New York Commercial Fisherman Ocean Use Mapping

Prepared by the Cornell Cooperative Extension Marine Program

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For New York State Department of State

Final Report

New York Commercial Fisherman Ocean Use Mapping Report Sections:

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Project Summary

New York State Department of State (NYSDOS) is amending its Coastal Management Program (CMP), under the authority of the federal Coastal Zone Management Act (CZMA) of 1972, to appropriately site offshore wind energy facilities and provide greater protection for the habitats that support New York's ocean industries.

Under the CZMA, states with approved Coastal Management Programs have the authority to approve or deny certain proposed offshore proposed activities no matter where it may occur, if the action may affect that state's coastal uses or resources.

New York's commercial and recreational fisheries are important and long-standing ocean industries. The uses and resources associated with these fisheries are geographically widespread and are connected by complex ecological and economic ties. Expanded or new ocean uses such as offshore wind energy development have the potential to impact these fisheries in multiple ways. For example, uses that require substantial space may restrict access to desirable fishing grounds, or may displace important fish habitat. NYSDOS identified a significant need for more and better information concerning fisheries resources and habitats within the New York Offshore Planning Area so that state and federal agencies can better understand the potential impacts of construction and operation of wind turbines, undersea cables, and other offshore wind energy infrastructure.

Cornell Cooperative Extension Marine Program (CCE) was asked by NYSDOS to collect information from New York Commercial Fishermen and For-Hire boatmen to identify key fishing areas within the New York offshore study area. The information that was collected included sites being fished, factual descriptions (including latitude/longitude) as well as common place names of these locations, gear type(s) being used, species being targeted and other information that could be important to identify the potential impacts of wind energy development on fishermen. CCE conducted fifteen work sessions for this project with Commercial Fishermen and For-Hire boatmen from Brooklyn to Montauk. The workshop sessions involved fishermen providing information about their fishing activities as described above and detailing specific fishing sites on nautical charts. Qualitative data for this project were collected from 90 Commercial Fishermen and For-Hire boatmen vessel operators, which represent 36% of the combined active fleet presently operating in the New York Ocean Offshore Planning Area.

Quantitative fisheries dependent monitoring data were obtained from the National Marine Fisheries Service (NMFS) by NYSDOS. This included vessel trip report (VTR) data for all gear types by fishing effort (number of tows) and landings (total catch) within the New York offshore planning area for 2001-2010. The information in these VTR data is not limited to licensed commercial fishers based in New York or commercial fishers bringing fish to New York ports. Rather, these VTR data capture all federally-licensed vessels fishing in this reporting area. For comparative purposes, the NY Commercial and For-Hire aggregated data were layered over the VTR maps.

Draft GIS layered maps from both processes were presented to fishermen for review and revisions prior to submission to NYSDOS. All individual fisherman information was kept confidential and only aggregate data in GIS layered maps are public information.

Project Goals

The project goal was to collect information on fishing activity areas from New York based Commercial fishermen and For-Hire boatmen that use state and federal waters adjacent to New York. Commercial and For-Hire fishermen working (operating) from the ports of Montauk, Shinnecock, Greenport, Islip (including Captree boat basin), Freeport and Sheepshead Bay, New York were surveyed. Information was collected through a series of planned one-on-one and group meetings with industry organizations and individuals from the listed ports. Additionally, a direct mail survey was conducted to assure an opportunity for all affected individuals to input the data collection process. Related project objectives were:

1) Assure ocean usage mapping is representative of NY Commercial/For-Hire Fisheries across variables of port and gear types.

2) Protect the confidentiality of individual fishermen's proprietary fishing areas.

3) Adopt methods and procedures for data collection that eliminate recording bias, which can be validated.

Description of Population

Commercial Harvesters and For-Hire boatmen populations: The New York State Department of Environmental Conservation (NYSDEC) Bureau of Marine Resources issues a variety of licenses and permits which authorize Recreational and Commercial harvest of marine species under its jurisdiction. For the purposes of the ocean usage mapping project, only those licenses for all Commercial and For-Hire fleet fishermen were considered. In 2010, the most recent year for which related data are available, NYSDEC issued 990 resident and 40 non-resident food fish licenses; 360 resident, and 30 non-resident lobster licenses; 578 resident, and 28 non-resident crab licenses; 256 resident, and 12 non-resident whelk licenses; 501 party/charter (For-Hire) licenses; and 423 food fish and crustacean dealer licenses. Among the New York resident food fish license holders, approximately 304 (31%) hold federal vessel permits and are home ported in New York (See Attachment 1). Collectively these individuals, who fish in the identified study area (coordinates), represent the target study population. This primary group was targeted by port affiliation for interviews and direct mail purposes. Holders of NY Commercial food fish licenses and holders of marine and coastal boat licenses are required to submit fishing vessel trip reports (VTR). 2008-2010 federal and state VTRs submitted by NY Commercial and For-Hire licensees were reviewed to help further identify individual fishing activity within NMFS statistical areas to delineate the ocean usage population and to identify active commercial and for-hire vessel permit holders.

