STOMACH CONTENTS OF TWENTY-NINE FISH SPECIES FROM FIVE REGIONS IN THE NORTHWEST ATLANTIC--DATA REPORT

by

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INTRODUCTION

The food habits of 29 species of marine fish from five ecological areas between Cape Hatteras (southerly) and western Nova Scotia (northerly) were investigated. These areas are referred to as the Middle Atlantic, Southern New England, Georges Bank, Gulf of Maine and Western Nova Scotia. This report presents the areal food habits from fish stomach collections made during the years from 1969 through 1972. The information obtained establishes a quantitative data base on the foods of some of the more abundant demersal fish species.

METHODS AND MATERIALS

Stomach samples were obtained aboard the ALBATROSS IV from fish caught with an otter trawl during spring and fall groundfish surveys. The geographical range of the surveys (shelf waters from Cape Hatteras to Nova Scotia) can be seen in Figure 1. The collection of 18,583 samples,representing 29 species of fish, was made during the years from 1969 through 1972. The yearly distribution of the samples is shown on page 7. A more detailed distribution (by species and year) is listed in the appendix. Tows were made at depths ranging from 27 m to 366 m for a period of 30 minutes. Fish stomachs were excised aboard the ship, labeled by station and species, pooled regardless of size, and preserved in 10% Formalin[1].

At the laboratory the samples were opened and the contents identified to the lowest possible taxa. Each prey species was then counted, damp dried (blotted dry), weighed and recorded. When numerous amounts of small animals occurred an estimate of the total number was derived by examining a small sample and then multiplying the results by the appropriate expansion factor (determined by the ratio of the subsample weight to the total weight). Stomachs were considered empty when nothing, or a trace amount of unidentifiable material was found in them. Reduction of the data was accomplished by the use of computer facilities at the laboratory.

DATA PRESENTATION

The food habit data are presented in tabular form, arranged in phyletic sequence, with the predator species of each family alphabetized to generic and specific names. The total number of samples examined within each area, the portion of that total which was empty, and the mean weight per stomach, are given at the bottom of the table. The mean weight per stomach was calculated by dividing the total stomach contents weight by the total number of stomachs. Included with each species are the total number of specimens examined, the percent of the total number with empty stomachs, and the mean weight per stomach for all samples (found on the lower right hand portion of the tables).

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[1]Reference to trade names does not imply endorsement by the National Marine Fisheries Service, NOAA.

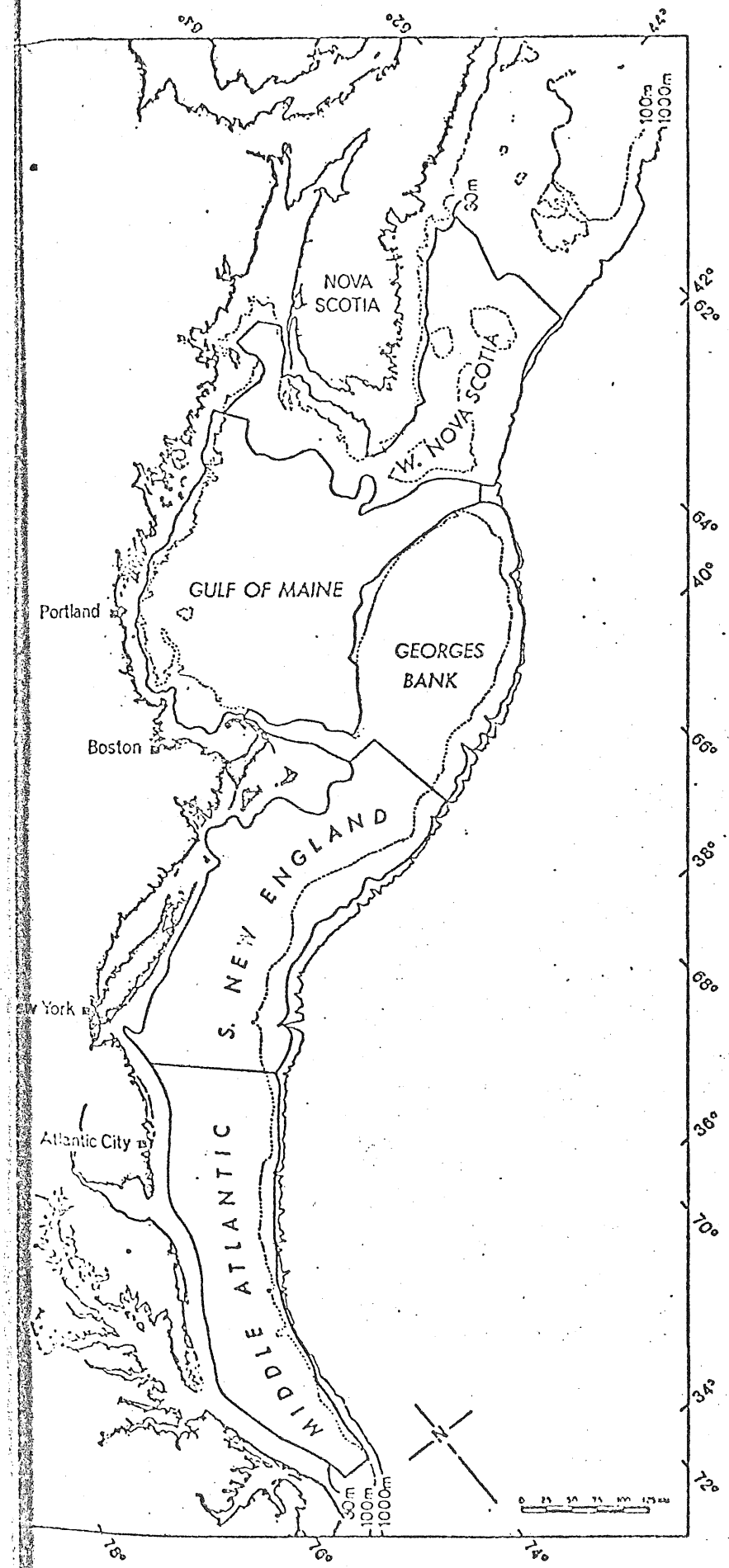

Figure 1. Areas sampled from 1969 to 1972 by the Groundfish Survey Unit, NEFC, Woods Hole.

Food habit data are given for each area where samples were collected. Results of the analysis are presented as a percentage of the total stomach content weight for each prey group. The cumulative percentage of the total stomach content weight for each major food category is underlined. The percent stomach content weights for more specific food groups are offset. Items of little dietary significance, parasites, and unidentifiable food organisms (because of the degree of digestion) are listed as animal remains. On any particular table, adding all underlined percent weights within an area will yield 100%.

Yearly and seasonal distribution of stomach samples collected between 1969 and 1972 from five regions in the northwest Atlantic.

CRUISE	YEAR	SEASON	NO. SPECIES	NO. FISH
69-11	1969	Fall	20	1,528
70-6	1970	Fall	18	2,716
71-1	1971	Spring	21	3,703
71-4	1971	Fall	5	80
71-5	1971	Fall	1	2
71-6	1971	Fall	15	1,431
72-1	1972	Winter	14	481
72-2	1972	Spring	27	4,694
72-5	1972	Summer	3	42
72-8	1972	Fall	27	3,358
*Other			4	548
			Total	18,583

*Samples from 1962 (3), 1973 (48), 1974 (497) are included in the tables so indicated.

Table 1. Stomach contents of *Squalus acanthias* (Linnaeus) expressed as percent of weight, by ecological area.

