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## ANNOTATED LIST OF FISHES REPORTED FROM THE MARINE WATERS OF NEW YORK

PHILIP T. BRIGGS<sup>1</sup> AND JOHN R. WALDMAN<sup>2,3</sup>

**ABSTRACT** — The marine waters of New York State (excluding the Hudson River) are home to a large and diverse ichthyofauna that includes pelagics, migratory coastal fishes, resident species, anadromous and catadromous fishes, euryhaline-estuarine forms, and freshwater and deep-ocean strays. This diversity is attributable, in part, to the broad variety of habitats composing New York's marine waters. Also, although New York is located near the center of the Virginian biogeographic province, seasonal representatives of the Acadian and Carolinian provinces increase the breadth of its ichthyofauna. We record 338 fishes (114 families) reported from these waters, with annotations where warranted. Rare and unusual specimens are documented where possible with museum and literature citations.

### INTRODUCTION

The last, most complete, compilation of the fishes found in the marine waters of New York was that of Nichols and Breder (1927). Since then, many additions and clarifications have been made. Here we attempt to bring together and incorporate these many changes and produce a new, updated document to present New York's coastal fish fauna. Classification and nomenclature have changed. That used in Robins et al. (1991) is generally used in this list, with some exceptions above the species level, where we follow Nelson (1994) as being more appropriate. When a species is not listed by them the most generally accepted nomenclature for that species is used.

The geographical boundaries for this list are defined as follows. The 47.5 meter (25 fathom) depth limit used by Nichols and Breder (1927) is accepted for water seaward of Long Island. An eastern boundary of the New York-Rhode Island border in Block Island Sound has been set. However, if literature sources state only vaguely "near Block Island," or, "Block Island Sound," or similarly inexact wording, the species is included. All fishes reported from Long Island Sound and Fishers Island Sound are included. The Battery, at the southern tip of Manhattan Island, is set as the boundary to exclude fishes of the Hudson River

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(although marine fishes routinely penetrate the Hudson River north of the Battery). All fishes reported from Upper and Lower Bays of New York Harbor and the waters surrounding Staten Island (Kill Van Kull, Arthur Kill, but not including the New Jersey side of Raritan and Sandy Hook Bays) are included.

If a species is abundant or common (a subjective opinion at best), that may be the only comment. If a species is locally or seasonally common, that may be noted. Sometimes common means that a species is generally not common but is common during some years. Occurrences of rare or uncommon species are recorded, or the literature where such occurrences have been reported or reviewed is cited. We consider a species rare when there have been ten or fewer reports of its occurrence in recent (since 1960) years. Uncommon species are those found more frequently, but are not likely to be expected as an everyday event.

At present, this list comprises 338 species of fish representing 114 families. It includes marine, estuarine, diadromous, deepwater species, and freshwater strays. The freshwater strays cannot be considered as part of the marine ichthyofauna of New York; nonetheless, they were captured in what are considered marine locations. These strays number 12 species from five families (Cyprinidae, Ictaluridae, Esocidae, Centrarchidae, and Percidae). If freshwater strays are disregarded, our list totals 326 species from 109 families.

Also noted are a few species whose occurrences in New York waters are doubtful and in need of verification. The list has evolved over the past three decades from the records (both published and unpublished) of both authors, New York State Department of Environmental Conservation (NYSDEC) and Hudson River Foundation (HRF) personnel, specimens in the collection of the NYSDEC Bureau of Marine Resources, and a search of the literature available to us. Most of the specimens recorded by NYSDEC personnel were transferred from the collection of the Bureau of Marine Resources to the New York State Museum in 2000. This list is not limited to species with documented museum specimens. Thus, some of these records vary in their reliability and we provide the accordant annotations. Although ichthyofaunal lists based solely on documented specimens are more reliable, they also may substantially underestimate the ichthyofaunal diversity of a region. By including all records known to us, we risk overestimation of ichthyofaunal diversity, but we also highlight where further documentation is needed. Users of this list should be aware of these distinctions.

Recent records of additional fishes from oceanic waters off New York in depths beyond the limits of this list may be found in Edwards et al. (1962), Clark et al. (1969), Wilk and Silverman (1976), and Wilk et al. (1977). Inland fishes of New York, including marine, estuarine, and diadromous species from the Hudson River have been presented in

Smith (1985) and Smith and Lake (1990). Although there is no dedicated guide to the marine fishes of New York State, for identification purposes and life history information we recommend consulting Hildebrand and Schroeder (1928), Bigelow and Schroeder (1953), Smith (1985), Scott and Scott (1988), and Murdy et al. (1997).

Although this list is complete, to our knowledge, through October 2001, additions should be expected. Over the last decade about 20 new species were recorded as a result of either NYSDEC fisheries investigations, power plant ecological studies, other studies, or captures by individual fishermen that were brought to the attention of NYSDEC or the junior author. At this rate one might expect to add a new species or two to the list every year.

Though we have tried to be thorough in our literature search, there is always the possibility that we may have missed or misinterpreted some paper or report. We welcome any comments that will bring to light any such error of commission or omission. Species new to New York undoubtedly will be found in future studies, particularly strays of southern reef fishes. These may be expected in rocky areas or among pilings and in other habitats not well sampled by traditional methods such as seining or trawling. New occurrences of rare species will be recorded. Some species whose occurrences need to be verified will be found, and others will remain questionable. As with any faunal list from any area, in time, this list will become obsolete. Before that happens, we hope that this list will lead to some greater understanding of the vastness and complexity of New York's marine fish fauna.

## ZOOGEOGRAPHIC FACTORS

We believe there are two primary factors that account for the relatively diverse ichthyofauna of the marine waters of New York State. The first is the great variety of habitats found in the region — habitat diversity results in greater species diversity. The somewhat estuarine Long Island Sound couples with the East River on its western end and with the more oceanic waters of Fishers Island Sound on its eastern side. The East River (a tidal strait) receives water from the Hudson River estuary and from the New York Bight through Upper and Lower New York Bays. Long Island Sound also contains numerous bays, with various amounts of freshwater inflow. The two eastern forks of Long Island jut into oceanic waters, creating a mixing zone for currents and coastal and offshore migratory species.

The south shore of Long Island has an extensive network of shallow bays behind barrier beaches; these bays exchange water with the ocean via a series of inlets. Coastal waters south of Long Island deepen gradually. Although our 47.5 meter (25 fathom) depth boundary is

within the continental shelf, it does intersect the head of the Hudson Canyon and is not far from the heads of lesser canyons.

A second factor that increases ichthyofaunal diversity in the New York region is its mid-latitudinal position on the east coast of North America and in the Virginian biogeographic province. The inshore waters between the New York Bight and Cape Hatteras undergo extreme seasonal temperature changes, which favors a migratory rather than an endemic fauna (Parr 1933, Grosslein and Azarovitz 1982). In the New York Bight apex, there is a range of about 25 °C between summer and winter surface temperatures in nearshore areas (from 1 °C to 26 °C), and inshore bottom temperatures range from a maximum of about 21 °C in summer to less than 1 °C in winter. As such, there is considerable latitudinal movement of fishes across the Virginian province, with New York waters becoming habitable by representatives of the Acadian province in winter, and the Carolinian province during summer. In particular, the south shore bays of Long Island often host early life stages of subtropical fishes carried northward by the Gulf Stream. Fish diversity reaches a maximum in late summer and early autumn, and a minimum in late winter and early spring.

## LIST OF SPECIES

### Petromyzontiformes

#### Petromyzontidae (lampreys)

Sea Lamprey (*Petromyzon marinus*). Common. We have seen them in the Connetquot and Carmans Rivers where they spawn.

### Lamniformes

#### Rhincodontidae (carpet sharks)

Whale shark (*Rhincodon typus*). Rare. The only local record appears to be one from a pound net off Fire Island on 19 August 1935 (Nichols 1949).

#### Odontaspidae (sand tigers)

Sand tiger (*Odontaspis taurus*). Common.

#### Alopiidae (thresher sharks)

Bigeye thresher (*Alopias superciliosus*). Rare. Noted as occasional or rare by Gilbert and Gilbert (1968).

Thresher shark (*Alopias vulpinus*). Not uncommon. Latham (1964) found it in Long Island Sound at Orient in November 1946. Anglers take a few off the south shore of Long Island every year.

#### Cetorhinidae (basking sharks)

Basking shark (*Cetorhinus maximus*). Not uncommon.

#### Lamnidae (mackerel sharks)

White shark (*Carcharodon carcharius*). Not uncommon.

Shortfin mako (*Isurus oxyrinchus*). Common off the south shore of Long Island. Latham (1964) found it in Long Island Sound at Orient on 10 November 1947. Stuart Brill (NYSDEC) took a pup 61 cm long on rod and reel at Oak Beach inside Fire Island Inlet in July 1971.

Longfin mako (*Isurus paucus*). Uncertain. Specimens have been landed by anglers at Montauk and other ports. Most have been taken beyond the limit of this list. However, accounts of capture locations have been vague in many instances. Thus, it is included.

Porbeagle (*Lamna nasus*). Occasional. Nichols and Breder (1927) did not list the species. However, DeKay (1842) noted it from New York Harbor in 1840. Bean (1901) reported a 1.1 m specimen from a gill net at Southampton in July 1898. Only a few have been taken by anglers off the south shore of Long Island in recent years.

#### Scyliorhinidae (cat sharks)

False cat shark (*Pseudotriakis microdon*). Rare. The only local record appears to be one from Amagansett on 8 February 1883 (Bean 1901, 1903).

Chain dogfish (*Scyliorhinus retifer*). Rare. This shark, common in deep waters, is occasionally found in depths as shallow as 20 fathoms (Castro 1983). Matthew Pestinger (NYSDEC, personal communication) observed an otter trawl haul of several dozen from about 28 m off Jones Beach in summer 1985. Northeast Utilities Environmental Laboratory (1989) trawled one in Long Island Sound between June 1976 and May 1977.

#### Carcharhinidae (requiem sharks)

Silky shark (*Carcharhinus falciformis*). Rare. Brim (1972) reported four from pound nets off Fire Island on 30 July 1971.

Finetooth shark (*Carcharhinus isodon*). Rare. Bean (1903) noted that it had been recorded from New York.

Bull shark (*Carcharhinus leucas*). Uncommon. Nichols (1918) and Nichols and Breder (1927) called males uncommon in the late summer. We recently examined photographs of an about 1 m female taken by an angler off Heckscher State Park (Great South Bay) in August 1979.

Blacktip shark (*Carcharhinus limbatus*). Rare. Nichols and Breder (1927) cited one record each from Babylon (14 July 1910) and East Hampton (7 August 1916). Nichols (1918) had earlier noted that the Babylon fish was taken in Great South Bay, not in the ocean.

Dusky shark (*Carcharhinus obscurus*). Common.

Sandbar shark (*Carcharhinus plumbeus*). Common.

Tiger shark (*Galeocerdo cuvier*). Not uncommon.

Smooth dogfish (*Mustelus canis*). Abundant.

Blue shark (*Prionace glauca*). Common. Nichols and Breder (1927) called it "very rare." Nichols (1918) had only one record, near City Island in Long Island Sound. However, in the last three decades, the blue shark has been the most frequently seen and caught large shark off the south shore of Long Island. It also has been caught on rod and reel in Great South Bay.

Atlantic sharpnose shark (*Rhizoprionodon terraenovae*). Rare. Bean (1901, 1903) included it from an account by Mitchell (1815). Irwin Alperin (NYSDEC, personal communication) collected the species in Great South Bay in the mid-1950s.

#### Sphyrnidae (hammerhead sharks)

Scalloped hammerhead (*Sphyrna lewini*). Not uncommon. Gilbert and Gilbert (1968) called it rare or occasional. We have seen several taken by anglers off the south shore of Long Island.

