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REPORT TO THE WORKING GROUP ON POLLUTION BASELINE AND
MONITORING STUDIES IN THE OSLO COMMISSION AND ICNAF AREAS
ON HEAVY METALS IN SELECTED FINFISH AND SHELLFISH FROM THE
NORTHWEST ATLANTIC

by

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Report to the Working Group on Pollution Baseline and
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on Heavy Metals in Selected Finfish and Shellfish from the
Northwest Atlantic

Preface

As noted in the preface to Annex 6, Document C.M.1976/E:4 the conduct of large-scale baseline sampling programmes is often fraught with difficulties. Much of the data reported in the present paper were collected prior to the establishment of a standard ICES monitoring program and associated protocol. Fortunately, however, the data reported were the result of standardized analyses conducted by two laboratories^{1/} of the National Marine Fisheries Service, National Oceanic and Atmospheric Administration. Both of these laboratories participated in the 1975 ICES trace metal intercalibration exercise sponsored by ICES (Annex 5a, Document C.M.1976/E:4). The general methods used are also outlined in Annex 5a.

Introduction

The species of fish reported upon will differ from those in Annex 6 although a few species are common both to the eastern and western Atlantic. Generally, however, the species reported upon in this paper represent the same families or "feeding types" as those from the eastern Atlantic which are considered in Annex 6.

The data in the present paper include the results of analyses for cadmium, copper, lead, mercury and zinc as well as chromium, arsenic, silver, nickel and molybdenum. In some cases, a species of fish was analyzed for all or most of these metals. In other instances however, a particular species or tissue was run for only a few metals or even a single metal. This was especially true for mercury, a metal which has been of some concern to scientists, politicians and the general public in the United States. We have attempted to use the same format for reporting the data as was used in Tables 1 and 2 of Annex 6. We have, however, placed both muscle and liver data in the same table rather than separating the data into two separate tables as in Annex 6. This was done so that data on different tissues from the same fish samples could be more readily compared.

The geographic locations where fish and shellfish samples were taken are given in column 1 (source) of each table and shown on Figure 1. The date of collection is given for most samples; no collections were made prior to March 1971. In most instances, the length of fishes is provided rather than the year-class information.

All metal concentrations are given as parts per million (ppm), wet weight. The final column of Table 1 indicates the source of the data presented. Where a broken or dashed line (---) is inserted in the table, it indicates that those particular data are unavailable;

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generally, this is the case where an analysis was run on a composite sample and only a single or mean value for a particular metal was available. When 0.000 appears in the table, it means that the measurement was attempted but the values obtained were below the minimum detection levels used in the particular analysis.

Results of the Baseline Heavy Metal Survey

As previously noted, the data herein reported were collected prior to the development of a standard ICES protocol. In many cases, however, the data were collected in a fashion similar to the optimal program; at least 10 individuals were taken during summer months. Unfortunately, as indicated in Annex 6, "theoretical biological practicalities" are often not the same as "actual biological practicalities" and this paper therefore contains the same potential sources of variations as did data in Annex 6. However, most of the data are the results of analyses which were conducted in a way similar to the analyses which were provided for the ICES intercalibration exercise. Moreover, the data obtained from R. Greig, Milford Laboratory, National Marine Fisheries Service, have been verified through intercalibration exercises using neutron activation techniques (Greig, 1975). We therefore have confidence that the reported data are representative of the species considered and the areas from which they were collected.

The results of the survey are given in Tables 1-52 and are discussed in some further detail below. The area covered by the survey is shown in Figure 1. The dotted lines show the boundaries of specific ICNAF areas off the east coast of North America. Lettered and numbered boxes or grid squares indicate sampling localities referred to in the tables under sources.

Metal Analyses

As was the case with monitoring data provided in Annex 6, certain species were more intensively studied than others. Also, as previously noted, the analyses were particularly concerned with certain metals and less so with others. Again, however, all data are provided. An extensive compilation of data from a far larger data set than that reported herein is presently underway and should be available as a report to ICES prior to October 1977; these data are being computer processed and are therefore not available for the present study.

As was done in Annex 6, comparisons between data in the present study as well as between these data and those in Annex 6 were made on the basis of mean concentrations in each sample. Generally, almost all heavy metal data in the present study were within the same general ranges observed for mean metal concentrations reported in Annex 6. For instance, Annex 6 reported a range of mean concentrations of mercury in cod muscle and liver tissue samples of 0.02-0.32 mg/kg and 0.01 to 0.09, respectively; the present study showed a range of mean concentrations for cod muscle and liver of 0.07-0.25 and 0.02-0.11 mg/kg.

Likewise, cod samples from ICNAF areas off the east coast of North America ranged from 0.94-4.64 mg/kg in zinc concentration while cod reported upon in Annex 6 had 1.9-7.3 mg/kg zinc in muscle tissue. Concentrations of other metals, including copper, cadmium and lead, followed similar patterns. The upper means for muscle from cod reported upon in Annex 6 usually were slightly elevated relative to those considered here; present values were from fish collected in areas E and F off Cape Cod, Massachusetts (see Fig. 1).

The data for other gadids such as haddock showed similar or lower values when compared with those given in Annex 6 for cod. Mean metal concentrations in silver, red and white hake could not be compared in detail because of the limited metal analyses accomplished for silver hake. However, mean mercury values in muscle tissues from silver hake were comparable to values from the white and red hakes from North America as well as the "hake" reported on in Annex 6.

Comparisons of metal concentrations in plaice and sole reported upon in Annex 6, with similar data for yellowtail flounder and winter flounder provided in the present report, again indicate generally similar values in these species of fish. The upper mean concentrations of mercury tended to be higher in the plaice and sole (0.26 and 0.32 mg/kg) contrasted to yellowtail and winter flounder (0.12 and 0.19 mg/kg). Upper mean values of zinc were, however, lowest in the yellowtail flounder, 4.57 mg/kg, and highest in the winter flounder, 16.0 mg/kg. Plaice and sole had upper mean values of 6.1 and 6.5 mg/kg, respectively.

The present compendium considers a number of species which are taxonomically or ecologically quite different from the species reported upon in Annex 6. Because of the ease in catching them, their catholic diet and possible commercial utilization, particularly large numbers of elasmobranchs were taken. The spiny dogfish was taken at stations from the Canadian-United States boundary south to Cape Hatteras. When fish in the general size range of 70-95 cm were compared, it was observed that fish taken close to shore and in the southern portions of the aforementioned area may have tended towards higher mean mercury values in muscle tissues. Additional specimens must be obtained and analyzed, however, before any conclusions can be drawn. Such collections should be made in a highly systematic manner in order to be able to compare specific species, of well-defined size ranges, taken from precisely located collecting sites or areas.

The bluefish is a common inshore marine species which will move into embayments, such as Chesapeake Bay, to forage. These fish and similar species which move through both estuaries and inshore coastal waters and feed in the water column may be particularly suitable for monitoring studies. They tend to integrate the effects of exposure to a wide range of environments and are also large, dominant predators in many food webs. Thus, they are likely to show accumulations of specific contaminants if these are in the environments through which they pass and live in. The bluefish analyzed and reported on in the present paper had quite high muscle mercury values with the maximums in some individual fish being close to the 0.5 mg/kg "action levels" established by the United States Government. Some cusk also had muscle tissue mercury values approaching the action levels. Another dominant apex predator, the white marlin, had high mercury values in muscle tissue. A mean of 0.545 mg/kg was measured in this species with a maximum value of 1.140 mg/kg.

This study also reports on metals measured in commercially important invertebrates (Tables 46-52). Values for metals in various tissues of crabs, lobsters, oysters, hard shell clams, scallops and squid are given. Somewhat elevated values for mercury and cadmium were measured in digestive gland tissue from the rock crab (Table 47b).

Discussion

Until objective computer analyses are done considering species, feeding types, geographic area(s) habituated and other factors, it will continue to be difficult to arrive at definite conclusions in regard to body burdens of metals and other contaminants in closely or distantly related species collected over broad geographic areas. The data reported in this paper, as well as those in Annex 6, form the beginning of a baseline against which spatial and temporal changes can be compared. The need for such

comparisons becomes apparent when samples of similar-sized individuals are collected over a wide geographic range. For instance, analyses of the surf clam, Spisula solidissima, over a range from Virginia to Long Island, New York, show that individuals taken from the New York Bight apex (source area Ii) are characterized by higher tissue heavy metal levels (Wenzloff et al. , 1977).

Personnel of the Northeast Fisheries Center are presently analyzing large amounts of heavy metal data to determine the relationships between sources of heavy metals and elevated tissue or body burdens in resources and forage species. It is also important to understand the relevance of these findings. Of what significance are increased levels of metals in tissues, i.e. elevated body burdens, to the resource species in question? There is relatively little known in this regard (George and Coombs, 1975; Young and Jan, 1977) but it is essential to understand the impact of metals on resources if they, and their environment, are to be effectively managed. Several authors (Vernberg and Vernberg, 1972; Bryan and Hummerstone, 1973; and Jones, Jones and Radlett, 1976) have noted that metal burdens may affect metabolism in various ways and, further, may play a role in complex synergisms which are poorly understood.

Conclusions

Other than mercury, none of the samples contained mean levels of metals which exceeded values which are presently acknowledged to be harmful from the human consumption point of view. Some individual demersal species, such as the dogfish, and the apex predator, marlin, did individually contain levels of mercury which exceed recognized "action levels". There were possible relationships between size of fish, geographic area of catch, species or feeding type and metal values. There has not, however, been sufficient analysis of the data to definitely confirm these relationships.

In several instances mean values for specific species reported upon in the present paper were very similar to values reported for the same or similar species in Annex 6.

Finally, scientists working within the National Marine Fisheries Service are presently preparing a much more extensive data base, which is being analyzed using computer techniques, to verify possible relationships between heavy metal values in resources and other factors such as geographic areas of catch, size and age of fish and date of catch.

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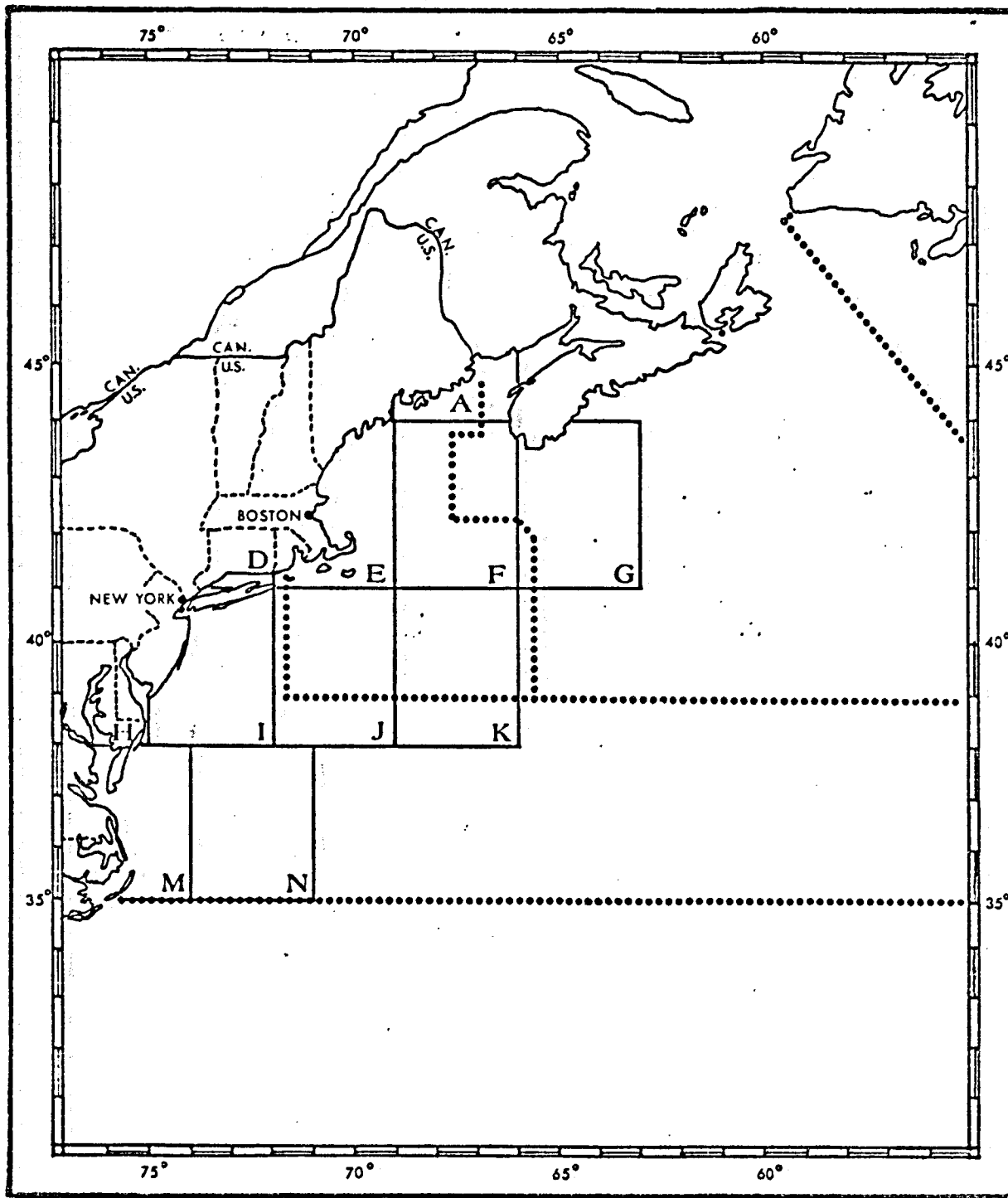


FIGURE 1

Blocks with capital letters indicate $3^{\circ} \times 3^{\circ}$ sampling areas.

Blocks with numerals indicate $1^{\circ} \times 1^{\circ}$ areas.

Blocks with lower case letters indicate $1/2^{\circ} \times 1/2^{\circ}$ areas.

Dotted lines indicate ICNAF area boundaries.

1	2	3	
4	5	6	
7	8	9	
		j	b
		c	d

Sources of data indicated by numeral given in extreme right column of Tables 1-52.