Stomach content group	Ecological area					
	Middle Atlantic	Southern New England	Georges Bank	Gulf of Maine	Western Nova Scotia	
	% wt	% wt	% wt	% wt	% wt	
CNIDARIA	-	1.1	-	-	-	
Hydrozoans	-	1.1	-	-	-	
NEMERTEA	-	-	0.2	-	0.3	
ANNELIDA	0.2	0.1	0.2	0.1	-	
SIPUNCULIDA	-	0.1	6.2	-	-	
CRUSTACEA	1.0	2.0	1.3	2.6	6.8	
Caridean shrimp	-	-	-	2.4	-	
Anomuran crabs	0.9	0.2	0.4	-	4.7	
Brachyuran crabs	0.1	1.5	0.4	-	-	
Euphausiids	-	-	-	0.2	2.1	
Mysids	-	-	0.1	-	-	
Unidentified	-	0.3	0.4	-	-	
MOLLUSCA	53.0	15.5	1.6	-	-	
Gastropods	-	-	0.1	-	-	
Cephalopods	53.0	15.5	1.5	-	-	
TUNICATA	-	0.1	-	-	-	
PISCES	45.4	80.1	88.9	87.3	88.9	
Clupeidae	-	13.5	6.0	18.4	-	
Scombridae	28.4	28.9	16.9	-	-	
Pleuronectiformes	-	2.0	12.2	-	-	
Gadidae	-	7.6	-	-	-	
Fish eggs	-	-	2.8	-	0.1	
Unidentified	17.0	28.1	51.0	68.9	88.8	
ANIMAL REMAINS	0.4	1.0	1.6	9.9	4.0	
SAND AND ROCK	-	-	-	0.1	-	
						Total
Stomachs analyzed	34	159	152	26	11	382
Number empty (%)	41.2	20.8	22.4	11.6	63.6	23.8
Mean weight per stomach (g)	36.1	27.7	19.3	21.2	4.9	24.0

Table 2. Stomach contents of *Raja erinacea* (Mitchill) expressed as percent of weight, by ecological area.

Stomach content group	Ecological area					
	Middle Atlantic	Southern New England	Georges Bank	Gulf of Maine	Western Nova Scotia	
	% wt	% wt	% wt	% wt	% wt	
NEMERTEA	5.0	-	0.2	-	-	
ANNELIDA	7.6	19.8	15.6	-	-	
CRUSTACEA	84.6	50.3	66.2	-	-	
Caprellid amphipods	0.2	0.5	-	-	-	
Gammaridean amphipods	7.3	15.3	10.0	-	-	
Hyperid amphipods	-	-	0.1	-	-	
Caridean shrimp	5.1	6.8	9.9	-	-	
Anomuran crabs	1.4	5.8	25.1	-	-	
Brachyuran crabs	51.0	14.3	6.4	-	-	
Isopoda	4.9	0.9	2.2	-	-	
Unidentified	14.7	6.7	12.5	-	-	
MOLLUSCA	-	5.6	0.2	-	-	
Pelecypods	-	5.6	-	-	-	
Cephalopods	-	-	0.2	-	-	
PISCES	1.3	8.5	4.9	-	-	
Pleuronectiformes	-	-	0.7	-	-	
Gadidae	-	2.6	-	-	-	
Cottidae	-	-	1.3	-	-	
Fish eggs	-	1.1	-	-	-	
Unidentified	1.3	4.8	2.9	-	-	
ANIMAL REMAINS	-	15.8	12.9	-	-	
SAND AND ROCK	1.5	-	-	-	-	
						Total
Stomachs analyzed	15	203	174	-	-	392
Number empty (%)	6.7	9.9	10.3	-	-	9.9
Mean weight per stomach (g)	3.5	2.3	2.2	-	-	2.23

*Includes 48 stomachs from 1973.

Alewife

Table 3. Stomach contents of *Alosa pseudoharengus* (Wilson) expressed as percent of weight, by ecological area.

Stomach content group	Ecological area					
	Middle Atlantic	Southern New England	Georges Bank	Gulf of Maine	Western Nova Scotia	
	% wt	% wt	% wt	% wt	% wt	
CRUSTACEA	-	11.5	94.0	100.0	83.0	
Gammaridean amphipods	-	0.5	2.0	-	-	
Caridean shrimp	-	-	0.8	-	-	
Brachyuran crabs	-	-	0.1	-	-	
Euphausiids	-	-	13.0	100.0	79.7	
Mysids	-	0.3	75.6	-	-	
Copepods	-	2.7	0.1	-	-	
Unidentified	-	8.0	2.4	-	3.3	
MOLLUSCA	-	56.0	-	-	-	
Pteropods	-	56.0	-	-	-	
CHAETOGNATHA	-	31.2	-	-	-	
TUNICATA	-	-	3.7	-	-	
PISCES	-	-	-	-	15.4	
ANIMAL REMAINS	-	1.3	2.3	-	1.6	
						Total
Stomachs analyzed	-	40	52	22	22	136
Number empty (%)	-	5.0	9.6	4.5	22.7	9.6
Mean weight per stomach (g)	-	0.4	1.1	0.5	1.1	0.8

Table 4. Stomach contents of *Clupea harengus harengus* (Linnaeus) expressed as percent of weight, by ecological area.

Stomach content group	Ecological area					
	Middle Atlantic	Southern New England	Georges Bank	Gulf of Maine	Western Nova Scotia	
	% wt	% wt	% wt	% wt	% wt	
CNIDARIA	-	-	0.1	-	-	
Hydrozoans	-	-	0.1	-	-	
CRUSTACEA	1.8	27.7	54.4	99.8	86.0	
Gammaridean amphipods	-	0.1	0.1	0.1	-	
Caridean shrimp	-	1.6	-	-	-	
Cumaceans	-	6.2	-	-	-	
Euphausiids	-	0.3	51.2	99.6	86.0	
Copepods	1.8	16.5	1.9	-	-	
Unidentified	-	3.0	1.2	0.1	-	
MOLLUSCA	-	6.6	2.5	-	0.3	
Pteropods	-	6.6	2.5	-	0.3	
CHAETOGNATHA	-	57.4	28.6	-	-	
TUNICATA	-	0.1	0.1	-	-	
PISCES	-	1.1	-	-	-	
Ammodytidae	-	0.6	-	-	-	
Unidentified	-	0.5	-	-	-	
ANIMAL REMAINS	98.2	7.1	14.3	0.2	13.7	
						Total
Stomachs analyzed	6	198	98	28	14	344
Number empty (%)	0.0	15.2	21.4	25.0	7.1	17.2
Mean weight per stomach (g)	0.1	0.3	0.4	1.2	0.4	0.4

*Includes 219 stomachs from 1974.

Table 5. Stomach contents of *Lophius americanus* (Valenciennes) expressed as percent of weight, by ecological area.

Stomach content group	Ecological area					
	Middle Atlantic	Southern New England	Georges Bank	Gulf of Maine	Western Nova Scotia	
	% wt	% wt	% wt	% wt	% wt	
CRUSTACEANS	3.4	3.2	0.1	0.1	0.3	
Caridean shrimp	0.6	0.1	0.1	0.7	0.3	
Brachyuran crabs	2.8	-	-	-	-	
Euphausiids	-	-	-	0.1	-	
Unidentified	-	3.1	-	0.2	-	
MOLLUSCA	30.0	28.2	2.4	6.0	-	
Cephalopods	30.0	28.2	2.4	6.0	-	
PISCES	66.4	63.2	97.2	92.9	99.7	
Clupeidae	-	1.3	-	-	-	
Scombridae	-	-	20.9	-	-	
Pleuronectiformes	2.4	-	-	-	29.9	
Gadidae	35.5	8.4	24.2	11.2	35.7	
Cottidae	-	-	5.2	-	-	
Unidentified	28.5	53.5	46.9	81.7	34.1	
ANIMAL REMAINS	0.2	5.4	0.3	0.1	-	
						Total
Stomachs analyzed	92	75	25	30	28	250
Number empty (%)	47.8	41.3	44.0	50.0	60.7	47.2
Mean weight per stomach (g)	15.0	26.4	132.1	38.6	50.1	36.9

Table 6. Stomach contents of *Gadus morhua* (Linnaeus) expressed as percent of weight, by ecological area.

