

APPENDIX A

Overall Prey of 110 Predators Which Were Lightly Sampled and/or Not Well Represented in Collections during the NEFSC's 1977-80 Bottom Trawl Surveys

Stomach content data for 110 subjectively chosen predator species are given in Tables A-1 through A-13. These tables present data for: 1) 86 predator species for which 25 or fewer individuals were sampled during the 1977-80 NEFSC bottom trawl surveys, and 2) 28 predator species not well represented in the 1977-80 survey samples (*i.e.*, there is some duplication with the aforementioned 86 species). Data were gathered over a number of years (*i.e.*, 1963-84) from various areas, and were

collected and analyzed using different methods. Sources of the data and other information for each species are included in the 13 tables.

Data on the latter 28 species are important because some of the species are large pelagic predators which make up a considerable biomass (*e.g.*, blue shark), and which are known to feed primarily on fish and squid.

Table A-1. Diet composition and sampling data for Atlantic hagfish, sand tiger, bigeye thresher, thresher shark, white shark, shortfin mako, longfin mako, and porbeagle. (Subscripts indicate data source: 1 = 1977-80 trawl surveys, and 2 = Apex Predators Investigation studies. Superscripts indicate data type: * = percentage by volume, and none = percentage by weight. Squared brackets indicate major taxon subtotal; parentheses indicate minor taxon subtotal.)

| Stomach Contents | Predator | | | | | | | | | |
|--|-------------------------------|-------------------------|--------------------------------------|---|--|---------------------------------------|----------------------------|---|--|-------------------------------------|
| | Atlantic hagfish ₁ | Sand tiger ₁ | Sand tiger ₂ [*] | Bigeye thresher ₂ [*] | Thresher shark ₂ [*] | White shark ₂ [*] | Shortfin mako ₁ | Shortfin mako ₂ [*] | Longfin mako ₂ [*] | Porbeagle ₂ [*] |
| CEPHALOPODA | - | - | - | [15.1] | [2.9] | - | [22.9] | [1.4] | [4.9] | [99.3] |
| <i>Illex illecebrosus</i> | - | - | - | 11.9 | 2.2 | - | - | 1.2 | - | 69.5 |
| <i>Loligo pealeii</i> | - | - | - | - | - | - | 22.9 | <0.1 | - | - |
| Cephalopoda unid. | - | - | - | 3.2 | 0.7 | - | - | 0.2 | 4.9 | 29.8 |
| ARTHROPODA | [52.4] | - | - | - | - | - | - | - | - | - |
| CHONDRICHTHYES | - | [33.2] | [76.3] | - | - | [1.1] | - | [0.3] | [12.1] | - |
| Odontaspidae | - | 33.2 | - | - | - | - | - | - | - | - |
| <i>Carcharhinus</i> sp. | - | - | - | - | - | - | - | - | 12.1 | - |
| <i>Mustelus canis</i> | - | - | - | - | - | 0.3 | - | - | - | - |
| <i>Prionace glauca</i> | - | - | - | - | - | 0.1 | - | 0.2 | - | - |
| Squaliformes | - | - | - | - | - | 0.7 | - | - | - | - |
| <i>Raja eglanteria</i> | - | - | 76.3 | - | - | - | - | - | - | - |
| Chondrichthyes unid. | - | - | - | - | - | - | - | 0.1 | - | - |
| OSTEICHTHYES | [47.6] | [66.8] | [23.7] | [83.5] | [97.1] | [25.9] | [77.1] | [97.9] | [79.8] | [0.7] |
| <i>Anguilla rostrata</i> | - | - | - | - | - | - | - | 0.2 | - | - |
| <i>Etrumeus teres</i> | - | - | - | 1.7 | - | - | - | - | - | - |
| <i>Brevoortia tyrannus</i> | - | - | - | - | - | - | - | 0.1 | - | - |
| Gadidae | - | - | 0.1 | - | - | - | - | 0.2 | - | - |
| <i>Macrozoarces americanus</i> | - | - | - | - | - | - | - | 0.1 | - | - |
| Exocoetidae | - | - | - | - | 1.8 | - | - | - | - | - |
| <i>Scomberesox saurus</i> | - | - | - | - | 3.3 | - | - | 0.4 | - | - |
| <i>Pomatomus saltatrix</i> | - | - | - | - | 22.3 | 11.0 | - | 77.5 | 6.2 | - |
| <i>Stenotomus chrysops</i> | - | 0.9 | - | - | - | - | - | - | - | - |
| <i>Leiostomus xanthurus</i> | - | 12.0 | - | - | - | - | - | - | - | - |
| Sciaenidae | - | - | - | 3.3 | - | - | - | - | - | - |
| Labridae | - | - | 2.9 | - | - | - | - | - | - | - |
| <i>Ammodytes dubius</i> | - | - | - | - | 66.3 | - | - | - | - | - |
| <i>Euthynnus pelamis</i> | - | - | - | - | - | - | - | 0.4 | - | - |
| <i>Scomber scombrus</i> | - | - | - | 1.5 | - | - | - | 0.6 | - | - |
| <i>Thunnus thynnus</i> | - | - | - | - | - | 13.7 | - | - | 73.2 | - |
| <i>Thunnus</i> sp. | - | - | - | - | - | - | - | 0.5 | - | - |
| Scombridae | - | - | - | 6.8 | 2.7 | - | - | 2.4 | - | - |
| <i>Xiphias gladius</i> | - | - | - | - | - | - | - | 12.4 | 0.4 | - |
| <i>Peprilus triacanthus</i> | - | 17.7 | - | - | - | - | 30.8 | <0.1 | - | - |
| Scorpaenidae | - | - | - | 53.8 | - | - | - | 0.4 | - | - |
| <i>Sebastes fasciatus</i> | - | - | - | - | - | - | - | 0.3 | - | - |
| Triglidae | - | - | 20.6 | - | - | - | - | 0.1 | - | - |
| Osteichthyes unid. | 47.6 | 36.2 | 0.1 | 16.4 | 0.7 | 1.2 | 46.3 | 2.2 | - | 0.7 |
| MAMMALIA | - | - | - | - | - | [73.0] | - | [0.3] | - | - |
| ANIMAL REMAINS AND MISC. | - | - | - | [1.4] | - | - | - | [0.1] | [3.2] | - |
| Number sampled | 4 | 5 | 3 | 24 | 19 | 23 | 1 | 399 | 10 | 6 |
| Number empty | 3 | 0 | 0 | 6 | 7 | 9 | 0 | 126 | 4 | 2 |
| Mean stomach content (g or cm ³) | <0.1 | 275.1 | 687.0 | 245.7 | 388.4 | 2857.8 | 141.1 | 1226.5 | 1851.7 | 586.7 |
| Mean fish length (cm) | 42 | 235 | 169 | 238 | 199 | 187 | 146 | NA | 155 | 126 |
| Fish length range (cm) | 33-55 | 213-246 | 80-207 | 123-335 | 155-240 | 111-459 | - | 67-328 | 97-242 | 78-209 |

Table A-2. Diet composition and sampling data for bignose shark, silky shark, sandbar shark, night shark, tiger shark, blue shark, scalloped hammerhead, and smooth hammerhead. (Subscripts indicate data source: 1 = 1977-80 trawl surveys, and 2 = Apex Predators Investigation studies. Superscripts indicate data type: * = percentage by volume, and none = percentage by weight. Squared brackets indicate major taxon subtotal; parentheses indicate minor taxon subtotal.)

