



Atlantic Coast of Long Island, Fire Island Inlet to Montauk Point, New York Reformulation Study



Work Order 16 Eastern Ecological Zone Finfish Creel Survey



DRAFT

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**Prepared for U.S. Army Corps of Engineers
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Executive Summary

Finfish creel surveys were conducted along the south shore and adjacent bays of Long Island, New York between April and October 2000. Creel surveys are generally conducted to determine the species of fish being caught from a given area by one or more types of user groups.

The creel surveys were conducted as part of the Generalized Shore Zone Ecological Inventory of Selected Areas in the Eastern Zone of the study area being studied under the Fire Island to Montauk Point Reformulation Study. The entire area under study consists of the 83-mile reach from Fire Island Inlet to Montauk Point, NY out to a distance of approximately 1.5 miles offshore. The distance offshore is based on the approximate maximum distance of the proposed sand borrow areas being considered for the project. For the purposes of this report however, the study area includes the south shore and adjacent bays of Long Island between Heckscher State Park and Montauk Point, NY. Although surveys were conducted in the western portion of the study area (i.e., from Heckscher State Park east to Westhampton Beach) in order to characterize overall fishing pressure, efforts were concentrated in the eastern-most sections due to an overall lack of creel data in this region. The United States Army Corps of Engineers – New York District and the New York State Department of Environmental Conservation are project sponsors.

Various user groups were interviewed including 100 surf fishermen, 12 recreational fleet captains, and 6 commercial boat captains. Attempts were made to conduct interviews with a total of 12 commercial boat captains; those captains sailing from Montauk Point however, refused to participate. Those commercial captains that did participate sail from Shinnecock Fishermen's Cooperative.

The objectives of the finfish creel survey were: (1) to characterize the recreational, and to a lesser degree, the commercial fisheries use of waters in the study area among the various user groups; and (2) to gain data pertaining to what finfish and/or other non-target species are being taken or observed by the various user groups.

Under the supervision of the New York District, a survey questionnaire was developed to facilitate the data collection process. In addition to identifying target species, respondents were asked to provide additional information pertaining to incidental catches, distance traveled for a given fishing trip, and level of fishing effort.

Of the 100 surf fishermen interviewed, 81 fished the waters of the study area for the majority of their fishing trips. The remaining 19 fishermen did not fish in the waters of the study area for the majority of their fishing trips due to the distance they needed to travel to reach the beaches and bays. Of the 12 open and private charter boat captains interviewed, all captains generally fished the waters of, or in close proximity to, the study area. The variation in terms of areas fished was a function of species sought and time of year. In general, open and private charter boat captains fished the waters within or in close proximity to the study area during the late summer, fall, and early winter for the majority of their fishing trips. Charter boat captains concentrated fishing efforts in waters

INTRODUCTION

The Fire Island Inlet to Montauk Point Reformulation Study provides for an evaluation of beach erosion control and hurricane protection measures along the 83-mile reach of the Atlantic Coast of New York from Fire Island Inlet to Montauk Point. In support of this proposed study, the ecological resources of the beach, intertidal, and subtidal zones have become subject to extensive analysis. The ecological resources of the eastern-most section of the study area, from Shinnecock Inlet to Montauk Point, are being surveyed in greater detail due to a lack of existing data. This report presents the results of a finfish creel survey that was conducted in conjunction with the ecological resources study program. The finfish creel survey was conducted between April and October 2000. For the purposes of this report, the study area includes the south shore and adjacent bays of Long Island between Heckscher State Park and Montauk Point, NY out to a distance of approximately 1.5 miles offshore. The distance offshore is based on the approximate maximum distance of the proposed sand borrow areas being considered for the project. Depths in the study area range from the intertidal zone to an average maximum depth of approximately 10 fathoms. Although surveys were conducted in the western portion of the study area (i.e., from Heckscher State Park east to Westhampton Beach) in order to characterize overall fishing pressure, efforts were concentrated in the eastern-most sections due to an overall lack of existing creel data in this region. A map of the study area is presented in Figure 1. The United States Army Corps of Engineers – New York District and the New York State Department of Environmental Conservation are project sponsors.