- #1 NOAA, NMFS, Southeast Utilization Research Center. 1975. First Interim Report on Microconstituent Resources Survey. (Unpublished, incomplete research)
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- #3 Greig, R. A., D. Wenzloff and C. Shelpuk. 1975. Mercury Concentrations in Fish, North Atlantic Offshore Waters - 1971. Pesticides Monitoring Journal. 9(1):15-20.
- #4 Greig, R. A. and J. Jones. Nondestructive Neutron Activation Analysis of Marine Organisms Collected from Ocean Dump Sites of the Middle Eastern United States. Archives of Environmental Contamination and Toxicology. In Press.
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TABLE 1 Results of Base-Line Survey: Metals in fish and shellfish

SMOOTH DOGFISH (Mustelus canis)

Source	Date of Collection	Year-Class or Length	Type of Tissue & No. in Sample	Concentration (in ppm, wet weight)												Notes and Source of Information
				Hg min max MEAN s.d.	Zn min max MEAN s.d.	Cu min max MEAN s.d.	Cd min max MEAN s.d.	Pb min max MEAN s.d.	Cr min max MEAN s.d.	Co min max MEAN s.d.	As min max MEAN s.d.	Aq min max MEAN s.d.	Ni min max MEAN s.d.	Mo min max MEAN s.d.	Min max MEAN s.d.	
D8			muscle 10	0.060	3.25	0.180	0.000	0.180	0.000				0.000	0.000	0.090	#1
				0.923	6.07	0.640	0.160	1.130	0.330				0.050	0.440	0.410	
				0.457	4.51	0.355	0.062	0.576	0.139				0.024	0.234	0.234	
				0.313	0.85	0.123	0.046	0.371	0.114				0.014	0.139	0.114	
D9c	November 1973	85 cm	muscle 10	---	---	---	---	---	---	---	---	---	---	---	#7	
				---	---	---	---	---	---	---	---	---	---			
				3.7	0.7	<0.1	<0.8	<0.3				<0.1	<0.3	0.4		
D9c	"	"	liver 10	---	---	---	---	---	---	---	---	---	---	---	#7	
				---	---	---	---	---	---	---	---	---	---			
				3.2	1.5	<0.1	<0.8	<0.8				<0.1	<0.3	<0.4		
I2b	July 1973	89 cm	muscle 10	---	---	---	---	---	---	---	---	---	---	---	#7	
				---	---	---	---	---	---	---	---	---	---			
				4.7	1.0	<0.1	<0.8	<0.3				<0.1	<0.3	0.4		
I2b	"	"	liver 10	---	---	---	---	---	---	---	---	---	---	---	#7	
				---	---	---	---	---	---	---	---	---	---			
				2.0	3.6	0.6	<0.2	<0.8	<0.6				0.3	<0.3		0.4

TABLE 2a Results of Base-Line Survey: Metals in fish and shellfish

SPINY DOGFISH (*Squalus acanthias*)

Source	Date of Collection	Year-Class or Length	Type of Tissue & No. in Sample	Concentration (in ppm, wet weight)												Notes & Source of Information	
				Hg min max MEAN s.d.	Zn min max MEAN s.d.	Cu min max MEAN s.d.	Cd min max MEAN s.d.	Pb min max MEAN s.d.	Cr min max MEAN s.d.	Co min max MEAN s.d.	As min max MEAN s.d.	min min MEAN s.d.	min min MEAN s.d.	min min MEAN s.d.	min min MEAN s.d.		
G4	April 1971	68-75 cm	muscle	----	----	----	----	----	----	----	----	----	----	----	----	----	#3
F6	March 1971		"	0.23	----	----	----	----	----	----	----	----	----	----	----	----	#3
A9c	November 1971	81-84 cm	"	0.32	----	----	----	----	----	----	----	----	----	----	----	----	#3
J1b	March 1971	37 cm	"	0.34	----	----	----	----	----	----	----	----	----	----	----	----	#3
M8d	April 1971	80-92 cm	"	0.07	----	----	----	----	----	----	----	----	----	----	----	----	#3
J8	April 1971	82-95 cm	"	0.53	----	----	----	----	----	----	----	----	----	----	----	----	#3
				0.47	----	----	----	----	----	----	----	----	----	----	----	----	#3

(continued next page)

2a Results of Base-Line Survey: Metals in fish and shellfish

SPINY DOGFISH (*Squalus acanthias*)

Source	Date of Collection	Year-Class or Length	Type of Tissue & No. in Sample	Concentration (in ppm, wet weight)											Notes & Source of Information		
				Hg	Zn	Cu	Cd	Pb	Cr	Co	As	min	min	min		min	min
				min	min	min	min	min	min	min	min	min	min	min	min	min	
				max	max	max	max	max	max	max	max	max	max	max	max	max	
				MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	
				s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	
G4	April 1971	68-75 cm	Liver	----	----	----	----	----	----	----	----	----	----	----	----	----	#3
				0.07													
F6	March 1971		"	----	----	----	----	----	----	----	----	----	----	----	----	----	#3
				0.06													
A9c	November 1971	81-84 cm	"	----	----	----	----	----	----	----	----	----	----	----	----	----	#3
				0.09													
J1b	March 1971	37 cm	"	----	----	----	----	----	----	----	----	----	----	----	----	----	#3
				<0.05													
M8d	April 1971	80-92 cm	"	----	----	----	----	----	----	----	----	----	----	----	----	----	#3
				0.19													
J8	April 1971	82-95 cm	"	----	----	----	----	----	----	----	----	----	----	----	----	----	#3
				0.07													

(continued on next page)

TABLE 2a Results of Base-Line Survey: Metals in fish and shellfish

SPINY DOGFISH (Squalus acanthias)

(Page 2)

Source	Date of Collection	Year-Class or Length	Type of Tissue & No. in Sample	Concentration (in ppm, wet weight)												Notes and Source of Information
				Hg	Zn	Cu	Cd	Pb	Cr	Co	As	Se	Ag	Rb		
				min	min	min	min	min	min	min	min	min	min	min	min	
				max	max	max	max	max	max	max	max	max	max	max	max	
				MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	
				s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.		
I3d	October 1971	60-86 cm	muscle	---	---	---	---	---	---	---	---	---	---	---	---	#3
I3d	October 1971	60-86 cm	liver	---	---	---	---	---	---	---	---	---	---	---	---	#3
I3b	October 1971		muscle	---	---	---	---	---	---	---	---	---	---	---	---	#3
I3b	October 1971		liver	---	---	---	---	---	---	---	---	---	---	---	---	#3
I7a	January 1972		muscle 6-10	---	---	---	---	---	---	---	---	---	---	---	---	#4
					7.6			0.5	*		0.94	0.26	0.07			

* Below detection level

TABLE 2b Results of Base-Line Survey: Metals Fish and shellfish

SPINY DOGFISH (Squalus acanthias)

Source	Date of Collection	Year-Class or Length	Type of Tissue & No. in Sample	Concentration (in ppm, wet weight)												Notes and Source of Information	
				Hg min max MEAN s.d.	Zn min max MEAN s.d.	Cu min max MEAN s.d.	Cd min max MEAN s.d.	Pb min max MEAN s.d.	Cr min max MEAN s.d.	Co min max MEAN s.d.	As min max MEAN s.d.	min	min	min	min		
F8	Fall 1972	80-99 cm	musc. 10	0.37 1.5 0.62 0.292													#5
"	"	"	gills 10	0.07 0.62 0.20 0.182													#5
"	"	"	spleen 10	0.01 0.60 0.17 0.145													#5
"	"	"	kidney 10	0.11 1.3 0.44 0.379													#5
F7	"	62-78 cm	musc. 10	0.19 0.65 0.31 0.1611													#5
"	"	"	gills	0.06 0.16 0.08 0.047													#5
"	"	"	spleen	0.01 0.23 0.06 0.085													#5

(continued on next page)

TABLE 2b Results of Base-Line Survey: Metals in fish and shellfish

SPINY DOGFISH (Squalus acanthias) (page 2)

Source	Date of Collection	Year-Class or Length	Type of Tissue & No. in Sample	Concentration (in ppm, wet weight)												Notes and Source of Information
				Hg	Zn	Cu	Cd	Pb	Cr	Co	As	min	min	min	min	
				min	min	min	min	min	min	min	min	min	min	min	min	
				max	max	max	max	max	max	max	max	max	max	max	max	
				MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	
				s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	
F7	Fall 1972	62-78 cm	kidney	0.02												#5
				0.49												
				0.15												
				0.133												
"	"	"	gonads	<0.05												#5
				0.06												
				<0.05												

			pan-creas	---												#5
				0.09												

TABLE 2c Results of Base-Line Survey: Metals in fish and shellfish

SPINY DOGFISH (Squalus acanthias)

Source	Date of Collection	Year-Class or Length	Type of Tissue & No. in Sample	Concentration (in ppm, wet weight)												Notes and Source of Information
				Hg	Zn	Cu	Cd	Pb	Cr	Co	As	min	min	min	min	
				min	min	min	min	min	min	min	min	min	min	min	min	
				max	max	max	max	max	max	max	max	max	max	max	max	
				MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	
				s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.		
F1	Fall 1972	63-92 cm	musc 10	0.14												#5
				0.56												
				0.41												
				0.132												
"	"	"	kidney 10	0.05												#5
				0.44												
				0.21												
				0.123												
"	"	"	Pan- creas 10	---												#5

				0.09												

A9a	"	70-93 cm	musc 10	0.13												#5
				0.69												
				0.40												
				0.182												
"	"	"	kidney 10	0.03												#5
				0.80												
				0.17												
				0.234												
"	"	"	Pan- creas 10	---												#5

				0.12												

E5d	"	79-80 cm	musc 10	0.3												#5
				0.8												
				0.48												
				0.146												

(Continued on next page)

TABLE 2c Results of Base-Line Survey: Metals in fish and shellfish

SPINY DOGFISH (Squalus acanthias) (page 2)

Source	Date of Collection	Year-Class or Length	Type of Tissue & No. in Sample	Concentration (in ppm, wet weight)											Notes and Source of Information		
				Hg	Zn	Cu	Cd	Pb	Cr	Co	As	min	min	min		min	
				min	min	min	min	min	min	min	min	min	min	min	min	min	
				max	max	max	max	max	max	max	max	max	max	max	max	max	
				MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	
				s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	
E5d	Fall 1972	79-80 cm	kidney 10	0.06													#5
				1.1													
				0.27													
				0.321													
"	"	"	Pan-creas 10	---													#5

				0.09													

TABLE 2d Results of Base-Line Survey: Metals in fish and shellfish

SPINY DOGFISH (Squalus acanthias)

Source	Date of Collection	Year-Class or Length	Type of Tissue & No. in Sample	Concentration (in ppm, wet weight)											Notes and Source of Information	
				Hg min max MEAN s.d.	Zn min max MEAN s.d.	Cu min max MEAN s.d.	Cd min max MEAN s.d.	Pb min max MEAN s.d.	Cr min max MEAN s.d.	Co min max MEAN s.d.	As min max MEAN s.d.	min min MEAN s.d.	min min MEAN s.d.	min min MEAN s.d.		
E7d	Fall 1972	80-91 10	musc 10	0.31 0.94 <u>0.61</u> 0.246												#5
"	"	"	liver 10	0.01 0.31 0.13 <u>0.104</u> 0.11												#5
"	"	"	gills 10	0.34 0.21 <u>0.089</u>												#5
"	"	"	spleen 10	0.10 0.51 0.22 <u>0.155</u>												#5
J1a	"	56-76 cm	musc 10	0.1 0.62 0.28 <u>0.187</u> 0.09												#5
"	"	"	gills 10	0.19 0.14 <u>0.043</u>												#5
"	"	"	spleen 10	0.01 0.07 0.03 <u>0.021</u>												#5

(continued on next page)

TABLE 2d Results of Base-Line Survey: Metals in fish and shellfish

SPINY DOGFISH (Squalus acanthias) (Page 2)

Source	Date of Collection	Year-Class or Length	Type of Tissue & No. in Sample	Concentration (in ppm, wet weight)												Notes and Source of Information	
				Hg	Zn	Cu	Cd	Pb	Cr	Co	As	min	min	min	min		
				min	min	min	min	min	min	min	min	min	min	min	min		
				max	max	max	max	max	max	max	max	max	max	max	max		
				MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN		
				s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.		
J1a	Fall 1972	56-76 cm	Gonad 10	< 0.05													#5
				0.08													
				< 0.05													

J3	"	48-79 cm	musc 10	0.1													#5
				0.43													
				0.21													
				0.106													

TABLE 2a Results of Base-Line Survey: Metals in fish and shellfish

SPINY DOGFISH (Squalus acanthias)

Source	Date of Collection	Year-Class or Length	Type of Tissue & No. in Sample	Concentration (in ppm, wet weight)										Notes and Source of Information	
				Hg	Zn	Cu	Cd	Pb	Cr	Co	As	min	min		min
				min	min	min	min	min	min	min	min	min	min	min	
				max	max	max	max	max	max	max	max	max	max	max	
				MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	
				s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.		
J3	Fall 1972	48-79 cm	gills 10	0.02											#5
				0.12											
				0.05											
				0.048											
"	"	"	spleen 10	0.02											#5
				0.10											
				0.05											
				0.032											

TABLE 3 Results of Base-Line Survey: Metals in fish and shellfish

ANGEL SHARK (Squalus dumerili)

Source	Date of Collection	Year-Class or Length	Type of Tissue & No. in Sample	Concentration (in ppm, wet weight)												Notes and Source of Information		
				Hg	Zn	Cu	Cd	Pb	Cr	Co	As	min	min	min	min			
				min	min	min	min	min	min	min	min	min	min	min	min			
				max	max	max	max	max	max	max	max	max	max	max	max	max		
				MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN		
				s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.		
M6	September 1971	43-58 cm	muscle	---	---	---	---	---	---	---	---	---	---	---	---	---	#3	
				0.08														
"	"	"	liver	---	---	---	---	---	---	---	---	---	---	---	---	---	#3	
				< 0.05														

TABLE 4 Results of Base-Line Survey: Metals in fish and shellfish

LITTLE SKATE (Raja erinacea)

Source	Date of Collection	Year-Class or Length	Type of Tissue & No. in Sample	Concentration (in ppm, wet weight)												Notes and Source of Information
				Hg	Zn	Cu	Cd	Pb	Cr	Co	As	min	min	min	min	
				min	min	min	min	min	min	min	min	min	min	min	min	
				max	max	max	max	max	max	max	max	max	max	max	max	
				MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	
				s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	
J1d	October 1971		musc	---	---	---	---	---	---	---	---	---	---	---	---	#3
				0.16												
			liver	---	---	---	---	---	---	---	---	---	---	---	---	#3
				0.23												
J1b	March 1971	45-50 cm	musc	---	---	---	---	---	---	---	---	---	---	---	---	#3
				0.13												
			liver	---	---	---	---	---	---	---	---	---	---	---	---	#3
				0.10												

TABLE 5 Results of Base-Line Survey: Metals in fish and shellfish

THORNY SKATE (Raja radiata)

Source	Date of Collection	Year-Class or Length	Type of Tissue & No. in Sample	Concentration (in ppm, wet weight)											Notes and Source of Information		
				Hg	Zn	Cu	Cd	Pb	Cr	Co	As	min	min	min		min	
				min	min	min	min	min	min	min	min	min	min	min	min	min	
				max	max	max	max	max	max	max	max	max	max	max	max	max	
				MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	
				s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	
F6	April 1971	60-93 cm	musc	---	---	---	---	---	---	---	---	---	---	---	---	---	#3
				0.21													
"	"	"	liver	---	---	---	---	---	---	---	---	---	---	---	---	---	#3
				0.09													
A9c	November 1971	60-81 cm	musc	---	---	---	---	---	---	---	---	---	---	---	---	---	#3
				0.26													
"	"	"	liver	---	---	---	---	---	---	---	---	---	---	---	---	---	#3
				0.15													

TABLE 6 Results of Base-Line Survey: Metals in fish and shellfish

WINTER SKATE (Raja binoculata)