| Stomach Contents | Predator | | | | | | | | |
|--|---|---------------------------------------|----------------------------|---------------------------------------|---------------------------------------|--------------------------------------|-----------------------------------|--------------------------------|---|
| | Bignose shark ₂ [*] | Silky shark ₂ [*] | Sandbar shark ₁ | Night shark ₂ [*] | Tiger shark ₂ [*] | Blue shark ₂ [*] | Scalloped hammerhead ₁ | Smooth hammerhead ₁ | Smooth hammerhead ₂ [*] |
| BIVALVIA | - | - | [1.0] | - | - | - | - | - | - |
| <i>Spisula solidissima</i> | - | - | 1.0 | - | - | - | - | - | - |
| CEPHALOPODA | - | [32.3] | - | [97.9] | [0.3] | [33.8] | - | - | - |
| <i>Illex illecebrosus</i> | - | 29.2 | - | 38.8 | - | 3.7 | - | - | - |
| Octopodida | - | - | - | - | - | 21.4 | - | - | - |
| Cephalopoda unid. | - | 3.1 | - | 59.1 | 0.3 | 8.7 | - | - | - |
| CHONDRICHTHYES | [0.9] | [0.2] | - | - | [20.0] | [2.1] | - | - | [0.1] |
| <i>Cetorhinus maximus</i> | - | - | - | - | 8.3 | - | - | - | - |
| <i>Prionace glauca</i> | - | - | - | - | - | 0.5 | - | - | - |
| <i>Carcharhinus obscurus</i> | - | - | - | - | 6.2 | - | - | - | - |
| <i>Galeocerdo cuvieri</i> | - | - | - | - | 3.2 | - | - | - | - |
| Squaliformes | 0.9 | - | - | - | 0.1 | 1.1 | - | - | - |
| <i>Raja</i> sp. | - | - | - | - | 2.0 | 0.4 | - | - | - |
| Rajidae | - | 0.2 | - | - | 0.2 | 0.1 | - | - | 0.1 |
| OSTEICHTHYES | [37.5] | [57.3] | [98.2] | [1.2] | [37.6] | [51.8] | [100.0] | [100.0] | [97.9] |
| <i>Ophichthus cruentifer</i> | - | - | 29.4 | - | - | - | - | - | - |
| <i>Clupea harengus</i> | - | - | - | - | - | 0.4 | - | - | 17.1 |
| <i>Etrumeus teres</i> | - | 0.8 | - | - | - | - | - | - | - |
| <i>Brevoortia tyrannus</i> | - | 16.9 | - | - | - | - | - | - | - |
| Clupeidae | - | - | - | - | - | 2.2 | - | - | - |
| <i>Anchoa hepsetus</i> | - | - | - | - | - | - | 12.0 | - | - |
| <i>Lophius americanus</i> | - | - | - | - | 31.6 | 0.1 | - | - | - |
| <i>Alepisaurus</i> sp. | - | - | - | - | - | 8.9 | - | - | - |
| <i>Urophycis tenuis</i> | - | - | 5.5 | - | - | - | - | - | - |
| Gadidae | - | - | - | - | 0.2 | 13.2 | - | - | - |
| <i>Pomatomus saltatrix</i> | - | - | - | - | 4.4 | 13.4 | - | - | - |
| <i>Coryphaena hippurus</i> | - | - | - | - | - | - | - | - | 63.8 |
| <i>Stenotomus chrysops</i> | - | - | - | - | <0.1 | 0.1 | - | - | - |
| <i>Leiostomus xanthurus</i> | - | - | 23.4 | - | - | - | - | - | - |
| <i>Scomber scombrus</i> | - | - | - | - | 0.3 | 2.5 | - | - | - |
| Sciaenidae | - | 0.2 | - | - | - | - | - | - | - |
| <i>Peprilus triacanthus</i> | 0.8 | - | - | 1.1 | - | 1.1 | - | - | 6.5 |
| Scorpaenidae | 0.4 | - | - | - | - | - | - | - | - |
| Triglidae | - | - | - | - | <0.1 | - | - | - | 5.9 |
| <i>Pleuronectes ferruginus</i> | - | - | - | - | - | 2.1 | - | - | - |
| Osteichthyes unid. | 36.3 | 39.4 | 39.9 | 0.1 | 1.1 | 7.8 | 88.0 | 100.0 | 4.6 |
| SEA TURTLE | - | - | - | - | [7.6] | - | - | - | - |
| SEA AND LAND BIRDS | - | - | - | - | [0.2] | [0.4] | - | - | - |
| MAMMALIA | [61.6] | - | - | - | [30.1] | [8.0] | - | - | - |
| ANIMAL REMAINS AND MISC. | - | [10.2] | [0.8] | [0.9] | [4.2] | [3.9] | - | - | [2.0] |
| Number sampled | 22 | 54 | 7 | 66 | 52 | 1199 | 2 | 1 | 15 |
| Number empty | 13 | 36 | 4 | 35 | 12 | 617 | 0 | 0 | 9 |
| Mean stomach content (g or cm ³) | 180.8 | 60.3 | 12.7 | 40.5 | 1788.1 | 170.6 | 36.8 | 2.1 | 175.1 |
| Mean fish length (cm) | 155 | 111 | 160 | 112 | 181 | 187 | 67 | 92 | 146 |
| Fish length range (cm) | 66-210 | 73-212 | 104-240 | 60-196 | 102-305 | 53-356 | 54-81 | - | 128-204 |

Table A-3. Diet composition and sampling data for Atlantic torpedo, rosette skate, barndoor skate, southern stingray, roughtail stingray, spiny butterfly ray, bullnose ray, cownose ray, and margined snake eel. (Data source: 1977-80 trawl survey. Data type: percentage by weight. Squared brackets indicate major taxon subtotal; parentheses indicate minor taxon subtotal.)

| Stomach Contents | Predator | | | | | | | | |
|-----------------------------------|------------------|---------------|----------------|-------------------|--------------------|---------------------|--------------|-------------|--------------------|
| | Atlantic torpedo | Rosette skate | Barndoor skate | Southern stingray | Roughtail stingray | Spiny butterfly ray | Bullnose ray | Cownose ray | Margined snake eel |
| RHYNCHOCOELA | - | - | - | - | - | - | [3.8] | - | - |
| MOLLUSCA | - | [2.6] | - | - | - | - | [84.9] | - | - |
| Gastropoda | - | - | - | - | - | - | (1.1) | - | - |
| Bivalvia | - | - | - | - | - | - | (73.1) | - | - |
| <i>Yoldia</i> sp. | - | - | - | - | - | - | 0.6 | - | - |
| <i>Ensis directus</i> | - | - | - | - | - | - | 26.3 | - | - |
| Bivalvia unid. | - | - | - | - | - | - | 46.2 | - | - |
| Cephalopoda | - | (2.6) | - | - | - | - | - | - | - |
| Nudibranchia | - | - | - | - | - | - | (8.1) | - | - |
| Mollusca unid. | - | - | - | - | - | - | (2.6) | - | - |
| POLYCHAETA | [<0.1] | [0.7] | - | [0.3] | [<0.1] | - | [2.2] | - | [31.7] |
| <i>Lumbrineris tenuis</i> | - | - | - | - | - | - | - | - | 31.1 |
| Polychaeta unid. | - | - | - | - | - | - | - | - | 0.6 |
| CRUSTACEA | - | [91.7] | [100.0] | [99.0] | [68.8] | - | [6.4] | [8.9] | [68.1] |
| Amphipoda | - | (1.0) | - | - | - | - | (<0.1) | - | (6.4) |
| <i>Melita</i> sp. | - | - | - | - | - | - | - | - | 1.2 |
| <i>Leptocheirus pinguis</i> | - | - | - | - | - | - | - | - | 4.9 |
| <i>Unciola irrorata</i> | - | 0.8 | - | - | - | - | - | - | - |
| Amphipoda unid. | - | 0.2 | - | - | - | - | <0.1 | - | 0.3 |
| Mysidacea | - | (3.4) | - | - | - | - | - | (8.6) | - |
| <i>Mysidopsis bigelowi</i> | - | - | - | - | - | - | - | 8.5 | - |
| Mysidacea unid. | - | 3.4 | - | - | - | - | - | 0.1 | - |
| Decapoda | - | (81.8) | (100.0) | (98.7) | (68.7) | - | (6.2) | (0.3) | (61.7) |
| <i>Ranilia muricata</i> | - | - | - | - | - | - | 4.8 | - | - |
| <i>Dichelopandalus leptocerus</i> | - | - | 38.4 | - | - | - | - | - | - |
| <i>Crangon septemspinosa</i> | - | 27.3 | - | <0.1 | <0.1 | - | 0.2 | 0.1 | 34.3 |
| <i>Pagurus</i> sp. | - | - | 5.8 | - | - | - | 0.2 | 0.2 | - |
| <i>Cancer irroratus</i> | - | 49.1 | 37.2 | - | <0.1 | - | 1.0 | - | - |
| <i>Cancer borealis</i> | - | - | 18.6 | - | - | - | - | - | - |
| <i>Ovalipes ocellatus</i> | - | - | - | 68.1 | 68.7 | - | - | - | - |
| <i>Portunus</i> sp. | - | - | - | 17.7 | - | - | - | - | - |
| <i>Munidairis</i> sp. | - | - | - | - | - | - | - | - | 27.4 |
| <i>Munida</i> sp. | - | 5.0 | - | 0.2 | - | - | - | - | - |
| Decapoda unid. | - | 0.4 | - | 12.7 | <0.1 | - | - | <0.1 | - |
| Crustacea unid. | - | (5.5) | - | (0.3) | (0.1) | - | (0.2) | - | - |
| OSTEICHTHYES | [100.0] | [1.7] | - | [0.7] | [31.1] | [6.9] | [<0.1] | [90.7] | - |
| <i>Ophichthus cruentifer</i> | - | 1.6 | - | - | - | - | - | - | - |
| <i>Anchoa hepsetus</i> | - | - | - | - | - | - | - | 90.7 | - |
| Gadidae | - | - | - | - | - | - | - | - | - |
| <i>Merluccius bilinearis</i> | 58.7 | - | - | - | - | - | - | - | - |
| <i>Stenotomus chrysops</i> | - | - | - | - | 7.2 | - | - | - | - |
| <i>Ammodytes dubius</i> | - | - | - | - | 23.9 | - | - | - | - |
| Osteichthyes unid. | 41.3 | 0.1 | - | 0.7 | <0.1 | 6.9 | <0.1 | - | - |
| ANIMAL REMAINS AND MISC. | - | [3.3] | - | - | [0.1] | [93.1] | [2.7] | [0.4] | [0.2] |
| Number sampled | 7 | 16 | 3 | 2 | 4 | 8 | 15 | 3 | 3 |
| Number empty | 3 | 1 | 0 | 0 | 0 | 4 | 2 | 0 | 0 |
| Mean stomach content (g) | 5.8 | 0.6 | 17.1 | 47.6 | 132.8 | 0.2 | 10.0 | 4.9 | 0.1 |
| Mean fish length (cm) | 70 | 32 | 85 | 85 | 99 | 63 | 70 | 47 | 39 |
| Fish length range (cm) | 25-125 | 19-42 | 78-92 | 84-87 | 76-129 | 52-112 | 37-123 | 40-52 | 36-42 |