The finfish creel survey program was conducted under Work Order 16 of the Generalized Shore Zone Ecological Inventory of Selected Areas in the Eastern Zone (Contract DACW61-97-D-0007). Surveys were conducted with 100 surf fishermen, 12 recreational fleet captains and 6 commercial fleet captains. The original scope of work under this Work Order required that surveys be conducted with a total of 12 commercial fleet captains located in both Shinnecock Fishermen's Cooperative and Montauk Harbor. While surveys were successfully conducted with commercial fleet captains in Shinnecock Fishermen's Coop, those captains sailing from Montauk Harbor declined to participate.

The objectives of the finfish creel survey program are: (1) to characterize the recreational, and to a lesser degree, the commercial fishing industry's use of waters in the study area among the various user groups; and (2) to gain data pertaining to what finfish and/or other non-target species are being taken or observed by the various user groups.

METHODOLOGY

The finfish creel survey program was generally conducted by questioning potential respondents while actively fishing. Interviews with commercial and recreational boat captains were conducted dockside. All interviews were conducted during daylight hours. Potential respondents were approached by the interviewer who identified himself as

working on behalf of the US Army Corps of Engineers – NY District. An overview of the study was provided, as well as an explanation of the finfish creel survey.

Individuals participating with the survey were asked a series of questions listed on a questionnaire developed under the direct supervision of the New York District. The questionnaire was developed to facilitate data collection as well as to standardize the data collection process. A copy of the questionnaire is presented as Attachment 1. In addition to asking about target finfish species, a given respondent was asked to provide information pertaining to the following:

- Areas typically fished
- Fishing effort
- Required travel distance to fishing grounds
- Depths of water typically fished if from a boat
- Fishing interest as a function of season
- Incidental catches of by-catch/non-target species
- Incidental sightings of marine mammals and/or sea turtles

Interviews were completed in a manner that would not interfere with the business practices and/or recreation of respondents. All data were recorded on the questionnaire form for subsequent analysis. Interviews were conducted in the following areas:

- Heckscher State Park
- Smith Point
- Fire Island National Seashore
- Center Moriches
- Westhampton Beach
- Hampton Beach
- Shinnecock Bay Area
- Amagansett Beach
- Hither Hills State Park
- Montauk Point State Park
- Shagwong Point

Interviews with charter boat captains were conducted at Oakland's Marina (Shinnecock Bay area) and Montauk Harbor. Commercial boat captains were interviewed at the Shinnecock Fishermen's Cooperative. Attempts were made to conduct interviews with commercial boat captains in Montauk Harbor, but they declined the opportunity to comment. Please refer to Figure 1 for a map of the areas where interviews were conducted.

RESULTS

It was noted that, with exception to the commercial boat captains sailing from Montauk Harbor, all respondents were fully cooperative with the objectives and procedure of the survey. In the course of conversation with respondents, although it was not directly related to the objectives of the survey, it was noted that 100% of those interviewed were in favor of the proposed beach replenishment program being evaluated. All of those interviewed expressed their support of a structural solution to the coastal erosion that is currently affecting the south shore of Long Island between Fire Island Inlet and Montauk Point. Coastal erosion is of particular concern to those boat captains using Shinnecock

Inlet as passage to interior waterways and docks. These captains note that waters immediately to the south and east of Shinnecock Inlet have become extremely dangerous due to the bars that have developed as a result of offshore transport and subsequent deposition of sediments. They feel that a structural beach replenishment program can provide safe passage.

The following sections present the results of the finfish creel survey by user group. Data are presented qualitatively based on a six-month survey effort. When discussing frequency of fishing and levels of fishing effort, the 'majority' of time spent fishing any given area is defined as more than half of the average number of trips made by a given individual boater or angler.

When interviewing boat captains, it was difficult for respondents to identify any specific location within the study area. Responses were therefore categorized by water depths (expressed in fathoms) and, in some cases, given in terms of distance from shore (e.g., miles). Additionally, when interviewing shore-bound anglers, it was difficult for respondents to definitively express the number of trips one made on a yearly basis. Annual fishing effort was therefore expressed as an average number based on the number of trips made in a two-month period.