Project Work Components

The following describes the ocean usage information collected, methodology and data sources.

Fishery Activity Maps Based on Qualitative Inputs

1.) Commercial and For-Hire fisheries usage geographic information system (GIS) data layers and maps for New York's offshore waters were created, including: for-hire (Charter) fishing usage areas, Commercial fishing usage areas (mobile gear and fixed gear).

2.) The main purpose of this data collection effort was to document the offshore locations used by NY Commercial and For-Hire fishermen. Ocean use data collected focused on the NY Ocean Planning Area, which represents approximately 17,000 square miles. (1500' from the coast out to the continental shelf edge.

3.) Fisheries usage qualitative data layers were developed using standardized qualitative research methods. Data was collected through interview and mapping exercises conducted in person, both one on one and in small groups with New York Commercial and For-Hire fishermen and through a direct mail survey. The CCE research team consisted of three members. Team member one, project leader, provided overall project leadership including initial project outreach, interview schedules and community/port/group orientation; and coordinated all quantitative data analysis collection. Team member two, project integrator, conducted data collection interviews and information collection exercises. Team member three, project data technician, assured information was recorded accurately, comprehensively, and consistent in the mapping and interview process.

4.) Interview subjects were identified from the population described above. Interviews were organized around the identified port locations at times and places convenient to area fishermen.

In general the ocean use data collection interview process, once scheduled, began with a brief introduction on the NY Ocean Planning process. NOAA nautical charts of the study area were shown to fishermen. Fishermen were advised that their individual input would be kept confidential, and that only aggregate data in the form of GIS data layers and maps would become public information. Establishing the confidentiality of individual fishermen's information about areas fished was essential to facilitate useful participation.

Fishermen were asked to describe where they fish and to draw polygons encompassing these areas on nautical charts. Follow-up questions about these areas included:

a) During which seasons do you fish in each area?

b) With what gear?

c) What are the target species in each area?

This information was notated on nautical charts with additional notes where appropriate. Fishermen were given the opportunity to question the ocean use methods to help strengthen the stakeholder process.

d) Meetings were conducted with individuals and groups of Commercial fishermen and For-Hire boatmen from the ports of Montauk, Shinnecock, Greenport, Point Lookout/Freeport, Captree, Oceanside, and Brooklyn. Following these meetings, data was aggregated on to three sets of nautical charts to represent the proposed three different data layers described. The raw data, which exists in the form of the original charts with fishermen's confidential information, was archived by CCE. These three aggregated charts and notations were provided to DOS with other requested data aggregates that were developed.

Below is a chart detailing the qualitative data collection outcome. For each vessel listed below, an interview and a detailed map were obtained. Among the New York resident food fish license holders, presently 304 hold federal commercial fishing vessel permits. From this list, there were 155 NY active commercial fishing vessels home ported in NY that have reported landings in 2012. In 2012 there were 148 For-Hire recreational vessels home-ported in New York. Ninety-two of these vessels reported landings in 2012. Qualitative data presented below was collected from 90 Commercial fishermen and For-Hire boatmen vessel operators, which represents 36% of the combined active fleet presently operating in the NY Ocean Planning Area (See Attachment 1).

Qualitative Data: Commercial Fishermen and For-Hire Boatmen Summary

Commercial / For-Hire	Port	Primary Fishery	Gear Type	# of Vessels
Commercial	Freeport/Fire Island	fluke, skate, sand dab	dragger	2 vessels
Commercial	Freeport/Fire Island	fluke, skate, sand dab	dragger	2 vessels
Commercial	Freeport/Fire Island	squid, fluke	dragger	2 vessels
Commercial	Freeport/Fire Island	squid, fluke, skate, bluefish, striped bass, butterfish, black sea bass, monk	dragger	2 vessels

Commercial / For-Hire	Port	Primary Fishery	Gear Type	# of Vessels
Commercial	Freeport/Fire Island	squid, fluke, skate, bluefish, striped bass, butterfish, black sea bass, monk	dragger	2 vessels
Commercial	Freeport/Fire Island	fluke, squid, scup, black sea bass, bluefish, monk	dragger	2 vessels
Commercial	Freeport/Fire Island	squid, scup, fluke, black sea bass, monk	dragger	2 vessels
Commercial	Freeport/Fire Island	squid, scup, fluke, whiting, black sea bass, scallops, butterfish, monk	dragger	2 vessels
Commercial	Freeport/Fire Island	squid, scup, fluke, whiting, black sea bass, scallops, butterfish, monk	dragger	2 vessels
Commercial	Freeport/Fire Island	squid, scup, fluke, whiting, black sea bass, scallops, butterfish, monk	dragger	2 vessels
Commercial	Freeport/Fire Island	scup, squid, whiting, monk,black sea bass, scallops, butterfish, fluke	dragger	1 vessel