Table A-4. Diet composition and sampling data for slender snipe eel, conger eel, blueback herring, hickory shad, American shad, Atlantic thread herring, Spanish sardine, striped anchovy, and Atlantic salmon. (Subscripts indicate data source: 1 = 1977-80 trawl survey, and 4 = 1963-66 trawl survey. Superscripts indicate data type: # = percentage by occurrence, and none = percentage by weight. Squared brackets indicate major taxon subtotal; parentheses indicate minor taxon subtotal.)

| Stomach Contents | Predator | | | | | | | | |
|----------------------------------|--------------------------------|-------------------------|-------------------------------|--|----------------------------|--------------------------------------|------------------------------|------------------------------|------------------------------|
| | Slender snipe eel ₁ | Conger eel ₁ | Blueback herring ₁ | Hickory shad ₄ [#] | American shad ₁ | Atlantic thread herring ₁ | Spanish sardine ₁ | Striped anchovy ₁ | Atlantic salmon ₁ |
| CTENOPHORA | - | - | [42.5] | - | - | - | - | - | - |
| CHAETOGNATHA | - | - | - | - | [0.2] | - | - | - | - |
| MOLLUSCA | - | - | [<0.1] | - | [1.1] | - | - | - | - |
| Gastropoda | - | - | <0.1 | - | - | - | - | - | - |
| Bivalvia | - | - | <0.1 | - | - | - | - | - | - |
| Cephalopoda | - | - | - | - | 1.1 | - | - | - | - |
| POLYCHAETA | - | - | - | - | - | - | - | [5.9] | [4.6] |
| Phyllodocidae | - | - | - | - | - | - | - | 0.2 | - |
| <i>Lumbrineris tenuis</i> | - | - | - | - | - | - | - | - | - |
| Polychaeta unid. | - | - | - | - | - | - | - | 5.7 | 4.6 |
| CRUSTACEA | [100.0] | [0.1] | [50.5] | 25.0 | [78.1] | - | [100.0] | [82.3] | [0.3] |
| Copepoda | - | - | (41.6) | - | (2.8) | - | (100.0) | (0.3) | - |
| <i>Centropages</i> sp. | - | - | - | - | - | - | - | 0.1 | - |
| Calanoida | - | - | - | - | - | - | 100.0 | 0.2 | - |
| Copepoda unid. | - | - | 41.6 | - | 2.8 | - | - | - | - |
| Amphipoda | - | (<0.1) | (8.0) | - | (0.2) | - | - | - | - |
| <i>Parathemisto</i> | - | - | 8.0 | - | 0.2 | - | - | - | - |
| <i>Melita</i> sp. | - | - | - | - | - | - | - | - | - |
| <i>Leptocheirus pinguis</i> | - | - | - | - | - | - | - | - | - |
| Amphipoda unid. | - | <0.1 | - | - | - | - | - | - | - |
| Mysidacea | - | - | - | - | - | - | - | (78.8) | - |
| <i>Neomysis americana</i> | - | - | - | - | - | - | - | 30.9 | - |
| Mysidacea unid. | - | - | - | - | - | - | - | 47.9 | - |
| Euphausiacea | - | - | - | - | (74.6) | - | - | - | - |
| <i>Meganyctiphanes norvegica</i> | - | - | - | - | 59.7 | - | - | - | - |
| Euphausiacea unid. | - | - | - | - | 14.9 | - | - | - | - |
| Decapoda | - | - | (0.9) | 25.0 | - | - | - | (2.8) | (0.3) |
| Penaeidae | - | - | - | - | - | - | - | 1.7 | - |
| <i>Callinassa setimanus</i> | - | - | - | - | - | - | - | 1.1 | - |
| <i>Crangon septemspinosa</i> | - | - | - | 25.0 | - | - | - | - | - |
| <i>Munidairis</i> sp. | - | - | - | - | - | - | - | - | - |
| Decapoda larvae | - | - | 0.9 | - | - | - | - | - | - |
| Decapoda unid. | - | - | - | - | - | - | - | - | 0.3 |
| Crustacea unid. | (100.0) | (0.1) | - | - | (0.5) | - | - | (0.4) | - |
| OSTEICHTHYES | - | [96.5] | - | - | [16.3] | - | - | [0.3] | - |
| Gadidae | - | 96.4 | - | - | - | - | - | - | - |
| <i>Merluccius bilinearis</i> | - | - | - | - | 14.4 | - | - | - | - |
| Osteichthyes scales | - | - | - | - | - | - | - | 0.3 | - |
| Osteichthyes unid. | - | 0.1 | - | - | 1.9 | - | - | - | - |
| ANIMAL REMAINS AND MISC. | - | [3.4] | [7.0] | - | [4.3] | [41.6] | [<0.1] | [11.1] | [95.1] |
| SAND | - | - | - | - | - | [58.4] | - | [0.4] | - |
| Number sampled | 1 | 9 | 11 | 4 | 21 | 6 | 8 | 15 | 1 |
| Number empty | 0 | 2 | 2 | 2 | 0 | 2 | 0 | 1 | 0 |
| Mean stomach content (g) | <0.1 | 5.0 | <0.1 | NA | 1.7 | <0.1 | <0.1 | 0.1 | 2.6 |
| Mean fish length (cm) | 45 | 61 | 22 | 43 | 25 | 14 | 5 | 11 | 34 |
| Fish length range (cm) | - | 39-90 | 14-28 | 37-50 | 15-48 | 14-16 | 5-6 | 10-13 | - |

Table A-5. Diet composition and sampling data for shortnose greeneye, inshore lizardfish, offshore lizardfish, snakefish, longnose lancetfish, lanternfish unclassified, *Hygophum taaningi*, *Maurolicus weitzmani*, and fourbeard rockling. (Subscripts indicate data source: 1 = 1977-80 trawl survey, 3 = 1969-72 trawl survey, and 5 = Food Chain Dynamics Investigation special studies. Data type: percentage by weight. Squared brackets indicate major taxon subtotal; parentheses indicate minor taxon subtotal.)