Source	Date of Collection	Year-Class or Length	Type of Tissue & No. in Sample	Concentration (in ppm, wet weight)											Notes and Source of Information	
				Hg	Zn	Cu	Cd	Pb	Cr	Co	As	min	min	min		min
				min	min	min	min	min	min	min	min	min	min	min	min	min
				max	max	max	max	max	max	max	max	max	max	max	max	max
				MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN
				s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.
K1	October 1971		muscle	---												#3
				0.15												

"	"	"	liver	---												#3
				0.18												

TABLE 7 Results of Base-Line Survey: Metals in fish and shellfish

AMERICAN EEL (Anquilla rostrata)

Source	Date of Collection	Year-Class or Length	Type of Tissue & No. in Sample	Concentration (in ppm, wet weight)											Notes and Source of Information	
				Hg	Zn	Cu	Cd	Pb	Cr	Co	As	Ag	Ni	Mn		
				min	min	min	min	min	min	min	min	min	min	min	min	
				max	max	max	max	max	max	max	max	max	max	max	max	
				MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	
				s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	
M4			10	0.070	15.00	0.150	0.000	0.000	0.000			0.000	0.000	0.250		#1
				0.330	21.89	0.320	0.110	0.335	0.180			0.240	0.280	0.960		
				0.196	18.072	0.230	0.032	0.109	0.080			0.042	0.138	0.456		
				0.080	2.909	0.058	0.037	0.133	0.067			0.077	0.097	0.218		

TABLE 8 Results of Base-Line Survey: Metals in fish and shellfish

MENHADEN (*Brevoortia tyrannus*)

Source	Date of Collection	Year-Class or Length	Type of Tissue & No. in Sample	Concentration (in ppm, wet weight)												Notes and Source of Information
				Hg	Zn	Cu	Cd	Pb	Cr	Co	As	Ag	Ni	Mn		
				min	min	min	min	min	min	min	min	min	min	min		
				max	max	max	max	max	max	max	max	max	max	max		
				MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	
				s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	
H8			Whole 9	0.000	12.44	1.120	0.100	1.880	0.360				0.110	0.490	3.060	#1
				0.050	24.28	2.220	0.430	3.215	0.860			0.305	2.660	9.840		
				0.012	18.84	1.625	0.228	2.672	0.585			0.200	1.310	6.712		
				0.021	4.37	0.415	0.129	0.431	0.175			0.065	0.683	2.270		
M1			Whole 9	0.000	12.38	1.000	0.130	1.120	0.360				0.110	0.360	6.430	#1
				0.000	24.11	3.000	0.350	3.210	0.965			0.290	1.520	9.025		
				0.000	17.75	1.705	0.213	2.209	0.570			0.187	1.002	7.578		
				0.000	4.46	0.579	0.080	0.700	0.239			0.050	0.403	0.796		
M1			Whole 10	0.000	12.18	0.650	0.060	1.060	0.330				0.100	0.490	2.870	#1
				0.085	30.35	2.110	0.320	3.930	1.610			0.305	2.250	14.640		
				0.016	18.54	1.340	0.165	2.417	0.978			0.158	1.371	9.201		
				0.030	6.63	0.476	0.098	1.090	0.396			0.061	0.644	3.360		

TABLE 9 Results of Base-Line Survey: Metals in fish and shellfish

ATLANTIC HERRING (Clupea harengus harengus)

Source	Date of Collection	Year-Class or Length	Type of Tissue & No. in Sample	Concentration (in ppm, wet weight)											Notes and Source of Information	
				Hg	Zn	Cu	Cd	Pb	Cr	Co	As	min	min	min		min
				min	min	min	min	min	min	min	min	min	min	min	min	
				max	max	max	max	max	max	max	max	max	max	max	max	
				MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	
				s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.		
F7	October 1971		musc	---	---	---	---	---	---	---	---	---	---	---	---	#3
				<0.05												
"	"		liver	---	---	---	---	---	---	---	---	---	---	---	---	#3
				0.26												
Jld	March 1971	20 cm	musc	---	---	---	---	---	---	---	---	---	---	---	---	#3
				0.09												
"	"	"	liver	---	---	---	---	---	---	---	---	---	---	---	---	#3
				0.28												

TABLE 10 Results of Base-Line Survey: Metals in fish and shellfish

ROUND HERRING (Etrumeus teres)

Source	Date of Collection	Year-Class or Length	Type of Tissue & No. in Sample	Concentration (in ppm, wet weight)												Notes and Source of Information	
				Hg	Zn	Cu	Cd	Pb	Cr	Co	As						
				min	min	min	min	min	min	min	min	min	min	min	min		
				max	max	max	max	max	max	max	max	max	max	max	max		
				MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN		
s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.						
I2c	October 1971	15-16 cm	Whole	----	----	----	----	----	----	----	----	----	----	----	----	----	43
				<0.05													

TABLE 11a Results of Base-Line Survey: Metals in fish and shellfish

CUSK (Brosme brosme)

Source	Date of Collection	Year-Class or Length	Type of Tissue & No. in Sample	Concentration (in ppm, wet weight)												Notes and Source of Information		
				Hg	Zn	Cu	Cd	Pb	Cr	Co	As	min	min	min	min			
				min	min	min	min	min	min	min	min	min	min	min	min			
				max	max	max	max	max	max	max	max	max	max	max	max	max		
				MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN		
				s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.		
F6	November 1971	61-67 cm	musc	---													#3	

				0.49														
"	"	"	liver	---													#3	

				0.83														
E5b	April 1971	44-68 cm	musc	---													#3	

				0.27														
"	"	"	liver	---													#3	

				0.23														
E6	Fall of 1972	50-68 cm	musc	0.1													#5	
				0.25														
				0.19														
				0.055														
"	"	"	liver	0.02													#5	
				0.52														
				0.13														
				0.162														
"	"	"	gills	0.03													#5	
				0.11														
				0.07														
				0.030														

(continued on next page)

TABLE 11a Results of Base-Line Survey: Metals in fish and shellfish

CUSK (Brosme brosme) (page 2)

Source	Date of Collection	Year-Class or Length	Type of Tissue & No. in Sample	Concentration (in ppm, wet weight)											Notes and Source of Information		
				Hg	Zn	Cu	Cd	Pb	Cr	Co	As.	min	min	min		min	
				min	min	min	min	min	min	min	min	max	max	max		max	
				max	max	max	max	max	max	max	max	MEAN	MEAN	MEAN		MEAN	
				MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	s.d.	s.d.	s.d.		s.d.	
E6	Fall of 1972	50-68 cm	kidney 10	0.03													#5
				0.19													
				0.08													
				0.049													
F6	"	39-61 cm	musc 10	0.09													#5
				0.54													
				0.32													
				0.133													

TABLE 11b Results of Base-Line Survey: Metals in fish and shellfish

CUSK (Brosme brosme)

Source	Date of Collection	Year-Class or Length	Type of Tissue & No. in Sample	Concentration (in ppm, wet weight)											Notes and Source of Information	
				Hg	Zn	Cu	Cd	Pb	Cr	Co	As	min	min	min		min
				min	min	min	min	min	min	min	min	min	min	min	min	
				max	max	max	max	max	max	max	max	max	max	max	max	
				MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	
				s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.		
F6	Fall of 1972	39-61 cm	liver 10	0.05												#5
				0.62												
				0.30												
				0.208												
"	"	"	gills 10	0.02												#5
				0.14												
				0.07												
				0.030												
"	"	"	kidney 10	0.02												#5
				0.33												
				0.10												
				0.099												

TABLE 12 Results of Base-Line Survey: Metals in fish and shellfish

COD (Gadus morhua)

Source	Date of Collection	Year-Class or Length	Type of Tissue & No. in Sample	Concentration (in ppm, wet weight)											Notes and Source of Information
				Hg	Zn	Cu	Cd	Pb	Cr	Co	As	Ag	Ni	Mn	
				min	min	min	min	min	min	min	min	min	min	min	
				max	max	max	max	max	max	max	max	max	max	max	
				MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	
s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.					
F8			musc. 8	0.070	0.94	0.030	0.015	0.000	0.000			0.000	0.040	0.040	#1
				0.190	4.64	0.250	0.110	0.940	0.280			0.050	0.540	0.260	
				0.116	3.31	0.130	0.056	0.420	0.082			0.018	0.275	0.139	
				0.041	1.46	0.076	0.029	0.350	0.099			0.017	0.186	0.059	
E9a	October 1971		musc	---	---	---	---	---	---	---	---	---	---	#3	
				0.25											
"	"		liver	---	---	---	---	---	---	---	---	---	---	#3	
				0.02											
E5d	November 1971	54-61 cm	musc	---	---	---	---	---	---	---	---	---	---	#3	
				0.14											
"	"	"	liver	---	---	---	---	---	---	---	---	---	---	#3	
				0.11											

TABLE 13 Results of Base-Line Survey: Metals in fish and shellfish

HADDOCK (Melanogrammus aeglefinus)

Source	Date of Collection	Year-Class or Length	Type of Tissue & No. in Sample	Concentration (in ppm, wet weight)											Notes and Source of Information	
				Hg	Zn	Cu	Cd	Pb	Cr	Ag	Ni	Mn	Mo	V		Tin(sn)
				min	min	min	min	min	min	min	min	min	min	min		min
				max	max	max	max	max	max	max	max	max	max	max		max
				MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN		MEAN
s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.					
K5			musc 8	0.000	1.63	0.095	0.010	0.060	0.060	0.000	0.060	0.000	0.000	0.000	0.370	#1
				0.180	4.06	0.320	0.070	0.620	0.160	0.050	1.170	0.250	0.160	0.000	0.750	
				0.095	2.83	0.218	0.048	0.335	0.093	0.029	0.304	0.134	0.028	0.000	0.523	
				0.055	0.762	0.090	0.021	0.196	0.039	0.014	0.358	0.076	0.057	0.000	0.145	
E9a	October 1971		musc	---	---	---	---	---	---	---	---	---	---	---	#3	
				0.09	---	---	---	---	---	---	---	---	---	---		
"	"	"	liver	---	---	---	---	---	---	---	---	---	---	---	#3	
				<0.05	---	---	---	---	---	---	---	---	---	---		
F8	March 1971	46-68 cm	musc	---	---	---	---	---	---	---	---	---	---	---	#3	
				<0.05	---	---	---	---	---	---	---	---	---	---		
"	"	"	liver	---	---	---	---	---	---	---	---	---	---	---	#3	
				<0.05	---	---	---	---	---	---	---	---	---	---		

TABLE 14 Results of Base-Line Survey: Metals in fish and shellfish

SILVER HAKE (Merluccius bilinearis)

Source	Date of Collection	Year-Class or Length	Type of Tissue & No. in Sample	Concentration (in ppm, wet weight)											Notes and Source of Information			
				Hg	Zn	Cu	Cd	Pb	Cr	Co	As	min	min	min		min		
				min	min	min	min	min	min	min	min	min	min	min	min	min	min	
				max	max	max	max	max	max	max	max	max	max	max	max	max	max	
				MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	
				s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	
16	October 1971	28-31 cm	muscle	---	---	---	---	---	---	---	---	---	---	---	---	---	---	#3
"	"	"	liver	---	---	---	---	---	---	---	---	---	---	---	---	---	---	#3
				0.01														

TABLE 15 Results of Base-Line Survey: Metals in fish and shellfish

ATLANTIC POLLOCK (Pollachius virens)

Source	Date of Collection	Year-Class or Length	Type of Tissue & No. in Sample	Concentration (in ppm, wet weight)											Notes and Source of Information	
				Hg	Zn	Cu	Cd	Pb	Cr	Co	As	Ag	Ni	Mn		
				min	min	min	min	min	min	min	min	min	min	min	min	min
				max	max	max	max	max	max	max	max	max	max	max	max	max
				MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN
				s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.
F5			8	0.020	1.50	0.240	0.000	0.000	0.000				0.000	0.080	0.040	#1
				0.470	5.69	0.560	0.080	0.50	0.270				0.090	0.320	0.180	
				0.104	3.78	0.429	0.051	0.229	0.119				0.025	0.162	0.118	
				0.150	1.35	0.109	0.030	0.173	0.094				0.031	0.075	0.056	
				---	---	---	---	---	---	---	---	---	---	---	---	
F6	April 1971	51 cm	musc 1	0.08												#3
"	"	"	liver 1	<0.05												#3
E9d	October 1971		musc	0.10												#3
"	"		liver	0.06												#3

TABLE 16a Results of Base-Line Survey: Metals in fish and shellfish

RED HAKE (Urophycis chuss)

Source	Date of Collection	Year-Class or Length	Type of Tissue & No. in Sample	Concentration (in ppm, wet weight)												Notes and Source of Information	
				Hg	Zn	Cu	Cd	Pb	Cr	Co	Aq	Se	Rb	Mn	Ni		
				min	min	min	min	min	min	min	min	min	min	min	min		
				max	max	max	max	max	max	max	max	max	max	max	max		
				MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN		
s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.						
J2	March 1971	25-30 cm	musc	---	---	---	---	---	---	---	---	---	---	---	---	---	#3
				<0.05													
"	"	"	liver	---	---	---	---	---	---	---	---	---	---	---	---	---	#3
				<0.05													
J1a	September 1971	27-34 cm	musc	---	---	---	---	---	---	---	---	---	---	---	---	---	#3
				0.05													
"	"	"	liver	---	---	---	---	---	---	---	---	---	---	---	---	---	#3
				0.08													
I2c	January 1972		musc 6-10	---	---	---	---	---	---	---	---	---	---	---	---	---	#4
				3.3				*	*	*	0.42	0.8					
"	"		liver 6-10	---	---	---	---	---	---	---	---	---	---	---	---	---	#4
				29.5				*	*	0.06	1.9	*					

* Below detection limits

(continued on next page)

TABLE 16a Results of Base-Line Survey: Metals in fish and shellfish

RED HAKE (Urophycis chuss) (page 2)

Source	Date of Collection	Year-Class or Length	Type of Tissue & No. in Sample	Concentration (in ppm, wet weight)												Notes and Source of Information	
				Hg	Zn	Cu	Cd	Pb	Cr	Co	Ag	Se	Rb	Mn	Ni		
				min	min	min	min	min	min	min	min	min	min	min	min	min	
				max	max	max	max	max	max	max	max	max	max	max	max	max	
				MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	
				s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	
I2c	May 1972		liver 10	---	---	---	---	---	---	---	---	---	---	---	---	---	#7
				0.03	28.	3.2	<0.3	<1.7			<0.3			0.8	<0.6		
				---	---	---	---	---	---	---	---	---	---	---	---	---	
I2c	"	30 cm	liver 10	---	---	---	---	---	---	---	---	---	---	---	---	---	#7
				<0.03	29.	4.4	<0.3	1.7			<0.3			1.2	<0.6		
				---	---	---	---	---	---	---	---	---	---	---	---	---	
"	"	24 cm	liver 10	---	---	---	---	---	---	---	---	---	---	---	---	---	#7
				<0.03	23.	4.2	<0.3				<<0.3			0.7	<0.6		
				---	---	---	---	---	---	---	---	---	---	---	---	---	