Commercial / For-Hire	Port	Primary Fishery	Gear Type	# of Vessels
Commercial	Freeport	bluefish, butterfish, croackers, spanish mackerel	dragger	1 vessel
Commercial	Freeport	fluke, *Loligo*	dragger	1 vessel
Commercial	Freeport	scallop(all season), squid(fall), fluke(fall)	dragger	1 vessel
Commercial	Freeport	whiting, ling, scup (spring), fluke, black sea bass (fall)	dragger	1 vessel
Commercial	Freeport	squid, scup, black sea bass	dragger	1 vessel
Commercial	Freeport	whiting , squid, scup, fluke	dragger	1 vessel
Commercial	Freeport	squid, scup, black sea bass, fluke	dragger	1 vessel
Commercial	Shinnecock	mostly scallops and all species	dragger	2 vessels
Commercial	Shinnecock	mostly scallops and all species	dragger	2 vessels
Commercial	Shinnecock	mostly squid and all species	dragger	2 vessels
Commercial	Shinnecock	fluke	dragger	2 vessels
Commercial	Shinnecock	scup, fluke	dragger	2 vessels
Commercial	Shinnecock	scup, *Loligo*	dragger	2 vessels
	Shinnecock	New Bedford boats – scallops		1 vessel
Commercial	Greenport	squid and fluke – inside 5 miles	dragger	2 vessels
Commercial	Greenport	yellowtail, squid, fluke	dragger	2 vessels

Commercial / For-Hire	Port	Primary Fishery	Gear Type	# of Vessels
Commercial	Greenport	yellowtail, squid, fluke, scup	dragger	2 vessels
Commercial	Greenport	squid, fluke, scup, whiting	dragger	2 vessels
Commercial	Shinnecock	squid , scup, fluke	dragger	1 vessel
Commercial	Shinnecock	mostly squid, some fluke	dragger	1 vessel
Commercial	Shinnecock	squid, scup, some fluke	dragger	1 vessel
Commercial	Shinnecock	squid, scup, whiting, fluke	dragger	1 vessel
For-Hire	Shinnecock	fluke, seabass	rod and reel	2 vessels
For-Hire	Shinnecock	fluke, seabass, striped bass, scup, bluefish	rod and reel	2 vessels
For-Hire	Shinnecock	seabass, fluke, scup, blackfish, tuna	rod and reel	2 vessels
For-Hire	Shinnecock	cod, seabass, scup	rod and reel	2 vessels
For-Hire	Shinnecock	spring, summer, fall species	rod and reel	2 vessels
Commercial	Montauk	tilefish only	long liner	2 vessels
For-Hire	Captree	black sea bass, scup, fluke, bluefish, cod	hook and line	1 vessel
For-Hire	Captree	black sea bass, scup, fluke, bluefish, cod	hook and line	1 vessel
For-Hire	Captree	black sea bass, scup, fluke, bluefish, cod	hook and line	2 vessels
For-Hire	Captree	black sea bass, scup, fluke, bluefish, cod	hook and line	2 vessels

Commercial / For-Hire	Port	Primary Fishery	Gear Type	# of Vessels
For-Hire	Captree	black sea bass, scup, fluke, bluefish, cod	hook and line	2 vessels
Commercial	Shinnecock	monk, skates, bluefish, fluke, bonito, spanish mackerel, striped bass, croaker, cobia	gillnet	7 vessels
Commercial	Shinnecock	monk, skates, bluefish, fluke, bonito, spanish mackerel, striped bass, croaker, cobia	gillnet	1 vessel
Commercial	Montauk	lobster, monk, dogfish, skates	lobster pots	6 vessels
Commercial	Montauk	lobster, monk, dogfish, skates	lobster pots	6 vessels
Commercial	Oceanside	surf clams	clam dredge	3 vessels
Commercial	Oceanside	surf clams	clam dredge	3 vessels
Commercial	Oceanside	Quahog	clam dredge	3 vessels
Commercial	Oceanside	Quahog	clam dredge	3 vessels
Commercial	Montauk	weakfish, bluefish, fluke, blackfish, scup, mackerel, seabass, monk	dragger	1 vessel
Commercial	Montauk	concentrated seabass	dragger	1 vessel
Commercial	Montauk	squid, striped bass	dragger	1 vessel
Commercial	Montauk	scup, whiting, ling, fluke, black sea bass	dragger	1 vessel

Commercial / For-Hire	Port	Primary Fishery	Gear Type	# of Vessels
Commercial	Montauk	scup, whiting, ling, fluke, monk	dragger	1 vessel
Commercial	Montauk	squid, fluke, squid spawning, dogfish(all), bluefish(all)	dragger	6 vessels
Commercial	Montauk	whiting, monkfish	dragger	6 vessels
Commercial	Montauk	whiting, squid, monkfish, *Illex*	dragger	6 vessels
Commercial	Montauk	whiting squid, fluke, monk	dragger	6 vessels
Commercial	Montauk	squid, scallops, fluke, whiting, scup	dragger	5 vessels
Commercial	Montauk	squid, scup	dragger	3 vessels
Commercial	Montauk	squid, scallop, scup, whiting, ling, fluke, black sea bass	dragger	5 vessels
Commercial	Montauk	whiting, squid, scup, lobster, scallops	dragger	5 vessels
For-Hire	Brooklyn (Sheepshead Bay)	multi species	rod and reel	1 vessel
For-Hire	Brooklyn (Sheepshead Bay)	blackfish, seabass, bluefish, cod, ling, fluke,	rod and reel	1 vessel
For-Hire	Brooklyn (Sheepshead Bay)	blackfish, seabass, bluefish, cod, ling, fluke, scup, striped bass	rod and reel	1 vessel

