERCURY	LEAD	CADMIUM	ARSENIC	SELENIUM	SILVER	CHROM	COPPER	ZINC	NICKEL	MOLYB	PPM	PPM	PPM	PPM	
NUMBER	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	
N DET.	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	
MEAN	0.040	0.500	0.425	1.926	0.900	0.020	0.120	0.865	17.06	0.155	0.495	0.120	0.585	0.720	0.540	
S. D.	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
LOW	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
HIGH	0.040	0.500	0.425	1.926	0.900	0.020	0.120	0.865	17.06	0.155	0.495	0.120	0.585	0.720	0.540	

COD, ATL.		GADUS MORHUA							033008 AREA- NORTH ATLANTIC			SITE- J8			MUSCLE	
LENGTH WEIGHT	NUM NUM	18 MEAN	0.632	S. D.	0.148	LOW	0.404	HIGH	1.040	1.040	VANADIUM	MANG	ANTIMONY	TIN		
	MERCURY	LEAD	CADMIUM	ARSENIC	SELENIUM	SILVER	CHROM	COPPER	ZINC	NICKEL	MOLYB	PPM	PPM	PPM	PPM	
NUMBER	0018	0018	0018	0017	0017	0018	0018	0017	0018	0018	0018	0018	0017	0018	0018	
N DET.	0001	0001	0001	0000	0000	0003	0000	0000	0000	0001	0012	0014	0000	0001	0000	
MEAN	0.098	0.373	0.057	5.185	0.315	0.051	0.134	0.198	3.93	0.231	0.358	0.108	0.132	0.722	0.570	
S. D.	0.048	0.137	0.025	3.688	0.130	0.043	0.084	0.074	1.46	0.129	0.348	0.032	0.052	0.219	0.160	
LOW	0.020	0.190	0.025	1.725	0.130	0.020	0.030	0.030	1.06	0.040	0.060	0.060	0.060	0.380	0.310	
HIGH	0.210	0.685	0.120	17.183	0.560	0.180	0.325	0.310	7.50	0.460	0.870	0.130	0.240	1.080	0.950	



TABLE 5. SUMMARY OF TRACE ELEMENT LEVELS  
IN RESOURCE SURVEY SPECIES  
BY TISSUE AND LOCATION

REPORT

LOCATION LEVEL 5

Table for Gadus morhua muscle, Site 09, Area-North Atlantic. Includes columns for Length Weight, Mercury, Lead, Cadmium, Arsenic, Selenium, Silver, Chrom, Copper, Zinc, Nickel, Manganese, Vanadium, Antimony, and Tin. Data points for Mean, S.D., Low, and High are provided for various elements.

Table for Gadus morhua liver, Site 09, Area-North Atlantic. Similar structure to the muscle table, but for liver tissue.

Table for Gadus morhua liver, Site P1, Area-North Atlantic. Similar structure to the muscle table, but for liver tissue at Site P1.

Table for Melanogrammus aeglefinus muscle, Site 09, Area-North Atlantic. Includes columns for Length Weight, Mercury, Lead, Cadmium, Arsenic, Selenium, Silver, Chrom, Copper, Zinc, Nickel, Manganese, Vanadium, Antimony, and Tin.

Table for Melanogrammus aeglefinus muscle, Site 10, Area-North Atlantic. Similar structure to the muscle table, but for Site 10.

Table for Melanogrammus aeglefinus liver, Site 10, Area-North Atlantic. Similar structure to the muscle table, but for liver tissue at Site 10.

Table for Melanogrammus aeglefinus whole, Site J5, Area-North Atlantic. Similar structure to the muscle table, but for whole fish at Site J5.



TABLE 5. SUMMARY OF TRACE ELEMENT LEVELS  
IN RESOURCE SURVEY SPECIES;  
BY TISSUE AND LOCATION

REPORT

LOCATION LEVEL 5

HADDOCK				MELANOGRAMMUS-AEGLEFINUS				033011 AREA- NORTH ATLANTIC			SITE- J9			LIVER	
LENGTH WEIGHT	NUM NUM	2 MEAN	MEAN	0.470	S. D.	0.349	LOW	0.223	HIGH	0.717					
	MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM
NUMBER	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002
N DET.	0002	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0001	0000	0000	0000
MEAN	0.000	0.595	0.370	18.025	1.700	0.040	0.090	4.840	14.10	0.405	0.235	0.340	0.875	0.785	0.84
S. D.	0.000	0.304	0.071	3.712	0.141	0.014	0.085	2.164	0.05	0.049	0.106	0.000	0.177	0.219	0.000
LOW	0.000	0.380	0.320	15.400	1.600	0.030	0.030	3.310	14.06	0.370	0.160	0.000	0.750	0.630	0.000
HIGH	0.000	0.810	0.420	20.650	1.800	0.050	0.150	6.370	14.13	0.440	0.310	0.340	1.000	0.940	0.840

HADDOCK				MELANOGRAMMUS AEGLEFINUS				033011 AREA- NORTH ATLANTIC			SITE- K3			MUSCLE	
LENGTH WEIGHT	NUM NUM	2 MEAN	MEAN	0.450	S. D.	0.045	LOW	0.418	HIGH	0.482					
	MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM
NUMBER	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002
N DET.	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0002	0001	0000	0000	0000
MEAN	0.038	0.288	0.075	2.940	0.623	0.035	0.123	0.360	4.83	0.270	0.000	0.190	0.185	1.105	0.466
S. D.	0.018	0.032	0.007	2.744	0.145	0.007	0.088	0.113	2.50	0.014	0.000	0.000	0.064	0.318	0.230
LOW	0.025	0.265	0.070	1.000	0.520	0.030	0.060	0.280	3.06	0.260	0.000	0.000	0.140	0.880	0.305
HIGH	0.050	0.310	0.080	4.880	0.725	0.040	0.185	0.440	6.60	0.280	0.000	0.190	0.230	1.330	0.630

HADDOCK				MELANOGRAMMUS AEGLEFINUS				033011 AREA- NORTH ATLANTIC			SITE- K4			MUSCLE	
LENGTH WEIGHT	NUM NUM	5 MEAN	MEAN	0.298	S. D.	0.081	LOW	0.242	HIGH	0.440					
	MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM
NUMBER	0005	0005	0005	0005	0005	0005	0005	0005	0005	0005	0005	0005	0005	0005	0005
N DET.	0001	0000	0000	0000	0000	0000	0000	0000	0000	0000	0005	0003	0000	0000	0000
MEAN	0.065	0.425	0.058	5.736	0.738	0.032	0.091	0.281	3.83	0.269	0.000	0.160	0.261	0.486	0.489
S. D.	0.051	0.100	0.022	1.786	0.225	0.011	0.051	0.068	0.50	0.084	0.000	0.042	0.061	0.260	0.191
LOW	0.020	0.310	0.030	3.850	0.430	0.020	0.045	0.190	3.16	0.155	0.000	0.130	0.180	0.130	0.340
HIGH	0.130	0.560	0.090	7.700	1.050	0.040	0.160	0.360	4.30	0.380	0.000	0.190	0.340	0.860	0.810

HADDOCK				MELANOGRAMMUS AEGLEFINUS				033011 AREA- NORTH ATLANTIC			SITE- K7			MUSCLE	
LENGTH WEIGHT	NUM NUM	1 MEAN	MEAN	0.610	S. D.	0.000	LOW	0.610	HIGH	0.610					
	MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM
NUMBER	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001
N DET.	0000	0000	0001	0000	0000	0001	0000	0000	0000	0000	0001	0000	0000	0000	0000
MEAN	0.210	0.176	0.000	33.750	0.475	0.000	0.136	0.500	3.82	1.155	0.000	0.200	0.320	0.910	0.460
S. D.	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.000	0.000	0.000	0.000	0.000	0.000
LOW	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.000	0.000	0.000	0.000	0.000	0.000
HIGH	0.210	0.176	0.000	33.750	0.475	0.000	0.136	0.500	3.82	1.155	0.000	0.200	0.320	0.910	0.460

HADDOCK				MELANOGRAMMUS AEGLEFINUS				033011 AREA- NORTH ATLANTIC			SITE- K7			LIVER	
LENGTH WEIGHT	NUM NUM	1 MEAN	MEAN	0.445	S. D.	0.000	LOW	0.445	HIGH	0.445					
	MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM
NUMBER	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001
N DET.	0001	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0001	0000
MEAN	0.000	0.166	0.210	25.666	2.240	0.125	0.240	4.730	18.15	0.410	0.345	2.065	0.835	0.000	0.240
S. D.	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.000	0.000	0.000	0.000	0.000	0.000
LOW	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.000	0.000	0.000	0.000	0.000	0.000
HIGH	0.000	0.166	0.210	25.666	2.240	0.125	0.240	4.730	18.15	0.410	0.345	2.065	0.835	0.000	0.240

HADDOCK				MELANOGRAMMUS AEGLEFINUS				033011 AREA- NORTH ATLANTIC			SITE- O3			MUSCLE	
LENGTH WEIGHT	NUM NUM	9 MEAN	MEAN	0.621	S. D.	0.139	LOW	0.440	HIGH	0.780					
	MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM
NUMBER	0009	0009	0009	0009	0009	0009	0009	0009	0009	0009	0009	0009	0009	0009	0009
N DET.	0001	0000	0000	0000	0000	0000	0000	0000	0000	0000	0006	0006	0000	0000	0000
MEAN	0.105	0.316	0.051	6.210	0.516	0.035	0.251	0.256	3.46	0.236	0.123	0.273	0.187	0.601	0.600
S. D.	0.056	0.083	0.008	1.951	0.267	0.014	0.230	0.107	0.81	0.086	0.085	0.311	0.086	0.185	0.177
LOW	0.020	0.190	0.040	3.745	0.250	0.020	0.060	0.180	2.31	0.145	0.060	0.060	0.090	0.310	0.345
HIGH	0.185	0.470	0.065	9.500	0.980	0.060	0.750	0.530	5.09	0.440	0.220	0.630	0.370	0.880	0.970

HADDOCK				MELANOGRAMMUS AEGLEFINUS				033011 AREA- NORTH ATLANTIC			SITE- O3			LIVER	
LENGTH WEIGHT	NUM NUM	2 MEAN	MEAN	0.743	S. D.	0.032	LOW	0.720	HIGH	0.765					
	MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM
NUMBER	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002
N DET.	0001	0000	0000	0000	0000	0001	0000	0000	0000	0000	0001	0000	0000	0000	0000
MEAN	0.030	0.578	0.160	28.504	2.365	0.160	0.060	3.528	13.79	0.370	0.250	0.875	0.928	0.470	0.370
S. D.	0.000	0.194	0.099	22.374	1.407	0.000	0.000	0.576	5.36	0.184	0.000	0.969	0.187	0.396	0.000
LOW	0.000	0.440	0.090	12.683	1.370	0.000	0.060	3.120	10.00	0.240	0.000	0.190	0.795	0.190	0.000
HIGH	0.030	0.715	0.230	44.325	3.360	0.160	0.060	3.935	17.58	0.500	0.250	1.560	1.060	0.750	0.370



TABLE 5. SUMMARY OF TRACE ELEMENT LEVELS  
IN RESOURCE SURVEY SPECIES  
BY TISSUE AND LOCATION

REPORT NO.

LOCATION LEVEL 5

HAKE, SILVER (WHITING)				MERLUCCIVUS BILINEARIS				033012 AREA- NORTH ATLANTIC			SITE- 05			LIVER	
LENGTH WEIGHT	NUM NUM	1 MEAN	MEAN	0.430	S. D.	0.000	LOW	0.430	HIGH	0.430	0.190	VANADIUM	MANG	ANTIMONY	TIN
	MERCURY	LEAD	CADMIUM	ARSENIC	SELENIUM	SILVER	CHROM	COPPER	ZINC	NICKEL	MOLYB	PPM	PPM	PPM	PPM
NUMBER	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001
N DET.	0001	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0001	0001	0001	0001
MEAN	0.000	1.060	0.140	5.450	1.100	0.030	0.060	4.380	43.13	0.190	0.190	0.000	1.120	0.310	0.310
S. D.	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
LOW	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
HIGH	0.000	1.060	0.140	5.450	1.100	0.030	0.060	4.380	43.13	0.190	0.190	0.000	1.120	0.310	0.310

HAKE, SILVER (WHITING)				MERLUCCIVUS BILINEARIS				033012 AREA- NORTH ATLANTIC			SITE- 01			MUSCLE	
LENGTH WEIGHT	NUM NUM	4 MEAN	MEAN	0.295	S. D.	0.086	LOW	0.228	HIGH	0.412	0.640	VANADIUM	MANG	ANTIMONY	TIN
	MERCURY	LEAD	CADMIUM	ARSENIC	SELENIUM	SILVER	CHROM	COPPER	ZINC	NICKEL	MOLYB	PPM	PPM	PPM	PPM
NUMBER	0003	0004	0004	0004	0004	0004	0004	0004	0004	0004	0004	0004	0004	0004	0004
N DET.	0000	0000	0001	0000	0000	0001	0000	0000	0000	0000	0001	0003	0004	0004	0004
MEAN	0.052	0.444	0.047	4.461	0.665	0.040	0.178	0.404	4.01	0.254	0.123	0.620	0.323	0.944	0.699
S. D.	0.020	0.105	0.015	1.566	0.488	0.005	0.062	0.144	0.69	0.046	0.118	0.000	0.131	0.111	0.130
LOW	0.040	0.330	0.030	3.020	0.260	0.035	0.095	0.240	3.25	0.200	0.050	0.000	0.200	0.030	0.300
HIGH	0.075	0.535	0.060	6.500	1.340	0.045	0.250	0.595	4.83	0.305	0.260	0.620	0.490	1.095	0.680

HAKE, SILVER (WHITING)				MERLUCCIVUS BILINEARIS				033012 AREA- NORTH ATLANTIC			SITE- 02			MUSCLE	
LENGTH WEIGHT	NUM NUM	10 MEAN	MEAN	0.350	S. D.	0.043	LOW	0.309	HIGH	0.442	0.662	VANADIUM	MANG	ANTIMONY	TIN
	MERCURY	LEAD	CADMIUM	ARSENIC	SELENIUM	SILVER	CHROM	COPPER	ZINC	NICKEL	MOLYB	PPM	PPM	PPM	PPM
NUMBER	0010	0010	0010	0010	0010	0010	0010	0010	0010	0010	0010	0010	0010	0010	0010
N DET.	0002	0000	0000	0000	0001	0002	0000	0000	0000	0001	0007	0007	0001	0001	0001
MEAN	0.065	0.350	0.052	5.272	0.495	0.031	0.137	0.290	2.67	0.178	0.186	0.127	0.159	0.565	0.510
S. D.	0.073	0.146	0.018	1.795	0.195	0.019	0.092	0.152	1.14	0.036	0.003	0.065	0.061	0.230	0.172
LOW	0.020	0.060	0.010	3.300	0.270	0.010	0.040	0.040	0.06	0.130	0.185	0.060	0.085	0.040	0.240
HIGH	0.240	0.560	0.075	8.533	0.850	0.065	0.295	0.555	4.62	0.250	0.190	0.190	0.255	0.810	0.790

HAKE, SILVER (WHITING)				MERLUCCIVUS BILINEARIS				033012 AREA- NORTH ATLANTIC			SITE- 03			MUSCLE	
LENGTH WEIGHT	NUM NUM	10 MEAN	MEAN	0.267	S. D.	0.018	LOW	0.250	HIGH	0.312	0.217	VANADIUM	MANG	ANTIMONY	TIN
	MERCURY	LEAD	CADMIUM	ARSENIC	SELENIUM	SILVER	CHROM	COPPER	ZINC	NICKEL	MOLYB	PPM	PPM	PPM	PPM
NUMBER	0010	0010	0010	0010	0010	0010	0010	0010	0010	0010	0010	0010	0010	0010	0010
N DET.	0000	0000	0000	0000	0000	0002	0000	0000	0000	0000	0004	0007	0000	0000	0000
MEAN	0.046	0.440	0.116	6.885	0.497	0.043	0.130	0.322	3.83	0.220	0.170	0.290	0.197	0.694	0.676
S. D.	0.030	0.194	0.012	1.744	0.181	0.019	0.041	0.131	0.97	0.071	0.129	0.180	0.046	0.271	0.180
LOW	0.020	0.130	0.035	3.750	0.195	0.025	0.070	0.130	1.88	0.090	0.060	0.090	0.090	0.280	0.190
HIGH	0.115	0.750	0.630	9.545	0.720	0.085	0.220	0.530	5.69	0.320	0.310	0.440	0.255	1.285	0.815

HAKE, SILVER (WHITING)				MERLUCCIVUS BILINEARIS				033012 AREA- NORTH ATLANTIC			SITE- 04			MUSCLE	
LENGTH WEIGHT	NUM NUM	1 MEAN	MEAN	0.370	S. D.	0.000	LOW	0.370	HIGH	0.370	0.300	VANADIUM	MANG	ANTIMONY	TIN
	MERCURY	LEAD	CADMIUM	ARSENIC	SELENIUM	SILVER	CHROM	COPPER	ZINC	NICKEL	MOLYB	PPM	PPM	PPM	PPM
NUMBER	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001
N DET.	0000	0000	0000	0000	0000	0001	0000	0000	0000	0000	0000	0000	0000	0000	0000
MEAN	0.130	1.125	0.055	6.150	0.806	0.000	0.590	0.250	3.79	0.215	0.120	0.300	0.175	0.815	0.790
S. D.	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.000	0.000	0.000	0.000	0.000	0.000
LOW	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.300	0.000	0.000	0.000	0.000	0.000
HIGH	0.130	1.125	0.055	6.150	0.806	0.000	0.590	0.250	3.79	0.215	0.120	0.300	0.175	0.815	0.790

HAKE, SILVER (WHITING)				MERLUCCIVUS BILINEARIS				033012 AREA- NORTH ATLANTIC			SITE- 01			MUSCLE	
LENGTH WEIGHT	NUM NUM	11 MEAN	MEAN	0.277	S. D.	0.011	LOW	0.256	HIGH	0.290	0.144	VANADIUM	MANG	ANTIMONY	TIN
	MERCURY	LEAD	CADMIUM	ARSENIC	SELENIUM	SILVER	CHROM	COPPER	ZINC	NICKEL	MOLYB	PPM	PPM	PPM	PPM
NUMBER	0011	0011	0011	0011	0011	0011	0011	0011	0011	0011	0011	0011	0011	0011	0011
N DET.	0007	0000	0000	0000	0000	0000	0000	0000	0000	0000	0009	0007	0000	0000	0000
MEAN	0.025	0.436	0.056	6.185	0.534	0.038	0.199	0.298	3.84	0.224	0.175	0.220	0.173	0.649	0.530
S. D.	0.010	0.115	0.022	1.659	0.137	0.013	0.155	0.085	0.66	0.079	0.021	0.159	0.048	0.172	0.150
LOW	0.020	0.310	0.020	3.250	0.350	0.020	0.060	0.110	2.94	0.110	0.160	0.060	0.090	0.380	0.330
HIGH	0.040	0.690	0.110	9.075	0.770	0.060	0.620	0.430	5.05	0.400	0.190	0.440	0.245	0.845	0.750

HAKE, PAC.				MERLUCCIVUS PRODUCTUS				033013 AREA- CALIFORNIA			SITE- 04			MUSCLE	
LENGTH WEIGHT	NUM NUM	6 MEAN	MEAN	0.547	S. D.	0.045	LOW	0.490	HIGH	0.590	1.000	VANADIUM	MANG	ANTIMONY	TIN
	MERCURY	LEAD	CADMIUM	ARSENIC	SELENIUM	SILVER	CHROM	COPPER	ZINC	NICKEL	MOLYB	PPM	PPM	PPM	PPM
NUMBER	0006	0006	0006	0006	0006	0006	0006	0006	0005	0006	0006	0006	0006	0006	0006
N DET.	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0005	0004	0006	0000	0000
MEAN	0.121	0.632	0.063	1.758	0.491	0.033	0.191	0.373	3.69	0.170	0.340	0.343	0.224	0.690	0.700
S. D.	0.045	0.127	0.020	0.657	0.044	0.009	0.081	0.081	0.50	0.039	0.000	0.046	0.093	0.159	0.150
LOW	0.060	0.440	0.040	0.850	0.403	0.020	0.080	0.245	3.13	0.140	0.000	0.310	0.110	0.440	0.500
HIGH	0.170	0.785	0.090	2.616	0.525	0.045	0.310	0.460	4.37	0.240	0.340	0.375	0.360	0.880	0.900

TABLE 5. SUMMARY OF TRACE ELEMENT LEVELS  
IN RESOURCE SURVEY SPECIES:  
BY TISSUE AND LOCATION

LOCATION LEVEL 5

NAME, PAC.		MERLUCCIOUS PRODUCTUS							033013 AREA- CALIFORNIA			SITE- P4 LIVER				
LENGTH WEIGHT	NUM NUM MERCURY PPH	1 MEAN		0.547	S. D.	0.000	LOW	0.547	HIGH	0.547	MOLYB PPH	VANADIUM PPH	MANG PPH	ANTIMONY PPH	TIN PPH	
		LEAD PPH	CADMIUM PPH	0.780	S. D.	0.000	LOW	0.780	HIGH	0.780						
NUMBER	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001
N DET.	0001	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000
MEAN	0.000	0.750	0.690	3.950	1.250	0.030	0.060	7.500	25.12	0.150	0.280	0.000	1.180	0.130	0.100	0.100
S. D.	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000
LOW	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000
HIGH	0.000	0.750	0.690	3.950	1.250	0.030	0.060	7.500	25.12	0.150	0.280	0.000	1.180	0.130	0.100	0.100

NAME, PAC.		MERLUCCIOUS PRODUCTUS							033013 AREA- PACIFIC NORTHWEST			SITE- G9 MUSCLE				
LENGTH WEIGHT	NUM NUM MERCURY PPH	8 MEAN		0.553	S. D.	0.040	LOW	0.505	HIGH	0.600	MOLYB PPH	VANADIUM PPH	MANG PPH	ANTIMONY PPH	TIN PPH	
		LEAD PPH	CADMIUM PPH	0.000	S. D.	0.000	LOW	0.000	HIGH	0.000						
NUMBER	0008	0008	0008	0008	0008	0008	0008	0008	0008	0008	0008	0008	0008	0008	0008	0008
N DET.	0000	0001	0002	0000	0000	0005	0002	0000	0000	0001	0008	0008	0001	0000	0000	0000
MEAN	0.142	0.471	0.061	3.742	0.485	0.043	0.200	0.289	4.74	0.195	0.000	0.000	0.121	0.660	0.436	0.436
S. D.	0.031	0.165	0.033	1.715	0.138	0.012	0.090	0.073	1.76	0.113	0.000	0.000	0.026	0.160	0.098	0.098
LOW	0.050	0.270	0.030	1.985	0.303	0.030	0.095	0.210	2.86	0.040	0.000	0.000	0.070	0.480	0.100	0.100
HIGH	0.230	0.710	0.110	6.750	0.680	0.050	0.340	0.390	8.03	0.400	0.000	0.000	0.140	0.785	0.600	0.600

NAME, PAC.		MERLUCCIOUS PRODUCTUS							033013 AREA- PACIFIC NORTHWEST			SITE- M7 MUSCLE				
LENGTH WEIGHT	NUM NUM MERCURY PPH	2 MEAN		0.600	S. D.	0.000	LOW	0.600	HIGH	0.600	MOLYB PPH	VANADIUM PPH	MANG PPH	ANTIMONY PPH	TIN PPH	
		LEAD PPH	CADMIUM PPH	0.000	S. D.	0.000	LOW	0.000	HIGH	0.000						
NUMBER	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002
N DET.	0000	0000	0001	0000	0000	0001	0000	0000	0000	0001	0002	0002	0000	0000	0000	0000
MEAN	0.140	0.240	0.040	1.641	0.370	0.020	0.138	0.240	3.24	0.230	0.000	0.000	0.130	0.968	0.290	0.290
S. D.	0.028	0.014	0.000	0.536	0.240	0.000	0.053	0.212	1.45	0.000	0.000	0.000	0.014	1.149	0.000	0.000
LOW	0.120	0.230	0.000	1.262	0.200	0.000	0.100	0.090	2.21	0.000	0.000	0.000	0.120	0.155	0.000	0.000
HIGH	0.160	0.250	0.040	2.020	0.540	0.020	0.175	0.390	4.26	0.230	0.000	0.000	0.140	1.780	0.290	0.290

NAME, PAC.		MERLUCCIOUS PRODUCTUS							033013 AREA- PACIFIC NORTHWEST			SITE- 17 MUSCLE				
LENGTH WEIGHT	NUM NUM MERCURY PPH	9 MEAN		0.408	S. D.	0.060	LOW	0.350	HIGH	0.550	MOLYB PPH	VANADIUM PPH	MANG PPH	ANTIMONY PPH	TIN PPH	
		LEAD PPH	CADMIUM PPH	0.357	S. D.	0.045	LOW	0.272	HIGH	0.408						
NUMBER	0009	0009	0009	0008	0008	0009	0009	0009	0009	0009	0009	0009	0009	0009	0009	0009
N DET.	0001	0000	0003	0000	0000	0004	0002	0000	0000	0002	0006	0005	0000	0000	0000	0000
MEAN	0.059	0.418	0.056	1.695	0.421	0.035	0.274	0.234	3.15	0.168	0.417	0.060	0.242	0.693	0.569	0.569
S. D.	0.040	0.173	0.021	0.786	0.472	0.005	0.177	0.060	0.67	0.056	0.432	0.062	0.108	0.226	0.166	0.166
LOW	0.020	0.200	0.030	0.540	0.175	0.030	0.100	0.180	2.50	0.100	0.000	0.000	0.120	0.109	0.400	0.400
HIGH	0.140	0.750	0.075	3.040	1.580	0.040	0.630	0.160	4.64	0.250	0.870	1.380	0.440	0.940	0.870	0.870

NAME, PAC.		MERLUCCIOUS PRODUCTUS							033013 AREA- PACIFIC NORTHWEST			SITE- M2 MUSCLE				
LENGTH WEIGHT	NUM NUM MERCURY PPH	10 MEAN		0.580	S. D.	0.000	LOW	0.580	HIGH	0.580	MOLYB PPH	VANADIUM PPH	MANG PPH	ANTIMONY PPH	TIN PPH	
		LEAD PPH	CADMIUM PPH	0.000	S. D.	0.000	LOW	0.000	HIGH	0.000						
NUMBER	0010	0010	0010	0010	0010	0010	0010	0010	0010	0010	0010	0010	0010	0010	0010	0010
N DET.	0000	0000	0003	0000	0000	0004	0001	0000	0000	0002	0007	0008	0000	0000	0000	0000
MEAN	0.090	0.595	0.110	2.473	0.417	0.048	0.174	0.350	4.46	0.422	0.235	0.380	0.353	0.600	0.642	0.642
S. D.	0.030	0.284	0.056	0.857	0.145	0.022	0.125	0.100	2.12	0.170	0.163	0.000	0.172	0.221	0.116	0.116
LOW	0.050	0.255	0.055	0.960	0.160	0.020	0.040	0.250	2.79	0.185	0.120	0.000	0.110	0.265	0.110	0.110
HIGH	0.130	1.165	0.180	3.710	0.650	0.075	0.405	0.535	8.93	0.715	0.350	0.380	0.640	0.950	1.165	1.165

NAME, PAC.		MERLUCCIOUS PRODUCTUS							033013 AREA- PACIFIC NORTHWEST			SITE- M1 MUSCLE				
LENGTH WEIGHT	NUM NUM MERCURY PPH	4 MEAN		0.482	S. D.	0.078	LOW	0.425	HIGH	0.590	MOLYB PPH	VANADIUM PPH	MANG PPH	ANTIMONY PPH	TIN PPH	
		LEAD PPH	CADMIUM PPH	1.134	S. D.	0.000	LOW	1.134	HIGH	1.134						
NUMBER	0004	0004	0004	0304	0004	0004	0004	0004	0003	0304	0304	0004	0004	0004	0004	0004
N DET.	0000	0000	0001	0000	0000	0001	0000	0000	0000	0002	0002	0002	0000	0000	0000	0000
MEAN	0.170	0.626	0.083	2.853	1.076	0.017	0.154	0.215	1.80	0.218	0.125	0.165	0.221	0.878	0.515	0.515
S. D.	0.023	0.361	0.068	2.507	0.676	0.012	0.091	0.041	0.93	0.112	0.163	0.063	0.046	0.274	0.160	0.160
LOW	0.150	0.335	0.030	0.500	0.210	0.010	0.060	0.166	1.60	0.095	0.110	0.000	0.110	0.195	0.110	0.110
HIGH	0.190	1.120	0.160	6.360	2.400	0.030	0.275	0.260	4.18	0.160	0.260	0.160	0.110	0.960	0.260	0.260

NAME, PAC.		MERLUCCIOUS PRODUCTUS							033013 AREA- PACIFIC NORTHWEST			SITE- M2 MUSCLE				
LENGTH WEIGHT	NUM NUM MERCURY PPH	10 MEAN		0.535	S. D.	0.000	LOW	0.535	HIGH	0.535	MOLYB PPH	VANADIUM PPH	MANG PPH	ANTIMONY PPH	TIN PPH	
		LEAD PPH	CADMIUM PPH	0.000	S. D.	0.000	LOW	0.000	HIGH	0.000						
NUMBER	0010	0010	0010	0009	0009	0010	0010	0010	0010	0010	0010	0009	0010	0010	0010	0010
N DET.	0000	0000	0001	0000	0000	0006	0003	0000	0000	0002	0002	0002	0000	0000	0000	0000
MEAN	0.098	0.529	0.086	1.941	0.544	0.045	0.201	0.250	1.85	0.195	0.300	0.000	0.265	0.791	0.648	0.648
S. D.	0.034	0.379	0.034	0.819	0.208	0.021	0.099	0.093	0.90	0.115	0.200	0.000	0.110	0.316	0.160	0.160
LOW	0.060	0.115	0.040	0.830	0.275	0.020	0.070	0.110	2.39	0.090	0.200	0.000	0.110	0.316	0.160	0.160
HIGH	0.155	1.450	0.140	3.025	0.960	0.070	0.380	0.410	5.17	0.190	0.300	0.000	0.110	0.791	0.648	0.648





TABLE 5. SUMMARY OF TRACE ELEMENT LEVELS  
IN RESOURCE SURVEY SPECIES;  
BY TISSUE AND LOCATION

REPORT #

LOCATION LEVEL 5

POLLOCK		POLLACHIUS VIRENS							033017	AREA- NORTH ATLANTIC			SITE- K7		MUSCLE	
LENGTH WEIGHT	NUM NUM MERCURY PPM	4 MEAN LEAD PPM	MEAN CADIUM PPM	0.588 ARSENIC PPM	S. D. SELENIUM PPM	0.074 SILVER PPM	LOW CHROM PPM	0.480 COPPER PPM	HIGH ZINC PPM	1.134 NICKEL PPM	0.640 MOLYB PPM	2.722 VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM	
NUMBER N DET.	0004 0000	0004 0000	0004 0000	0003 0000	0003 0000	0004 0002	0004 0000	0004 0000	0004 0000	0004 0000	0004 0003	0004 0003	0004 0000	0004 0001	0004 0000	
MEAN	0.109	0.299	0.045	3.664	0.463	0.050	0.127	0.393	3.64	0.411	1.120	0.260	0.113	0.967	0.507	
S. D.	0.033	0.140	0.009	1.992	0.116	0.028	0.083	0.026	1.15	0.184	0.000	0.000	0.025	0.394	0.197	
LOW	0.060	0.145	0.040	1.900	0.340	0.030	0.070	0.375	2.09	0.280	0.000	0.000	0.080	0.630	0.365	
HIGH	0.130	0.485	0.055	5.825	0.570	0.070	0.250	0.430	4.81	0.680	1.120	0.260	0.140	1.400	0.680	

POLLOCK		POLLACHIUS VIRENS							033017	AREA- NORTH ATLANTIC			SITE- K7		LIVER	
LENGTH WEIGHT	NUM NUM MERCURY PPM	2 MEAN LEAD PPM	MEAN CADIUM PPM	0.552 ARSENIC PPM	S. D. SELENIUM PPM	0.101 SILVER PPM	LOW CHROM PPM	0.480 COPPER PPM	HIGH ZINC PPM	1.134 NICKEL PPM	0.623 MOLYB PPM	2.570 VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM	
NUMBER N DET.	0002 0002	0002 0001	0002 0000	0002 0000	0002 0000	0002 0001	0002 0001	0002 0000	0002 0000	0002 0000	0002 0001	0002 0002	0002 0000	0002 0000	0002 0000	
MEAN	0.000	0.125	0.080	5.608	0.723	0.010	0.200	2.073	7.03	0.115	0.180	0.000	0.433	0.418	0.225	
S. D.	0.000	0.000	0.042	4.873	0.456	0.000	0.000	1.969	1.99	0.092	0.000	0.000	0.216	0.067	0.039	
LOW	0.000	0.000	0.050	2.162	0.400	0.000	0.000	0.680	5.62	0.050	0.000	0.000	0.280	0.370	0.200	
HIGH	0.000	0.125	0.110	9.053	1.045	0.010	0.200	3.465	8.43	0.180	0.180	0.000	0.595	0.445	0.250	

POLLOCK		POLLACHIUS VIRENS							033017	AREA- NORTH ATLANTIC			SITE- O2		MUSCLE	
LENGTH WEIGHT	NUM NUM MERCURY PPM	2 MEAN LEAD PPM	MEAN CADIUM PPM	0.930 ARSENIC PPM	S. D. SELENIUM PPM	0.113 SILVER PPM	LOW CHROM PPM	0.850 COPPER PPM	HIGH ZINC PPM	1.010 NICKEL PPM	1.010 MOLYB PPM	0.000 VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM	
NUMBER N DET.	0002 0000	0001 0000	0002 0000	0002 0000	0002 0000	0002 0001	0002 0000	0002 0000	0002 0000	0002 0000	0002 0002	0002 0002	0002 0000	0002 0000	0002 0000	
MEAN	0.283	0.280	0.080	4.525	0.415	0.020	0.280	0.468	3.35	0.318	0.000	0.000	0.103	0.795	0.308	
S. D.	0.131	0.000	0.071	0.672	0.049	0.000	0.311	0.230	3.76	0.173	0.000	0.000	0.018	0.120	0.199	
LOW	0.190	0.000	0.030	4.050	0.380	0.020	0.060	0.305	2.81	0.195	0.000	0.000	0.090	0.710	0.190	
HIGH	0.375	0.280	0.130	5.000	0.450	0.020	0.500	0.630	3.88	0.440	0.000	0.000	0.115	0.880	0.415	

POLLOCK		POLLACHIUS VIRENS							033017	AREA- NORTH ATLANTIC			SITE- O2		LIVER	
LENGTH WEIGHT	NUM NUM MERCURY PPM	2 MEAN LEAD PPM	MEAN CADIUM PPM	0.930 ARSENIC PPM	S. D. SELENIUM PPM	0.113 SILVER PPM	LOW CHROM PPM	0.850 COPPER PPM	HIGH ZINC PPM	1.010 NICKEL PPM	1.010 MOLYB PPM	0.000 VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM	
NUMBER N DET.	0002 0001	0002 0000	0002 0000	0002 0000	0002 0000	0002 0001	0002 0001	0002 0000	0002 0000	0002 0000	0002 0001	0002 0001	0002 0000	0002 0000	0002 0000	
MEAN	0.020	0.298	0.155	3.081	1.120	0.020	0.030	4.303	16.45	0.130	0.120	0.310	0.465	0.435	0.233	
S. D.	0.000	0.202	0.035	0.892	0.141	0.000	0.000	3.157	6.21	0.342	0.000	0.000	0.021	0.049	0.023	
LOW	0.000	0.155	0.130	2.450	1.020	0.000	0.000	2.070	12.06	0.100	0.000	0.000	0.450	0.400	0.215	
HIGH	0.020	0.440	0.180	3.712	1.220	0.020	0.030	6.535	20.84	0.160	0.120	0.310	0.480	0.470	0.250	

POLLOCK, WALLEYE (ALASKA)		THERAGRA CHALCOGRAMMA							033019	AREA- PACIFIC NORTHWEST			SITE- I7		MUSCLE	
LENGTH WEIGHT	NUM NUM MERCURY PPM	1 MEAN LEAD PPM	MEAN CADIUM PPM	0.400 ARSENIC PPM	S. D. SELENIUM PPM	0.000 SILVER PPM	LOW CHROM PPM	0.400 COPPER PPM	HIGH ZINC PPM	0.400 NICKEL PPM	0.400 MOLYB PPM	0.000 VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM	
NUMBER N DET.	0001 0000	0001 0000	0001 0000	0001 0000	0001 0000	0001 0001	0001 0000	0001 0000	0001 0000	0001 0000	0001 0001	0001 0001	0001 0000	0001 0000	0001 0000	
MEAN	0.190	1.030	0.000	3.200	0.330	0.000	0.250	0.360	3.61	0.290	0.000	0.000	0.180	1.250	0.600	
S. D.	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.000	0.000	0.000	0.000	0.000	0.000	
LOW	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.000	0.000	0.000	0.000	0.000	0.000	
HIGH	0.190	1.030	0.000	3.200	0.330	0.000	0.250	0.360	3.61	0.290	0.000	0.000	0.180	1.250	0.600	

POLLOCK, WALLEYE (ALASKA)		THERAGRA CHALCOGRAMMA							033019	AREA- PACIFIC NORTHWEST			SITE- W1		MUSCLE	
LENGTH WEIGHT	NUM NUM MERCURY PPM	9 MEAN LEAD PPM	MEAN CADIUM PPM	0.391 ARSENIC PPM	S. D. SELENIUM PPM	0.043 SILVER PPM	LOW CHROM PPM	0.345 COPPER PPM	HIGH ZINC PPM	0.495 NICKEL PPM	0.495 MOLYB PPM	0.000 VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM	
NUMBER N DET.	0009 0000	0009 0000	0009 0003	0009 0000	0009 0001	0009 0002	0009 0000	0009 0000	0009 0000	0009 0001	0009 0006	0009 0006	0009 0000	0009 0000	0009 0000	
MEAN	0.148	0.466	0.063	3.997	0.453	0.056	0.258	0.274	3.41	0.238	0.185	0.397	0.156	0.694	0.547	
S. D.	0.045	0.471	0.027	1.485	0.331	0.016	0.265	0.074	0.91	0.080	0.048	0.075	0.058	0.296	0.245	
LOW	0.085	0.150	0.040	1.600	0.080	0.035	0.050	0.140	1.88	0.110	0.130	0.310	0.060	0.340	0.380	
HIGH	0.210	1.690	0.110	5.926	1.180	0.080	0.840	0.390	5.00	0.360	0.220	0.440	0.250	1.250	1.060	