TABLE 16b Results of Base-Line Survey: Metals in fish and shellfish

RED HAKE (*Urophycis chuss*)

Source	Date of Collection	Year-Class or Length	Type of Tissue & No. in Sample	Concentration (in ppm, wet weight)												Notes and Source of Information	
				Hg min max MEAN s.d.	Zn min max MEAN s.d.	Cu min max MEAN s.d.	Cd min max MEAN s.d.	Pb min max MEAN s.d.	Cr min max MEAN s.d.	Co min max MEAN s.d.	As min max MEAN s.d.	Ag min max MEAN s.d.	Mn min max MEAN s.d.	Ni min max MEAN s.d.			
I2c	January 1972	30 cm	muscle 10	---	---	---	---	---	---	---	---	---	---	---	---	---	#7
"	"	"	liver 10	<0.03	3.3	0.5	<0.1	<0.3	<0.2	---	---	---	<0.1	0.4	0.5	---	#7
"	"	"	liver 10	<0.03	30.	2.6	0.1	<0.3	<0.2	---	---	---	<0.1	0.6	<0.2	---	#7
"	April 1972	26 cm	liver 10	---	---	---	---	---	---	---	---	---	---	---	---	---	#7
"	"	41 cm	liver 10	---	---	---	---	---	---	---	---	---	---	---	---	---	#7
"	"	41 cm	liver 10	<0.3	40.	5.8	<0.3	---	---	---	---	---	<0.3	0.7	<1.2	---	#7
"	May 1972	31 cm	liver 10	---	---	---	---	---	---	---	---	---	---	---	---	---	#7
"	"	31 cm	liver 10	0.03	29.	5.3	<0.3	<1.7	---	---	---	---	0.3	1.0	<0.6	---	#7
"	April 1972	28 cm	liver 10	---	---	---	---	---	---	---	---	---	---	---	---	---	#7
"	"	28 cm	liver 10	0.03	19.	5.8	<0.3	---	---	---	---	---	<0.3	0.9	<1.2	---	#7
"	May 1972	27 cm	liver 10	---	---	---	---	---	---	---	---	---	---	---	---	---	#7
"	"	27 cm	liver 10	0.05	30.	4.9	<0.3	<1.7	---	---	---	---	<0.3	1.5	0.7	---	#7

(continued on next page)

TABLE 16b Results of Base-Line Survey: Metals in fish and shellfish

RED HAKE (Urophycis chuss) (page 2)

Source	Date of Collection	Year-Class or Length	Type of Tissue & No. in Sample	Concentration (in ppm, wet weight)												Notes and Source of Information
				Hg	Zn	Cu	Cd	Pb	Cr	Co	As	Ag	Mn	Ni		
				min	min	min	min	min	min	min	min	min	min	min	min	
				max	max	max	max	max	max	max	max	max	max	max	max	
				MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	
				s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	
I2c	April 1972	31 cm	musc 10	---	---	---	---	---	---	---	---	---	---	---	---	#7
"	"	"	liver 10	---	---	---	---	---	---	---	---	---	---	---	---	#7
				0.05		0.7	< 0.1	< 0.6	< 0.6			< 0.1	0.3	0.3		
				0.03	41.				< 0.6			0.5				

TABLE 17a Results of Base-Line Survey: Metals in fish and shellfish

WHITE HAKE (*Urophycis tenuis*)

Source	Date of Collection	Year-Class or Length	Type of Tissue & No. in Sample	Concentration (in ppm, wet weight)												Notes and Source of Information
				Hg min	Zn min	Cu min	Cd min	Pb min	Cr min	Co min	Aq min	Ni min	Mn min	Se min	Rb min	
				max	max	max	max	max	max	max	max	max	max	max	max	
				MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	
				s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.		
F5			8	0.030	1.21	0.110	0.015	0.000	0.000			0.010	0.000	0.070		#1
				0.400	4.25	0.500	0.130	1.455	0.470			0.070	0.440	0.280		
				0.154	2.85	0.289	0.074	0.533	0.158			0.035	0.263	0.149		
				0.122	1.01	0.123	0.035	0.493	0.151			0.022	0.152	0.065		
E6	April 1971	57-68 cm	musc	---	---	---	---	---	---	---	---	---	---	---	---	#3
				0.12												
"	"	"	liver	---	---	---	---	---	---	---	---	---	---	---	---	#3
				0.12												
E5d	November 1971	27-72 cm	musc	---	---	---	---	---	---	---	---	---	---	---	---	#3
				0.10												
"	"	"	liver	---	---	---	---	---	---	---	---	---	---	---	---	#3
				0.16												
I2c	September 1971		musc 6-10	---	---	---	---	---	---	---	---	---	---	---	---	#4
					2.9				*	*	*		0.3	0.8		
"	"		liver 6-10	---	---	---	---	---	---	---	---	---	---	---	---	#4
					19.7				0.6	*	*		1.7	0.4		

* Below detection limits

(Continued on next page)

TABLE 17a Results of Base-Line Survey: Metals in fish and shellfish

WHITE HAKE (Urophycis tenuis) (page 2)

Source	Date of Collection	Year-Class or Length	Type of Tissue & No. in Sample	Concentration (in ppm, wet weight)												Notes and Source of Information
				Hg	Zn	Cu	Cd	Pb	Cr	Co	Aq	Ni	Mn	Se	Rb	
				min	min	min	min	min	min	min	min	min	min	min	min	
				max	max	max	max	max	max	max	max	max	max	max	max	
				MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	
s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.					
I2c	November 1971		musc 10	---	---	---	< 0.1	< 0.3	< 0.2	---	< 0.1	< 0.1	0.1	.		#7
"	March 1972		musc 10	---	---	---	< 0.1	0.8	< 0.2	---	---	---	---	---		#7

TABLE 17b Results of Base-Line Survey: Metals in fish and shellfish

WHITE HAKE (Urophycis tenuis)

Source	Date of Collection	Year-Class or Length	Type of Tissue & No. in Sample	Concentration (in ppm, wet weight)											Notes and Source of Information		
				Hg	Zn	Cu	Cd	Pb	Cr	Co	As	min	min	min		min	
				min	min	min	min	min	min	min	min	max	max	max		max	
				MAX	MAX	MAX	MAX	MAX	MAX	MAX	MAX	MEAN	MEAN	MEAN		MEAN	
				s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.		s.d.	
I2c	March 1972		liver	---			---	---	---								87
				0.13			<0.1	1.1	<0.2								
				---			---	---	---								

TABLE 19 Results of Base-Line Survey: Metals in fish and shellfish

OCEAN POUT (Macrozoarces americanus)

Source	Date of Collection	Year-Class or Length	Type of Tissue & No. in Sample	Concentration (in ppm, wet weight)											Notes and Source of Information	
				Hg	Zn	Cu	Cd	Pb	Cr	Co	As	min	min	min		min
				min	min	min	min	min	min	min	min	min	min	min	min	
				max	max	max	max	max	max	max	max	max	max	max	max	
				MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	
				s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	
I2d	March 1971	45-55 cm	musc	---	---	---	---	---	---	---	---	---	---	---	---	#3
				0.11												
"	"	"	liver	---	---	---	---	---	---	---	---	---	---	---	---	#3
				0.09												
J1a	"	46 cm	musc	---	---	---	---	---	---	---	---	---	---	---	---	#3
				< 0.05												
"	"	"	liver	---	---	---	---	---	---	---	---	---	---	---	---	#3
				< 0.05												

TABLE 20. Results of Base-Line Survey: Metals in fish and shellfish

BEARDFISH (Polymixia lowei)

Source	Date of Collection	Year-Class or Length	Type of Tissue & No. in Sample	Concentration (in ppm, wet weight)												Notes and Source of Information	
				Hg	Zn	Cu	Cd	Pb	Cr	Co	As	min	min	min	min		
				min	min	min	min	min	min	min	min	min	min	min	min	min	
				max	max	max	max	max	max	max	max	max	max	max	max	max	
				MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	
				s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	
M3	May 1971	13-14 cm	Whole	---	---	---	---	---	---	---	---	---	---	---	---	---	#3
				0.06													

TABLE 21 Results of Base-Line Survey: Metals in fish and shellfish

BALLYHOO (Hemiramphus brasiliensis)

Source	Date of Collection	Year-Class or Length	Type of Tissue & No. in Sample	Concentration (in ppm, wet weight)												Notes and Source of Information
				Hg	Zn	Cu	Cd	Pb	Cr	Ag	Ni	Mn	Mo	V	Tin	
				min	min	min	min	min	min	min	min	min	min	min	min	
				max	max	max	max	max	max	max	max	max	max	max	max	
				MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	
s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.					
G2			Whole fish 24	0.000	17.12	0.190	0.060	1.070	0.000	0.070	0.150	0.500	0.000	0.080	1.500	#1
				0.040	45.00	0.890	0.430	3.070	0.890	0.360	2.210	1.930	0.630	1.410	3.120	
				0.005	27.05	0.599	0.236	2.056	0.448	0.193	0.956	1.063	0.329	0.641	2.180	
				0.012	6.86	0.179	0.095	0.597	0.217	0.075	0.537	0.393	0.224	0.429	0.613	

TABLE 22 Results of Base-Line Survey: Metals in fish and shellfish

STRIPED BASS (Morone saxatilis)

Source	Date of Collection	Year-Class or Length	Type of Tissue & No. in Sample	Concentration (in ppm, wet weight)											Notes and Source of Information
				Hg	Zn	Cu	Cd	Pb	Cr	Co	As	Ag	Ni	Mn	
				min	min	min	min	min	min	min	min	min	min	min	min
				max	max	max	max	max	max	max	max	max	max	max	max
				MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN
				s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.
M4	--	---	musc 10	0.040	1.30	0.210	0.000	0.000	0.000			0.000	0.000	0.030	#1
				0.265	5.71	0.555	0.110	0.500	0.430			0.150	0.400	0.310	
				0.168	3.59	0.371	0.037	0.127	0.127			0.047	0.139	0.178	
				0.068	1.26	0.114	0.041	0.207	0.145			0.056	0.130	0.085	

TABLE 23 Results of Base-Line Survey: Metals in Fish and shellfish

BLACK SEA BASS (Centropristis striata)

Source	Date of Collection	Year-Class or Length	Type of Tissue & No. in Sample	Concentration (in ppm, wet weight)										Notes and Source of Information		
				Hg	Zn	Cu	Cd	Pb	Cr	Co	As	min	min		min	min
				min	min	min	min	min	min	min	min	min	min	min	min	
				max	max	max	max	max	max	max	max	max	max	max	max	
				MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	
				s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	
M6	April 1971	22-24 cm	musc	---	---	---	---	---	---	---	---	---	---	---	---	#3
				0.08												
"	"	"	liver	---	---	---	---	---	---	---	---	---	---	---	---	#3
				0.18												

TABLE 24 Results of Base-Line Survey: Metals in fish and shellfish

BLUEFISH (Pomatomus saltatrix)

Source	Date of Collection	Year-Class or Length	Type of Tissue & No. in Sample	Concentration (in ppm, wet weight)												Notes and Source of Information
				Hg	Zn	Cu	Cd	Pb	Cr	Co	As	Ag	Ni	Mn		
				min	min	min	min	min	min	min	min	min	min	min		
				max	max	max	max	max	max	max	max	max	max	max		
				MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN		
s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.						
I2			musc 10	0.110	8.09	0.230	0.000	0.000	0.000			0.000	0.000	0.110	#1	
				0.470	19.28	0.840	0.130	0.535	0.410			0.125	0.360	0.215		
				0.226	11.87	0.565	0.045	0.226	0.113			0.022	0.142	0.152		
				0.101	3.30	0.179	0.041	0.222	0.118			0.038	0.116	0.036		
				0.155	4.50	0.280	0.000	0.000	0.000			0.000	0.000	0.070		
M7			musc 10	0.310	7.15	0.610	0.040	0.310	0.360			0.110	0.390	0.415	#1	
				0.222	5.74	0.428	0.011	0.063	0.104			0.029	0.111	0.173		
				0.046	0.78	0.095	0.013	0.103	0.130			0.039	0.123	0.095		

TABLE 25 Results of Base-Line Survey: Metals in fish and shellfish

SPECKLED SEA TROUT (Cynoscion nebulosus)

Source	Date of Collection	Year-Class or Length	Type of Tissue & No. in Sample	Concentration (in ppm, wet weight)												Notes and Source of Information
				Hg	Zn	Cu	Cd	Pb	Cr	Co	As	Ag	Ni	Mn		
				min	min	min	min	min	min	min	min	min	min	min	min	
				max	max	max	max	max	max	max	max	max	max	max	max	
				MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	
s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.					
M7			musc 10	0.045	2.89	0.195	0.000	0.000	0.000			0.000	0.000	0.040	#1	
				0.185	6.09	0.530	0.110	0.710	0.360			0.140	0.320	0.710		
				<u>0.108</u>	<u>3.84</u>	<u>0.336</u>	<u>0.031</u>	<u>0.148</u>	<u>0.126</u>			<u>0.027</u>	<u>0.107</u>	<u>0.264</u>		
				0.054	1.02	0.108	0.032	0.233	0.128			0.042	0.123	0.189		

TABLE 26 Results of Base-Line Survey: Metals in fish and shellfish

WEAKFISH (Cynoscion regalis)

Source	Date of Collection	Year-Class or Length	Type of Tissue & No. in Sample	Concentration (in ppm, wet weight)												Notes and Source of Information
				Hg	Zn	Cu	Cd	Pb	Cr	Ag	Ni	Mn	Mo	V	Tin	
				min	min	min	min	min	min	min	min	min	min	min	min	
				max	max	max	max	max	max	max	max	max	max	max	max	
				MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	
s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.				
I2			9	0.110	2.19	0.170	0.000	0.000	0.000	0.000	0.000	0.040				#1
				0.240	5.06	0.590	0.070	0.440	0.300	0.070	0.430	0.140				
				0.177	4.526	0.293	0.034	0.209	0.133	0.015	0.167	0.089				
				0.068	1.764	0.143	0.021	0.172	0.101	0.022	0.125	0.029				
M8			8	0.070	3.44	0.250	0.060	0.310	0.060	0.010	0.090	0.060	0.000	0.000	0.190	#1
				0.240	6.63	0.660	0.100	1.310	1.420	0.080	0.250	0.220	0.440	0.190	0.750	
				0.152	4.23	0.400	0.078	0.660	0.415	0.031	0.181	0.105	0.078	0.043	0.397	
				0.055	1.11	0.140	0.017	0.387	0.518	0.021	0.059	0.052	0.152	0.065	0.199	

TABLE 27 Results of Base-Line Survey: Metals in fish and shellfish

SPOT (Leiostomus xanthurus)