| Stomach Contents | Predator | | | | | | | | |
|---------------------------------|------------------------------------|------------------------------------|-------------------------------------|------------------------|-------------------------------------|-----------------------------------|---|--|------------------------------------|
| | Shortnose greeneye ₁ | Inshore lizardfish ₁ | Offshore lizardfish ₁ | Snakefish ₁ | Longnose lancetfish ₅ | Lanternfish uncl. ₁ | <i>Hygophum taaningi</i> ₁ | <i>Maurolicus weitzmani</i> ₃ | Fourbeard rockling ₁ |
| PLATYHELMINTHES | - | - | - | [7.7] | - | - | - | - | - |
| MOLLUSCA | - | - | [96.2] | - | [1.0] | - | - | - | - |
| Bivalvia | - | - | - | - | - | - | - | - | (0.7) |
| Cephalopoda | - | - | (96.2) | - | (1.0) | - | - | - | - |
| Octopodida | - | - | - | - | 0.8 | - | - | - | - |
| Cephalopoda unid. | - | - | 96.2 | - | 0.2 | - | - | - | - |
| POLYCHAETA | [10.7] | - | - | - | - | - | [0.5] | - | [65.7] |
| Spionidae | - | - | - | - | - | - | - | - | 20.7 |
| Polychaeta unid. | 10.7 | - | - | - | - | - | 0.5 | - | 45.0 |
| CRUSTACEA | [68.8] | - | [1.3] | - | [96.1] | [72.9] | [99.0] | [100.0] | [1.2] |
| Copepoda | - | - | - | - | - | (38.9) | (48.4) | (38.9) | - |
| Pontellidae | - | - | - | - | - | - | - | 5.6 | - |
| <i>Centropages</i> sp. | - | - | - | - | - | 4.2 | - | - | - |
| Calanoida | - | - | - | - | - | - | - | 33.3 | - |
| Copepoda unid. | - | - | - | - | - | 34.7 | 48.4 | - | - |
| Stomatopoda | - | - | - | - | - | (3.3) | - | - | - |
| Amphipoda | - | - | - | - | (74.5) | (7.9) | (0.9) | - | (0.2) |
| <i>Parathemisto gaudichaudi</i> | - | - | - | - | - | 2.8 | - | - | - |
| <i>Parathemisto</i> sp. | - | - | - | - | 71.5 | - | - | - | - |
| <i>Prosina</i> sp. | - | - | - | - | 1.8 | - | - | - | - |
| Platyscelidae | - | - | - | - | 0.5 | - | - | - | - |
| <i>Pronima</i> sp. | - | - | - | - | 0.4 | - | - | - | - |
| Hyperiididae | - | - | - | - | 0.3 | 0.7 | 0.9 | - | - |
| <i>Ampelisca</i> sp. | - | - | - | - | - | 4.4 | - | - | - |
| Amphipoda unid. | - | - | - | - | - | - | - | - | 0.2 |
| Mysidacea | - | - | - | - | - | (0.4) | - | - | - |
| Euphausiacea | - | - | - | - | - | (1.9) | (36.1) | - | - |
| <i>Euphausia krohni</i> | - | - | - | - | - | - | 35.2 | - | - |
| Euphausiacea unid. | - | - | - | - | - | 1.9 | 0.9 | - | - |
| Decapoda | - | - | (1.3) | - | (13.5) | (20.5) | (3.3) | - | - |
| <i>Lucifer faxoni</i> | - | - | - | - | - | - | 0.5 | - | - |
| <i>Crangon septemspinosa</i> | - | - | - | - | - | 16.5 | - | - | - |
| Crabs unid. | - | - | 1.3 | - | - | - | 2.8 | - | - |
| Brachyuran (megalops) | - | - | - | - | 13.5 | - | - | - | - |
| Decapoda unid. | - | - | - | - | - | 4.0 | - | 2.8 | - |
| Crustacea unid. | (68.8) | - | - | - | (8.1) | - | (10.3) | (61.1) | (1.0) |
| OSTEICHTHYES | - | [100.0] | [2.5] | - | [2.8] | [6.2] | - | - | - |
| Ogcocephalidae | - | - | - | - | 1.0 | - | - | - | - |
| Osteichthyes unid. | - | 100.0 | 2.5 | - | 1.8 | 6.2 | - | - | - |
| ANIMAL REMAINS AND MISC. | [20.5] | - | - | [92.3] | [0.1] | [20.9] | [0.5] | - | [32.4] |
| Number sampled | 6 | 2 | 6 | 3 | 2 | 10 | 9 | 16 | 7 |
| Number empty | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 6 | 1 |
| Mean stomach content (g) | <0.1 | 0.2 | 0.7 | <0.1 | 25.1 | 0.1 | <0.1 | <0.1 | 0.1 |
| Mean fish length (cm) | 12 | 26 | 10 | 18 | 73 | 8 | 6 | NA | 22 |
| Fish length range (cm) | 11-14 | 22-31 | 7-15 | 14-20 | NA | 8-10 | 6-7 | NA | 15-32 |

Table A-6. Diet composition and sampling data for offshore hake, longfin hake, marlin-spike, longnose grenadier, grenadier unclassified, striped cusk-eel, Atlantic midshipman, and Atlantic needlefish. (Subscripts indicate data source: 1 = 1977-80 trawl survey, and 3 = 1969-72 trawl survey. Data type: percentage by weight. Squared brackets indicate major taxon subtotal; parentheses indicate minor taxon subtotal.)

| Stomach Contents | Predator | | | | | | | |
|----------------------------------|----------------------------|---------------------------|---------------------------|---------------------------------|------------------------------|-------------------------------|----------------------------------|----------------------------------|
| | Offshore hake ₁ | Longfin hake ₁ | Marlin-spike ₁ | Longnose grenadier ₁ | Grenadier uncl. ₁ | Striped cusk-eel ₁ | Atlantic midshipman ₁ | Atlantic needlefish ₃ |
| MOLLUSCA | - | - | - | - | - | - | [23.2] | - |
| Cephalopoda | - | - | - | - | - | - | 23.2 | - |
| POLYCHAETA | - | - | [0.4] | [80.1] | [16.7] | - | - | - |
| <i>Glycera</i> sp. | - | - | - | 2.2 | - | - | - | - |
| <i>Nephtys incisa</i> | - | - | - | 15.6 | - | - | - | - |
| <i>Nephtys</i> sp. | - | - | - | 1.6 | - | - | - | - |
| <i>Ophelina</i> sp. | - | - | - | 26.0 | - | - | - | - |
| Spionidae | - | - | - | 0.2 | - | - | - | - |
| <i>Lumbrineris fragilis</i> | - | - | - | 5.6 | - | - | - | - |
| <i>Lumbrineris</i> sp. | - | - | - | 1.0 | - | - | - | - |
| <i>Ninoe nigripes</i> | - | - | - | 5.4 | - | - | - | - |
| Ampharetidae | - | - | - | - | 4.4 | - | - | - |
| Polychaeta unid. | - | - | 0.4 | 22.5 | 12.3 | - | - | - |
| CRUSTACEA | [82.5] | [99.1] | [99.6] | [13.8] | [27.3] | [100.0] | [7.9] | [100.0] |
| Copepoda | - | (3.7) | - | (0.3) | - | - | - | (100.0) |
| <i>Calanus</i> sp. | - | 1.7 | - | - | - | - | - | - |
| <i>Centropages</i> sp. | - | - | - | 0.3 | - | - | - | - |
| Calanoida | - | - | - | - | - | - | - | 100.0 |
| Copepoda unid. | - | 2.0 | - | - | - | - | - | - |
| Stomatopoda | - | - | - | - | - | - | (0.4) | - |
| Cumacea | - | - | (<0.1) | (0.1) | (0.2) | - | - | - |
| Isopoda | - | (0.2) | (0.5) | - | (17.7) | - | - | - |
| <i>Cirolana</i> sp. | - | 0.2 | 0.5 | - | 17.7 | - | - | - |
| Amphipoda | - | (0.3) | - | (5.5) | (1.2) | (29.7) | (<0.1) | - |
| Hyperiididae | - | 0.3 | - | - | - | - | - | - |
| <i>Ampelisca</i> sp. | - | - | - | 2.0 | - | - | <0.1 | - |
| <i>Unciola</i> sp. | - | - | - | 3.0 | - | - | - | - |
| Amphipoda unid. | - | - | - | 0.5 | 1.2 | 29.7 | - | - |
| Mysidacea | - | - | (0.1) | - | (4.6) | - | (1.6) | - |
| <i>Pseudomma affine</i> | - | - | - | - | 4.6 | - | - | - |
| Mysidacea unid. | - | - | 0.1 | - | - | - | 1.6 | - |
| Euphausiacea | (82.5) | (57.6) | (99.0) | - | - | - | - | - |
| <i>Meganyctiphanes norvegica</i> | - | 47.3 | 99.0 | - | - | - | - | - |
| <i>Thysanoessa raschi</i> | 20.6 | - | - | - | - | - | - | - |
| Euphausiacea unid. | 61.9 | 10.3 | - | - | - | - | - | - |
| Decapoda | - | - | - | (2.9) | - | (70.3) | (2.8) | - |
| <i>Crangon septemspinosa</i> | - | - | - | 2.8 | - | 70.3 | - | - |
| Decapoda unid. | - | - | - | 0.1 | - | - | 2.8 | - |
| Crustacea unid. | - | (37.3) | - | (5.0) | (3.6) | - | (3.1) | - |
| OSTEICHTHYES | - | [0.5] | - | - | - | - | [68.9] | - |
| Engraulidae | - | - | - | - | - | - | 64.5 | - |
| Osteichthyes unid. | - | 0.5 | - | - | - | - | 4.4 | - |
| ANIMAL REMAINS AND MISC. | [17.5] | [0.4] | - | [6.1] | [56.0] | - | - | - |
| Number sampled | 17 | 17 | 10 | 18 | 3 | 2 | 10 | 5 |
| Number empty | 14 | 4 | 1 | 0 | 0 | 0 | 1 | 4 |
| Mean stomach content (g) | <0.1 | 0.2 | 0.3 | 0.2 | 0.1 | 0.1 | 0.1 | <0.1 |
| Mean fish length (cm) | 27 | 20 | 20 | 15 | 26 | 25 | 14 | NA |
| Fish length range (cm) | 13-35 | 16-35 | 15-26 | 10-23 | 26 | 22-29 | 14 | NA |