Stomach content group	Ecological area					
	Middle Atlantic	Southern New England	Georges Bank	Gulf of Maine	Western Nova Scotia	
	% wt	% wt	% wt	% wt	% wt	
CNIDARIA	-	-	0.7	-	0.2	
ANNELIDA	-	6.4	1.1	0.2	0.9	
CRUSTACEA	-	20.7	16.6	25.5	27.1	
Gammaridean amphipods	-	1.6	0.5	0.1	-	
Caridean shrimp	-	1.1	3.8	4.0	4.5	
Anomuran crabs	-	3.3	3.1	0.2	3.3	
Brachyuran crabs	-	12.7	5.8	15.8	5.7	
Astacidean crabs	-	-	0.1	-	-	
Euphausiids	-	-	0.4	1.2	8.7	
Mysids	-	-	0.7	-	-	
Unidentified	-	2.0	2.2	4.2	4.9	
MOLLUSCA	-	1.8	15.2	0.6	0.6	
Gastropods	-	1.3	4.4	0.3	0.3	
Pelecypods	-	0.4	9.2	-	-	
Cephalopods	-	-	-	0.3	-	
Unidentified	-	0.1	1.6	-	0.3	
ECHINODERMATA	-	0.3	0.4	0.4	3.5	
PISCES	-	64.2	60.7	70.0	60.5	
Ammodytidae	-	-	0.1	-	11.2	
Clupeidae	-	32.8	30.2	19.8	11.9	
Scombridae	-	6.4	-	8.5	1.7	
Pleuronectiformes	-	3.7	5.1	0.3	-	
Gadidae	-	-	2.5	5.7	6.4	
Cottidae	-	1.1	2.7	-	-	
Fish eggs	-	-	8.6	0.2	-	
Unidentified	-	20.2	11.5	35.5	29.3	
ANIMAL REMAINS	-	5.7	2.9	2.9	6.1	
SAND AND ROCK	-	0.9	2.4	0.4	1.1	
						Total
Stomachs analyzed	-	79	817	364	439	1699
Number empty (%)	-	6.3	6.5	9.3	8.0	7.5
Mean weight per stomach (g)	-	46.6	29.9	31.3	18.3	28.0

Table 7. Stomach contents of *Melanogrammus aeglefinus* (Linnaeus) expressed as percent of weight, by ecological area.

Stomach content group	Ecological area					
	Middle Atlantic	Southern New England	Georges Bank	Gulf of Maine	Western Nova Scotia	
	% wt	% wt	% wt	% wt	% wt	
CNIDARIA	-	-	0.1	0.2	0.1	
ANNELIDA	14.3	4.5	23.9	13.1	11.8	
CRUSTACEA	2.2	81.9	23.7	13.2	14.5	
Caprellid amphipods	-	-	-	-	0.3	
Gammaridean amphipods	-	2.1	9.9	1.6	3.6	
Caridean shrimp	0.3	1.2	0.7	7.3	1.5	
Anomuran crabs	-	0.9	0.9	0.3	3.3	
Brachyuran crabs	-	0.8	0.2	0.5	0.4	
Isopods	1.3	-	0.2	0.1	0.2	
Euphausiids	-	-	5.5	1.5	1.7	
Mysids	-	-	0.2	-	-	
Unidentified	0.6	76.9	6.1	1.9	3.5	
MOLLUSCA	0.4	0.7	6.2	1.5	2.9	
Gastropods	0.4	-	0.4	0.4	0.3	
Pelecypods	-	0.7	5.2	0.8	1.9	
Unidentified	-	-	0.6	0.3	0.7	
ECHINODERMATA	-	1.4	12.5	56.6	48.9	
Asteroids	-	0.1	0.2	-	0.8	
Ophiuroids	-	-	9.3	43.9	34.4	
Echinoids	-	1.2	2.5	9.9	9.0	
Holothuroids	-	0.1	0.5	2.8	4.2	
Unidentified	-	-	-	-	0.5	
TUNICATA	-	-	-	0.2	1.2	
PISCES	-	-	-	1.7	3.8	
ANIMAL REMAINS	1.2	8.5	10.0	11.0	13.8	
SAND AND ROCK	81.9	3.0	23.6	2.5	3.0	
						Total
Stomachs analyzed	10	27	408	266	505	1216
Number empty (%)	0.0	11.1	8.6	9.0	9.5	9.0
Mean weight per stomach (g)	3.2	4.1	5.8	6.6	5.0	5.6

Table 8. Stomach contents of *Merluccius bilinearis* (Mitchill) expressed as percent of weight, by ecological area.

Stomach content group	Ecological area					
	Middle Atlantic	Southern New England	Georges Bank	Gulf of Maine	Western Nova Scotia	
	% wt	% wt	% wt	% wt	% wt	
ANNELIDA	-	1.0	-	-	-	
CRUSTACEA	31.1	36.7	20.5	21.3	33.8	
Gammaridean amphipods	1.1	1.1	0.1	-	-	
Caridean shrimp	18.3	16.3	4.6	6.2	0.5	
Brachyuran crabs	-	-	-	0.1	-	
Cumaceans	-	0.1	-	-	-	
Euphausiids	8.0	14.4	13.2	12.4	28.3	
Mysids	0.3	0.7	-	0.2	0.1	
Copepods	-	-	-	-	0.1	
Unidentified	3.4	4.1	2.6	2.4	4.8	
MOLLUSCA	14.6	0.8	0.6	1.3	-	
Cephalopods	14.6	0.8	0.6	1.3	-	
CHAETOGNATHA	0.1	0.1	-	-	-	
PISCES	48.8	58.8	78.2	76.2	65.0	
Clupeidae	-	-	-	32.0	-	
Scombridae	-	29.6	-	27.9	-	
Pleuronectiformes	0.1	0.1	-	-	-	
Gadidae	5.1	11.7	-	1.4	51.1	
Cottidae	0.1	0.1	-	-	-	
Unidentified	43.5	17.3	78.2	14.9	13.9	
ANIMAL REMAINS	5.4	2.6	0.7	1.2	1.2	
						Total
Stomachs analyzed	413	707	236	409	284	2049
Number empty (%)	34.6	33.7	26.3	34.7	33.5	33.2
Mean weight per stomach (g)	1.1	1.6	4.5	5.8	1.0	2.6

Table 9. Stomach contents of *Merluccius albidus* (Mitchill) expressed as percent of weight, by ecological area.

Stomach content group	Ecological area					
	Middle Atlantic	Southern New England	Georges Bank	Gulf of Maine	Western Nova Scotia	
	% wt	% wt	% wt	% wt	% wt	
CRUSTACEA	100.0	3.5	14.0	-	-	
Caridean shrimp	37.5	1.6	10.5	-	-	
Euphausiids	62.5	0.8	1.5	-	-	
Unidentified	-	1.1	2.0	-	-	
MOLLUSCA	-	-	5.1	-	-	
Cephalopods	-	-	5.1	-	-	
PISCES	-	96.4	80.4	-	-	
Gadidae	-	73.6	-	-	-	
Unidentified	-	22.8	80.4	-	-	
ANIMAL REMAINS	-	0.1	0.5	-	-	
						Total
Stomachs analyzed	4	28	44	-	-	76
Number empty (%)	25.0	46.4	65.9	-	-	56.6
Mean weight per stomach (g)	0.1	5.2	0.8	-	-	2.4

*Includes 3 stomachs from 1962.