POLLOCK, WALLEYE (ALASKA)		THERAGRA CHALCOGRAMMA							033019	AREA- ALASKA			SITE- L7		MUSCLE	
LENGTH WEIGHT	NUM NUM MERCURY PPM	5 MEAN LEAD PPM	MEAN CADIUM PPM	0.475 ARSENIC PPM	S. D. SELENIUM PPM	0.000 SILVER PPM	LOW CHROM PPM	0.475 COPPER PPM	HIGH ZINC PPM	0.475 NICKEL PPM	0.475 MOLYB PPM	0.000 VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM	
NUMBER N DET.	0005 0000	0005 0000	0005 0000	0005 0000	0005 0000	0005 0001	0005 0000	0005 0000	0005 0000	0005 0000	0005 0005	0005 0004	0005 0000	0005 0000	0005 0000	
MEAN	0.116	0.411	0.077	3.175	0.220	0.039	0.098	0.290	3.67	0.244	0.000	0.190	0.092	0.866	0.521	
S. D.	0.095	0.187	0.020	1.770	0.069	0.002	0.044	0.071	0.32	0.107	0.300	0.000	0.022	0.300	0.101	
LOW	0.040	0.240	0.060	0.925	0.130	0.035	0.040	0.190	3.31	0.080	0.000	0.000	0.060	0.630	0.280	
HIGH	0.220	0.720	0.105	4.625	0.310	0.040	0.130	0.380	4.16	0.340	0.000	0.190	0.110	1.250	0.740	

TABLE 5. SUMMARY OF TRACE ELEMENT LEVELS IN RESOURCE SURVEY SPECIES; BY TISSUE AND LOCATION

LOCATION LEVEL 5

POLLOCK, WALLEYE (ALASKA)				THERAGRA CHALCOGRAMMA				033019 AREA- ALASKA			SITE- N6			MUSCLE		
LENGTH WEIGHT	NUM NUM	28 MEAN	MEAN	0.498 0.936	S. D. S. D.	0.068 0.132	LOW LOW	0.408 0.681	HIGH HIGH	0.665 1.135						
	MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM	
NUMBER	0028	0028	0028	0028	0028	0028	0028	0028	0028	0028	0028	0028	0028	0028	0028	0028
N DET.	0012	0000	0000	0000	0000	0000	0005	0000	0000	0000	0024	0022	0001	0000	0000	
MEAN	0.135	0.595	0.077	2.603	0.374	0.029	0.232	0.520	4.58	0.177	0.228	0.317	0.144	0.644	0.787	
S. D.	0.225	0.463	0.060	1.174	0.187	0.011	0.195	0.427	1.02	0.069	0.057	0.346	0.049	0.240	0.325	
LOW	0.020	0.130	0.010	0.750	0.120	0.010	0.060	0.130	2.00	0.060	0.190	0.060	0.060	0.050	0.220	
HIGH	0.950	2.060	0.290	5.375	0.915	0.060	0.810	2.380	6.31	0.310	0.310	1.000	0.250	1.060	1.630	

POLLOCK, WALLEYE (ALASKA)				THERAGRA CHALCOGRAMMA				033019 AREA- ALASKA			SITE- N6			LIVER	
LENGTH WEIGHT	NUM NUM	3 MEAN	MEAN	0.488 0.936	S. D. S. D.	0.024 0.000	LOW LOW	0.461 0.936	HIGH HIGH	0.507 0.936					
	MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM
NUMBER	0003	0003	0003	0003	0003	0003	0003	0003	0003	0003	0003	0003	0003	0003	0003
N DET.	0002	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0003	0000	0000	0000
MEAN	0.050	0.417	0.353	5.937	0.803	0.042	0.153	2.670	15.16	0.120	0.240	0.000	0.888	0.562	0.503
S. D.	0.000	0.235	0.183	6.867	0.251	0.028	0.067	1.128	5.11	0.013	0.068	0.000	0.254	0.128	0.110
LOW	0.000	0.250	0.210	1.550	0.520	0.010	0.105	1.370	11.25	0.110	0.175	0.000	0.650	0.435	0.440
HIGH	0.050	0.685	0.560	13.850	1.000	0.060	0.230	3.390	20.94	0.135	0.310	0.000	1.155	0.690	0.630

POLLOCK, WALLEYE (ALASKA)				THERAGRA CHALCOGRAMMA				033019 AREA- ALASKA			SITE- R1			MUSCLE	
LENGTH WEIGHT	NUM NUM	5 MEAN	MEAN	0.440 0.000	S. D. S. D.	0.000 0.000	LOW LOW	0.440 0.000	HIGH HIGH	0.440 0.000					
	MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM
NUMBER	0004	0005	0005	0005	0005	0005	0005	0005	0005	0005	0005	0005	0004	0005	0004
N DET.	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0003	0004	0000	0000	0000
MEAN	0.363	0.488	0.083	1.397	0.343	0.054	0.202	0.347	5.98	0.247	0.140	0.440	0.151	0.695	0.829
S. D.	0.097	0.183	0.010	0.505	0.136	0.020	0.078	0.097	2.02	0.118	0.028	0.000	0.019	0.128	0.284
LOW	0.220	0.375	0.070	0.616	0.170	0.035	0.130	0.200	4.12	0.115	0.120	0.000	0.140	0.560	0.495
HIGH	0.440	0.810	0.090	2.000	0.530	0.080	0.310	0.470	9.10	0.380	0.160	0.440	0.180	0.870	1.190

HAKE, RED				UROPHYCIS CHUSS				033020 AREA- NORTH ATLANTIC			SITE- I3			MUSCLE	
LENGTH WEIGHT	NUM NUM	7 MEAN	MEAN	0.395 0.565	S. D. S. D.	0.090 0.385	LOW LOW	0.258 0.108	HIGH HIGH	0.508 1.121					
	MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM
NUMBER	0007	0007	0007	0006	0006	0007	0007	0007	0007	0007	0007	0007	0007	0007	0007
N DET.	0003	0000	0000	0000	0000	0001	0001	0000	0000	0000	0006	0007	0000	0000	0000
MEAN	0.093	0.376	0.038	10.196	0.550	0.033	0.089	0.205	2.88	0.204	0.190	0.000	0.154	0.607	0.457
S. D.	0.054	0.115	0.024	5.135	0.280	0.010	0.034	0.052	0.43	0.064	0.000	0.000	0.051	0.238	0.111
LOW	0.045	0.190	0.010	2.875	0.180	0.020	0.060	0.130	2.38	0.155	0.000	0.000	0.090	0.250	0.340
HIGH	0.170	0.530	0.065	17.500	0.920	0.050	0.130	0.260	3.69	0.340	0.190	0.000	0.230	0.910	0.630

HAKE, RED				UROPHYCIS CHUSS				033020 AREA- NORTH ATLANTIC			SITE- I5			MUSCLE	
LENGTH WEIGHT	NUM NUM	4 MEAN	MEAN	0.408 0.519	S. D. S. D.	0.017 0.101	LOW LOW	0.394 0.411	HIGH HIGH	0.431 0.633					
	MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM
NUMBER	0004	0004	0004	0004	0004	0004	0004	0004	0004	0004	0004	0004	0004	0004	0004
N DET.	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0001	0001	0000	0000	0000
MEAN	0.063	0.442	0.060	11.166	0.513	0.038	0.112	0.311	3.71	0.184	0.197	0.117	0.140	0.940	0.474
S. D.	0.018	0.339	0.011	5.251	0.359	0.010	0.078	0.081	1.24	0.058	0.142	0.074	0.014	0.227	0.310
LOW	0.040	0.250	0.050	7.575	0.260	0.030	0.020	0.240	2.30	0.120	0.070	0.060	0.130	0.750	0.215
HIGH	0.085	0.950	0.075	18.750	1.043	0.050	0.210	0.420	4.95	0.260	0.350	0.200	0.160	1.200	0.890

HAKE, RED				UROPHYCIS CHUSS				033020 AREA- NORTH ATLANTIC			SITE- I7			MUSCLE	
LENGTH WEIGHT	NUM NUM	11 MEAN	MEAN	0.377 0.510	S. D. S. D.	0.011 0.074	LOW LOW	0.357 0.409	HIGH HIGH	0.393 0.645					
	MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM
NUMBER	0011	0011	0011	0011	0011	0011	0011	0011	0011	0011	0011	0011	0011	0011	0011
N DET.	0000	0000	0000	0000	0000	0000	0003	0000	0000	0000	0010	0007	0000	0000	0000
MEAN	0.062	0.396	0.056	7.553	0.375	0.045	0.156	0.401	2.75	0.213	0.060	0.435	0.162	0.567	0.519
S. D.	0.029	0.218	0.014	2.497	0.135	0.041	0.065	0.338	0.68	0.109	0.000	0.288	0.040	0.249	0.208
LOW	0.030	0.130	0.040	4.450	0.185	0.010	0.060	0.060	1.65	0.080	0.000	0.060	0.075	0.280	0.220
HIGH	0.110	0.845	0.080	12.765	0.610	0.150	0.250	1.380	3.87	0.500	0.060	0.690	0.230	1.130	0.810

HAKE, RED				UROPHYCIS CHUSS				033020 AREA- NORTH ATLANTIC			SITE- J1			MUSCLE	
LENGTH WEIGHT	NUM NUM	3 MEAN	MEAN	0.461 0.768	S. D. S. D.	0.080 0.448	LOW LOW	0.394 0.430	HIGH HIGH	0.550 1.276					
	MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM
NUMBER	0003	0003	0003	0003	0003	0003	0003	0003	0003	0003	0003	0003	0003	0003	0003
N DET.	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0003	0002	0000	0000	0000
MEAN	0.110	0.373	0.052	23.649	0.458	0.028	0.282	0.242	2.42	0.238	0.300	0.310	0.120	0.487	0.448
S. D.	0.061	0.105	0.019	10.668	0.302	0.013	0.242	0.067	0.31	0.109	0.000	0.000	0.028	0.081	0.013
LOW	0.040	0.310	0.030	12.716	0.250	0.015	0.125	0.165	2.15	0.150	0.000	0.000	0.095	0.440	0.435
HIGH	0.150	0.495	0.065	34.030	0.805	0.040	0.560	0.290	2.75	0.360	0.000	0.310	0.150	0.580	0.460

TABLE 5. SUMMARY OF TRACE ELEMENT LEVELS  
IN RESOURCE SURVEY SPECIES  
BY TISSUE AND LOCATION

LOCATION LEVEL 5

HAKE, RED				UROPHYCIS CUSS				033020 AREA- NORTH ATLANTIC				SITE- J4 MUSCLE				
LENGTH WEIGHT	NUM NUM	5 MEAN		0.388 S. D.	0.093 S. D.	0.457 LOW		0.310 HIGH	0.199 HIGH	0.910		1.192				
MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM		
NUMBER	0005	0005	0005	0005	0005	0005	0005	0005	0005	0005	0005	0005	0005	0005	0005	
N DET.	0001	0000	0000	0000	0000	0000	0001	0000	0000	0005	0005	0000	0000	0000		
MEAN	0.103	0.472	0.048	13.395	0.451	0.024	0.256	0.185	2.93	0.189	0.000	0.000	0.137	0.555		
S. D.	0.097	0.177	0.010	8.198	0.046	0.011	0.200	0.061	0.41	0.043	0.000	0.000	0.078	0.110		
LOW	0.025	0.375	0.040	2.700	0.390	0.010	0.060	0.125	2.47	0.130	0.000	0.000	0.080	0.390		
HIGH	0.230	0.785	0.065	24.366	0.500	0.040	0.560	0.270	3.50	0.250	0.000	0.000	0.180	0.695		

HAKE, RED				UROPHYCIS CUSS				033020 AREA- NORTH ATLANTIC				SITE- K2 MUSCLE				
LENGTH WEIGHT	NUM NUM	1 MEAN		0.310 S. D.	0.234 S. D.	0.000 LOW		0.310 HIGH	0.234 HIGH	0.310		0.234				
MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM		
NUMBER	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001		
N DET.	0000	0000	0000	0000	0000	0000	0000	0000	0000	0001	0001	0000	0000	0000		
MEAN	0.020	0.130	0.060	3.950	0.650	0.310	0.000	0.230	1.03	0.100	0.300	0.000	0.120	0.280		
S. D.	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.000	0.000	0.000	0.000	0.000		
LOW	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.000	0.000	0.000	0.000	0.000		
HIGH	0.020	0.130	0.060	3.950	0.650	0.310	0.000	0.230	1.03	0.100	0.300	0.000	0.120	0.280		

HAKE, RED				UROPHYCIS CUSS				033020 AREA- NORTH ATLANTIC				SITE- M4 MUSCLE				
LENGTH WEIGHT	NUM NUM	4 MEAN		0.367 S. D.	0.278 S. D.	0.078 LOW		0.266 HIGH	0.127 HIGH	0.453		0.881				
MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM		
NUMBER	0004	0004	0004	0004	0004	0004	0004	0004	0004	0004	0004	0004	0004	0004		
N DET.	0000	0000	0000	0000	0000	0001	0000	0000	0000	0001	0004	0000	0000	0000		
MEAN	0.136	0.486	0.055	8.336	0.515	0.022	0.143	0.166	3.99	0.125	0.130	0.000	0.280	0.539		
S. D.	0.044	0.133	0.013	2.022	0.075	0.008	0.068	0.050	0.95	0.070	0.000	0.000	0.045	0.177		
LOW	0.100	0.393	0.035	6.270	0.420	0.015	0.060	0.095	3.30	0.050	0.000	0.000	0.150	0.440		
HIGH	0.190	0.680	0.063	11.050	0.600	0.030	0.225	0.210	5.39	0.203	0.130	0.000	0.260	0.710		

HAKE, RED				UROPHYCIS CUSS				033020 AREA- NORTH ATLANTIC				SITE- N6 MUSCLE				
LENGTH WEIGHT	NUM NUM	4 MEAN		0.289 S. D.	0.150 S. D.	0.073 LOW		0.237 HIGH	0.078 HIGH	0.340		0.245				
MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM		
NUMBER	0004	0004	0004	0004	0004	0004	0004	0004	0004	0004	0004	0004	0004	0004		
N DET.	0001	0000	0000	0000	0000	0000	0000	0000	0000	0001	0002	0000	0000	0000		
MEAN	0.087	0.534	0.078	8.528	0.495	0.049	0.323	0.354	3.43	0.241	0.143	0.000	0.294	0.856		
S. D.	0.060	0.152	0.013	2.305	0.117	0.012	0.164	0.045	0.29	0.334	0.144	0.000	0.042	0.302		
LOW	0.030	0.310	0.060	6.297	0.340	0.040	0.175	0.300	3.19	0.205	0.060	0.000	0.200	0.500		
HIGH	0.150	0.630	0.090	11.575	0.620	0.065	0.510	0.405	5.84	0.270	0.310	0.000	0.290	1.190		

HAKE, RED				UROPHYCIS CUSS				033020 AREA- NORTH ATLANTIC				SITE- O1 MUSCLE				
LENGTH WEIGHT	NUM NUM	6 MEAN		0.274 S. D.	0.162 S. D.	0.073 LOW		0.189 HIGH	0.052 HIGH	0.353		0.305				
MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM		
NUMBER	0006	0006	0006	0006	0006	0006	0005	0006	0006	0006	0006	0006	0006	0006		
N DET.	0001	0000	0000	0000	0000	0000	0000	0000	0000	0005	0002	0000	0000	0000		
MEAN	0.055	0.360	0.079	7.452	0.621	0.039	0.393	0.488	4.54	0.299	0.250	0.000	0.166	0.712		
S. D.	0.028	0.255	0.019	3.739	0.477	0.013	0.300	0.227	1.03	0.104	0.000	0.109	0.078	0.259		
LOW	0.020	0.250	0.060	2.900	0.310	0.030	0.060	0.270	3.40	0.200	0.000	0.250	0.100	0.380		
HIGH	0.090	0.680	0.110	14.000	1.560	0.060	0.880	0.810	6.38	0.460	0.250	0.480	0.310	1.310		

HAKE, RED				UROPHYCIS CUSS				033020 AREA- NORTH ATLANTIC				SITE- O3 MUSCLE				
LENGTH WEIGHT	NUM NUM	6 MEAN		0.375 S. D.	0.475 S. D.	0.105 LOW		0.298 HIGH	0.159 HIGH	0.510		0.121				
MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM		
NUMBER	0006	0006	0006	0006	0006	0006	0006	0006	0006	0006	0006	0006	0006	0006		
N DET.	0000	0000	0000	0000	0000	0000	0000	0000	0000	0004	0006	0000	0000	0000		
MEAN	0.068	0.366	0.053	8.238	0.488	0.038	0.100	0.279	3.42	0.197	0.110	0.000	0.187	0.657		
S. D.	0.052	0.172	0.012	2.792	0.172	0.012	0.030	0.083	0.77	0.053	0.071	0.000	0.136	0.177		
LOW	0.020	0.220	0.035	4.600	0.275	0.025	0.060	0.180	2.56	0.110	0.060	0.000	0.090	0.345		
HIGH	0.160	0.690	0.070	11.405	0.730	0.060	0.130	0.405	4.37	0.255	0.160	0.000	0.455	0.875		

HAKE, RED				UROPHYCIS CUSS				033020 AREA- NORTH ATLANTIC				SITE- P1 MUSCLE				
LENGTH WEIGHT	NUM NUM	2 MEAN		0.347 S. D.	0.327 S. D.	0.025 LOW		0.329 HIGH	0.261 HIGH	0.365		0.392				
MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM		
NUMBER	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002		
N DET.	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0001	0000	0000	0000		
MEAN	0.102	0.595	0.063	11.130	0.540	0.033	0.128	0.345	4.28	0.200	0.220	0.155	0.213	0.728		
S. D.	0.012	0.085	0.011	1.230	0.156	0.011	0.004	0.141	0.31	0.021	0.042	0.000	0.074	0.117		
LOW	0.093	0.535	0.055	10.260	0.430	0.025	0.125	0.245	4.06	0.185	0.190	0.000	0.160	0.645		
HIGH	0.110	0.655	0.070	12.000	0.650	0.040	0.130	0.445	4.50	0.215	0.250	0.155	0.265	0.810		



TABLE 5. SUMMARY OF TRACE ELEMENT LEVELS  
IN RESOURCE SURVEY SPECIES;  
BY TISSUE AND LOCATION

REPORT

LOCATION LEVEL 5

HAKE, WHITE			UROPHYCIS TENUIS					033025 AREA- NORTH ATLANTIC				SITE- I5		MUSCLE		
LENGTH WEIGHT	NUM NUM	1 MEAN	MEAN	0.490 S. D.	S. D.	0.000 LOW	LOW	0.490 HIGH	HIGH	0.490	VANADIUM	MANG	ANTIMONY	TIN		
	MERCURY	LEAD	CADMIUM	ARSENIC	SELENIUM	SILVER	CHROM	COPPER	ZINC	NICKEL	MOLYB	PPM	PPM	PPM	PPM	
NUMBER	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001
N DET.	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000
MEAN	0.060	0.300	0.030	6.500	0.360	0.000	0.100	0.160	3.16	0.255	0.280	0.000	0.115	0.620	0.620	0.620
S. D.	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000
LOW	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000
HIGH	0.060	0.300	0.030	6.500	0.360	0.000	0.100	0.160	3.16	0.255	0.280	0.000	0.115	0.620	0.620	0.620

HAKE, WHITE			UROPHYCIS TENUIS					033025 AREA- NORTH ATLANTIC				SITE- I6		MUSCLE		
LENGTH WEIGHT	NUM NUM	1 MEAN	MEAN	0.290 S. D.	S. D.	0.000 LOW	LOW	0.290 HIGH	HIGH	0.290	VANADIUM	MANG	ANTIMONY	TIN		
	MERCURY	LEAD	CADMIUM	ARSENIC	SELENIUM	SILVER	CHROM	COPPER	ZINC	NICKEL	MOLYB	PPM	PPM	PPM	PPM	
NUMBER	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002
N DET.	0000	0000	0000	0000	0000	0000	0001	0000	0000	0000	0001	0000	0000	0000	0000	0000
MEAN	0.220	0.280	0.040	5.438	0.450	0.030	0.190	0.255	3.06	0.265	0.060	0.000	0.160	0.780	0.580	0.580
S. D.	0.156	0.042	0.000	4.366	0.566	0.000	0.000	0.092	0.71	0.035	0.000	0.000	0.085	0.042	0.085	0.085
LOW	0.110	0.250	0.040	2.350	0.050	0.030	0.000	0.190	2.56	0.240	0.000	0.000	0.100	0.750	0.440	0.440
HIGH	0.330	0.310	0.040	8.525	0.850	0.030	0.190	0.320	3.56	0.290	0.060	0.000	0.220	0.810	0.580	0.580

HAKE, WHITE			UROPHYCIS TENUIS					033025 AREA- NORTH ATLANTIC				SITE- I6		LIVER		
LENGTH WEIGHT	NUM NUM	1 MEAN	MEAN	0.620 S. D.	S. D.	0.000 LOW	LOW	0.620 HIGH	HIGH	0.620	VANADIUM	MANG	ANTIMONY	TIN		
	MERCURY	LEAD	CADMIUM	ARSENIC	SELENIUM	SILVER	CHROM	COPPER	ZINC	NICKEL	MOLYB	PPM	PPM	PPM	PPM	
NUMBER	0001	0001	0001	0001	0000	0001	0001	0001	0000	0001	0001	0001	0001	0001	0001	0001
N DET.	0001	0000	0000	0000	0000	0000	0000	0000	0000	0000	0001	0001	0000	0000	0000	0001
MEAN	0.000	0.380	0.160	1.750	0.000	0.020	0.060	4.070	0.00	0.070	0.000	0.000	0.710	0.250	0.000	0.000
S. D.	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.000	0.300	0.000	0.000	0.000	0.000	0.000
LOW	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000
HIGH	0.000	0.380	0.160	1.750	0.000	0.020	0.060	4.070	0.00	0.070	0.000	0.000	0.710	0.250	0.000	0.000

HAKE, WHITE			UROPHYCIS TENUIS					033025 AREA- NORTH ATLANTIC				SITE- J1		MUSCLE		
LENGTH WEIGHT	NUM NUM	13 MEAN	MEAN	0.570 S. D.	S. D.	0.203 LOW	LOW	0.288 HIGH	HIGH	0.920	VANADIUM	MANG	ANTIMONY	TIN		
	MERCURY	LEAD	CADMIUM	ARSENIC	SELENIUM	SILVER	CHROM	COPPER	ZINC	NICKEL	MOLYB	PPM	PPM	PPM	PPM	
NUMBER	0013	0012	0012	0013	0013	0013	0013	0013	0013	0013	0013	0013	0013	0013	0013	0013
N DET.	0003	0000	0000	0000	0000	0003	0001	0000	0000	0000	0008	0009	0000	0000	0000	0000
MEAN	0.066	0.370	0.060	7.295	0.636	0.032	0.141	0.232	2.65	0.183	0.162	0.263	0.110	0.561	0.425	0.425
S. D.	0.052	0.144	0.040	3.770	0.393	0.011	0.102	0.069	0.44	0.048	0.098	0.055	0.031	0.220	0.179	0.179
LOW	0.020	0.190	0.030	2.240	0.350	0.010	0.040	0.125	2.06	0.100	0.060	0.190	0.050	0.190	0.179	0.179
HIGH	0.155	0.620	0.180	14.430	1.705	0.045	0.345	0.360	3.84	0.250	0.280	0.310	0.170	1.060	0.870	0.870

HAKE, WHITE			UROPHYCIS TENUIS					033025 AREA- NORTH ATLANTIC				SITE- J1		LIVER		
LENGTH WEIGHT	NUM NUM	4 MEAN	MEAN	0.755 S. D.	S. D.	0.227 LOW	LOW	0.421 HIGH	HIGH	0.920	VANADIUM	MANG	ANTIMONY	TIN		
	MERCURY	LEAD	CADMIUM	ARSENIC	SELENIUM	SILVER	CHROM	COPPER	ZINC	NICKEL	MOLYB	PPM	PPM	PPM	PPM	
NUMBER	0004	0004	0004	0004	0004	0004	0004	0004	0004	0004	0004	0004	0004	0004	0004	0004
N DET.	0004	0000	0000	0000	0000	0001	0000	0000	0000	0000	0001	0003	0000	0001	0000	0000
MEAN	0.000	0.245	0.065	17.239	0.933	0.030	0.284	7.988	46.66	0.306	0.133	0.130	0.731	0.177	0.293	0.293
S. D.	0.000	0.110	0.006	6.797	0.261	0.010	0.139	4.497	17.18	0.320	0.055	0.000	0.242	0.102	0.102	0.102
LOW	0.000	0.120	0.060	9.700	0.603	0.020	0.080	3.860	28.21	0.085	0.080	0.000	0.500	0.060	0.060	0.060
HIGH	0.000	0.375	0.070	25.862	1.180	0.040	0.375	14.370	67.50	0.780	0.190	0.130	1.060	0.250	0.250	0.440

HAKE, WHITE			UROPHYCIS TENUIS					033025 AREA- NORTH ATLANTIC				SITE- J4		MUSCLE		
LENGTH WEIGHT	NUM NUM	11 MEAN	MEAN	0.691 S. D.	S. D.	0.073 LOW	LOW	0.600 HIGH	HIGH	0.860	VANADIUM	MANG	ANTIMONY	TIN		
	MERCURY	LEAD	CADMIUM	ARSENIC	SELENIUM	SILVER	CHROM	COPPER	ZINC	NICKEL	MOLYB	PPM	PPM	PPM	PPM	
NUMBER	0011	0011	0011	0011	0011	0011	0011	0011	0011	0011	0011	0011	0011	0011	0011	0011
N DET.	0004	0000	0000	0000	0000	0001	0000	0000	0000	0000	0010	0009	0000	0007	0000	0000
MEAN	0.080	0.308	0.050	9.424	0.405	0.029	0.207	0.228	2.71	0.233	0.060	0.125	0.110	0.576	0.583	0.583
S. D.	0.073	0.164	0.016	7.333	0.194	0.003	0.135	0.049	0.32	0.073	0.000	0.092	0.014	0.283	0.160	0.160
LOW	0.025	0.060	0.010	2.550	0.080	0.020	0.030	0.160	2.31	0.095	0.000	0.060	0.090	0.425	0.370	0.370
HIGH	0.240	0.690	0.070	25.500	0.730	0.030	0.440	0.310	3.44	0.360	0.060	0.190	1.000	1.000	0.940	0.940

HAKE, WHITE			UROPHYCIS TENUIS					033025 AREA- NORTH ATLANTIC				SITE- J4		LIVER		
LENGTH WEIGHT	NUM NUM	6 MEAN	MEAN	0.725 S. D.	S. D.	0.072 LOW	LOW	0.650 HIGH	HIGH	0.860	VANADIUM	MANG	ANTIMONY	TIN		
	MERCURY	LEAD	CADMIUM	ARSENIC	SELENIUM	SILVER	CHROM	COPPER	ZINC	NICKEL	MOLYB	PPM	PPM	PPM	PPM	
NUMBER	0006	0006	0006	0006	0003	0006	0006	0006	0005	0006	0006	0006	0006	0006	0006	0006
N DET.	0006	0000	0000	0000	0000	0001	0004	0000	0000	0000	0004	0006	0000	0001	0000	0000
MEAN	0.000	0.153	0.063	9.485	0.470	0.084	0.060	6.392	34.05	0.220	0.110	0.000	0.622	0.284	0.125	0.125
S. D.	0.000	0.103	0.041	6.456	0.408	0.138	0.000	3.830	19.28	0.274	0.071	0.000	0.217	0.143	0.092	0.092
LOW	0.000	0.060	0.020	4.300	0.210	0.010	0.060	3.500	8.90	0.010	0.060	0.000	0.330	0.160	0.060	0.060
HIGH	0.000	0.310	0.140	20.250	0.940	0.330	0.060	13.800	61.00	0.760	0.160	0.000	0.920	0.440	0.190	0.190

TABLE 5. SUMMARY OF TRACE ELEMENT LEVELS  
IN RESOURCE SURVEY SPECIES:  
BY TISSUE AND LOCATION

LOCATION LEVEL 5

HAKE, WHITE				UROPHYCIS TENUIIS				033025	AREA- NORTH ATLANTIC	SITE- J5	MUSCLE				
LENGTH WEIGHT	NUM NUM	17 MEAN	MEAN	0.582	S. D.	0.132	LOW	0.377	HIGH	0.780					
		14	MEAN	1.712	S. D.	1.267	LOW	0.529	HIGH	4.540					
	MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM
NUMBER	0017	0017	0017	0017	0017	0017	0016	0017	0017	0017	0017	0017	0017	0017	0017
N DET.	0003	0000	0001	0000	0000	0000	0000	0000	0000	0000	0009	0012	0000	0000	0000
MEAN	0.120	0.374	0.073	7.556	0.466	0.027	0.215	0.231	2.95	0.314	0.186	0.200	0.145	0.576	0.569
S. D.	0.069	0.159	0.048	4.275	0.149	0.014	0.220	0.116	0.86	0.218	0.093	0.193	0.046	0.199	0.236
LOW	0.020	0.190	0.030	1.100	0.270	0.010	0.060	0.060	1.78	0.153	0.060	0.060	0.090	0.190	0.220
HIGH	0.265	0.720	0.220	20.400	0.765	0.060	0.940	0.500	4.56	1.000	0.370	0.440	0.240	1.095	1.190

HAKE, WHITE				UROPHYCIS TENUIIS				033025	AREA- NORTH ATLANTIC	SITE- J5	LIVER				
LENGTH WEIGHT	NUM NUM	8 MEAN	MEAN	0.683	S. D.	0.039	LOW	0.620	HIGH	0.750					
		5	MEAN	2.631	S. D.	0.608	LOW	1.814	HIGH	3.175					
	MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM
NUMBER	0008	0008	0008	0007	0006	0008	0008	0008	0008	0008	0008	0008	0008	0008	0008
N DET.	0007	0001	0002	0000	0000	0004	0003	0000	0000	0000	0004	0006	0000	0003	0000
MEAN	0.103	0.188	0.061	7.604	0.576	0.033	0.471	5.261	37.54	0.161	0.158	0.250	0.628	0.314	0.331
S. D.	0.000	0.103	0.019	4.719	0.200	0.022	0.745	2.531	9.42	0.139	0.065	0.000	0.111	0.009	0.182
LOW	0.000	0.060	0.040	1.800	0.350	0.010	0.060	1.820	18.06	0.050	0.060	0.250	0.510	0.310	0.120
HIGH	0.103	0.345	0.085	12.650	0.915	0.060	1.800	9.060	50.63	0.480	0.190	0.250	0.840	0.330	0.630

HAKE, WHITE				UROPHYCIS TENUIIS				033025	AREA- NORTH ATLANTIC	SITE- J6	MUSCLE				
LENGTH WEIGHT	NUM NUM	2 MEAN	MEAN	0.710	S. D.	0.042	LOW	0.680	HIGH	0.740					
		0	MEAN	0.000	S. D.	0.000	LOW	0.000	HIGH	0.000					
	MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM
NUMBER	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002
N DET.	0000	0000	0000	0000	0000	0000	0001	0000	0000	0000	0000	0001	0000	0000	0000
MEAN	0.248	0.580	0.085	4.063	0.748	0.038	0.090	0.283	4.22	0.333	0.120	0.060	0.130	0.628	0.273
S. D.	0.216	0.156	0.021	2.210	0.520	0.039	0.000	0.060	1.90	0.152	0.057	0.000	0.057	0.004	0.117
LOW	0.095	0.470	0.070	2.500	0.380	0.010	0.000	0.240	2.88	0.225	0.080	0.000	0.090	0.625	0.190
HIGH	0.400	0.690	0.100	5.625	1.116	0.065	0.090	0.325	5.56	0.440	0.160	0.060	0.170	0.630	0.355

HAKE, WHITE				UROPHYCIS TENUIIS				033025	AREA- NORTH ATLANTIC	SITE- J6	LIVER				
LENGTH WEIGHT	NUM NUM	2 MEAN	MEAN	0.710	S. D.	0.042	LOW	0.680	HIGH	0.740					
		0	MEAN	0.000	S. D.	0.000	LOW	0.000	HIGH	0.000					
	MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM
NUMBER	0002	0002	0002	0001	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002
N DET.	0001	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0002	0000	0000	0000
MEAN	0.090	0.263	0.075	4.675	0.685	0.020	0.085	5.103	47.72	0.103	0.140	0.000	0.738	0.438	0.180
S. D.	0.000	0.286	0.021	0.000	0.134	0.000	0.007	1.022	1.19	0.018	0.071	0.000	0.301	0.004	0.014
LOW	0.000	0.060	0.060	0.000	0.590	0.020	0.080	4.380	46.88	0.090	0.090	0.000	0.525	0.435	0.170
HIGH	0.090	0.465	0.090	4.675	0.780	0.020	0.090	5.825	48.56	0.115	0.190	0.000	0.950	0.440	0.190

HAKE, WHITE				UROPHYCIS TENUIIS				033025	AREA- NORTH ATLANTIC	SITE- J7	MUSCLE				
LENGTH WEIGHT	NUM NUM	2 MEAN	MEAN	0.748	S. D.	0.018	LOW	0.735	HIGH	0.760					
		2	MEAN	4.650	S. D.	0.320	LOW	4.423	HIGH	4.876					
	MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM
NUMBER	0002	0002	0002	0002	0001	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002
N DET.	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0001	0000	0000	0000	0000
MEAN	0.135	0.455	0.083	4.637	0.575	0.033	0.110	0.185	2.86	0.175	0.160	0.205	0.155	0.470	0.375
S. D.	0.014	0.064	0.046	1.631	0.000	0.004	0.014	0.028	0.20	0.049	0.000	0.106	0.021	0.085	0.134
LOW	0.125	0.410	0.050	3.483	0.000	0.030	0.100	0.165	2.72	0.140	0.300	0.130	0.140	0.410	0.280
HIGH	0.145	0.500	0.115	5.790	0.575	0.035	0.120	0.205	3.00	0.210	0.160	0.280	0.170	0.530	0.470

HAKE, WHITE				UROPHYCIS TENUIIS				033025	AREA- NORTH ATLANTIC	SITE- K2	MUSCLE				
LENGTH WEIGHT	NUM NUM	1 MEAN	MEAN	0.940	S. D.	0.000	LOW	0.940	HIGH	0.940					
		0	MEAN	0.000	S. D.	0.000	LOW	0.000	HIGH	0.000					
	MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM
NUMBER	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001
N DET.	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0300	0000	0000	0000	0000
MEAN	0.103	0.293	0.040	10.140	0.650	0.033	0.185	0.190	3.31	0.236	0.285	0.310	0.166	0.376	0.460
S. D.	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.300	0.300	0.000	0.000	0.000	0.300
LOW	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.000	0.300	0.000	0.000	0.000	0.300
HIGH	0.103	0.293	0.040	10.140	0.650	0.033	0.185	0.190	3.31	0.236	0.285	0.310	0.166	0.376	0.460

HAKE, WHITE				UROPHYCIS TENUIIS				033025	AREA- NORTH ATLANTIC	SITE- K2	LIVER				
LENGTH WEIGHT	NUM NUM	1 MEAN	MEAN	0.940	S. D.	0.000	LOW	0.940	HIGH	0.940					
		0	MEAN	0.000	S. D.	0.000	LOW	0.000	HIGH	0.000					
	MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM
NUMBER	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001
N DET.	0001	0000	0000	0000	0000	0001	0000	0000	0000	0000	0000	0000	0000	0000	0000
MEAN	0.000	0.190	0.030	10.930	0.780	0.000	0.310	1.940	36.88	0.090	0.190	0.310	0.540	0.310	0.380
S. D.	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.000	0.300	0.000	0.000	0.000	0.300
LOW	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.000	0.300	0.000	0.000	0.000	0.300
HIGH	0.000	0.190	0.030	10.930	0.780	0.000	0.310	1.940	36.88	0.090	0.190	0.310	0.540	0.310	0.380

**TABLE 5. SUMMARY OF TRACE ELEMENT LEVELS  
IN RESOURCE SURVEY SPECIES:  
BY TISSUE AND LOCATION**

**REPORT**

**LOCATION LEVEL 5**

HAKE, WHITE		UROPHYCIS TENUIIS							033025 AREA- NORTH ATLANTIC			SITE- K5		MUSCLE	
LENGTH WEIGHT	NUM	MEAN	0.674	S. D.	0.097	LOW	0.520	HIGH	0.850	VANADIUM	MANG	ANTIMONY	TIM		
	NUM	8												MEAN	1.889
	MERCURY	LEAD	CADMIUM	ARSENIC	SELENIUM	SILVER	CHROM	COPPER	ZINC	NICKEL	MDLYB				
NUMBER	0008	0008	0008	0008	0008	0008	0008	0008	0008	0008	0008	0008	0008		
N DET.	0000	0000	0000	0000	0000	0002	0001	0000	0000	0000	0007	0007	0000		
MEAN	0.173	0.363	0.056	9.031	0.526	0.027	0.101	0.234	3.70	0.199	0.120	0.310	0.111		
S. D.	0.127	0.128	0.013	3.871	0.192	0.015	0.050	0.060	2.16	0.068	0.000	0.000	0.027		
LOW	0.090	0.120	0.040	3.533	0.250	0.010	0.060	0.120	2.69	0.100	0.000	0.000	0.080		
HIGH	0.470	0.565	0.075	15.712	0.890	0.050	0.190	0.310	9.03	0.330	0.120	0.310	0.170		

HAKE, WHITE		UROPHYCIS TENUIIS							033025 AREA- NORTH ATLANTIC			SITE- K5		LIVER	
LENGTH WEIGHT	NUM	MEAN	0.680	S. D.	0.103	LOW	0.520	HIGH	0.850	VANADIUM	MANG	ANTIMONY	TIM		
	NUM	7												MEAN	1.951
	MERCURY	LEAD	CADMIUM	ARSENIC	SELENIUM	SILVER	CHROM	COPPER	ZINC	NICKEL	MDLYB				
NUMBER	0007	0007	0007	0006	0006	0007	0007	0006	0007	0006	0007	0007	0007		
N DET.	0004	0000	0000	0000	0000	0003	0002	0000	0000	0000	0004	0005	0000		
MEAN	0.057	0.297	0.133	19.706	0.542	0.068	0.236	4.793	48.86	0.198	0.123	0.155	0.670		
S. D.	0.035	0.194	0.103	13.446	0.229	0.108	0.209	0.690	18.33	0.058	0.006	0.134	0.241		
LOW	0.020	0.130	0.030	5.475	0.290	0.010	0.060	4.000	34.75	0.090	0.120	0.060	0.440		
HIGH	0.090	0.560	0.280	40.400	0.810	0.230	0.570	5.810	87.50	0.250	0.130	0.250	1.060		