Table A-7. Diet composition and sampling data for Atlantic saury, silverside unclassified, buckler dory, deepbody boarfish, threespine stickleback, red cornetfish, cornetfish unclassified, and longspine snipefish. (Subscripts indicate data source: 1 = 1977-80 trawl survey, 3 = 1969-72 trawl survey, and 5 = Food Chain Dynamics Investigation special studies. Superscripts indicate data type: # = percentage by occurrence, and none = percentage by weight. Squared brackets indicate major taxon subtotal; parentheses indicate minor taxon subtotal.)

| Stomach Contents | Predator | | | | | | | |
|----------------------------|-----------------------------|-------------------------------|---------------------------|--------------------------------|-------------------------------------|-----------------------------|-------------------------------|---|
| | Atlantic saury ₅ | Silverside uncl. ₃ | Buckler dory ₃ | Deepbody boarfish ₁ | Threespine stickleback ₁ | Red cornetfish ₁ | Cornetfish uncl. ₁ | Longspine snipefish ₃ [#] |
| HYDROZOA | [54.4] | - | - | - | - | - | - | - |
| Siphonophora | 54.4+ | - | - | - | - | - | - | - |
| CRUSTACEA | [45.6] | [100.0] | - | [43.1] | [25.0] | - | [73.3] | 66.7 |
| Copepoda | - | - | - | (4.2) | (25.0) | - | - | - |
| <i>Metridia</i> sp. | - | - | - | 3.6 | - | - | - | - |
| Calanoida | - | - | - | - | - | - | - | 16.7 |
| Copepoda unid. | - | - | - | 0.6 | 25.0 | - | - | - |
| Cumacea | - | - | - | (0.9) | - | - | - | - |
| Bodotriidae | - | - | - | 0.9 | - | - | - | - |
| Amphipoda | - | (100.0) | - | (0.3) | - | - | - | - |
| Hyperiididae | - | - | - | 0.2 | - | - | - | - |
| Caprellidae | - | 100.0 | - | - | - | - | - | - |
| Gammaridea | - | - | - | - | - | - | - | 66.7 |
| Amphipoda unid. | - | - | - | 0.1 | - | - | - | - |
| Mysidacea | - | - | - | - | - | - | (73.3) | - |
| <i>Praunus flexuosus</i> | - | - | - | - | - | - | 73.3 | - |
| Euphausiacea | (45.6)+ | - | - | - | - | - | - | - |
| Crustacea unid. | - | - | - | (37.7) | - | - | - | - |
| OSTEICHTHYES | - | - | [100.0] | [3.3] | [75.0] | [100.0] | [26.7] | - |
| <i>Stenotomus chrysops</i> | - | - | 32.1 | - | - | - | - | - |
| Labridae | - | - | - | - | - | 91.0 | - | - |
| Percophidae | - | - | - | - | - | 1.5 | - | - |
| Osteichthyes larvae | - | - | - | - | 75.0 | - | - | - |
| Osteichthyes unid. | - | - | 67.9 | 3.3 | - | 7.5 | 26.7 | - |
| ANIMAL REMAINS AND MISC. | - | - | - | [53.6] | - | - | - | 16.7 |
| Number sampled | 30 | 36 | 5 | 5 | 1 | 5 | 1 | 6 |
| Number empty | 2 | 30 | 2 | 0 | 0 | 0 | 0 | 2 |
| Mean stomach content (g) | 0.7 | <0.1 | 5.4 | 0.6 | <0.1 | 11.0 | <0.1 | NA |
| Mean fish length (cm) | 32 | NA | NA | 12 | 5 | 69 | 32 | NA |
| Fish length range (cm) | NA | NA | NA | 12-14 | - | 43-115 | - | NA |

+ Not a positive identification due to being well digested.

Table A-8. Diet composition and sampling data for scorpionfish unclassified, armored searobin, spiny searobin, striped searobin, bluespotted searobin, searobin unclassified, hookear sculpin unclassified, shorthorn sculpin, and bigeye sculpin. (Subscripts indicate data source: 1 = 1977-80 trawl survey, and 3 = 1969-72 trawl survey. Data type: percentage by weight. Squared brackets indicate major taxon subtotal; parentheses indicate minor taxon subtotal.)