Table 10. Stomach contents of *Phycis chesteri* (Goode and Bean) expressed as percent of weight, by ecological area.

Stomach content group	Ecological area					
	Middle Atlantic	Southern New England	Georges Bank	Gulf of Maine	Western Nova Scotia	
	% wt	% wt	% wt	% wt	% wt	
CRUSTACEA	-	100.0	95.7	75.5	99.6	
Caridean shrimp	-	-	18.7	-	-	
Euphausiids	-	100.0	50.2	46.0	72.7	
Unidentified	-	-	26.8	29.5	26.9	
ECHINODERMATA	-	-	0.7	-	-	
Echinoids	-	-	0.7	-	-	
PISCES	-	-	2.5	-	-	
Unidentified	-	-	2.5	-	-	
ANIMAL REMAINS	-	-	1.1	24.5	0.4	
						Total
Stomachs analyzed	-	8	59	7	7	81
Number empty (%)	-	75.0	59.3	42.9	0.0	54.3
Mean weight per stomach (g)	-	0.3	0.2	0.2	2.4	0.4

Table 11. Stomach contents of *Pollachius virens* (Linnaeus) expressed as percent of weight, by ecological area.

Stomach content group	Ecological area					
	Middle Atlantic	Southern New England	Georges Bank	Gulf of Maine	Western Nova Scotia	
	% wt	% wt	% wt	% wt	% wt	
CNIDARIA	-	-	1.0	-	-	
Hydrozoans	-	-	-	-	-	
ANNELIDA	-	-	0.1	-	0.1	
CRUSTACEA	92.6	-	70.7	68.7	51.1	
Caridean shrimp	92.6	-	3.3	59.4	10.4	
Euphausiids	-	-	65.2	6.8	40.0	
Mysids	-	-	0.1	-	-	
Unidentified	-	-	2.1	2.5	0.7	
MOLLUSCA	-	-	1.7	0.1	-	
Gastropods	-	-	0.1	-	-	
Pteropods	-	-	1.6	-	-	
Cephalopods	-	-	-	0.1	-	
TUNICATA	-	-	0.1	-	-	
PISCES	7.4	-	23.6	30.2	46.9	
Ammodytidae	-	-	-	-	0.6	
Clupeidae	7.0	-	0.9	3.1	-	
Gadidae	-	-	0.5	2.4	1.7	
Unidentified	0.4	-	22.2	24.7	44.6	
ANIMAL REMAINS	-	-	2.8	1.0	1.8	
SAND AND ROCK	-	-	-	-	0.1	
						Total
Stomachs analyzed	5	-	197	181	203	586
Number empty (%)	20.0	-	3.6	16.6	22.7	14.3
Mean weight per stomach (g)	36.3	-	12.8	24.2	10.4	15.7

Table 12. Stomach contents of *Urophycis chuss* (Walbaum) expressed as percent of weight, by ecological area.

Stomach content group	Ecological area					
	Middle Atlantic	Southern New England	Georges Bank	Gulf of Maine	Western Nova Scotia	
	% wt	% wt	% wt	% wt	% wt	
NEMERTEA	-	0.8	-	-	-	
PRIAPULIDA	-	-	-	-	5.2	
ANNELIDA	1.4	3.3	2.4	1.9	2.4	
CRUSTACEA	51.9	51.6	52.6	43.0	88.5	
Caprellid amphipods	0.2	0.4	0.1	-	-	
Gammaridean amphipods	0.2	5.0	3.7	1.2	1.3	
Caridean shrimp	17.9	11.5	17.7	13.8	73.2	
Anomuran crabs	20.7	15.8	14.0	1.5	3.2	
Brachyuran crabs	2.7	5.7	4.6	7.4	-	
Isopods	2.1	0.7	1.7	-	0.1	
Cumaceans	-	0.4	-	-	-	
Euphausiids	-	2.0	2.3	12.3	2.3	
Mysids	-	-	-	0.4	0.2	
Unidentified	8.1	10.1	8.5	6.4	8.2	
MOLLUSCA	0.3	5.2	20.0	2.5	-	
Gastropods	0.2	0.1	20.0	2.5	-	
Cephalopods	-	2.1	-	-	-	
Unidentified	0.1	3.0	-	-	-	
ECHINODERMATA	0.1	0.7	0.2	1.3	-	
PISCES	38.4	28.1	6.2	49.4	0.6	
Clupeidae	-	-	4.1	-	-	
Scombridae	-	0.6	-	-	-	
Pleuronectiformes	0.1	0.8	-	-	-	
Gadidae	-	2.4	-	-	-	
Cottidae	-	-	0.3	-	0.6	
Fish eggs	-	-	0.3	-	-	
Unidentified	38.3	24.3	1.5	49.4	-	
ANIMAL REMAINS	7.6	10.0	18.5	1.9	3.1	
SAND AND ROCK	0.3	0.3	0.1	-	0.2	
						Total
Stomachs analyzed	195	640	195	78	20	1128
Number empty (%)	11.8	15.5	23.1	20.5	10	16.4
Mean weight per stomach (g)	2.0	2.5	1.7	4.1	2.2	2.4

Table 13. Stomach contents of *Urophycis regius* (Walbaum) expressed as percent of weight, by ecological area.

Stomach content group	Ecological area					
	Middle Atlantic	Southern New England	Georges Bank	Gulf of Maine	Western Nova Scotia	
	% wt	% wt	% wt	% wt	% wt	
ANNELIDA	0.4	0.3	-	-	-	
CRUSTACEA	51.1	62.9	-	-	-	
Caprellid amphipods	0.1	-	-	-	-	
Gammaridean amphipods	7.0	-	-	-	-	
Hyperiid amphipods	11.3	16.1	-	-	-	
Caridean shrimp	10.9	16.2	-	-	-	
Anomuran crabs	10.9	19.8	-	-	-	
Brachyuran crabs	7.8	1.8	-	-	-	
Isopods	1.3	0.5	-	-	-	
Euphausiids	0.1	0.2	-	-	-	
Unidentified	1.7	8.3	-	-	-	
MOLLUSCA	32.9	2.5	-	-	-	
Pelecypods	1.1	-	-	-	-	
Cephalopods	31.8	2.5	-	-	-	
ECHINODERMATA	-	0.1	-	-	-	
PISCES	14.8	31.2	-	-	-	
Pleuronectiformes	0.3	2.2	-	-	-	
Gadidae	-	0.8	-	-	-	
Unidentified	14.5	28.2	-	-	-	
ANIMAL REMAINS	0.8	2.8	-	-	-	
SAND AND ROCK	-	0.2	-	-	-	
						Total
Stomachs analyzed	230	100	-	-	-	330
Number empty (%)	11.3	9	-	-	-	10.6
Mean weight per stomach (g)	0.7	1.3	-	-	-	0.9

Table 14. Stomach contents of *Urophycis tenuis* (Mitchill) expressed as percent of weight, by ecological area.