When discussing areas typically fished with shore-bound anglers, data are presented by geographic reach. For the purposes of this report, the reaches of the study area are as follows:

- Reach 1 - Heckscher State Park to Center Moriches
- Reach 2 – Westhampton Beach to Shinnecock Bay
- Reach 3 – Amagansett Beach to Hither Hills State Park
- Reach 4 – Montauk Point State Park to Shagwong Point

Shore-bound anglers often replied that they fished many different beaches in a given area in one fishing trip. This is due to the transient nature of migrating schools of fish and because fishermen often change fishing location after short periods of time. It was therefore difficult to determine overall fishing effort and the location where an angler spends the majority of his or her time. By presenting a map that included the four reaches of the study area, an individual could confidently state that he or she fished one or more reaches for the majority of trips made. This method proved to be valuable when processing results.

The number of trips made by shore-bound anglers to particular reaches was converted so that an overall percent fishing effort could be estimated. Note that survey effort was concentrated in the eastern most portion of Reach 2 and all of Reaches 3 and 4, as per the requirements of Work Order 16. Efforts were made in Reaches 1 and 2 so as to characterize overall fishing pressure within the entire 83-mile extent of the Fire Island Inlet to Montauk Point Reformulation Study area.

Fishermen were asked to list the finfish species they targeted as a function of season. This information is useful because there is a general lack of creel data pertaining to the easternmost zones of the study area. This information may also serve as baseline data for future studies in the area.

Recreational Fishermen

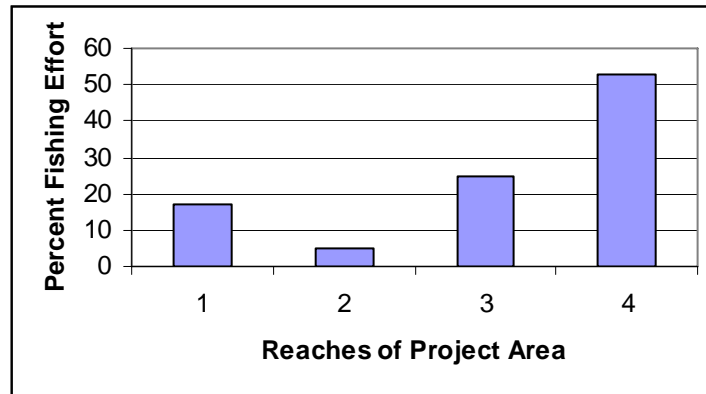
Surf Anglers

Of the 100 surf fishermen interviewed, 81 (81%) fished the waters of the study area for the majority of their fishing trips. Twelve of the anglers surveyed spent the majority of their time fishing Reach 1. Ten anglers spent equal effort fishing Reaches 1 and 2. Thirty-six anglers equally fished Reaches 3 and 4. The remaining 23 anglers surveyed fished Reach 4 exclusively.

The remaining 19 (19%) fishermen did not fish in the waters of the study area for the majority of their fishing trips due to the distance they needed to travel to reach the beaches and bays. These 19 respondents generally consisted of tourists who were incorporating some recreational fishing as part of their stay. Seven anglers were interviewed at Shinnecock Inlet, while the remaining 12 were interviewed at Montauk State Park.

The following graph presents a distribution of fishing effort among the four reaches. Of the 100 anglers surveyed, the majority of them concentrated fishing efforts in Reach 4. Fishing pressure in Reach 1 was slightly less than that of Reach 3 while Reach 2 experienced the least.

Distribution of Surf Anglers in Study area – Reaches 1 - 4



The overall average number of fishing trips made by shore-bound anglers to any of the four reaches in the study area was approximately 9 trips per month. This number was

derived by first calculating the average number of trips made by fishermen to a given reach; the overall average was then calculated from the mean values of each reach. Note that this average number is based on the estimated number of trips made during a two-month period. It is also important to note that this average number is subject to variation as a function of weather.

On average, the distance a surf angler was required to travel from home to his or her primary fishing grounds was 10 miles or less. Additional mileage was usually incurred because fishermen often drove to multiple fishing locations over the course of any given trip. This average distance was estimated based on responses from the 81 anglers that spent the majority of their time fishing in the study area. Responses from the remaining 19 respondents generally ranged between 60 and 200 miles. Three respondents were from overseas so their travel distances were not used in the calculation of average distance travelled.

The following table lists the finfish species most targeted by surf anglers participating in the creel survey. The species are listed in order of recreational preference.