Commercial / For-Hire	Port	Primary Fishery	Gear Type	# of Vessels
For-Hire	Brooklyn (Sheepshead Bay)	blackfish, seabass, bluefish, cod, ling, fluke, scup, striped bass	rod and reel	1 vessel
For-Hire	Brooklyn (Sheepshead Bay)	blackfish, seabass, bluefish, cod, ling, fluke, scup, striped bass	rod and reel	1 vessel
For-Hire	Brooklyn (Sheepshead Bay)	blackfish, seabass, bluefish, cod, ling, fluke, scup, striped bass	rod and reel	1 vessel
For-Hire	Brooklyn (Sheepshead Bay)	blackfish, seabass, bluefish, cod, ling, fluke,	rod and reel	1 vessel
For-Hire	Brooklyn (Sheepshead Bay)	blackfish, seabass, bluefish, cod, ling, fluke,	rod and reel	1 vessel
Commercial	Montauk	whiting, squid, scup	dragger	1 vessel
Commercial	Montauk	fluke, yellowtail, squid, scup, whiting	dragger	1 vessel
Commercial	Montauk	fluke, squid, flounder	dragger	1 vessel
Commercial	Montauk	fluke, scup	dragger	1 vessel
Commercial	Montauk	fluke	dragger	1 vessel
Commercial	Shinnecock	fluke, squid, winter flounder, black sea bass, skate, striped bass	dragger	1 vessel
Commercial	Montauk	monkfish	dragger	5 vessels
Commercial	Montauk	scallops	scalloper	3 vessels
Commercial	Montauk	sword and tuna	long liner	1 vessel

Commercial / For-Hire	Port	Primary Fishery	Gear Type	# of Vessels
Commercial	Shinnecock	scallops	scalloper	1 vessel
Commercial	Point Lookout	blackfish, sea bass, and scup	rod and reel	1 vessel
Commercial	Point Lookout	fluke	rod and reel	1 vessel
Commercial	Point Lookout	cod	rod and reel	1 vessel
Commercial	Montauk	tilefish	long liner	1 vessel
Commercial	Montauk	tilefish	long liner	1 vessel
Commercial	Montauk	tilefish	long liner	1 vessel
Commercial	Unknown	what ever the law allows	dragger	1 vessel
Commercial	Montauk	squid, scup, whiting	dragger	1 vessel
Commercial	Montauk	squid, scup, whiting	dragger	1 vessel
Commercial	Montauk	scup	dragger	1 vessel
Commercial	Montauk	squid	dragger	1 vessel
Commercial	Montauk	squid	dragger	1 vessel
Commercial	Montauk	all species	dragger	1 vessel
Commercial	Montauk	all species	dragger	1 vessel
Commercial	Montauk	all species	dragger	1 vessel
Commercial	Shinnecock	lobster, sea bass, scup, crab, blackfish	fish/lobster pots	1 vessel
Commercial	Shinnecock	lobster, sea bass, scup, crab, blackfish	fish/lobster pots	1 vessel
Commercial	Shinnecock	lobster, sea bass, scup, crab, blackfish	fish/lobster pots	1 vessel
For-Hire	Captree	bluefish, sea bass, scup, fluke	rod and reel	1 vessel
Commercial	Montauk	Monkfish, striped bass	Gillnet	1 vessel
Commercial	Montauk	black sea bass, ocean perch	fish pot	1 vessel

Commercial / For-Hire	Port	Primary Fishery	Gear Type	# of Vessels
Commercial	Montauk	monkfish, dogfish, skates	gillnet	2 vessels
Commercial	Montauk	lobster	fish/lobster pots	2 vessels
Commercial	Montauk	heavy squid fishing area	dragger	16 vessels
Commercial	Montauk	fluke, squid, whiting	dragger	2 vessels
Commercial	Montauk	squid, whiting	dragger	2 vessels
Commercial	Montauk	squid	dragger	2 vessels
Commercial	Montauk	squid, whiting, fluke	dragger	2 vessels

5.) Direct Mail Survey (See Attachment 2)

A comparison was made of those interviewed versus the primary population database to select individuals not interviewed to survey by mail. CCE used qualifiers such as gear type, homeport, and fishing activity in the NY Ocean Planning Area to select 130 individuals that met these criteria to survey by direct mail. The survey population included Commercial fishermen from fixed and mobile gear usage categories and For-Hire boatmen. The mail surveys were completed and received from 19 vessel owners resulting in a 15% response rate.