Stomach content group	Ecological area					
	Middle Atlantic	Southern New England	Georges Bank	Gulf of Maine	Western Nova Scotia	
	% wt	% wt	% wt	% wt	% wt	
ANNELIDA	-	0.2	0.1	0.2	0.1	
CRUSTACEA	-	2.6	45.5	20.0	10.7	
Gammaridean amphipods	-	-	0.1	-	-	
Caridean shrimp	-	1.1	37.4	12.6	4.7	
Anomuran crabs	-	0.5	1.0	0.1	0.1	
Brachyuran crabs	-	0.6	0.4	1.4	-	
Isopods	-	-	-	-	0.1	
Euphausiids	-	-	4.8	5.0	5.1	
Mysids	-	-	-	-	0.1	
Unidentified	-	0.4	1.8	0.9	0.6	
MOLLUSCA	-	7.4	7.5	0.4	0.8	
Gastropods	-	-	0.1	-	-	
Cephalopods	-	7.4	7.4	0.4	0.8	
PISCES	-	88.9	43.0	76.6	86.4	
Ammodytidae	-	-	-	-	5.4	
Scombridae	-	24.4	-	22.4	-	
Pleuronectiformes	-	-	-	3.3	-	
Gadidae	-	26.6	11.5	1.1	1.3	
Unidentified	-	37.9	31.5	49.8	79.7	
ANIMAL REMAINS	-	0.9	3.9	2.8	2.0	
						Total
Stomachs analyzed	-	79	128	312	91	610
Number empty (%)	-	29.1	28.9	36.5	20.9	31.6
Mean weight per stomach (g)	-	18.4	6.3	12.1	21.9	13.2

Table 15. Stomach contents of *Lepophidium ceruinum* (Good and Bean) expressed as percent of weight, by ecological area.

Stomach content group	Ecological area					
	Middle Atlantic	Southern New England	Georges Bank	Gulf of Maine	Western Nova Scotia	
	% wt	% wt	% wt	% wt	% wt	
ANNELIDA	7.0	22.4	-	-	-	
CRUSTACEA	19.5	64.7	100.0	-	-	
Caprellid amphipods	-	1.0	-	-	-	
Gammaridean amphipods	0.2	23.2	14.3	-	-	
Caridean shrimp	2.6	22.4	-	-	-	
Anomuran crabs	0.8	1.6	-	-	-	
Isopods	15.9	-	-	-	-	
Unidentified	-	16.5	85.7	-	-	
MOLLUSCA	-	0.8	-	-	-	
ECHINODERMATA	0.6	-	-	-	-	
Asteroids	0.4	-	-	-	-	
Ophiuroids	0.2	-	-	-	-	
PISCES	2.8	-	-	-	-	
Pleuronectiformes	2.8	-	-	-	-	
ANIMAL REMAINS	70.1	12.1	-	-	-	
						Total
Stomachs analyzed	63	42	2	-	-	107
Number empty (%)	12.7	35.7	0.0	-	-	21.5
Mean weight per stomach (g)	0.04	0.02	0.02	-	-	0.03

Table 16. Stomach contents of *Macrozoarces americanus* (Block and Schneider) expressed as percent of weight, by ecological area.

Stomach content group	Ecological area					
	Middle Atlantic	Southern New England	Georges Bank	Gulf of Maine	Western Nova Scotia	
	% wt	% wt	% wt	% wt	% wt	
CNIDARIA	-	-	1.0	-	-	
ANNELIDA	-	10.3	0.5	-	-	
CRUSTACEA	-	25.8	3.8	-	-	
Gammaridean amphipods	-	13.4	0.3	-	-	
Anomuran crabs	-	-	0.7	-	-	
Brachyuran crabs	-	7.4	1.8	-	-	
Astacidean crabs	-	0.1	-	-	-	
Isopods	-	0.1	-	-	-	
Cumaceans	-	0.1	-	-	-	
Unidentified	-	4.7	1.0	-	-	
MOLLUSCA	-	0.5	5.7	-	-	
Pelecypods	-	0.4	5.6	-	-	
Unidentified	-	0.1	0.1	-	-	
ECHINODERMATA	-	59.2	75.7	-	-	
Ophiuroids	-	-	8.9	-	-	
Echinoids	-	59.2	66.8	-	-	
TUNICATA	-	-	0.6	-	-	
PISCES	-	0.1	6.2	-	-	
Fish eggs	-	-	6.2	-	-	
Unidentified	-	0.1	-	-	-	
ANIMAL REMAINS	-	3.6	5.9	-	-	
SAND AND ROCK	-	0.5	0.6	-	-	
						Total
Stomachs analyzed	-	129	109	-	-	238
Number empty (%)	-	16.3	31.2	-	-	23.1
Mean weight per stomach (g)	-	5.2	11.5	-	-	8.1

Table 17. Stomach contents of *Stenotomus chrysops* (Linnaeus) expressed as percent of weight, by ecological area.

Stomach content group	Ecological area					
	Middle Atlantic	Southern New England	Georges Bank	Gulf of Maine	Western Nova Scotia	
	% wt	% wt	% wt	% wt	% wt	
CNIDARIA	27.7	-	-	-	-	
Anthozoans	27.7	-	-	-	-	
ANNELIDA	24.9	54.0	-	-	-	
CRUSTACEA	7.7	14.4	-	-	-	
Caprellid amphipods	0.5	0.2	-	-	-	
Gammaridean amphipods	5.9	6.7	-	-	-	
Carideàn shrimp	0.1	-	-	-	-	
Anomuran crabs	0.1	-	-	-	-	
Brachyuran crabs	0.3	-	-	-	-	
Isopods	-	0.2	-	-	-	
Euphausiids	0.1	-	-	-	-	
Mysids	-	0.1	-	-	-	
Unidentified	0.7	7.2	-	-	-	
MOLLUSCA	10.2	0.8	-	-	-	
Gastropods	4.3	-	-	-	-	
Pelecypods	5.9	0.3	-	-	-	
Unidentified	-	0.5	-	-	-	
ECHINODERMATA	0.6	3.3	-	-	-	
Ophiuroids	-	3.3	-	-	-	
Echinoids	0.6	-	-	-	-	
TUNICATA	0.4	-	-	-	-	
PISCES	1.4	-	-	-	-	
ANIMAL REMAINS	26.8	27.5	-	-	-	
SAND AND ROCK	0.3	-	-	-	-	
						Total
Stomachs analyzed	254	92	-	-	-	346
Number empty (%)	14.2	7.6	-	-	-	12.4
Mean weight per stomach (g)	0.7	0.6	-	-	-	0.7

Table 18. Stomach contents of *Anarhichas lupus* (Linnaeus) expressed as percent of weight, by ecological area.

Stomach content group	Ecological area					
	Middle Atlantic	Southern New England	Georges Bank	Gulf of Maine	Western Nova Scotia	
	% wt	% wt	% wt	% wt	% wt	
CNIDARIA	-	-	2.5	-	0.3	
Hydrozoans	-	-	2.5	-	-	
Anthozoans	-	-	-	-	0.3	
ANNELIDA	-	-	0.9	-	1.9	
CRUSTACEA	-	-	16.6	11.6	24.4	
Caridean shrimp	-	-	-	9.1	1.2	
Anomuran crabs	-	-	11.2	2.3	12.8	
Brachyuran crabs	-	-	1.4	-	9.4	
Cirripeds	-	-	0.8	-	-	
Unidentified	-	-	3.2	0.2	1.0	
MOLLUSCA	-	-	41.6	82.0	34.3	
Gastropods	-	-	6.7	20.0	5.7	
Pelecypods	-	-	32.9	62.0	27.5	
Cephalopods	-	-	-	-	0.3	
Unidentified	-	-	2.0	-	0.8	
ECHINODERMATA	-	-	13.7	4.0	22.5	
Asteroids	-	-	0.1	-	1.1	
Ophiuroids	-	-	0.2	1.3	4.9	
Echinoids	-	-	13.4	2.7	16.2	
Unidentified	-	-	-	-	0.3	
PISCES	-	-	19.9	2.1	3.1	
Cottidae	-	-	19.9	-	3.1	
Fish eggs	-	-	-	-	-	
Unidentified	-	-	-	2.1	-	
ANIMAL REMAINS	-	-	2.6	0.1	9.7	
SAND AND ROCK	-	-	2.2	0.2	3.8	
						Total
Stomachs analyzed	-	-	22	27	127	176
Number empty (%)	-	-	4.5	29.6	41.7	35.2
Mean weight per stomach (g)	-	-	55.2	12.1	12.9	18.1

Table 19. Stomach contents of *Scomber scombrus* (Linnaeus) expressed as percent of weight, by ecological area.