Bonnethead (*Sphyrna tiburo*). Rare. Bean (1901) stated that it had been taken occasionally.

Smooth hammerhead (*Sphyrna zygaena*). Not uncommon.

### Squaliformes

#### Squalidae (dogfish sharks)

Spiny dogfish (*Squalus acanthias*). Abundant in the ocean during late fall, winter, and early spring, often entering eastern Long Island Sound.

#### Squatinae (angel sharks)

Atlantic angel shark (*Squatina dumeril*). Rare. Nichols and Breder (1927) called it rare at New York. Bean (1901) stated that it was found occasionally in the south shore bays and Gravesend Bay in the summer. There appear to be only two recent records. One 15.9 kg specimen was caught in a pound net in Gardiners Bay on 7 October

1976 and displayed at a seafood festival in Greenport, New York, on 9 October. The other was a 39 kg fish taken on rod and reel about 10 km east of Montauk Point in about 18.3 m of water on 19 August 1989.

## Rajiformes

### Pristidae (sawfishes)

Smalltooth sawfish (*Pristis pectinata*). Rare. DeKay (1842) cited Schoepf's (1788) account of a single capture at New York in July 1782.

### Torpedinidae (electric rays)

Atlantic torpedo (*Torpedo nobiliana*). Common. Nichols and Breder (1927) called it accidental at New York. Past and present NYSDEC personnel (Irwin Alperin, Byron Young, and Pieter VanVolkenburgh, personal communications) have seen many Atlantic torpedo from the inshore oceanic waters and surf zone of the south shore of Long Island.

### Rajidae (skates)

Clearnose skate (*Raja eglanteria*). Common.

Little skate (*Raja erinacea*). Common.

Rosette skate (*Raja garmani*). The presence of this common deepwater skate in the waters encompassed by this list has not been shown, but a stray might be expected. Grumman Ecosystems Corporation and Quirk, Lawler and Matusky, Engineers (1974) reported 22 rosette skates from depths of 21 - 28 m off the south shore of Long Island in February and March 1974. However, in their final report they re-assigned those specimens to *R. erinacea* (Grumman Ecosystems Corporation and Quirk, Lawler, and Matusky, Engineers 1975).

Barndoor skate (*Raja laevis*). Not uncommon.

Winter skate (*Raja ocellata*). Common.

Thorny skate (*Raja radiata*). Rare. The only local records appear to be one (NYSM 11610) taken at Orient on 27 December 1947 (Latham 1964) and five trawled from 18 m off the south shore of Long Island on 30 June 1975 (Wilk et al. 1977).

### Dasyatidae (stingrays)

Roughtail stingray (*Dasyatis centroura*). Common. Nichols and Breder (1927) called it formerly common, but now rare. Schaefer (1967) regularly seined the species from the surf at Fire Island. We have seen several taken by anglers from Great South Bay and from the surf at Fire Island and Jones Beach.

Bluntnose stingray (*Dasyatis say*). Rare. Bean (1901) noted that specimens were sent to the Museum of Natural History in Paris from New York; one 326 mm specimen (MNHN 2322) is presently listed there. Nichols and Breder (1927) did not include it in their list of New York fishes. Breder (1948) wrote that it sometimes strayed to New York. We could find no recent records of the species.

Smooth butterfly ray (*Gymnura micrura*). Rare. Nichols and Breder (1927) called it rare at New York. Bean (1901, 1903) stated that the species was rarely seen in Gravesend Bay. Hickey and Lester (1983) reported it from Fort Pond Bay, Montauk.

### Myliobatidae (eagle rays)

Bullnose ray (*Myliobatis fremenvillei*). Rare. Nichols and Breder (1927) cited a single record from Sandy Hook Bay. Ayres (1842-1844) reported one at Old Man's Harbor (now Mount Sinai Harbor) on 17 July 1841. Hickey and Lester (1983) found it in Fort Pond Bay, Montauk. Northeast Utilities Environmental Laboratory (1989) trawled one from Long Island Sound between June 1982 and May 1983. The American Museum of Natural History has a specimen (AMNH 44106) from the south side of Long Island.

Cownose ray (*Rhinoptera bonasus*). Erratic. Nichols and Breder (1927) cited it as unknown at Orient since 1906. Bean (1901) stated that it was rarely seen in Gravesend Bay. Alperin and Schaefer (1965) took one from the surf at Fire Island on 16 October 1963. Byron Young (NYSDEC, personal communication) observed one from the surf at Montauk on 11 June 1975 and another from the surf at



Amagansett on 19 June 1975. Riepe and Tanacredi (1988) took one from Jamaica Bay between November 1985 and October 1986. Recently, Vecchio and Young (1988) reported 124 seined from the surf at East Hampton in the late summer and fall of 1987. John Leeman (NYSDEC, personal communication) seined four near Seatuck Creek, Moriches Bay on 3 July 1988.

**Mobulidae (mantas)**

Manta (*Manta birostris*). Rare. Nichols and Breder (1927) reported one from 10 miles (16 km) "off Block Island." Hickey and Lester (1983) encountered it in Fort Pond Bay, Montauk.

Devil ray (*Mobula hypostoma*). Rare. Breder (1948) noted that it had been recorded from New York.

**Acipenseriformes**

**Acipenseridae (sturgeons)**

Shortnose sturgeon (*Acipenser brevirostrum*). Rare outside the Connecticut River, Hudson River, and perhaps, New York Harbor. An endangered species.

Atlantic sturgeon (*Acipenser oxyrinchus oxyrinchus*). Formerly common, but now much reduced in abundance. Schaefer (1967) seined both species of sturgeon from the surf at Fire Island. Commercial gill netters landed a few Atlantic sturgeon from inshore waters off Fire Island every year until a moratorium on their taking was enacted by New York on 20 March 1996. Karen Graulich (NYSDEC, personal communication) saw one gilled in a lobster trap near City Island in autumn 1990 in western Long Island Sound. Until the moratorium took effect, draggers took a few in Long Island Sound.

**Elopiformes**

**Elopidae (tarpons)**

Ladyfish (*Elops saurus*). Uncommon. Bean (1899, 1901) noted one from Gravesend Bay in 1888 and another near Clam Pond, Great South Bay on 17 October 1898. Latham (1917, 1918) reported it from Orient on 16 October 1916 and 19 October 1917, stating, "We usually obtain one or two records each fall." Hickey et al. (1975) found it at Montauk. Briggs et al. (1985) reported several from Orient in October, 1985. We have found it as far west as Northport in Long Island Sound in a thermal plume (17 January 1970).

Tarpon (*Megalops atlanticus*). Large adults are uncommon but regular summer visitors. Young have not been seen (Hickey et al. 1976; Briggs et al. 1985). Newspaper reports and pictures indicated an angler took an adult tarpon while surf casting at Montauk Point on 17 August 1997. All prior reports of the species were from pound net catches or fish surveys.

**Albuliformes**

**Albulidae (bonefishes)**

Bonefish (*Albula vulpes*). Rare. While Alperin and Schaefer (1964) seined 108 juveniles in Great South Bay, few adults and no other juveniles have been reported in New York. Bean (1903) noted one bonefish but gave no date or location. Breder and Nigrelli (1934) reported a 61 cm fish from Long Island Sound. Latham (1964) reported one of 55.3 cm from Orient on 1 October 1939 and another of 35.6 cm there on 17 June 1940. Briggs et al. (1979) reported two (3.0 and 3.3 kg) from gill nets off the south shore of Long Island in September 1978.

**Anguilliformes**

**Anguillidae (catadromous eels)**

American eel (*Anguilla rostrata*). Abundant in all bays and harbors.

**Ophichthidae (snake eels)**

Margined snake eel (*Ophichthus cruentifer*). Rare. Wilk et al. (1977) trawled eight in depths of 8 to 46 m off the south shore of Long Island in July and November 1974.

## Congridae (conger eels)

Conger eel (*Conger oceanicus*). Common. Usually found in the ocean but occasionally in the south shore bays and Long Island Sound.

**Clupeiformes**

## Clupeidae (herrings)

Blueback herring (*Alosa aestivalis*). Common.

Hickory shad (*Alosa mediocris*). Common.

Alewife (*Alosa pseudoharengus*). Common.

American shad (*Alosa sapidissima*). Common.

Atlantic menhaden (*Brevoortia tyrannus*). Abundant.

Atlantic herring (*Clupea harengus*). Common to abundant. Nichols and Breder (1927) called it uncommon to irregular. More recent studies (Briggs 1975a; Briggs and O'Connor 1971; Zawacki and Briggs 1976) found juveniles common in Great South Bay and Long Island Sound in the spring. In recent late falls and winters (1990-1991 through 2000-2001), Atlantic herring have supported extensive recreational and commercial fisheries.

Gizzard shad (*Dorosoma cepedianum*). Uncommon. Breder (1938) included it among the fishes of New York Harbor. National Marine Fisheries Service, Sandy Hook Marine Laboratory (Anthony Pacheco, unpublished manuscript) staff collected two from Lower New York Harbor in November 1981. Hickey and Lester (1976) provided the first Long Island record with one from a pound net at Northwest Harbor on 20 May 1975. NYSDEC personnel seined one on 1 August 1988, four on 10 July 1990, and electroshocked 19 (33.3 to 44.0 cm long) on 14-15 November 1990, all from brackish waters of the Carmans River (Charles Guthrie and Kim McKown, NYSDEC, personal communication). Waldman (1985) trawled one in Upper New York Harbor during winter 1983-1984. Connecticut Department of Environmental Protection has caught it in trawls in Long Island Sound (Penelope Howell, personal communication).

Round herring (*Etrumeus teres*). Common in the ocean and eastern Long Island Sound, but uncommon in the south shore bays.

Atlantic thread herring (*Opisthonema oglinum*). Rare. Nichols and Breder (1927) called it rare at Orient and New York. Bean (1901, 1903) noted that it appeared in July and August in Gravesend Bay and stated that a "great run" lasting about two weeks begins in late July. Robert Schmidt (Hudsonia Ltd., personal communication) has located several specimens in the New York State Museum that were captured in 1938 in Long Island Sound and at Orient, NY. None have been reported in the last three to four decades.

Spanish sardine (*Sardinella aurita*). Rare. The only local record appears to be an 83 mm fish reported from Montauk on 17 September 1923 (Nichols and Breder 1927).

## Engraulidae (anchovies)

Striped anchovy (*Anchoa hepsetus*). Erratic. Nichols and Breder (1927) called it rare at Orient and New York. Bean (1903) noted that it was extremely abundant in Great South Bay in September, 1884, but uncommon in the summer of 1888 and not seen in 1901. Briggs (1975a) thought it more common in the ocean than the south shore bays. Kiley (1975) seined it at Staten Island. Zawacki and Briggs (1976) took one at Shoreham on Long Island Sound. Conover et al. (1985) caught it from Lower New York Bay. Northeast Utilities staff (1994) have taken eggs and larvae in ichthyoplankton of Long Island Sound. Julia Brischler (NYSDEC) seined 38 from 30 to 68 mm in Jamaica Bay on 23 October 2001.

Bay anchovy (*Anchoa mitchilli*). Abundant in all the bays.

Flat anchovy (*Anchoviella perfasciata*). Rare. Bean (1903) reported it from Gravesend Bay and eastern Long Island Sound. Greeley (1939) seined one at Rocky Point, Long Island Sound, and another at Fire Island Inlet in 1938. Robert Schmidt (Hudsonia Ltd., personal communication) notes that Bean's specimens from

Gravesend Bay have since been found to be silver anchovy (*Engraulis eurystole*) and Greeley's specimen from Fire Island Inlet is a striped anchovy (*Anchoa hepsetus*). The Long Island Sound specimens have not been reexamined, but, now appear questionable.