Fishery Activity Maps Based on Quantitative Data

Additionally, Commercial and For-Hire fisheries usage GIS data layers and maps were created for NY ocean usage through the use of quantitative fisheries dependent monitoring data which was obtained from NMFS by NYSDOS. The best available data that provide insight into the spatial and temporal characteristics of commercial fishing activity are Vessel Trip Reports (VTR) data. As a way of monitoring fisheries activity, NMFS requires commercial fishermen with federal permits operating in the study area to submit one VTR per trip. On each report, the fisherman identifies the location of that trip as one set of coordinates (latitude/longitude or loran). VTR location is only an approximation of fishing activity because the fisherman reports only one set of coordinates for the trip, which may include multiple tows in different locations. VTR data for vessels fishing in the statistical areas within the NYS Ocean Planning Area for 2000-2010 were obtained from NMFS, subject to data access agreements, which are designed to ensure fishermen's privacy. The VTR quantitative data GIS maps developed describe fishing activity based on fishing effort days or landed pounds (lb) ranges. Fishing activity maps were

created by aggregating all VTRs as one set of point data into ten minute squares (approximately 100 square miles), and then aggregating the data by gear type. In addition, because VTR data include dates of each fishing trip, data was aggregated by gear type and season (Winter, Jan. 1 - March 31; Spring, April 1- June 30; Summer, July 1 - September 30; and, Fall: October 1-December 31).

NY Ocean Planning Area Stakeholder Review

The completed two project components: (1) Fishery activity maps based on quantitative inputs; and (2) Fishery activity maps based on qualitative data; were used to collectively provide triangulation of quantitative and qualitative data. Quantitative data (VTR) generated GIS maps and qualitative data (interview/mail survey) generated GIS maps based on the above described processes were developed by NYSDOS (See Attachment 3 Composite GIS Maps). These composite GIS maps were validated through ground-truth meetings with stakeholders. Meetings were held in Montauk, Shinnecock, and Captree to review composite GIS maps with participating stakeholders. This ground-truth process generated both corrective information and new input that was used to illuminate the existing GIS maps.

Commercial Fisheries Overview

In 2010, New York State Fishermen landed 27.7 million pounds of finfish, shellfish and crustaceans with a landed value of $34 million, 99% of which occurs in Nassau and Suffolk counties. With a standard economic multiplier of 4.5, this translates into a regional economic value of close to $153 million annually. New York State fisheries support thousands of jobs, and hundreds of Long Island businesses. Fishing related industries are a hybrid of local serving, resource dependent, and traded industries. They act as an economic driver through marketing of fishery products to New York City and the world. With targeted economic development support, this impact will grow and be sustainable. This project will assure the protection of the valuable economy dependent on access to commercial and recreationally important fisheries.

The following charts describe NY commercial fishery landing statistics based on landed pounds and value, by gear types, and species.

New York Commercial Fishing Landings by Pounds and Dollars for the Years 2008-2010

Year	Metric Tons	Pounds	$
2008	15,678.70	34,565,284	59,207,140
2009	15,614.90	34,424,510	49,379,116
2010*	12,574.10	27,720,791	33,994,822
GRAND TOTALS:	43,867.60	96,710,585	142,581,078

*The 2010 NY commercial landings are undervalued because the NYS shellfish/finfish landings are under represented. (National Marine Fisheries Service, Fisheries Statistics Division, personal communication, August 1, 2012)

New York Commercial Fishing Top 10 Landed Species by Pounds 2010

Rank	Species Name	Pounds	Dollars
1	HAKE, SILVER	4,540,135	3,070,406
2	SQUID, LONGFIN	3,899,835	4,516,283
3	SCUP	2,689,703	2,112,499
4	CLAM, ATLANTIC SURF	2,572,508	1,707,924
5	SKATES	2,289,097	498,031
6	TILEFISH, GOLDEN	1,585,539	4,077,066
7	FLOUNDER, SUMMER	1,363,421	3,568,739
8	GOOSEFISH	1,211,470	1,665,502
9	CRAB, JONAH	968,122	417,988
10	CRAB, BLUE	963,847	1,561,431

(National Marine Fisheries Service, Fisheries Statistics Division, personal communication, August 1, 2012)

New York Commercial Fishing Top 10 Landed Species by Dollars 2010

Rank	Species Name	Pounds	Dollars
1	SQUID, LONGFIN	3,899,835	4,516,283
2	TILEFISH, GOLDEN	1,585,539	4,077,066
3	SCALLOP, SEA	507,299	3,776,583
4	FLOUNDER, SUMMER	1,363,421	3,568,739
5	HAKE, SILVER	4,540,135	3,070,406
6	SCUP	2,689,703	2,112,499
7	BASS, STRIPED	747,493	1,860,341
8	CLAM, ATLANTIC SURF	2,572,508	1,707,924
9	GOOSEFISH	1,211,470	1,665,502
10	CRAB, BLUE	963,847	1,561,431