Stomach content group	Ecological area					
	Middle Atlantic	Southern New England	Georges Bank	Gulf of Maine	Western Nova Scotia	
	% wt	% wt	% wt	% wt	% wt	
CRUSTACEA	92.0	5.8	67.8	76.4	3.4	
Gammaridean amphipods	-	-	0.1	-	-	
Hyperiid amphipods	-	0.4	-	-	3.4	
Caridean shrimp	0.1	0.1	11.5	-	-	
Penaeid shrimp	-	0.1	-	-	-	
Anomuran crabs	-	-	0.1	-	-	
Euphausiids	-	3.6	51.8	-	-	
Mysids	-	-	2.2	-	-	
Copepods	90.4	1.2	1.9	76.4	-	
Unidentified	1.5	0.4	0.2	-	-	
MOLLUSCA	-	57.8	1.0	-	-	
Pteropods	-	57.8	0.4	-	-	
Cephalopods	-	-	0.6	-	-	
ECHINODERMATA	-	0.8	-	-	-	
Ophiuroids	-	0.3	-	-	-	
Unidentified	-	0.5	-	-	-	
CHAETOGNATHA	-	0.8	2.3	-	-	
TUNICATA	-	6.2	7.9	-	7.6	
PISCES	7.9	3.6	0.8	-	-	
Ammodytidae	0.8	2.2	-	-	-	
Gadidae	5.3	-	-	-	-	
Fish eggs	-	0.7	-	-	-	
Unidentified	1.8	0.7	0.8	-	-	
ANIMAL REMAINS	0.1	25.0	20.2	23.6	89.0	
						Total
Stomachs analyzed	25	193	56	1	3	278
Number empty (%)	0.0	30.6	37.5	0.0	0.0	28.8
Mean weight per stomach (g)	2.1	0.4	0.6	0.1	0.4	0.6

*All stomachs collected in 1974.

Table 20. Stomach contents of *Peprilus triacanthus* (Peck) expressed as percent of weight, by ecological area.

Stomach content group	Ecological area					
	Middle Atlantic	Southern New England	Georges Bank	Gulf of Maine	Western Nova Scotia	
	% wt	% wt	% wt	% wt	% wt	
ANNELIDA	-	2.9	-	-	-	
CRUSTACEA	0.2	2.4	37.8	-	-	
Gammaridean amphipods	-	-	0.3	-	-	
Hyperiid amphipods	0.2	-	0.6	-	-	
Caridean shrimp	-	0.4	-	-	-	
Anomuran crabs	-	-	0.1	-	-	
Isopods	-	0.1	-	-	-	
Euphausiids	-	0.1	7.5	-	-	
Copepods	-	0.1	0.1	-	-	
Unidentified	-	1.7	29.2	-	-	
CHAETOGNATHA	-	5.1	7.5	-	-	
TUNICATA	82.8	76.4	21.4	-	-	
ANIMAL REMAINS	17.0	13.2	33.3	-	-	
						Total
Stomachs analyzed	20	359	67	-	-	446
Number empty (%)	0.0	17.0	40.3	-	-	19.7
Mean weight per stomach (g)	0.6	0.2	0.2	-	-	0.3

Table 21. Stomach contents of *Sebastes marinus* (Linnaeus) expressed as percent of weight, by ecological area.

Stomach content group	Ecological area					
	Middle Atlantic	Southern New England	Georges Bank	Gulf of Maine	Western Nova Scotia	
	% wt	% wt	% wt	% wt	% wt	
ANNELIDA	-	-	-	0.1	0.1	
CRUSTACEA	-	-	77.9	97.3	96.5	
Gammaridean amphipods	-	-	0.1	-	-	
Hyperiid amphipods	-	-	0.1	-	0.1	
Caridean shrimp	-	-	-	20.4	8.9	
Penaeid shrimp	-	-	0.2	-	-	
Anomuran crabs	-	-	-	-	-	
Euphausiids	-	-	44.4	74.3	78.9	
Copepods	-	-	-	0.2	2.2	
Unidentified	-	-	33.1	2.4	6.4	
MOLLUSCA	-	-	-	0.2	-	
Pelecypods	-	-	-	0.2	-	
ECHINODERMATA	-	-	-	0.5	-	
Ophiuroids	-	-	-	0.5	-	
TUNICATA	-	-	-	0.1	-	
PISCES	-	-	20.6	0.5	1.0	
Fish eggs	-	-	-	0.2	0.1	
Unidentified	-	-	-	0.3	0.9	
ANIMAL REMAINS	-	-	1.5	1.3	2.4	
						Total
Stomachs analyzed	-	-	54	579	286	919
Number empty (%)	-	-	31.5	38.2	51.4	41.9
Mean weight per stomach (g)	-	-	1.0	1.5	0.9	1.3

Table 22. Stomach contents of *Hemitripterus americanus* (Gmelin) expressed as percent of weight, by ecological area.

Stomach content group	Ecological area					
	Middle Atlantic	Southern New England	Georges Bank	Gulf of Maine	Western Nova Scotia	
	% wt	% wt	% wt	% wt	% wt	
NEMERTEA	-	0.1	-	0.6	-	
ANNELIDA	2.1	0.1	-	-	-	
CRUSTACEA	95.0	32.0	2.1	1.9	-	
Gammaridean amphipods	1.1	-	-	-	-	
Caridean shrimp	26.0	3.9	0.1	1.4	-	
Anomuran crabs	-	-	0.1	-	-	
Brachyuran crabs	36.9	27.8	1.8	-	-	
Mysids	-	-	-	0.5	-	
Unidentified	31.0	0.3	0.1	-	-	
MOLLUSCA	0.1	-	22.1	37.9	-	
Cephalopoda	-	-	22.1	37.9	-	
Unidentified	0.1	-	-	-	-	
ECHINODERMATA	0.5	-	-	-	-	
Echinoids	0.5	-	-	-	-	
PISCES	1.0	66.1	75.8	59.6	-	
Pleuronectiformes	0.2	-	0.2	-	-	
Gadidae	-	6.2	18.2	-	-	
Cottidae	-	-	40.2	-	-	
Unidentified	0.8	59.9	17.2	59.6	-	
ANIMAL REMAINS	1.1	-	-	-	-	
SAND AND ROCK	0.2	1.7	-	-	-	
						Total
Stomachs analyzed	20	11	66	7	-	104
Number empty (%)	0.0	45.5	43.9	14.3	-	33.7
Mean weight per stomach (g)	2.0	2.1	13.3	6.3	-	9.5

Table 23. Stomach contents of *Myoxocephalus octadecemspinosus* (Mitchill) expressed as percent of weight, by ecological area.