Silver anchovy (*Engraulis eurystole*). Rare. Nichols and Breder (1927) listed one from Orient and called it casual at New York. Bean (1903) reported "many" from Fire Island, but called it uncommon in Gravesend Bay. Nichols (1918) recorded it from Long Beach and Coney Island. Two specimens are known from Montauk, collected during summer 1936 (AMNH 13643). There appear to be only two recent records. One is a specimen from Orient on 17 August 1970 in the collection of the NYSDEC. The other was seined at Shoreham on Long Island Sound by Geomet Technologies on 11 December 1982 (Robert Meisterich, personal communication.)

### Cypriniformes

#### Cyprinidae (carps and minnows)

Goldfish (*Carassius auratus*). A freshwater stray. Petrowski (1974) reported it impinging on a power plant intake screen in the Arthur Kill.

Common carp (*Cyprinus carpio*). A freshwater stray. NYSDEC personnel have seen them in tidal waters of the Bronx River and we have seen them in Glen Cove Creek, leading into Long Island Sound, and the Carmans and Connetquot Rivers leading into Great South Bay.

Golden shiner (*Notemigonus crysoleucas*). A freshwater stray. Texas Instruments (1977) personnel seined it from Oyster Bay Harbor in 1975. A juvenile was seined from tidal waters of the Carmans River by NYSDEC personnel in September 1988. Lent et al. (1990) seined it in a tidal marsh of Great South Bay at Islip.

### Siluriformes

#### Ictaluridae (bullhead catfishes)

White catfish (*Ameiurus catus*). A freshwater stray. The New England River Basins Commission (1975) included it in a list of the 61 most common fishes from Long Island Sound. Thomson et al. (1978) also included it. The species inhabits the Hudson River (Smith 1985; Smith and Lake 1990) and several rivers that empty into Long Island Sound (Whitworth et al. 1968).

#### Ariidae (sea catfishes)

Hardhead catfish (*Arius felis*). Rare. Nichols and Breder (1927) called it rare at New York. The New York State Museum has one specimen (NYSM 2278) taken by Roy Latham at Orient on 5 May 1919.

Gafftopsail catfish (*Bagre marinus*). Rare. Nichols and Breder (1927) called it occasionally common at New York. DeKay (1842) found it "frequently abundant" on the New Jersey side of New York Harbor. Breder (1938), though, considered it rare in Lower New York Harbor. The American Museum of Natural History has a specimen (AMNH 1605) collected on 18 August 1901 at Great Kills, Staten Island. Four, undated, young-of-the-year specimens taken by Roy Latham from Fort Pond Bay are in the collection of the New York State Museum (NYSM 2279).

### Salmoniformes

#### Esocidae (pikes)

Redfin pickerel (*Esox americanus americanus*). A freshwater stray. We have seen it in brackish water near the mouths of several rivers and creeks that empty into Great South Bay.

Northern pike (*Esox lucius*). A freshwater stray. Huver (1965) reported one from Fishers Island Sound.

Chain pickerel (*Esox niger*). A freshwater stray. Percy and Richards (1962) reported it from the Mystic River estuary of Long Island Sound.

**Osmeridae (smelts)**

Rainbow smelt (*Osmerus mordax*). Erratic. Nichols and Breder (1927) called it common. Few have been reported in the last three decades. Most recent records are from Long Island Sound and adjacent bays and estuaries.

**Salmonidae (trouts)**

Coho salmon (*Oncorhynchus kisutch*). Rare. Hickey and Lester (1983) reported one from a pound net at Fort Pond Bay, Montauk. Massachusetts, Connecticut, and New Hampshire stocked this Pacific salmon from the late 1960s to the late 1980s. This fish was probably a stray from those efforts.

Rainbow trout (*Oncorhynchus mykiss*). Not uncommon. Recent marine records are from Northport on Long Island Sound (Long Island Lighting Company 1977a) and Fort Pond Bay, Montauk (Hickey and Lester 1983).

Atlantic salmon (*Salmo salar*). Once common. Latham's (1964) most recent records from Orient were in Long Island Sound in 1932 and 1938. As a result of efforts to re-establish a run in the Connecticut River, some have been taken by pound nets in recent years from eastern Long Island waters (Hickey and Lester 1983; Byron Young, NYSDEC, personal communication). Newspaper reports indicated at least three were caught by anglers the last week of May 1992 from such diverse areas as Montauk and Great South Bay.

Brown trout (*Salmo trutta*). Not uncommon. It frequently enters the marine environment from several stocked streams. Perlmutter (1971) took one in Long Island Sound at Shoreham. Brown trout of sea-run strain have been purposefully stocked in Connecticut.

Brook trout (*Salvelinus fontinalis*). Not uncommon. It frequently enters the marine environment from several streams.

**Aulopiformes****Synodontidae (lizardfishes)**

Inshore lizardfish (*Synodus foetens*). Sometimes common in the summer (Alperin 1976b).

Snakefish (*Trachinocephalus myops*). Rare. Alperin (1976b) reviewed the known occurrences: 10 September 1934 from Mattituck and 18 October 1964 from Shinnecock Bay. A third snakefish, 92 mm fork length, was seined from Shinnecock Bay on 4 September 1987 (Kim McKown, NYSDEC, personal communication).

**Myctophiformes****Myctophidae (lanternfishes)**

Lanternfish (*Symbolophorus veranyi*). Ayres (1842-1844) found a lanternfish at Old Man's Harbor "rolled and chafed by the tide" on 31 October 1841. While unable to determine the species "with certainty," he thought it to be *Scopelus humboldti*, which is now in synonymy with *Symbolophorus veranyi*. The presence of this species in New York waters needs verification.

**Gadiformes****Gadidae (cods)**

Cusk (*Brosme brosme*). Rare. Equitable Environmental Health, Inc. (1976b) reported a 78 mm cusk from a fish trap near an electric power generating station on Hempstead Bay in April 1967. Northeast Utilities Environmental Laboratory (1989) staff trawled one from Long Island Sound between June 1987 and May 1988.

Fourbeard rockling (*Enchelyopus cimbrius*). Common in Long Island Sound.

Atlantic cod (*Gadus morhua*). Common in the ocean and sometimes eastern Long Island Sound from late fall through early spring.

Haddock (*Melanogrammus aeglefinus*). Uncommon. Nichols and Breder (1927) called it uncommon at New York in the winter. Perlmutter (1939) took larvae in Block Island Sound and at Montauk in late May 1938. Latham (1964) reported a 32

- cm fish from Gardiners Bay at Orient on 8 June 1963. Wilk et al. (1977) trawled one from 23 m of water off the south shore of Long Island on 7 May 1975. Otter trawlers encountered many juveniles inshore off the south shore of Long Island in the winter of 1987-1988. Northeast Utilities Environmental Laboratory (1992) staff have trawled only two in Long Island Sound since May 1976. The Connecticut Department of Environmental Protection has trawled haddock in Long Island Sound.
- Offshore hake (*Merluccius albidus*). Rare. Wilk et al. (1977) trawled two in 26 m off the south shore of Long Island on 25 May 1975. It is common in water deeper than the limits of this list.
- Silver hake (*Merluccius bilinearis*). Abundant in the ocean from fall through spring. It also enters Long Island Sound and the south shore bays.
- Atlantic tomcod (*Microgadus tomcod*). Locally common. Primarily estuarine.
- Pollock (*Pollachius virens*). Common. Nichols and Breder (1927) called the young common, but the adults rare. Adult pollock are subject to a directed sport fishery at Montauk (Bromley and Heacox 1939).
- Red hake (*Urophycis chuss*). Abundant in the ocean. Anglers usually call them "ling." It also enters Long Island Sound and the south shore bays.
- Spotted hake (*Urophycis regia*). Not uncommon.
- White hake (*Urophycis tenuis*). Common in the ocean.
- Macrouridae (grenadiers)**
- Longnose grenadier (*Caelorinchus caelorinchus carminatus*). Rare. Wilk et al. (1977) trawled two of these deepwater fish in only 35 m off the south shore of Long Island on 25 November 1975.
- Roughhead grenadier (*Macrourus berglax*). Rare. Goode and Bean (1895) noted, "The first specimen seen by American naturalists was picked up floating at the surface, off the mouth of New York Harbor." It is not uncommon in water deeper than the limits of this list.
- Ophidiidae (cusk-eels)**
- Fawn cusk-eel (*Lepophidium profundorum*). Rare. Wilk et al. (1977) trawled five in 10 to 23 m off the south shore of Long Island in October and November 1974 and June 1975. Conover et al. (1985) reported two from Lower Bay, New York Harbor in October 1982.
- Striped cusk-eel (*Ophidion marginatum*). Common in bays.
- Unnamed cusk-eel (*Ophidion robinsi*). Perhaps rare this far north. Fahay (1992) described the species. His appendix table indicates he took larvae in 21 to 30 m of water in the apex of the New York Bight.
- Crested cusk-eel (*Ophidion welshi*). Northeast Utilities Environmental Laboratory (1989, 1992) staff list it among fishes they have trawled in Long Island Sound. Robins et al. (1986) gave the range of the species as "Ga. ne Fla., and entire n. Gulf of Mexico." They note that this and *O. marginatum* are often confused, as is the distribution of the two species in U.S. waters. Presence of this species in Long Island Sound needs verification.

## **Batrachoidiformes**

### **Batrachoididae (toadfishes)**

- Oyster toadfish (*Opsanus tau*). Abundant in all bays.

## **Lophiiformes**

### **Lophiidae (goosefishes)**

- Goosefish (*Lophius americanus*). Common. They move inshore from late fall through early spring.

### **Antennariidae (frogfishes)**

- Sargassumfish (*Histrio histrio*). Rare. Nichols and Breder (1927) called it accidental at New York. Bean (1901, 1903) noted a single fish "off Long Island" in 1897 (AMNH 780).

**Ogcocephalidae (batfish)**

- Longnose batfish (*Ogcocephalus corniger*). Rare. Nichols (1918) and Nichols and Breder (1927) called it accidental at New York. Bean (1903) reported that one was seen “recently caught” at a wharf on the East River in the summer of 1884 or 1885.
- Roughback batfish (*Ogcocephalus parvus*). Rare. Byron Young (NYSDEC) obtained one that a fisherman took from a pound net at Amagansett (Block Island Sound) in summer 1982 (now in the collection of the NYSM).

**Mugiliformes****Mugilidae (mullet)**

- Striped mullet (*Mugil cephalus*). Common. NYSDEC personnel electroshocked a 76.5 cm (total length) female weighing 7 kg from tidal waters of the Carmans River on 9 November 1990. Water temperature at the capture site was 11.1 °C. Salinity was 8 ppt. Examination of the scales indicated this exceptionally large striped mullet was 11+ years old (Charles Guthrie, NYSDEC, personal communication).
- White mullet (*Mugil curema*). Common.

**Atheriniformes****Atherinidae (silversides)**

- Rough silverside (*Membras martinica*). Locally common. Nichols and Breder (1927) called it casual in New York. Alperin and Schaefer (1965) seined several thousand in Red Cedar Creek, Great Peconic Bay in September 1963. Bean (1901) found only one in Mecox Bay on 1 August 1898. And “few” from the other south shore bays. Briggs (1975a) seined one from Great South Bay on 9 June 1971. Texas Instruments (1977) staff seined it in Jamaica Bay and off the northeast shore of Staten Island in the summer of 1975. Stephen Heins (NYSDEC, personal communication) seined several from Great South Bay each year from 1983 through 1988.
- Inland silverside (*Menidia beryllina*). Common.
- Atlantic silverside (*Menidia menidia*). Abundant.