(National Marine Fisheries Service, Fisheries Statistics Division, personal communication, August 1, 2012)

New York Commercial Fishing Landings by Gear Type for 2010

Gear	Metric Tons	Pounds	$
Not Coded	5,935.80	13,086,152	14,144,811
Haul Seines, Long	2	4,350	3,153
Purse Seines, Other	0	57	228
Beam Trawls, Other	0.2	464	959
Otter Trawl Bottom, Crab	1.9	4,266	3,635
Otter Trawl Bottom, Fish	2,285.80	5,039,197	6,461,862
Otter Trawl Bottom, Lobster	1.5	3,240	2,363
Otter Trawl Bottom, Scallop	0	20	143
Trawl Midwater, Paired	0	100	45
Trawl Bottom, Paired	0	91	203
Weirs	0.5	1,016	2,397
Pound Nets, Other	8.7	19,233	51,498
Floating Traps (Shallow)	0.1	319	678
Fyke Net, Other	0.3	700	1,225
Pots And Traps, Eel	0.5	1,181	2,243
Pots And Traps, Fish	0	110	385
Pots And Traps, Lobster Inshore	34.4	75,868	273,319
Pots And Traps, Lobster Inshore	0.1	140	695
Pots And Traps, Other	956.9	2,109,572	2,742,716
Gill Nets, Other	7.9	17,499	11,382
Gill Nets, Sink/Anchor, Other	1,133.50	2,498,880	2,457,693
Gill Nets, Drift, Other	0.6	1,313	-100
Gill Nets, Drift, Runaround	1.6	3,546	3,198
Troll & Hand Lines Cmb	51.8	114,153	175,089
Lines Hand, Other	310	683,464	1,504,619
Lines Long Set With Hooks	4.9	10,891	76,667
Lines Long, Reef Fish	215.2	474,371	835,803
Dip Nets, Common	3.6	8,039	-525
Cast Nets	2.8	6,100	2,043
Spears	1.1	2,480	255
Dredge Clam Hydraulic	1,166.90	2,572,548	1,708,204
Dredge Clam	0.1	120	840
Dredge Other	418.3	922,283	3,452,131
Rakes, Other	0	89	53
Hooks, Other	0	90	395
By Hand, Other	1.3	2,824	3,944
Unspecified Gear	25.4	56,025	70,573
	12,574.10	27,720,791	33,994,822

(National Marine Fisheries Service, Fisheries Statistics Division, personal communication, August 1, 2012)

New York Landed Species by Value for the Years 2008-2010

Species Name	2008	2009	2010	Total
ALEWIFE	$19.00	$13.00		$32.00
ARGENTINES	$1,671.00			$1,671.00
BASS, STRIPED	$1,671,014.00	$1,724,554.00	$1,860,341.00	$5,255,909.00
BLUEFISH	$663,362.00	$608,371.00	$482,508.00	$1,754,241.00
BONITO, ATLANTIC	$16,412.00	$32,345.00	$56,856.00	$105,613.00
BULLHEAD, BROWN	$0.00	$515.00	$22.00	$537.00
BURBOT	$200.00	$430.00	$1,470.00	$2,100.00
BUTTERFISH	$345,725.00	$176,872.00	$297,238.00	$819,835.00
CATFISHES & BULLHEADS	$1,210.00			$1,210.00
CLAM, ATLANTIC JACKKNIFE	$51,300.00	$134,157.00		$185,457.00
CLAM, ATLANTIC SURF	$5,669,578.00	$5,857,616.00	$1,707,924.00	$13,235,118.00
CLAM, NORTHERN QUAHOG	$13,184,754.00	$8,396,994.00		$21,581,748.00
CLAM, SOFTSHELL	$1,075,536.00	$700,325.00		$1,775,861.00
CLAMS OR BIVALVES	$120.00	$175.00		$295.00
COBIA	$133.00			$133.00
COD, ATLANTIC	$94,985.00	$134,188.00	$146,867.00	$376,040.00
CRAB, ATLANTIC ROCK	$13,146.00	$10,165.00	$5,677.00	$28,988.00
CRAB, BLUE	$895,117.00	$1,181,719.00	$1,561,431.00	$3,638,267.00
CRAB, GREEN	$167,333.00	$67,467.00	$136,301.00	$371,101.00
CRAB, HORSESHOE	$290,189.00	$243,952.00		$534,141.00
CRAB, JONAH	$238,490.00	$212,465.00	$417,988.00	$868,943.00
CRAB, SPIDER	$3,798.00	$17,677.00	$14,850.00	$36,325.00
CRABS	$12,018.00	$174,821.00	$2,066.00	$188,905.00
CROAKER, ATLANTIC	$3,007.00	$900.00	$16.00	$3,923.00
CUNNER	$24,550.00	$12,670.00	$10,053.00	$47,273.00
DOLPHINFISH	$11,513.00	$8,604.00	$3,785.00	$23,902.00
DORY, AMERICAN JOHN	$10,311.00	$20,892.00	$21,063.00	$52,266.00
DRUM, BLACK		$93.00		$93.00
DRUMS	$81.00	$94.00		$175.00
EEL, AMERICAN	$1,922.00	$27,486.00	$10,231.00	$39,639.00
EEL, CONGER	$718.00	$1,009.00	$3,030.00	$4,757.00
FINFISHES, UNC FOR FOOD	$8,955.00			$8,955.00
FINFISHES, UNC GENERAL	$13,028.00	$83,367.00	$126,680.00	$223,075.00
FLATFISH	$372.00			$372.00
FLOUNDER, FOURSPOT	$6,783.00	$3,856.00	$5,758.00	$16,397.00
FLOUNDER, SUMMER	$2,933,479.00	$3,087,968.00	$3,568,739.00	$9,590,186.00
FLOUNDER, WINDOWPANE	$50,745.00	$41,175.00	$55,313.00	$147,233.00
FLOUNDER, WINTER	$412,880.00	$144,224.00	$29,607.00	$586,711.00
FLOUNDER, WITCH	$9,484.00	$5,402.00	$1,564.00	$16,450.00