Stomach content group	Ecological area					
	Middle Atlantic	Southern New England	Georges Bank	Gulf of Maine	Western Nova Scotia	
	% wt	% wt	% wt	% wt	% wt	
CNIDARIA	-	-	0.2	-	-	
Hydrozoans	-	-	0.2	-	-	
NEMERTEA	-	-	0.1	3.0	-	
ANNELIDA	0.1	4.8	2.6	9.3	2.8	
CRUSTACEA	95.3	84.0	81.8	56.3	78.5	
Caprellid amphipods	-	0.3	0.3	0.3	0.1	
Gammaridean amphipods	0.2	8.7	0.9	3.4	-	
Caridean shrimp	1.1	6.8	14.4	5.7	15.0	
Anomuran crabs	8.6	7.2	26.9	-	5.7	
Brachyuran crabs	81.1	33.3	31.9	44.2	32.0	
Isopods	1.1	3.4	0.5	2.7	-	
Cumaceans	-	0.1	-	-	-	
Euphausiids	-	0.3	0.1	-	19.5	
Mysids	2.1	-	0.1	-	-	
Unidentified	1.1	23.9	6.7	-	6.2	
MOLLUSCA	1.2	1.0	1.1	-	-	
Gastropods	-	-	0.2	-	-	
Pelecypods	-	0.2	0.7	-	-	
Unidentified	1.2	0.8	0.2	-	-	
PISCES	0.8	8.0	11.2	11.2	9.2	
Ammodytidae	-	-	0.5	-	-	
Pleuronectiformes	-	0.8	-	-	-	
Cottidae	-	-	1.1	-	-	
Fish eggs	-	1.4	3.8	-	-	
Unidentified	0.8	5.8	5.8	11.2	9.2	
ANIMAL REMAINS	2.6	1.9	2.0	20.2	8.0	
SAND AND ROCK	-	0.3	1.0	-	1.5	
						Total
Stomachs analyzed	38	453	287	50	80	908
Number empty (%)	13.2	26.3	37.3	66.0	28.8	31.6
Mean weight per stomach (g)	2.3	0.9	1.0	0.3	0.9	1.0

Table 24. Stomach contents of *Paralichthys oblongus* (Mitchill) expressed as percent of weight, by ecological area.

Stomach content group	Ecological area					
	Middle Atlantic	Southern New England	Georges Bank	Gulf of Maine	Western Nova Scotia	
	% wt	% wt	% wt	% wt	% wt	
NEMERTEA	-	0.1	-	-	-	
ANNELIDA	-	0.3	-	2.4	-	
CRUSTACEA	78.8	23.4	46.4	35.2	-	
Gammaridean amphipods	0.1	1.3	-	1.4	-	
Caridean shrimp	30.8	9.9	39.4	32.7	-	
Penaeid shrimp	-	-	0.8	-	-	
Anomuran crabs	3.3	0.2	-	-	-	
Brachyuran crabs	44.4	7.8	-	-	-	
Mysids	-	0.1	0.2	-	-	
Unidentified	0.2	4.1	6.0	1.1	-	
MOLLUSCA	4.5	26.6	10.3	-	-	
Pelecypods	0.8	-	-	-	-	
Cephalopods	3.7	26.5	10.3	-	-	
Unidentified	-	0.1	-	-	-	
TUNICATA	0.9	-	-	-	-	
PISCES	9.6	37.1	23.9	39.6	-	
Pleuronectiformes	-	0.1	-	32.3	-	
Gadidae	7.0	34.6	20.1	-	-	
Unidentified	2.6	2.4	3.8	7.3	-	
ANIMAL REMAINS	5.6	12.3	19.4	22.8	-	
SAND AND ROCK	0.6	0.2	-	-	-	
						Total
Stomachs analyzed	81	697	111	6	-	895
Number empty (%)	34.6	45.5	41.4	33.3	-	43.9
Mean weight per stomach (g)	0.4	0.5	0.8	1.0	-	0.5

Table 25. Stomach contents of *Scophthalmus aquosus* (Mitchill) expressed as percent of weight, by ecological area.

Stomach content group	Ecological area					
	Middle Atlantic	Southern New England	Georges Bank	Gulf of Maine	Western Nova Scotia	
	% wt	% wt	% wt	% wt	% wt	
ANNELIDA	0.5	-	-	-	-	
CRUSTACEA	93.2	99.0	28.6	-	-	
Caprellid amphipods	3.4	-	-	-	-	
Caridean shrimp	0.3	13.7	26.7	-	-	
Brachyuran crabs	0.9	-	-	-	-	
Mysids	88.1	80.5	-	-	-	
Unidentified	0.5	4.8	1.9	-	-	
ECHINODERMATA	-	-	50.3	-	-	
Echinoids	-	-	50.3	-	-	
ANIMAL REMAINS	6.3	0.3	21.1	-	-	
SAND AND ROCK	-	0.7	-	-	-	
						Total
Stomachs analyzed	45	45	30	-	-	120
Number empty (%)	71.1	22.2	60.0	-	-	50.0
Mean weight per stomach (g)	0.2	2.8	0.6	-	-	1.3

Table 26. Stomach contents of *Glyptocephalus cynoglossus* (Linnaeus) expressed as percent of weight, by ecological area.

Stomach content group	Ecological area					
	Middle Atlantic	Southern New England	Georges Bank	Gulf of Maine	Western Nova Scotia	
	% wt	% wt	% wt	% wt	% wt	
CNIDARIA	-	0.5	-	0.2	4.2	
Anthozoans	-	0.5	-	0.2	4.2	
NEMERTEA	-	-	0.3	0.1	-	
ANNELIDA	99.9	42.0	87.9	81.4	57.2	
CRUSTACEA	0.1	11.9	6.2	2.6	7.2	
Gammaridean amphipods	-	1.2	3.4	0.4	3.9	
Caridean shrimp	-	0.1	2.4	0.1	-	
Anomuran crabs	-	0.1	0.2	-	-	
Brachyuran crabs	-	4.4	-	-	-	
Isopods	-	-	-	0.8	0.3	
Euphausiids	-	-	0.1	0.7	0.4	
Unidentified	0.1	6.1	0.1	0.6	2.6	
MOLLUSCA	-	40.6	0.2	0.2	0.3	
Pelecypods	-	0.1	0.2	0.2	0.3	
Cephalopods	-	40.5	-	-	-	
ECHINODERMATA	-	-	0.2	6.0	22.1	
Ophiuroids	-	-	-	0.4	-	
Unidentified	-	-	0.2	5.6	22.1	
TUNICATA	-	-	-	0.6	-	
PISCES	-	0.4	-	1.5	0.1	
Pleuronectiformes	-	-	-	0.3	-	
Fish eggs	-	-	-	-	0.1	
Unidentified	-	0.4	-	1.2	-	
ANIMAL REMAINS	-	4.6	5.1	7.1	8.9	
SAND ROCK	-	-	0.1	0.3	-	
						Total
Stomachs analyzed	32	92	97	463	271	955
Number empty (%)	0.0	38.0	6.2	9.5	7.4	11.0
Mean weight per stomach (g)	0.3	0.6	1.0	0.7	0.8	0.7

Table 27. Stomach contents of *Hippoglossoides platessoides* (Fabricius) expressed as percent of weight, by ecological area.