HAKE, WHITE		UROPHYCIS TENUIIS							033025 AREA- NORTH ATLANTIC			SITE- P1		MUSCLE	
LENGTH WEIGHT	NUM	MEAN	0.726	S. D.	0.208	LOW	0.497	HIGH	0.905	VANADIUM	MANG	ANTIMONY	TIM		
	NUM	3												MEAN	4.340
	MERCURY	LEAD	CADMIUM	ARSENIC	SELENIUM	SILVER	CHROM	COPPER	ZINC	NICKEL	MDLYB				
NUMBER	0003	0003	0003	0003	0003	0003	0003	0003	0003	0003	0003	0003	0003		
N DET.	0000	0000	0002	0000	0000	0002	0000	0000	0000	0000	0002	0002	0000		
MEAN	0.137	0.323	0.030	9.294	0.478	0.020	0.191	0.107	2.50	0.402	0.870	0.410	0.162		
S. D.	0.120	0.166	0.000	6.086	0.024	0.000	0.083	0.029	0.40	0.093	0.000	0.000	0.095		
LOW	0.015	0.210	0.000	2.950	0.460	0.000	0.116	0.085	2.23	0.295	0.000	0.000	0.090		
HIGH	0.255	0.513	0.030	15.083	0.505	0.020	0.280	0.140	2.96	0.465	0.870	0.410	0.270		

HAKE, WHITE		UROPHYCIS TENUIIS							033025 AREA- NORTH ATLANTIC			SITE- P2		MUSCLE	
LENGTH WEIGHT	NUM	MEAN	0.454	S. D.	0.000	LOW	0.454	HIGH	0.494	VANADIUM	MANG	ANTIMONY	TIM		
	NUM	1												MEAN	0.738
	MERCURY	LEAD	CADMIUM	ARSENIC	SELENIUM	SILVER	CHROM	COPPER	ZINC	NICKEL	MDLYB				
NUMBER	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001		
N DET.	0000	0000	0000	0000	0001	0000	0001	0000	0000	0000	0000	0000	0000		
MEAN	0.030	0.310	0.040	21.000	0.000	0.040	0.000	0.040	2.81	0.210	0.870	0.120	0.040		
S. D.	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.000	0.000	0.000	0.000		
LOW	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.300	0.300	0.000	0.000		
HIGH	0.030	0.310	0.040	21.000	0.000	0.040	0.000	0.040	2.81	0.210	0.870	0.120	0.040		

HAKE, WHITE		UROPHYCIS TENUIIS							033025 AREA- NORTH ATLANTIC			SITE- P3		MUSCLE	
LENGTH WEIGHT	NUM	MEAN	0.451	S. D.	0.000	LOW	0.451	HIGH	0.451	VANADIUM	MANG	ANTIMONY	TIM		
	NUM	1												MEAN	0.756
	MERCURY	LEAD	CADMIUM	ARSENIC	SELENIUM	SILVER	CHROM	COPPER	ZINC	NICKEL	MDLYB				
NUMBER	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001		
N DET.	0000	0000	0000	0000	0000	0001	0000	0000	0000	0000	0001	0000	0000		
MEAN	0.060	0.355	0.040	11.000	0.530	0.000	0.145	0.250	3.21	0.140	0.000	0.150	0.280		
S. D.	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.000	0.000	0.000	0.000		
LOW	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.000	0.000	0.000	0.000		
HIGH	0.060	0.355	0.040	11.000	0.530	0.000	0.145	0.250	3.21	0.140	0.000	0.150	0.280		

CUSK-EEL, FAWN		LEPOPHIDIUM CERVINUM							037004 AREA- NORTH ATLANTIC			SITE- P4		MUSCLE	
LENGTH WEIGHT	NUM	MEAN	0.216	S. D.	0.000	LOW	0.216	HIGH	0.216	VANADIUM	MANG	ANTIMONY	TIM		
	NUM	2												MEAN	0.033
	MERCURY	LEAD	CADMIUM	ARSENIC	SELENIUM	SILVER	CHROM	COPPER	ZINC	NICKEL	MDLYB				
NUMBER	0002	0002	0002	0001	0001	0002	0002	0002	0002	0002	0002	0002	0002		
N DET.	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000		
MEAN	0.030	1.355	0.145	8.670	0.500	0.070	0.288	0.820	9.11	0.785	0.150	0.345	1.445		
S. D.	0.014	0.198	0.049	0.000	0.000	0.000	0.011	0.099	2.27	0.403	0.000	0.007	0.629		
LOW	0.020	1.215	0.110	0.000	0.000	0.070	0.280	0.750	7.50	0.500	0.150	0.340	1.000		
HIGH	0.040	1.495	0.180	8.670	0.500	0.070	0.295	0.890	10.71	1.070	0.150	0.350	1.890		

DOLPHIN		CORYPHAENA HIPPURUS							041002 AREA- SOUTH ATLANTIC			SITE- C2		MUSCLE	
LENGTH WEIGHT	NUM	MEAN	0.688	S. D.	0.070	LOW	0.650	HIGH	0.900	VANADIUM	MANG	ANTIMONY	TIM		
	NUM	11												MEAN	2.317
	MERCURY	LEAD	CADMIUM	ARSENIC	SELENIUM	SILVER	CHROM	COPPER	ZINC	NICKEL	MDLYB				
NUMBER	0011	0011	0011	0011	0011	0011	0011	0011	0011	0011	0010	0010	0011		
N DET.	0001	0001	0003	0000	0000	0006	0000	0000	0000	0004	0008	0008	0000		
MEAN	0.133	0.461	0.071	3.490	0.595	0.034	0.252	0.535	5.09	0.286	0.470	0.565	0.155		
S. D.	0.179	0.224	0.031	1.375	0.257	0.009	0.267	0.147	0.89	0.083	0.042	0.092	0.118		
LOW	0.010	0.130	0.040	1.770	0.140	0.020	0.040	0.310	3.67	0.210	0.440	0.500	0.040		
HIGH	0.530	0.736	0.140	5.940	1.130	0.040	0.990	0.790	6.25	0.460	0.500	0.630	0.460		

TABLE 5. SUMMARY OF TRACE ELEMENT LEVELS  
IN RESOURCE SURVEY SPECIES;  
BY TISSUE AND LOCATION

LOCATION LEVEL 5

DOLPHIN		CORYPHAENA HIPPIRUS							041002 AREA- SOUTH ATLANTIC				SITE- M1		MUSCLE	
LENGTH WEIGHT	NUM NUM	0 MEAN	0.000	S. D.	0.000	LOW	0.000	HIGH	0.000	AREA- SOUTH ATLANTIC		SITE- M1		MUSCLE		
		9 MEAN	4.335	S. D.	1.729	LOW	0.000	HIGH	7.272	AREA- SOUTH ATLANTIC		SITE- M1		MUSCLE		
	MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM	
NUMBER	0010	0010	0010	0010	0010	0010	0010	0010	0010	0010	0010	0010	0010	0010	0010	
N DET.	0000	0000	0001	0000	0000	0003	0001	0000	0000	0000	0007	0008	0001	0001	0000	
MEAN	0.175	0.440	0.107	4.463	0.775	0.043	0.158	0.398	5.72	0.322	0.207	0.450	0.202	1.127	0.431	
S. D.	0.114	0.183	0.029	1.406	0.148	0.008	0.072	0.079	2.19	0.130	0.144	0.354	0.089	0.431	0.146	
LOW	0.035	0.140	0.055	1.875	0.520	0.030	0.070	0.300	3.23	0.175	0.100	0.200	0.113	0.525	0.250	
HIGH	0.335	0.725	0.150	6.400	0.970	0.055	0.280	0.520	10.17	0.545	0.370	0.700	0.335	1.780	0.650	

DOLPHIN		CORYPHAENA HIPPIRUS							041002 AREA- SOUTH ATLANTIC				SITE- M1		LIVER	
LENGTH WEIGHT	NUM NUM	0 MEAN	0.000	S. D.	0.000	LOW	0.000	HIGH	0.000	AREA- SOUTH ATLANTIC		SITE- M1		LIVER		
		1 MEAN	4.627	S. D.	0.000	LOW	0.000	HIGH	4.627	AREA- SOUTH ATLANTIC		SITE- M1		LIVER		
	MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM	
NUMBER	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	
N DET.	0000	0000	0000	0000	0000	0000	0001	0000	0000	0000	0000	0000	0000	0000	0000	
MEAN	0.110	0.150	0.980	3.120	1.865	0.010	0.000	1.900	28.90	0.100	0.500	0.200	0.460	0.700	0.650	
S. D.	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.000	0.000	0.000	0.000	0.000	0.000	
LOW	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.000	0.000	0.000	0.000	0.000	0.000	
HIGH	0.110	0.150	0.980	3.120	1.865	0.010	0.000	1.900	28.90	0.100	0.500	0.200	0.460	0.700	0.650	

DOLPHIN		CORYPHAENA HIPPIRUS							041002 AREA- GULF				SITE- L5		MUSCLE	
LENGTH WEIGHT	NUM NUM	1 MEAN	1.403	S. D.	0.000	LOW	1.403	HIGH	1.403	AREA- GULF		SITE- L5		MUSCLE		
		2 MEAN	11.123	S. D.	5.136	LOW	7.491	HIGH	14.755	AREA- GULF		SITE- L5		MUSCLE		
	MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM	
NUMBER	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	
N DET.	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0002	0002	0000	0000	0000	
MEAN	0.350	0.345	0.055	3.875	0.770	0.030	0.160	0.625	4.32	0.205	0.000	0.000	0.090	0.000	0.545	
S. D.	0.255	0.049	0.021	1.520	0.382	0.000	0.042	0.049	0.26	0.092	0.000	0.000	0.014	0.000	0.021	
LOW	0.170	0.310	0.040	2.800	0.500	0.030	0.130	0.590	4.13	0.140	0.000	0.000	0.080	0.000	0.530	
HIGH	0.530	0.380	0.070	4.950	1.040	0.030	0.190	0.660	4.50	0.270	0.000	0.000	0.100	0.000	0.560	

DOLPHIN		CORYPHAENA HIPPIRUS							041002 AREA- HAWAII				SITE- C3		MUSCLE	
LENGTH WEIGHT	NUM NUM	1 MEAN	0.829	S. D.	0.000	LOW	0.829	HIGH	0.829	AREA- HAWAII		SITE- C3		MUSCLE		
		1 MEAN	4.783	S. D.	0.000	LOW	4.783	HIGH	4.783	AREA- HAWAII		SITE- C3		MUSCLE		
	MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM	
NUMBER	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0000	
N DET.	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0001	0000	0000	0000	
MEAN	0.040	0.630	0.210	0.900	0.370	0.020	0.140	1.130	3.69	0.160	0.200	0.000	0.060	0.810	0.000	
S. D.	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.000	0.000	0.000	0.000	0.000	0.000	
LOW	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.000	0.000	0.000	0.000	0.000	0.000	
HIGH	0.040	0.630	0.210	0.900	0.370	0.020	0.140	1.130	3.69	0.160	0.200	0.000	0.060	0.810	0.000	

DOLPHIN		CORYPHAENA HIPPIRUS							041002 AREA- HAWAII				SITE- C3		LIVER	
LENGTH WEIGHT	NUM NUM	1 MEAN	0.829	S. D.	0.000	LOW	0.829	HIGH	0.829	AREA- HAWAII		SITE- C3		LIVER		
		1 MEAN	4.783	S. D.	0.000	LOW	4.783	HIGH	4.783	AREA- HAWAII		SITE- C3		LIVER		
	MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM	
NUMBER	0001	0001	0001	0001	0000	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	
N DET.	0001	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	
MEAN	0.000	0.500	1.290	2.300	0.000	0.050	0.130	5.630	18.44	0.150	0.250	0.250	0.620	0.630	0.310	
S. D.	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.000	0.000	0.000	0.000	0.000	0.000	
LOW	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.000	0.000	0.000	0.000	0.000	0.000	
HIGH	0.000	0.500	1.290	2.300	0.000	0.050	0.130	5.630	18.44	0.150	0.250	0.250	0.620	0.630	0.310	

DOLPHIN		CORYPHAENA HIPPIRUS							041002 AREA- HAWAII				SITE- D5		MUSCLE	
LENGTH WEIGHT	NUM NUM	4 MEAN	0.585	S. D.	0.126	LOW	0.469	HIGH	0.731	AREA- HAWAII		SITE- D5		MUSCLE		
		33 MEAN	9.590	S. D.	4.713	LOW	1.027	HIGH	20.412	AREA- HAWAII		SITE- D5		MUSCLE		
	MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM	
NUMBER	0033	0033	0033	0033	0031	0033	0033	0033	0033	0033	0033	0033	0033	0033	0032	
N DET.	0002	0000	0000	0000	0000	0004	0000	0000	0000	0000	0017	0023	0000	0000	0000	
MEAN	0.111	0.464	0.059	3.034	0.644	0.028	0.170	0.349	3.81	0.183	0.192	0.411	0.088	0.682	0.492	
S. D.	0.085	0.232	0.023	1.096	0.222	0.013	0.116	0.161	1.26	0.053	0.137	0.259	0.026	0.265	0.155	
LOW	0.020	0.060	0.030	1.433	0.140	0.015	0.060	0.110	2.12	0.090	0.060	0.060	0.050	0.155	0.190	
HIGH	0.385	1.060	0.120	6.900	1.300	0.080	0.470	0.870	9.50	0.305	0.630	1.000	0.146	1.190	0.750	

DOLPHIN		CORYPHAENA HIPPIRUS							041002 AREA- HAWAII				SITE- D5		LIVER	
LENGTH WEIGHT	NUM NUM	1 MEAN	0.585	S. D.	0.000	LOW	0.585	HIGH	0.585	AREA- HAWAII		SITE- D5		LIVER		
		21 MEAN	11.200	S. D.	4.737	LOW	2.038	HIGH	20.412	AREA- HAWAII		SITE- D5		LIVER		
	MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM	
NUMBER	0021	0020	0021	0020	0011	0021	0020	0021	0019	0021	0021	0021	0021	0021	0019	
N DET.	0010	0000	0000	0000	0000	0002	0001	0000	0000	0000	0005	0019	0000	0000	0000	
MEAN	0.036	0.596	1.988	3.852	1.995	0.043	0.215	9.253	24.14	0.219	0.464	0.265	1.031	0.770	0.585	
S. D.	0.030	0.362	0.850	2.461	0.717	0.025	0.142	7.179	6.73	0.106	0.206	0.064	0.483	0.386	0.236	
LOW	0.020	0.060	0.490	0.700	1.300	0.010	0.040	2.050	10.63	0.060	0.220	0.220	0.200	0.250	0.310	
HIGH	0.120	1.380	3.600	10.450	3.675	0.110	0.630	28.280	34.37	0.480	1.000	0.310	1.810	1.500	1.250	





TABLE 5. SUMMARY OF TRACE ELEMENT LEVELS  
IN RESOURCE SURVEY SPECIES;  
BY TISSUE AND LOCATION

REPORT #11

LOCATION LEVEL 5

SEATROUT, SPOTTED (SPECKLED)				CYNOSCIION NEBULOSUS				045008 AREA- GULF			SITE- 80			MUSCLE	
LENGTH WEIGHT	NUM NUM	3 MEAN MEAN	0.387 0.613	S. D. S. D.	0.117 0.305	LOW LOW	0.266 0.280	HIGH HIGH	0.500 0.879	VANADIUM	MANG	ANTIMONY	TIN		
	MERCURY	LEAD	CADMIUM	ARSENIC	SELENIUM	SILVER	CHROM	COPPER	ZINC	NICKEL	MOLYB	VANADIUM	MANG	ANTIMONY	TIN
	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM
NUMBER N DET.	0005 0000	0005 0000	0005 0004	0005 0000	0005 0000	0005 0004	0005 0000	0005 0001	0005 0000	0005 0000	0005 0004	0005 0004	0005 0000	0005 0001	0005 0000
MEAN	0.170	0.535	0.040	3.431	0.710	0.020	0.255	0.434	3.80	0.307	0.080	0.280	0.214	1.238	0.518
S. D.	0.124	0.293	0.000	1.870	0.166	0.000	0.105	0.400	1.32	0.103	0.000	0.000	0.139	0.805	0.046
LOW	0.100	0.200	0.000	0.800	0.520	0.000	0.085	0.125	2.34	0.210	0.000	0.000	0.075	0.250	0.450
HIGH	0.390	0.990	0.040	6.000	0.950	0.020	0.365	1.010	5.85	0.460	0.080	0.280	0.445	2.100	0.950

SEATROUT, SPOTTED (SPECKLED)				CYNOSCIION NEBULOSUS				045008 AREA- GULF			SITE- D5			MUSCLE	
LENGTH WEIGHT	NUM NUM	0 MEAN MEAN	0.000 0.131	S. D. S. D.	0.000 0.000	LOW LOW	0.000 0.131	HIGH HIGH	0.000 0.131	VANADIUM	MANG	ANTIMONY	TIN		
	MERCURY	LEAD	CADMIUM	ARSENIC	SELENIUM	SILVER	CHROM	COPPER	ZINC	NICKEL	MOLYB	VANADIUM	MANG	ANTIMONY	TIN
	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM
NUMBER N DET.	0012 0000	0013 0000	0013 0001	0013 0001	0013 0000	0013 0000	0012 0000	0012 0000	0012 0000	0013 0000	0013 0009	0013 0010	0013 0000	0013 0002	0012 0000
MEAN	0.162	0.468	0.091	2.132	0.660	0.049	0.165	0.327	3.90	0.216	0.173	0.420	0.182	0.730	0.607
S. D.	0.057	0.307	0.054	1.355	0.251	0.041	0.105	0.304	0.72	0.092	0.147	0.312	0.061	0.263	0.234
LOW	0.095	0.020	0.035	0.725	0.350	0.020	0.060	0.060	3.03	0.125	0.060	0.220	0.110	0.280	0.400
HIGH	0.305	1.120	0.220	5.000	1.290	0.180	0.370	1.250	5.74	0.415	0.370	0.780	0.330	1.310	1.300

SEATROUT, SPOTTED (SPECKLED)				CYNOSCIION NEBULOSUS				045008 AREA- GULF			SITE- D5			LIVER	
LENGTH WEIGHT	NUM NUM	0 MEAN MEAN	0.000 0.000	S. D. S. D.	0.000 0.000	LOW LOW	0.000 0.000	HIGH HIGH	0.000 0.000	VANADIUM	MANG	ANTIMONY	TIN		
	MERCURY	LEAD	CADMIUM	ARSENIC	SELENIUM	SILVER	CHROM	COPPER	ZINC	NICKEL	MOLYB	VANADIUM	MANG	ANTIMONY	TIN
	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM
NUMBER N DET.	0001 0000	0001 0000	0001 0001	0001 0000	0001 0000	0001 0001	0001 0000	0001 0000	0001 0000	0001 0000	0001 0001	0001 0001	0001 0000	0001 0000	0001 0000
MEAN	0.020	0.350	0.000	3.650	1.800	0.000	0.255	3.860	13.21	0.360	0.000	0.000	0.530	0.800	0.780
S. D.	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.000	0.000	0.000	0.000	0.000	0.000
LOW	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.000	0.000	0.000	0.000	0.000	0.000
HIGH	0.020	0.350	0.000	3.650	1.800	0.000	0.255	3.860	13.21	0.360	0.000	0.000	0.530	0.800	0.780

SEATROUT, SPOTTED (SPECKLED)				CYNOSCIION NEBULOSUS				045008 AREA- GULF			SITE- E5			MUSCLE	
LENGTH WEIGHT	NUM NUM	20 MEAN MEAN	0.450 0.901	S. D. S. D.	0.068 0.369	LOW LOW	0.343 0.404	HIGH HIGH	0.576 1.735	VANADIUM	MANG	ANTIMONY	TIN		
	MERCURY	LEAD	CADMIUM	ARSENIC	SELENIUM	SILVER	CHROM	COPPER	ZINC	NICKEL	MOLYB	VANADIUM	MANG	ANTIMONY	TIN
	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM
NUMBER N DET.	0020 0000	0020 0000	0020 0003	0020 0000	0020 0000	0020 0004	0020 0001	0020 0000	0020 0000	0020 0001	0020 0017	0020 0015	0020 0001	0020 0004	0020 0000
MEAN	0.543	0.467	0.070	1.873	0.757	0.053	0.213	0.211	4.14	0.278	0.097	0.366	0.124	0.722	0.460
S. D.	0.212	0.257	0.027	3.948	0.295	0.042	0.223	0.080	1.08	0.190	0.035	0.226	0.048	0.292	0.099
LOW	0.250	0.050	0.040	0.150	0.170	0.030	0.060	0.090	2.88	0.110	0.060	0.190	0.040	0.440	0.325
HIGH	0.865	1.070	0.140	3.630	1.325	0.190	0.925	0.370	7.50	0.820	0.130	0.750	0.250	1.450	0.630

SEATROUT, SPOTTED (SPECKLED)				CYNOSCIION NEBULOSUS				045008 AREA- GULF			SITE- E5			LIVER	
LENGTH WEIGHT	NUM NUM	1 MEAN MEAN	0.414 0.779	S. D. S. D.	0.000 0.000	LOW LOW	0.414 0.779	HIGH HIGH	0.414 0.779	VANADIUM	MANG	ANTIMONY	TIN		
	MERCURY	LEAD	CADMIUM	ARSENIC	SELENIUM	SILVER	CHROM	COPPER	ZINC	NICKEL	MOLYB	VANADIUM	MANG	ANTIMONY	TIN
	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM
NUMBER N DET.	0001 0000	0001 0000	0001 0000	0001 0000	0001 0000	0001 0000	0001 0000	0001 0000	0001 0000	0001 0000	0001 0000	0001 0001	0001 0000	0001 0000	0001 0000
MEAN	0.240	0.440	0.140	1.000	1.630	0.060	0.120	10.060	31.25	0.280	0.060	0.000	1.010	0.500	0.560
S. D.	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.000	0.000	0.000	0.000	0.000	0.000
LOW	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.000	0.000	0.000	0.000	0.000	0.000
HIGH	0.240	0.440	0.140	1.000	1.630	0.060	0.120	10.060	31.25	0.280	0.060	0.000	1.010	0.500	0.560

SEATROUT, SPOTTED (SPECKLED)				CYNOSCIION NEBULOSUS				045008 AREA- GULF			SITE- G3			MUSCLE	
LENGTH WEIGHT	NUM NUM	0 MEAN MEAN	0.000 0.058	S. D. S. D.	0.000 0.000	LOW LOW	0.000 0.058	HIGH HIGH	0.000 0.058	VANADIUM	MANG	ANTIMONY	TIN		
	MERCURY	LEAD	CADMIUM	ARSENIC	SELENIUM	SILVER	CHROM	COPPER	ZINC	NICKEL	MOLYB	VANADIUM	MANG	ANTIMONY	TIN
	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM
NUMBER N DET.	0003 0000	0003 0002	0003 0002	0003 0000	0003 0000	0003 0001	0003 0001	0003 0000	0003 0000	0003 0002	0003 0003	0003 0003	0003 0000	0003 0002	0003 0000
MEAN	0.253	0.375	0.060	0.798	0.860	0.185	0.148	0.203	4.94	0.260	0.000	0.000	0.100	0.310	0.525
S. D.	0.086	0.000	0.000	0.474	0.285	0.205	0.004	0.071	1.26	0.000	0.000	0.000	0.052	0.000	0.025
LOW	0.160	0.000	0.000	0.408	0.610	0.040	0.145	0.140	3.57	0.000	0.000	0.000	0.070	0.000	0.500
HIGH	0.330	0.375	0.060	1.325	1.170	0.330	0.150	0.280	6.06	0.260	0.000	0.000	0.160	0.310	0.550

SEATROUT, SPOTTED (SPECKLED)				CYNOSCIION NEBULOSUS				045008 AREA- GULF			SITE- G5			MUSCLE	
LENGTH WEIGHT	NUM NUM	1 MEAN MEAN	0.630 2.497	S. D. S. D.	0.000 0.000	LOW LOW	0.630 2.497	HIGH HIGH	0.630 2.497	VANADIUM	MANG	ANTIMONY	TIN		
	MERCURY	LEAD	CADMIUM	ARSENIC	SELENIUM	SILVER	CHROM	COPPER	ZINC	NICKEL	MOLYB	VANADIUM	MANG	ANTIMONY	TIN
	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM
NUMBER N DET.	0001 0000	0001 0000	0001 0000	0001 0000	0001 0000	0001 0000	0001 0000	0001 0000	0001 0000	0001 0000	0001 0001	0001 0001	0001 0000	0001 0001	0001 0000
MEAN	0.090	0.565	0.055	4.500	0.615	0.040	0.315	0.110	3.21	0.180	0.000	0.000	0.085	0.000	0.455
S. D.	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.000	0.000	0.000	0.000	0.000	0.000
LOW	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.000	0.000	0.000	0.000	0.000	0.000
HIGH	0.090	0.565	0.055	4.500	0.615	0.040	0.315	0.110	3.21	0.180	0.000	0.000	0.085	0.000	0.455











TABLE 5. SUMMARY OF TRACE ELEMENT LEVELS  
IN RESOURCE SURVEY SPECIES:  
BY TISSUE AND LOCATION

REPORT

LOCATION LEVEL 5

CROAKER, ATL.		MICROPOGON UNDULATUS							045026 AREA- NORTH ATLANTIC			SITE- N8			MUSCLE
LENGTH WEIGHT	NUM NUM	1 MEAN	0.244	S. D.	0.000	LOW	0.244	HIGH	0.244						
	MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM
NUMBER	0001	0001	0001	0001	0000	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001
N DET.	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0001	0001	0000	0001	0000
MEAN	0.020	0.310	0.060	1.350	0.000	0.020	0.130	0.630	3.75	0.310	0.300	0.000	0.230	0.000	0.380
S. D.	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.000	0.300	0.000	0.000	0.000	0.000
LOW	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.000	0.300	0.000	0.000	0.000	0.000
HIGH	0.020	0.310	0.060	1.350	0.000	0.020	0.130	0.630	3.75	0.310	0.000	0.000	0.230	0.000	0.380

CROAKER, ATL.		MICROPOGON UNDULATUS							045026 AREA- NORTH ATLANTIC			SITE- 04			MUSCLE
LENGTH WEIGHT	NUM NUM	3 MEAN	0.163	S. D.	0.045	LOW	0.114	HIGH	0.203						
	MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM
NUMBER	0003	0003	0003	0002	0003	0003	0003	0003	0003	0003	0003	0003	0003	0003	0003
N DET.	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0301	0001	0000	0000	0000
MEAN	0.048	0.450	0.070	5.393	1.008	0.048	0.197	0.593	3.93	0.312	0.250	0.265	0.345	0.857	0.715
S. D.	0.041	0.131	0.020	0.520	0.744	0.013	0.012	0.078	1.12	0.033	0.269	0.247	0.217	0.216	0.043
LOW	0.020	0.310	0.050	5.025	0.340	0.035	0.190	0.520	3.19	0.280	0.060	0.090	0.210	0.630	0.690
HIGH	0.095	0.570	0.090	5.760	1.810	0.060	0.210	0.675	5.22	0.345	0.440	0.440	0.595	1.060	0.765

CROAKER, ATL.		MICROPOGON UNDULATUS							045026 AREA- NORTH ATLANTIC			SITE- R3			MUSCLE
LENGTH WEIGHT	NUM NUM	10 MEAN	0.241	S. D.	0.012	LOW	0.224	HIGH	0.257						
	MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM
NUMBER	0010	0010	0010	0010	0010	0010	0010	0010	0010	0009	0010	0010	0010	0010	0010
N DET.	0006	0000	0000	0000	0000	0000	0000	0000	0000	0000	0009	0009	0000	0010	0000
MEAN	0.033	0.430	0.067	2.343	0.633	0.034	0.214	0.364	4.02	0.240	0.080	0.130	0.261	0.000	0.504
S. D.	0.015	0.109	0.018	1.207	0.276	0.009	0.139	0.056	0.40	0.063	0.000	0.000	0.063	0.000	0.146
LOW	0.020	0.310	0.030	0.100	0.020	0.020	0.060	0.295	3.44	0.120	0.000	0.000	0.170	0.000	0.380
HIGH	0.050	0.630	0.100	4.000	1.025	0.050	0.500	0.490	6.65	0.330	0.080	0.130	0.370	0.000	0.880

CROAKER, ATL.		MICROPOGON UNDULATUS							045026 AREA- NORTH ATLANTIC			SITE- R6			MUSCLE
LENGTH WEIGHT	NUM NUM	9 MEAN	0.247	S. D.	0.014	LOW	0.228	HIGH	0.272						
	MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM
NUMBER	0009	0008	0009	0009	0009	0009	0009	0009	0009	0009	0009	0009	0009	0009	0009
N DET.	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0007	0008	0000	0004	0000
MEAN	0.083	0.391	0.100	1.382	0.486	0.044	0.162	0.741	3.72	0.276	0.100	0.750	0.294	0.556	0.658
S. D.	0.061	0.099	0.064	0.458	0.235	0.009	0.084	0.287	1.01	0.113	0.057	0.000	0.168	0.261	0.282
LOW	0.020	0.250	0.010	0.840	0.120	0.030	0.030	0.380	1.81	0.090	0.060	0.000	0.145	0.190	0.285
HIGH	0.220	0.500	0.210	2.133	0.745	0.060	0.250	1.190	5.06	0.450	0.140	0.750	0.530	0.810	1.220

CROAKER, ATL.		MICROPOGON UNDULATUS							045026 AREA- NORTH ATLANTIC			SITE- S7			MUSCLE
LENGTH WEIGHT	NUM NUM	5 MEAN	0.200	S. D.	0.078	LOW	0.114	HIGH	0.263						
	MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM
NUMBER	0005	0004	0005	0005	0005	0005	0005	0005	0005	0005	0005	0005	0005	0005	0005
N DET.	0001	0000	0000	0000	0001	0001	0000	0000	0000	0000	0002	0002	0000	0001	0000
MEAN	0.130	0.551	0.118	4.424	0.716	0.049	0.159	0.419	4.02	0.308	0.303	0.290	0.413	1.053	0.789
S. D.	0.028	0.289	0.108	2.340	0.276	0.009	0.091	0.286	0.94	0.074	0.211	0.221	0.196	0.638	0.217
LOW	0.090	0.293	0.055	2.215	0.365	0.040	0.075	0.060	2.85	0.220	0.060	0.060	0.165	0.250	0.525
HIGH	0.155	0.940	0.310	8.000	1.040	0.060	0.310	0.580	5.40	0.415	0.440	0.500	0.690	1.810	1.015

CROAKER, ATL.		MICROPOGON UNDULATUS							045026 AREA- NORTH ATLANTIC			SITE- S8			MUSCLE
LENGTH WEIGHT	NUM NUM	9 MEAN	0.233	S. D.	0.016	LOW	0.210	HIGH	0.254						
	MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM
NUMBER	0009	0009	0009	0009	0009	0009	0009	0009	0009	0009	0009	0009	0009	0009	0009
N DET.	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0007	0003	0000	0000	0000
MEAN	0.134	0.853	0.071	5.192	0.722	0.054	0.197	0.436	4.70	0.229	0.120	0.267	0.324	0.783	0.583
S. D.	0.059	0.363	0.013	1.175	0.123	0.015	0.082	0.066	0.35	0.361	0.000	0.092	0.084	0.215	0.150
LOW	0.030	0.570	0.050	3.550	0.450	0.040	0.120	0.375	4.27	0.140	0.120	0.190	0.200	0.560	0.380
HIGH	0.220	1.710	0.090	7.750	0.840	0.080	0.380	0.580	5.30	0.295	0.120	0.440	0.500	1.130	0.815

CROAKER, ATL.		MICROPOGON UNDULATUS							045026 AREA- SOUTH ATLANTIC			SITE- C2			MUSCLE
LENGTH WEIGHT	NUM NUM	2 MEAN	0.242	S. D.	0.006	LOW	0.237	HIGH	0.246						
	MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM
NUMBER	0012	0012	0012	0011	0011	0012	0012	0012	0012	0012	0011	0011	0012	0012	0011
N DET.	0004	0002	0004	0000	0000	0008	0002	0000	0000	0004	0009	0008	0000	0003	0000
MEAN	0.061	0.473	0.075	2.332	0.726	0.040	0.182	0.373	4.70	0.316	0.185	0.177	0.487	0.921	0.583
S. D.	0.051	0.131	0.061	1.352	0.211	0.024	0.058	0.220	1.05	0.245	0.233	0.090	0.277	0.620	0.177
LOW	0.010	0.266	0.010	0.400	0.380	0.010	0.090	0.160	3.20	0.085	0.020	0.120	0.210	0.295	0.200
HIGH	0.150	0.635	0.180	0.050	1.095	0.070	0.290	0.860	7.14	0.855	0.350	0.280	1.000	2.280	0.750

TABLE 5. SUMMARY OF TRACE ELEMENT LEVELS  
IN RESOURCE SURVEY SPECIES:  
BY TISSUE AND LOCATION

LOCATION LEVEL 5

CROAKER, ATL.			MICROPOGON UNDULATUS					045026 AREA- SOUTH ATLANTIC			SITE- F6			MUSCLE	
LENGTH WEIGHT	NUM	2 MEAN	0.168	S. D.	0.000	LOW	0.168	HIGH	0.168	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM		
	NUM	MEAN	0.072	S. D.	0.000	LOW	0.072	HIGH	0.072						
MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM					
NUMBER	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002		
N DET.	0001	0000	0000	0000	0000	0001	0000	0000	0000	0001	0002	0000	0000		
MEAN	0.030	0.555	0.115	0.904	0.710	0.070	0.383	0.310	5.09	0.170	1.310	0.000	0.665	0.998	0.813
S. D.	0.000	0.325	0.092	0.820	0.127	0.000	0.180	0.212	0.48	0.085	0.000	0.000	0.177	0.774	0.442
LOW	0.000	0.325	0.050	8.460	0.620	0.000	0.255	0.160	4.47	0.110	0.000	0.000	0.540	0.450	0.500
HIGH	0.030	0.785	0.180	9.620	0.800	0.070	0.510	0.460	5.71	0.230	1.310	0.000	0.790	1.545	1.125

CROAKER, ATL.			MICROPOGON UNDULATUS					045026 AREA- GULF			SITE- B7			MUSCLE	
LENGTH WEIGHT	NUM	8 MEAN	0.203	S. D.	0.067	LOW	0.155	HIGH	0.302	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM		
	NUM	MEAN	0.141	S. D.	0.118	LOW	0.056	HIGH	0.355						
MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM					
NUMBER	0009	0009	0009	0009	0009	0009	0009	0008	0009	0009	0009	0009	0008		
N DET.	0006	0000	0000	0000	0000	0000	0000	0000	0007	0007	0000	0000	0000		
MEAN	0.090	0.689	0.097	3.307	0.865	0.037	0.141	0.262	4.45	0.208	0.190	0.248	0.342	0.826	0.611
S. D.	0.044	0.466	0.024	1.701	0.283	0.005	0.076	0.080	0.46	0.083	0.085	0.004	0.185	0.343	0.198
LOW	0.040	0.190	0.060	0.500	0.380	0.030	0.060	0.130	3.06	0.060	0.130	0.245	0.160	0.160	0.380
HIGH	0.120	1.660	0.130	6.250	1.360	0.040	0.250	0.360	6.16	0.340	0.250	0.250	0.705	1.250	0.875

CROAKER, ATL.			MICROPOGON UNDULATUS					045026 AREA- GULF			SITE- C9			MUSCLE	
LENGTH WEIGHT	NUM	10 MEAN	0.350	S. D.	0.000	LOW	0.350	HIGH	0.350	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM		
	NUM	MEAN	0.795	S. D.	0.000	LOW	0.795	HIGH	0.795						
MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM					
NUMBER	0010	0010	0010	0010	0010	0010	0009	0010	0010	0010	0010	0010	0009		
N DET.	0000	0000	0000	0000	0000	0000	0000	0000	0000	0009	0009	0000	0000		
MEAN	0.135	0.365	0.077	1.746	0.661	0.039	0.147	0.380	3.21	0.236	0.060	0.060	0.142	0.539	0.568
S. D.	0.043	0.106	0.024	1.070	0.276	0.008	0.061	0.091	0.74	0.091	0.000	0.000	0.072	0.194	0.153
LOW	0.070	0.250	0.050	0.360	0.120	0.025	0.060	0.250	1.88	0.080	0.000	0.000	0.090	0.310	0.380
HIGH	0.210	0.560	0.130	3.600	1.140	0.050	0.250	0.530	4.88	0.360	0.360	0.060	0.340	0.810	0.810

CROAKER, ATL.			MICROPOGON UNDULATUS					045026 AREA- GULF			SITE- E5			MUSCLE	
LENGTH WEIGHT	NUM	10 MEAN	0.314	S. D.	0.016	LOW	0.291	HIGH	0.342	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM		
	NUM	MEAN	0.425	S. D.	0.068	LOW	0.322	HIGH	0.540						
MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM					
NUMBER	0010	0010	0010	0010	0010	0010	0010	0010	0010	0010	0010	0009	0009		
N DET.	0003	0000	0002	0000	0000	0006	0000	0000	0005	0008	0001	0003	0000		
MEAN	0.027	0.378	0.087	3.256	0.904	0.040	0.151	0.412	4.16	0.230	0.146	0.215	0.176	0.621	0.514
S. D.	0.014	0.154	0.049	1.509	0.177	0.008	0.081	0.099	0.93	0.147	0.130	0.092	0.085	0.217	0.125
LOW	0.010	0.216	0.040	0.975	0.586	0.030	0.040	0.250	2.50	0.085	0.060	0.150	0.080	0.400	0.350
HIGH	0.050	0.750	0.180	6.900	1.170	0.050	0.290	0.540	6.03	0.530	0.370	0.280	0.320	1.000	0.735

CROAKER, ATL.			MICROPOGON UNDULATUS					045026 AREA- GULF			SITE- E8			MUSCLE	
LENGTH WEIGHT	NUM	10 MEAN	0.316	S. D.	0.010	LOW	0.297	HIGH	0.332	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM		
	NUM	MEAN	0.449	S. D.	0.044	LOW	0.382	HIGH	0.511						
MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM					
NUMBER	0010	0010	0010	0010	0010	0010	0010	0010	0009	0010	0010	0010	0009		
N DET.	0009	0000	0000	0000	0000	0000	0000	0000	0000	0009	0008	0000	0000		
MEAN	0.020	0.445	0.093	3.687	1.092	0.032	0.233	0.421	4.29	0.177	0.190	0.430	0.136	0.581	0.480
S. D.	0.000	0.176	0.079	1.502	0.296	0.009	0.165	0.132	0.79	0.329	0.000	0.071	0.031	0.143	0.086
LOW	0.000	0.190	0.040	1.400	0.510	0.020	0.070	0.180	3.00	0.140	0.000	0.380	0.100	0.310	0.310
HIGH	0.020	0.750	0.310	6.900	1.485	0.050	0.560	0.590	6.06	0.240	0.190	0.480	0.210	0.850	0.630

CROAKER, ATL.			MICROPOGON UNDULATUS					045026 AREA- GULF			SITE- G5			MUSCLE	
LENGTH WEIGHT	NUM	2 MEAN	0.385	S. D.	0.007	LOW	0.380	HIGH	0.390	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM		
	NUM	MEAN	0.908	S. D.	0.000	LOW	0.908	HIGH	0.908						
MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM					
NUMBER	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002		
N DET.	0001	0000	0000	0000	0000	0000	0000	0000	0000	0002	0002	0000	0000		
MEAN	0.035	0.565	0.060	2.891	0.958	0.040	0.118	0.378	3.64	0.235	0.000	0.000	0.178	0.000	0.408
S. D.	0.000	0.269	0.014	0.530	0.152	0.014	0.018	0.074	0.11	0.057	0.000	0.000	0.053	0.000	0.018
LOW	0.000	0.375	0.050	2.516	0.850	0.030	0.105	0.325	3.56	0.195	0.000	0.000	0.140	0.000	0.395
HIGH	0.035	0.755	0.070	3.266	1.065	0.050	0.130	0.430	3.72	0.275	0.000	0.000	0.215	0.000	0.420

DRUM, BLACK			POGONIAS CROMIS					045028 AREA- GULF			SITE- B9			MUSCLE	
LENGTH WEIGHT	NUM	1 MEAN	0.315	S. D.	0.000	LOW	0.315	HIGH	0.315	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM		
	NUM	MEAN	0.000	S. D.	0.000	LOW	0.000	HIGH	0.000						
MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM					
NUMBER	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001		
N DET.	0000	0000	0000	0000	0000	0000	0000	0000	0000	0001	0001	0000	0000		
MEAN	0.020	0.500	0.110	2.900	1.045	0.030	0.130	0.330	4.75	0.240	0.000	0.000	0.120	0.940	0.310
S. D.	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.000	0.000	0.000	0.000	0.000	0.000
LOW	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.000	0.000	0.000	0.000	0.000	0.000
HIGH	0.020	0.500	0.110	2.900	1.045	0.030	0.130	0.330	4.75	0.240	0.000	0.000	0.120	0.940	0.310

TABLE 5. SUMMARY OF TRACE ELEMENT LEVELS IN RESOURCE SURVEY SPECIES: BY TISSUE AND LOCATION

LOCATION LEVEL 5

Table with 18 columns: DRUM, BLACK; LENGTH WEIGHT; NUM NUM; 0 MEAN; 0.000 S. D.; 0.000 LOW; 0.000 HIGH; 0.000 HIGH; 0.000 LOW; 0.000 HIGH; 0.000 HIGH; 0.000 LOW; 0.000 HIGH; 0.000 LOW; 0.000 HIGH; 0.000 LOW; 0.000 HIGH; 0.000 LOW; 0.000 HIGH. Rows include N DET., MEAN, S. D., LOW, HIGH.