Target Species of Surf Anglers Surveyed

Common Name	Scientific Name
Striped Bass	<i>Morone saxatilis</i>
Summer Flounder	<i>Paralichthys dentatus</i>
Bluefish	<i>Pomatomus saltarix</i>
Weakfish	<i>Cynoscion regalis</i>
Winter Flounder	<i>Pseudopleuronectes americanus</i>

Summer flounder, bluefish, and weakfish are targeted in the spring, summer, and early fall. Winter flounder is targeted in the very early spring and early winter. Striped bass is pursued year-round.

Anglers were also asked to provide information pertaining to incidental catches of non-target species. The number one response was sea robin. There are two prominent species of sea robin occurring in the study area (*Prionotus carolinus* and *P. evolans*). It could not be confirmed which species was taken. Other non-target species taken by surf anglers include windowpane flounder (*Scophthalmus aquosus*), dogfish species (*Mustelus* and *Squalus* spp.), and skates (*Raja* spp.). Anglers were not capable of identifying dogfish or skates by species.

Private/Open Charter Boat Captains

Of the 12 open and private charter boat captains interviewed, all captains fished the waters of, or in close proximity to, the study area. The variation in terms of areas fished was a function of species sought and time of year. In general, open and private charter boat captains fished these waters during the late summer, fall and early winter. Charter boat captains generally concentrated fishing efforts in waters outside (i.e., greater than

1.5 miles offshore) of the study area during spring and summer months. Private and open charter boat captains were interviewed dockside at Oakland’s Marina in the Shinnecock Bay area and Montauk Harbor in Montauk Point.

Those captains fishing the waters of the study area during the late summer, fall, and early winter typically drifted and/or trolled beaches and points in close proximity to their respective home ports. When asked about depths of water typically fished in the study area, they all responded that normal depths ranged from 2 to 10 fathoms, but varied as a function of locating fish. The captains report they rarely have to venture further than 15-20 miles in any direction from their respective homeports.

When fishing the waters of the study area, all charter boat captains targeted striped bass, summer flounder, bluefish, weakfish, and winter flounder. Summer flounder, bluefish, and weakfish were targeted in the spring, summer, and early fall. Winter flounder was targeted in the very early spring and early winter. Striped bass is pursued year-round when fishing the waters of the study area.

In terms of effort (i.e., number of days fished), all captains responded that they fished almost every day (20 to 25 days per month on average) of those months that they targeted species in the waters of the study area, assuming fair weather. Note, however, that private charter boat captains generally stop fishing altogether from January to March. Down time was generally attributed to maintenance, weather, and/or periods of slow business.

When open charter boat (head/party boats) captains fished outside of the study area, they typically did so when the aforementioned target species could not be found in sufficient numbers close to shore. When catches of these inshore species dwindled (late fall and winter), party boat captains targeted other bottom-dwelling species including black seabass (*Centropristis striata*), Atlantic Cod (*Gadus morhua*), and Spotted Hake (*Urophycis regia*). Fishing for these species was conducted outside of the study area.

When private charter boat captains fished outside of the study area, they generally concentrated their efforts on pelagic offshore species that moved into shelf waters during the summer months. The following table presents those species most targeted by charter boat captains fishing outside the waters of the study area.

Target Species of Charter Boat Captains Fishing Waters Outside Study area

Common Name	Scientific Name
Albacore Tuna	<i>Thunnus alalunga</i>
Atlantic Bonito	<i>Sarda sarda</i>
Bluefin Tuna	<i>Thunnus thynnus</i>
False Albacore (Little Tunny)	<i>Euthynnus alletteratus</i>
Shortfin Mako	<i>Isurus oxyrinchus</i>
Yellowfin Tuna	<i>Thunnus albacares</i>

When asked to provide information regarding incidental catches of non-target species when fishing in the study area, responses reflected those of surf anglers. Information regarding incidental catches of non-target species when fishing outside of the study area was not recorded.

Of the twelve charter boat captains interviewed, all of them were local residents of towns in close proximity to their respective home ports. The distance needed to travel from home to the boat was ten miles or less.

Commercial Boat Captains

Of the six commercial fishing boat captains interviewed, all but two consistently fished the waters of the study area during the summer. Commercial boat captains operating in the study area during summer months generally concentrated efforts between Smith Point and Montauk Point. The remaining two captains concentrated efforts at least 15 miles offshore.