Species Name	2008	2009	2010	Total
FLOUNDER, YELLOWTAIL	$89,591.00	$93,807.00	$94,342.00	$277,740.00
FLOUNDER,ATLANTIC,PLAICE	$164.00	$765.00	$1,828.00	$2,757.00
GOOSEFISH	$1,964,019.00	$1,395,170.00	$1,665,502.00	$5,024,691.00
HAKE, ATLANTIC, RED/WHITE	$32,258.00	$46,070.00	$54,505.00	$132,833.00
HAKE, OFFSHORE SILVER	$22,610.00	$20,844.00	$7,472.00	$50,926.00
HAKE, RED	$80,267.00	$78,614.00	$128,514.00	$287,395.00
HAKE, SILVER	$2,571,491.00	$2,500,800.00	$3,070,406.00	$8,142,697.00
HAKE, WHITE	$34,734.00	$22,896.00	$5,905.00	$63,535.00
HERRING, ATLANTIC	$39,740.00	$21,411.00	$7,911.00	$69,062.00
HERRING, BLUEBACK	$3,379.00	$1,111.00	-$942.00	$3,548.00
HERRINGS	$1,569.00	$504.00	$362.00	$2,435.00
KING WHITING	$147.00	$10.00	$204.00	$361.00
LEATHERJACKETS	$1,243.00	$3,898.00	$4,174.00	$9,315.00
LOBSTER, AMERICAN	$5,498,176.00	$3,942,766.00	$1,328,548.00	$10,769,490.00
MACKEREL, ATLANTIC	$69,660.00	$75,730.00	$64,484.00	$209,874.00
MACKEREL, KING	$525.00		$426.00	$951.00
MACKEREL, SPANISH	$6,960.00	$7,195.00	$8,334.00	$22,489.00
MANTIS SHRIMPS	$90.00	$43.00	$365.00	$498.00
MENHADEN	$29,660.00	$48,798.00	$53,648.00	$132,106.00
MUSSEL, BLUE	$10,070.00	$2,704.00		$12,774.00
OYSTER, EASTERN	$2,870,069.00	$1,428,015.00		$4,298,084.00
PERCH, WHITE	$588.00	$2,798.00	$284.00	$3,670.00
PERCH, YELLOW	$62,952.00	$31,131.00	$69,081.00	$163,164.00
POLLOCK	$426.00	$190.00	$706.00	$1,322.00
PORGY, RED			$1,299.00	$1,299.00
POUT, OCEAN	$11,582.00	$4,239.00	$135.00	$15,956.00
PUFFER, NOTHERN	$61.00	$60.00	$3,551.00	$3,672.00
PUFFERS	$215.00	$615.00		$830.00
REDFISH, ACADIAN	$15,513.00	$28,768.00	$10,674.00	$54,955.00
SCALLOP, BAY	$154,235.00	$270,784.00		$425,019.00
SCALLOP, SEA	$5,050,153.00	$5,018,495.00	$3,776,583.00	$13,845,231.00
SCUP	$1,710,410.00	$1,887,052.00	$2,112,499.00	$5,709,961.00
SEA BASS, BLACK	$701,876.00	$428,064.00	$618,003.00	$1,747,943.00
SEA RAVEN	$1,722.00	$649.00	$1,170.00	$3,541.00
SEAROBINS	$2,797.00	$3,953.00	$8,773.00	$15,523.00
SHAD, AMERICAN	$20,028.00	$4,412.00	$1,346.00	$25,786.00
SHAD, GIZZARD	$2.00			$2.00
SHAD, HICKORY	$77.00		$0.00	$77.00
SHARK, DOGFISH			$264.00	$264.00
SHARK, MAKOS	$8,492.00	$2,158.00		$10,650.00