Table with 18 columns: DRUM, BLACK; LENGTH WEIGHT; NUM NUM; 10 MEAN; 0.463 S. D.; 0.146 LOW; 0.360 HIGH; 0.690 HIGH; 0.850 LOW; 0.690 HIGH. Rows include N DET., MEAN, S. D., LOW, HIGH.

Table with 18 columns: DRUM, BLACK; LENGTH WEIGHT; NUM NUM; 0 MEAN; 0.000 S. D.; 0.000 LOW; 0.000 HIGH; 0.000 HIGH; 0.000 LOW; 0.000 HIGH; 0.000 HIGH; 0.000 LOW; 0.000 HIGH. Rows include N DET., MEAN, S. D., LOW, HIGH.

Table with 18 columns: DRUM, BLACK; LENGTH WEIGHT; NUM NUM; 0 MEAN; 0.000 S. D.; 0.000 LOW; 0.000 HIGH; 0.000 HIGH; 0.000 LOW; 0.000 HIGH; 0.000 HIGH; 0.000 LOW; 0.000 HIGH. Rows include N DET., MEAN, S. D., LOW, HIGH.

Table with 18 columns: DRUM, BLACK; LENGTH WEIGHT; NUM NUM; 10 MEAN; 0.501 S. D.; 0.057 LOW; 0.385 HIGH; 1.134 HIGH; 0.570 LOW; 1.134 HIGH. Rows include N DET., MEAN, S. D., LOW, HIGH.

Table with 18 columns: DRUM, BLACK; LENGTH WEIGHT; NUM NUM; 5 MEAN; 0.534 S. D.; 0.156 LOW; 0.350 HIGH; 0.795 HIGH; 0.770 LOW; 0.795 HIGH. Rows include N DET., MEAN, S. D., LOW, HIGH.

Table with 18 columns: DRUM, BLACK; LENGTH WEIGHT; NUM NUM; 1 MEAN; 0.252 S. D.; 0.000 LOW; 0.252 HIGH; 0.415 HIGH; 0.252 LOW; 0.415 HIGH. Rows include N DET., MEAN, S. D., LOW, HIGH.



TABLE 5. SUMMARY OF TRACE ELEMENT LEVELS  
IN RESOURCE SURVEY SPECIES:  
BY TISSUE AND LOCATION

REPORT

LOCATION LEVEL 5																					
DRUM, RED				SCIAENOPS OCELLATA				045030		AREA- GULF		SITE- C9				MUSCLE					
LENGTH	NUM	0	MEAN	0.000	S. D.	0.000	LOW	0.000	HIGH	0.000	0.000	0.000	0.000	0.000	0.000						
WEIGHT	NUM	0	MEAN	0.000	S. D.	0.000	LOW	0.000	HIGH	0.000	0.000	0.000	0.000	0.000	0.000						
	MERCURY	LEAD	CADMIUM	ARSENIC	SELENIUM	SILVER	CHROM	COPPER	ZINC	NICKEL	MLYB	VANADIUM	MANG	ANTIMONY							
	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM						
NUMBER	0010	0009	0010	0010	0010	0010	0007	0010	0010	0010	0010	0010	0010	0010							
N DET.	0000	0000	0000	0000	0000	0002	0001	0000	0000	0000	0010	0010	0000	0001							
MEAN	0.413	0.406	0.083	4.168	0.610	0.020	0.162	0.314	3.69	0.142	0.000	0.000	0.095	0.587							
S. D.	0.241	0.189	0.042	2.362	0.168	0.012	0.101	0.037	0.73	0.065	0.000	0.000	0.024	0.194							
LOW	0.150	0.130	0.040	1.750	0.300	0.010	0.060	0.250	1.88	0.070	0.000	0.000	0.050	0.310							
HIGH	0.800	0.690	0.190	8.000	0.900	0.040	0.310	0.380	4.44	0.270	0.000	0.000	0.130	0.940							











TABLE 5. SUMMARY OF TRACE ELEMENT LEVELS IN RESOURCE SURVEY SPECIES: BY TISSUE AND LOCATION

LOCATION LEVEL 5

Table with columns: FLOUNDER, FOURSPT, PARALICHTHYS OBLONGUS, 058028, AREA- NORTH ATLANTIC, SITE- 08, MUSCLE. Rows include Length Weight, Mean, S. D., Low, High for various elements like Mercury, Lead, Cadmium, Arsenic, Selenium, Silver, Chromium, Copper, Zinc, Nickel, Molybdenum, Vanadium, Manganese, and Antimony.

Table with columns: FLOUNDER, FOURSPT, PARALICHTHYS OBLONGUS, 058028, AREA- NORTH ATLANTIC, SITE- 01, MUSCLE. Rows include Length Weight, Mean, S. D., Low, High for various elements like Mercury, Lead, Cadmium, Arsenic, Selenium, Silver, Chromium, Copper, Zinc, Nickel, Molybdenum, Vanadium, Manganese, and Antimony.

Table with columns: FLOUNDER, FOURSPT, PARALICHTHYS OBLONGUS, 058028, AREA- NORTH ATLANTIC, SITE- 02, MUSCLE. Rows include Length Weight, Mean, S. D., Low, High for various elements like Mercury, Lead, Cadmium, Arsenic, Selenium, Silver, Chromium, Copper, Zinc, Nickel, Molybdenum, Vanadium, Manganese, and Antimony.

Table with columns: FLOUNDER, FOURSPT, PARALICHTHYS OBLONGUS, 058028, AREA- NORTH ATLANTIC, SITE- 03, MUSCLE. Rows include Length Weight, Mean, S. D., Low, High for various elements like Mercury, Lead, Cadmium, Arsenic, Selenium, Silver, Chromium, Copper, Zinc, Nickel, Molybdenum, Vanadium, Manganese, and Antimony.

Table with columns: FLOUNDER, FOURSPT, PARALICHTHYS OBLONGUS, 058028, AREA- NORTH ATLANTIC, SITE- P1, MUSCLE. Rows include Length Weight, Mean, S. D., Low, High for various elements like Mercury, Lead, Cadmium, Arsenic, Selenium, Silver, Chromium, Copper, Zinc, Nickel, Molybdenum, Vanadium, Manganese, and Antimony.

Table with columns: FLOUNDER, FOURSPT, PARALICHTHYS OBLONGUS, 058028, AREA- NORTH ATLANTIC, SITE- S1, MUSCLE. Rows include Length Weight, Mean, S. D., Low, High for various elements like Mercury, Lead, Cadmium, Arsenic, Selenium, Silver, Chromium, Copper, Zinc, Nickel, Molybdenum, Vanadium, Manganese, and Antimony.

Table with columns: FLOUNDER, FOURSPT, PARALICHTHYS OBLONGUS, 058028, AREA- NORTH ATLANTIC, SITE- S4, MUSCLE. Rows include Length Weight, Mean, S. D., Low, High for various elements like Mercury, Lead, Cadmium, Arsenic, Selenium, Silver, Chromium, Copper, Zinc, Nickel, Molybdenum, Vanadium, Manganese, and Antimony.

TABLE 5. SUMMARY OF TRACE ELEMENT LEVELS  
IN RESOURCE SURVEY SPECIES;  
BY TISSUE AND LOCATION

LOCATION LEVEL 5

FLOUNDER, WINDOWPANE (S. DAB)				SCOPHTHALMUS AQUOSUS				058030	AREA- NORTH ATLANTIC			SITE- I8			MUSCLE
LENGTH WEIGHT	NUM NUM	2 2	MEAN MEAN	0.202 0.179	S. D. S. D.	0.040 0.099	LOW LOW	0.173 0.109	HIGH HIGH	0.230 0.249					
	MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM
NUMBER	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002
N DET.	0001	0000	0000	0000	0000	0000	0000	0000	0000	0000	0002	0001	0000	0000	0000
MEAN	0.020	0.345	0.070	3.088	0.905	0.035	0.155	0.450	6.22	0.290	0.000	0.250	0.230	0.705	0.675
S. D.	0.000	0.219	0.014	0.088	0.502	0.007	0.134	0.226	0.40	0.071	0.000	0.000	0.141	0.559	0.332
LOW	0.000	0.190	0.060	3.025	0.550	0.030	0.060	0.290	5.94	0.240	0.000	0.000	0.130	0.310	0.440
HIGH	0.020	0.500	0.080	3.150	1.260	0.040	0.250	0.610	6.50	0.340	0.000	0.250	0.330	1.100	0.910

FLOUNDER, WINDOWPANE (S. DAB)				SCOPHTHALMUS AQUOSUS				058030	AREA- NORTH ATLANTIC			SITE- N2			MUSCLE
LENGTH WEIGHT	NUM NUM	4 4	MEAN MEAN	0.229 0.227	S. D. S. D.	0.064 0.113	LOW LOW	0.150 0.087	HIGH HIGH	0.300 0.363					
	MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM
NUMBER	0004	0004	0004	0004	0004	0004	0003	0004	0004	0004	0004	0004	0004	0004	0004
N DET.	0000	0000	0000	0000	0000	0001	0000	0000	0000	0000	0004	0004	0000	0000	0000
MEAN	0.140	0.558	0.080	5.810	0.679	0.033	0.137	0.271	6.45	0.350	0.000	0.000	0.290	0.718	0.414
S. D.	0.124	0.313	0.014	4.100	0.093	0.006	0.080	0.067	0.23	0.276	0.000	0.000	0.094	0.162	0.112
LOW	0.020	0.190	0.070	3.125	0.600	0.030	0.060	0.200	6.25	0.160	0.000	0.000	0.200	0.500	0.310
HIGH	0.290	0.940	0.100	11.900	0.805	0.040	0.220	0.355	6.69	0.760	0.000	0.000	0.390	0.850	0.560

FLOUNDER, WINDOWPANE (S. DAB)				SCOPHTHALMUS AQUOSUS				058030	AREA- NORTH ATLANTIC			SITE- N3			MUSCLE
LENGTH WEIGHT	NUM NUM	1 1	MEAN MEAN	0.267 0.225	S. D. S. D.	0.000 0.000	LOW LOW	0.267 0.225	HIGH HIGH	0.267 0.225					
	MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM
NUMBER	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001
N DET.	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0001	0000	0000	0000	0000
MEAN	0.165	0.500	0.125	2.246	0.460	0.090	0.075	0.310	4.12	0.385	0.000	0.750	0.405	0.380	0.690
S. D.	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.000	0.000	0.000	0.000	0.000	0.000
LOW	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.000	0.000	0.000	0.000	0.000	0.000
HIGH	0.165	0.500	0.125	2.246	0.460	0.090	0.075	0.310	4.12	0.385	0.000	0.750	0.405	0.380	0.690

FLOUNDER, WINDOWPANE (S. DAB)				SCOPHTHALMUS AQUOSUS				058030	AREA- NORTH ATLANTIC			SITE- N5			MUSCLE
LENGTH WEIGHT	NUM NUM	7 7	MEAN MEAN	0.221 0.163	S. D. S. D.	0.053 0.068	LOW LOW	0.150 0.088	HIGH HIGH	0.278 0.250					
	MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM
NUMBER	0007	0007	0007	0007	0007	0007	0005	0007	0007	0007	0007	0007	0007	0007	0006
N DET.	0001	0000	0000	0000	0000	0000	0000	0000	0000	0000	0006	0007	0000	0002	0000
MEAN	0.090	0.568	0.058	3.149	0.574	0.038	0.170	0.326	4.50	0.190	0.130	0.000	0.251	0.512	0.484
S. D.	0.046	0.340	0.017	1.289	0.113	0.014	0.163	0.205	1.93	0.078	0.000	0.000	0.156	0.274	0.147
LOW	0.030	0.190	0.030	1.000	0.410	0.020	0.040	0.110	2.00	0.080	0.000	0.000	0.110	0.300	0.310
HIGH	0.160	1.250	0.075	4.525	0.740	0.060	0.440	0.750	7.13	0.295	0.130	0.000	0.580	0.940	0.705

FLOUNDER, WINDOWPANE (S. DAB)				SCOPHTHALMUS AQUOSUS				058030	AREA- NORTH ATLANTIC			SITE- N7			MUSCLE
LENGTH WEIGHT	NUM NUM	1 1	MEAN MEAN	0.265 0.257	S. D. S. D.	0.000 0.000	LOW LOW	0.265 0.257	HIGH HIGH	0.265 0.257					
	MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM
NUMBER	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001
N DET.	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0001	0001	0000	0000	0000
MEAN	0.340	1.130	0.110	3.480	0.900	0.010	0.060	0.330	7.63	0.280	0.000	0.000	0.190	0.750	0.380
S. D.	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.000	0.000	0.000	0.000	0.000	0.000
LOW	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.000	0.000	0.000	0.000	0.000	0.000
HIGH	0.340	1.130	0.110	3.480	0.900	0.010	0.060	0.330	7.63	0.280	0.000	0.000	0.190	0.750	0.380

FLOUNDER, WINDOWPANE (S. DAB)				SCOPHTHALMUS AQUOSUS				058030	AREA- NORTH ATLANTIC			SITE- O1			MUSCLE
LENGTH WEIGHT	NUM NUM	2 2	MEAN MEAN	0.307 0.326	S. D. S. D.	0.023 0.073	LOW LOW	0.291 0.274	HIGH HIGH	0.323 0.377					
	MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM
NUMBER	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002
N DET.	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0002	0002	0000	0000	0000
MEAN	0.113	0.393	0.063	6.205	0.608	0.043	0.143	0.333	6.89	0.243	0.000	0.000	0.290	0.740	0.473
S. D.	0.103	0.067	0.004	0.078	0.223	0.004	0.067	0.004	1.13	0.025	0.000	0.000	0.028	0.156	0.346
LOW	0.040	0.345	0.060	6.150	0.450	0.040	0.095	0.330	6.09	0.225	0.000	0.000	0.270	0.630	0.440
HIGH	0.185	0.440	0.065	6.260	0.765	0.045	0.190	0.335	7.69	0.260	0.000	0.000	0.310	0.850	0.505

FLOUNDER, WINDOWPANE (S. DAB)				SCOPHTHALMUS AQUOSUS				058030	AREA- NORTH ATLANTIC			SITE- P2			MUSCLE
LENGTH WEIGHT	NUM NUM	1 0	MEAN MEAN	0.329 0.000	S. D. S. D.	0.000 0.000	LOW LOW	0.329 0.000	HIGH HIGH	0.329 0.000					
	MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM
NUMBER	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001
N DET.	0000	0001	0001	0000	0000	0001	0001	0000	0000	0001	0000	0001	0000	0001	0000
MEAN	0.040	0.000	0.000	14.360	0.500	0.000	0.000	0.180	5.79	0.000	0.075	0.000	0.180	0.000	0.250
S. D.	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.000	0.300	0.000	0.000	0.000	0.000
LOW	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.000	0.000	0.000	0.000	0.000	0.000
HIGH	0.040	0.000	0.000	14.360	0.500	0.000	0.000	0.180	5.79	0.000	0.075	0.000	0.180	0.000	0.250













TABLE 5. SUMMARY OF TRACE ELEMENT LEVELS IN RESOURCE SURVEY SPECIES; BY TISSUE AND LOCATION

LOCATION LEVEL 5

Table with 18 columns: Species, Tissue, Mean, S.D., and trace elements (As, Se, Ag, Cr, Cu, Zn, Ni, Mo, V, Mn, Sb, Pb). Rows include length, weight, mercury, lead, cadmium, arsenic, selenium, silver, chromium, copper, zinc, nickel, molybdenum, vanadium, manganese, antimony, tin, and number/detector/mean/s.d./low/high values.

Table with 18 columns: Species, Tissue, Mean, S.D., and trace elements (As, Se, Ag, Cr, Cu, Zn, Ni, Mo, V, Mn, Sb, Pb). Rows include length, weight, mercury, lead, cadmium, arsenic, selenium, silver, chromium, copper, zinc, nickel, molybdenum, vanadium, manganese, antimony, tin, and number/detector/mean/s.d./low/high values.

Table with 18 columns: Species, Tissue, Mean, S.D., and trace elements (As, Se, Ag, Cr, Cu, Zn, Ni, Mo, V, Mn, Sb, Pb). Rows include length, weight, mercury, lead, cadmium, arsenic, selenium, silver, chromium, copper, zinc, nickel, molybdenum, vanadium, manganese, antimony, tin, and number/detector/mean/s.d./low/high values.

Table with 18 columns: Species, Tissue, Mean, S.D., and trace elements (As, Se, Ag, Cr, Cu, Zn, Ni, Mo, V, Mn, Sb, Pb). Rows include length, weight, mercury, lead, cadmium, arsenic, selenium, silver, chromium, copper, zinc, nickel, molybdenum, vanadium, manganese, antimony, tin, and number/detector/mean/s.d./low/high values.

Table with 18 columns: Species, Tissue, Mean, S.D., and trace elements (As, Se, Ag, Cr, Cu, Zn, Ni, Mo, V, Mn, Sb, Pb). Rows include length, weight, mercury, lead, cadmium, arsenic, selenium, silver, chromium, copper, zinc, nickel, molybdenum, vanadium, manganese, antimony, tin, and number/detector/mean/s.d./low/high values.

Table with 18 columns: Species, Tissue, Mean, S.D., and trace elements (As, Se, Ag, Cr, Cu, Zn, Ni, Mo, V, Mn, Sb, Pb). Rows include length, weight, mercury, lead, cadmium, arsenic, selenium, silver, chromium, copper, zinc, nickel, molybdenum, vanadium, manganese, antimony, tin, and number/detector/mean/s.d./low/high values.

Table with 18 columns: Species, Tissue, Mean, S.D., and trace elements (As, Se, Ag, Cr, Cu, Zn, Ni, Mo, V, Mn, Sb, Pb). Rows include length, weight, mercury, lead, cadmium, arsenic, selenium, silver, chromium, copper, zinc, nickel, molybdenum, vanadium, manganese, antimony, tin, and number/detector/mean/s.d./low/high values.



TABLE 5. SUMMARY OF TRACE ELEMENT LEVELS IN RESOURCE SURVEY SPECIES; BY TISSUE AND LOCATION

LOCATION LEVEL 5

Main data table with 18 columns: Species, Location, Muscle, Length, Weight, Mercury, Lead, Cadmium, Arsenic, Selenium, Silver, Chromium, Copper, Zinc, Nickel, Molybdenum, Vanadium, Manganese, Antimony, Tin. Rows include Halibut (Muscle and Liver), Sole (Rock), Flounder (Yellowtail) at various sites and locations.



TABLE 5. SUMMARY OF TRACE ELEMENT LEVELS IN RESOURCE SURVEY SPECIES: BY TISSUE AND LOCATION

REPORT

LOCATION LEVEL 5

SOLE, DOVER			MICROSTOMUS PACIFICUS						059021 AREA- CALIFORNIA			SITE- B2		MUSCLE	
LENGTH WEIGHT	NUM NUM	10 MEAN MEAN	0.420 0.740	S. D. S. D.	0.033 0.174	LOW LOW	0.378 0.520	HIGH HIGH	0.480 1.068						
MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM	
NUMBER	0010	0010	0010	0010	0010	0010	0010	0010	0010	0010	0010	0010	0010	0010	
N DET.	0000	0000	0002	0000	0000	0003	0001	0000	0000	0000	0009	0000	0002	0000	
MEAN	0.120	0.390	0.081	4.381	1.033	0.027	0.158	0.200	3.58	0.291	0.000	0.600	0.154	0.515	
S. D.	0.069	0.219	0.043	2.449	0.284	0.016	0.085	0.073	0.67	0.130	0.000	0.000	0.096	0.278	
LOW	0.030	0.050	0.040	1.550	0.610	0.010	0.053	0.075	2.50	0.135	0.000	0.000	0.030	0.060	
HIGH	0.230	0.750	0.180	9.250	1.530	0.040	0.305	0.300	4.48	0.565	0.000	0.600	0.360	0.940	

SOLE, DOVER			MICROSTOMUS PACIFICUS						059021 AREA- CALIFORNIA			SITE- B9		MUSCLE
LENGTH WEIGHT	NUM NUM	10 MEAN MEAN	0.393 0.530	S. D. S. D.	0.031 0.129	LOW LOW	0.351 0.334	HIGH HIGH	0.444 0.725					
MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM
NUMBER	0010	0010	0010	0008	0008	0010	0010	0010	0009	0009	0010	0010	0010	0010
N DET.	0000	0001	0000	0000	0000	0006	0001	0001	0000	0000	0009	0007	0000	0003
MEAN	0.116	0.569	0.076	9.256	1.277	0.048	0.225	0.205	4.06	0.254	0.190	0.297	0.166	0.931
S. D.	0.043	0.326	0.049	4.027	0.430	0.022	0.086	0.043	1.71	0.092	0.000	0.145	0.096	0.407
LOW	0.060	0.200	0.030	3.800	0.780	0.020	0.100	0.110	2.59	0.070	0.000	0.150	0.070	0.480
HIGH	0.200	1.130	0.180	14.563	1.875	0.070	0.320	0.250	8.00	0.360	0.190	0.440	0.340	1.630

SOLE, DOVER			MICROSTOMUS PACIFICUS						059021 AREA- CALIFORNIA			SITE- B9		LIVER
LENGTH WEIGHT	NUM NUM	1 MEAN MEAN	0.390 0.507	S. D. S. D.	0.000 0.000	LOW LOW	0.390 0.507	HIGH HIGH	0.390 0.507					
MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM
NUMBER	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001
N DET.	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0001	0000
MEAN	0.210	0.480	2.000	6.560	2.610	0.040	0.375	2.500	22.86	0.890	0.130	0.430	1.000	0.000
S. D.	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.000	0.000	0.000	0.000	0.000
LOW	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.000	0.000	0.000	0.000	0.000
HIGH	0.210	0.480	2.000	6.560	2.610	0.040	0.375	2.500	22.86	0.890	0.130	0.430	1.000	0.000

SOLE, DOVER			MICROSTOMUS PACIFICUS						059021 AREA- CALIFORNIA			SITE- F4		MUSCLE
LENGTH WEIGHT	NUM NUM	10 MEAN MEAN	0.354 0.467	S. D. S. D.	0.010 0.039	LOW LOW	0.331 0.403	HIGH HIGH	0.365 0.524					
MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM
NUMBER	0010	0010	0010	0009	0009	0010	0010	0010	0010	0010	0010	0010	0010	0009
N DET.	0003	0000	0004	0000	0000	0006	0001	0000	0000	0000	0009	0009	0001	0000
MEAN	0.026	0.551	0.069	5.689	0.668	0.031	0.186	0.130	4.35	0.330	0.350	0.350	0.172	0.695
S. D.	0.014	0.304	0.042	2.984	0.213	0.020	0.167	0.037	1.28	0.234	0.000	0.000	0.118	0.520
LOW	0.010	0.210	0.030	2.025	0.290	0.010	0.020	0.080	2.80	0.110	0.000	0.000	0.030	0.200
HIGH	0.050	1.250	0.150	9.325	0.975	0.055	0.530	0.180	6.77	0.670	0.350	0.350	0.390	1.630

SOLE, DOVER			MICROSTOMUS PACIFICUS						059021 AREA- PACIFIC NORTHWEST			SITE- G9		MUSCLE
LENGTH WEIGHT	NUM NUM	9 MEAN MEAN	0.437 0.000	S. D. S. D.	0.008 0.000	LOW LOW	0.415 0.000	HIGH HIGH	0.440 0.000					
MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM
NUMBER	0009	0009	0009	0008	0008	0009	0009	0009	0009	0008	0008	0009	0009	0008
N DET.	0000	0001	0002	0000	0000	0003	0001	0000	0000	0001	0006	0004	0000	0003
MEAN	0.111	0.485	0.069	6.805	0.976	0.034	0.223	0.158	3.94	0.292	0.255	0.383	0.159	1.180
S. D.	0.052	0.186	0.058	0.956	0.169	0.013	0.182	0.090	1.64	0.187	0.134	0.249	0.107	0.421
LOW	0.060	0.250	0.010	5.556	0.805	0.010	0.080	0.040	1.91	0.040	0.160	0.200	0.085	0.756
HIGH	0.230	0.755	0.180	8.000	1.250	0.046	0.510	0.325	7.86	0.550	0.350	0.750	0.430	1.930

SOLE, DOVER			MICROSTOMUS PACIFICUS						059021 AREA- PACIFIC NORTHWEST			SITE- G9		LIVER
LENGTH WEIGHT	NUM NUM	2 MEAN MEAN	0.415 0.000	S. D. S. D.	0.000 0.000	LOW LOW	0.415 0.000	HIGH HIGH	0.415 0.000					
MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM
NUMBER	0002	0002	0002	0001	0001	0002	0002	0002	0002	0002	0002	0002	0002	0002
N DET.	0000	0000	0000	0000	0000	0001	0000	0000	0000	0000	0000	0001	0000	0001
MEAN	0.270	0.595	2.333	4.200	3.070	0.055	0.183	3.083	19.71	0.350	0.145	2.630	0.690	0.565
S. D.	0.042	0.071	0.272	0.000	0.000	0.000	0.018	0.392	7.48	0.014	0.120	0.000	0.339	0.000
LOW	0.240	0.545	2.140	0.000	0.000	0.000	0.170	2.805	14.42	0.340	0.060	0.000	0.450	0.000
HIGH	0.300	0.645	2.525	4.200	3.070	0.055	0.195	3.360	25.00	0.360	0.230	2.630	0.930	0.565

SOLE, DOVER			MICROSTOMUS PACIFICUS						059021 AREA- PACIFIC NORTHWEST			SITE- H8		MUSCLE
LENGTH WEIGHT	NUM NUM	2 MEAN MEAN	0.380 0.000	S. D. S. D.	0.000 0.000	LOW LOW	0.380 0.000	HIGH HIGH	0.380 0.000					
MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM
NUMBER	0002	0002	0002	0001	0002	0002	0002	0002	0002	0002	0002	0001	0002	0002
N DET.	0000	0000	0000	0000	0000	0001	0000	0000	0000	0000	0002	0002	0000	0000
MEAN	0.035	0.841	0.285	8.953	0.665	0.040	0.353	0.453	3.86	0.368	0.000	0.000	0.106	1.205
S. D.	0.021	0.324	0.304	0.000	0.035	0.000	0.117	0.364	0.91	0.031	0.000	0.000	0.000	0.417
LOW	0.020	0.612	0.070	0.000	0.640	0.000	0.270	0.195	3.21	0.346	0.000	0.000	0.000	0.910
HIGH	0.050	1.070	0.500	8.953	0.690	0.040	0.435	0.710	4.50	0.390	0.000	0.000	0.106	1.500











TABLE 5. SUMMARY OF TRACE ELEMENT LEVELS IN RESOURCE SURVEY SPECIES; BY TISSUE AND LOCATION

LOCATION LEVEL 5

Table with 17 columns: FLOUNDER, WINTER; PSEUDOPLEURONECTES AMERICANUS; 059030; AREA- NORTH ATLANTIC; SITE- N3; MUSCLE. Rows include LENGTH WEIGHT, NUM NUM, MEAN MEAN, MERCURY, LEAD, CADMIUM, ARSENIC, SELENIUM, SILVER, CHROM, COPPER, ZINC, NICKEL, MOLYB, VANADIUM, MANG, ANTIMONY, and NUMBER N DET. MEAN S. D. LOW HIGH.

Table with 17 columns: FLOUNDER, WINTER; PSEUDOPLEURONECTES AMERICANUS; 059030; AREA- NORTH ATLANTIC; SITE- N5; MUSCLE. Rows include LENGTH WEIGHT, NUM NUM, MEAN MEAN, MERCURY, LEAD, CADMIUM, ARSENIC, SELENIUM, SILVER, CHROM, COPPER, ZINC, NICKEL, MOLYB, VANADIUM, MANG, ANTIMONY, and NUMBER N DET. MEAN S. D. LOW HIGH.

Table with 17 columns: FLOUNDER, WINTER; PSEUDOPLEURONECTES AMERICANUS; 059030; AREA- NORTH ATLANTIC; SITE- N8; MUSCLE. Rows include LENGTH WEIGHT, NUM NUM, MEAN MEAN, MERCURY, LEAD, CADMIUM, ARSENIC, SELENIUM, SILVER, CHROM, COPPER, ZINC, NICKEL, MOLYB, VANADIUM, MANG, ANTIMONY, and NUMBER N DET. MEAN S. D. LOW HIGH.

Table with 17 columns: FLOUNDER, WINTER; PSEUDOPLEURONECTES AMERICANUS; 059030; AREA- NORTH ATLANTIC; SITE- 01; MUSCLE. Rows include LENGTH WEIGHT, NUM NUM, MEAN MEAN, MERCURY, LEAD, CADMIUM, ARSENIC, SELENIUM, SILVER, CHROM, COPPER, ZINC, NICKEL, MOLYB, VANADIUM, MANG, ANTIMONY, and NUMBER N DET. MEAN S. D. LOW HIGH.

Table with 17 columns: FLOUNDER, WINTER; PSEUDOPLEURONECTES AMERICANUS; 059030; AREA- NORTH ATLANTIC; SITE- 02; MUSCLE. Rows include LENGTH WEIGHT, NUM NUM, MEAN MEAN, MERCURY, LEAD, CADMIUM, ARSENIC, SELENIUM, SILVER, CHROM, COPPER, ZINC, NICKEL, MOLYB, VANADIUM, MANG, ANTIMONY, and NUMBER N DET. MEAN S. D. LOW HIGH.

Table with 17 columns: FLOUNDER, WINTER; PSEUDOPLEURONECTES AMERICANUS; 059030; AREA- NORTH ATLANTIC; SITE- 03; MUSCLE. Rows include LENGTH WEIGHT, NUM NUM, MEAN MEAN, MERCURY, LEAD, CADMIUM, ARSENIC, SELENIUM, SILVER, CHROM, COPPER, ZINC, NICKEL, MOLYB, VANADIUM, MANG, ANTIMONY, and NUMBER N DET. MEAN S. D. LOW HIGH.

Table with 17 columns: FLOUNDER, WINTER; PSEUDOPLEURONECTES AMERICANUS; 059030; AREA- NORTH ATLANTIC; SITE- P1; MUSCLE. Rows include LENGTH WEIGHT, NUM NUM, MEAN MEAN, MERCURY, LEAD, CADMIUM, ARSENIC, SELENIUM, SILVER, CHROM, COPPER, ZINC, NICKEL, MOLYB, VANADIUM, MANG, ANTIMONY, and NUMBER N DET. MEAN S. D. LOW HIGH.















TABLE 5. SUMMARY OF TRACE ELEMENT LEVELS IN RESOURCE SURVEY SPECIES BY TISSUE AND LOCATION

Table with multiple sections: GRUNT, BLUESTRIPED (YELLOW) MAEMULON SCIURUS 073015 AREA- SOUTH ATLANTIC SITE- M4 MUSCLE; GRUNT, BLUESTRIPED (YELLOW) MAEMULON SCIURUS 073015 AREA- GULF SITE- R6 MUSCLE; PIGFISH ORTHOPRISTIS CHRYSOPTERA 073017 AREA- NORTH ATLANTIC SITE- R8 MUSCLE; PIGFISH ORTHOPRISTIS CHRYSOPTERA 073017 AREA- NORTH ATLANTIC SITE- R8 MUSCLE; PIGFISH ORTHOPRISTIS CHRYSOPTERA 073017 AREA- SOUTH ATLANTIC SITE- C2 MUSCLE; PIGFISH ORTHOPRISTIS CHRYSOPTERA 073017 AREA- SOUTH ATLANTIC SITE- J4 MUSCLE; HERRING, BLUEBACK ALOSA AESTIVALIS 078001 AREA- NORTH ATLANTIC SITE- M2 WHOLE. Each section contains columns for length, weight, and concentration of various elements (Mercury, Lead, Cadmium, Arsenic, Selenium, Silver, Chromium, Copper, Zinc, Nickel, Molybdenum, Vanadium, Manganese, Antimony, Tin).