Source	Date of Collection	Year-Class or Length	Type of Tissue & No. in Sample	Concentration (in ppm, wet weight)											Notes and Source of Information			
				Hg	Zn	Cu	Cd	Pb	Cr	Co	As	Ag	Ni	Mn				
				min	min	min	min	min	min	min	min	min	min	min	min			
				max	max	max	max	max	max	max	max	max	max	max	max	max		
				MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN		
				s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.		
M8			10	0.000	0.321	0.180	0.000	0.000	0.000			0.000	0.000	0.000			#1	
				0.110	6.31	0.535	0.150	0.740	0.330			0.040	0.545	0.555				
				0.016	4.69	0.321	0.035	0.331	0.100			0.013	0.172	0.336				
				0.036	0.97	0.101	0.048	0.268	0.115			0.014	0.169	0.153				
M2d	October 1971	27-29 cm	musc	---													#3	
				<0.05														
"	"	"	liver	---													#3	
				<0.05														

TABLE 28 Results of Base-Line Survey: Metals in fish and shellfish

DAUBED SHANNY (Lumpenus maculatus)

Source	Date of Collection	Year-Class or Length	Type of Tissue & No. in Sample	Concentration (in ppm, wet weight)											Notes and Source of Information		
				Hg	Zn	Cu	Cd	Pb	Cr	Co	As	min	min	min		min	
				min	min	min	min	min	min	min	min	min	min	min	min	min	
				max	max	max	max	max	max	max	max	max	max	max	max	max	
				MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	
				s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	
E3b	April 1971	8-12 cm	Whole	---	---	---	---	---	---	---	---	---	---	---	---	---	#3
				0.05													

TABLE 29 Results of Base-Line Survey: Metals in fish and shellfish

ATLANTIC WOLFFISH (Anarhichas lupus)

Source	Date of Collection	Year-Class or Length	Type of Tissue & No. in Sample	Concentration (in ppm, wet weight)												Notes and Source of Information	
				Hg	Zn	Cu	Cd	Pb	Cr	Co	As	min	min	min	min		
				min	min	min	min	min	min	min	min	max	max	max	max		
				MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN		
s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.					
F6	April 1971	78-93 cm	musc	---	---	---	---	---	---	---	---	---	---	---	---	---	#3
"	"	"	liver	---	---	---	---	---	---	---	---	---	---	---	---	---	#3
				< 0.05													
G4	November 1971	20-74 cm	musc	---	---	---	---	---	---	---	---	---	---	---	---	---	#3
				0.07													
"	"	"	liver	---	---	---	---	---	---	---	---	---	---	---	---	---	#3
				< 0.05													

TABLE 30 Results of Base-Line Survey: Metals in fish and shellfish

ATLANTIC MACKEREL (Scomber scombrus)

Source	Date of Collection	Year-Class or Length	Type of Tissue & No. in Sample	Concentration (in ppm, wet weight)												Notes and Source of Information
				Hg	Zn	Cu	Cd	Pb	Cr	Co	As	min	min	min	min	
				min	min	min	min	min	min	min	min	max	max	max	max	
				MAX	MAX	MAX	MAX	MAX	MAX	MAX	MAX	MEAN	MEAN	MEAN	MEAN	
				s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	
J4	March 1971	30-35 cm	musc	---	---	---	---	---	---	---	---	---	---	---	---	#3

TABLE 31 Results of Base-Line Survey: Metals in fish and shellfish

WHITE MARLIN (Tetrapturus albidus)

Source	Date of Collection	Year-Class or Length	Type of Tissue & No. in Sample	Concentration (in ppm, wet weight)												Notes and Source of Information
				Hg	Zn	Cu	Cd	Pb	Cr	Co	As	Ag	Ni	Mn		
				min	min	min	min	min	min	min	min	min	min	min		
				max	max	max	max	max	max	max	max	max	max	max		
				MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN		
s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.					
M8			musc 10	0.160	2.63	0.130	0.000	0.000	0.000			0.000	0.000	0.000	#1	
				1.140	8.57	0.430	0.110	0.500	0.250			0.165	0.500	0.140		
				<u>0.545</u>	<u>5.34</u>	<u>0.265</u>	<u>0.046</u>	<u>0.182</u>	<u>0.069</u>			<u>0.023</u>	<u>0.242</u>	<u>0.069</u>		
				0.331	2.15	0.096	0.034	0.188	0.088			0.051	0.159	0.039		

TABLE 32 Results of Base-Line Survey: Metals in fish and shellfish

BUTTERFISH (Peprilus triacanthus)

Source	Date of Collection	Year-Class or Length	Type of Tissue & No. in Sample	Concentration (in ppm, wet weight)												Notes and Source of Information
				Hg	Zn	Cu	Cd	Pb	Cr	Ag	Ni	Mn	Mo	V	Tin(sn)	
				min	min	min	min	min	min	min	min	min	min	min	min	min
				max	max	max	max	max	max	max	max	max	max	max	max	max
				MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN
				s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.
K1			musc 13	0.000	3.87	0.190	0.000	0.000	0.000	0.000	0.060	0.060	0.000	0.000	0.380	# 1
				0.270	9.64	0.810	0.170	1.250	0.990	0.060	0.460	0.250	0.280	0.870	4.690	
				0.026	6.91	0.518	0.078	0.471	0.255	0.030	0.263	0.171	0.084	0.166	1.091	
				0.077	1.65	0.215	0.044	0.371	0.306	0.020	0.131	0.058	0.096	0.281	1.284	
M5b	April 1971	10 cm		---	---	---	---	---	---	---	---	---	---	---	#3	
				0.06												
				---	---	---	---	---	---	---	---	---	---	---		

TABLE 33a Results of Base-Line Survey: Metals in fish and shellfish

BLACKBELLY ROSEFISH (Heliocolenus dactylopterus)

Source	Date of Collection	Year-Class or Length	Type of Tissue & No. in Sample	Concentration (in ppm, wet weight)												Notes and Source of Information
				Hg	Zn	Cu	Cd	Pb	Cr	Co	As	min	min	min	min	
				min	min	min	min	min	min	min	min	min	min	min	min	
				max	max	max	max	max	max	max	max	max	max	max	max	
				MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	
s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.					
I6	October 1971	16-34 cm	musc	---	---	---	---	---	---	---	---	---	---	---	---	#3
				0.22	---	---	---	---	---	---	---	---	---			
				---	---	---	---	---	---	---	---	---	---			
"	"	"	liver	---	---	---	---	---	---	---	---	---	---	---	#3	
				0.40	---	---	---	---	---	---	---	---	---			
				---	---	---	---	---	---	---	---	---	---			
J6	Fall 1972	16-22 cm	musc	0.	0.22	---	---	---	---	---	---	---	---	---	#5	
				0.08	---	---	---	---	---	---	---	---	---			
				0.075	---	---	---	---	---	---	---	---	---			
"	"	"	liver	---	---	---	---	---	---	---	---	---	---	---	#5	
				<0.05	---	---	---	---	---	---	---	---	---			
				---	---	---	---	---	---	---	---	---	---			
"	"	"	gills	---	---	---	---	---	---	---	---	---	---	---	#5	
				<0.05	---	---	---	---	---	---	---	---	---			
				---	---	---	---	---	---	---	---	---	---			
"	"	"	kidney	---	---	---	---	---	---	---	---	---	---	---	#5	
				0.06	---	---	---	---	---	---	---	---	---			
				---	---	---	---	---	---	---	---	---	---			
J2	"	15-18 cm	musc	0.07	0.18	---	---	---	---	---	---	---	---	---	#5	
				0.12	---	---	---	---	---	---	---	---	---			
				0.041	---	---	---	---	---	---	---	---	---			

* Below detection limits

(continued on next page)

TABLE 33a Results of Base-Line Survey: Metals in fish and shellfish

BLACKBELLY ROSEFISH (Heliocolenus dactylopterus) (page 2)

Source	Date of Collection	Year-Class or Length	Type of Tissue & No. in Sample	Concentration (in ppm, wet weight)												Notes and Source of Information	
				Hg	Zn	Cu	Cd	Pb	Cr	Co	As	min	min	min	min		
				min	min	min	min	min	min	min	min	min	min	min	min	min	
				max	max	max	max	max	max	max	max	max	max	max	max	max	
				MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	
				s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	
J2	Fall 1972	15-18 cm	liver 10	*	0.11												#5
"	"	"	gills 10	---	<0.05												#5

*Below detection limits

TABLE 33b Results of Base-Line Survey: Metals in fish and shellfish

BLACKBELLY ROSEFISH (Helicolenus dactylopterus)

Source	Date of Collection	Year-Class or Length	Type of Tissue & No. in Sample	Concentration (in ppm, wet weight)												Notes and Source of Information
				Hg	Zn	Cu	Cd	Pb	Cr	Co	As	min	min	min	min	
				min	min	min	min	min	min	min	min	min	min	min	min	
				max	max	max	max	max	max	max	max	max	max	max	max	
				MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	
				s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	
J2	Fall 1972	15-18 cm	kidney 10	*	---	0.17	---									#5
J2	"	15-19 cm	musc 10	0.04	0.15	0.07	0.035									#5
"	"	"	liver 10	0.01	0.15	0.07	0.051									#5
"	"	"	gills 10	0.	0.14	0.05	0.047									#5
I6	"	13-24 cm	musc 10	0.05	0.17	0.09	0.040									#5
"	"	"	liver 10	0.02	0.19	0.09	0.054									#5

* Below detection level

TABLE 34 Results of Base-Line Survey: Metals in fish and shellfish

REDFISH (Sebastes marinus)

Source	Date of Collection	Year-Class or Length	Type of Tissue & No. in Sample	Concentration (in ppm, wet weight)												Notes and Source of Information	
				Hg	Zn	Cu	Cd	Pb	Cr	Co	As	min	min	min	min		
				min	min	min	min	min	min	min	min	max	max	max	max		
				max	max	max	max	max	max	max	max	MEAN	MEAN	MEAN	MEAN		
				MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN		
s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.					
E9b	March 1971	38 cm	musc	---	---	---	---	---	---	---	---	---	---	---	---	---	#3
				0.20													
"	"	"	liver	---	---	---	---	---	---	---	---	---	---	---	---	---	#3
				0.15													
"	October 1971	41-57 cm	musc	---	---	---	---	---	---	---	---	---	---	---	---	---	#3
				0.10													
"	"	"	liver	---	---	---	---	---	---	---	---	---	---	---	---	---	#3
				0.15													

TABLE 35 Results of Base-Line Survey: Metals in Fish and shellfish

NORTHERN SEAROBIN (Prionotus carolinus)

Source	Date of Collection	Year-Class or Length	Type of Tissue & No. in Sample	Concentration (in ppm, wet weight)												Notes and Source of Information
				Hg	Zn	Cu	Cd	Pb	Cr	Co	As	min	min	min	min	
				min	min	min	min	min	min	min	min	max	max	max	max	
				max	max	max	max	max	max	max	max	MEAN	MEAN	MEAN	MEAN	
				MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	s.d.	s.d.	s.d.	s.d.	
M3	October 1971	24-27 cm	musc	---	---	---	---	---	---	---	---	---	---	---	---	#3
"	"	"	liver	---	---	---	---	---	---	---	---	---	---	---	---	#3

TABLE 36 Results of Base-Line Survey: Metals in fish and shellfish

STRIPED SEAROBIN (Prionotus evolans)

Source	Date of Collection	Year-Class or Length	Type of Tissue & No. in Sample	Concentration (in ppm, wet weight)											Notes and Source of Information		
				Hg	Zn	Cu	Cd	Pb	Cr	Co	As						
				min	min	min	min	min	min	min	min	min	min	min	min	min	
				max	max	max	max	max	max	max	max	max	max	max	max	max	
				MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	
				s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	
M6	April 1971	27-37 cm	musc	---	---	---	---	---	---	---	---	---	---	---	---	---	#3
"	"	"	liver	---	---	---	---	---	---	---	---	---	---	---	---	---	#3

TABLE 37 Results of Base-Line Survey: Metals in fish and shellfish

LONGHORN SCULPIN (Myoxocephalus octodecemspinosus)

Source	Date of Collection	Year-Class or Length	Type of Tissue & No. in Sample	Concentration (in ppm, wet weight)												Notes and Source of Information		
				Hg	Zn	Cu	Cd	Pb	Cr	Co	As	min	min	min	min			
				min	min	min	min	min	min	min	min	min	min	min	min	min	min	
				max	max	max	max	max	max	max	max	max	max	max	max	max	max	
				MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	
				s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	
K1	October 1971		musc	---	---	---	---	---	---	---	---	---	---	---	---	---	---	#3
"	"		liver	---	---	---	---	---	---	---	---	---	---	---	---	---	---	#3
E7d	March 1971	25 cm	musc	---	---	---	---	---	---	---	---	---	---	---	---	---	---	#3
"	"	"	liver	---	---	---	---	---	---	---	---	---	---	---	---	---	---	#3

TABLE 38 Results of Base-Line Survey: Metals in fish and shellfish

MAILED SCULPIN (Triglops nybelini)

Source	Date of Collection	Year-Class or Length	Type of Tissue & No. in Sample	Concentration (in ppm, wet weight)												Notes and Source of Information	
				Hg	Zn	Cu	Cd	Pb	Cr	Co	As						
				min	min	min	min	min	min	min	min	min	min	min	min		
				max	max	max	max	max	max	max	max	max	max	max	max		
				MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN		
s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.						
F3	April 1971	8-13 cm	whole	---	---	<0.05	---										#3

TABLE 39 Results of Base-Line Survey: Metals in fish and shellfish

GULF STREAM FLOUNDER (Citharichthys arctifrons)

Source	Date of Collection	Year-Class or Length	Type of Tissue & No. in Sample	Concentration (in ppm, wet weight)										Notes and Source of Information		
				Hg	Zn	Cu	Cd	Pb	Cr	Co	As	min	min		min	min
				min	min	min	min	min	min	min	min	min	min	min	min	
				max	max	max	max	max	max	max	max	max	max	max	max	
				MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	
				s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	
I7d	October 1971	6-12 cm	musc	---	---	---	---	---	---	---	---	---	---	---	---	#3
				0.05												

TABLE 40 Results of Base-Line Survey: Metals in fish and shellfish

FOURSPOT FLOUNDER (Paralichthys oblongus)

Source	Date of Collection	Year-Class or Length	Type of Tissue & No. in Sample	Concentration (in ppm, wet weight)												Notes and Source of Information	
				Hg	Zn	Cu	Cd	Pb	Cr	Co	As	min	min	min	min		
				min	min	min	min	min	min	min	min	max	max	max	max		
				max	max	max	max	max	max	max	max	MEAN	MEAN	MEAN	MEAN		
				MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	s.d.	s.d.	s.d.	s.d.		
J1c	March 1971	16-19 cm	liver	---	---	---	---	---	---	---	---	---	---	---	---	---	#3
I5	October 1971	21-34 cm	musc	---	---	---	---	---	---	---	---	---	---	---	---	---	#3
"	"	"	liver	---	---	---	---	---	---	---	---	---	---	---	---	---	#3

TABLE 41 Results of Base-Line Survey: Metals in fish and shellfish

FLUKE (Paralichthys dentatus)

Source	Date of Collection	Year-Class or Length	Type of Tissue & No. in Sample	Concentration (in ppm, wet weight)												Notes and Source of Information		
				Hg	Zn	Cu	Cd	Pb	Cr	Co	As	Se	Ag	Rb	min			
				min	min	min	min	min	min	min	min	min	min	min	min	min	min	
				max	max	max	max	max	max	max	max	max	max	max	max	max	max	
				MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	
				s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	
I7a	September 1971		musc 6-10	---	---	---	---	---	---	---	---	---	---	---	---	---	---	84
				---	4.0	---	---	---	0.7	*	---	0.7	*	*	---	---	---	
				---	---	---	---	---	---	---	---	---	---	---	---	---	---	

* Below detection levels.