| Stomach Contents | Predators | | | | | | | | |
|------------------------------|---------------------------------|-------------------------------|-----------------------------|-------------------------------|-----------------------------------|-----------------------------|------------------------------|--------------------------------|-----------------------------|
| | Scorpionfish uncl. ₁ | Armored searobin ₁ | Spiny searobin ₁ | Striped searobin ₁ | Bluespotted searobin ₁ | Searobin uncl. ₁ | Hookear sculpin ₁ | Shorthorn sculpin ₃ | Bigeye sculpin ₃ |
| MOLLUSCA | - | - | - | [0.1] | - | - | [12.1] | - | - |
| Bivalvia | - | - | - | 0.1 | - | - | 12.1 | - | - |
| ANNELIDA | - | - | - | - | - | - | [56.1] | - | [47.9] |
| Polychaeta | - | - | - | - | - | - | (54.2) | - | (47.9) |
| Nephtyidae | - | - | - | - | - | - | 34.4 | - | - |
| Polychaeta unid. | - | - | - | - | - | - | 19.8 | - | 47.9 |
| Annelida | - | - | - | - | - | - | (1.9) | - | - |
| CRUSTACEA | [100.0] | [87.1] | [100.0] | [22.6] | [100.0] | [44.4] | [25.3] | [61.3] | [50.3] |
| Stomatopoda | - | (10.1) | - | - | - | - | - | - | - |
| <i>Heterosquilla armata</i> | - | 10.1 | - | - | - | - | - | - | - |
| Cumacea | - | - | - | - | - | - | 0.3 | - | - |
| Amphipoda | - | (14.9) | - | - | - | - | (17.6) | (<0.1) | (9.6) |
| <i>Harpinia propinqua</i> | - | - | - | - | - | - | 0.3 | - | - |
| <i>Unciola irrorata</i> | - | 12.2 | - | - | - | - | - | - | - |
| Amphipoda unid. | - | 2.7 | - | - | - | - | 17.3 | <0.1 | 9.6 |
| Mysidacea | - | - | - | - | - | - | - | - | (3.6) |
| Decapoda | (100.0) | (38.8) | - | (21.3) | - | - | - | (58.4) | (34.7) |
| Pasiphaeidae | - | - | - | - | - | - | - | 47.6 | - |
| Crangonidae | - | 6.8 | - | - | - | - | - | - | - |
| <i>Crangon septemspinosa</i> | - | - | - | 6.0 | - | - | - | - | - |
| Decapod shrimp | - | - | - | - | - | - | - | - | 12.0 |
| <i>Cancer irroratus</i> | - | 9.1 | - | 2.6 | - | - | - | - | - |
| <i>Pelidnota mutica</i> | - | - | - | - | - | - | - | 6.0 | - |
| <i>Munida</i> sp. | - | 22.9 | - | - | - | - | - | - | - |
| <i>Pilumnus sayi</i> | 100.0 | - | - | - | - | - | - | - | - |
| Crab unid. | - | - | - | 12.7 | - | - | - | - | - |
| Decapoda unid. | - | - | - | - | - | - | - | 4.8 | 22.7 |
| Crustacea unid. | - | (23.3) | (100.0) | (1.3) | (100.0) | (44.4) | (7.4) | (2.9) | (2.4) |
| OSTEICHTHYES | - | [1.1] | - | [77.3] | - | - | - | - | - |
| ANIMAL REMAINS AND MISC. | - | [11.8] | - | - | - | [55.6] | [6.5] | [38.7] | [1.8] |
| Number sampled | 1 | 24 | 1 | 7 | 1 | 8 | 22 | 10 | 21 |
| Number empty | 0 | 8 | 0 | 2 | 0 | 4 | 2 | 2 | 6 |
| Mean stomach content (g) | 0.5 | <0.1 | <0.1 | 0.6 | <0.1 | <0.1 | <0.1 | <0.1 | 0.1 |
| Mean fish length (cm) | 20 | 25 | 13 | 30 | 16 | 8 | 6 | 153 | NA |
| Fish length range (cm) | - | 7-34 | - | 21-39 | - | 5-11 | 4-8 | NA | NA |

Table A-9. Diet composition and sampling data for alligatorfish, lumpfish, Atlantic seasnail, striped bass, sand perch, red grouper, scamp, and bigeye. (Subscripts indicate data source: 1 = 1977-80 trawl survey, and 3 = 1969-72 trawl survey. Data type: percentage by weight. Squared brackets indicate major taxon subtotal; parentheses indicate minor taxon subtotal.)

| Stomach Contents | Predator | | | | | | | | |
|--------------------------------|-----------------------------|-----------------------------|-----------------------|--------------------------------|---------------------------|-------------------------|--------------------------|--------------------|---------------------|
| | Alligator-fish ₁ | Alligator-fish ₃ | Lumpfish ₁ | Atlantic seasnail ₃ | Striped bass ₁ | Sand perch ₁ | Red grouper ₃ | Scamp ₁ | Bigeye ₁ |
| MOLLUSCA | - | - | - | - | - | - | [100.0] | <0.1] | - |
| Gastropoda | - | - | - | - | - | - | - | <0.1] | - |
| Cephalopoda | - | - | - | - | - | - | (100.0) | - | - |
| Octopodida | - | - | - | - | - | - | 100.0 | - | - |
| POLYCHAETA | - | - | [10.9] | - | - | - | - | - | [21.2] |
| Nereidae | - | - | 10.9 | - | - | - | - | - | - |
| Polychaeta unid. | - | - | - | - | - | - | - | - | 21.2 |
| CRUSTACEA | [100.0] | [100.0] | [0.8] | [100.0] | - | - | - | [3.0] | [15.4] |
| Copepoda | - | - | (0.4) | - | - | - | - | <0.1] | - |
| Amphipoda | (100.0) | (86.3) | - | (100.0) | - | - | - | - | - |
| <i>Stenopleustes gracilis</i> | 18.2 | - | - | - | - | - | - | - | - |
| <i>Dyopodos porrectus</i> | 81.8 | - | - | - | - | - | - | - | - |
| Aoridae | - | 36.0 | - | - | - | - | - | - | - |
| Caprellidae | - | 49.3 | - | - | - | - | - | - | - |
| Gammaridea | - | - | - | 100.0 | - | - | - | - | - |
| Amphipoda unid. | <0.1 | 1.0 | - | - | - | - | - | - | - |
| Decapoda | - | (3.4) | (0.4) | - | - | - | - | (3.0) | - |
| <i>Portunus spinicarpus</i> | - | - | - | - | - | - | - | 2.5 | - |
| Decapoda larvae | - | - | 0.4 | - | - | - | - | - | - |
| Decapoda unid. | - | 3.4 | - | - | - | - | - | 0.5 | - |
| Crustacea unid. | - | (10.3) | - | - | - | - | - | - | 15.4 |
| ASCIDIACEA | - | - | [29.4] | - | - | - | - | - | - |
| OSTEICHTHYES | - | - | - | - | [100.0] | [100.0] | - | [97.0] | - |
| <i>Brevoortia tryannus</i> | - | - | - | - | 68.8 | - | - | - | - |
| <i>Urophycis chuss</i> | - | - | - | - | 30.1 | - | - | - | - |
| <i>Macrozoarces americanus</i> | - | - | - | - | 1.1 | - | - | - | - |
| <i>Cyprinodon variegatus</i> | - | - | - | - | - | - | - | 95.7 | - |
| Osteichthyes larvae | - | - | - | - | - | 2.5 | - | - | - |
| Osteichthyes unid. | - | - | - | - | - | 97.5 | - | 1.3 | - |
| ANIMAL REMAINS AND MISC. | - | - | [58.9] | - | - | - | - | - | [63.4] |
| Number sampled | 1 | 23 | 2 | 2 | 2 | 3 | 1 | 3 | 2 |
| Number empty | 0 | 5 | 0 | 0 | 0 | 1 | 0 | 1 | 0 |
| Mean stomach content (g) | <0.1 | <0.1 | 27.9 | <0.1 | 542.3 | 0.4 | <0.1 | 14.2 | <0.1 |
| Mean fish length (cm) | 9 | NA | 35 | NA | 107 | 20 | NA | 71 | 18 |
| Fish length range (cm) | - | NA | 31-40 | NA | 102-112 | 18-24 | NA | 54-99 | 18 |

Table A-10. Diet composition and sampling data for tilefish, cobia, Atlantic bumper, round scad, bigeye scad, greater amberjack, banded rudderfish, rough scad, and vermilion snapper. (Data source: 1977-80 trawl survey. Data type: percentage by weight. Squared brackets indicate major taxon subtotal; parentheses indicate minor taxon subtotal.)