**Beloniformes****Belonidae (needlefishes)**

- Flat needlefish (*Albionnens hians*). Rare. The only local record appears to be a 43.2 cm specimen reported by Latham (1964) from Long Island Sound at Orient on 2 October 1942. The New York State Museum has a specimen from Orient taken on 1 September 1929 (NYSM 11776).
- Atlantic needlefish (*Strongylura marina*). Common in the summer.
- Needlefish (*Strongylura* sp.). Hickey and Lester (1983) reported a timucu (*Strongylura timucu*) from a pound net in Fort Pond Bay in July 1988. They now note that they can no longer verify the specimen as *S. timucu*, but still believe it was not *S. marina* (Hickey and Lester 1998).
- Agujon (*Tylosurus acu*). Rare. Listed as rare in Lower New York Bay by Breder (1938). The American Museum of Natural History holds two specimens (AMNH 221969) collected on 29 July 1937, at Island Park. Newspaper reports indicate that a 2.1 kg agujon was taken by an angler in Hempstead Bay off Lynbrook on 20 June 1991.
- Houndfish (*Tylosurus crocodilus*). Rare. Listed as rare in New York Harbor by Breder (1938).

**Scomberesocidae (sauries)**

- Atlantic saury (*Scomberesox saurus*). Uncommon. Nichols and Breder (1927) called it rare and irregular at Orient, noting several occurrences there in 1910. They also reported one from Fire Island Inlet on 9 August 1923. Latham (1964) noted a 58.4 cm individual from Long Island Sound at Orient on 6 August 1942. He also deposited seven specimens in the New York State Museum from Orient captured on 25 June 1916, 27 September 1917, 8 November 1921, 18 November 1922, 22

October 1922, and 23 November 1923. Northeast Utilities Corporation (1976) reported six seined near Millstone Point, Long Island Sound between May 1969 and December 1975.

**Exocoetidae (flyingfishes)**

Spotfin flyingfish (*Cypselurus furcatus*). Rare. Nichols and Breder (1927) called it accidental at New York. Bean (1903) noted that Mitchill (1815) obtained one about 76 mm long.

Atlantic flyingfish (*Cypselurus melanurus*). Rare. Nichols and Breder (1927) noted one from Great South Bay on 18 August 1926. Bean (1901,1903) noted that Mitchill (1815) had one of 30.5 cm seined near New York. Latham (1964) secured a 22.9 cm specimen from Gardiners Bay at Orient on 3 September 1941. The only recent record appears to be a 13.2 cm fish from Lake Montauk on 19 August 1985 (Briggs 1986).

Tropical two-wing flyingfish (*Exocoetus volitans*). Rare. Nichols and Breder (1927) called it accidental at New York.

Sailfin flyingfish (*Parexocoetus brachypterus*). Rare. The only local record appears to be one reported by Breder and Nigrelli (1934) "on the Long Island shore."

**Hemiramphidae (halfbeaks)**

Silverstripe halfbeak (*Hyporhamphus unifasciatus*). Uncommon. Alperin and Schaefer (1965) summarized occurrences of the species. Briggs (1975a) found a 10.5 cm specimen near Fire Island Lighthouse in Great South Bay. Thomson et al. (1978) reported a juvenile, seined on 30 July 1969, from Long Island Sound.

Flying halfbeak (*Euleptorhamphus velox*). Rare. The only local record appears to be one (AMNH 20402) found on the beach at Quogue on 7 August 1959 (Breder 1960).

**Cyprinodontiformes**

**Cyprinodontidae (pupfishes)**

Sheepshead minnow (*Cyprinodon variegatus*). Abundant.

**Fundulidae (killifishes)**

Banded killifish (*Fundulus diaphanus*). This primarily freshwater killifish frequently enters estuarine waters.

Mummichog (*Fundulus heteroclitus*). Abundant.

Spotfin killifish (*Fundulus luciae*). Locally common. Nichols and Breder (1927) called it rare. Greeley (1939) found it at Shelter Island and Mattituck Inlet. Kiley (1975) seined it from two salt creeks on Staten Island. We have seen it in Flax Pond, a tidal pond off Long Island Sound, where it appeared abundant in the early 1970s.

Striped killifish (*Fundulus majalis*). Abundant.

Rainwater killifish (*Lucania parva*). Common.

**Poeciliidae (livebearers)**

Eastern mosquitofish (*Gambusia holbrooki*). This euryhaline fish has been reported as having been introduced into many marshy areas on Long Island. Lent et al. (1990) reported seining a few between 1984 and 1986 at a tidal marsh of Great South Bay at Islip. However, all catalogued specimens from all Hudson River and Long Island, New York, waters examined to date by Robert Schmidt (Hudsonia Ltd., personal communication) have been the western mosquitofish (*Gambusia affinis*), in keeping with the conclusions of Smith (1985).

**Beryciformes**

**Holocentridae (squirrelfishes)**

Squirrelfish (*Holocentrus adscensionis*). Rare. One is known from Reynolds Channel near Point Lookout on 14 August 1969 (Schaefer and Doheny 1970). Todd Gardner (HRF, personal communication) caught one in Shinnecock Bay in the early 1990s.

Deepwater squirrelfish (*Holocentrus bullisi*). Rare. Todd Gardner (HRF, personal communication) took it from Shinnecock Bay in 1989, 1990, and 1991.



**Zeiformes**

## Zeidae (dories)

Buckler dory (*Zenopsis conchifera*). Uncommon. While there are no confirmed records from water shallower than 47.5 m, it should be expected. Many commercial trawlers claim to have taken it “inshore” and “just off the beach.”

## Capridae (boarfish)

Deepbody boarfish (*Antigonia capros*). Rare inshore. Robert Schmidt (Hudsonia Ltd., personal communication) notes that Latham deposited a specimen in the New York State Museum from “off Montauk Point” taken 2 June 1951.

**Gasterosteiformes**

## Gasterosteidae (sticklebacks)

Fourspine stickleback (*Apeltes quadracus*). Abundant.

Threespine stickleback (*Gasterosteus aculeatus*). Abundant.

Blackspotted stickleback (*Gasterosteus wheatlandi*). Uncommon. Nichols and Breder (1927) called it common at Orient. Thomson et al. (1978) reported one from Long Island Sound. Hanlon (1983) found a few in Shinnecock, Moriches, and Great South Bays. Numerous seining efforts by NYSDEC personnel since the 1950s have failed to capture it. However, Cowen et al. (1991) took many in the inshore ocean off Long Island.

Ninespine stickleback (*Pungitius pungitius*). Locally common.

## Aulostomidae (trumpetfishes)

Trumpetfish (*Aulostomus maculatus*). Rare. Grumman Ecosystems Corporation and Quirk, Lawler and Matusky, Engineers (1975) reported one from 8 m depths off the south shore of Long Island on 15 October 1974. Northeast Utilities Environmental Laboratory (1989) staff trawled one in Long Island Sound between June 1976 and May 1977.

## Fistulariidae (cornetfishes)

Bluespotted cornetfish (*Fistularia tabacaria*). Uncommon, but regular.

Red cornetfish (*Fistularia petimba*). Rare. Connecticut Department of Environmental Protection staff trawled it in Long Island Sound on 20 August 1990, 21 September 1990, and 13 September 1993, both in New York and Connecticut waters (David Simpson, personal communication; Weiss et al. 1995). There are also unconfirmed reports from the south shore bays.

## Centriscidae (snipefishes)

Longspine snipefish (*Macroramphosus scolopax*). Rare. The only inshore local record appears to be a 10 cm fish taken near Montauk Point in July 1973 (Hickey et al. 1975).

## Syngnathidae (pipefishes)

Lined seahorse (*Hippocampus erectus*). Common.

Northern pipefish (*Syngnathus fuscus*). Abundant.

Sargassum pipefish (*Syngnathus pelagicus*). Rare. Clark et al. (1969) reported a 99 mm fish off Fire Island Inlet on 3 December 1966.

**Dactylopteriformes**

## Dactylopteridae (flying gurnards)

Flying gurnard (*Dactylopterus volitans*). Uncommon. Alperin and Schaefer (1965) reviewed records of the species. Briggs (1975a) took one of 24.1 cm from Great South Bay in November 1970. The most recent south shore record is one seined by HRF staff from Shinnecock Bay on 2 September 1999. In Long Island Sound, staff of Northeast Utilities Environmental Laboratory (1994) have trawled at least one and as many as four every season since 1985-1986.

**Scorpaeniformes**

## Scorpaenidae (scorpionfishes)

Lionfish (*Pterois volitans*). Rare. Two approximately 20 mm specimens were col-



lected by Todd Gardner in Fire Island Inlet on 16 and 23 September 2001. This Indo-Pacific species has recently been documented from multiple sites in North Carolina (Whitfield et al., submitted).

Spotted scorpionfish (*Scorpaena plumieri*). Rare. Alperin and Schaefer (1965) reviewed the three local records of the species.

Golden redfish (*Sebastes norvegicus*). Rare. See Robins et al. (1991) for a brief, non-technical account of the nomenclatural status of the former *S. marinus*. DeKay (1842) called it "very rare." The only local record in less than 47.5 m appears to be a 20 mm fish reported by Austin and Tollefson (1973) off the south shore of Long Island.

Buchanan (1973) reported catches by anglers in 55 m just south of the limits of this list.

#### Triglidae (searobins)

Armored searobin (*Peristedion miniatum*). Rare. The only confirmed local record appears to be one Latham (1964) found on the beach of Gardiners Bay at Orient on 2 May 1945.

Northern searobin (*Prionotus carolinus*). Abundant.

Striped searobin (*Prionotus evolans*). Abundant.

Bighead searobin (*Prionotus tribulus*). Greeley (1939) reported young (20 - 100 mm) in Great South Bay and Fire Island Inlet in 1938. Nichols (1949) felt there may have been confusion with young of the abundant *P. evolans* which Greeley did not find. Examination of his specimens in the New York State Museum by Robert Schmidt (Hudsonia Ltd.) confirmed Nichol's doubt—Schmidt identified them as *P. evolans*.

#### Cottidae (sculpins)

Sea raven (*Hemitripterus americanus*). Common in the ocean.

Grubby (*Myoxocephalus aeneus*). Common.

Longhorn sculpin (*Myoxocephalus octodecemspinosus*). Common from late fall through mid-spring.

Shorthorn sculpin (*Myoxocephalus scorpius*). Rare. DeKay (1842) had a mutilated specimen from Hell Gate in the East River. Wilk et al. (1977) took one in 8 m depths in the apex of the New York Bight on 23 September 1974. Long Island Lighting Company (1977a) found it at Northport, Long Island Sound in 1975 and 1976. Hanlon (1983) trawled a 20.4 cm specimen from Shinnecock Bay in November 1981. NYSDEC personnel trawled one each from Little Peconic Bay on 31 May 1995 and Noyac Bay on 1 June 1995.

#### Agonidae (poachers)

Alligatorfish (*Aspidophoroides monopterygius*). Rare. Nichols and Breder (1927) called it rare at New York. There is a specimen in the collection of the NYSDEC Bureau of Marine Resources with no date or location of capture.

#### Cyclopteridae (snailfishes)

Lumpfish (*Cyclopterus lumpus*). Not uncommon in the winter and early spring in the ocean, eastern Long Island Sound, and the Gardiners and Peconic Bays systems.

Atlantic seasnail (*Liparis atlanticus*). Uncommon. Cooley (1968) took one from Shinnecock Bay in July 1967. Long Island Lighting Company (1975) and Equitable Environmental Health (1979) reported it at Shoreham in 1973, 1974, 1977 and 1978.

Inquiline snailfish (*Liparis inquilinus*). Not uncommon. Five fish from Fire Island Artificial Reef reported by Briggs (1974) as *L. atlanticus* proved to be, on re-examination, this recently described species (Able 1973). Another was taken there on 22 November 1977 (Briggs et al. 1979). Alice Weber and Frederick Mushacke (NYSDEC, personal communication) found two in lobster pots set in 26 m depths southeast of Shinnecock Inlet on 3 October 1980. Two fish in the collection of the NYSDEC labeled as skillefish (*Gobiesox strumosus*) taken off Fire Island Inlet on 12 April 1952 proved to be, on re-examination, *L. inquilinus*. There are likely many other records, particularly among fish identified as striped seasnail (*L. liparis*). Able (1973, 1976, 1990) has shown that all records of *L. liparis* in the western Atlantic are referable to other species, *L. liparis* being solely an eastern Atlantic species.