Commercial fishing boat captains generally fished waters outside of the study area for the remaining seasons of the year in depths ranging from 10 to 130 fathoms. Squid (*Loligo pealei* and *Illex illecebrosus*), butterfish (*Peprilus triacanthus*), and mixed groundfish (i.e., flounders and hake species) were the most heavily targeted finfish species among commercial boat captains using the waters of the study area. Squid and butterfish are targeted year-round. Groundfish is targeted as a function of species-specific regulations but as a rule, flounders are targeted during the spring and summer while hake is targeted during the fall and winter.

Of the six commercial boat captains interviewed, five operated trawlers while one used gill-netting gear. The average number of days fished, regardless of time of year, was 25 per month. When not fishing waters of the study area, distance from shore ranged between 15 and 100 miles.

Incidental catches of non-target species were low among trawlers due to the fact that the gear is designed to catch specific fish of commercial importance. This is especially true of those nets designed to catch squid. When incidental catches are made, however, sea robin, skate, dogfish, and herring and shad (*Alosa* spp.) comprise the majority of non-target species. The gill-net captain replied that skate made up the majority of non-target species taken.

Of those captains interviewed, all of them lived locally (i.e., within 10 miles of their respective dock).

Marine Mammal/Sea Turtle Sightings

To help estimate the occurrence of marine mammals and sea turtles in the study area, all survey respondents were asked if they make incidental sightings when engaged in fishing

activities. Surf fishermen responded that they occasionally spot dolphins and porpoises swimming close to the beaches and inlets in the summer months. Charter boat captains remarked that they see dolphins and porpoises as well as the occasional sea turtle sighting when fishing in or near the waters of the study area. Commercial fishing boat captains gave similar reports and added that they see more mammals in offshore waters (e.g., whales).

Conclusion

Based on information taken from respondents, the results of the finfish creel survey program suggest that the study area is subject to heavy fishing pressure by those having both commercial and recreational fishing interests. Results are representative of typical fishing interests and efforts for the south shore and adjacent bays of Long Island between Heckscher State Park and Montauk Point, NY. Species targeted, as well as those taken as bycatch, represent a typical fisheries profile for communities inhabiting this coastal area.

It is important to note, however, that this finfish creel survey was conducted in approximately 15 days over the course of a six-month period. Limitations of area coverage, time frame, as well as the number of people able to be reached should be recognized when considering the results of the survey. The information collected from the survey, however, is sufficient to characterize the recreational, and to a lesser degree, the commercial fisheries use of waters in the study area among the various user groups. The data is also sufficient to characterize the finfish and/or other non-target species being taken or observed by the various user groups in the study area.

**Generalized Shore Zone Ecological Inventory of Selected Areas in the Eastern Zone
Fire Island to Montauk Point Reformulation Study
New York**

**FinFish Creel Survey -
Survey Questionnaire**

Interviewee No. _____

Reach _____

Respondent's Name _____ (optional)

Home State and County _____ (optional)

1. Please specify your fishing interest (choose all that may apply):

- a) Recreational (boat)
 - 1. privately owned
 - 2. open boat (e.g. party/head boat)
 - 3. private charter for hire
- b) Recreational (surf/back bay)
- c) Commercial

2. If commercial, specify type of gear employed:

- a) Trawl net
- b) Gill net
- c) Long-line
- d) Hook and line (e.g. Blue fin Tuna fishermen)

3. Typically, where do you fish? Be as specific as possible.

a) How often do you fish in this location?

b) How far did you travel to fish here today?

4. If from a boat, what depths of water do you typically fish? Provide a general range of depths.

5. **Catch Composition By Season**

Please use the following table to indicate the target species on a seasonal basis. Mark a check for the species targeted in the each of the four seasons.