TABLE 42a Results of Base-Line Survey: Metals in fish and shellfish

WINDOWPANE FLOUNDER (Scophthalmus aquosus)

Source	Date of Collection	Year-Class or Length	Type of Tissue & No. in Sample	Concentration (in ppm, wet weight)												Notes and Source of Information
				Hg	Zn	Cu	Cd	Pb	Cr	Co	As	Se	Rb	Ag		
				min	min	min	min	min	min	min	min	min	min	min	min	
				max	max	max	max	max	max	max	max	max	max	max	max	
				MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	
				s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.		
E8c	September 1971	22-31 cm	musc	---												#3
				0.10												
"	"	"	liver	---												#3
				0.12												
I4b	1971		musc		4.3				*	*		0.73	0.7			#4
					5.5							0.75	0.7	*		
					4.9							0.74	0.7			
					---							---	---			
I2c	1971		musc		4.0				*	*		---	*			#4
					4.5							---	0.6			
					4.3							0.59	< 0.6			
					---							---	---			
I7a	1971		musc		3.7				*	*		0.5	0.7			#4
					10.0							0.7	1.0	*		
					6.1							0.6	0.8			
					---							---	---			
M2b	1971		musc		4.1				*	*		0.3	*	*		
					8.5				0.3			0.55	0.5			
					6.3				< 0.3			0.43	< 0.5			#4
					---				---			---	---			
D9d	1971		musc		3.9				*	*		*	*	*		
					8.2							0.5	0.8	3.4		#4
					5.5							< 0.5	< 0.7	< 1.2		
					---							---	---	---		

* Below detection limits

(continued on next page)

TABLE 42a Results of Base-Line Survey: Metals in fish and shellfish

WINDOWPANE FLOUNDER (Scophthalmus aquosus) (page 2)

Source	Date of Collection	Year-Class or Length	Type of Tissue & No. in Sample	Concentration (in ppm, wet weight)												Notes and Source of Information
				Hg	Zn	Cu	Cd	Pb	Cr	Co	As	Se	Rb	Ag		
				min	min	min	min	min	min	min	min	min	min	min		
				max	max	max	max	max	max	max	max	max	max	max		
				MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN		
s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.					
D9c	1971		.musc		4.5					*	*		*	0.6	*	#4
					5.5				0.3			0.3	0.9			
					5.0				<0.3			<0.3	0.75			
					---				---			---	---			
I4b	"		liver		34.3				0.4	0.13		2.4	1.5	0.5		#4
					54.2				0.4	0.14		5.1	1.5	1.4		
					44.2				0.4	0.14		3.8	1.5	10.0		
					---				---	---		---	---	---		

* Below detection limits

TABLE 42b Results of Base-Line Survey: Metals in fish and shellfish

WINDOWPANE FLOUNDER (Scophthalmus aquosus)

Source	Date of Collection	Year-Class or Length	Type of Tissue & No. in Sample	Concentration (in ppm, wet weight)													Notes & Source of Information
				Hg	Zn	Cu	Cd	Pb	Cr	Co	As	Se	Rb	Ag	Mn	Ni	
				min	min	min	min	min	min	min	min	min	min	min	min	min	min
				max	max	max	max	max	max	max	max	max	max	max	max	max	max
				MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN
				s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.
I2c	1971		liver	37.0					*	0.13		2.1	*	*			
				39.3					0.4	0.13		2.5	1.1	1.3			
				38.0					<0.4	0.13		2.3	<1.1	<1.3			
				---					---	---		---	---	---			
I7a	"		liver	23.7					*	0.04		1.1	*	*			
				39.2					0.8	0.16		2.8	1.8	*			
				32.3					<0.8	0.12		1.6	<1.8	---			
				---					---	---		---	---	---			
M2b	"		liver	24.5					*	0.07		1.1	*	*			
				46.0					0.3	0.20		2.5	0.9	*			
				35.3					<0.3	0.13		1.8	<0.9	---			
				---					---	---		---	---	---			
D9d	"		liver	34.3					*	0.11		1.6	*	*			
				40.6					1.3	0.25		2.0	1.1	0.2			
				36.5					<0.7	0.17		1.8	<1.1	<0.2			
				---					---	---		---	---	---			
D9c	"		liver	32.0					0.3	0.04		1.1	*	*			
				36.3					0.5	0.10		2.0	1.5	*			
				34.1					0.4	0.07		1.5	<1.5	---			
				---					---	---		---	---	---			
9Dd	1971		musc	---	---	---	---	---	---	---	---	---	---	---	---	---	---
				---	---	---	---	---	---	---	---	---	---	---	---	---	
				0.13	5.8	0.7	<0.1	<0.5	0.6		2.7			<0.1	0.4	0.3	
9Dc	1972		musc	0.02	0.9	0.15	---	---	0.3		---				0.07	0.1	
				---	---	---	---	---	---	---	---	---	---	---	---	---	
				---	---	---	---	---	---	---	---	---	---	---	---	---	
9Dc	Winter 1972		musc	---	---	---	---	---	---	---	---	---	---	---	---	---	---
				0.12	5.0	1.4	<0.1	<0.6	<0.3					<0.1	0.3	<0.5	
				---	---	---	---	---	---	---	---	---	---	---	---	---	

*Below detection limits.

(continued on next page)

TABLE 42b Results of Base-Line Survey: Metals in fish and shellfish

WINDOWPANE FLOUNDER (Scophthalmus aquosus) (page 2)

Source	Date of Collection	Year-Class or Length	Type of Tissue & No. in Sample	Concentration (in ppm, wet weight)													Notes & Source of Information
				Hg	Zn	Cu	Cd	Pb	Cr	Co	As	Se	Rb	Ag	Mn	Ni	
				min	min	min	min	min	min	min	min	min	min	min	min	min	
				max	max	max	max	max	max	max	max	max	max	max	max	max	
				MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	
s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.					
I2a	1971 1972		musc	---	---	---	---	---	---	---	---	---	---	---	---	---	#6
				0.15	4.6	1.0	<0.1	<0.5	< 0.5	1.4	<0.1	0.26	0.2				
				0.04	---	---	---	---	---	---	---	---	0.03	0.04			
				---	---	---	---	---	---	---	---	---	---	---			
I4b	1972		musc	---	---	---	---	---	---	---	---	---	---	---	---	---	#6
				0.27	5.1		<0.1	0.5	<0.5	2.8	<0.1	0.18	0.2				
				0.03	---	---	---	0.1	---	0.5	---	0.01	---				
				---	---	---	---	---	---	---	---	---	---				

TABLE 42c Results of Base-Line Survey: Metals in fish and shellfish

WINDOWPANE FLOUNDER (*Scophthalmus aquosus*)

Source	Date of Collection	Year-Class or Length	Type of Tissue & No. in Sample	Concentration (in ppm, wet weight)												Notes and Source of Information
				Hg	Zn	Cu	Cd	Pb	Cr	Co	As	Ag	Mn	Ni		
				min	min	min	min	min	min	min	min	min	min	min	min	min
				max	max	max	max	max	max	max	max	max	max	max	max	max
				MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN
				s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.
I7a	1971		muscle	---	---	---	---	---	---	---	---	---	---	---	---	#6
				0.15	6.2	<0.1	1.0	<0.5	1.8	<0.1	0.23	0.4				
				0.01	1.4	---	0.15	---	0.3	---	0.05	0.15				
M2b	"		muscle	---	---	---	---	---	---	---	---	---	---	---	---	#6
				0.17	6.3	<0.1	0.8	<0.2	2.0	<0.1	0.35	<0.2				
				0.03	---	---	0.14	---	---	---	0.09	---				
D9d	1971 1972		liver	---	---	---	---	---	---	---	---	---	---	---	#6	
				0.22	36.8	---	---	<0.7	---	<0.1	---	---				
				0.04	1.1	---	---	---	---	---	---	---				
D9c	1972		liver 20	---	---	---	---	---	---	---	---	---	---	---	#6	
				---	34.1	---	---	<0.5	---	<0.1	---	---				
				---	---	---	---	---	---	---	---	---				
I2c	1971 1972		liver	---	---	---	---	---	---	---	---	---	---	---	#6	
				0.29	38.2	---	---	<0.4	---	0.6	---	---				
				---	---	---	---	---	---	---	---	---				
I4b	1972		liver	---	---	---	---	---	---	---	---	---	---	---	#6	
				---	41.9	<0.1	<0.5	<0.3	---	<0.5	2.5	<0.3				
				---	---	---	---	---	---	---	---	---				
I7a	1971		liver	---	---	---	---	---	---	---	---	---	---	---	#6	
				0.30	32.2	10.5	0.1	1.7	<0.5	---	<0.1	1.7	<0.2			
				0.13	3.	---	---	---	---	---	---	---	---			

(continued on next page)

TABLE 42c Results of Base-Line Survey: Metals in fish and shellfish

WINDOWPANE FLOUNDER (Scophthalmus aquosus) (page 2)

Source	Date of Collection	Year-Class or Length	Type of Tissue & No. in Sample	Concentration (in ppm, wet weight)												Notes and Source of Information
				Hg	Zn	Cu	Cd	Pb	Cr	Co	As	Ag	Mn	Ni		
				min	min	min	min	min	min	min	min	min	min	min		
				max	max	max	max	max	max	max	max	max	max	max		
				MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN		
s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.					
M2b	1971		liver	---	---	---	---	---	---	---	---	---	---	---	#6	
				0.13	35.2	<0.1	<0.3				<0.1					
				---	---	---	---	---	---	---	---	---	---	---		

TABLE 433 Results of Base-Line Survey: Metals in fish and shellfish

WITCH FLOUNDER (Glyptocephalus cynoglossus)

Source	Date of Collection	Year-Class or Length	Type of Tissue & No. in Sample	Concentration (in ppm, wet weight)												Notes and Source of Information
				Hg	Zn	Cu	Cd	Pb	Cr	Co	As	min	min	min	min	
				min	min	min	min	min	min	min	min	min	min	min	min	
				max	max	max	max	max	max	max	max	max	max	max	max	
				MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	
				s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	
I8	April 1971	31-36 cm	musc	---	---	---	---	---	---	---	---	---	---	---	---	#3
				0.07												
"	"	"	liver	---	---	---	---	---	---	---	---	---	---	---	---	#3
				0.16												
J2	October 1971	42-50 cm	musc	---	---	---	---	---	---	---	---	---	---	---	---	#3
				0.10												
"	"	"	liver	---	---	---	---	---	---	---	---	---	---	---	---	#3
				0.13												

TABLE 44a Results of Base-Line Survey: Metals in fish and shellfish

YELLOWTAIL FLOUNDER (*Limanda ferruginea*)

Source	Date of Collection	Year-Class or Length	Type of Tissue & No. in Sample	Concentration (in ppm, wet weight)												Notes and Source of Information
				Hg min max MEAN s.d.	Zn min max MEAN s.d.	Cu min max MEAN s.d.	Cd min max MEAN s.d.	Pb min max MEAN s.d.	Cr min max MEAN s.d.	Co min max MEAN s.d.	Ag min max MEAN s.d.	Ni min max MEAN s.d.	Mn min max MEAN s.d.	Se min max MEAN s.d.	Rb min max MEAN s.d.	
J1			8	0.021	2.86	0.820	0.020	0.310	0.100			0.000	0.080	0.060		
				0.120	6.43	1.690	0.070	0.630	0.330		0.040	0.410	0.270			
				0.066	4.459	1.111	0.053	0.400	0.201		0.028	0.218	0.192			
				0.043	1.439	0.277	0.022	0.109	0.083		0.013	0.094	0.063			
J3			11	0.000	3.05	0.135	0.000	0.000	0.000			0.000	0.055	0.110		
				0.105	6.28	0.390	0.150	1.060	0.240		0.040	0.610	0.250			
				0.036	4.57	0.242	0.052	0.351	0.078		0.013	0.244	0.169			
				0.028	1.10	0.072	0.040	0.271	0.072		0.015	0.142	0.041			
I2d	March 1971	28-32 cm	musc	---	---	---	---	---	---	---	---	---	---	---	---	#3
				0.24												
"	"	"	liver	---	---	---	---	---	---	---	---	---	---	---	---	#3
				0.17												
I2d	September 1971	33-38 cm	musc	---	---	---	---	---	---	---	---	---	---	---	---	#3
				0.10												
"	"	"	liver	---	---	---	---	---	---	---	---	---	---	---	---	#3
				0.25												
I4d	April 1971	6-10	musc	---	---	---	---	---	---	---	---	---	---	---	---	#4
					9.0			*	*	*				0.70	*	

*Below detection limits

(Continued on next page)

TABLE 44a Results of Base-Line Survey: Metals in fish and shellfish

YELLOWTAIL FLOUNDER (Limanda ferruginea) (page 2)

Source	Date of Collection	Year-Class or Length	Type of Tissue & No. in Sample	Concentration (in ppm, wet weight)												Notes and Source of Information	
				Hg	Zn	Cu	Cd	Pb	Cr	Co	Ag	Ni	Mn	Se	Rb		
				min	min	min	min	min	min	min	min	min	min	min	min		
				max	max	max	max	max	max	max	max	max	max	max	max		
				MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN		
s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.					
I2c	September 1971		musc 6-10	---	---	---	---	---	---	---	---	---	---	---	---	---	#4
				4.2			*	*	*				0.50	0.5			
				---			---	---	---	---	---	---	---	---	---	---	

* Below detection limits

TABLE 44b Results of Base-Line Survey: Metals in fish and shellfish

YELLOWTAIL FLOUNDER (*Limanda ferruginea*)

Source	Date of Collection	Year-Class or Length	Type of Tissue & No. in Sample	Concentration (in ppm, wet weight)												Notes and Source of Information
				Hg	Zn	Cu	Cd	Pb	Cr	Co	As	Ag	Ni	Mn	min	
				min	min	min	min	min	min	min	min	min	min	min	min	max
				MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN
				s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	
12c	April 1971	31 cm	musc 10	---	---	---	<0.1	<0.3	<0.1	---	---	---	---	---	---	#7
"	"	"	liver 10	---	---	---	0.10	0.25	<0.2	0.2	---	---	---	---	---	#7
"	November 1971	30 cm	musc 10	---	---	---	0.10	4.2	0.8	<0.1	<0.4	<0.2	<0.1	0.2	0.3	#7
"	"	"	liver 10	---	---	---	---	5.3	0.5	1.2	<0.2	<0.1	0.4	1.4	---	#7
"	January 1972	34 cm	musc 10	---	---	---	0.13	<0.1	<0.3	<0.2	<0.1	0.2	0.1	---	---	#7
"	"	"	liver 10	---	---	---	0.17	0.3	1.2	<0.2	<0.1	0.3	1.6	---	---	#7
"	March 1972		musc 10	---	---	---	0.12	1.2	<0.1	0.8	<0.35	0.4	0.6	---	---	#7