| Stomach Contents | Predator | | | | | | | | |
|---------------------------------|----------|--------|-----------------|------------|-------------|-------------------|-------------------|------------|-------------------|
| | Tilefish | Cobia | Atlantic bumper | Round scad | Bigeye scad | Greater amberjack | Banded rudderfish | Rough scad | Vermilion snapper |
| MOLLUSCA | [0.2] | [12.9] | [<0.1] | [17.1] | - | - | - | - | [81.7] |
| Gastropoda | (0.1) | - | (<0.1) | (17.1) | - | - | - | - | - |
| Bivalvia | (0.1) | - | (<0.1) | - | - | - | - | - | - |
| Pectinidae | 0.1 | - | - | - | - | - | - | - | - |
| Bivalvia unid. | - | - | <0.1 | - | - | - | - | - | - |
| Cephalopoda | - | (12.9) | - | - | - | - | - | - | - |
| <i>Illlex</i> sp. | - | 12.9 | - | - | - | - | - | - | - |
| Cephalopoda unid. | - | - | - | - | - | - | - | - | 81.7 |
| POLYCHAETA | [0.2] | - | - | - | - | - | - | - | - |
| CRUSTACEA | [21.9] | [54.3] | - | - | [14.7] | - | [3.0] | [38.0] | [0.1] |
| Copepoda | - | - | - | - | - | - | - | (25.7) | (<0.1) |
| Isopoda | (1.2) | - | - | - | - | - | - | - | - |
| <i>Cirolana polita</i> | 1.0 | - | - | - | - | - | - | - | - |
| Isopoda unid. | 0.2 | - | - | - | - | - | - | - | - |
| Amphipoda | (0.2) | - | - | - | - | - | - | - | (0.1) |
| Euphausiacea | (0.5) | - | - | - | - | - | - | - | - |
| Decapoda | (4.4) | (54.3) | - | - | (10.6) | - | (3.0) | - | (<0.1) |
| <i>Euprognatha rastellifera</i> | 1.6 | - | - | - | - | - | - | - | - |
| <i>Ovalipes ocellatus</i> | - | 28.4 | - | - | - | - | - | - | - |
| <i>Bathynectes</i> sp. | - | 13.8 | - | - | - | - | - | - | - |
| <i>Munida irrasa</i> | 1.3 | - | - | - | - | - | - | - | - |
| Shrimp unid. | - | - | - | - | - | - | 3.0 | - | - |
| Crabs unid. | - | - | - | - | 10.6 | - | - | - | - |
| Decapoda unid. | 1.5 | 12.1 | - | - | - | - | - | <0.1 | <0.1 |
| Crustacea unid. | (15.6) | - | - | - | (4.1) | - | - | (12.3) | - |
| ECHINODERMATA | [74.8] | - | - | - | - | - | - | - | - |
| Ophiuroidea | (74.8) | - | - | - | - | - | - | - | - |
| <i>Amphioplus</i> sp. | 10.4 | - | - | - | - | - | - | - | - |
| Amphiuridae | 64.4 | - | - | - | - | - | - | - | - |
| ASCIDIACEA | - | - | - | - | - | - | - | - | [16.4] |
| OSTEICHTHYES | [<0.1] | [29.5] | - | - | [13.6] | [100.0] | [97.0] | - | [0.5] |
| <i>Myoxo. octodecemspinus</i> | - | - | - | - | - | 32.4 | - | - | - |
| <i>Scophthalmus aquosus</i> | - | 28.4 | - | - | - | - | - | - | - |
| Pleuronectiformes | - | 1.1 | - | - | - | - | - | - | - |
| Osteichthyes scales | - | - | - | - | 1.8 | - | - | - | - |
| Osteichthyes unid. | <0.1 | - | - | - | 11.8 | 67.6 | 97.0 | - | 0.5 |
| ANIMAL REMAINS AND MISC. | [2.9] | [3.3] | [100.0] | [82.9] | [71.7] | - | - | [62.0] | [1.3] |
| Number sampled | 9 | 3 | 5 | 5 | 10 | 3 | 2 | 11 | 10 |
| Number empty | 3 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 1 |
| Mean stomach content (g) | 0.8 | 24.0 | <0.1 | <0.1 | <0.1 | 133.7 | 3.8 | <0.1 | 0.8 |
| Mean fish length (cm) | 39 | 94 | 10 | 14 | 13 | 96 | 18 | 13 | 17 |
| Fish length range (cm) | 25-45 | 84-100 | 9-16 | 14-16 | 13-15 | 92-100 | 18 | 12-15 | 12-24 |

Table A-11. Diet composition and sampling data for tomate, white grunt, pigfish, whitebone porgy, spottail pinfish, pinfish, silver perch, banded drum, and Atlantic spadefish. Data source: 1977-80 trawl survey. Data type: percentage by weight. Squared brackets indicate major taxon subtotal; parentheses indicate minor taxon subtotal.)

| Stomach Contents | Predator | | | | | | | | |
|------------------------------|----------|-------------|---------|-----------------|------------------|---------|--------------|-------------|--------------------|
| | Tomate | White grunt | Pigfish | Whitebone porgy | Spottail pinfish | Pinfish | Silver perch | Banded drum | Atlantic spadefish |
| CNIDARIA | - | - | - | - | [50.6] | [16.3] | - | - | - |
| Hydrozoa | - | - | - | - | 19.7 | - | - | - | - |
| Anthozoa | - | - | - | - | 30.9 | 16.3 | - | - | - |
| MOLLUSCA | - | [40.8] | - | - | [14.9] | [81.3] | - | - | - |
| Bivalvia | - | 17.9 | - | - | 14.9 | - | - | - | - |
| Mollusca unid. | - | 22.9 | - | - | - | 81.3 | - | - | - |
| POLYCHAETA | [5.6] | [18.9] | [61.2] | - | - | - | - | - | - |
| Glyceridae | - | - | 3.1 | - | - | - | - | - | - |
| <i>Diopatra cuprea</i> | - | - | 17.6 | - | - | - | - | - | - |
| <i>Lumbrineris</i> sp. | 1.2 | - | - | - | - | - | - | - | - |
| Arabellidae | - | 2.2 | - | - | - | - | - | - | - |
| Terebellidae | - | 7.1 | - | - | - | - | - | - | - |
| Polychaeta unid. | 4.4 | 9.6 | 40.5 | - | - | - | - | - | - |
| SIPUNCULA | - | - | [9.8] | - | - | - | - | - | - |
| CRUSTACEA | [6.6] | [17.5] | [6.5] | - | [9.8] | - | [100.0] | [100.0] | - |
| Stomatopoda | - | (4.0) | - | - | - | - | - | - | - |
| Amphipoda | (3.7) | (0.3) | (0.2) | - | (5.2) | - | - | (1.4) | - |
| <i>Aeginina longicornis</i> | - | - | - | - | 5.1 | - | - | - | - |
| Gammaridea | - | - | - | - | - | - | - | 1.4 | - |
| Amphipoda unid. | 3.7 | 0.3 | 0.2 | - | 0.1 | - | - | - | - |
| Mysidacea | - | - | - | - | - | - | (100.0) | (64.4) | - |
| <i>Mysidopsis bigelowi</i> | - | - | - | - | - | - | 100.0 | 64.4 | - |
| Decapoda | (1.0) | (13.2) | (5.8) | - | (4.6) | - | - | (19.9) | - |
| <i>Acetes americanus</i> | - | - | 0.3 | - | 2.1 | - | - | - | - |
| <i>Crangon septemspinosa</i> | 1.0 | - | - | - | - | - | - | - | - |
| Shrimps unid. | - | 0.3 | 5.1 | - | - | - | - | - | - |
| Crabs unid. | - | 6.6 | 0.1 | - | - | - | - | 19.9 | - |
| Decapoda unid. | - | 6.3 | 0.3 | - | 2.5 | - | - | - | - |
| Crustacea unid. | (1.9) | (<0.1) | (0.5) | - | - | - | - | (14.3) | - |
| ECHINODERMATA | - | [1.7] | - | - | [1.0] | [0.7] | - | - | - |
| Echinoidea | - | 0.8 | - | - | - | - | - | - | - |
| Ophiuroidea | - | 0.5 | - | - | 1.0 | 0.7 | - | - | - |
| Echinodermata unid. | - | 0.4 | - | - | - | - | - | - | - |
| OSTEICHTHYES | [0.4] | [13.1] | - | [100.0] | [0.2] | [1.7] | - | - | - |
| <i>Anchoa</i> sp. | - | - | - | 90.6 | - | - | - | - | - |
| Engraulidae | - | - | - | - | - | 1.7 | - | - | - |
| Osteichthyes unid. | 0.4 | 13.1 | - | 9.4 | 0.2 | - | - | - | - |
| ANIMAL REMAINS AND MISC. | [87.4] | [8.0] | [22.5] | - | [23.5] | - | - | - | [100.0] |
| Number sampled | 23 | 14 | 11 | 11 | 6 | 11 | 5 | 11 | 1 |
| Number empty | 9 | 3 | 1 | 9 | 1 | 6 | 4 | 3 | 0 |
| Mean stomach content (g) | 0.1 | 1.5 | 0.4 | 0.1 | 0.2 | 0.2 | <0.1 | <0.1 | <0.1 |
| Mean fish length (cm) | 15 | 29 | 18 | 27 | 17 | 16 | 19 | 15 | 12 |
| Fish length range (cm) | 11-19 | 24-39 | 16-24 | 20-32 | 12-20 | 15-18 | 18-20 | 14-20 | - |