TABLE 5. SUMMARY OF TRACE ELEMENT LEVELS  
IN RESOURCE SURVEY SPECIES:  
BY TISSUE AND LOCATION

LOCATION LEVEL 5

MENHADEN, GULF		BREVOORTIA PATRONUS							078008 AREA- GULF			SITE- 87 WHOLE			
LENGTH WEIGHT	NUM	6	MEAN	0.228	S. D.	0.008	LOW	0.214	HIGH	0.237	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM	
	NUM	6	MEAN	0.265	S. D.	0.030	LOW	0.213	HIGH	0.287					
	MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MDLYB PPM				
NUMBER	0006	0006	0006	0006	0006	0006	0006	0006	0006	0306	0006	0006	0006	0006	
N DET.	0003	0000	0000	0000	0000	0000	0000	0000	0000	0000	0001	0000	0001	0000	
MEAN	0.138	3.147	0.259	6.218	0.804	0.222	1.197	0.839	35.14	1.436	0.408	2.589	12.810	2.184	
S. D.	0.169	0.719	0.118	1.574	0.111	0.070	0.296	0.203	30.87	0.448	0.142	1.187	3.058	0.914	
LOW	0.010	1.850	0.180	4.670	0.680	0.146	0.756	0.550	18.14	0.966	0.240	1.340	9.574	0.740	
HIGH	0.330	4.023	0.480	8.380	1.010	0.310	1.605	1.075	97.50	2.115	0.585	4.380	17.935	3.900	

MENHADEN, GULF		BREVOORTIA PATRONUS							078008 AREA- GULF			SITE- 87 GUTTED			
LENGTH WEIGHT	NUM	9	MEAN	0.231	S. D.	0.005	LOW	0.225	HIGH	0.242	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM	
	NUM	9	MEAN	0.269	S. D.	0.010	LOW	0.252	HIGH	0.283					
	MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MDLYB PPM				
NUMBER	0008	0009	0009	0007	0007	0009	0009	0009	0009	0009	0009	0009	0009	0009	
N DET.	0004	0000	0000	0000	0000	0000	0000	0000	0000	0300	0000	0000	0000	0000	
MEAN	0.020	2.424	0.259	7.124	0.662	0.203	1.402	0.766	24.39	1.738	0.388	2.051	5.725	2.570	
S. D.	0.078	0.793	0.116	4.394	0.251	0.069	0.676	0.288	5.88	0.637	0.136	0.946	1.246	0.435	
LOW	0.010	0.750	0.120	3.350	0.330	0.100	0.360	0.360	18.37	0.710	0.245	1.000	3.810	1.880	
HIGH	0.030	3.686	0.460	16.400	0.940	0.310	2.453	1.210	33.93	2.515	0.665	3.640	7.880	3.210	

MENHADEN, GULF		BREVOORTIA PATRONUS							078008 AREA- GULF			SITE- 88 MUSCLE			
LENGTH WEIGHT	NUM	3	MEAN	0.145	S. D.	0.000	LOW	0.145	HIGH	0.145	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM	
	NUM	0	MEAN	0.000	S. D.	0.000	LOW	0.000	HIGH	0.000					
	MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MDLYB PPM				
NUMBER	0003	0003	0003	0003	0003	0003	0003	0003	0003	0003	0003	0003	0003	0003	
N DET.	0003	0000	0000	0000	0000	0000	0000	0000	0000	0000	0003	0002	0000	0000	
MEAN	0.000	0.710	0.067	3.317	0.373	0.018	0.243	0.800	5.68	0.293	0.000	0.375	0.398	0.722	
S. D.	0.000	0.505	0.025	1.007	0.172	0.014	0.119	0.684	3.40	0.170	0.000	0.000	0.377	0.344	
LOW	0.000	0.250	0.040	2.250	0.250	0.010	0.160	0.300	2.69	0.190	0.000	0.000	0.110	0.395	
HIGH	0.000	1.250	0.090	4.250	0.570	0.035	0.380	1.580	9.38	0.490	0.000	0.375	0.625	1.060	

MENHADEN, GULF		BREVOORTIA PATRONUS							078008 AREA- GULF			SITE- 05 WHOLE			
LENGTH WEIGHT	NUM	22	MEAN	0.221	S. D.	0.011	LOW	0.204	HIGH	0.255	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM	
	NUM	22	MEAN	0.231	S. D.	0.038	LOW	0.181	HIGH	0.349					
	MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MDLYB PPM				
NUMBER	0022	0022	0022	0022	0022	0022	0022	0022	0021	0022	0022	0022	0022	0022	
N DET.	0006	0000	0000	0000	0000	0001	0000	0000	0000	0000	0300	0001	0000	0003	
MEAN	0.053	2.144	0.166	4.047	0.902	0.143	0.568	0.765	20.64	0.788	0.455	2.629	8.372	2.015	
S. D.	0.053	0.765	0.089	1.843	0.261	0.045	0.216	0.270	7.62	0.501	0.222	1.408	3.721	0.559	
LOW	0.010	0.310	0.040	2.000	0.520	0.030	0.270	0.190	11.87	0.400	0.220	1.000	2.790	0.960	
HIGH	0.235	3.440	0.430	9.160	1.475	0.230	1.310	1.400	41.87	2.640	0.970	7.060	17.140	3.350	

MENHADEN, GULF		BREVOORTIA PATRONUS							078008 AREA- GULF			SITE- 05 MUSCLE			
LENGTH WEIGHT	NUM	20	MEAN	0.197	S. D.	0.017	LOW	0.179	HIGH	0.245	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM	
	NUM	20	MEAN	0.188	S. D.	0.042	LOW	0.139	HIGH	0.238					
	MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MDLYB PPM				
NUMBER	0020	0019	0020	0020	0020	0020	0020	0019	0020	0020	0020	0020	0020	0020	
N DET.	0016	0000	0000	0000	0000	0000	0000	0000	0000	0000	0017	0003	0000	0003	
MEAN	0.058	0.511	0.086	2.364	0.559	0.045	0.258	1.024	5.30	0.258	0.250	0.446	0.743	0.713	
S. D.	0.057	0.160	0.038	1.464	0.217	0.014	0.253	0.313	1.60	0.134	0.000	0.271	0.176	0.274	
LOW	0.020	0.380	0.040	0.690	0.090	0.020	0.060	0.465	2.75	0.090	0.250	0.190	0.460	0.245	
HIGH	0.140	0.880	0.210	5.050	0.900	0.080	1.000	1.750	9.19	0.750	0.250	1.130	1.000	1.130	

MENHADEN, GULF		BREVOORTIA PATRONUS							078008 AREA- GULF			SITE- E5 MUSCLE			
LENGTH WEIGHT	NUM	20	MEAN	0.282	S. D.	0.020	LOW	0.252	HIGH	0.322	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM	
	NUM	20	MEAN	0.293	S. D.	0.040	LOW	0.243	HIGH	0.370					
	MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MDLYB PPM				
NUMBER	0020	0020	0020	0019	0019	0020	0020	0020	0020	0020	0020	0019	0020	0020	
N DET.	0010	0000	0002	0000	0000	0005	0000	0000	0000	0000	0012	0005	0000	0003	
MEAN	0.057	0.737	0.094	5.459	0.720	0.109	0.236	0.704	7.59	0.348	0.285	0.498	0.617	0.899	
S. D.	0.034	0.302	0.048	2.072	0.287	0.262	0.116	0.264	2.06	0.211	0.215	0.285	0.246	0.274	
LOW	0.020	0.380	0.030	2.650	0.100	0.010	0.080	0.390	5.00	0.130	0.130	0.190	0.290	0.360	
HIGH	0.110	1.430	0.210	9.000	1.250	1.055	0.560	1.340	13.57	1.000	0.720	1.130	1.110	1.440	

MENHADEN, GULF		BREVOORTIA PATRONUS							078008 AREA- GULF			SITE- G5 MUSCLE			
LENGTH WEIGHT	NUM	4	MEAN	0.206	S. D.	0.006	LOW	0.197	HIGH	0.210	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM	
	NUM	4	MEAN	0.269	S. D.	0.012	LOW	0.255	HIGH	0.284					
	MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MDLYB PPM				
NUMBER	0004	0004	0004	0004	0004	0004	0004	0004	0004	0004	0004	0004	0004	0004	
N DET.	0003	0000	0000	0000	0000	0000	0000	0000	0000	0000	0004	0000	0000	0000	
MEAN	0.020	0.751	0.095	2.748	0.858	0.050	0.304	0.565	7.67	0.248	0.000	0.445	0.620	0.885	
S. D.	0.000	0.342	0.037	1.029	0.493	0.008	0.197	0.149	1.06	0.040	0.000	0.218	0.123	0.230	
LOW	0.000	0.500	0.075	1.500	0.330	0.040	0.180	0.400	6.19	0.190	0.000	0.220	0.445	0.720	
HIGH	0.020	1.250	0.150	4.000	1.515	0.060	0.595	0.740	8.56	0.280	0.000	0.690	0.720	1.220	

TABLE 5. SUMMARY OF TRACE ELEMENT LEVELS  
IN RESOURCE SURVEY SPECIES;  
BY TISSUE AND LOCATION

LOCATION LEVEL 5

MENHADEN, GULF				BREVORTIA PATRONUS				078008	AREA- GULF			SITE- H1			MUSCLE
LENGTH WEIGHT	NUM NUM	3 MEAN MEAN		0.147	S. D.	0.002	LOW	0.145	HIGH	0.149					
	MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM
NUMBER	0003	0003	0003	0003	0003	0003	0003	0003	0003	0003	0003	0003	0003	0003	0003
N DET.	0003	0000	0000	0000	0000	0000	0000	0000	0000	0000	0003	0001	0000	0000	0000
MEAN	0.000	0.897	0.077	3.817	0.488	0.037	0.253	0.690	8.23	0.240	0.000	0.375	0.590	1.023	0.670
S. D.	0.000	0.189	0.021	0.592	0.024	0.012	0.125	0.120	1.15	0.095	0.000	0.262	0.149	0.382	0.131
LOW	0.000	0.690	0.060	3.450	0.470	0.030	0.130	0.570	6.94	0.180	0.000	0.190	0.480	0.690	0.550
HIGH	0.000	1.060	0.100	4.500	0.515	0.050	0.380	0.810	9.13	0.350	0.000	0.560	0.760	1.440	0.810

MENHADEN, YELLOWFIN				BREVORTIA SMITHI				078009	AREA- GULF			SITE- L5			WHOLE
LENGTH WEIGHT	NUM NUM	13 MEAN MEAN		0.195	S. D.	0.012	LOW	0.173	HIGH	0.213					
	MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM
NUMBER	0013	0013	0013	0012	0012	0013	0013	0013	0013	0013	0013	0013	0013	0013	0013
N DET.	0007	0000	0000	0000	0000	0000	0000	0000	0000	0000	0301	0000	0000	0001	0000
MEAN	0.093	1.519	0.165	7.808	1.143	0.140	0.439	0.757	17.02	0.582	0.396	1.474	1.135	2.133	1.969
S. D.	0.161	0.463	0.109	4.216	0.742	0.053	0.132	0.176	2.84	0.353	0.123	0.935	0.256	0.493	0.526
LOW	0.010	0.720	0.040	3.400	0.640	0.010	0.195	0.435	13.50	0.150	0.250	0.060	0.730	1.000	0.970
HIGH	0.420	2.210	0.495	15.250	3.250	0.215	0.625	1.060	22.50	1.290	0.690	3.950	1.750	3.200	3.000

MENHADEN, ATL.				BREVORTIA TYRANNUS				078010	AREA- NORTH ATLANTIC			SITE- R2			WHOLE
LENGTH WEIGHT	NUM NUM	32 MEAN MEAN		0.198	S. D.	0.010	LOW	0.150	HIGH	0.211					
	MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM
NUMBER	0032	0032	0032	0030	0030	0032	0032	0032	0031	0032	0032	0032	0032	0032	0032
N DET.	0024	0000	0000	0001	0000	0000	0000	0001	0000	0000	0002	0002	0000	0003	0000
MEAN	0.074	1.802	0.224	2.930	1.119	0.175	0.742	1.386	18.50	0.968	0.348	1.052	7.258	2.126	1.850
S. D.	0.095	0.644	0.233	1.233	0.624	0.077	0.322	0.489	5.47	0.557	0.192	0.576	3.514	1.011	0.808
LOW	0.010	0.380	0.040	1.025	0.350	0.030	0.130	0.350	7.70	0.110	0.100	0.100	0.010	0.130	0.500
HIGH	0.270	3.165	1.390	6.455	3.760	0.390	1.350	2.345	34.64	2.250	0.940	2.310	16.665	4.810	3.800

MENHADEN, ATL.				BREVORTIA TYRANNUS				078010	AREA- NORTH ATLANTIC			SITE- R2			MUSCLE
LENGTH WEIGHT	NUM NUM	10 MEAN MEAN		0.224	S. D.	0.010	LOW	0.213	HIGH	0.246					
	MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM
NUMBER	0010	0010	0010	0010	0010	0010	0010	0010	0010	0009	0010	0010	0010	0010	0010
N DET.	0008	0000	0000	0000	0000	0000	0000	0000	0000	0000	0007	0006	0000	0009	0000
MEAN	0.020	0.535	0.071	2.049	0.767	0.045	0.271	1.097	6.77	0.357	0.217	0.245	0.784	0.340	0.599
S. D.	0.000	0.165	0.017	1.293	0.222	0.010	0.139	0.470	0.95	0.202	0.029	0.082	0.294	0.000	0.103
LOW	0.020	0.250	0.030	0.500	0.450	0.030	0.090	0.310	5.94	0.160	0.200	0.140	0.260	0.000	0.470
HIGH	0.020	0.690	0.090	5.000	1.150	0.060	0.500	1.810	9.13	0.860	0.250	0.310	1.400	0.340	0.750

MENHADEN, ATL.				BREVORTIA TYRANNUS				078010	AREA- NORTH ATLANTIC			SITE- R3			WHOLE
LENGTH WEIGHT	NUM NUM	23 MEAN MEAN		0.212	S. D.	0.017	LOW	0.197	HIGH	0.280					
	MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM
NUMBER	0023	0023	0023	0022	0022	0023	0023	0023	0023	0023	0023	0023	0023	0023	0023
N DET.	0016	0000	0000	0000	0000	0000	0000	0000	0000	0000	0001	0000	0000	0005	0000
MEAN	0.099	1.820	0.211	3.144	1.074	0.172	0.732	1.468	18.38	0.962	0.340	1.234	6.013	1.943	1.507
S. D.	0.113	0.463	0.117	2.341	0.332	0.076	0.325	0.492	4.81	0.571	0.191	0.643	2.438	0.825	0.559
LOW	0.010	0.810	0.060	0.700	0.563	0.070	0.240	0.710	7.75	0.070	0.100	0.500	1.115	0.180	0.880
HIGH	0.310	2.485	0.430	10.620	2.000	0.340	1.755	2.460	32.50	2.560	0.810	3.250	10.500	3.930	3.000

MENHADEN, ATL.				BREVORTIA TYRANNUS				078010	AREA- SOUTH ATLANTIC			SITE- C2			WHOLE
LENGTH WEIGHT	NUM NUM	46 MEAN MEAN		0.208	S. D.	0.058	LOW	0.163	HIGH	0.332					
	MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM
NUMBER	0045	0045	0046	0046	0046	0046	0046	0045	0046	0046	0045	0046	0046	0046	0045
N DET.	0033	0000	0000	0000	0000	0000	0000	0000	0000	0000	0301	0001	0000	0001	0000
MEAN	0.164	1.664	0.181	5.348	1.006	0.173	0.645	1.100	19.21	0.760	0.445	1.749	3.685	2.181	1.748
S. D.	0.187	0.817	0.090	2.328	0.341	0.070	0.314	0.683	15.60	0.479	0.172	1.086	2.039	0.841	0.558
LOW	0.030	0.440	0.085	1.725	0.400	0.090	0.150	0.380	9.50	0.295	0.220	0.625	1.435	0.500	0.570
HIGH	0.670	3.930	0.530	10.840	2.290	0.390	1.580	3.710	111.41	2.150	0.845	5.285	10.750	4.280	3.750

HERRING, ATL.				CLUPEA HARENGUS HARENGUS				078011	AREA- NORTH ATLANTIC			SITE- I5			WHOLE
LENGTH WEIGHT	NUM NUM	2 MEAN MEAN		0.234	S. D.	0.028	LOW	0.214	HIGH	0.253					
	MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM
NUMBER	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002
N DET.	0002	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000
MEAN	0.000	1.360	0.150	3.238	0.760	0.085	0.285	1.155	16.26	0.425	0.205	0.283	1.143	1.533	1.793
S. D.	0.000	0.594	0.014	0.230	0.127	0.007	0.049	0.219	4.44	0.007	0.064	0.272	0.230	0.223	0.520
LOW	0.000	0.940	0.140	3.075	0.670	0.080	0.250	1.000	13.12	0.420	0.160	0.090	0.980	1.375	1.425
HIGH	0.000	1.780	0.160	3.400	0.850	0.090	0.320	1.310	19.40	0.430	0.250	0.475	1.305	1.690	2.160















TABLE 5. SUMMARY OF TRACE ELEMENT LEVELS  
IN RESOURCE SURVEY SPECIES;  
BY TISSUE AND LOCATION

LOCATION LEVEL 5

JACK, AKULE				TRACHUROPS CRUMENOPHTHALMUS				079053 AREA- HAWAII				SITE- D1 MUSCLE			
LENGTH WEIGHT	NUM NUM	0 MEAN	MEAN	0.000 0.266	S. D. S. D.	0.000 0.043	LOW LOW	0.000 0.187	HIGH HIGH	0.000 0.369	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM	
	MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM					MOLYB PPM
NUMBER DET.	0039 0002	0038 0001	0039 0003	0038 0000	0037 0000	0038 0010	0039 0002	0038 0000	0039 0000	0038 0002	0039 0028	0039 0000	0039 0005	0038 0000	
MEAN	0.149	0.484	0.077	3.760	0.883	0.037	0.186	1.280	12.07	0.239	0.158	0.305	0.181	0.632	
S. D.	0.062	0.299	0.050	2.088	0.226	0.027	0.135	1.336	5.15	0.131	0.100	0.220	0.091	0.208	
LOW	0.020	0.180	0.010	1.100	0.570	0.010	0.050	0.210	6.59	0.040	0.060	0.100	0.070	0.250	
HIGH	0.270	1.505	0.290	12.100	1.660	0.140	0.690	8.995	31.79	0.470	0.280	0.870	0.670	1.065	

JACK, (MACKEREL SCAD)				DECAPTERUS PINNULATUS				079068 AREA- HAWAII				SITE- D6 MUSCLE			
LENGTH WEIGHT	NUM NUM	0 MEAN	MEAN	0.000 0.398	S. D. S. D.	0.000 0.033	LOW LOW	0.000 0.347	HIGH HIGH	0.000 0.463	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM	
	MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM					MOLYB PPM
NUMBER DET.	0019 0004	0021 0001	0020 0000	0021 0000	0021 0000	0021 0000	0020 0000	0020 0000	0021 0000	0021 0000	0021 0020	0021 0000	0021 0005	0019 0000	
MEAN	0.072	0.577	0.092	3.457	0.976	0.035	0.215	1.093	8.79	0.209	0.220	0.170	0.187	0.599	
S. D.	0.045	0.344	0.022	1.563	0.387	0.009	0.150	0.488	2.26	0.064	0.000	0.000	0.058	0.246	
LOW	0.020	0.130	0.060	0.970	0.190	0.020	0.040	0.260	3.50	0.120	0.000	0.000	0.115	0.130	
HIGH	0.160	1.440	0.130	6.650	1.620	0.060	0.640	1.880	12.38	0.370	0.220	0.170	0.310	1.000	

JACK, (MACKEREL SCAD)				DECAPTERUS PINNULATUS				079068 AREA- HAWAII				SITE- H4 MUSCLE			
LENGTH WEIGHT	NUM NUM	0 MEAN	MEAN	0.000 0.178	S. D. S. D.	0.000 0.029	LOW LOW	0.000 0.133	HIGH HIGH	0.000 0.212	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM	
	MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM					MOLYB PPM
NUMBER DET.	0010 0009	0010 0000	0010 0001	0009 0000	0009 0000	0010 0004	0010 0000	0010 0000	0010 0000	0010 0001	0010 0006	0010 0000	0010 0002	0010 0000	
MEAN	0.050	0.777	0.082	4.660	1.188	0.038	0.314	1.477	10.51	0.216	0.197	0.615	0.181	0.873	
S. D.	0.000	0.546	0.040	2.530	0.405	0.026	0.192	0.378	2.79	0.176	0.080	0.190	0.062	0.279	
LOW	0.000	0.365	0.040	1.790	0.650	0.010	0.080	1.006	7.63	0.040	0.120	0.160	0.040	0.400	
HIGH	0.050	2.130	0.180	10.280	1.840	0.070	0.680	2.240	16.36	0.610	0.280	0.620	0.260	1.250	

JACK, (MACKEREL SCAD)				DECAPTERUS PINNULATUS				079068 AREA- HAWAII				SITE- H5 MUSCLE			
LENGTH WEIGHT	NUM NUM	0 MEAN	MEAN	0.000 0.314	S. D. S. D.	0.000 0.035	LOW LOW	0.000 0.272	HIGH HIGH	0.000 0.369	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM	
	MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM					MOLYB PPM
NUMBER DET.	0009 0006	0009 0000	0009 0000	0009 0000	0009 0000	0009 0000	0008 0000	0009 0000	0009 0000	0009 0000	0009 0009	0009 0000	0009 0000	0009 0000	
MEAN	0.027	0.478	0.078	5.026	1.193	0.028	0.161	1.028	7.60	0.170	0.300	0.000	0.162	0.637	
S. D.	0.012	0.288	0.019	3.161	0.242	0.012	0.086	0.545	1.68	0.085	0.000	0.000	0.059	0.135	
LOW	0.020	0.250	0.060	1.425	0.730	0.010	0.060	0.220	5.80	0.060	0.000	0.000	0.100	0.500	
HIGH	0.040	1.000	0.120	10.100	1.450	0.040	0.310	2.000	11.00	0.340	0.000	0.000	0.300	0.880	

JACK, CREVALLE (HAWAII)				CARANX MELAMPYGUS				079069 AREA- HAWAII				SITE- D6 MUSCLE			
LENGTH WEIGHT	NUM NUM	0 MEAN	MEAN	0.000 3.005	S. D. S. D.	0.000 0.000	LOW LOW	0.000 3.005	HIGH HIGH	0.000 3.005	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM	
	MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM					MOLYB PPM
NUMBER DET.	0001 0000	0001 0000	0001 0000	0001 0000	0001 0000	0001 0000	0001 0000	0001 0000	0001 0000	0001 0000	0001 0000	0001 0000	0001 0000	0001 0000	
MEAN	0.515	0.250	0.060	2.890	0.445	0.035	0.060	0.335	3.91	0.220	0.870	0.230	0.080	0.720	
S. D.	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.000	0.000	0.000	0.000	0.000	
LOW	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.000	0.000	0.000	0.000	0.000	
HIGH	0.515	0.250	0.060	2.890	0.445	0.035	0.060	0.335	3.91	0.220	0.870	0.230	0.080	0.720	

JACK, CREVALLE (HAWAII)				CARANX MELAMPYGUS				079069 AREA- HAWAII				SITE- D9 MUSCLE			
LENGTH WEIGHT	NUM NUM	0 MEAN	MEAN	0.000 2.364	S. D. S. D.	0.000 0.637	LOW LOW	0.000 1.701	HIGH HIGH	0.000 4.111	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM	
	MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM					MOLYB PPM
NUMBER DET.	0038 0000	0037 0000	0039 0000	0039 0000	0039 0001	0039 0002	0039 0001	0039 0000	0039 0000	0039 0000	0039 0034	0039 0029	0039 0000	0038 0000	
MEAN	0.332	0.354	0.067	2.513	0.381	0.035	0.195	0.383	4.00	0.229	0.128	0.232	0.102	0.746	
S. D.	0.141	0.157	0.027	1.423	0.191	0.014	0.115	0.222	1.29	0.104	0.078	0.120	0.033	0.216	
LOW	0.070	0.130	0.020	0.510	0.050	0.010	0.020	0.120	1.38	0.060	0.060	0.060	0.040	0.380	
HIGH	0.580	0.880	0.150	6.500	0.820	0.100	0.465	1.060	7.38	0.540	0.250	0.440	0.180	1.190	

WAHOO				ACANTHOCYBIUM SOLANDERI				091001 AREA- GJLF				SITE- L5 MUSCLE			
LENGTH WEIGHT	NUM NUM	0 MEAN	MEAN	1.175 14.906	S. D. S. D.	0.000 6.875	LOW LOW	1.175 7.037	HIGH HIGH	1.175 19.749	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM	
	MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM					MOLYB PPM
NUMBER DET.	0003 0000	0003 0000	0003 0000	0003 0000	0003 0000	0003 0000	0003 0000	0003 0000	0003 0000	0003 0000	0003 0303	0003 0000	0003 0000	0003 0000	
MEAN	0.730	0.345	0.052	1.392	0.835	0.025	0.218	0.333	4.91	0.217	0.000	0.000	0.072	0.608	
S. D.	0.468	0.035	0.003	0.970	0.308	0.009	0.148	0.021	0.58	0.023	0.000	0.000	0.010	0.202	
LOW	0.190	0.310	0.050	0.700	0.500	0.015	0.090	0.310	4.25	0.193	0.000	0.000	0.060	0.470	
HIGH	1.000	0.380	0.055	2.500	1.105	0.030	0.380	0.350	5.34	0.230	0.000	0.000	0.080	0.943	



















TABLE 5. SUMMARY OF TRACE ELEMENT LEVELS  
IN RESOURCE SURVEY SPECIES;  
BY TISSUE AND LOCATION

LOCATION LEVEL 5

TUNA, ALBACORE				THUNNUS ALALUNGA				091019 AREA- CALIFORNIA				SITE- 88 LIVER			
LENGTH HEIGHT	NUM NUM	1	MEAN	0.609	S. D.	0.000	LOW	0.609	HIGH	0.609	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM	
		MEAN	MEAN	4.852	S. D.	0.000	LOW	4.852	HIGH	4.852					
		LEAD	CADMIUM	ARSENIC	SELENIUM	SILVER	CHROM	COPPER	ZINC	NICKEL	MOLYB				
NUMBER DET.	0001 0000	0001 0000	0001 0000	0001 0000	0001 0000	0001 0000	0001 0000	0001 0000	0001 0000	0001 0000	0001 0000	0001 0000	0001 0000	0001 0000	
MEAN	0.120	0.690	5.380	5.650	8.700	0.000	0.060	0.880	21.88	0.050	0.250	0.310	0.460	0.190	
S. D.	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.000	0.300	0.000	0.000	0.000	
LOW	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.000	0.000	0.000	0.000	0.000	
HIGH	0.120	0.690	5.380	5.650	8.700	0.000	0.060	0.880	21.88	0.050	0.250	0.310	0.460	0.190	
TUNA, ALBACORE				THUNNUS ALALUNGA				091019 AREA- PACIFIC NORTHWEST				SITE- F1 MUSCLE			
LENGTH HEIGHT	NUM NUM	10	MEAN	0.626	S. D.	0.014	LOW	0.610	HIGH	0.650	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM	
		MEAN	MEAN	5.416	S. D.	0.384	LOW	4.762	HIGH	5.987					
		LEAD	CADMIUM	ARSENIC	SELENIUM	SILVER	CHROM	COPPER	ZINC	NICKEL	MOLYB				
NUMBER DET.	0010 0000	0009 0001	0010 0003	0010 0000	0010 0000	0010 0005	0010 0000	0010 0000	0009 0000	0009 0001	0010 0005	0010 0009	0010 0000	0010 0004	
MEAN	0.159	0.377	0.079	3.308	0.836	0.037	0.197	0.417	3.77	0.173	0.337	0.280	0.127	0.848	
S. D.	0.036	0.158	0.051	1.040	0.268	0.020	0.171	0.178	1.20	0.102	0.273	0.000	0.120	0.457	
LOW	0.110	0.175	0.010	1.255	0.285	0.020	0.037	0.160	2.64	0.040	0.025	0.000	0.040	0.336	
HIGH	0.240	0.603	0.140	4.750	1.200	0.070	0.605	0.640	6.52	0.390	0.720	0.280	0.430	1.700	
TUNA, ALBACORE				THUNNUS ALALUNGA				091019 AREA- PACIFIC NORTHWEST				SITE- F1 LIVER			
LENGTH HEIGHT	NUM NUM	2	MEAN	0.626	S. D.	0.000	LOW	0.626	HIGH	0.626	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM	
		MEAN	MEAN	5.416	S. D.	0.128	LOW	5.325	HIGH	5.506					
		LEAD	CADMIUM	ARSENIC	SELENIUM	SILVER	CHROM	COPPER	ZINC	NICKEL	MOLYB				
NUMBER DET.	0002 0000	0002 0001	0002 0000	0001 0000	0002 0000	0002 0000	0002 0000	0002 0000	0002 0000	0002 0000	0002 0000	0002 0000	0002 0000	0002 0000	
MEAN	0.140	1.380	2.355	2.136	12.238	0.095	0.070	7.560	36.88	0.165	0.640	0.310	0.745	0.810	
S. D.	0.014	0.000	0.375	0.000	4.331	0.021	0.085	2.828	18.56	0.049	0.679	0.269	0.445	0.354	
LOW	0.130	0.000	2.090	0.000	9.175	0.080	0.010	5.560	23.75	0.130	0.160	0.120	0.430	0.560	
HIGH	0.150	1.380	2.620	2.136	15.300	0.110	0.130	9.560	50.00	0.200	1.120	0.500	1.060	1.000	
TUNA, YELLOWFIN				THUNNUS ALBACARES				091020 AREA- HAWAII				SITE- 04 MUSCLE			
LENGTH HEIGHT	NUM NUM	0	MEAN	0.000	S. D.	0.000	LOW	0.000	HIGH	0.000	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM	
		MEAN	MEAN	30.844	S. D.	0.000	LOW	30.844	HIGH	30.844					
		LEAD	CADMIUM	ARSENIC	SELENIUM	SILVER	CHROM	COPPER	ZINC	NICKEL	MOLYB				
NUMBER DET.	0001 0000	0001 0000	0001 0000	0001 0000	0001 0000	0001 0000	0001 0000	0001 0000	0001 0000	0001 0000	0001 0001	0001 0001	0001 0000	0001 0000	
MEAN	0.210	0.440	0.060	2.075	0.870	0.020	0.250	0.250	3.31	0.200	0.000	0.000	0.200	0.870	
S. D.	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.000	0.000	0.000	0.000	0.000	
LOW	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.000	0.000	0.000	0.000	0.000	
HIGH	0.210	0.440	0.060	2.075	0.870	0.020	0.250	0.250	3.31	0.200	0.000	0.000	0.200	0.870	
TUNA, YELLOWFIN				THUNNUS ALBACARES				091020 AREA- HAWAII				SITE- 05 MUSCLE			
LENGTH HEIGHT	NUM NUM	6	MEAN	1.527	S. D.	0.135	LOW	1.375	HIGH	1.755	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM	
		MEAN	MEAN	71.782	S. D.	21.585	LOW	46.720	HIGH	107.957					
		LEAD	CADMIUM	ARSENIC	SELENIUM	SILVER	CHROM	COPPER	ZINC	NICKEL	MOLYB				
NUMBER DET.	0008 0000	0008 0001	0008 0002	0007 0000	0007 0000	0008 0005	0008 0000	0008 0000	0008 0000	0008 0002	0008 0006	0008 0006	0008 0001	0008 0000	
MEAN	0.296	0.428	0.051	3.321	1.232	0.028	0.236	0.262	3.67	0.243	0.590	0.740	0.061	0.787	
S. D.	0.108	0.136	0.014	2.658	0.647	0.003	0.159	0.082	1.34	0.144	0.750	0.622	0.017	0.296	
LOW	0.145	0.225	0.035	1.455	0.585	0.025	0.100	0.190	2.45	0.060	0.060	0.300	0.040	0.400	
HIGH	0.475	0.600	0.070	8.240	2.570	0.030	0.590	0.370	6.78	0.500	1.120	1.180	0.080	1.215	
TUNA, YELLOWFIN				THUNNUS ALBACARES				091020 AREA- HAWAII				SITE- 05 LIVER			
LENGTH HEIGHT	NUM NUM	3	MEAN	1.603	S. D.	0.134	LOW	1.500	HIGH	1.755	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM	
		MEAN	MEAN	82.858	S. D.	22.117	LOW	66.226	HIGH	107.957					
		LEAD	CADMIUM	ARSENIC	SELENIUM	SILVER	CHROM	COPPER	ZINC	NICKEL	MOLYB				
NUMBER DET.	0003 0000	0003 0000	0003 0000	0003 0000	0003 0000	0003 0000	0003 0000	0003 0000	0003 0000	0003 0001	0003 0000	0003 0002	0003 0000	0003 0003	
MEAN	0.343	0.267	10.363	6.795	20.330	0.140	0.143	25.307	168.19	0.275	0.297	0.130	1.357	0.000	
S. D.	0.215	0.067	7.696	2.847	17.621	0.182	0.101	24.947	115.67	0.021	0.099	0.000	0.257	0.095	
LOW	0.160	0.190	5.310	3.550	3.990	0.020	0.050	9.420	95.31	0.260	0.230	0.000	1.060	0.440	
HIGH	0.580	0.310	19.220	8.875	39.000	0.350	0.250	54.060	301.56	0.290	0.410	0.130	1.510	0.630	
TUNA, YELLOWFIN				THUNNUS ALBACARES				091020 AREA- HAWAII				SITE- 06 MUSCLE			
LENGTH HEIGHT	NUM NUM	0	MEAN	0.000	S. D.	0.000	LOW	0.000	HIGH	0.000	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM	
		MEAN	MEAN	2.489	S. D.	0.253	LOW	2.041	HIGH	2.948					
		LEAD	CADMIUM	ARSENIC	SELENIUM	SILVER	CHROM	COPPER	ZINC	NICKEL	MOLYB				
NUMBER DET.	0010 0003	0010 0000	0010 0000	0010 0000	0010 0000	0010 0002	0010 0001	0010 0000	0010 0000	0009 0000	0010 0009	0010 0009	0009 0000	0010 0000	
MEAN	0.054	0.457	0.062	4.037	1.524	0.028	0.162	0.564	4.34	0.182	0.190	0.560	0.105	0.664	
S. D.	0.034	0.102	0.014	1.408	0.469	0.008	0.114	0.222	1.63	0.056	0.000	0.000	0.031	0.309	
LOW	0.020	0.310	0.040	2.410	0.770	0.020	0.060	0.310	2.69	0.120	0.000	0.000	0.060	0.130	
HIGH	0.105	0.660	0.080	7.475	2.550	0.040	0.380	1.050	8.12	0.270	0.190	0.560	0.145	1.190	









TABLE 5. SUMMARY OF TRACE ELEMENT LEVELS IN RESOURCE SURVEY SPECIES; BY TISSUE AND LOCATION

LOCATION LEVEL 5

Table for TUNA, BIGEYE, THUNNUS OBESUS, 091022 AREA- HAWAII, SITE- J5 LIVER. Columns include Length Weight, Mercury, Lead, Cadmium, Arsenic, Selenium, Silver, Chrom, Copper, Zinc, Nickel, Molyb, Vanadium, Mang, Antimony, Tin.

Table for TUNA, BIGEYE, THUNNUS OBESUS, 091022 AREA- HAWAII, SITE- K1 MUSCLE. Columns include Length Weight, Mercury, Lead, Cadmium, Arsenic, Selenium, Silver, Chrom, Copper, Zinc, Nickel, Molyb, Vanadium, Mang, Antimony, Tin.

Table for TUNA, BIGEYE, THUNNUS OBESUS, 091022 AREA- HAWAII, SITE- K1 LIVER. Columns include Length Weight, Mercury, Lead, Cadmium, Arsenic, Selenium, Silver, Chrom, Copper, Zinc, Nickel, Molyb, Vanadium, Mang, Antimony, Tin.

Table for TUNA, BLUEFIN, THUNNUS THYNNUS, 091023 AREA- NORTH ATLANTIC, SITE- I7 MUSCLE. Columns include Length Weight, Mercury, Lead, Cadmium, Arsenic, Selenium, Silver, Chrom, Copper, Zinc, Nickel, Molyb, Vanadium, Mang, Antimony, Tin.

Table for TUNA, BLUEFIN, THUNNUS THYNNUS, 091023 AREA- CALIFORNIA, SITE- K6 MUSCLE. Columns include Length Weight, Mercury, Lead, Cadmium, Arsenic, Selenium, Silver, Chrom, Copper, Zinc, Nickel, Molyb, Vanadium, Mang, Antimony, Tin.

Table for TUNA, BLUEFIN, THUNNUS THYNNUS, 091023 AREA- CALIFORNIA, SITE- K6 LIVER. Columns include Length Weight, Mercury, Lead, Cadmium, Arsenic, Selenium, Silver, Chrom, Copper, Zinc, Nickel, Molyb, Vanadium, Mang, Antimony, Tin.

Table for MOJARRA, YELLOWFIN, GERRES CINEREUS, 094010 AREA- SOUTH ATLANTIC, SITE- J4 MUSCLE. Columns include Length Weight, Mercury, Lead, Cadmium, Arsenic, Selenium, Silver, Chrom, Copper, Zinc, Nickel, Molyb, Vanadium, Mang, Antimony, Tin.

TABLE 5. SUMMARY OF TRACE ELEMENT LEVELS IN RESOURCE SURVEY SPECIES; BY TISSUE AND LOCATION

LOCATION LEVEL 5

Table with 16 columns: MULLET, STRIPED; LENGTH WEIGHT; NUM NUM; 10 10; MEAN MEAN; MUGIL CEPHALUS (0.478, S. D., 0.000, LOW); 098002 (0.478, HIGH); AREA- SOUTH ATLANTIC (0.478, HIGH); SITE- C2 (MOLYB, VANADIUM, MANG); MUSCLE (ANTIMONY, TIN). Rows include NUMBER, N DET., MEAN, S. D., LOW, HIGH.

Table with 16 columns: MULLET, STRIPED; LENGTH WEIGHT; NUM NUM; 0 0; MEAN MEAN; MUGIL CEPHALUS (0.000, S. D., 0.000, LOW); 098002 (0.000, HIGH); AREA- SOUTH ATLANTIC (0.000, HIGH); SITE- C2 (MOLYB, VANADIUM, MANG); LIVER (ANTIMONY, TIN). Rows include NUMBER, N DET., MEAN, S. D., LOW, HIGH.

Table with 16 columns: MULLET, STRIPED; LENGTH WEIGHT; NUM NUM; 10 10; MEAN MEAN; MUGIL CEPHALUS (0.306, S. D., 0.000, LOW); 098002 (0.306, HIGH); AREA- SOUTH ATLANTIC (0.306, HIGH); SITE- G7 (MOLYB, VANADIUM, MANG); MUSCLE (ANTIMONY, TIN). Rows include NUMBER, N DET., MEAN, S. D., LOW, HIGH.

Table with 16 columns: MULLET, STRIPED; LENGTH WEIGHT; NUM NUM; 0 0; MEAN MEAN; MUGIL CEPHALUS (0.000, S. D., 0.000, LOW); 098002 (0.000, HIGH); AREA- SOUTH ATLANTIC (0.000, HIGH); SITE- J1 (MOLYB, VANADIUM, MANG); MUSCLE (ANTIMONY, TIN). Rows include NUMBER, N DET., MEAN, S. D., LOW, HIGH.

Table with 16 columns: MULLET, STRIPED; LENGTH WEIGHT; NUM NUM; 0 0; MEAN MEAN; MUGIL CEPHALUS (0.000, S. D., 0.000, LOW); 098002 (0.000, HIGH); AREA- SOUTH ATLANTIC (0.000, HIGH); SITE- J1 (MOLYB, VANADIUM, MANG); LIVER (ANTIMONY, TIN). Rows include NUMBER, N DET., MEAN, S. D., LOW, HIGH.

Table with 16 columns: MULLET, STRIPED; LENGTH WEIGHT; NUM NUM; 3 3; MEAN MEAN; MUGIL CEPHALUS (0.315, S. D., 0.009, LOW); 098002 (0.290, HIGH); AREA- SOUTH ATLANTIC (0.317, HIGH); SITE- J4 (MOLYB, VANADIUM, MANG); MUSCLE (ANTIMONY, TIN). Rows include NUMBER, N DET., MEAN, S. D., LOW, HIGH.

Table with 16 columns: MULLET, STRIPED; LENGTH WEIGHT; NUM NUM; 0 0; MEAN MEAN; MUGIL CEPHALUS (0.000, S. D., 0.000, LOW); 098002 (0.000, HIGH); AREA- SOUTH ATLANTIC (0.000, HIGH); SITE- M1 (MOLYB, VANADIUM, MANG); MUSCLE (ANTIMONY, TIN). Rows include NUMBER, N DET., MEAN, S. D., LOW, HIGH.