**Perciformes****Centropomidae (snooks)**

Snooks (*Centropomus* sp.). Rare. The only local record, probably the common snook (*C. undecimalis*), appears to be one taken at Island Park in October 1969 (Schaefer 1972).

**Moronidae (temperate basses)**

White perch (*Morone americana*). Common.

Striped bass (*Morone saxatilis*). Common.

**Polyprionidae (wreckfishes)**

Wreckfish (*Polyprion americanus*). Rare. Nichols and Breder (1927) cited one record of a young fish at New York in August (year not given). A specimen collected in August 1971 southeast of Shinnecock Inlet is held by the American Museum of Natural History (AMNH 30937). The family status of this genus is debatable. We follow Nelson's (1994) suggestion that it "probably" should be in its own family.

**Serranidae (sea basses)**

Rock sea bass (*Centropristis philadelphica*). Reported impinged on the intake screen of a power plant on the East River in December 1972 (Quirk, Lawler and Matusky, Engineers 1973). The single fish was 80 mm long. Specific identification of small, impinged and possibly damaged specimens of *Centropristis* can be difficult. There may be the possibility of confusion with *C. striata*. The presence of this species in New York waters needs verification.

Black sea bass (*Centropristis striata*). Common.

Goliath grouper (*Epinephelus itajara*). Rare. Photographs published in the Suffolk County Times (Greenport, New York) on 17 August 1972 of a 104 kg grouper taken from a pound net off Cherry Point, Bostwick Bay clearly show 11 spiny dorsal rays. The only western Atlantic grouper to get that large and have 11 spiny dorsal rays is *E. itajara*.

Red grouper (*Epinephelus morio*). Rare. The only local records appear to be one from Shinnecock Bay on 13 September 1962 and one from Great South Bay on 2 October 1962, both seined by Alperin and Schaefer (1965). They noted that those reported by Greeley (1939) proved to be *E. nigrilus* and *E. niveatus*.

Warsaw grouper (*Epinephelus nigrilus*). Rare. Local records include one from Fire Island Inlet in 1938 and one from Shinnecock Bay on 12 October 1962 (Alperin and Schaefer 1965). Another is known from Long Beach, collected on 23 September 1933 (AMNH 12512).

Snowy grouper (*Epinephelus niveatus*). Juveniles are not uncommon in the south shore bays most summers.

Gag (*Mycteroperca microlepis*). Rare. Alperin and Schaefer (1965) first reported it from Moriches and Shinnecock Bays in 1962. Briggs (1975b) had one from Kismet Artificial Reef, Great South Bay. Texas Instruments (1977) seined one from Jamaica Bay in the summer of 1974. A bait dealer seined a 65 mm gag from Moriches Bay on 14 August 1990. The American Museum of Natural History has two individuals collected on 3 October 1973 in Shinnecock Bay (AMNH 33534). The New York State Museum has four collections from 2000 totaling 10 specimens.

Scamp (*Mycteroperca phenax*). Rare. Alperin and Schaefer (1965) seined a 68 mm specimen from Shinnecock Bay on 2 August 1962. Briggs et al. (1985) reported a 42 mm fish taken by dip net there on 8 August 1980 (AMNH 39185).

**Centrarchidae (sunfishes)**

Green sunfish (*Lepomis cyanellus*). A freshwater stray. Kiley (1975) seined it from tidal waters at Staten Island.

Pumpkinseed (*Lepomis gibbosus*). A freshwater stray. Kiley (1975) seined it from tidal waters at Staten Island. Petrowski (1974) found it impinged on the intake screen of a power plant on the Arthur Kill. Lent et al. (1990) seined it in a tidal marsh of Great South Bay at Islip. We caught it in brackish water at Sunken Meadow Creek.

Bluegill (*Lepomis macrochirus*). A freshwater stray. Petrowski (1974) found it impinging on the intake screen of a power plant on the Arthur Kill. Equitable Environmental Health (1976a) captured 13 there in May and June 1975.

Black crappie (*Pomoxis nigromaculatus*). A freshwater stray. Petrowski (1974) found it impinging on the intake screen of a power plant in the Arthur Kill.

Percidae (perches)

Yellow perch (*Perca flavescens*). A freshwater stray. Long Island Lighting Company (1977a) found it in Long Island Sound at Northport.

Priacanthidae (bigeyes)

Bigeye (*Priacanthus arenatus*). Rare. Foehrenbach (1968) reported one from Hempstead Bay on 8 November 1967 and summarized occurrences of the species. Northeast Utilities Environmental Laboratory (1989) staff trawled three from Long Island Sound between June 1984 and May 1986. CTDEP has trawled it in Long Island Sound (Penelope Howell, personal communication). The American Museum of Natural History holds single specimens collected near Fire Island in 1933 (AMNH 12518) and East Hampton in 1940 (AMNH 15340), and a pair from Orient Point in 1918 (AMNH 50934).

Glasseye snapper (*Priacanthus cruentatus*). Rare. Local records include one from Montauk in September 1973 (Hickey et al. 1975), an 11.1 cm total length fish from a trap net on Southold Bay on 17 October 1988 (Luann DiTommaso, NYSDEC, personal communication), and four taken by Todd Gardner (HRF, personal communication) from Shinnecock Bay in 1998.

Short bigeye (*Pristigenys alta*). Uncommon, but regular. Alperin and Schaefer (1965) summarized records of the species. Hickey et al. (1975) found it in Block Island Sound in October 1973. Northeast Utilities Environmental Laboratory (1989) trawled six from Long Island Sound between June 1981 and 1987. NYSDEC personnel have either captured or have been made aware of the capture of one or two nearly every year through the last decade.

Pomatidae (bluefishes)

Bluefish (*Pomatomus saltatrix*). Abundant.

Rachycentridae (cobias)

Cobia (*Rachycentron canadum*). Uncommon, but regular (Briggs et al. 1985). Newspaper accounts indicated that well over a dozen were caught by anglers from Great South Bay the first week of July 1991. Two of those we examined were about 60 cm long. One or two juveniles are reported seined nearly every summer.

Echeneidae (remoras)

Sharksucker (*Echeneis naucrates*). Not uncommon.

Spearfish remora (*Remora brachyptera*). Rare. The only local records appear to be a 15.3 cm individual from Montauk on 9 August 1934 (Latham 1964) and two others from Montauk (NYSM 2603, 2604).

Remora (*Remora remora*). Rare. Nichols and Breder (1927) called it casual at New York. Latham (1964) found it in Gardiners Bay at Orient on 25 August 1943. He had earlier deposited a specimen with the New York State Museum that was taken about a mile off Montauk on 13 July 1933 (NYSM 15795). There is a specimen at the American Museum of Natural History (AMNH 222676) that was taken 10-15 miles south-southeast of Center Moriches in June 1980.

Carangidae (jacks)

African pompano (*Alectis ciliaris*). Uncommon. Alperin and Schaefer (1965) seined three from the surf at Fire Island and reviewed earlier records. Byron Young (NYSDEC, personal communication) recorded one from the surf at Montauk on 30 July 1974 and another from the surf at Amagansett on 31 July 1974. Hickey and Lester (1983) reported it from Fort Pond Bay, Montauk. CTDEP has caught it in trawls in Long Island Sound (Penelope Howell, personal communication).

Yellow jack (*Caranx bartholomaei*). Rare. Todd Gardner (HRF, personal communication) has caught it in recent years near Shinnecock Inlet. The only confirmed local

record appears to be one from Long Island Sound at Orient on 21 October 1960 (Latham 1964).

Blue runner (*Caranx crysos*). Sometimes common (Alperin 1976a).

Creville jack (*Caranx hippos*). Juveniles are common in the summer.

Horse-eye jack (*Caranx latus*). Rare. The only local records appear to be one from Montauk in August 1973 (Hickey et al. 1975), one (73 mm fork length) seined by NYSDEC personnel at Canoe Place, Shinnecock Bay on 23 August 1982, and nine seined by Julia Brischler (NYSDEC) from Jamaica Bay on 24 September 2001.

Atlantic bumper (*Chloroscombrus chrysurus*). Rare. Nichols and Breder (1927) reported three from Orient and called it accidental at New York. Bean (1903) noted several from Gravesend Bay in 1889. A specimen collected in September 1918 at Orient is held at the American Museum of Natural History (AMNH 8731).

Mackerel scad (*Decapterus macarellus*). Sometimes common. Alperin and Schaefer (1965) seined one from the surf at Fire Island and reviewed earlier records.

Round scad (*Decapterus punctatus*). Sometimes common (Alperin 1976a).

Rainbow runner (*Elagatis bipinnulata*). Rare. Nichols and Breder (1927) called it accidental at New York. Bean (1903) called it rare and noted a 38 cm fish from Gravesend Bay on 2 August 1895.

Pilotfish (*Naucrates ductor*). Rare. Alperin (1976a) noted that it is rarely seen inshore. Latham (1964) reported a 61 cm fish from Greenport on 2 September 1938 and a 27.9 cm fish from Orient on 11 September 1942.

Leatherjack (*Oligoplites saurus*). Uncommon. Nichols and Breder (1927) called it occasional at New York. Bean (1903) reported a 24.8 cm fish from Gravesend Bay. Latham (1964) reported one from Long Island Sound at Orient on 1 August 1942. Irwin Alperin (NYSDEC, personal communication) examined several 23 to 30 cm specimens from a fish trap in Great South Bay in the summer of 1952. Byron Young (NYSDEC, personal communication) collected a 21.7 cm fish from a pound net set in Long Island Sound at Orient on 30 July 1982 and observed the release of a similar size leatherjack from a pound net set in Orient Harbor, Gardiners Bay on 17 August 1982.

Bigeye scad (*Selar crumenophthalmus*). Not uncommon.

Atlantic moonfish (*Selene setapinnis*). Not uncommon.

Lookdown (*Selene vomer*). Not uncommon as juveniles in south shore bays.

Greater amberjack (*Seriola dumerili*). Uncommon. Hickey and Loewen (1976) reviewed records of the species. Philip Savona (NYSDEC) acquired a 29.8 cm fork length fish taken by an angler near Kismet Artificial Reef, Great South Bay on 3 September 1991. Samuel Finkelstein (NYSDEC) caught a 24.7 cm fork length fish on rod and reel at Fire Island Artificial Reef on 12 September 1993.

Lesser amberjack (*Seriola fasciata*). Rare. In 1999, Todd Gardner (HRF, pers. comm.) caught juveniles together with juvenile greater amberjack near Shinnecock Inlet. The only confirmed local record appears to be a 47 mm individual reported from "off Long Island" by Ginsburg (1952).

Banded rudderfish (*Seriola zonata*). Common. Anglers and divers mistakenly call the barred juveniles "pilotfish" and larger fish "amberjack." See, for example, likely erroneous reports of pilotfish (*Naucrates ductor*) in Clark (1962).

Florida pompano (*Trachinotus carolinus*). Not uncommon.

Permit (*Trachinotus falcatus*). Juveniles are common on sandy shores near the inlets on the south shore of Long Island in late summer.

Palometa (*Trachinotus goodei*). Rare. The only local records appears to be two (28 and 30 mm) seined by Greeley (1939) from the outlet of Sagapanac [sic] Lake on 18 August 1938.

Rough scad (*Trachurus lathami*). Not uncommon.

Coryphaenidae (dolphins)

Pompano dolphin (*Coryphaena equisetis*). Rare. The only local record appears to be one described by DeKay (1842) as taken by angling from a lightship off New York Harbor.