Stomach content group	Ecological area					
	Middle Atlantic	Southern New England	Georges Bank	Gulf of Maine	Western Nova Scotia	
	% wt	% wt	% wt	% wt	% wt	
CNIDARIA	-	-	-	0.5	0.2	
Hydrozoans	-	-	-	0.5	-	
Anthozoans	-	-	-	-	0.2	
ANNELIDA	-	21.6	0.5	9.3	3.4	
CRUSTACEA	-	49.8	6.0	13.2	28.6	
Gammaridean amphipods	-	14.1	-	-	0.1	
Caridean shrimp	-	-	3.3	7.4	3.5	
Anomuran crabs	-	0.3	2.6	0.2	17.8	
Euphausiids	-	3.4	-	0.3	6.5	
Mysids	-	0.2	0.1	-	-	
Unidentified	-	31.8	-	5.3	0.7	
MOLLUSCA	-	12.7	0.3	21.0	1.2	
Gastropods	-	12.7	-	0.1	1.0	
Pelecypods	-	-	-	20.7	0.2	
Cephalopods	-	-	0.2	-	-	
Unidentified	-	-	0.1	0.2	-	
ECHINODERMATA	-	4.6	91.0	48.2	58.3	
Ophiuroids	-	4.6	15.0	40.6	12.4	
Echinoids	-	-	76.0	7.6	45.9	
TUNICATA	-	-	-	0.6	-	
PISCES	-	-	0.1	2.2	0.2	
Gadidae	-	-	-	-	0.2	
Cottidae	-	-	-	0.5	-	
Fish eggs	-	-	-	0.1	-	
Unidentified	-	-	0.1	1.6	-	
ANIMAL REMAINS	-	11.3	2.1	4.8	2.8	
SAND AND ROCK	-	-	-	0.2	5.3	
						Total
Stomachs analyzed	-	26	251	482	229	988
Number empty (%)	-	65.4	52.2	38.2	45.9	44.2
Mean weight per stomach (g)	-	0.3	1.9	0.8	1.6	1.2

Table 28. Stomach contents of *Limanda ferruginea* (Storer) expressed as percent of weight, by ecological area.

Stomach content group	Ecological area					
	Middle Atlantic	Southern New England	Georges Bank	Gulf of Maine	Western Nova Scotia	
	% wt	% wt	% wt	% wt	% wt	
CNIDARIA	0.7	0.1	10.6	1.9	6.2	
Anthozoans	0.7	0.1	10.6	1.9	6.2	
NEMERTEA	2.5	0.4	0.1	-	0.1	
ANNELIDA	43.9	34.6	46.4	27.7	81.3	
CRUSTACEA	31.8	47.2	32.2	27.9	7.5	
Caprellid amphipods	0.1	0.9	0.1	0.8	0.1	
Gammaridean amphipods	13.4	19.8	9.1	11.8	6.5	
Caridean shrimp	0.8	3.0	2.5	-	-	
Anomuran crabs	-	-	0.7	-	0.2	
Brachyuran crabs	6.7	1.1	-	0.1	-	
Isopods	0.7	0.4	0.5	0.4	-	
Cumaceans	0.7	0.5	0.1	-	-	
Euphausiids	0.1	-	-	-	-	
Mysids	0.9	-	-	-	-	
Unidentified	8.4	21.5	19.2	14.8	0.7	
MOLLUSCA	3.7	1.5	1.3	-	-	
Gastropods	1.4	0.2	0.1	-	-	
Pelecypods	1.3	1.2	1.1	-	-	
Unidentified	1.0	0.1	0.1	-	-	
ECHINODERMATA	3.0	2.0	2.2	21.2	0.1	
TUNICATA	1.5	4.3	0.3	7.5	-	
PISCES	2.6	0.4	0.1	-	0.4	
Cottidae	2.3	-	-	-	-	
Unidentified	0.3	0.4	0.1	-	0.4	
ANIMAL REMAINS	7.2	8.0	3.0	4.7	3.5	
SAND AND ROCK	3.1	1.5	3.8	9.1	0.9	
						Total
Stomachs analyzed	464	1428	709	44	70	2715
Number empty (%)	14.7	21.5	28.5	29.5	40	22.8
Mean weight per stomach (g)	0.7	0.5	0.4	0.9	1.2	0.5

Table 29. Stomach contents of *Pseudopleuronectes americanus* (Walbaum) expressed as percent of weight, by ecological area.

Stomach content group	Ecological area					
	Middle Atlantic	Southern New England	Georges Bank	Gulf of Maine	Western Nova Scotia	
	% wt	% wt	% wt	% wt	% wt	
CNIDARIA	53.3	-	13.9	-	37.8	
Hydrozoans	-	-	3.9	-	0.1	
Anthozoans	53.3	-	10.0	-	37.7	
NEMERTEA	0.3	-	-	-	-	
ANNELIDA	45.8	-	33.0	-	28.4	
CRUSTACEA	0.5	-	8.3	-	4.2	
Caprellid amphipods	-	-	-	-	0.3	
Gammaridean amphipods	-	-	2.7	-	3.8	
Caridean shrimp	0.1	-	-	-	-	
Anomuran crabs	-	-	0.2	-	-	
Brachyuran crabs	-	-	0.3	-	-	
Astacidean crabs	0.4	-	-	-	-	
Unidentified	-	-	5.1	-	0.1	
MOLLUSCA	-	-	1.0	-	1.6	
Gastropods	-	-	0.3	-	-	
Pelecypods	-	-	0.7	-	1.6	
ECHINODERMATA	-	-	0.3	-	0.2	
Asteroids	-	-	0.1	-	-	
Ophiuroids	-	-	0.1	-	0.2	
Echinoids	-	-	0.1	-	-	
TUNICATA	-	-	2.6	-	24.6	
PISCES	-	-	0.1	-	-	
ANIMAL REMAINS	0.1	-	22.1	-	1.6	
SAND AND ROCK	-	-	18.7	-	1.6	
						Total
Stomachs analyzed	25	-	71	-	13	109
Number empty (%)	0.0	-	25.4	-	15.4	18.3
Mean weight per stomach (g)	1.0	-	1.8	-	2.2	1.7

Appendix Table 1. Distribution of stomach samples collected between 1969 and 1972 by species, year, and season.

	1962	1969	1970	1971		1972				1973		1974	
Species	Summer	Fall	Fall	Spring	Fall	Winter	Spring	Summer	Fall	Spring	Fall	Spring	Total
Spiny dogfish				26		1	177		178				382
Little skate			101	211		31			1	9	39		392
Alewife							86		50				136
Atlantic herring		16		4	19		83		3			219	344
Goosefish		2	15	3	13	9	42	26	140				250
Atlantic cod		159	164	304	216	160	238		458				1,699
Haddock		166	98	259	191	95	153		254				1,216
Silver hake		210	401	424	613	8	245		148				2,049
Offshore hake	3						22		51				76
Longfin hake							26	7	48				81
Pollock		23	22	185	2	9	204		141				586
Red hake		203	177	143	158	6	139		302				1,128
Spotted hake		164		53	18		49		46				330
White hake		28	250	56	1	1	201		73				610
Fawn cusk-eel		20	29	7	10		19		22				107
Ocean pout						4	210		24				238
Scup		27		57			123		139				346
Atlantic wolffish		2	5	25	37	12	41	9	45				176
Atlantic mackerel												278	278
Butterfish		6			16		253		171				446
Redfish		8	388	293	26		152		52				919
Sea raven		20				4	50		30				104
Longhorn sculpin		48	222	185		74	205		174				908
Fourspot flounder			82		2		463		348				895
Windowpane		12	71	14			19		4				120
Witch flounder			140	152			415		248				955
American plaice		70	114	139	5		508		152				988
Yellowtail flounder		293	412	1,150	186	67	551		56				2,715
Winter flounder		51	25	13			20						109
											Total		18,583