TABLE 5. SUMMARY OF TRACE ELEMENT LEVELS  
IN RESOURCE SURVEY SPECIES;  
BY TISSUE AND LOCATION

REPORT

LOCATION LEVEL 5

PORGY, RED		PAGRUS SEDECIM							114014 AREA- SOUTH ATLANTIC			SITE- C2			MUSCLE	
LENGTH WEIGHT	NUM NUM	10 LEAD	MEAN MEAN	0.365 ARSENIC	S. D. S. D.	0.000 SELENIUM	LOW LOW	0.365 COPPER	HIGH HIGH	0.365 MOLYB	1.022 VANADIUM	MANG	ANTIMONY	TIN		
	MERCURY	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM		
NUMBER	0010	0010	0010	0010	0010	0010	0010	0010	0010	0010	0010	0010	0010	0010		
N DET.	0000	0000	0000	0000	0000	0000	0001	0000	0000	0000	0006	0007	0000	0000		
MEAN	0.612	0.598	0.065	15.119	0.626	0.047	0.230	0.321	3.96	0.249	0.196	0.063	0.120	0.975		
S. D.	0.252	0.146	0.020	6.741	0.180	0.026	0.097	0.107	1.24	0.060	0.053	0.025	0.031	0.191		
LOW	0.340	0.375	0.040	4.700	0.300	0.015	0.120	0.190	2.44	0.150	0.125	0.040	0.060	0.630		
HIGH	1.166	0.880	0.115	30.500	0.850	0.110	0.375	0.495	7.12	0.350	0.250	0.090	0.170	1.310		

PORGY, RED		PAGRUS SEDECIM							114014 AREA- SOUTH ATLANTIC			SITE- G2			MUSCLE	
LENGTH WEIGHT	NUM NUM	2 LEAD	MEAN MEAN	0.241 ARSENIC	S. D. S. D.	0.053 SELENIUM	LOW LOW	0.203 COPPER	HIGH HIGH	0.278 MOLYB	0.448 VANADIUM	MANG	ANTIMONY	TIN		
	MERCURY	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM		
NUMBER	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002		
N DET.	0000	0000	0001	0000	0000	0000	0002	0001	0000	0001	0001	0000	0000	0000		
MEAN	0.215	0.325	0.140	12.495	0.505	0.000	0.223	0.220	2.59	0.465	0.000	0.350	0.180	1.410		
S. D.	0.134	0.035	0.000	2.906	0.134	0.000	0.000	0.014	0.13	0.000	0.000	0.000	0.099	1.358		
LOW	0.120	0.300	0.000	10.440	0.410	0.000	0.000	0.210	2.50	0.000	0.000	0.000	0.110	0.450		
HIGH	0.310	0.350	0.140	14.550	0.600	0.000	0.223	0.230	2.68	0.465	0.000	0.350	0.250	2.370		

SCUP		STENOTOMUS CHRYSOPS							114016 AREA- NORTH ATLANTIC			SITE- I8			MUSCLE	
LENGTH WEIGHT	NUM NUM	1 LEAD	MEAN MEAN	0.171 ARSENIC	S. D. S. D.	0.000 SELENIUM	LOW LOW	0.171 COPPER	HIGH HIGH	0.171 MOLYB	0.127 VANADIUM	MANG	ANTIMONY	TIN		
	MERCURY	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM		
NUMBER	0011	0011	0011	0011	0011	0011	0011	0011	0011	0011	0011	0011	0011	0011		
N DET.	0010	0000	0000	0000	0000	0000	0000	0000	0000	0001	0002	0000	0000	0004		
MEAN	0.020	1.118	0.146	1.679	0.912	0.124	0.366	0.879	11.01	0.564	0.356	0.536	0.891	1.733		
S. D.	0.000	0.560	0.041	1.053	0.306	0.037	0.146	0.227	3.23	0.174	0.142	0.203	0.324	0.391		
LOW	0.000	0.190	0.070	0.580	0.420	0.030	0.130	0.240	3.25	0.210	0.250	0.310	0.150	1.220		
HIGH	0.020	2.300	0.240	3.790	1.230	0.180	0.700	1.100	15.00	0.850	0.720	1.000	1.235	2.310		

SCUP		STENOTOMUS CHRYSOPS							114016 AREA- NORTH ATLANTIC			SITE- J6			MUSCLE	
LENGTH WEIGHT	NUM NUM	3 LEAD	MEAN MEAN	0.200 ARSENIC	S. D. S. D.	0.027 SELENIUM	LOW LOW	0.176 COPPER	HIGH HIGH	0.230 MOLYB	0.285 VANADIUM	MANG	ANTIMONY	TIN		
	MERCURY	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM		
NUMBER	0003	0002	0003	0003	0003	0003	0003	0003	0003	0003	0003	0003	0003	0003		
N DET.	0000	0000	0000	0000	0000	0000	0001	0000	0000	0000	0003	0002	0000	0002		
MEAN	0.113	0.560	0.137	1.244	0.303	0.033	0.145	0.343	2.25	0.320	0.000	0.220	0.193	0.630		
S. D.	0.047	0.354	0.059	0.991	0.300	0.006	0.021	0.263	0.97	0.200	0.000	0.000	0.091	0.000		
LOW	0.060	0.310	0.070	0.580	0.120	0.030	0.130	0.060	1.13	0.190	0.000	0.000	0.090	0.000		
HIGH	0.150	0.810	0.180	2.383	0.650	0.040	0.160	0.580	2.81	0.550	0.300	0.220	0.260	0.630		

SCUP		STENOTOMUS CHRYSOPS							114016 AREA- NORTH ATLANTIC			SITE- J7			MUSCLE	
LENGTH WEIGHT	NUM NUM	6 LEAD	MEAN MEAN	0.193 ARSENIC	S. D. S. D.	0.005 SELENIUM	LOW LOW	0.188 COPPER	HIGH HIGH	0.202 MOLYB	0.191 VANADIUM	MANG	ANTIMONY	TIN		
	MERCURY	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM		
NUMBER	0006	0006	0006	0006	0006	0006	0006	0005	0006	0006	0006	0006	0006	0006		
N DET.	0002	0000	0000	0000	0000	0000	0000	0000	0000	0000	0005	0005	0000	0003		
MEAN	0.086	0.594	0.084	3.076	0.513	0.043	0.161	0.430	3.38	0.257	0.130	0.250	0.239	0.948		
S. D.	0.066	0.452	0.031	2.774	0.310	0.015	0.052	0.246	1.44	0.089	0.000	0.000	0.097	0.386		
LOW	0.020	0.130	0.050	0.580	0.050	0.020	0.100	0.190	0.81	0.080	0.300	0.000	0.125	0.635		
HIGH	0.150	1.250	0.140	7.500	0.850	0.060	0.220	0.815	5.25	0.320	0.130	0.250	0.390	1.380		

SCUP		STENOTOMUS CHRYSOPS							114016 AREA- NORTH ATLANTIC			SITE- J8			MUSCLE	
LENGTH WEIGHT	NUM NUM	2 LEAD	MEAN MEAN	0.188 ARSENIC	S. D. S. D.	0.011 SELENIUM	LOW LOW	0.180 COPPER	HIGH HIGH	0.196 MOLYB	0.170 VANADIUM	MANG	ANTIMONY	TIN		
	MERCURY	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM		
NUMBER	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002		
N DET.	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0001	0002	0000	0001		
MEAN	0.045	0.505	0.070	2.065	0.325	0.030	0.145	0.475	3.44	0.230	0.190	0.000	0.138	0.850		
S. D.	0.035	0.177	0.000	2.029	0.332	0.014	0.021	0.021	0.53	0.014	0.000	0.000	0.025	0.000		
LOW	0.020	0.380	0.070	0.630	0.090	0.020	0.130	0.460	3.06	0.220	0.000	0.000	0.120	0.000		
HIGH	0.070	0.630	0.070	3.500	0.560	0.040	0.160	0.490	3.81	0.240	0.190	0.000	0.155	0.850		

SCUP		STENOTOMUS CHRYSOPS							114016 AREA- NORTH ATLANTIC			SITE- J9			MUSCLE	
LENGTH WEIGHT	NUM NUM	2 LEAD	MEAN MEAN	0.191 ARSENIC	S. D. S. D.	0.010 SELENIUM	LOW LOW	0.184 COPPER	HIGH HIGH	0.198 MOLYB	0.168 VANADIUM	MANG	ANTIMONY	TIN		
	MERCURY	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM		
NUMBER	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002		
N DET.	0001	0000	0000	0000	0000	0000	0000	0000	0000	0000	0002	0002	0000	0001		
MEAN	0.070	0.500	0.070	1.800	0.495	0.030	0.095	0.435	3.78	0.190	0.000	0.000	0.170	0.850		
S. D.	0.000	0.269	0.014	0.919	0.078	0.000	0.049	0.177	0.04	0.042	0.000	0.000	0.000	0.000		
LOW	0.000	0.310	0.060	1.150	0.440	0.030	0.060	0.310	3.75	0.160	0.000	0.000	0.170	0.000		
HIGH	0.070	0.690	0.080	2.450	0.550	0.030	0.130	0.560	3.81	0.220	0.000	0.000	0.170	0.850		

TABLE 5. SUMMARY OF TRACE ELEMENT LEVELS  
IN RESOURCE SURVEY SPECIES;  
BY TISSUE AND LOCATION

LOCATION LEVEL 5

SCUP		STENOTOMUS CHRYSOPS							114016 AREA- NORTH ATLANTIC			SITE- M9			MUSCLE	
LENGTH WEIGHT	NUM NUM	1 1	MEAN MEAN	0.178 0.136	S. D. S. D.	0.000 0.000	LOW LOW	0.178 0.136	HIGH HIGH	0.178 0.136						
	MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM	
NUMBER	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001
N DET.	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0001	0001	0001	0001	0001
MEAN	0.040	0.905	0.085	2.113	0.595	0.045	0.275	0.450	0.000	3.44	0.305	0.130	0.000	0.315	0.000	0.425
S. D.	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.300
LOW	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
HIGH	0.040	0.905	0.085	2.113	0.595	0.045	0.275	0.450	0.450	3.44	0.305	0.130	0.000	0.315	0.000	0.425

SCUP		STENOTOMUS CHRYSOPS							114016 AREA- NORTH ATLANTIC			SITE- N1			MUSCLE	
LENGTH WEIGHT	NUM NUM	1 1	MEAN MEAN	0.184 0.164	S. D. S. D.	0.000 0.000	LOW LOW	0.184 0.164	HIGH HIGH	0.184 0.164						
	MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM	
NUMBER	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001
N DET.	0001	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0001	0001	0001	0001	0001
MEAN	0.000	0.440	0.070	1.550	0.710	0.030	0.190	0.500	3.81	0.210	0.000	0.000	0.300	0.000	0.440	
S. D.	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.400
LOW	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
HIGH	0.000	0.440	0.070	1.550	0.710	0.030	0.190	0.500	3.81	0.210	0.000	0.000	0.300	0.000	0.440	0.440

SCUP		STENOTOMUS CHRYSOPS							114016 AREA- NORTH ATLANTIC			SITE- N3			MUSCLE	
LENGTH WEIGHT	NUM NUM	7 11	MEAN MEAN	0.175 0.124	S. D. S. D.	0.017 0.044	LOW LOW	0.150 0.054	HIGH HIGH	0.206 0.194						
	MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM	
NUMBER	0011	0011	0011	0011	0011	0011	0011	0011	0011	0011	0011	0011	0010	0011	0011	0011
N DET.	0002	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0002	0002	0000
MEAN	0.058	0.418	0.063	2.911	0.732	0.043	0.151	0.629	3.93	0.255	0.210	0.437	0.255	0.733	0.716	
S. D.	0.031	0.210	0.016	1.734	0.231	0.008	0.084	0.257	1.49	0.101	0.147	0.134	0.083	0.276	0.184	
LOW	0.020	0.190	0.040	1.440	0.420	0.030	0.060	0.205	1.13	0.090	0.120	0.340	0.150	0.440	0.500	
HIGH	0.110	0.845	0.085	7.520	1.050	0.060	0.310	1.000	6.50	0.430	0.380	0.590	0.395	1.310	1.130	

SCUP		STENOTOMUS CHRYSOPS							114016 AREA- NORTH ATLANTIC			SITE- N4			MUSCLE	
LENGTH WEIGHT	NUM NUM	2 2	MEAN MEAN	0.168 0.116	S. D. S. D.	0.008 0.022	LOW LOW	0.162 0.100	HIGH HIGH	0.174 0.131						
	MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM	
NUMBER	0002	0002	0002	0002	0002	0002	0002	0002	0001	0002	0002	0002	0002	0002	0002	0002
N DET.	0000	0000	0000	0000	0000	0001	0001	0000	0000	0000	0002	0002	0000	0002	0000	0000
MEAN	0.055	0.315	0.050	2.425	0.550	0.040	0.130	0.245	3.75	0.125	0.000	0.000	0.155	0.000	0.395	
S. D.	0.007	0.092	0.028	1.308	0.071	0.000	0.000	0.177	0.00	0.092	0.000	0.000	0.078	0.000	0.021	
LOW	0.050	0.250	0.030	1.500	0.500	0.000	0.000	0.120	0.00	0.060	0.000	0.000	0.100	0.000	0.380	
HIGH	0.060	0.380	0.070	3.350	0.600	0.040	0.130	0.370	3.75	0.190	0.000	0.000	0.210	0.000	0.410	

SCUP		STENOTOMUS CHRYSOPS							114016 AREA- NORTH ATLANTIC			SITE- N7			MUSCLE	
LENGTH WEIGHT	NUM NUM	1 1	MEAN MEAN	0.144 0.077	S. D. S. D.	0.000 0.000	LOW LOW	0.144 0.077	HIGH HIGH	0.144 0.077						
	MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM	
NUMBER	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001
N DET.	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0001	0000	0001	0000	0000
MEAN	0.025	0.410	0.080	0.720	0.795	0.040	0.125	0.310	3.31	0.260	0.000	0.000	0.200	0.000	0.545	
S. D.	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.000	0.000	0.000	0.000	0.000	0.000	
LOW	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.000	0.000	0.000	0.000	0.000	0.000	
HIGH	0.025	0.410	0.080	0.720	0.795	0.040	0.125	0.310	3.31	0.260	0.000	0.000	0.200	0.000	0.545	

SCUP		STENOTOMUS CHRYSOPS							114016 AREA- NORTH ATLANTIC			SITE- O1			MUSCLE	
LENGTH WEIGHT	NUM NUM	6 6	MEAN MEAN	0.187 0.161	S. D. S. D.	0.029 0.045	LOW LOW	0.132 0.095	HIGH HIGH	0.214 0.226						
	MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM	
NUMBER	0006	0006	0006	0006	0006	0006	0006	0006	0006	0006	0006	0006	0006	0006	0006	0006
N DET.	0003	0000	0000	0000	0000	0000	0000	0000	0000	0000	0006	0004	0000	0001	0000	
MEAN	0.043	0.554	0.089	2.594	0.347	0.049	0.170	0.458	4.37	0.239	0.000	0.285	0.200	0.612	0.742	
S. D.	0.021	0.316	0.041	1.439	0.219	0.015	0.095	0.270	1.59	0.113	0.000	0.134	0.070	0.214	0.254	
LOW	0.020	0.130	0.020	0.960	0.060	0.035	0.080	0.230	2.06	0.030	0.000	0.190	0.110	0.310	0.380	
HIGH	0.060	1.005	0.145	4.576	0.600	0.075	0.345	0.810	6.78	0.370	0.000	0.380	0.300	0.810	1.000	

SCUP		STENOTOMUS CHRYSOPS							114016 AREA- NORTH ATLANTIC			SITE- O2			MUSCLE	
LENGTH WEIGHT	NUM NUM	5 5	MEAN MEAN	0.192 0.165	S. D. S. D.	0.008 0.020	LOW LOW	0.185 0.148	HIGH HIGH	0.202 0.190						
	MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM	
NUMBER	0005	0005	0005	0005	0005	0005	0005	0004	0005	0005	0005	0005	0005	0005	0005	0005
N DET.	0001	0000	0000	0000	0000	0000	0000	0000	0000	0000	0005	0005	0000	0001	0000	
MEAN	0.105	0.484	0.081	2.556	0.611	0.045	0.218	0.401	4.09	0.223	0.000	0.000	0.245	0.815	0.697	
S. D.	0.084	0.159	0.025	1.570	0.172	0.011	0.141	0.173	1.27	0.084	0.000	0.000	0.177	0.166	0.266	
LOW	0.020	0.360	0.060	0.490	0.430	0.030	0.060	0.190	3.00	0.130	0.000	0.000	0.140	0.630	0.440	
HIGH	0.220	0.750	0.120	4.600	0.880	0.060	0.440	0.545	6.25	0.320	0.000	0.000	0.560	0.970	1.000	





TABLE 5. SUMMARY OF TRACE ELEMENT LEVELS IN RESOURCE SURVEY SPECIES BY TISSUE AND LOCATION

LOCATION LEVEL 5

Table with columns: SABLEFISH, ANOPLLOPOMA FIMBRIA, 126001, AREA- PACIFIC NORTHWEST, SITE- G9, MUSCLE. Rows include LENGTH WEIGHT, NUM NUM, MERCURY PPM, LEAD PPM, CADMIUM PPM, ARSENIC PPM, SELENIUM PPM, SILVER PPM, CHROM PPM, COPPER PPM, ZINC PPM, NICKEL PPM, MOLYB PPM, VANADIUM PPM, MANG PPM, ANTIMONY PPM, and NUMBER N DET. MEAN S. D. LOW HIGH.

Table with columns: SABLEFISH, ANOPLLOPOMA FIMBRIA, 126001, AREA- PACIFIC NORTHWEST, SITE- G9, LIVER. Rows include LENGTH WEIGHT, NUM NUM, MERCURY PPM, LEAD PPM, CADMIUM PPM, ARSENIC PPM, SELENIUM PPM, SILVER PPM, CHROM PPM, COPPER PPM, ZINC PPM, NICKEL PPM, MOLYB PPM, VANADIUM PPM, MANG PPM, ANTIMONY PPM, and NUMBER N DET. MEAN S. D. LOW HIGH.

Table with columns: SABLEFISH, ANOPLLOPOMA FIMBRIA, 126001, AREA- PACIFIC NORTHWEST, SITE- H7, MUSCLE. Rows include LENGTH WEIGHT, NUM NUM, MERCURY PPM, LEAD PPM, CADMIUM PPM, ARSENIC PPM, SELENIUM PPM, SILVER PPM, CHROM PPM, COPPER PPM, ZINC PPM, NICKEL PPM, MOLYB PPM, VANADIUM PPM, MANG PPM, ANTIMONY PPM, and NUMBER N DET. MEAN S. D. LOW HIGH.

Table with columns: SABLEFISH, ANOPLLOPOMA FIMBRIA, 126001, AREA- PACIFIC NORTHWEST, SITE- I7, MUSCLE. Rows include LENGTH WEIGHT, NUM NUM, MERCURY PPM, LEAD PPM, CADMIUM PPM, ARSENIC PPM, SELENIUM PPM, SILVER PPM, CHROM PPM, COPPER PPM, ZINC PPM, NICKEL PPM, MOLYB PPM, VANADIUM PPM, MANG PPM, ANTIMONY PPM, and NUMBER N DET. MEAN S. D. LOW HIGH.

Table with columns: SABLEFISH, ANOPLLOPOMA FIMBRIA, 126001, AREA- PACIFIC NORTHWEST, SITE- M1, MUSCLE. Rows include LENGTH WEIGHT, NUM NUM, MERCURY PPM, LEAD PPM, CADMIUM PPM, ARSENIC PPM, SELENIUM PPM, SILVER PPM, CHROM PPM, COPPER PPM, ZINC PPM, NICKEL PPM, MOLYB PPM, VANADIUM PPM, MANG PPM, ANTIMONY PPM, and NUMBER N DET. MEAN S. D. LOW HIGH.

Table with columns: SABLEFISH, ANOPLLOPOMA FIMBRIA, 126001, AREA- PACIFIC NORTHWEST, SITE- N1, LIVER. Rows include LENGTH WEIGHT, NUM NUM, MERCURY PPM, LEAD PPM, CADMIUM PPM, ARSENIC PPM, SELENIUM PPM, SILVER PPM, CHROM PPM, COPPER PPM, ZINC PPM, NICKEL PPM, MOLYB PPM, VANADIUM PPM, MANG PPM, ANTIMONY PPM, and NUMBER N DET. MEAN S. D. LOW HIGH.

Table with columns: SABLEFISH, ANOPLLOPOMA FIMBRIA, 126001, AREA- PACIFIC NORTHWEST, SITE- N5, MUSCLE. Rows include LENGTH WEIGHT, NUM NUM, MERCURY PPM, LEAD PPM, CADMIUM PPM, ARSENIC PPM, SELENIUM PPM, SILVER PPM, CHROM PPM, COPPER PPM, ZINC PPM, NICKEL PPM, MOLYB PPM, VANADIUM PPM, MANG PPM, ANTIMONY PPM, and NUMBER N DET. MEAN S. D. LOW HIGH.























TABLE 5. SUMMARY OF TRACE ELEMENT LEVELS  
IN RESOURCE SURVEY SPECIES;  
BY TISSUE AND LOCATION

REPORT # 77

LOCATION LEVEL 5

DOG FISH, SPINY		SQUALUS ACANTHIAS							141007	AREA- SOUTH ATLANTIC			SITE- D2	LIVER	
LENGTH WEIGHT	NUM NUM	10 MEAN	0.280	S. D.	0.000	LOW	0.280	HIGH	0.280						
	MERCURY	LEAD	CADMIUM	ARSENIC	SELENIUM	SILVER	CHROM	COPPER	ZINC	NICKEL	MOLYB	VANADIUM	MANG	ANTIMONY	TIN
	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM
NUMBER	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001
N DET.	0001	0000	0000	0000	0000	0000	0000	0000	0000	0000	0001	0001	0000	0000	0000
MEAN	0.000	0.535	0.890	6.340	1.250	0.040	0.130	1.850	7.41	0.245	0.000	0.000	0.670	0.370	0.400
S. D.	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.000	0.000	0.000	0.000	0.000	0.000
LOW	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.000	0.000	0.000	0.000	0.000	0.000
HIGH	0.000	0.535	0.890	6.340	1.250	0.040	0.130	1.850	7.41	0.245	0.000	0.000	0.670	0.370	0.400

DOG FISH, SPINY		SQUALUS ACANTHIAS							141007	AREA- PACIFIC NORTHWEST			SITE- H7	MUSCLE	
LENGTH WEIGHT	NUM NUM	10 MEAN	0.815	S. D.	0.000	LOW	0.815	HIGH	0.815						
	MERCURY	LEAD	CADMIUM	ARSENIC	SELENIUM	SILVER	CHROM	COPPER	ZINC	NICKEL	MOLYB	VANADIUM	MANG	ANTIMONY	TIN
	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM
NUMBER	0010	0010	0010	0009	0009	0010	0010	0010	0010	0010	0010	0010	0010	0010	0009
N DET.	0000	0002	0004	0000	0001	0005	0001	0000	0000	0002	0009	0009	0000	0000	0000
MEAN	0.372	0.508	0.077	4.696	0.286	0.025	0.265	0.322	2.63	0.237	0.270	0.100	0.143	0.555	1.013
S. D.	0.123	0.267	0.053	2.036	0.151	0.014	0.223	0.092	0.45	0.167	0.000	0.000	0.130	0.282	0.533
LOW	0.230	0.190	0.040	1.650	0.050	0.010	0.076	0.210	2.00	0.110	0.000	0.000	0.060	0.190	0.235
HIGH	0.640	0.880	0.180	7.920	0.500	0.040	0.750	0.540	3.28	0.570	0.270	0.100	0.500	0.863	2.000

DOG FISH, SPINY		SQUALUS ACANTHIAS							141007	AREA- PACIFIC NORTHWEST			SITE- H8	MUSCLE	
LENGTH WEIGHT	NUM NUM	10 MEAN	0.830	S. D.	0.000	LOW	0.830	HIGH	0.830						
	MERCURY	LEAD	CADMIUM	ARSENIC	SELENIUM	SILVER	CHROM	COPPER	ZINC	NICKEL	MOLYB	VANADIUM	MANG	ANTIMONY	TIN
	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM
NUMBER	0010	0009	0010	0009	0009	0010	0010	0010	0010	0010	0010	0010	0010	0010	0009
N DET.	0000	0000	0000	0000	0001	0001	0000	0000	0000	0000	0005	0007	0000	0001	0000
MEAN	0.344	0.432	0.079	7.013	0.557	0.034	0.279	0.305	3.65	0.233	0.380	0.537	0.149	0.549	0.670
S. D.	0.100	0.213	0.043	3.472	0.790	0.016	0.159	0.121	1.47	0.105	0.299	0.629	0.048	0.226	0.332
LOW	0.220	0.060	0.030	1.310	0.145	0.020	0.090	0.075	2.19	0.150	0.120	0.060	0.080	0.250	0.360
HIGH	0.570	0.810	0.150	11.100	2.500	0.070	0.630	0.485	6.25	0.460	0.870	1.250	0.255	0.880	1.370

DOG FISH, SPINY		SQUALUS ACANTHIAS							141007	AREA- PACIFIC NORTHWEST			SITE- I7	MUSCLE	
LENGTH WEIGHT	NUM NUM	10 MEAN	1.017	S. D.	0.056	LOW	0.870	HIGH	1.075						
	MERCURY	LEAD	CADMIUM	ARSENIC	SELENIUM	SILVER	CHROM	COPPER	ZINC	NICKEL	MOLYB	VANADIUM	MANG	ANTIMONY	TIN
	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM
NUMBER	0010	0010	0010	0010	0010	0010	0009	0010	0010	0010	0010	0010	0010	0010	0009
N DET.	0000	0000	0000	0000	0000	0002	0000	0000	0000	0000	0007	0007	0000	0001	0000
MEAN	0.825	0.594	0.058	3.999	0.404	0.032	0.124	0.259	3.41	0.146	0.187	0.193	0.114	0.586	0.915
S. D.	0.411	0.276	0.027	1.244	0.309	0.013	0.051	0.090	0.95	0.041	0.219	0.122	0.055	0.223	0.579
LOW	0.195	0.310	0.030	2.462	0.020	0.010	0.040	0.130	2.37	0.070	0.060	0.060	0.055	0.250	0.360
HIGH	1.600	1.060	0.115	6.570	1.115	0.050	0.190	0.410	5.44	0.215	0.440	0.300	0.210	1.000	1.880

DOG FISH, SPINY		SQUALUS ACANTHIAS							141007	AREA- PACIFIC NORTHWEST			SITE- I7	LIVER	
LENGTH WEIGHT	NUM NUM	10 MEAN	1.017	S. D.	0.056	LOW	0.870	HIGH	1.075						
	MERCURY	LEAD	CADMIUM	ARSENIC	SELENIUM	SILVER	CHROM	COPPER	ZINC	NICKEL	MOLYB	VANADIUM	MANG	ANTIMONY	TIN
	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM
NUMBER	0009	0010	0010	0010	0010	0010	0010	0010	0010	0010	0010	0010	0010	0010	0010
N DET.	0001	0000	0000	0000	0000	0001	0004	0000	0000	0000	0005	0007	0000	0002	0001
MEAN	0.174	0.278	0.566	6.307	0.327	0.069	0.092	2.370	5.13	0.081	0.188	0.360	0.326	0.376	0.328
S. D.	0.122	0.247	0.343	3.095	0.226	0.074	0.056	2.140	2.32	0.059	0.088	0.044	0.155	0.245	0.297
LOW	0.040	0.060	0.100	2.210	0.040	0.010	0.020	0.440	2.50	0.010	0.060	0.310	0.140	0.060	0.060
HIGH	0.360	0.750	1.130	12.975	0.665	0.230	0.160	7.500	10.00	0.210	0.310	0.390	0.540	0.810	1.000

DOG FISH, SPINY		SQUALUS ACANTHIAS							141007	AREA- PACIFIC NORTHWEST			SITE- M8	MUSCLE	
LENGTH WEIGHT	NUM NUM	1 MEAN	0.810	S. D.	0.000	LOW	0.810	HIGH	0.810						
	MERCURY	LEAD	CADMIUM	ARSENIC	SELENIUM	SILVER	CHROM	COPPER	ZINC	NICKEL	MOLYB	VANADIUM	MANG	ANTIMONY	TIN
	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM
NUMBER	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001
N DET.	0000	0000	0000	0000	0000	0001	0000	0000	0000	0001	0001	0001	0000	0000	0000
MEAN	0.700	0.050	0.140	9.900	0.890	0.000	0.320	0.290	2.86	0.000	0.000	0.000	0.070	0.360	0.930
S. D.	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.000	0.000	0.000	0.000	0.000	0.000
LOW	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.000	0.000	0.000	0.000	0.000	0.000
HIGH	0.700	0.050	0.140	9.900	0.890	0.000	0.320	0.290	2.86	0.000	0.000	0.000	0.070	0.360	0.930

DOG FISH, SPINY		SQUALUS ACANTHIAS							141007	AREA- PACIFIC NORTHWEST			SITE- N1	MUSCLE	
LENGTH WEIGHT	NUM NUM	8 MEAN	0.895	S. D.	0.000	LOW	0.895	HIGH	0.895						
	MERCURY	LEAD	CADMIUM	ARSENIC	SELENIUM	SILVER	CHROM	COPPER	ZINC	NICKEL	MOLYB	VANADIUM	MANG	ANTIMONY	TIN
	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM
NUMBER	0010	0010	0010	0010	0010	0010	0010	0010	0010	0010	0009	0009	0010	0010	0008
N DET.	0000	0001	0003	0000	0000	0004	0000	0000	0000	0003	0007	0009	0000	0003	0000
MEAN	1.059	0.342	0.069	7.148	0.450	0.068	0.173	0.252	3.61	0.170	0.095	0.000	0.126	0.617	0.753
S. D.	0.292	0.145	0.029	2.684	0.178	0.050	0.077	0.090	1.34	0.100	0.049	0.000	0.058	0.453	0.585
LOW	0.720	0.150	0.040	4.400	0.220	0.030	0.050	0.125	1.61	0.070	0.060	0.000	0.040	0.120	0.350
HIGH	1.560	0.575	0.110	12.600	0.790	0.150	0.310	0.450	6.43	0.360	0.130	0.000	0.200	1.400	2.130











TABLE 5. SUMMARY OF TRACE ELEMENT LEVELS  
IN RESOURCE SURVEY SPECIES:  
BY TISSUE AND LOCATION

LOCATION LEVEL 5

SKATE, LITTLE		RAJA ERINACEA							150005	AREA- NORTH ATLANTIC			SITE- 17		LIVER	
LENGTH WEIGHT	NUM NUM	1 MEAN	0.490	S. D.	0.000	LOW	0.490	HIGH	0.490							
	MERCURY PPM	0 MEAN	0.000	S. D.	0.000	LOW	0.000	HIGH	0.000							
		LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM	
NUMBER N DET.	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001
MEAN	0.120	1.060	0.510	5.650	0.880	0.010	0.310	3.310	13.13	0.220	0.130	0.310	0.020	0.500	0.380	
S. D.	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
LOW	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
HIGH	0.120	1.060	0.510	5.650	0.880	0.010	0.310	3.310	13.13	0.220	0.130	0.310	0.020	0.500	0.380	

SKATE, LITTLE		RAJA ERINACEA							150005	AREA- NORTH ATLANTIC			SITE- J6		MUSCLE	
LENGTH WEIGHT	NUM NUM	3 MEAN	0.465	S. D.	0.011	LOW	0.454	HIGH	0.475							
	MERCURY PPM	3 MEAN	0.615	S. D.	0.017	LOW	0.604	HIGH	0.635							
		LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM	
NUMBER N DET.	0003	0003	0003	0003	0003	0003	0003	0003	0003	0003	0003	0003	0003	0003	0003	
MEAN	0.097	0.468	0.068	12.205	0.427	0.042	0.442	0.512	6.62	0.393	0.160	0.000	0.337	0.000	0.735	
S. D.	0.035	0.030	0.014	1.611	0.327	0.008	0.272	0.105	1.14	0.042	0.042	0.000	0.064	0.000	0.105	
LOW	0.060	0.440	0.060	10.350	0.050	0.035	0.130	0.395	5.31	0.360	0.130	0.000	0.300	0.000	0.630	
HIGH	0.130	0.500	0.085	13.250	0.630	0.050	0.630	0.600	7.38	0.440	0.190	0.000	0.410	0.000	0.840	

SKATE, LITTLE		RAJA ERINACEA							150005	AREA- NORTH ATLANTIC			SITE- J7		MUSCLE	
LENGTH WEIGHT	NUM NUM	14 MEAN	0.463	S. D.	0.028	LOW	0.357	HIGH	0.472							
	MERCURY PPM	14 MEAN	0.535	S. D.	0.101	LOW	0.245	HIGH	0.625							
		LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM	
NUMBER N DET.	0014	0014	0014	0014	0012	0014	0013	0014	0014	0014	0014	0014	0014	0014	0014	
MEAN	0.121	0.584	0.094	18.631	0.649	0.076	0.343	0.426	8.54	0.392	0.166	0.196	0.839	0.250	0.928	
S. D.	0.041	0.218	0.014	11.336	0.253	0.033	0.227	0.088	1.20	0.097	0.044	0.091	0.442	0.000	0.342	
LOW	0.060	0.300	0.070	0.460	0.050	0.030	0.130	0.310	6.63	0.240	0.090	0.130	0.130	0.000	0.560	
HIGH	0.200	1.130	0.130	47.400	0.970	0.150	0.970	0.640	10.25	0.540	0.250	0.310	1.740	0.250	1.630	

SKATE, LITTLE		RAJA ERINACEA							150005	AREA- NORTH ATLANTIC			SITE- M9		MUSCLE	
LENGTH WEIGHT	NUM NUM	5 MEAN	0.461	S. D.	0.029	LOW	0.423	HIGH	0.490							
	MERCURY PPM	5 MEAN	0.866	S. D.	0.087	LOW	0.756	HIGH	0.965							
		LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM	
NUMBER N DET.	0005	0005	0005	0005	0005	0005	0005	0005	0005	0005	0005	0005	0005	0005	0005	
MEAN	0.206	0.987	0.100	19.620	0.745	0.078	0.238	0.305	7.82	0.323	0.208	0.305	1.251	1.332	1.124	
S. D.	0.072	0.285	0.014	8.961	0.070	0.008	0.016	0.070	1.27	0.142	0.033	0.097	0.275	0.154	0.352	
LOW	0.130	0.530	0.080	11.725	0.650	0.070	0.220	0.200	6.13	0.150	0.175	0.190	1.010	1.130	1.080	
HIGH	0.325	1.230	0.115	33.750	0.800	0.090	0.250	0.370	9.30	0.460	0.250	0.435	1.600	1.500	1.190	

SKATE, LITTLE		RAJA ERINACEA							150005	AREA- NORTH ATLANTIC			SITE- M2		MUSCLE	
LENGTH WEIGHT	NUM NUM	1 MEAN	0.371	S. D.	0.000	LOW	0.371	HIGH	0.371							
	MERCURY PPM	1 MEAN	0.704	S. D.	0.000	LOW	0.704	HIGH	0.704							
		LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM	
NUMBER N DET.	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	
MEAN	0.115	1.265	0.140	13.816	0.550	0.075	0.190	0.265	5.97	0.340	0.280	0.310	2.085	1.155	1.025	
S. D.	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
LOW	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
HIGH	0.115	1.265	0.140	13.816	0.550	0.075	0.190	0.265	5.97	0.340	0.280	0.310	2.085	1.155	1.025	

SKATE, LITTLE		RAJA ERINACEA							150005	AREA- NORTH ATLANTIC			SITE- M3		MUSCLE	
LENGTH WEIGHT	NUM NUM	1 MEAN	0.455	S. D.	0.000	LOW	0.455	HIGH	0.455							
	MERCURY PPM	0 MEAN	0.000	S. D.	0.000	LOW	0.000	HIGH	0.000							
		LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM	
NUMBER N DET.	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	
MEAN	0.220	0.940	0.120	45.450	0.390	0.130	0.410	2.250	7.13	0.510	0.060	0.310	1.130	1.880	0.000	
S. D.	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
LOW	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
HIGH	0.220	0.940	0.120	45.450	0.390	0.130	0.410	2.250	7.13	0.510	0.060	0.310	1.130	1.880	0.000	

SKATE, LITTLE		RAJA ERINACEA							150005	AREA- NORTH ATLANTIC			SITE- M3		LIVER	
LENGTH WEIGHT	NUM NUM	1 MEAN	0.455	S. D.	0.000	LOW	0.455	HIGH	0.455							
	MERCURY PPM	0 MEAN	0.000	S. D.	0.000	LOW	0.000	HIGH	0.000							
		LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM	
NUMBER N DET.	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	
MEAN	0.040	0.750	0.890	13.975	1.230	0.030	0.000	0.750	16.25	0.430	0.880	0.380	1.190	0.440	0.560	
S. D.	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
LOW	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
HIGH	0.040	0.750	0.890	13.975	1.230	0.030	0.000	0.750	16.25	0.430	0.880	0.380	1.190	0.440	0.560	

TABLE 5. SUMMARY OF TRACE ELEMENT LEVELS  
IN RESOURCE SURVEY SPECIES;  
BY TISSUE AND LOCATION

LOCATION LEVEL 5

SKATE, LITTLE		RAJA ERINACEA							150005			AREA- NORTH ATLANTIC			SITE- 01		MUSCLE	
LENGTH WEIGHT	NUM NUM	3 3	MEAN MEAN	0.453 0.584	S. D. S. D.	0.037 0.152	LOW LOW	0.415 0.422	HIGH HIGH	0.488 0.724								
	MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM			
NUMBER	0003	0003	0003	0003	0003	0003	0003	0003	0003	0003	0003	0003	0003	0003	0003	0003		
N DET.	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0002	0002	0000	0002	0000	0000		
MEAN	0.237	0.425	0.080	25.300	0.773	0.042	0.380	0.303	6.40	0.280	0.530	0.630	0.317	0.310	0.719			
S. D.	0.110	0.066	0.010	17.161	0.127	0.003	0.130	0.100	0.20	0.061	0.000	0.000	0.072	0.000	0.306			
LOW	0.150	0.375	0.070	13.600	0.690	0.040	0.250	0.200	6.25	0.240	0.000	0.000	0.270	0.000	0.467			
HIGH	0.360	0.500	0.090	45.000	0.920	0.045	0.510	0.400	6.63	0.350	0.530	0.630	0.400	0.310	1.060			

SKATE, LITTLE		RAJA ERINACEA							150005			AREA- NORTH ATLANTIC			SITE- 02		MUSCLE	
LENGTH WEIGHT	NUM NUM	10 10	MEAN MEAN	0.472 0.779	S. D. S. D.	0.056 0.506	LOW LOW	0.424 0.438	HIGH HIGH	0.615 2.182								
	MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM			
NUMBER	0010	0010	0010	0010	0010	0010	0009	0009	0010	0010	0010	0010	0010	0010	0009			
N DET.	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0008	0008	0000	0008	0000			
MEAN	0.107	0.547	0.073	16.522	0.585	0.063	0.312	0.419	7.48	0.459	0.125	0.095	0.578	0.250	0.866			
S. D.	0.041	0.356	0.013	7.354	0.208	0.020	0.097	0.076	1.77	0.159	0.049	0.049	0.423	0.000	0.285			
LOW	0.055	0.190	0.060	8.150	0.330	0.030	0.190	0.280	5.50	0.210	0.090	0.060	0.130	0.250	0.310			
HIGH	0.190	1.380	0.095	32.740	0.920	0.090	0.500	0.510	11.22	0.810	0.160	0.130	1.390	0.250	1.170			

SKATE, LITTLE		RAJA ERINACEA							150005			AREA- NORTH ATLANTIC			SITE- 03		MUSCLE	
LENGTH WEIGHT	NUM NUM	3 3	MEAN MEAN	0.461 0.525	S. D. S. D.	0.020 0.081	LOW LOW	0.442 0.434	HIGH HIGH	0.482 0.590								
	MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM			
NUMBER	0003	0003	0003	0003	0003	0003	0003	0003	0003	0003	0003	0003	0003	0003	0003			
N DET.	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0002	0003	0000	0003	0000			
MEAN	0.060	0.417	0.077	10.250	0.720	0.040	0.310	0.353	5.86	0.550	0.190	0.000	0.480	0.000	0.940			
S. D.	0.010	0.185	0.015	1.602	0.131	0.010	0.166	0.049	1.23	0.226	0.000	0.000	0.563	0.000	0.537			
LOW	0.050	0.310	0.060	8.400	0.570	0.030	0.190	0.320	4.44	0.400	0.000	0.000	0.130	0.000	0.630			
HIGH	0.070	0.630	0.090	11.200	0.810	0.050	0.500	0.410	6.69	0.810	0.190	0.000	1.130	0.000	1.560			

SKATE, LITTLE		RAJA ERINACEA							150005			AREA- NORTH ATLANTIC			SITE- P1		MUSCLE	
LENGTH WEIGHT	NUM NUM	7 7	MEAN MEAN	0.456 0.567	S. D. S. D.	0.014 0.047	LOW LOW	0.444 0.521	HIGH HIGH	0.475 0.631								
	MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM			
NUMBER	0007	0007	0007	0007	0007	0007	0007	0007	0007	0007	0007	0007	0006	0007	0007			
N DET.	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0004	0004	0000	0003	0000			
MEAN	0.110	0.607	0.084	13.939	0.767	0.057	0.205	0.297	9.18	0.335	0.203	0.327	0.335	1.145	0.853			
S. D.	0.040	0.303	0.018	6.968	0.347	0.034	0.086	0.136	3.07	0.136	0.364	0.119	0.201	0.654	0.394			
LOW	0.060	0.300	0.060	4.260	0.450	0.020	0.060	0.080	4.00	0.140	0.130	0.190	0.130	0.380	0.310			
HIGH	0.160	1.190	0.110	26.850	1.520	0.110	0.310	0.430	13.56	0.510	0.250	0.410	0.640	1.880	1.440			