Dolphin (*Coryphaena hippurus*). Common offshore, but rare inshore. The only local inshore record we have is a 23.6 cm fish the junior author got from an angler in the State Boat Channel between Jones and Fire Island Inlets (Great South Bay) and observations of many taken by anglers in early September 2001 from water only 3 to 10 m deep about 1 to 2 km east of Fire Island Inlet.

#### Lutjanidae (snappers)

Mutton snapper (*Lutjanus analis*). Rare. Alperin and Schaefer (1965) provided the first local records with 24 fish seined from 6 August - 10 September 1962 from Shinnecock, Moriches, and Great South Bays. A commercial bait dealer seined a 50 mm total length fish from Moriches Bay on 14 August 1990. NYSDEC personnel trawled a 95 mm total length specimen from Roses Grove, Little Peconic Bay on 10 September 1990 (Luann DiTommaso, personal communication).

Schoolmaster (*Lutjanus apodus*). Rare. The only confirmed local record appears to be a 23 mm fish seined by Greeley (1939) at Fire Island Inlet on 8 August 1938. Possible sightings by divers were reported in Clark (1962).

Red snapper (*Lutjanus campechanus*). Rare. Bean (1903) reported an 11.4 cm fish from Bay Shore on 26 October 1887. Latham (1964) reported one from Long Island Sound at Orient on 3 October 1939.

Cubera snapper (*Lutjanus cyanopterus*). Rare. Schaefer (1973) reported a probable specimen from 18 m depth off Shinnecock Inlet on 27 September 1966. Young (1978) reported one from Montauk in August 1975 (AMNH 35783). We examined two taken in 1988. An 8.6 kg fish was taken by an angler at Fire Island Inlet on 16 August and another of 21.1 kg was speared by a diver at Kismet Artificial Reef, Great South Bay on 11 September. Unlike most tropical strays, those found in our waters all have been large adults.

Grey snapper (*Lutjanus griseus*). Juveniles are not uncommon most summers.

Dog snapper (*Lutjanus jocu*). Rare. Alperin and Schaefer (1965) seined one from Great South Bay and another from Moriches Bay in July and September 1962.

#### Lobotidae (tripletails)

Tripletail (*Lobotes surinamensis*). Rare. Nichols and Breder (1927) called it rare at New York. Dickinson (1939) reported it from a pound net at Orient in 1938. The only recent record is a 32.5 mm fish weighing 760 g seined from the surf at Amagansett on 6 August 1982 and given by the fishermen to Byron Young.

#### Gerreidae (mojarras)

Rhomboid mojarra (*Diapterus rhombeus*). Rare. Austin (1973b) provided the first record from U.S. mainland waters with an adult from a pound net set at Northwest Creek, East Hampton in October 1971.

Spotfin mojarra (*Eucinostomus argenteus*). Rare. The only local records appear to be two juveniles seined by NYSDEC personnel from Great South Bay near Fire Island Inlet. One was 24 mm total length caught on 26 June 1987. The other was 33 mm total length, taken 22 October 1987.

Silver jenny (*Eucinostomus gula*). Rare. The only local record appears to be one Bean (1903) reported from Clam Pond, Great South Bay, on 22 August 1898.

Slender mojarra (*Eucinostomus jonesi*). Rare. The only local record appears to be a 25 mm fish Greeley (1939) seined from the Connetquot River on 10 August 1938.

Mottled mojarra (*Eucinostomus lefroyi*). Rare. Northeast Utilities Environmental Laboratory (1989) lists it as among those fishes seined in their sampling near Millstone Point, Long Island Sound. However, they were found in Long Island's south shore bays in 2001; Julia Brischler (NYSDEC) seined one (57 mm total length) from Jamaica Bay on 9 September, 90 (37-58 mm total length) from Shinnecock Bay on 5 October, and one (26 mm total length) from Great South Bay on 11 October.

#### Haemulidae (grunts)

White grunt (*Haemulon plumieri*). Rare. DeKay (1842) examined a single specimen from New York Harbor. He called it "squirrel-fish, *Haemulon formosum*," which is now in synonymy with *H. plumieri*. His description and figure of the specimen agree with the description and figure of the species in Böhlke and Chaplin (1968).

Pigfish (*Orthopristis chrysoptera*). Rare. Nichols and Breder (1927) called it rare at Orient, but occasionally common at New York. Bean (1903) reported several from Gravesend Bay on 24 October 1894. Breder (1938) called it rare in New York Harbor. Latham (1964) had a 23.5 cm fish from Gardiners Bay at Orient on 24 June 1946. Wilk et al. (1977) trawled one from 6 m at the apex of the New York Bight on 22 October 1974 and another in 8 m south of Fire Island Inlet on 19 November 1974. There is a museum specimen (AMNH 20290) from the New York Bight taken during August 1951.

Sparidae (porgies)

Sheepshead (*Archosargus probatocephalus*). Uncommon. Nichols and Breder (1927) noted that it was once common at Orient, but none had been found there since 1904. Latham (1964) reported a 35.6 cm specimen from Long Island Sound at Orient on 8 June 1954. Bean (1903) noted it was once common in Great South Bay, but he could find none there. He had one of 6.4 kg from Coney Island on 16 September 1887. Recent reports include one taken by Schreiber (1973) in the summer of 1972 from Great South Bay, four between 2 and 3 kg from Kismet Artificial Reef in Great South Bay in September 1978 (Keating 1978), one from Fort Pond Bay, Montauk (Hickey and Lester 1983), newspaper reports of a 3.3 kg fish speared near Breezy Point jetty late June 1991, one of 5.2 kg from Captree State Park on 23 October 1993, and a 4.3 kg fish from Jamaica Bay pictured in the angling weekly Northeast Saltwater edition of 20 August 1997.

Spottail pinfish (*Diplodus holbrooki*). Rare. Stephen Heins, NYSDEC (personal communication) seined one from Shinnecock Bay in the early 1980s.

Pinfish (*Lagodon rhomboides*). Uncommon. Alperin (1955) reported many from 25.4 to 35.6 cm from the Peconic Bay system in the early 1950s. Others have found few. Latham (1964) reported one from Orient on 5 August 1952. Gaw (1972) found it in Great South Bay. Briggs (1975a) seined one juvenile there. Texas Instruments (1977) personnel seined it off Staten Island and in Jamaica Bay in the summer and fall of 1974. A bait seiner captured an approximately 75 mm pinfish from Great South Bay in August 1993.

Longspine porgy (*Stenotomus caprinus*). Quirk, Lawler and Matusky, Engineers (1973) reported it impinging on the intake screen of a power plant on the East River. Their fish ranged from 52 to 105 mm. Identification of small, impinged and possibly damaged porgies can be difficult. There is the possibility of confusion with the abundant *S. chrysops*. The presence of this species in New York waters needs verification.

Scup (*Stenotomus chrysops*). Abundant.

Sciaenidae (drums)

Silver perch (*Bairdiella chrysoura*). Sometimes common.

Spotted seatrout (*Cynoscion nebulosus*). Rare. Nichols and Breder (1927) reported three (in June) from Gardiners Bay. Latham (1964) reported a 0.9 kg specimen from Orient, but gave no date. Hanlon (1983) gill netted one of 68 cm from Shinnecock Bay in September 1981.

Weakfish (*Cynoscion regalis*). Common, but subject to large fluctuations.

Banded drum (*Larimus fasciatus*). Rare. The only local records appear to be two from Gravesend Bay, one on 25 July 1895 (AMNH 425), the other (AMNH 676) on 2 August 1895 (Bean 1903).

Spot (*Leiostomus xanthurus*). Erratic. Nichols and Breder (1927) called it common. However, few were seen from the late 1920s until newspaper reports indicated they were abundant in Jamaica Bay in late August 1976. Byron Young (NYSDEC, personal communication) seined it in abundance in the bays and harbors of western Long Island Sound in the summer and fall of 1976 and 1977, but found only one in the same areas in 1978. In the same years (1976 and 1977) it was also common in the south shore bays. It has been scarce since.

Southern kingfish (*Menticirrhus americanus*). Rare. The only local record appears to be one Schaefer (1965) seined from the surf at Fire Island on 28 May 1964.



- Northern kingfish (*Menticirrhus saxatilis*). Common, but subject to wide fluctuations.
- Atlantic croaker (*Micropogonias undulatus*). Uncommon. Nichols and Breder (1927) called it common in some years at New York. Schaefer (1967) seined a 33.5 cm fish from the surf in July 1962. Hickey and Lester (1983) called it rare in Fort Pond Bay, Montauk. Byron Young (NYSDEC, personal communication) saw several about 40 cm long seined from the surf at East Hampton on 1-2 May 1979.
- Black drum (*Pogonias cromis*). Not uncommon some years. In several angling forums, accounts were given of a 28.5 kg specimen landed in the surf near Sagaponack on 1 October 1999.
- Red drum (*Sciaenops ocellatus*). Rare. Nichols and Breder (1927) called it "almost unknown" on Long Island. Muller and Knowlson (undated) mentioned a 27 kg fish caught surf casting at Edgemere (Rockaway Beach) in 1901. Latham (1964) noted five from Orient in October 1937. All were about 0.9 kg in weight. The only recent records appear to be a 33 kg individual taken by an angler from Jamaica Bay on 26 August 1981 and another of 63.5 cm taken by an angler at Gilgo Beach on 24 October 1992. Juveniles have not been reported from New York waters.
- Mullidae (goatfishes)
- Red goatfish (*Mullus auratus*). Uncommon. Alperin and Schaefer (1965) reviewed records of the species. Briggs (1975a) noted two from Fire Island Inlet, one on 9 June 1970, the other on 10 August 1971. Northeast Utilities Environmental Laboratory (1994) trawled nine from Long Island Sound between 1978 and 1993. NYSDEC seined one from Great South Bay on 26 June 1987. A bait seiner caught a 77 mm fork length red goatfish in Great South Bay in August 1993.
- Dwarf goatfish (*Upeneus parvus*). Rare. Northeast Utilities Environmental Laboratory (1989) trawled one from Long Island Sound between June 1985 and May 1986. NYSDEC staff trawled a 10.2 cm fork length fish from Great Peconic Bay on 11 August 1993 and another of 97 mm on 15 August 1995. CTDEP has trawled both dwarf goatfish and red goatfish in Long Island Sound (Penelope Howell, personal communication). The American Museum of Natural History has one collected on 10 October 1976 from Shinnecock Bay (AMNH 28560).
- Kyphosidae (sea chubs)
- Bermuda chub (*Kyphosus sectatrix*). Rare. Nichols and Breder (1927) cited two from Orient (3 June and 2 November 1915) and called it rare at New York. Bean (1903) reported it from Gravesend Bay in October 1896 and September 1897 (AMNH 571).
- Ephippidae (spadefishes)
- Atlantic spadefish (*Chaetodipterus faber*). Uncommon. Nichols and Breder (1927) reported one from Orient on 12 June 1912 and three from Gardiners Bay from 2-6 October 1915. DeKay (1842), however, stated that it occasionally appeared in "great numbers." Latham (1964) reported one from Orient on 11 October 1939. Hickey and Lester (1983) reported it from Fort Pond Bay, Montauk.
- Chaetodontidae (butterflyfishes)
- Four-eye butterflyfish (*Chaetodon capistratus*). Rare. Schaefer and Doheny (1973) first reported it from Reynolds Channel, Point Lookout on 16 September 1965. Thomson et al. (1978) reported one from Long Island Sound. Hanlon (1983) trawled a 68 mm fish from Moriches Bay in October 1981 and two more of 61 and 67 mm from Great South Bay in November 1981. Briggs et al. (1985) reported two from Shinnecock Bay in August 1980.
- Spotfin butterflyfish (*Chaetodon ocellatus*). Juveniles are not uncommon in summer and early fall.
- Reef butterflyfish (*Chaetodon sedentarius*). Rare. Todd Gardner (HRF, personal communication) captured five from Great South Bay in 1992.
- Pomacanthidae (angelfishes)
- Grey angelfish (*Pomacanthus arcuatus*). Rare. Nichols and Breder (1927) called it accidental at New York. Nichols (1949) reported one from Shinnecock Bay about 10 June 1948. Latham (1964) reported one from Orient on 16 September 1935. Possible sightings by divers were reported by Clark (1962).