Table A-12. Diet composition and sampling data for hogfish, tautog, Atlantic soft pout, radiated shanny, wrymouth, southern stargazer, Atlantic cutlassfish, little tunny, and Atlantic bonito. (Subscripts indicate data source: 1 = 1977-80 trawl survey, and 4 = 1963-66 trawl survey. Superscripts indicate data type: # = percentage by occurrence, and none = percentage by weight. Squared brackets indicate major taxon subtotal; parentheses indicate minor taxon subtotal.)

| Stomach Contents | Predator | | | | | | | | |
|--------------------------------|----------------------|----------------------------------|---------------------------------|------------------------------|-----------------------|---------------------------------|-----------------------------------|---------------------------|------------------------------|
| | Hogfish ₁ | Tautog ₄ [#] | Atlantic soft pout ₁ | Radiated shanny ₁ | Wrymouth ₁ | Southern stargazer ₁ | Atlantic cutlassfish ₁ | Little tunny ₁ | Atlantic bonito ₁ |
| MOLLUSCA | [29.7] | - | - | - | - | - | - | - | [19.3] |
| Cephalopoda | - | - | - | - | - | - | - | - | (19.3) |
| <i>Loligo</i> sp. | - | - | - | - | - | - | - | - | 19.3 |
| Mollusca unid. (shell) | (29.7) | - | - | - | - | - | - | - | - |
| POLYCHAETA | - | - | - | [2.3] | - | - | - | - | - |
| CRUSTACEA | [30.6] | 66.7 | [100.0] | [5.4] | [100.0] | - | [30.0] | [0.6] | - |
| Copepoda | - | - | (100.0) | - | - | - | - | - | - |
| Amphipoda | - | - | - | (5.4) | - | - | - | (0.6) | - |
| <i>Leptocheirus plumulosus</i> | - | - | - | 0.8 | - | - | - | - | - |
| <i>Metopella angusta</i> | - | - | - | 2.3 | - | - | - | - | - |
| <i>Bathymedon saussurei</i> | - | - | - | 1.5 | - | - | - | - | - |
| <i>Gammarus lawrencianus</i> | - | - | - | - | - | - | - | 0.6 | - |
| Gammaridea | - | - | - | 0.8 | - | - | - | - | - |
| Mysidacea | - | - | - | - | - | - | (0.1) | - | - |
| Decapoda | (0.9) | 66.7 | - | - | (100.0) | - | (21.9) | - | - |
| <i>Acetes americanus</i> | - | - | - | - | - | - | 20.4 | - | - |
| Pandalidae | - | - | - | - | 100.0 | - | - | - | - |
| <i>Stenocionops furcata</i> | 0.9 | - | - | - | - | - | - | - | - |
| <i>Callinassa setimanus</i> | - | - | - | - | - | - | 1.5 | - | - |
| Decapoda unid. | - | 66.7 | - | - | - | - | - | - | - |
| Crustacea unid. | (29.7) | - | - | - | - | - | (8.0) | - | - |
| OSTEICHTHYES | - | - | - | - | - | [100.0] | [69.2] | [99.3] | [80.7] |
| <i>Etrumeus teres</i> | - | - | - | - | - | - | - | 66.3 | - |
| Osteichthyes unid. | - | - | - | - | - | 100.0 | 69.2 | 33.0 | 80.7 |
| ANIMAL REMAINS AND MISC. | [39.7] | - | - | [92.3] | - | - | [0.8] | [0.1] | - |
| Number sampled | 1 | 3 | 3 | 6 | 1 | 1 | 11 | 1 | 3 |
| Number empty | 0 | 1 | 2 | 1 | 0 | 0 | 0 | 0 | 0 |
| Mean stomach content (g) | 5.7 | NA | <0.1 | <0.1 | 0.6 | 2.1 | 0.1 | 31.7 | 8.5 |
| Mean fish length (cm) | 55 | 31 | 11 | 12 | 23 | 22 | 48 | 65 | 52 |
| Fish length range (cm) | - | 24-40 | 11 | 11-15 | - | - | 44-53 | - | 50-54 |

Table A-13. Diet composition and sampling data for chub mackerel, king mackerel, Spanish mackerel, swordfish, harvestfish, dusky flounder, and planehead filefish. (Subscripts indicate data source: 1 = 1977-80 trawl survey, and 2 = Apex Predators Investigation studies. Superscripts indicate data type: * = percentage by volume, and none = percentage by weight. Squared brackets indicate major taxon subtotal; parentheses indicate minor taxon subtotal.)

| Stomach Contents | Predator | | | | | | |
|---|----------------------------|----------------------------|-------------------------------|--------------------------|---------------------------|-----------------------------|---------------------------------|
| | Chub mackerel ₁ | King mackerel ₁ | Spanish mackerel ₁ | Swordfish ₂ * | Harvest-fish ₁ | Dusky flounder ₁ | Planehead filefish ₁ |
| MOLLUSCA | - | [0.1] | [16.5] | [67.4] | - | - | [5.8] |
| Bivalvia | - | - | - | - | - | - | (<0.1) |
| Cephalopoda | - | (0.1) | (16.5) | (67.4) | - | - | (5.8) |
| <i>Illex illecebrosus</i> | - | - | - | 25.5 | - | - | - |
| <i>Loligo</i> sp. | - | - | - | 0.1 | - | - | - |
| Cephalopoda unid. | - | 0.1 | 16.5 | 41.8 | - | - | 5.8 |
| POLYCHAETA | - | - | - | - | - | - | [66.7] |
| CRUSTACEA | [12.6] | - | [0.4] | - | - | [91.3] | - |
| Copepoda | (12.6) | - | - | - | - | - | - |
| Decapoda | - | - | (0.4) | - | - | (25.5) | - |
| Pandalidae | - | - | 0.4 | - | - | - | - |
| Crab unid. | - | - | - | - | - | 25.5 | - |
| Crustacea unid. | - | - | (<0.1) | - | - | (65.8) | - |
| ECHINODERMATA | - | - | - | - | - | - | [1.7] |
| Ophiuroidea | - | - | - | - | - | - | 1.7 |
| LARVACEA | [3.7] | - | - | - | - | - | - |
| OSTEICHTHYES | [0.8] | [99.9] | [82.5] | [32.5] | - | [8.7] | - |
| <i>Brevoortia tryannus</i> | - | - | - | 0.5 | - | - | - |
| <i>Clupea harengus</i> | - | - | - | 0.2 | - | - | - |
| <i>Etrumeus teres</i> | - | 33.8 | 60.3 | - | - | - | - |
| <i>Anchoa hepsetus</i> | - | - | 6.3 | - | - | - | - |
| <i>Paralepis atlantica</i> | - | - | - | 0.3 | - | - | - |
| Alepisauridae | - | - | - | 0.5 | - | - | - |
| <i>Merluccius bilinearis</i> | - | - | - | 9.4 | - | - | - |
| Gadidae | - | - | - | 2.6 | - | - | - |
| <i>Pomatomus saltatrix</i> | - | - | - | 4.0 | - | - | - |
| <i>Ammodytes dubius</i> | - | - | - | 0.2 | - | - | - |
| Gempylidae | - | - | - | 0.2 | - | - | - |
| <i>Scomber scombrus</i> | - | - | - | 5.4+ | - | - | - |
| Scombridae | - | 50.3 | - | - | - | - | - |
| <i>Cubiceps athenae</i> | - | - | - | 0.6 | - | - | - |
| <i>Peprilus triacanthus</i> | - | - | - | 1.5 | - | - | - |
| <i>Sebastes fasciatus</i> | - | - | - | 2.4 | - | - | - |
| Osteichthyes unid. | 0.8 | 15.8 | 15.9 | 4.7 | - | 8.7 | - |
| ANIMAL REMAINS AND MISC. | [82.9] | - | [0.6] | [0.1] | [100.0] | - | [25.8] |
| Number sampled | 25 | 5 | 12 | 168 | 2 | 1 | 8 |
| Number empty | 1 | 1 | 0 | 17 | 0 | 0 | 4 |
| Mean stomach content (g or m ³) | 0.1 | 12.2 | 3.0 | 702.3 | 0.2 | 0.2 | <0.1 |
| Mean fish length (cm) | 18 | 65 | 37 | 153 | 12 | 23 | 8 |
| Fish length range (cm) | 14-21 | 56-75 | 30-62 | 78-283 | 10-14 | - | 5-19 |

+ Atlantic mackerel was used as bait.