Species	Spring	Summer	Fall	Winter
Atlantic Mackerel				
Blackfish (Tautog)				
Black Seabass				
Bluefish				
Blue Fin Tuna				
Bonito				
False Albacore				
Scup (Porgy)				
Shark*				
Striped Bass				
Summer Flounder				
Weakfish				
Winter Flounder				
Yellowfin Tuna				
Other*				

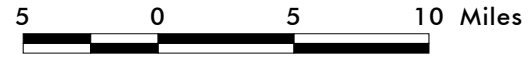
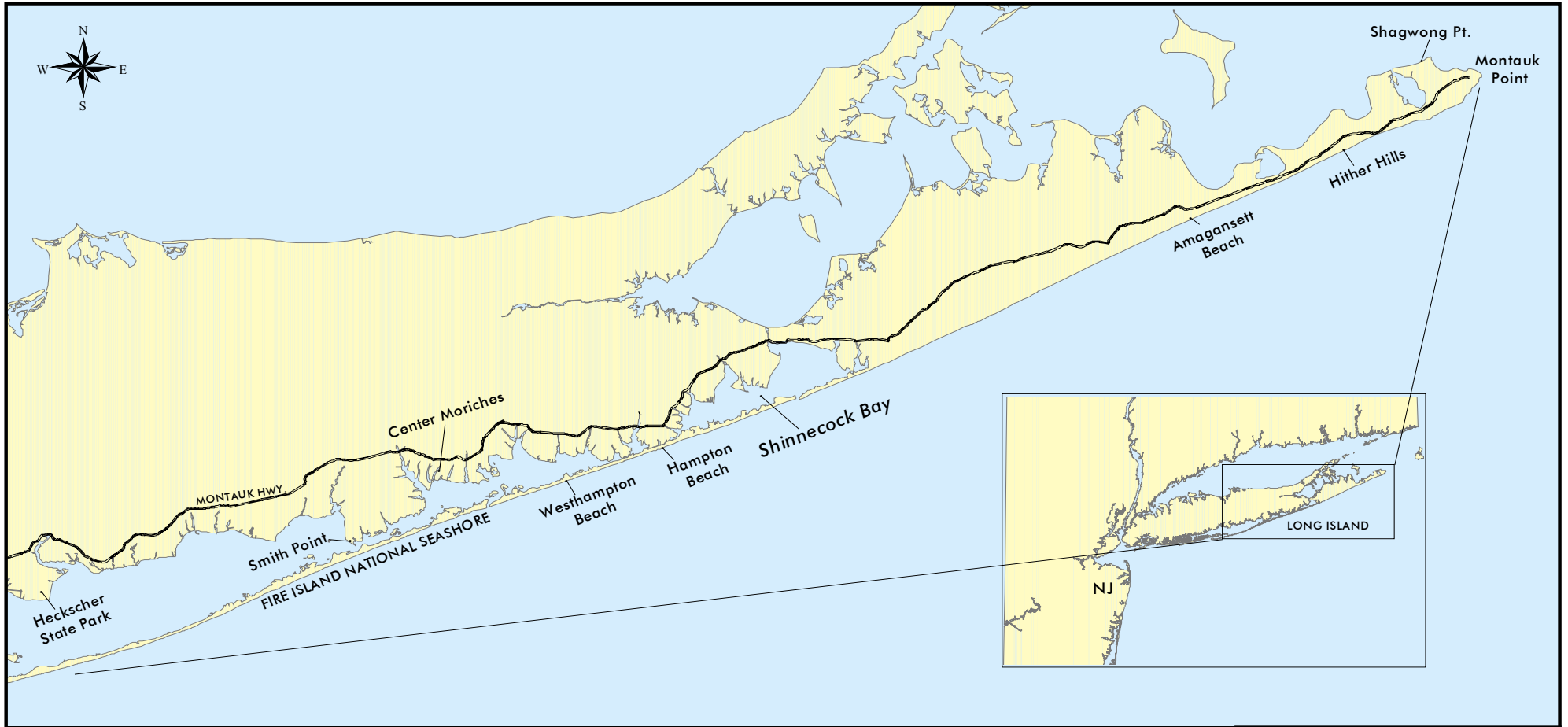
* Please use the space provided below to indicate species.

11. How is fishing so far this year compared to last year?

Notes:

Interview Status

1. Questionnaire Completed
2. Item(s) Refused
3. Item Number(s) Refused _____



**FIRE ISLAND INLET TO MONTAUK
POINT REFORMULATION STUDY**
 GENERALIZED SHORE ZONE ECOLOGICAL
 INVENTORY OF SELECTED AREAS IN THE
 EASTERN ZONE

**FINFISH CREEL SURVEY -
 GENERAL LOCATION MAP**

FIG.1