- French angelfish (*Pomacanthus paru*). Rare. Todd Gardner (HRF, personal communication) caught six in Shinnecock Bay in 1989. We have heard of other unconfirmed reports.
- Blue angelfish (*Holocanthus bermudensis*). Rare. Todd Gardner (HRF, personal communication) took it in Great South Bay and Shinnecock Bay in 1989, 1990 (10 that year), and 1991.
- Pomacentridae (damselfishes)
- Sergeant major (*Abudefduf saxatilis*). Rare. The only local record appears to be a 32 mm fish from Shinnecock Inlet on 14 September 1974 (Mushacke and Fallon 1978).
- Beaugregory (*Pomacentrus leucostictus*). Rare. The only local record appears to be a 52-mm fish taken by diving from Shinnecock Bay on 3 September 1987 (Frederick Mushacke and James Gilmore, NYSDEC, personal communication).
- Bicolor damselfish (*Pomacanthus partitus*). Rare. Todd Gardner (HRF) caught it on several occasions in the 1990s in Shinnecock Bay.
- Cocoa damselfish (*Pomacanthus variabilis*). Rare. One to three each year were taken by Todd Gardner (HRF) from Shinnecock Bay from 1989 through 1993.
- Sphyraenidae (barracudas)
- Great barracuda (*Sphyraena barracuda*). Rare. The only local record appears to be one collected by Irwin Alperin (NYSDEC, personal communication) from the south shore of Long Island in the summer of 1952. Donald de Sylva, University of Miami Institute of Marine Science, confirmed the identification.
- Northern sennet (*Sphyraena borealis*). Common in the summer.
- Guaguanche (*Sphyraena guachancho*). Rare. The only local records appear to be those trawled from the Peconic Bays system by NYSDEC personnel in the fall of 1989 and late summer of 1994. A specimen 72 mm total length was taken from Great Peconic Bay on 21 September 1989. Two others, 62 and 151 mm, were trawled there on 6 October 1989. Another of 130 mm fork length was trawled by NYSDEC from Hog Neck Bay on 13 September 1994.
- Polynemidae (threadfins)
- Atlantic threadfin (*Polydactylus octonemus*). Rare. Nichols and Breder (1927) noted one from Orient on 23 July 1917. Dickinson (1939) reported it from a pound net near Orient in 1938. Latham (1964) had two from Long Island Sound at Orient, one on 1 October 1939, the other (10.2 cm) on 6 July 1940. There also are specimens in the New York State Museum deposited by Latham in 1916 and 1919 (Robert Schmidt, Hudsonia Ltd., personal communication). Bean (1903) noted three from Gravesend Bay on 24 September 1896 (AMNH 719).
- Labridae (wrasses)
- Tautog (*Tautoga onitis*). Abundant.
- Cunner (*Tautoglabrus adspersus*). Abundant.
- Scaridae (parrotfishes)
- Redfin parrotfish (*Sparisoma rubripinne*). Rare. Todd Gardner (HRF, personal communication) seized it from Great South and Shinnecock Bays in 1992, 1993, and 1998.
- Zoarcidae (eelpouts)
- Ocean pout (*Macrozoarces americanus*). Common in the ocean. Most anglers erroneously call them "conger eels."
- Stichaeidae (pricklebacks)
- Snakeblenny (*Lumpenus lumpretaeformis*). Questionable. Austin (1973a) reported larvae abundant in Lake Montauk in June 1972. Long Island Lighting Company (1975) reported larvae at Shoreham on 2-3 April 1972. Northeast Utilities Environmental Laboratory (1989) reported it from ichthyoplankton collected off Millstone Point, Long Island Sound. However, they later reported none from 1976 to 1993 (Northeast Utilities Environmental Laboratory 1992, 1994) but did report radiated shanny (*Ulvaria subbifurcata*). Likewise, there are indications that the identifications of larvae by Austin (1973a) and Long Island Lighting Company (1975) may



have been based on an error in the literature and their specimens may also be the radiated shanny (Luann DiTommaso, NYSDEC, personal communication). Presence of this species in New York waters needs verification.

Radiated shanny (*Ulvaria subbifurcata*). Uncommon. Perlmutter (1939) took four post-larvae from Gardiners Bay and Block Island Sound in 1938. Briggs (1974) had a 33 mm fish from Fire Island Artificial Reef on 16 August 1972. Northeast Utilities Environmental Laboratory (1992, 1994) staff trawled 12 from Long Island Sound near Millstone Point from 1976 through 1993. They also frequently reported larvae over the same period. Larvae identified as the snakeblenny (*Lumpenus lumpretaeformis*) by Austin (1973a) and Long Island Lighting Company (1975) may actually be this species (Luann DiTommaso, NYSDEC, personal communication).

#### Cryptacanthodidae (wrymouths)

Wrymouth (*Cryptacanthodes maculatus*). Rare. Nichols and Breder (1927) called it occasional at New York. DeKay (1842) noted that it was found in Long Island Sound. The only recent records are one from Flax Pond on 25 November 1965, a larva reported from Long Island Sound by Long Island Lighting Company (1975) at Shoreham, and one adult seined from the surf at Amagansett on 28 April 1975 (Byron Young, NYSDEC, personal communication). The American Museum of Natural History has a specimen collected in the New York Bight during November 1988 (AMNH 96716).

#### Pholidae (gunnels)

Rock gunnel (*Pholis gunnellus*). Common.

#### Anarhichadidae (wolffishes)

Atlantic wolffish (*Anarhichas lupus*). Rare. Alperin and Schaefer (1965) reviewed occurrences of the species. Morrow (1957) noted an 80 cm, 4.7 kg specimen taken by otter trawl south of Faulkner Island, Long Island Sound on 17 May 1956. Briggs et al. (1985) reported one from a lobster pot set off Moriches Inlet on 1 August 1980. An undated individual taken by a commercial fisherman in the ocean off New York City is held at the American Museum of Natural History (AMNH 22577).

#### Uranoscopidae (stargazers)

Northern stargazer (*Astrocopus guttatus*). Uncommon, but regular.

#### Blenniidae (combtooth blennies)

Striped blenny (*Chasmodes bosquianus*). Rare. Nichols and Breder (1927) called it accidental at New York. DeKay (1842) had one from New York Harbor and noted that Mitchill (1815) reported one found in an oyster.

Feather blenny (*Hypsoblennius hentz*). Uncommon. Equitable Environmental Health, Inc. (1976b, 1976c, 1979) found several pre- and post-larvae in the vicinities of power plants on Hempstead Bay and Hempstead Harbor in the spring of 1976 and at Shoreham in 1978.

Seaweed blenny (*Parablennius marmoratus*). Rare. DeKay (1842) found it "not far from the coast of New York" in 1831. Briggs (1974) took one of 21 mm from Fire Island Artificial Reef on 21 October 1971. The identification was verified by Victor Springer of the U.S. Museum of Natural History.

#### Ammodytidae (sand lances)

American sand lance (*Ammodytes americanus*). Abundant. References to other species of *Ammodytes* in the inshore bays and Long Island Sound are attributable to this species.

Northern sand lance (*Ammodytes dubius*). Common offshore. According to Nizinski et al. (1990), this species and *A. americanus*, found inshore, are the only *Ammodytes* in our area.

#### Gobiidae (gobies)

Naked goby (*Gobiosoma bosc*). Common. Though Nichols and Breder (1927) cited it as taken only once, at Orient, Latham (1964) called it "common in shallow bays" there. NYSDEC personnel routinely find it in all bays.

Seaboard goby (*Gobiosoma ginsburgi*). Locally common. Donald Zacchea (NYSDEC, personal communication) found it to be common in Long Island Sound and the Huntington-Northport Bays complex near a power plant at Northport. Hanlon (1983) took several from the south shore bays. NYSDEC personnel have trawled and seined them from the Peconic Bays System.

Acanthuridae (surgeonfishes)

Doctorfish (*Acanthurus chirurgus*). Rare. Bean (1903) noted a 76 mm fish from Gravesend Bay on 22 October 1897. Alperin and Schaefer (1965) reported two from Shinnecock Bay in September 1962. Briggs (1975a) seined one from Fire Island Inlet on 30 June 1971.

Ocean surgeon (*Acanthurus bahianus*). Uncommon. Todd Gardner (HRF, personal communication) caught it in Great South and Shinnecock Bays from 1989 through 1993.

Blue tang (*Acanthurus coeruleus*). Rare. Breder (1948) gave its range as “accidentally northward to New York.”

Luvaridae (luvars)

Luvar (*Luvaris imperialis*). Rare. The only local record appears to be a 1.7 m fish (AMNH 15339) weighing 92 kg from the surf at Georgica Pond, East Hampton on 20 August 1940 (Nichols and Helmuth 1940).

Trichiuridae (snake mackerels)

Snake mackerel (*Gempylus serpens*). Rare. The only local record appears to be a 1.1 m fish found on the beach at Napeague on 16 November 1923 (Nichols and Breder 1927).

Atlantic cutlassfish (*Trichiurus lepturus*). Rare. Alperin and Schaefer (1965) reviewed occurrences of the species. Hickey et al. (1975) added another record, from Montauk, in September 1971. The American Museum of Natural History has specimens collected from Gravesend Bay in 1897 (AMNH 667) and 1901 (AMNH 1664).

Scombridae (mackerels)

Wahoo (*Acanthocybium solandri*). Uncommon. Anglers occasionally take them offshore near the limits of this list. The largest in recent years was a 24.7 kg fish caught in 23.5 m off Shinnecock Inlet in the summer of 1976.

Frigate mackerel (*Auxis thazard*). Irregular. Bean (1903) called it “almost unknown on our shores until 1880 when it arrived in almost countless numbers.”

Little tunny (*Euthynnus alletteratus*). Irregular.

Skipjack tuna (*Katsuwonus pelamis*). Sometimes common.

Striped bonito (*Sarda orientalis*). Questionable. Nichols and Breder (1927) noted two near Block Island on 15 and 22 August 1914. Breder (1932) reported a 56 cm fish there in the summer of 1931. Collette and Chao (1975) did not accept Atlantic records of this species. Robins et al. (1991) called it questionable.

Atlantic bonito (*Sarda sarda*). Common.

Chub mackerel (*Scomber japonicus*). Sometimes common.

Atlantic mackerel (*Scomber scombrus*). Abundant during seasonal migrations.

King mackerel (*Scomberomorus cavalla*). Uncommon. Nichols and Breder (1927) cited two records at Orient in 1910 and 1918. Briggs et al. (1985) reported one taken by an angler at Montauk on 12 September 1977 and two from pound nets at Orient on 30 July 1981. Christina Grahn (NYSDEC) obtained a 24.2 cm fork length king mackerel caught by an angler at Bellport, Great South Bay during August 1994. Gerald Willet (NYSDEC) brought in a 18.5 cm fork length specimen taken by an angler at Hempstead Harbor on 21 September 1994. Unverified newspaper accounts indicated that anglers took one of 6.6 kg at Montauk on 8 September 1990, and another of 5.7 kg about 8 km southwest of Fire Island Inlet on 10 July 1994. Robins et al. (1986) noted that juveniles are often found in schools of Spanish mackerel (*S. maculatus*). Juveniles are similarly spotted with gold as *S. maculatus*.