SKATE, LITTLE		RAJA ERINACEA							150005			AREA- NORTH ATLANTIC			SITE- P2		MUSCLE	
LENGTH WEIGHT	NUM NUM	6 6	MEAN MEAN	0.451 0.595	S. D. S. D.	0.033 0.115	LOW LOW	0.390 0.381	HIGH HIGH	0.478 0.695								
	MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM			
NUMBER	0006	0006	0006	0006	0006	0006	0006	0005	0006	0006	0006	0006	0006	0006	0006			
N DET.	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0004	0003	0000	0004	0000			
MEAN	0.154	0.643	0.113	24.077	0.602	0.069	0.372	0.410	10.52	0.418	0.175	0.267	0.782	0.530	0.924			
S. D.	0.077	0.239	0.040	10.415	0.294	0.033	0.165	0.119	2.29	0.387	0.321	0.187	0.646	0.396	0.364			
LOW	0.040	0.380	0.090	16.500	0.160	0.030	0.220	0.270	7.44	0.250	0.160	0.130	0.310	0.250	0.630			
HIGH	0.230	1.000	0.190	45.000	0.980	0.110	0.630	0.600	13.13	0.480	0.190	0.480	2.070	0.810	1.470			

SKATE, WINTER		RAJA OCELLATA							150012			AREA- NORTH ATLANTIC			SITE- I7		MUSCLE	
LENGTH WEIGHT	NUM NUM	1 0	MEAN MEAN	0.730 0.000	S. D. S. D.	0.000 0.000	LOW LOW	0.730 0.000	HIGH HIGH	0.730 0.300								
	MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM			
NUMBER	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001			
N DET.	0000	0000	0000	0000	0000	0001	0000	0000	0000	0000	0001	0001	0000	0000	0000			
MEAN	0.205	0.376	0.070	12.700	0.440	0.000	0.325	0.230	7.30	0.110	0.300	0.000	0.135	1.800	0.300			
S. D.	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.300	0.000	0.000	0.000	0.000	0.000			
LOW	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.300	0.300	0.000	0.000	0.000	0.000			
HIGH	0.205	0.376	0.070	12.700	0.440	0.000	0.325	0.230	7.30	0.110	0.300	0.000	0.135	1.800	0.300			

SKATE, WINTER		RAJA OCELLATA							150012			AREA- NORTH ATLANTIC			SITE- I7		LIVER	
LENGTH WEIGHT	NUM NUM	1 0	MEAN MEAN	0.730 0.000	S. D. S. D.	0.000 0.000	LOW LOW	0.730 0.000	HIGH HIGH	0.730 0.000								
	MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM			
NUMBER	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001	0001			
N DET.	0001	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0001	0000	0000	0000			
MEAN	0.000	0.650	0.210	4.500	1.450	0.180	0.400	5.710	19.30	0.890	0.300	0.300	0.640	1.250	0.300			
S. D.	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.300	0.300	0.000	0.000	0.000	0.000			
LOW	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.300	0.300	0.000	0.000	0.000	0.000			
HIGH	0.000	0.650	0.210	4.500	1.450	0.180	0.400	5.710	19.30	0.890	0.300	0.300	0.640	1.250	0.300			













TABLE 5. SUMMARY OF TRACE ELEMENT LEVELS  
IN RESOURCE SURVEY SPECIES;  
BY TISSUE AND LOCATION

LOCATION LEVEL 5

TILEFISH				LOPHOLATILUS CHAMAELONTICEPS				174003	AREA- GULF			SITE- G6			MUSCLE	
LENGTH WEIGHT	NUM NUM	41 MEAN	MEAN	0.815 S. D.	S. D.	0.103 S. D.	LOW LOW	0.625 HIGH	HIGH	0.975 HIGH	MOLYB	VANADIUM	MANG	ANTIMONY	TIN	
MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM		
NUMBER N DET.	0055 0000	0055 0000	0055 0001	0054 0000	0054 0000	0055 0014	0054 0005	0055 0000	0055 0000	0055 0000	0055 0049	0055 0045	0055 0000	0055 0000	0055 0000	
MEAN	1.471	0.442	0.061	4.342	1.280	0.036	0.098	0.255	4.46	0.215	0.087	0.211	0.118	0.647	0.478	
S. D.	0.626	0.129	0.014	2.175	0.444	0.011	0.045	0.117	1.30	0.047	0.032	0.100	0.035	0.171	0.192	
LOW	0.650	0.190	0.030	0.625	0.380	0.010	0.040	0.060	1.44	0.080	0.060	0.030	0.045	0.250	0.060	
HIGH	3.730	0.750	0.090	13.925	2.250	0.070	0.250	0.630	9.50	0.300	0.130	0.380	0.210	1.000	1.100	
SALMON, PINK				ONCORHYNCHUS GORBUSCHA				179016	AREA- ALASKA			SITE- G6			MUSCLE	
LENGTH WEIGHT	NUM NUM	10 MEAN	MEAN	0.458 S. D.	S. D.	0.024 S. D.	LOW LOW	0.417 HIGH	HIGH	0.493 HIGH	MOLYB	VANADIUM	MANG	ANTIMONY	TIN	
MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM		
NUMBER N DET.	0010 0006	0009 0001	0009 0001	0010 0000	0010 0001	0009 0003	0009 0000	0009 0000	0009 0002	0009 0003	0009 0007	0009 0000	0009 0000	0009 0000	0008 0000	
MEAN	0.023	0.482	0.076	2.220	0.408	0.035	0.234	0.825	5.44	0.172	0.281	0.580	0.171	0.745	0.776	
S. D.	0.013	0.122	0.021	1.080	0.156	0.006	0.158	0.250	1.22	0.058	0.329	0.467	0.069	0.283	0.306	
LOW	0.010	0.300	0.040	0.750	0.230	0.026	0.080	0.555	3.57	0.070	0.025	0.250	0.070	0.360	0.600	
HIGH	0.040	0.660	0.110	4.710	0.700	0.040	0.505	1.180	7.68	0.230	0.900	0.910	0.285	1.100	1.500	
SALMON, PINK				ONCORHYNCHUS GORBUSCHA				179016	AREA- ALASKA			SITE- G6			LIVER	
LENGTH WEIGHT	NUM NUM	1 MEAN	MEAN	0.458 S. D.	S. D.	0.000 S. D.	LOW LOW	0.458 HIGH	HIGH	0.458 HIGH	MOLYB	VANADIUM	MANG	ANTIMONY	TIN	
MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM		
NUMBER N DET.	0001 0001	0001 0000	0001 0000	0001 0000	0001 0000	0001 0000	0001 0000	0001 0000	0001 0000	0001 0000	0001 0001	0001 0000	0001 0000	0001 0000	0001 0000	
MEAN	0.000	0.310	0.510	2.125	1.270	0.340	0.060	18.750	32.50	0.220	0.160	0.000	0.550	0.380	0.630	
S. D.	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
LOW	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
HIGH	0.000	0.310	0.510	2.125	1.270	0.040	0.060	18.750	32.50	0.220	0.160	0.000	0.550	0.380	0.630	
SALMON, PINK				ONCORHYNCHUS GORBUSCHA				179016	AREA- ALASKA			SITE- G6			MUSCLE	
LENGTH WEIGHT	NUM NUM	9 MEAN	MEAN	0.501 S. D.	S. D.	0.026 S. D.	LOW LOW	0.464 HIGH	HIGH	0.525 HIGH	MOLYB	VANADIUM	MANG	ANTIMONY	TIN	
MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM		
NUMBER N DET.	0009 0004	0009 0000	0009 0002	0009 0000	0009 0000	0009 0001	0009 0001	0009 0000	0009 0000	0009 0001	0009 0004	0009 0006	0009 0000	0009 0004	0009 0000	
MEAN	0.039	0.335	0.080	2.829	0.428	0.037	0.119	0.641	5.33	0.156	0.385	0.320	0.170	0.622	0.655	
S. D.	0.025	0.185	0.038	1.755	0.192	0.009	0.032	0.198	1.43	0.085	0.286	0.069	0.065	0.139	0.236	
LOW	0.020	0.120	0.050	0.775	0.200	0.020	0.060	0.450	3.57	0.040	0.125	0.280	0.070	0.400	0.400	
HIGH	0.080	0.630	0.160	5.100	0.800	0.050	0.166	1.060	8.00	0.290	0.870	0.400	0.260	0.810	1.030	
SALMON, PINK				ONCORHYNCHUS GORBUSCHA				179016	AREA- ALASKA			SITE- G6			LIVER	
LENGTH WEIGHT	NUM NUM	1 MEAN	MEAN	0.501 S. D.	S. D.	0.000 S. D.	LOW LOW	0.501 HIGH	HIGH	0.501 HIGH	MOLYB	VANADIUM	MANG	ANTIMONY	TIN	
MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM		
NUMBER N DET.	0001 0001	0001 0000	0001 0000	0001 0000	0001 0000	0001 0001	0001 0000	0001 0000	0001 0000	0001 0000	0001 0001	0001 0000	0001 0000	0001 0000	0001 0000	
MEAN	0.000	0.190	0.360	0.600	1.900	0.300	0.250	23.130	10.00	0.110	0.160	0.000	0.300	0.440	0.690	
S. D.	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
LOW	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
HIGH	0.000	0.190	0.360	0.600	1.900	0.300	0.250	23.130	10.00	0.110	0.160	0.000	0.300	0.440	0.690	
SALMON, PINK				ONCORHYNCHUS GORBUSCHA				179016	AREA- ALASKA			SITE- U1			MUSCLE	
LENGTH WEIGHT	NUM NUM	10 MEAN	MEAN	0.457 S. D.	S. D.	0.017 S. D.	LOW LOW	0.432 HIGH	HIGH	0.486 HIGH	MOLYB	VANADIUM	MANG	ANTIMONY	TIN	
MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM		
NUMBER N DET.	0010 0008	0008 0000	0009 0000	0010 0002	0010 0000	0009 0000	0009 0001	0009 0000	0009 0000	0009 0000	0009 0005	0009 0004	0009 0000	0009 0001	0008 0000	
MEAN	0.015	0.383	0.093	1.894	0.397	0.047	0.179	0.849	5.65	0.311	0.220	0.414	0.179	1.004	0.583	
S. D.	0.007	0.100	0.053	1.107	0.160	0.032	0.107	0.272	1.41	0.158	0.156	0.266	0.054	0.588	0.270	
LOW	0.010	0.250	0.050	0.400	0.130	0.010	0.080	0.510	3.94	0.190	0.090	0.200	0.070	0.320	0.326	
HIGH	0.020	0.500	0.185	3.500	0.600	0.110	0.420	1.440	8.39	0.710	0.440	0.870	0.250	2.110	1.250	
SALMON, PINK				ONCORHYNCHUS GORBUSCHA				179016	AREA- ALASKA			SITE- U1			LIVER	
LENGTH WEIGHT	NUM NUM	1 MEAN	MEAN	0.457 S. D.	S. D.	0.000 S. D.	LOW LOW	0.457 HIGH	HIGH	0.457 HIGH	MOLYB	VANADIUM	MANG	ANTIMONY	TIN	
MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM		
NUMBER N DET.	0001 0001	0001 0000	0001 0000	0001 0000	0001 0000	0001 0000	0001 0000	0001 0000	0001 0000	0001 0000	0001 0000	0001 0000	0001 0000	0001 0000	0001 0000	
MEAN	0.000	0.250	0.590	0.850	1.470	0.030	0.220	21.500	62.50	0.200	0.870	0.120	0.780	0.810	1.000	
S. D.	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
LOW	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
HIGH	0.000	0.250	0.590	0.850	1.470	0.030	0.220	21.500	62.50	0.200	0.870	0.120	0.780	0.810	1.000	













TABLE 5. SUMMARY OF TRACE ELEMENT LEVELS IN RESOURCE SURVEY SPECIES; BY TISSUE AND LOCATION.

LOCATION LEVEL 5

Table for Salmon, Chinook (King) at Site-02, Liver. Columns include Length Weight, Mercury, Lead, Cadmium, Arsenic, Selenium, Silver, Chromium, Copper, Zinc, Nickel, Molybdenum, Vanadium, Manganese, Antimony, and Tin.

Table for Salmon, Chinook (King) at Site-H7, Muscle. Columns include Length Weight, Mercury, Lead, Cadmium, Arsenic, Selenium, Silver, Chromium, Copper, Zinc, Nickel, Molybdenum, Vanadium, Manganese, Antimony, and Tin.

Table for Salmon, Chinook (King) at Site-H7, Liver. Columns include Length Weight, Mercury, Lead, Cadmium, Arsenic, Selenium, Silver, Chromium, Copper, Zinc, Nickel, Molybdenum, Vanadium, Manganese, Antimony, and Tin.

Table for Salmon, Chinook (King) at Site-K4, Muscle. Columns include Length Weight, Mercury, Lead, Cadmium, Arsenic, Selenium, Silver, Chromium, Copper, Zinc, Nickel, Molybdenum, Vanadium, Manganese, Antimony, and Tin.

Table for Salmon, Chinook (King) at Site-K4, Liver. Columns include Length Weight, Mercury, Lead, Cadmium, Arsenic, Selenium, Silver, Chromium, Copper, Zinc, Nickel, Molybdenum, Vanadium, Manganese, Antimony, and Tin.

Table for Salmon, Chinook (King) at Site-04, Muscle. Columns include Length Weight, Mercury, Lead, Cadmium, Arsenic, Selenium, Silver, Chromium, Copper, Zinc, Nickel, Molybdenum, Vanadium, Manganese, Antimony, and Tin.

Table for Salmon, Chinook (King) at Site-04, Liver. Columns include Length Weight, Mercury, Lead, Cadmium, Arsenic, Selenium, Silver, Chromium, Copper, Zinc, Nickel, Molybdenum, Vanadium, Manganese, Antimony, and Tin.











TABLE 5. SUMMARY OF TRACE ELEMENT LEVELS  
IN RESOURCE SURVEY SPECIES:  
BY TISSUE AND LOCATION

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LOCATION LEVEL 5

SQUID, ATL. LONGFINNED				LOLIGO PEALII				188003 AREA- NORTH ATLANTIC			SITE- N5			MANTLE, SKINLESS	
LENGTH WEIGHT	NUM NUM	5 MEAN MEAN	0.112 S. D.	0.048 S. D.	0.027 S. D.	LOW	0.081 HIGH	0.020 HIGH	0.151 HIGH	0.089	VANADIUM	MANG	ANTIMONY	TIN	
	MERCURY	LEAD	CADMIUM	ARSENIC	SELENIUM	SILVER	CHROM	COPPER	ZINC	NICKEL	MOLYB	PPM	PPM	PPM	PPM
NUMBER	0005	0005	0005	0005	0005	0005	0005	0005	0005	0005	0005	0005	0005	0005	0005
N DET.	0002	0000	0000	0000	0000	0000	0000	0000	0000	0000	0004	0005	0000	0005	0000
MEAN	0.023	0.628	0.168	2.574	0.551	0.069	0.275	7.814	15.98	0.311	0.130	0.000	0.285	0.000	0.793
S. D.	0.006	0.164	0.016	1.438	0.304	0.019	0.304	2.235	2.39	0.022	0.000	0.000	0.059	0.000	0.190
LOW	0.020	0.380	0.150	1.533	0.170	0.040	0.060	4.630	13.93	0.285	0.000	0.000	0.230	0.000	0.630
HIGH	0.030	0.815	0.190	5.000	0.815	0.090	0.810	10.750	18.75	0.340	0.130	0.000	0.350	0.000	1.000

SQUID, ATL. LONGFINNED				LOLIGO PEALII				188003 AREA- NORTH ATLANTIC			SITE- N7			MANTLE, SKINLESS	
LENGTH WEIGHT	NUM NUM	7 MEAN MEAN	0.115 S. D.	0.055 S. D.	0.029 S. D.	LOW	0.077 HIGH	0.021 HIGH	0.160 HIGH	0.107	VANADIUM	MANG	ANTIMONY	TIN	
	MERCURY	LEAD	CADMIUM	ARSENIC	SELENIUM	SILVER	CHROM	COPPER	ZINC	NICKEL	MOLYB	PPM	PPM	PPM	PPM
NUMBER	0007	0006	0007	0007	0007	0007	0007	0007	0007	0007	0007	0007	0007	0007	0007
N DET.	0003	0000	0000	0000	0000	0000	0000	0000	0000	0000	0006	0005	0000	0004	0000
MEAN	0.088	0.456	0.156	1.973	0.439	0.081	0.184	5.332	10.44	0.289	0.310	0.175	0.309	0.553	0.757
S. D.	0.056	0.205	0.067	1.443	0.213	0.019	0.065	1.691	2.86	0.074	0.000	0.064	0.098	0.373	0.223
LOW	0.040	0.190	0.080	0.840	0.100	0.065	0.120	2.880	4.69	0.150	0.000	0.130	0.195	0.250	0.440
HIGH	0.150	0.810	0.270	4.925	0.670	0.120	0.280	7.560	13.62	0.395	0.310	0.220	0.455	0.970	1.080

SQUID, ATL. LONGFINNED				LOLIGO PEALII				188003 AREA- NORTH ATLANTIC			SITE- N8			MANTLE, SKINLESS	
LENGTH WEIGHT	NUM NUM	11 MEAN MEAN	0.202 S. D.	0.183 S. D.	0.018 S. D.	LOW	0.179 HIGH	0.127 HIGH	0.242 HIGH	0.290	VANADIUM	MANG	ANTIMONY	TIN	
	MERCURY	LEAD	CADMIUM	ARSENIC	SELENIUM	SILVER	CHROM	COPPER	ZINC	NICKEL	MOLYB	PPM	PPM	PPM	PPM
NUMBER	0010	0010	0011	0011	0011	0011	0011	0011	0011	0011	0011	0011	0011	0011	0011
N DET.	0002	0000	0000	0000	0000	0000	0000	0000	0000	0000	0008	0009	0000	0011	0000
MEAN	0.038	0.494	0.205	4.283	0.786	0.059	0.234	5.851	15.22	0.278	0.090	0.205	0.244	0.000	0.574
S. D.	0.017	0.183	0.081	1.209	0.228	0.016	0.091	3.192	3.97	0.068	0.000	0.064	0.067	0.000	0.124
LOW	0.020	0.310	0.050	3.025	0.460	0.040	0.130	0.250	3.94	0.180	0.090	0.160	0.080	0.000	0.310
HIGH	0.060	0.815	0.365	7.250	1.160	0.090	0.440	9.285	18.12	0.405	0.090	0.250	0.330	0.000	0.810

SQUID, ATL. LONGFINNED				LOLIGO PEALII				188003 AREA- NORTH ATLANTIC			SITE- O1			MANTLE, SKINLESS	
LENGTH WEIGHT	NUM NUM	20 MEAN MEAN	0.132 S. D.	0.077 S. D.	0.036 S. D.	LOW	0.087 HIGH	0.023 HIGH	0.195 HIGH	0.183	VANADIUM	MANG	ANTIMONY	TIN	
	MERCURY	LEAD	CADMIUM	ARSENIC	SELENIUM	SILVER	CHROM	COPPER	ZINC	NICKEL	MOLYB	PPM	PPM	PPM	PPM
NUMBER	0020	0020	0020	0020	0020	0020	0020	0020	0019	0020	0020	0020	0020	0020	0020
N DET.	0013	0000	0000	0000	0000	0000	0000	0000	0000	0000	0019	0015	0000	0018	0000
MEAN	0.100	0.571	0.135	2.938	0.593	0.072	0.261	3.962	12.40	0.292	0.190	0.292	0.256	0.845	0.614
S. D.	0.133	0.227	0.036	1.726	0.345	0.052	0.199	2.208	1.52	0.066	0.000	0.115	0.088	0.219	0.131
LOW	0.020	0.250	0.060	0.983	0.110	0.030	0.060	0.190	9.47	0.110	0.000	0.160	0.080	0.690	0.330
HIGH	0.390	1.250	0.195	8.750	1.800	0.280	0.880	10.500	15.38	0.380	0.190	0.440	0.480	1.000	0.880

SQUID, ATL. LONGFINNED				LOLIGO PEALII				188003 AREA- NORTH ATLANTIC			SITE- P1			WHOLE	
LENGTH WEIGHT	NUM NUM	23 MEAN MEAN	0.197 S. D.	0.147 S. D.	0.050 S. D.	LOW	0.108 HIGH	0.036 HIGH	0.300 HIGH	0.298	VANADIUM	MANG	ANTIMONY	TIN	
	MERCURY	LEAD	CADMIUM	ARSENIC	SELENIUM	SILVER	CHROM	COPPER	ZINC	NICKEL	MOLYB	PPM	PPM	PPM	PPM
NUMBER	0023	0022	0023	0023	0022	0023	0023	0022	0023	0023	0023	0023	0023	0023	0023
N DET.	0009	0000	0000	0000	0000	0000	0000	0000	0000	0000	0015	0015	0000	0000	0000
MEAN	0.050	0.576	0.163	6.744	0.801	0.167	0.399	38.365	17.00	0.300	0.133	0.269	0.385	0.855	0.724
S. D.	0.037	0.181	0.042	2.603	0.232	0.092	0.490	19.888	5.52	0.098	0.070	0.166	0.112	0.256	0.231
LOW	0.020	0.345	0.100	2.280	0.480	0.070	0.060	6.530	6.75	0.110	0.060	0.060	0.190	0.390	0.220
HIGH	0.125	1.030	0.245	13.750	1.440	0.460	2.190	76.565	31.25	0.610	0.250	0.590	0.580	1.380	1.140

SQUID, ATL. LONGFINNED				LOLIGO PEALII				188003 AREA- NORTH ATLANTIC			SITE- P2			MANTLE, SKINLESS	
LENGTH WEIGHT	NUM NUM	7 MEAN MEAN	0.138 S. D.	0.083 S. D.	0.040 S. D.	LOW	0.099 HIGH	0.033 HIGH	0.210 HIGH	0.200	VANADIUM	MANG	ANTIMONY	TIN	
	MERCURY	LEAD	CADMIUM	ARSENIC	SELENIUM	SILVER	CHROM	COPPER	ZINC	NICKEL	MOLYB	PPM	PPM	PPM	PPM
NUMBER	0007	0007	0007	0007	0007	0007	0007	0007	0006	0007	0007	0007	0007	0007	0006
N DET.	0005	0000	0000	0000	0000	0000	0000	0000	0000	0000	0006	0006	0000	0002	0000
MEAN	0.140	0.863	0.138	3.869	0.353	0.069	0.373	3.283	12.95	0.272	0.220	0.160	0.242	0.996	0.743
S. D.	0.028	0.396	0.044	2.249	0.111	0.042	0.286	1.490	0.97	0.066	0.000	0.000	0.091	0.198	0.301
LOW	0.120	0.440	0.090	1.275	0.260	0.040	0.060	1.690	11.63	0.180	0.000	0.000	0.190	0.750	0.515
HIGH	0.160	1.380	0.210	7.140	0.560	0.160	0.760	5.440	14.19	0.370	0.220	0.160	0.430	1.250	1.310

SQUID, ATL. LONGFINNED				LOLIGO PEALII				188003 AREA- NORTH ATLANTIC			SITE- P3			MANTLE, SKINLESS	
LENGTH WEIGHT	NUM NUM	6 MEAN MEAN	0.133 S. D.	0.072 S. D.	0.016 S. D.	LOW	0.113 HIGH	0.040 HIGH	0.153 HIGH	0.100	VANADIUM	MANG	ANTIMONY	TIN	
	MERCURY	LEAD	CADMIUM	ARSENIC	SELENIUM	SILVER	CHROM	COPPER	ZINC	NICKEL	MOLYB	PPM	PPM	PPM	PPM
NUMBER	0006	0006	0006	0006	0006	0006	0004	0006	0005	0006	0006	0006	0006	0006	0006
N DET.	0005	0000	0000	0000	0000	0000	0000	0000	0000	0000	0004	0005	0000	0001	0000
MEAN	0.130	0.454	0.174	4.653	0.405	0.064	0.283	3.921	11.19	0.228	0.205	0.310	0.326	0.649	0.936
S. D.	0.000	0.142	0.024	2.682	0.124	0.018	0.353	3.043	2.78	0.078	0.064	0.000	0.100	0.283	0.454
LOW	0.000	0.310	0.060	1.540	0.250	0.040	0.060	0.400	6.69	0.130	0.160	0.000	0.205	0.440	0.500
HIGH	0.130	0.690	0.630	9.000	0.560	0.080	0.810	9.190	14.06	0.355	0.250	0.310	0.490	1.130	1.700

TABLE 5. SUMMARY OF TRACE ELEMENT LEVELS  
IN RESOURCE SURVEY SPECIES;  
BY TISSUE AND LOCATION

LOCATION LEVEL 5

SQUID, ATL. LONGFINNED				LOLIGO PEALII				188003 AREA- NORTH ATLANTIC				SITE- S1 MANTLE, SKINLESS			
LENGTH WEIGHT	NUM NUM	2 MEAN MEAN		0.137 S. D.	S. D.	0.070 LOW		0.087 HIGH		0.186 HIGH					
	MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM
NUMBER	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002
N DET.	0002	0000	0000	0000	0000	0000	0000	0000	0000	0000	0002	0002	0000	0001	0000
MEAN	0.000	0.405	0.290	0.785	0.320	0.075	0.350	6.845	12.87	0.370	0.000	0.000	0.245	0.630	0.910
S. D.	0.000	0.134	0.071	0.474	0.269	0.049	0.311	5.607	3.87	0.057	0.000	0.000	0.021	0.000	0.311
LOW	0.000	0.310	0.240	0.450	0.130	0.040	0.130	2.880	10.13	0.330	0.000	0.000	0.230	0.000	0.690
HIGH	0.000	0.500	0.340	1.120	0.510	0.110	0.570	10.810	15.60	0.410	0.000	0.000	0.260	0.630	1.130

SQUID, ATL. LONGFINNED				LOLIGO PEALII				188003 AREA- NORTH ATLANTIC				SITE- S6 MANTLE, SKINLESS			
LENGTH WEIGHT	NUM NUM	4 MEAN MEAN		0.155 S. D.	S. D.	0.024 LOW		0.128 HIGH		0.184 HIGH					
	MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM
NUMBER	0004	0004	0004	0004	0004	0004	0004	0004	0004	0004	0004	0004	0004	0004	0004
N DET.	0003	0000	0000	0000	0000	0000	0000	0000	0000	0000	0003	0002	0000	0001	0000
MEAN	0.040	0.486	0.198	3.231	0.586	0.050	0.148	3.096	14.37	0.381	0.190	0.325	0.254	0.882	0.550
S. D.	0.000	0.235	0.176	1.806	0.108	0.014	0.021	1.802	3.21	0.135	0.000	0.191	0.093	0.316	0.164
LOW	0.000	0.190	0.090	1.600	0.445	0.030	0.130	1.535	11.09	0.275	0.000	0.190	0.180	0.595	0.380
HIGH	0.040	0.750	0.460	5.000	0.700	0.060	0.170	5.560	18.25	0.560	0.190	0.460	0.390	1.220	0.690

SQUID, PAC.				LOLIGO OPALESCENS				188006 AREA- CALIFORNIA				SITE- F8 WHOLE			
LENGTH WEIGHT	NUM NUM	10 MEAN MEAN		0.148 S. D.	S. D.	0.004 LOW		0.143 HIGH		0.156 HIGH					
	MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM
NUMBER	0010	0010	0010	0010	0010	0010	0010	0010	0010	0010	0010	0010	0010	0010	0010
N DET.	0006	0001	0000	0000	0000	0000	0001	0000	0000	0002	0009	0006	0000	0001	0000
MEAN	0.038	0.597	0.427	2.071	0.580	0.124	0.162	30.551	16.45	0.382	0.700	0.230	0.417	0.928	0.319
S. D.	0.021	0.263	0.090	1.121	0.221	0.135	0.087	5.843	2.99	0.161	0.000	0.115	0.146	0.645	0.248
LOW	0.010	0.300	0.215	0.558	0.240	0.030	0.045	21.780	11.93	0.285	0.000	0.150	0.210	0.130	0.475
HIGH	0.060	1.130	0.515	3.450	0.945	0.500	0.250	39.310	20.71	0.770	0.700	0.400	0.695	1.900	1.250

SQUID, PAC.				LOLIGO OPALESCENS				188006 AREA- CALIFORNIA				SITE- I8 WHOLE			
LENGTH WEIGHT	NUM NUM	30 MEAN MEAN		0.162 S. D.	S. D.	0.020 LOW		0.135 HIGH		0.180 HIGH					
	MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM
NUMBER	0029	0030	0030	0030	0030	0030	0030	0030	0030	0030	0030	0030	0030	0030	0030
N DET.	0019	0000	0000	0000	0000	0000	0001	0000	0000	0000	0015	0024	0000	0001	0000
MEAN	0.064	0.749	0.766	3.265	0.566	0.062	0.193	25.390	21.27	0.212	0.282	0.263	0.433	0.616	0.654
S. D.	0.066	0.425	0.274	2.099	0.201	0.029	0.278	11.555	10.51	0.047	0.204	0.190	0.113	0.187	0.223
LOW	0.020	0.375	0.210	0.925	0.110	0.030	0.010	10.880	8.75	0.140	0.060	0.130	0.260	0.340	0.380
HIGH	0.240	2.310	1.250	10.100	0.950	0.180	1.560	53.125	66.87	0.350	0.880	0.630	0.730	0.985	1.630

SQUID, PAC.				LOLIGO OPALESCENS				188006 AREA- CALIFORNIA				SITE- K3 WHOLE			
LENGTH WEIGHT	NUM NUM	10 MEAN MEAN		0.170 S. D.	S. D.	0.000 LOW		0.170 HIGH		0.170 HIGH					
	MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM
NUMBER	0010	0010	0010	0010	0010	0010	0009	0010	0010	0010	0010	0010	0010	0010	0010
N DET.	0002	0000	0000	0000	0000	0000	0000	0000	0000	0000	0004	0005	0000	0000	0000
MEAN	0.036	0.486	1.223	2.612	0.539	0.104	0.171	37.198	11.86	0.176	0.197	0.276	0.313	0.638	0.514
S. D.	0.014	0.213	0.452	0.732	0.130	0.043	0.109	14.254	3.97	0.025	0.166	0.102	0.153	0.205	0.219
LOW	0.020	0.190	0.410	1.225	0.290	0.050	0.060	9.630	3.44	0.135	0.060	0.190	0.140	0.380	0.170
HIGH	0.050	0.940	1.720	4.166	0.710	0.185	0.310	53.125	16.67	0.215	0.500	0.440	0.680	0.965	0.895

SQUID, SHORTFINNED				ILLEX ILLECEBROSUS				188014 AREA- NORTH ATLANTIC				SITE- I5 MANTLE, SKINLESS			
LENGTH WEIGHT	NUM NUM	10 MEAN MEAN		0.242 S. D.	S. D.	0.020 LOW		0.211 HIGH		0.275 HIGH					
	MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM
NUMBER	0010	0010	0010	0010	0010	0010	0009	0010	0010	0010	0010	0010	0010	0010	0010
N DET.	0006	0000	0000	0000	0000	0000	0002	0000	0000	0000	0010	0008	0000	0005	0000
MEAN	0.073	0.453	0.106	1.549	0.407	0.046	0.252	3.078	10.87	0.225	0.000	0.130	0.333	0.788	0.931
S. D.	0.055	0.248	0.038	0.945	0.271	0.018	0.259	0.939	2.18	0.068	0.000	0.000	0.207	0.341	0.348
LOW	0.020	0.200	0.065	0.450	0.220	0.010	0.050	1.920	7.19	0.130	0.000	0.130	0.160	0.440	0.530
HIGH	0.120	1.000	0.180	3.730	1.130	0.080	0.690	4.380	13.94	0.330	0.000	0.130	0.810	1.250	1.440

SQUID, SHORTFINNED				ILLEX ILLECEBROSUS				188014 AREA- NORTH ATLANTIC				SITE- I9 MANTLE, SKINLESS			
LENGTH WEIGHT	NUM NUM	20 MEAN MEAN		0.226 S. D.	S. D.	0.034 LOW		0.179 HIGH		0.288 HIGH					
	MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM
NUMBER	0020	0020	0020	0020	0020	0020	0020	0020	0020	0020	0020	0020	0020	0020	0020
N DET.	0005	0000	0000	0000	0000	0000	0001	0000	0000	0000	0015	0011	0000	0020	0000
MEAN	0.069	0.726	0.143	2.238	0.514	0.046	0.372	5.421	13.41	0.260	0.126	0.192	0.299	0.000	0.548
S. D.	0.037	0.412	0.048	1.176	0.190	0.017	0.387	2.596	1.20	0.045	0.335	0.055	0.049	0.000	0.114
LOW	0.020	0.310	0.070	0.575	0.130	0.020	0.120	4.460	11.06	0.200	0.090	0.130	0.230	0.000	0.330
HIGH	0.150	1.810	0.240	4.500	0.985	0.080	1.815	9.500	15.91	0.360	0.160	0.310	0.390	0.000	0.750



















TABLE 5. SUMMARY OF TRACE ELEMENT LEVELS IN RESOURCE SURVEY SPECIES; BY TISSUE AND LOCATION

LOCATION LEVEL 5

Table with columns for SHRIMP, PINK; PENAUS DUORARUM; 192010 AREA- GULF; and SITE- L5 TAIL, PEELED. Rows include LENGTH WEIGHT, NUM, MEAN, MERCURY, LEAD, CADMIUM, ARSENIC, SELENIUM, SILVER, CHROM, COPPER, ZINC, NICKEL, MOLYB, VANADIUM, MANG, ANTIMONY, TIN.

Table with columns for SHRIMP, PINK; PENAUS DUORARUM; 192010 AREA- GULF; and SITE- R5 TAIL, PEELED. Rows include LENGTH WEIGHT, NUM, MEAN, MERCURY, LEAD, CADMIUM, ARSENIC, SELENIUM, SILVER, CHROM, COPPER, ZINC, NICKEL, MOLYB, VANADIUM, MANG, ANTIMONY, TIN.

Table with columns for SHRIMP, PINK; PENAUS DUORARUM; 192010 AREA- GULF; and SITE- R6 TAIL, PEELED. Rows include LENGTH WEIGHT, NUM, MEAN, MERCURY, LEAD, CADMIUM, ARSENIC, SELENIUM, SILVER, CHROM, COPPER, ZINC, NICKEL, MOLYB, VANADIUM, MANG, ANTIMONY, TIN.

Table with columns for SHRIMP, PINK (NORTHERN); PANDALUS BOREALIS; 192011 AREA- NORTH ATLANTIC; and SITE- TAIL, PEELED. Rows include LENGTH WEIGHT, NUM, MEAN, MERCURY, LEAD, CADMIUM, ARSENIC, SELENIUM, SILVER, CHROM, COPPER, ZINC, NICKEL, MOLYB, VANADIUM, MANG, ANTIMONY, TIN.

Table with columns for SHRIMP, PINK (NORTHERN); PANDALUS BOREALIS; 192011 AREA- NORTH ATLANTIC; and SITE- E9 TAIL, PEELED. Rows include LENGTH WEIGHT, NUM, MEAN, MERCURY, LEAD, CADMIUM, ARSENIC, SELENIUM, SILVER, CHROM, COPPER, ZINC, NICKEL, MOLYB, VANADIUM, MANG, ANTIMONY, TIN.

Table with columns for SHRIMP, PINK (NORTHERN); PANDALUS BOREALIS; 192011 AREA- NORTH ATLANTIC; and SITE- I2 TAIL, PEELED. Rows include LENGTH WEIGHT, NUM, MEAN, MERCURY, LEAD, CADMIUM, ARSENIC, SELENIUM, SILVER, CHROM, COPPER, ZINC, NICKEL, MOLYB, VANADIUM, MANG, ANTIMONY, TIN.

Table with columns for SHRIMP, PINK (NORTHERN); PANDALUS BOREALIS; 192011 AREA- NORTH ATLANTIC; and SITE- I5 TAIL, PEELED. Rows include LENGTH WEIGHT, NUM, MEAN, MERCURY, LEAD, CADMIUM, ARSENIC, SELENIUM, SILVER, CHROM, COPPER, ZINC, NICKEL, MOLYB, VANADIUM, MANG, ANTIMONY, TIN.