(continued on next page)

TABLE 44b Results of Base-Line Survey: Metals in fish and shellfish

YELLOWTAIL FLOUNDER (Limanda ferruginea) (page 2)

Source	Date of Collection	Year-Class or Length	Type of Tissue & No. in Sample	Concentration (in ppm, wet weight)												Notes and Source of Information
				Hg	Zn	Cu	Cd	Pb	Cr	Co	As	Ag	Ni	Mn	min	
				min	min	min	min	min	min	min	min	min	min	min	min	
				max	max	max	max	max	max	max	max	max	max	max	max	
				MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	
				s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.		
I2c	March 1972		liver 10	---	---	---	---	---	---	---	---	---	---	---	---	#7
				0.10	2.2	0.15	0.4	0.1			0.09	0.2	1.0			
"	"	33 cm	muscle 10	---	---	---	---	---	---	---	---	---	---	---	---	#7
				0.10	0.3	0.05	<0.3	<0.2			<0.1	0.3	0.3			
"	"	"	liver 10	---	---	---	---	---	---	---	---	---	---	---	---	#7
				0.11	1.8	0.09	0.2	0.1			0.06	0.3	1.5			

TABLE 44c Results of Base-Line Survey: Metals in fish and shellfish

YELLOWTAIL FLOUNDER (*Limanda ferruginea*)

Source	Date of Collection	Year-Class or Length	Type of Tissue & No. in Sample	Concentration (in ppm, wet weight)												Notes and Source of Information
				Hg min max MEAN s.d.	Zn min max MEAN s.d.	Cu min max MEAN s.d.	Cd min max MEAN s.d.	Pb min max MEAN s.d.	Cr min max MEAN s.d.	Co min max MEAN s.d.	As min max MEAN s.d.	Ag min max MEAN s.d.	Ni min max MEAN s.d.	Mn min max MEAN s.d.		
I2c	March 1972	32 cm	musc 10	---	---	---	---	---	---	---	---	---	---	---	---	#7
"	"	"	liver 10	0.06	0.4	< 0.1	0.5	< 0.2				< 0.1	0.2	1.8		#7
"	"	"	musc 10	0.12	0.6	< 0.1	0.3	0.2				< 0.1	0.3	0.3		#7
"	"	"	liver 10	0.12	0.6	< 0.1	0.3	0.2				< 0.1	0.3	0.3		#7
"	"	31 cm	musc 10	0.09	0.6	< 0.1	< 0.3	0.1				< 0.2	0.2	0.2		#7
"	"	"	liver 10	0.08	2.1	0.2	0.6	< 0.3				< 0.1	0.6	1.8		#7
I2d	"	30 cm	musc 10	0.11	0.3	< 0.1	< 0.2	< 0.2				< 0.1	0.2	0.18		#7

(continued on next page)

TABLE 44c Results of Base-Line Survey: Metals in fish and shellfish

YELLOWTAIL PLOUNDER (*Limanda ferruginea*) (page 2)

Source	Date of Collection	Year-Class or Length	Type of Tissue & No. in Sample	Concentration (in ppm, wet weight)												Notes and Source of Information
				Hg	Zn	Cu	Cd	Pb	Cr	Co	As	Ag	Ni	Mn	min	
				min	min	min	min	min	min	min	min	min	min	min	min	
				max	max	max	max	max	max	max	max	max	max	max	max	
				MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	
				s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.		
I2d	March 1972	30 cm	Liver 10	---	---	---	---	---	---	---	---	---	---	---	#7	
				0.14	4.7	0.4	1.2	0.6			1.1	2.5				
				---	---	---	---	---	---	---	---	---	---	---		

TABLE 45a Results of Base-Line Survey: Metals in fish and shellfish

WINTER FLOUNDER (*Pseudopleuronectes americanus*)

Source	Date of Collection	Year-Class or Length	Type of Tissue & No. in Sample	Concentration (in ppm, wet weight)																Notes and Source of Information
				Hg	Zn	Cu	Cd	Pb	Cr	Co	As	Ag	Ni	Mn	Mo	V	Tin(sn)	Se	Rb	
				min	min	min	min	min	min	min	min	min	min	min	min	min	min	min	min	
				max	max	max	max	max	max	max	max	max	max	max	max	max	max	max	max	
				MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	
s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.					
E7			10	0.02	3.56	0.06	0.04	0.12	0.06		2.1	0.0	0.00	0.06	0.00	0.000	0.25			#1
				0.19	7.81	0.44	0.09	0.69	0.25		2.35	0.09	0.35	0.21	0.19	0.16	0.84			
				0.055	5.26	0.236	0.077	0.42	0.15		2.200	0.026	0.17	0.15	0.022	0.031	0.432			
				0.055	1.42	0.106	0.049	0.19	0.07		0.122	0.026	0.08	0.06	0.060	0.054	0.248			
K2	April 1971	22-46 cm	muscle	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	#3
			liver	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	#3
				0.07																
				0.08																
I2a	October 1971	28-35 cm	muscle	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	#3
			liver	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	#3
				0.14																
				0.18																
	September 1971		muscle 6-10	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.40	0.40	#4
			liver 6-10	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	#4
				42.0					0.4	*		0.1					2.8	5.2		
				---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
I2a	December 1973	23 cm	muscle 10	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	#7
			liver 10	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	#7
				6.0	0.5	<0.1	0.8	<0.3			<0.1	0.3	0.35							
				15	4.1	<0.1	<0.8	0.5			<0.1	<0.3	0.9							

* Below detection limits

TABLE 45b Results of Base-Line Survey: Metals in fish and shellfish

WINTER FLOUNDER (*Pseudopleuronectes americanus*)

Source	Date of Collection	Year-Class cr Length	Type of Tissue & No. in Sample	Concentration (in ppm, wet weight)												Notes and Source of Information
				Hg min max MEAN s.d.	Zn min max MEAN s.d.	Cu min max MEAN s.d.	Cd min max MEAN s.d.	Pb min max MEAN s.d.	Cr min max MEAN s.d.	Co min max MEAN s.d.	As min max MEAN s.d.	Ag min max MEAN s.d.	Ni min max MEAN s.d.	Mn min max MEAN s.d.		
I3a	November 1973	34 cm	musc 10	---	---	---	---	---	---	---	---	---	---	---	---	#7
"	"	"	liver 10	---	5.5	0.8	<0.1	<0.8	<0.3	---	---	<0.1	<0.3	0.25	---	#7
"	"	"	liver 10	---	34.	9.9	0.28	<0.8	0.5	---	---	0.18	<0.3	1.8	---	#7
I2c	August 1973	24 cm	liver 10	---	---	---	---	---	---	---	---	---	---	---	---	#7
"	June 1972	22 cm	liver 10	---	---	---	---	---	---	---	---	---	---	---	---	#7
"	May 1972	30 cm	liver 10	---	---	---	---	---	---	---	---	---	---	---	---	#7
"	June 1972	35 cm	liver 10	---	---	---	---	---	---	---	---	---	---	---	---	#7
"	June 1971	32 cm	liver 10	---	---	---	---	---	---	---	---	---	---	---	---	#7

(Continued on next page)

TABLE 45b Results of Base-Line Survey: Metals in fish and shellfish

WINTER FLOUNDER (Pseudopleuronectes americanus) (page 2)

Source	Date of Collection	Year-Class or Length	Type of Tissue & No. in Sample	Concentration (in ppm, wet weight)												Notes and Source of Information
				Hg	Zn	Cu	Cd	Pb	Cr	Co	As	Ag	Ni	Mn		
				min	min	min	min	min	min	min	min	min	min	min		
				max	max	max	max	max	max	max	max	max	max	max		
				MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN		
				s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.		
12c	September 1971		musc 10	---	---	---	---	---	---	---	---	---	---	---	#7	
				0.09	5.2	<0.1	<0.2					<0.1				
				---	---	---	---	---	---	---	---	---	---			
"	"		liver 10	---	---	---	---	---	---	---	---	---	---	---	#7	
				0.06	42.							0.15				
				---	---	---	---	---	---	---	---	---	---			

TABLE 45c Results of Base-Line Survey: Metals in fish and shellfish

WINTER FLOUNDER (Pseudopleuronectes americanus)

Source	Date of Collection	Year-Class or Length	Type of Tissue & No. in Sample	Concentration (in ppm, wet weight)												Notes and Source of Information
				Hg	Zn	Cu	Cd	Pb	Cr	Co	As	Ag	Ni	Mn		
				min	min	min	min	min	min	min	min	min	min	min		
				max	max	max	max	max	max	max	max	max	max	max		
				MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN		
s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.						
I2c	March 1972		musc 10	---	---	---	---	---	---	---	---	---	---	---	---	#7
"	"		liver 10	---	---	---	---	---	---	---	---	---	---	---	---	#7
"	April 1972		liver 10	---	---	---	---	---	---	---	---	---	---	---	---	#7
"	"	24 cm	liver 10	---	---	---	---	---	---	---	---	---	---	---	---	#7
"	May 1972	28 cm	liver 10	---	---	---	---	---	---	---	---	---	---	---	---	#7
"	June 1972	29 cm	liver 10	---	---	---	---	---	---	---	---	---	---	---	---	#7
"	"	32 cm	liver 10	---	---	---	---	---	---	---	---	---	---	---	---	#7

(Continued on next page)

TABLE 45c Results of Base-Line Survey: Metals in fish and shellfish

WINTER FLOUNDER (Pseudopleuronectes americanus) (page 2)

Source	Date of Collection	Year-Class or Length	Type of Tissue & No. in Sample	Concentration (in ppm, wet weight)												Notes and Source of Information
				Hg	Zn	Cu	Cd	Pb	Cr	Co	As	Ag	Ni	Mn		
				min	min	min	min	min	min	min	min	min	min	min		
				max	max	max	max	max	max	max	max	max	max	max		
				MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN		
s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.					
I2c	July 1973	28 cm	liver 10	---	---	---	---	---	---	---	---	---	---	---	---	#7
				---	---	---	---	---	---	---	---	---	---	---	---	
				---	---	---	---	---	---	---	---	---	---	---	---	
				---	---	---	---	---	---	---	---	---	---	---	---	
"	April 1972	26 cm	liver 10	0.05	28.	5.1	<0.1	<0.8			0.17	0.6	2.5			#7
				---	---	---	---	---	---	---	---	---	---	---	---	
				---	---	---	---	---	---	---	---	---	---	---	---	

TABLE 45d Results of Base-Line Survey: Metals in fish and shellfish

WINTER FLOUNDER (Pseudopleuronectes americanus)

Source	Date of Collection	Year-Class or Length	Type of Tissue & No. in Sample	Concentration (in ppm, wet weight)												Notes and Source of Information	
				Hg	Zn	Cu	Cd	Pb	Cr	Co	As	Ag	Ni	Mn			
				min	min	min	min	min	min	min	min	min	min	min	min	min	
				max	max	max	max	max	max	max	max	max	max	max	max	max	
				MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	
				s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	
I2b	July 1973	25 cm	liver 10	---	---	---	---	---	---	---	---	---	---	---	---	---	#7
				24.	10.7	<0.2	<1.5	<0.5				<0.2	<1.0	0.4			
				---	---	---	---	---	---	---	---	---	---	---	---	---	
"	May 1972	27 cm	liver 10	<0.03	45.	13.8	<0.2	<1.4				0.8	<0.5	1.2			#7
				---	---	---	---	---	---	---	---	---	---	---	---	---	

TABLE 46 Results of Base-Line Survey: Metals in fish and shellfish

LOBSTER (Homarus americanus)

Source	Date of Collection	Year-Class or Length	Type of Tissue & No. in Sample	Concentration (in ppm, wet weight)												Notes and Source of Information	
				Hg	Zn	Cu	Cd	Pb	Cr	Co	As	Se	Ag	Rb	min		
				min	min	min	min	min	min	min	min	min	min	min	min		max
				max	max	max	max	max	max	max	max	max	max	max	max		max
				MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN		
				s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.		
I4c	September 1971	6-19 cm		---	---	---	---	---	---	---	---	---	---	---	---	#3 Muscle from tail only	
				0.31													
I2c	June 1971		Musc 6-10	---	30.2	---	---	---	*	*	---	2.0	0.5	1.0	---	#4	
"	"		Digest. gland 6-10	---	39.0	---	---	---	*	0.11	---	2.9	*	*	---	#4	

* Below detection limits

TABLE 47a Results of Base-Line Survey: Metals in fish and shellfish

ROCK CRAB (Cancer irroratus)

Source	Date of Collection	Year-Class or Length	Type of Tissue & No. in Sample	Concentration (in ppm, wet weight)												Notes and Source of Information	
				Hg	Zn	Cu	Cd	Pb	Cr	Co	As	Se	Ag	Rb	min		
				min	min	min	min	min	min	min	min	min	min	min	min	max	
				MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	
				s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.		
I4b	1971		musc		35.0					*	0.2		1.0	1.9	*		#4
					35.0					*	0.2		1.0	1.9	*		
					35.0					---	0.2		1.0	1.9	---		
I2c	"		musc		24.7					*	*		1.0	*	*		#4
					48.4					0.8	0.04		2.2	0.8	1.5		
					31.4					< 0.5	< 0.03		1.4	< 0.5	< 1.3		
I7a	"		musc		28.0					*	*		1.0	0.5	*		#4
					36.5					0.2	0.10		1.0	0.9	1.0		
					32.2					< 0.2	< 0.1		1.0	0.7	< 1.0		
M2b	"		musc		29.5					*	*		1.0	0.2	*		#4
					45.0					0.5	0.10		1.6	0.2	1.0		
					37.2					< 0.5	< 0.1		1.3	0.2	< 1.0		
D9c	"		musc		25.5					0.3	0.04		2.8	0.1	0.7		#4
					77.9					0.6	0.10		5.5	0.2	1.3		
					52.8					0.5	0.06		3.6	0.15	1.0		
I4b	"		Digest. gland		25.0					*	0.2		3.7	29.5	*		#4
					25.0					*	0.2		3.7	29.5	*		
					25.0					---	0.2		3.7	29.5	---		
I2c	"		"		13.0					*	*		1.3	*	*		#4
					24.5					0.8	0.22		1.7	10.0	1.5		
					18.2					< 0.8	< 0.16		1.5	< 4.0	< 1.2		

* Below detection levels

TABLE 47a Results of Base-Line Survey: Metals in fish and shellfish

ROCK CRAB (Cancer irroratus) (page 2)