The only reliable way to tell them apart is a count of gill rakers. It is unlikely that an angler would look at gill rakers of a "Spanish mackerel" he or she caught. Therefore, the species may be more common here than the few records indicate.

Spanish mackerel (*Scomberomorus maculatus*). Sometimes common.

Cero (*Scomberomorus regalis*). Rare. Nichols and Breder (1927) cited "recent" records at Orient. Hickey and Lester (1980) reported it from Montauk between June 1970 and November 1974. There is a museum specimen (AMNH 55795) collected in July 1911, from Mastic.

Albacore (*Thunnus alalunga*). Irregular. Nichols and Breder (1927) thought records of it were due to confusion with the little tunny. Hickey and Lester (1980, 1983) reported it from Montauk between June 1970 and November 1974. Anglers take it and the following tunas off the south shore of Long Island within the limits of this list. Most are generally more common farther offshore.

Yellowfin tuna (*Thunnus albacares*). Irregular. We are aware of at least two instances where anglers have taken them in the surf zone; on Fire Island in 1995 and on Rockaway Beach in 1997.

Blackfin tuna (*Thunnus atlanticus*). Irregular.

Bigeye tuna (*Thunnus obesus*). Irregular.

Bluefin tuna (*Thunnus thynnus*). Usually the most common and the most inshore of our large tunas.

#### Xiphiidae (swordfishes)

Swordfish (*Xiphias gladius*). Not uncommon off the south shore of Long Island, but rare inshore. A 91 kg swordfish was taken in Gardiners Bay on 16 July 1916 (Latham 1917).

#### Istiophoridae (billfishes)

Sailfish (*Istiophorus platypterus*). Rare. Nichols and Breder (1927) cited one record at New York. Latham (1964) had one from Orient on 8 June 1910. Irwin Alperin (personal communication) noted that it had been taken in the ocean pound net fishery off Fire Island.

Blue marlin (*Makaira nigricans*). Uncommon. Nichols (1949) added it to New York's fish fauna on the basis of anglers' catches at Montauk. We saw one that was harpooned less than a 1.6 km off Gilgo Beach in the mid-1960s. Anglers take a few off the south shore of Long Island in some years, mostly beyond the limits of this list.

White marlin (*Tetrapterus albidus*). Not uncommon.

#### Stromateidae (butterfishes)

Silver-rag (*Ariomma bondi*). Rare. Wilk et al. (1977) took two off the south shore of Long Island, one on 25 July 1974, in 21 m, the other on 23 August 1974, in 23 m.

Barrelfish (*Hyperoglyphe perciformis*). Not uncommon in some years. Schreiber (1973) took two (19.7 and 21.0 cm total length) on rod and reel in the summer of 1972. We have taken them on rod and reel in Fire Island Inlet in the late 1960s and early 1970s.

Man-of-war fish (*Nomeus gronovii*). Rare. The only local record appears to be a 12.7 cm fish from Montauk on 5 August 1939 (Latham 1964).

Harvestfish (*Peprilus alepidotus*). Rare. Nichols and Breder (1927) called it rare at Orient, but sometimes common at New York. Latham (1964) had one from Long Island Sound at Orient on 8 August 1942. Robert Schmidt (Hudsonia Ltd., personal communication) found specimens in the New York State Museum taken on 4 November 1939, and 22 August 1940 by Latham. Hickey and Lester (1983) reported it from Fort Pond Bay, Montauk. The only other recent record appears to be one from the surf at Montauk in July 1973 (Byron Young, NYSDEC, personal communication).

Butterfish (*Peprilus triacanthus*). Abundant.

Freckled driftfish (*Psenes cyanophrys*). Rare. The only local record appears to be one of 13.5 cm from a pound net "off Great South Bay" in 9 to 20 m of water (Nichols 1949).

**Pleuronectiformes****Bothidae (lefteye flounders)**

Eyed flounder (*Bothus ocellatus*). Rare. Bean (1901, 1903) collected two from Fire Island Inlet on 30 September 1890. Alperin and Schaefer (1965) felt Bean's description left doubt as to whether these were *B. ocellatus* or what is now known as *B. robinsi*. Clark et al. (1969) reported four, 20 to 24 mm total length, off Montauk Point on 14 October 1966. Northeast Utilities Environmental Laboratory (1989) staff trawled one from Long Island Sound between June 1982 and May 1983.

Twospot flounder (*Bothus robinsi*). Rare. A single specimen of this flounder was taken by Alperin and Schaefer (1965) from Shinnecock Bay on 8 October 1962.

Gulf Stream flounder (*Citharichthys arctifrons*). Not uncommon in the ocean.

Bay whiff (*Citharichthys spilopterus*). Rare. The only confirmed local record appears to be a 62 mm fish trawled from Noyac Bay on 4 October 1985 (Briggs and Weber 1986).

Smallmouth flounder (*Etropus microstomus*). Common.

Gulf flounder (*Paralichthys albigutta*). Quirk, Lawler and Matusky, Engineers (1973) reported it impinged on the intake screen of a power plant on the East River in January and February 1972. Specific identification of impinged and possibly damaged bothids can be difficult. The time of capture seems the wrong time of the year for a southern fish not previously seen from the area. This and the size range (92 to 257 mm) lead to the suspicion that there was confusion with a more common bothid found in the area during winter, possibly *P. oblongus* which quickly loses its distinctive spotting after death. The presence of this species in New York waters needs verification.

Summer flounder (*Paralichthys dentatus*). Abundant from spring to fall.

Fourspot flounder (*Paralichthys oblongus*). Common.

Windowpane (*Scophthalmus aquosus*). Abundant.

**Pleuronectidae (righteye flounders)**

Witch flounder (*Glyptocephalus cynoglossus*). Rare inshore, but common in depths beyond the limits of this list. Wilk et al. (1977) took 10 in depths of 24 to 31 m off the south shore of Long Island in 1974 and 1975.

Atlantic halibut (*Hippoglossus hippoglossus*). Rare. Nichols and Breder (1927) cited one record at Orient in April 1910 and another "several years before." They called it occasional at New York. There appear to be no recent local records.

Yellowtail flounder (*Limanda ferruginea*). Common in the ocean but rare inshore. The only recent inshore records are all from Long Island Sound. Geomet Technologies trawled one of 69 mm off Shoreham on 25 May 1982 (Robert Meisterich, personal communication). Ecological Analysts, Inc. trawled a single adult off Port Jefferson in 1983 (Philip Fallon, personal communication). Northeast Utilities Environmental Laboratory (1989) staff have trawled a few off Millstone Point nearly every year since 1976.

Smooth flounder (*Pleuronectes putnami*). Rare. Thomson et al. (1978) noted that a few strays have been reported in Long Island Sound. The Town of Smithtown Conservation Advisory Council (1978) called it common in estuarine waters of the Nissequogue River. However, this claim is probably based on misidentifications.

Winter flounder (*Pseudopleuronectes americanus*). Abundant.

**Soleidae (soles)**

Blackcheek tonguefish (*Symphurus plagiusa*). Rare. The only local record appears to be one trawled from 8 m off the south shore of Long Island on 19 November 1974 (Wilk et al. 1977).

Hogchoker (*Trinectes maculatus*). Common in low salinity areas of the bays.

**Tetraodontiformes****Balistidae (leatherjackets)**

Orange filefish (*Aluterus schoepfi*). Uncommon, occurring in summer only.

- Scrawled filefish (*Aluterus scriptus*). Nichols and Breder (1927) noted that it has been questionably reported from New York. Presence of this species in New York waters needs verification.
- Slender filefish (*Monacanthus tuckeri*). Rare. Todd Gardner (HRF, personal communication) seined one at Oak Beach in Fire Island Inlet on 20 July 1999.
- Grey triggerfish (*Balistes caprisus*). Common in the summer in recent years.
- Queen triggerfish (*Balistes vetula*). Rare. The only confirmed local record appears to be one from Freeport on 5 October 1933 (Breder and Nigrelli 1934).
- Whitespotted filefish (*Cantherhines macrocerus*). Rare. Gaw (1972) reported it from Great South Bay in 1970 or 1971.
- Ocean triggerfish (*Canthidermis sulflamen*). Rare. The only local record appears to be one taken at Greenport on 22 July 1939 (Latham 1964).
- Planehead filefish (*Monacanthus hispidus*). Not uncommon in summer.
- Ostraciidae (boxfishes)
- Honeycomb boxfish (*Lactophrys polygonia*). Rare. The only local record appears to be a 14 mm fish seined in Great South Bay in August 1981 (Hanlon 1983).
- Scrawled cowfish (*Lactophrys quadricornis*). Rare. Nichols and Breder (1927) cited one from Fire Island on 1 November 1919. Greeley (1939) seined four (14 to 34 mm) from Fire Island Inlet in August 1938. We examined two (the larger being 17.5 mm) that were seined from Moriches Bay in late July 1976. The American Museum of Natural History has specimens taken in September 1925, from Point of Woods (AMNH 9020), and in September 1937, from Island Park (AMNH 225340).
- Trunkfish (*Lactophrys trigonus*). Rare. Nichols and Breder (1927) called it occasional at New York. Bean (1903) reported one from Orient on 17 July 1945. Gaw (1972) took it from Great South Bay in 1970 or 1971.
- Smooth trunkfish (*Lactophrys triqueter*). Uncommon. Alperin and Schaefer (1965) reviewed records of the species. Briggs (1970, 1975a) took it from Great South Bay in 1968 and 1971. Texas Instruments (1977) personnel seined it from Jamaica Bay in the fall of 1974. NYSDEC personnel seined 11 from Shinnecock Bay on 15 August 1976 and two from there on 29 August 1980.
- Tetraodontidae (puffers)
- Web burrfish (*Chilomycterus antillarum*). Rare. On 19 July 1995 we examined two juveniles, 27 and 32 mm, seined five days earlier by Allison Tews, South Shore Nature Center, at East Islip Marina, Great South Bay. These fish were on display at the Center.
- Striped burrfish (*Chilomycterus schoepfi*). Not uncommon. Although there have been few published records of the species from New York waters (Greeley 1939; Gordon 1949; Clark 1962; Latham 1964; Hickey et al. 1975; Texas Instruments 1977; Hanlon 1983) and although Nichols and Breder (1927) called it rare at Orient and uncommon at New York, striped burrfish are often taken during NYSDEC sampling efforts in the Peconics, Long Island Sound, and the south shore bays in the summer. Schoepf (1788) discovered it in Long Island waters.
- Porcupinefish (*Diodon hystrix*). Rare. DeKay (1842) noted it (as *D. pilosus*) as "Occasionally taken in the bay of New York." His description and figure agree with the description of the species given in Böhlke and Chaplin (1968).
- Smooth puffer (*Lagocephalus laevigatus*). Uncommon. Alperin and Schaefer (1965) reviewed records of the species. Byron Young (NYSDEC, personal communication) collected a 72 mm fish from the surf at Montauk on 27 August 1974.
- Northern puffer (*Sphoeroides maculatus*). Common.
- Bandtail puffer (*Sphoeroides spengleri*). Uncommon. There appears to be only four local records. Greeley (1939) seined a 20 mm fish at Fire Island Inlet on 4 July 1938. Ecological Analysts, Inc. personnel seined a 47 mm specimen from Shinnecock Bay on 23 September 1983 and trawled another of 40 mm off Port Jefferson in Long Island Sound on 22 October 1984 (AMNH 221658). As many as 50 were captured in Shinnecock Inlet in the late 1980s (Giebel and Dini 1989).

## Molidae (molas)

Ocean sunfish (*Mola mola*). Not uncommon in the summer. Nichols and Breder (1927) called it rare. NYSDEC personnel have seen it many times off the south shore of Long Island. We have observed it twice (1974 and 1985) off Port Jefferson in Long Island Sound.

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