TABLE 5. SUMMARY OF TRACE ELEMENT LEVELS IN RESOURCE SURVEY SPECIES; BY TISSUE AND LOCATION

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LOCATION LEVEL 5

CRAB, BLUE		CALLINECTES SAPIDUS							196001 AREA- GULF			SITE- E5		BODY MEAT	
LENGTH WEIGHT	NUM NUM MERCURY PPM	10 10 LEAD PPM	MEAN MEAN CADMIUM PPM	0.150 0.174 ARSENIC PPM	S. D. S. D. SELENIUM PPM	0.005 0.016 SILVER PPM	LOW LOW CHROM PPM	0.143 0.146 COPPER PPM	HIGH HIGH ZINC PPM	NICKEL PPM	0.157 0.190 MOLYB PPM	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM
NUMBER	0010	0010	0009	0010	0008	0010	0010	0010	0010	0010	0010	0010	0010	0009	0009
N DET.	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0005	0006	0000	0001	0000
MEAN	0.201	0.557	0.083	5.311	0.943	0.134	0.195	4.521	22.74	0.372	0.168	0.343	0.300	0.867	0.704
S. D.	0.053	0.166	0.017	2.815	0.578	0.041	0.053	1.877	5.04	0.219	0.108	0.081	0.068	0.273	0.169
LOW	0.150	0.250	0.050	3.000	0.370	0.070	0.120	1.425	12.50	0.040	0.060	0.250	0.220	0.560	0.470
HIGH	0.330	0.810	0.105	12.140	1.900	0.200	0.260	7.440	29.25	0.740	0.310	0.440	0.440	1.440	1.000

CRAB, BLUE		CALLINECTES SAPIDUS							196001 AREA- GULF			SITE- E5		CLAW & BODY MEAT	
LENGTH WEIGHT	NUM NUM MERCURY PPM	10 10 LEAD PPM	MEAN MEAN CADMIUM PPM	0.138 0.151 ARSENIC PPM	S. D. S. D. SELENIUM PPM	0.005 0.017 SILVER PPM	LOW LOW CHROM PPM	0.133 0.134 COPPER PPM	HIGH HIGH ZINC PPM	NICKEL PPM	0.149 0.190 MOLYB PPM	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM
NUMBER	0010	0010	0010	0010	0010	0010	0010	0010	0010	0010	0010	0010	0010	0010	0010
N DET.	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0005	0002	0000	0008	0000
MEAN	0.266	0.709	0.105	6.893	0.780	0.158	0.235	4.624	30.08	0.452	0.166	0.249	0.863	0.345	0.729
S. D.	0.075	0.210	0.022	1.550	0.195	0.050	0.113	2.538	7.71	0.183	0.050	0.127	0.398	0.049	0.148
LOW	0.130	0.380	0.060	3.933	0.410	0.100	0.130	1.290	13.94	0.260	0.090	0.130	0.260	0.310	0.470
HIGH	0.330	1.000	0.130	9.100	1.060	0.250	0.500	9.440	38.13	0.870	0.220	0.540	1.590	0.380	1.060

CRAB, BLUE		CALLINECTES SAPIDUS							196001 AREA- GULF			SITE- G3		CLAW & BODY MEAT	
LENGTH WEIGHT	NUM NUM MERCURY PPM	2 1 LEAD PPM	MEAN MEAN CADMIUM PPM	0.151 0.185 ARSENIC PPM	S. D. S. D. SELENIUM PPM	0.008 0.000 SILVER PPM	LOW LOW CHROM PPM	0.145 0.185 COPPER PPM	HIGH HIGH ZINC PPM	NICKEL PPM	0.156 0.185 MOLYB PPM	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM
NUMBER	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002
N DET.	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0001	0000	0001	0000
MEAN	0.193	0.845	0.100	3.375	0.460	0.238	0.200	3.718	39.53	0.285	0.138	0.280	1.595	0.630	0.628
S. D.	0.011	0.354	0.028	0.884	0.127	0.216	0.028	0.795	0.23	0.049	0.011	0.000	0.233	0.000	0.110
LOW	0.185	0.595	0.080	2.750	0.370	0.085	0.180	3.155	39.37	0.250	0.130	0.000	1.430	0.000	0.550
HIGH	0.200	1.095	0.120	4.000	0.550	0.390	0.220	4.280	39.69	0.320	0.145	0.280	1.760	0.630	0.705

CRAB, BLUE		CALLINECTES SAPIDUS							196001 AREA- GULF			SITE- L5		CLAW & BODY MEAT	
LENGTH WEIGHT	NUM NUM MERCURY PPM	3 1 LEAD PPM	MEAN MEAN CADMIUM PPM	0.139 0.154 ARSENIC PPM	S. D. S. D. SELENIUM PPM	0.008 0.000 SILVER PPM	LOW LOW CHROM PPM	0.132 0.154 COPPER PPM	HIGH HIGH ZINC PPM	NICKEL PPM	0.148 0.154 MOLYB PPM	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM
NUMBER	0003	0003	0003	0002	0002	0003	0003	0003	0003	0003	0003	0003	0003	0003	0003
N DET.	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0001	0000	0001	0000
MEAN	0.100	0.782	0.128	9.230	1.022	0.608	0.203	10.168	33.67	0.489	0.212	0.450	0.632	0.845	0.873
S. D.	0.044	0.157	0.014	4.011	0.257	0.266	0.071	1.949	11.22	0.313	0.121	0.240	0.257	0.488	0.223
LOW	0.070	0.626	0.113	6.393	0.840	0.330	0.155	8.243	24.22	0.140	0.100	0.280	0.376	0.500	0.700
HIGH	0.150	0.940	0.140	12.066	1.203	0.860	0.285	12.140	46.07	0.745	0.340	0.620	0.890	1.190	1.125

CRAB, BLUE		CALLINECTES SAPIDUS							196001 AREA- GULF			SITE- L8		BODY MEAT	
LENGTH WEIGHT	NUM NUM MERCURY PPM	0 0 LEAD PPM	MEAN MEAN CADMIUM PPM	0.000 0.000 ARSENIC PPM	S. D. S. D. SELENIUM PPM	0.000 0.000 SILVER PPM	LOW LOW CHROM PPM	0.000 0.000 COPPER PPM	HIGH HIGH ZINC PPM	NICKEL PPM	0.000 0.000 MOLYB PPM	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM
NUMBER	0009	0009	0008	0008	0007	0009	0009	0009	0009	0008	0009	0009	0008	0009	0009
N DET.	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0001	0003	0000	0000	0000
MEAN	0.125	0.924	0.151	2.993	0.675	0.206	0.338	8.641	26.69	0.415	0.228	0.247	0.438	1.348	0.866
S. D.	0.049	0.444	0.044	0.885	0.299	0.032	0.160	1.836	11.86	0.041	0.134	0.133	0.167	0.269	0.213
LOW	0.020	0.360	0.090	2.225	0.250	0.140	0.140	6.380	9.56	0.355	0.060	0.060	0.300	0.970	0.620
HIGH	0.180	1.630	0.230	4.287	1.250	0.250	0.630	11.110	46.25	0.460	0.500	0.440	0.820	1.780	1.250

CRAB, BLUE		CALLINECTES SAPIDUS							196001 AREA- GULF			SITE- L8		CLAW MEAT	
LENGTH WEIGHT	NUM NUM MERCURY PPM	0 0 LEAD PPM	MEAN MEAN CADMIUM PPM	0.000 0.000 ARSENIC PPM	S. D. S. D. SELENIUM PPM	0.000 0.000 SILVER PPM	LOW LOW CHROM PPM	0.000 0.000 COPPER PPM	HIGH HIGH ZINC PPM	NICKEL PPM	0.000 0.000 MOLYB PPM	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM
NUMBER	0003	0003	0003	0003	0003	0003	0003	0003	0003	0003	0003	0003	0003	0003	0002
N DET.	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0002	0000	0000	0000	0000
MEAN	0.125	0.978	0.152	3.776	0.770	0.185	0.250	8.157	28.26	0.403	0.220	0.537	0.368	1.282	0.938
S. D.	0.048	0.400	0.073	1.795	0.448	0.031	0.295	3.762	9.84	0.087	0.000	0.502	0.156	0.294	0.442
LOW	0.080	0.745	0.085	2.012	0.260	0.150	0.010	5.940	20.63	0.330	0.000	0.090	0.250	1.095	0.625
HIGH	0.175	1.440	0.230	5.600	1.100	0.210	0.580	12.500	39.37	0.500	0.220	1.080	0.545	1.620	1.250

CRAB, BLUE		CALLINECTES SAPIDUS							196001 AREA- GULF			SITE- L8		CLAW & BODY MEAT	
LENGTH WEIGHT	NUM NUM MERCURY PPM	0 0 LEAD PPM	MEAN MEAN CADMIUM PPM	0.000 3.000 ARSENIC PPM	S. D. S. D. SELENIUM PPM	0.000 0.000 SILVER PPM	LOW LOW CHROM PPM	0.000 0.000 COPPER PPM	HIGH HIGH ZINC PPM	NICKEL PPM	0.000 0.000 MOLYB PPM	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM
NUMBER	0010	0011	0011	0011	0010	0011	0011	0011	0011	0011	0011	0011	0011	0011	0011
N DET.	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0003	0005	0000	0001	0000
MEAN	0.147	0.676	0.122	4.902	0.515	0.282	0.235	7.877	31.07	0.329	0.203	0.387	0.371	1.148	0.921
S. D.	0.026	0.291	0.051	2.181	0.519	0.120	0.131	4.491	5.65	0.083	0.185	0.170	0.102	0.300	0.167
LOW	0.120	0.300	0.070	1.516	0.130	0.090	0.090	3.305	21.94	0.230	0.060	0.190	0.270	0.810	0.690
HIGH	0.210	1.440	0.260	9.750	1.960	0.500	0.470	20.000	42.19	0.450	0.630	0.690	0.630	1.690	1.205





TABLE 5. SUMMARY OF TRACE ELEMENT LEVELS  
IN RESOURCE SURVEY SPECIES:  
BY TISSUE AND LOCATION

LOCATION LEVEL 5

CRAB, DUNGNESS				CANCER MAGISTER					196011 AREA- PACIFIC NORTHWEST			SITE- N1 MEAT			
LENGTH	NUM	0	MEAN	0.000	S. D.	0.000	LOW	0.000	HIGH	0.000	MANG	ANTIMONY	TIN		
		0	MEAN	0.000	S. D.	0.000	LOW	0.000	HIGH	0.000					
WEIGHT	MERCURY	LEAD	CADMIUM	ARSENIC	SELENIUM	SILVER	CHROM	COPPER	ZINC	NICKEL	MOLYB	VANADIUM			
PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM		
NUMBER	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002	0002		
N DET.	0000	0001	0000	0000	0000	0000	0000	0000	0000	0001	0002	0002	0000		
MEAN	0.375	0.150	0.175	4.682	1.260	0.325	0.135	5.815	48.96	0.240	0.300	0.000	0.780		
S. D.	0.064	0.000	0.035	3.208	0.467	0.163	0.078	0.686	14.57	0.000	0.000	0.000	0.156		
LOW	0.330	0.000	0.150	2.413	0.930	0.210	0.080	5.330	38.65	0.000	0.000	0.000	0.670		
HIGH	0.420	0.150	0.200	6.950	1.590	0.440	0.190	6.300	59.26	0.240	0.000	0.000	0.890		

CRAB, DUNGNESS				CANCER MAGISTER					196011 AREA- ALASKA			SITE- 08 MEAT			
LENGTH	NUM	0	MEAN	0.000	S. D.	0.000	LOW	0.000	HIGH	0.000	MANG	ANTIMONY	TIN		
		0	MEAN	0.000	S. D.	0.000	LOW	0.000	HIGH	0.000					
WEIGHT	MERCURY	LEAD	CADMIUM	ARSENIC	SELENIUM	SILVER	CHROM	COPPER	ZINC	NICKEL	MOLYB	VANADIUM			
PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM		
NUMBER	0010	0009	0010	0010	0010	0010	0009	0010	0010	0010	0010	0010	0010		
N DET.	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0008	0005	0000		
MEAN	0.052	0.553	0.098	5.640	0.649	0.202	0.136	4.357	54.61	0.365	0.170	0.264	0.241		
S. D.	0.028	0.162	0.023	2.151	0.175	0.059	0.050	1.439	11.74	0.063	0.156	0.115	0.067		
LOW	0.020	0.345	0.060	3.600	0.430	0.110	0.060	1.680	41.41	0.250	0.060	0.120	0.130		
HIGH	0.110	0.880	0.140	8.562	0.920	0.320	0.195	7.060	78.12	0.450	0.280	0.380	0.350		

CRAB, KING				PARALITHODES CAMSCHATICA					196012 AREA- ALASKA			SITE- L4 MEAT			
LENGTH	NUM	0	MEAN	0.000	S. D.	0.000	LOW	0.000	HIGH	0.000	MANG	ANTIMONY	TIN		
		0	MEAN	0.000	S. D.	0.000	LOW	0.000	HIGH	0.000					
WEIGHT	MERCURY	LEAD	CADMIUM	ARSENIC	SELENIUM	SILVER	CHROM	COPPER	ZINC	NICKEL	MOLYB	VANADIUM			
PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM		
NUMBER	0009	0010	0010	0010	0010	0010	0010	0010	0010	0010	0010	0010	0010		
N DET.	0003	0000	0000	0000	0000	0000	0000	0000	0000	0000	0001	0003	0000		
MEAN	0.038	0.825	0.226	4.330	0.399	0.095	0.280	14.370	57.45	0.408	0.188	0.450	0.429		
S. D.	0.012	0.344	0.068	0.935	0.116	0.038	0.123	7.371	31.82	0.159	0.071	0.204	0.122		
LOW	0.020	0.060	0.160	2.330	0.215	0.060	0.060	5.905	27.50	0.080	0.090	0.190	0.190		
HIGH	0.050	1.315	0.380	5.386	0.570	0.160	0.500	25.310	118.70	0.655	0.340	0.690	0.650		

CRAB, KING				PARALITHODES CAMSCHATICA					196012 AREA- ALASKA			SITE- N6 CLAW & BODY MEAT			
LENGTH	NUM	0	MEAN	0.000	S. D.	0.000	LOW	0.000	HIGH	0.000	MANG	ANTIMONY	TIN		
		0	MEAN	0.000	S. D.	0.000	LOW	0.000	HIGH	0.000					
WEIGHT	MERCURY	LEAD	CADMIUM	ARSENIC	SELENIUM	SILVER	CHROM	COPPER	ZINC	NICKEL	MOLYB	VANADIUM			
PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM		
NUMBER	0009	0008	0009	0009	0009	0009	0009	0009	0009	0009	0009	0009	0009		
N DET.	0000	0000	0000	0000	0000	0000	0001	0000	0000	0000	0006	0006	0000		
MEAN	0.128	0.461	0.242	5.771	0.443	0.052	0.114	6.116	65.91	0.309	0.123	0.227	0.372		
S. D.	0.070	0.125	0.045	2.731	0.116	0.009	0.046	1.867	27.67	0.068	0.058	0.119	0.103		
LOW	0.050	0.375	0.175	3.225	0.340	0.040	0.060	4.380	39.69	0.190	0.090	0.130	0.190		
HIGH	0.240	0.750	0.310	11.000	0.730	0.065	0.190	9.560	128.12	0.410	0.190	0.360	0.516		

CRAB, KING				PARALITHODES CAMSCHATICA					196012 AREA- ALASKA			SITE- P3 MEAT			
LENGTH	NUM	0	MEAN	0.000	S. D.	0.000	LOW	0.000	HIGH	0.000	MANG	ANTIMONY	TIN		
		0	MEAN	0.000	S. D.	0.000	LOW	0.000	HIGH	0.000					
WEIGHT	MERCURY	LEAD	CADMIUM	ARSENIC	SELENIUM	SILVER	CHROM	COPPER	ZINC	NICKEL	MOLYB	VANADIUM			
PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM		
NUMBER	0010	0010	0010	0010	0010	0010	0010	0009	0010	0010	0010	0010	0010		
N DET.	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0002	0004	0000		
MEAN	0.108	0.586	0.157	4.528	0.368	0.095	0.268	6.988	55.64	0.287	0.153	0.355	0.226		
S. D.	0.018	0.209	0.065	1.463	0.191	0.037	0.146	2.617	25.40	0.110	0.050	0.311	0.035		
LOW	0.080	0.250	0.010	2.475	0.100	0.040	0.105	3.380	30.63	0.110	0.090	0.060	0.175		
HIGH	0.130	0.845	0.270	6.573	0.650	0.165	0.560	11.880	108.70	0.500	0.250	0.810	0.285		

CRAB, TANNER (BAIRDII)				CHIONECEDES BAIRDI					196035 AREA- ALASKA			SITE- H7 MEAT			
LENGTH	NUM	0	MEAN	0.000	S. D.	0.000	LOW	0.000	HIGH	0.000	MANG	ANTIMONY	TIN		
		0	MEAN	0.000	S. D.	0.000	LOW	0.000	HIGH	0.000					
WEIGHT	MERCURY	LEAD	CADMIUM	ARSENIC	SELENIUM	SILVER	CHROM	COPPER	ZINC	NICKEL	MOLYB	VANADIUM			
PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM		
NUMBER	0010	0008	0009	0010	0010	0010	0010	0010	0010	0010	0010	0010	0010		
N DET.	0000	0000	0000	0000	0000	0003	0001	0000	0000	0000	0009	0010	0000		
MEAN	0.190	0.361	0.299	20.912	0.889	0.035	0.203	2.621	34.32	0.168	0.240	0.000	0.306		
S. D.	0.117	0.098	0.079	11.727	0.223	0.012	0.149	0.564	6.94	0.047	0.000	0.000	0.060		
LOW	0.060	0.210	0.240	10.625	0.520	0.030	0.060	1.440	19.38	0.100	0.000	0.000	0.210		
HIGH	0.380	0.440	0.500	41.250	1.260	0.060	0.500	3.260	42.50	0.220	0.240	0.000	0.380		

CRAB, TANNER (BAIRDII)				CHIONECEDES BAIRDI					196035 AREA- ALASKA			SITE- K3 MEAT			
LENGTH	NUM	0	MEAN	0.000	S. D.	0.000	LOW	0.000	HIGH	0.000	MANG	ANTIMONY	TIN		
		0	MEAN	0.000	S. D.	0.000	LOW	0.000	HIGH	0.000					
WEIGHT	MERCURY	LEAD	CADMIUM	ARSENIC	SELENIUM	SILVER	CHROM	COPPER	ZINC	NICKEL	MOLYB	VANADIUM			
PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM		
NUMBER	0009	0010	0010	0010	0010	0010	0010	0010	0010	0010	0010	0010	0010		
N DET.	0001	0000	0000	0000	0000	0000	0000	0000	0000	0000	0007	0005	0000		
MEAN	0.055	0.462	0.155	7.204	0.787	0.122	0.123	6.622	30.12	0.269	0.093	0.284	0.557		
S. D.	0.041	0.094	0.029	2.190	0.197	0.034	0.062	1.337	2.86	0.063	0.058	0.179	0.126		
LOW	0.020	0.345	0.105	3.820	0.480	0.080	0.060	4.850	25.63	0.190	0.060	0.190	0.320		
HIGH	0.150	0.630	0.203	10.040	1.090	0.200	0.250	8.940	35.00	0.390	0.160	0.600	0.765		



TABLE 5. SUMMARY OF TRACE ELEMENT LEVELS  
IN RESOURCE SURVEY SPECIES;  
BY TISSUE AND LOCATION

LOCATION LEVEL 5

OCTOPUS (MARMURATUS)				POLYPUS MARMURATUS				205001	AREA- HAWAII			SITE- D6		WHOLE	
LENGTH WEIGHT	NUM	0 MEAN	0.000 S. D.	0.000 S. D.	0.000 S. D.	LOW	0.000 S. D.	HIGH	0.000 S. D.	HIGH	0.000 S. D.	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM
	NUM	MEAN													
	MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM				
NUMBER	0004	0004	0004	0004	0004	0004	0004	0004	0004	0004	0004	0004	0004	0004	0003
N DET.	0001	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0001	0000
MEAN	0.023	0.645	0.688	16.563	0.716	0.381	0.119	15.903	14.53	0.463	0.226	0.135	0.444	1.010	0.888
S. D.	0.006	0.072	0.392	9.721	0.330	0.249	0.013	3.307	3.26	0.124	0.083	0.070	0.131	0.153	0.173
LOW	0.020	0.595	0.250	3.276	0.350	0.210	0.105	11.000	11.62	0.365	0.145	0.060	0.365	0.905	0.720
HIGH	0.030	0.750	1.200	26.500	1.075	0.750	0.130	18.210	18.93	0.540	0.340	0.200	0.640	1.185	1.065

OCTOPUS (MARMURATUS)				POLYPUS MARMURATUS				205001	AREA- HAWAII			SITE- D6		MANTLE, SKINLESS	
LENGTH WEIGHT	NUM	0 MEAN	0.000 S. D.	0.000 S. D.	0.000 S. D.	LOW	0.000 S. D.	HIGH	0.000 S. D.	HIGH	0.000 S. D.	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM
	NUM	MEAN													
	MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM				
NUMBER	0036	0035	0035	0034	0036	0036	0036	0036	0035	0036	0036	0036	0035	0036	0034
N DET.	0017	0000	0000	0000	0000	0000	0001	0000	0000	0000	0029	0031	0000	0004	0000
MEAN	0.058	0.604	0.308	17.195	0.403	0.154	0.166	9.051	14.01	0.340	0.564	0.592	0.282	0.898	0.851
S. D.	0.056	0.418	0.504	10.270	0.242	0.235	0.093	14.335	4.54	0.205	0.347	0.204	0.142	0.295	0.373
LOW	0.020	0.130	0.030	1.540	0.030	0.030	0.030	0.210	5.60	0.130	0.130	0.330	0.140	0.250	0.440
HIGH	0.250	2.100	1.810	38.250	1.000	0.980	0.380	78.130	34.38	1.170	1.060	0.810	0.690	1.630	2.000

MILKFISH				CHANOS CHANOS				206001	AREA- HAWAII			SITE- D6		MUSCLE	
LENGTH WEIGHT	NUM	0 MEAN	0.000 S. D.	0.000 S. D.	0.000 S. D.	LOW	0.000 S. D.	HIGH	0.000 S. D.	HIGH	0.000 S. D.	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM
	NUM	MEAN													
	MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM				
NUMBER	0040	0040	0040	0040	0040	0040	0040	0040	0039	0040	0040	0040	0040	0039	0038
N DET.	0014	0001	0003	0000	0000	0016	0001	0000	0000	0001	0036	0033	0000	0004	0000
MEAN	0.071	0.487	0.069	2.942	0.564	0.029	0.197	0.334	8.17	0.172	0.424	0.226	0.153	0.615	0.737
S. D.	0.050	0.307	0.024	1.522	0.271	0.009	0.141	0.145	2.55	0.260	0.467	0.096	0.035	0.256	1.390
LOW	0.020	0.120	0.030	0.350	0.060	0.010	0.060	0.070	0.44	0.070	0.130	0.120	0.090	0.050	0.440
HIGH	0.200	1.630	0.140	6.635	1.190	0.040	0.565	0.750	14.28	0.375	1.120	0.370	0.250	1.370	9.000

CLAM, SOFT				MYA ARENARIA				242001	AREA- NORTH ATLANTIC			SITE- M8		SHUCKED	
LENGTH WEIGHT	NUM	0 MEAN	0.000 S. D.	0.000 S. D.	0.000 S. D.	LOW	0.000 S. D.	HIGH	0.000 S. D.	HIGH	0.000 S. D.	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM
	NUM	MEAN													
	MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM				
NUMBER	0019	0019	0019	0019	0019	0019	0018	0019	0019	0019	0019	0019	0019	0019	0019
N DET.	0011	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000
MEAN	0.086	0.590	0.226	2.015	0.895	0.053	0.265	4.227	15.36	0.560	0.280	0.454	0.448	0.000	0.519
S. D.	0.116	0.158	0.033	1.245	0.322	0.032	0.074	1.071	1.60	0.128	0.083	0.131	1.520	0.000	0.118
LOW	0.020	0.370	0.180	0.430	0.130	0.020	0.130	2.393	10.92	0.410	0.120	0.250	0.490	0.000	0.280
HIGH	0.360	0.940	0.290	5.000	1.800	0.140	0.405	5.875	17.50	0.880	0.410	0.750	9.250	0.000	0.705

CLAM, RAZOR				SILIQUA PATULA				243002	AREA- PACIFIC NORTHWEST			SITE- M2		SHUCKED	
LENGTH WEIGHT	NUM	0 MEAN	0.076 S. D.	0.000 S. D.	0.000 S. D.	LOW	0.000 S. D.	HIGH	0.076 S. D.	HIGH	0.076 S. D.	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM
	NUM	MEAN													
	MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM				
NUMBER	0010	0010	0010	0010	0010	0010	0010	0010	0009	0010	0010	0010	0010	0010	0010
N DET.	0005	0000	0000	0000	0000	0004	0000	0000	0000	0001	0006	0002	0000	0002	0000
MEAN	0.042	0.530	0.094	2.027	0.536	0.050	0.240	0.552	20.07	0.511	0.298	0.343	2.533	0.876	1.486
S. D.	0.033	0.314	0.041	1.052	0.279	0.015	0.085	0.111	4.85	0.174	0.382	0.125	0.988	0.333	0.703
LOW	0.020	0.190	0.040	0.383	0.235	0.030	0.140	0.410	13.75	0.300	0.080	0.120	0.990	0.360	0.965
HIGH	0.100	1.085	0.180	4.350	1.260	0.070	0.390	0.695	26.92	0.750	0.870	0.490	3.890	1.365	3.310

CLAM, RAZOR				SILIQUA PATULA				243002	AREA- PACIFIC NORTHWEST			SITE- M6		SHUCKED	
LENGTH WEIGHT	NUM	0 MEAN	0.089 S. D.	0.000 S. D.	0.000 S. D.	LOW	0.000 S. D.	HIGH	0.089 S. D.	HIGH	0.089 S. D.	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM
	NUM	MEAN													
	MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM				
NUMBER	0010	0010	0010	0009	0009	0010	0010	0010	0010	0010	0010	0010	0010	0010	0010
N DET.	0005	0000	0002	0000	0000	0003	0000	0000	0000	0001	0007	0000	0000	0004	0000
MEAN	0.046	0.529	0.120	4.038	0.432	0.055	0.262	1.035	11.06	0.554	0.410	0.709	2.808	0.976	1.326
S. D.	0.042	0.285	0.071	1.885	0.099	0.026	0.137	0.148	1.95	0.162	0.404	0.248	0.578	0.368	1.036
LOW	0.020	0.250	0.030	1.600	0.225	0.030	0.106	0.860	8.57	0.360	0.110	0.295	2.125	0.450	0.453
HIGH	0.120	1.185	0.250	7.016	0.530	0.090	0.540	1.370	15.71	0.890	0.870	1.015	3.790	1.500	3.750

CLAM, RAZOR				SILIQUA PATULA				243002	AREA- ALASKA			SITE- H7		SHUCKED	
LENGTH WEIGHT	NUM	0 MEAN	0.000 S. D.	0.000 S. D.	0.000 S. D.	LOW	0.000 S. D.	HIGH	0.000 S. D.	HIGH	0.000 S. D.	VANADIUM PPM	MANG PPM	ANTIMONY PPM	TIN PPM
	NUM	MEAN													
	MERCURY PPM	LEAD PPM	CADMIUM PPM	ARSENIC PPM	SELENIUM PPM	SILVER PPM	CHROM PPM	COPPER PPM	ZINC PPM	NICKEL PPM	MOLYB PPM				
NUMBER	0011	0011	0011	0011	0011	0011	0011	0011	0011	0011	0011	0011	0011	0011	0009
N DET.	0008	0000	0000	0000	0000	0000	0000	0000	0000	0000	0004	0000	0000	0000	0000
MEAN	0.083	0.767	0.165	2.349	0.449	0.103	0.400	0.896	11.05	0.469	0.181	0.950	2.409	1.125	2.091
S. D.	0.057	0.215	0.042	0.743	0.151	0.036	0.181	0.346	2.07	0.103	0.081	0.430	1.362	0.272	1.220
LOW	0.020	0.440	0.090	1.400	0.230	0.055	0.210	0.495	8.81	0.350	0.060	0.310	0.855	0.750	0.250
HIGH	0.130	1.120	0.240	4.247	0.720	0.160	0.750	1.370	15.00	0.710	0.310	1.780	5.985	1.690	3.875

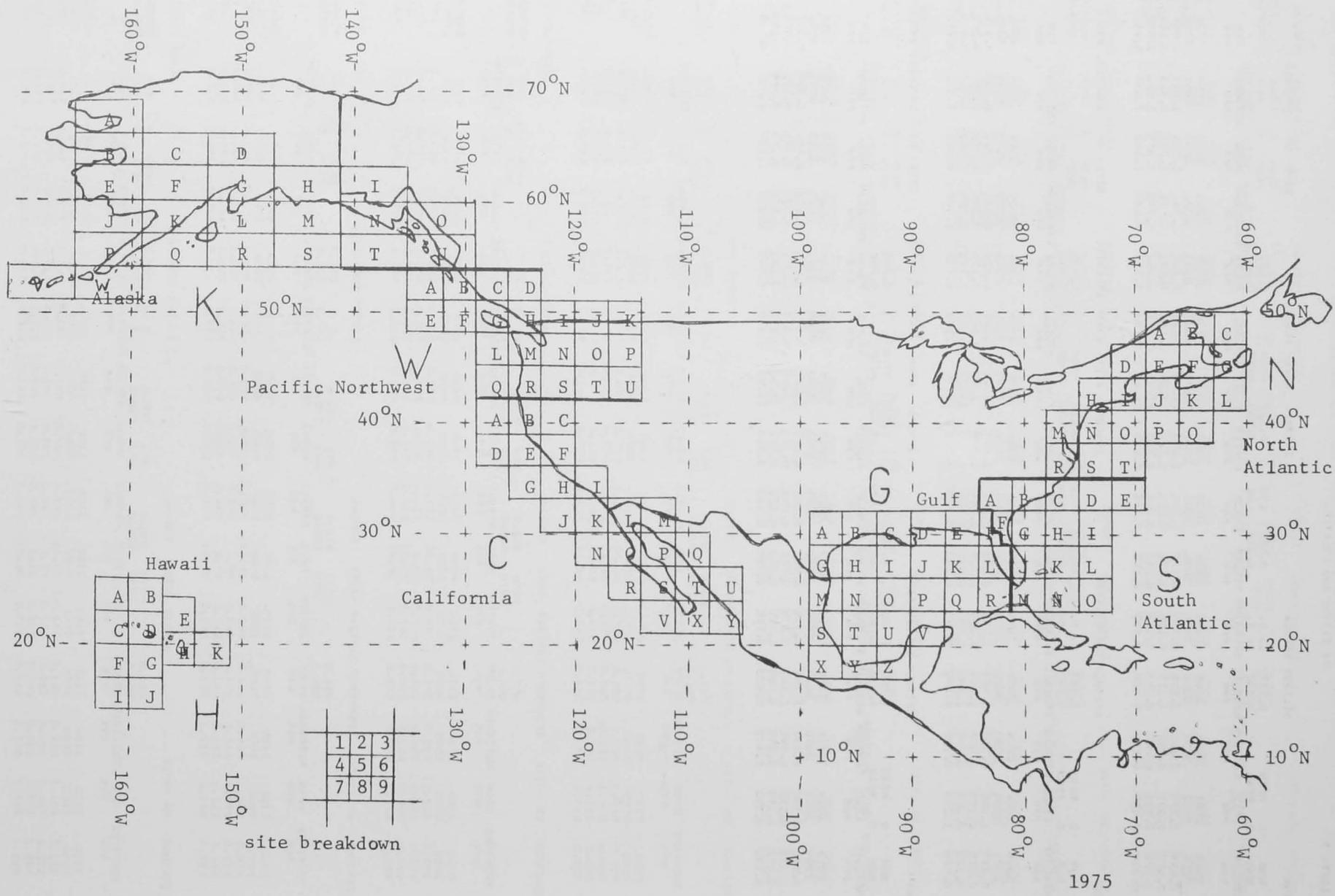
TABLE 5. SUMMARY OF TRACE ELEMENT LEVELS  
IN RESOURCE SURVEY SPECIES;  
BY TISSUE AND LOCATION

LOCATION LEVEL 5

CLAM, RAZOR				SILIQUA PATULA				243002 AREA- ALASKA				SITE- U8 SHUCKED			
LENGTH WEIGHT	NUM	0	MEAN	0.127	S. D.	0.000	LOW	0.127	HIGH	0.127	MOLYB	VANADIUM	MANG	ANTIMONY	TIN
	NUM	0	MEAN	0.000	S. D.	0.000	LOW	0.000	HIGH	0.000					
	MERCURY	LEAD	CADMIUM	ARSENIC	SELENIUM	SILVER	CHROM	COPPER	ZINC	NICKEL					
	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM
NUMBER	0008	0007	0008	0008	0008	0008	0008	0008	0008	0008	0008	0008	0008	0008	0008
N DET.	0004	0000	0000	0000	0000	0001	0000	0000	0000	0000	0003	0000	0000	0001	0000
MEAN	0.035	0.335	0.102	2.806	0.353	0.072	0.286	0.459	15.90	0.416	0.240	0.381	1.305	1.095	0.599
S. D.	0.013	0.077	0.042	1.311	0.156	0.028	0.212	0.113	4.05	0.185	0.273	0.198	0.293	0.535	0.215
LOW	0.020	0.210	0.040	0.970	0.140	0.040	0.060	0.320	11.82	0.195	0.060	0.090	0.890	0.500	0.300
HIGH	0.050	0.405	0.170	4.400	0.500	0.110	0.760	0.670	24.64	0.790	0.720	0.680	1.660	2.000	0.940

CLAM, SURF				SPISULA SOLIDISSIMA				244005 AREA- NORTH ATLANTIC				SITE- H9 SHUCKED, WHOLE			
LENGTH WEIGHT	NUM	0	MEAN	0.000	S. D.	0.000	LOW	0.000	HIGH	0.000	MOLYB	VANADIUM	MANG	ANTIMONY	TIN
	NUM	0	MEAN	0.000	S. D.	0.000	LOW	0.000	HIGH	0.000					
	MERCURY	LEAD	CADMIUM	ARSENIC	SELENIUM	SILVER	CHROM	COPPER	ZINC	NICKEL					
	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM
NUMBER	0004	0004	0004	0004	0004	0004	0004	0004	0004	0004	0004	0004	0004	0004	0004
N DET.	0001	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0004	0000
MEAN	0.037	1.096	0.110	3.963	0.705	0.088	0.641	2.457	16.44	1.091	0.625	0.721	3.762	0.000	0.474
S. D.	0.015	0.158	0.008	1.609	0.027	0.005	0.095	0.759	1.62	0.069	0.135	0.206	0.702	0.000	0.052
LOW	0.020	0.875	0.100	2.200	0.676	0.080	0.505	1.565	15.27	1.040	0.470	0.550	2.990	0.000	0.410
HIGH	0.050	1.250	0.120	6.090	0.740	0.090	0.720	3.310	18.75	1.190	0.775	1.000	4.380	0.000	0.530

CLAM, SURF				SPISULA SOLIDISSIMA				244005 AREA- NORTH ATLANTIC				SITE- R3 SHUCKED, WHOLE			
LENGTH WEIGHT	NUM	0	MEAN	0.000	S. D.	0.000	LOW	0.000	HIGH	0.000	MOLYB	VANADIUM	MANG	ANTIMONY	TIN
	NUM	0	MEAN	0.000	S. D.	0.000	LOW	0.000	HIGH	0.000					
	MERCURY	LEAD	CADMIUM	ARSENIC	SELENIUM	SILVER	CHROM	COPPER	ZINC	NICKEL					
	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM
NUMBER	0019	0018	0019	0019	0019	0019	0019	0019	0019	0019	0019	0019	0019	0019	0019
N DET.	0009	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0015	0000	0019	0000
MEAN	0.070	0.398	0.099	1.758	0.324	0.043	0.262	0.285	11.97	0.392	0.255	0.193	0.604	0.000	0.387
S. D.	0.039	0.156	0.094	1.147	0.174	0.015	0.099	0.126	1.66	0.065	0.075	0.021	0.321	0.000	0.091
LOW	0.020	0.190	0.050	0.680	0.010	0.010	0.120	0.090	9.00	0.270	0.130	0.170	0.180	0.000	0.190
HIGH	0.150	0.750	0.475	5.500	0.680	0.080	0.440	0.660	14.56	0.510	0.440	0.220	1.585	0.000	0.500



Appendix Figure 1.—Map of Microconstituent Data Bank areas and site.

DOC - NOAA - NMFS  
FISH DATA LABEL

(Do not use ink; use a soft lead pencil)

DATE OF SAMPLING

COLLECTOR'S SAMPLE #

TISSUE

COMMON NAME

SCIENTIFIC NAME

YEAR CLASS

WEIGHT (specify #, oz, g)

SEX

DEPTH (f)

LENGTH (mm)

LOCATION (Long.)

(Lat.)

(Other)

BOAT

CAPTAIN

COLLECTOR

BUSINESS ADDRESS OF COLLECTOR

REMARKS

OTHER PERTINENT INFORMATION WILL BE WELCOMED.

Appendix Figure 2.—Fish data label.

001 SOURCE LABORATORY SAMPLE NUMBER										002 TEST NO.										003										NOAA FORM 88-36 (4-75)										U. S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION NATIONAL MARINE FISHERIES SERVICE																																																																																																																																																					
D = DELETE										A = ADD										C = CHANGE										M = M/F CHANGE										MICROCONSTITUENTS IN FISH AND FISHERY PRODUCTS																																																																																																																																																					
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46																																																																																																																																																
004 005 SOURCE LAB ID.										006 ANALYSIS LABORATORY SAMPLE NUMBER										007 COLLECTOR'S ID. AND SAMPLE NUMBER										008 FISH FAMILY										009 FISH SPECIES										010 DATE OF CATCH										011 012 LATITUDE OR COUNTRY																																																																																																																																	
CARD										CARD										CARD										CARD										CARD										CARD																																																																																																																																											
MO. DAY YEAR										MO. DAY YEAR										MO. DAY YEAR										MO. DAY YEAR										MO. DAY YEAR										MO. DAY YEAR																																																																																																																																											
LONGITUDE										DEPTH OF CATCH										WATER TYPE										FISH LENGTH (In meters)										FISH WEIGHT (In kilograms)										AGE																																																																																																																																											
026 REPRO. CY.										027 MATURITY										028 HOUR LEV.										029 SURVEY ID.										030 TISSUE										031 TISSUE LOCATION										032 FISH STATE										033 FROZEN PREPARED FISHERY PRODUCTS										034 CONTENTS										035 CONT. PACK. IN										036 LIQUID CON-TENTS										037 COOK FISH										038 FISH PROT. CON. (FPC)										039 FISH MEAL										040 PRESS CAKE										041 FISH OIL										042 WET SOLIDS										043 MIS-CELLA										044 TEST ANIM.									
MISC.										STORAGE										STORAGE										ANALYSIS LAB. ID.										FISH COUNT										LITERATURE SOURCE OF DATA										DATE OF ANALYSIS										SITE										GROUP																																																																																																													
MERCURY (PPM)										LEAD (PPM)										CADMIUM (PPM)										ARSENIC (PPM)										SELENIUM (PPM)										SILVER (PPM)										CHROMIUM (PPM)																																																																																																																																	
COPPER (PPM)										ZINC (PPM)										NICKEL (PPM)										MOLYBDENUM (PPM)										VANADIUM (PPM)																																																																																																																																																					
MANGANESE (PPM)										ANTIMONY (PPM)										TIN (PPM)										DDT (PPM)										DIELDRIN (PPM)																																																																																																																																																					
DDE (PPM)										TDE (PPM)										PCB (PPM)										METHYL MERCURY (PPM)										MAGNESIUM (MG/GM)																																																																																																																																																					
IRON (MG/GM)										COBALT (PPM)										RUBIDIUM (PPB)										FLUORINE (PPM)										HCB (PPM)																																																																																																																																																					
BROMINE (PPM)										CHLORINE (MG/GM)										ALUMINUM (PPB)										GERMANIUM (PPB)										STRONTIUM 90 (pCi/kg)																																																																																																																																																					
BARIUM (PPM)										CESIUM (PPB)										BORON (PPB)										URANIUM (PPB)																																																																																																																																																															
PLUTONIUM (PPB)										THORIUM (PPB)										SCANDIUM (PPM)										ORGANIC-As (PPM)																																																																																																																																																															

Appendix Figure 3.—Coding Form NOAA 88-36.

**Appendix Table 1.—National Marine Fisheries Services' laboratories and agents supplying and preparing samples for the Resource Survey.**

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Laboratories responsible for collection and preparation:

SEFC College Park, Md.  
NWAFC Seattle, Wash.

Laboratories responsible for and assisting in collection:

NEFC Woods Hole, Mass.  
NEFC Gloucester, Mass.  
NEFC Narragansett, R.I.  
NEFC Milford, Conn.  
NEFC Sandy Hook, N.J.  
NEFC Oxford, Md.  
SEFC Beaufort, N.C.  
SEFC Brunswick, Ga.  
SEFC Miami, Fla.  
SEFC St. Petersburg, Fla.  
SEFC Panama City, Fla.  
SEFC Pascagoula, Miss.  
SEFC Galveston, Tex.  
SEFC Port Aransas, Tex.  
SWFC LaJolla, Calif.  
SWFC Tiboron, Calif.  
SWFC Honolulu, Hawaii  
NWAFC Seattle, Wash.  
NWAFC Auke Bay, Alas.

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