Source	Date of Collection	Year-Class or Length	Type of Tissue & No. in Sample	Concentration (in ppm, wet weight)											Notes and Source of Information
				Hg	Zn	Cu	Cd	Pb	Cr	Co	As	Se	Ag	Rb	
				min	min	min	min	min	min	min	min	min	min	min	min
				max	max	max	max	max	max	max	max	max	max	max	max
				MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN
				s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	
I7a	1971		Digest. gland	16.0					*	*		1.5	2.5	*	
				27.4					0.6	*		3.3	16.5	0.6	#4
				21.7					< 0.3	---		2.4	9.5	< 0.3	
				---					---	---		---	---	---	
M2b	"	"	"	28.1					*	0.21		1.4	2.4	0.9	
				34.9					0.6	0.25		2.1	3.2	1.7	#4
				31.5					< 0.4	0.23		1.7	2.8	1.3	
				---					---	---		---	---	---	

TABLE 47b Results of Base-Line Survey: Metals in fish and shellfish

ROCK CRAB (Cancer irroratus)

Source	Date of Collection	Year-Class 'or Length	Type of Tissue & No. in Sample	Concentration (in ppm, wet weight)													Notes & Source of In- forma- tion	
				Hg min max MEAN s.d.	Zn min max MEAN s.d.	Cu min max MEAN s.d.	Cd min max MEAN s.d.	Pb min max MEAN s.d.	Cr min max MEAN s.d.	Cc min max MEAN s.d.	As min max MEAN s.d.	Se min max MEAN s.d.	Ag min max MEAN s.d.	Rb min max MEAN s.d.	Mn min max MEAN s.d.	Ni min max MEAN s.d.		
D9c	1971		Digest. gland		21.0 45.8 32.4 ---					0.3 1.0 0.6 ---	0.05 0.20 0.14 ---		1.7 2.4 2.0 ---	2.3 4.4 3.8 ---	0.1 2.1 1.1 ---		#4	
"	"		gills	< 4 13.3 8.6 ---					3.8 3.9 3.85 ---	0.3 0.4 0.35 ---		0.6 0.9 0.7 ---	0.5 0.8 0.7 ---	0.4 2.5 1.2 ---			#4	
"	"		musc	---	---	---	---	---	---	---	---	---	---	---	---	---	---	#6
				0.18 0.02	64.4 7.0	13.0 1.7	1.0 1.34	3.4 3.2	0.6 0.12				0.28 0.7		28.7 4.5			
I2c	1971 1972		musc	---	---	---	---	---	---	---	---	---	---	---	---	---	---	#6
				0.19 0.03	32.1 3.8	14.8 0.5	< 0.1 ---	< 1.3 ---	< 0.5 ---				0.79 0.2		0.8 0.1	0.8 0.2		
"	1972		musc 40	---	---	---	---	---	---	---	---	---	---	---	---	---	---	#6
				---	---	25.4 5.	< 0.1 ---	< 1.1 ---	< 0.4 ---				0.24 0.03		1.1 0.08	1.5 ---		
I7a	1971		musc	---	---	---	---	---	---	---	---	---	---	---	---	---	---	#6
				0.16 0.05	37.3 ---		0.08 ---	0.9 ---	< 0.3 ---			1.9 ---		0.38 0.08		0.4 0.9		
M2b	1971		musc	---	---	---	---	---	---	---	---	---	---	---	---	---	---	#6
				0.15 0.02	35.5 ---		< 0.1 ---	< 0.5 ---	< 0.5 ---					0.26 0.10		0.8 ---	< 0.7 ---	

(Continued on next page)

TABLE 47b Results of Base-Line Survey: Metals in Fish and Shellfish

ROCK CRAB (Cancer irroratus)

(page 2)

Source	Date of Collection	Year-Class or Length	Type of Tissue & No. in Sample	Concentration (in ppm, wet weight)												Notes & Source of Information	
				Hg	Zn	Cu	Cd	Pb	Cr	Co	As	Se	Ag	Rb	Mn		Ni
				min	min	min	min	min	min	min	min	min	min	min	min		min
				max	max	max	max	max	max	max	max	max	max	max	max		max
				MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN		MEAN
s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.					
D9c	1971		Digest. gland	---	---	---	---	---	---	---	---	---	---	---	---	#6	
				0.09	31.2	161.	1.3	1.2	3.1	2.5							
				0.01	3.1	80.1	0.3	0.4	0.4	0.8							
I2c	1971		"	---	---	---	---	---	---	---	---	---	---	---	#6		
	1972			1.9	18.1	73.	1.1	1.3	<0.6	3.4	<0.6	1.3					
	0.3			1.5	10.	0.3	---	---	0.6	---	0.1						

TABLE 47c Results of Base-Line Survey: Metals in fish and shellfish

ROCK CRAB (Cancer irroratus)

Source	Date of Collection	Year-Class or Length	Type of Tissue & No. in Sample	Concentration (in ppm, wet weight)												Notes and Source of Information	
				Hg	Zn	Cu	Cd	Pb	Cr	Co	As	Se	Ag	Mn	Ni		
				min	min	min	min	min	min	min	min	min	min	min	min	min	
				max	max	max	max	max	max	max	max	max	max	max	max	max	
				MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	
				s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	
I2c	1972		Digest.. gland 40	---	---	---	---	---	---	---	---	---	---	---	---	---	#6
					18.5	48.		< 0.6	< 0.5				2.1	3.0	1.1		
					0.2	5.							0.5				
I7a	1971		"	---	---	---	---	---	---	---	---	---	---	---	---	---	#6
				0.07	25.9		3.2	1.0	0.4				3.1	2.3	2.2		
							1.0	0.2	0.04						0.3		
M2b	1971		"	---	---	---	---	---	---	---	---	---	---	---	---	---	#6
				0.24	31.5	66.	4.8	0.8	0.5				2.6	2.3	2.8		
									0.1				0.2				
D9c	1971		Gills	---	---	---	---	---	---	---	---	---	---	---	---	---	#6
	1972						2.7	2.9	2.5				0.57	22.1	2.3		
							0.21	0.20	0.37				0.12	3.4	0.32		
I2c	1971		Gills	---	---	---	---	---	---	---	---	---	---	---	---	---	#6
	1972			0.03		28.6	1.0	3.1					0.87		1.9		
				0.01		4.5	0.16	0.70					0.31		0.29		
I7a	1971		Gills 20	---	---	---	---	---	---	---	---	---	---	---	---	---	#6
						26.5	0.65	1.5	0.80				0.70		0.9		
M2b	1971		Gills 50	---	---	---	---	---	---	---	---	---	---	---	---	---	#6
						46.4	1.1	0.9	0.83				0.60	5.7	1.2		
						15.1	0.32	0.12	0.11				0.22	0.72	0.11		

TABLE 48 Results of Base-Line Survey: Metals in fish and shellfish

CHANNELED WHELK (Busycon canaliculatum)

Source	Date of Collection	Year-Class or Length	Type of Tissue & No. in Sample	Concentration (in ppm, wet weight)												Notes and Source of Information
				Hg	Zn	Cu	Cd	Pb	Cr	Co	As	Se	Ag	Rb		
				min	min	min	min	min	min	min	min	min	min	min		
				max	max	max	max	max	max	max	max	max	max	max		
				MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN		
s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.					
D9d	1971		musc		23.5					*	*		*	*	*	
					35.0					0.7	*		0.4	0.3	1.7	#4
					27.4					<0.3	*		<0.2	<0.2	<1.3	
					---					---	---		---	---	---	
D9c	1971		musc		22.8					*	*		*	*	*	
					25.0					0.4	*		0.4	*	<1.1	#4
					23.9					<0.4	*		<0.4	*	<1.1	
					---					---	---		---	---	---	

TABLE 49 Results of Base-Line Survey: Metals in fish and shellfish

SURF CLAM (SPISULA SOLIDISSIMA)

Source	Date of Collection	Year-Class or Length	Type of Tissue & No. in Sample	Concentration (in ppm, wet weight)													Notes & Source of Information	
				Hg	Zn	Cu	Cd	Pb	Cr	Co	As	Se	Rb	Ag	Mn	Ni		
				min	min	min	min	min	min	min	min	min	min	min	min	min		min
				max	max	max	max	max	max	max	max	max	max	max	max	max		max
MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN				
s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.				
M2b	April 1971		musc 6-10	---	---	---	---	---	---	---	---	---	---	---	---	---	---	#4
				---	22.5	---	---	---	*	0.20	---	0.7	*	*	---	---	---	#4
"	"		Digest. gland 6/10	---	---	---	---	---	---	---	---	---	---	---	---	---	---	#4
				---	17.0	---	---	---	*	0.40	---	1.1	*	3.7	---	---	---	#4
I7a	"		musc 6-10	---	---	---	---	---	---	---	---	---	---	---	---	---	---	#4
				---	15.2	---	---	---	1.3	0.30	---	0.7	1.5	0.7	---	---	---	#4
I2a	June 1971		musc 6-10	---	---	---	---	---	---	---	---	---	---	---	---	---	---	#4
				---	15.6	---	---	---	0.7	0.16	---	0.8	1.2	1.3	---	---	---	#4
"	"		musc 6-10	---	---	---	---	---	---	---	---	---	---	---	---	---	---	#4
				---	---	---	---	---	2.7	0.35	---	0.8	2.3	1.0	---	---	---	#4
I7a	1971		musc 10-30	---	---	---	---	---	---	---	---	---	---	---	---	---	---	#6
				---	< 0.05	1.1	< 0.2	< 0.5	< 0.7	---	---	---	---	< 0.2	1.9	1.4	---	#6
M2b	1971		musc 30-40	---	---	---	---	---	---	---	---	---	---	---	---	---	---	#6
				---	< 0.05	18.4	0.9	< 0.1	< 0.5	< 0.5	---	---	---	< 0.1	0.5	1.2	±0.2	#6
				---	---	---	---	---	---	---	1.3	---	---	---	---	---	---	#6
				---	---	---	---	---	---	---	±0.09	---	---	---	---	---	---	#6

* Below detection levels

TABLE 50 Results of Base-Line Survey: Metals in fish and shellfish

OYSTERS (CRASSOSTREA VIRGINICA)

Source	Date of Collection	Year-Class or Length	Type of Tissue & No. in Sample	Concentration (in ppm, wet weight)											Notes and Source of Information		
				Hg	Zn	Cu	Cd	Pb	Cr	Tin	Ag	Ni	Mn	Mo		V	
				min	min	min	min	min	min	min	min	min	min	min		min	
				max	max	max	max	max	max	max	max	max	max	max		max	
				MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN		MEAN	
s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.						
D8			9	0.000	500.0	162.500	4.310	0.710	1.065		0.640	0.710	6.910				#1 Whole animal minus shell
				0.100	960.7	504.640	5.680	6.070	2.140	2.570	6.860	14.640					
				0.018	604.3	298.856	4.949	2.605	1.552	1.530	2.428	10.583					
				0.031	148.6	33.310	0.432	1.735	0.310	0.550	1.792	2.794					
M2			10	0.000	111.25	5.250	0.100	0.120	0.030	0.000	0.020	0.085	0.260	0.000	0.000		#1
				0.020	1046.88	26.000	0.920	1.370	0.630	5.090	0.570	0.440	1.640	0.280	0.620		
				0.004	602.46	15.479	0.728	0.469	0.168	0.817	0.187	0.308	0.970	0.082	0.181		
				0.008	306.92	6.012	0.240	0.375	0.206	1.519	0.177	0.105	0.411	0.091	0.201		
D8			Adults 12	---	---	---	---	---	---	---	---	---	---	---	---	#2	
				10460.	2208.	28.1	<4.2			12.1							
D8			Pooled eggs from 8 adults	---	---	---	---	---	---	---	---	---	---	---	---	#2	
				82.4	28.9	<1.6	<10.0			<1.6							
D8			Adults 13	---	---	---	---	---	---	---	---	---	---	---	---	#2	
				8300.	1260.	15.6	7.1			16.4							
D8			Pooled eggs from 8 adults	---	---	---	---	---	---	---	---	---	---	---	---	#2	
				65.9	27.8	<1.2	<9.9			<1.2							
				19.6	7.80	---	---	---	---	---	---	---	---	---	---		

TABLE 51 Results of Base-Line Survey: Metals in fish and shellfish

MERCENARIA CLAMS (Mercenaria mercenaria)

Source	Date of Collection	Year-Class or Length	Type of Tissue & No. in Sample	Concentration (in ppm, wet weight)												Notes and Source of Information
				Hg	Zn	Cu	Cd	Pb	Cr	Ag	Ni	Mn	Mo	V	Tin	
				min	min	min	min	min	min	min	min	min	min	min	min	
				max	max	max	max	max	max	max	max	max	max	max	max	
				MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	
s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.					
D8			10	0.000	18.15	3.220	0.190	0.360	0.385	0.070	0.740	12.500				#1 Whole animal minus shell
				0.080	53.21	8.805	0.680	2.860	0.960	1.360	1.695	25.710				
				0.030	28.01	6.018	0.483	1.386	0.667	0.342	1.280	17.894				
				0.030	10.18	1.671	0.169	0.770	0.164	0.391	0.342	4.178				
H9			22	0.000	7.00	0.920	0.110	0.150	0.060	0.080	0.550	0.400	0.030	0.000	0.110	#1
				0.065	50.43	2.545	0.745	1.440	0.410	0.530	1.430	3.620	1.050	0.765	2.640	
				0.021	14.95	1.449	0.218	0.573	0.200	0.206	0.956	1.336	0.348	0.251	0.652	
				0.019	9.89	0.415	0.127	0.271	0.083	0.124	0.258	0.747	0.312	0.213	0.530	

TABLE 52 Results of Base-Line Survey: Metals in fish and shellfish

SCALLOPS (Placopecten magellanicus)

Source	Date of Collection	Year-Class cr Length	Type of Tissue & No. in Sample	Concentration (in ppm, wet weight)											Notes and Source of Information		
				Hg	Zn	Cu	Cd	Pb	Cr	Co	As	min	min	min		min	
				min	min	min	min	min	min	min	min	min	min	min	min	min	
				max	max	max	max	max	max	max	max	max	max	max	max	max	
				MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	
				s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	
I7d	June 1971	5-7 cm	musc	---	---	---	---	---	---	---	---	---	---	---	---	---	#3 muscle only
				<0.05													

TABLE 52 Results of Base-Line Survey: Metals in fish and shellfish

SQUID (*Illex illecebrosus*)

Source	Date of Collection	Year-Class or Length	Type of Tissue & No. in Sample	Concentration (in ppm, wet weight)												Notes and Source of Information	
				Hg	Zn	Cu	Cd	Pb	Cr	Co	As	Ag	Ni	Mn	min		
				min	min	min	min	min	min	min	min	min	min	min	min	min	
				max	max	max	max	max	max	max	max	max	max	max	max	max	
				MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	
				s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	
J2			9	0.000	8.06	3.380	0.180	0.000	0.000			0.000	0.000				#1
				0.66	18.75	13.790	0.340	0.940	0.640			0.155	0.68				
				0.05	14.90	9.148	0.266	0.391	0.157			0.082	0.29				
				0.10	3.26	3.260	0.053	0.321	0.193			0.056	0.20				
J1d	November 1971			< 0.05													#3
I6	April 1971			< 0.05													#5
J1d	August 1971	18-22 cm		< 0.05													#3
I4c	April 1971			< 0.05													#3