Species Name	2008	2009	2010	Total
SHARK, SHORTFIN MAKO		$7,598.00	$14,609.00	$22,207.00
SHARK, SMOOTH DOGFISH	$77,052.00	$75,102.00	$145,003.00	$297,157.00
SHARK, SPINY DOGFISH	$7,090.00	$41,089.00	$88,194.00	$136,373.00
SHARK, THRESHER		$176.00	$999.00	$1,175.00
SHARKS	$11,216.00	$5,653.00	$5,513.00	$22,382.00
SHELLFISH	$22,803.00	$8,200.00	$9,327.00	$40,330.00
SILVERSIDES	$25,471.00	$1,571.00	$12,574.00	$39,616.00
SKATE, LITTLE	$3,088.00	$3,385.00		$6,473.00
SKATES	$189,871.00	$226,295.00	$498,031.00	$914,197.00
SNAIL, MOON		$2,439.00		$2,439.00
SNAILS (CONCHS)	$95,568.00	$182,789.00		$278,357.00
SNAPPER, RED	$78.00	$297.00		$375.00
SPADEFISHES		$15.00		$15.00
SPOT	$274.00	$179.00	$205.00	$658.00
SQUID, LONGFIN	$5,289,744.00	$4,167,285.00	$4,516,283.00	$13,973,312.00
SQUID, NORTHERN SHORTFIN		$482.00	$2,066.00	$2,548.00
STARGAZER, NOTHERN			$12.00	$12.00
SWORDFISH	$385,512.00	$352,427.00	$408,178.00	$1,146,117.00
TAUTOG	$254,223.00	$276,245.00	$296,528.00	$826,996.00
TILEFISH, BLUELINE		$322.00		$322.00
TILEFISH, GOLDEN	$3,343,180.00	$3,261,284.00	$4,077,066.00	$10,681,530.00
TOADFISHES	$44.00		$94.00	$138.00
TROUT, RAINBOW			$802.00	$802.00
TUNA, ALBACORE	$34,638.00	$14,145.00	$14,384.00	$63,167.00
TUNA, BIGEYE	$221,181.00	$89,454.00	$127,217.00	$437,852.00
TUNA, BLUEFIN	$81,122.00			$81,122.00
TUNA, LITTLE TUNNY	$2,743.00	$4,074.00	$7,082.00	$13,899.00
TUNA, YELLOWFIN	$126,748.00	$56,040.00	$116,645.00	$299,433.00
WAHOO			$832.00	$832.00
WEAKFISH	$84,005.00	$115,490.00	$25,444.00	$224,939.00
Grand Total	**$59,207,140.00**	**$49,379,116.00**	**$33,994,822.00**	**$142,581,078.00**

(National Marine Fisheries Service, Fisheries Statistics Division, personal communication, August 1, 2012

Life Histories of Important New York Commercial and Recreational Species

Life histories for important species for NY Commercial fishermen and For-Hire boatmen were selected to encompass representative fisheries of significance to each group.

Atlantic Sea Scallops

The Atlantic sea scallop is found from the Gulf of St. Lawrence to Cape Hatteras. In the NY Ocean Planning Area, commercial fishermen harvest sea scallop. The scallop fishery is presently the most lucrative fishery in New England and Mid-Atlantic.

Sea scallops become sexually mature at age two, but those less than four years of age probably contribute little to egg production. Fertilization takes place externally, and sea scallops usually spawn in late summer and early autumn. A single female may release hundreds of millions of eggs annually (NEFSC 2006a). Larvae remain in the water column as part of the plankton for over one month after hatching (Pogsay 1979), during which time eggs and larvae are subjected to currents. The spat, or juvenile larvae, eventually sink and seek out hard substrate, such as shell fragments, on which to settle.

Young adults are exceptionally vulnerable to smothering by moving sands and loose bottom substrates (Mullen and Moring 1986). Sea scallops grow rapidly, increasing their shell height by 50 to 80 percent between ages three and five, and quadrupling their meat weight. They reach commercial size at about four or five years of age. Sea scallops can live up to 20 years. A combination of low mobility, rapid growth, and low natural mortality means sea scallop populations grow rapidly in areas, which are closed to fishing activity (NEFSC 2006a).

Sea scallops are found from mean low water to depths of several hundred feet. They are found on a variety of bottom types, including firm sand, gravel, shells, and rocks (NEFSC 2004b). They prefer sand and gravel sediments, and water temperatures below 68 degrees Fahrenheit (20 degrees Celsius). South of Cape Cod and on Georges Bank, sea scallops are usually found at depths between 25 and 200 meters (82 and 656 feet), with most commercial concentrations found between 35 and 100 meters (115 and 328 feet) of depth.

Sea scallops are filter feeders, feeding mainly on phytoplankton, but also on microzooplankton and detritus (NEFSC 2006a). Large adults do not migrate, but can escape predators by clapping the two halves of their shells together in a rudimentary form of swimming.

The fishery for sea scallops is conducted year-round, usually with scallop dredges. The New England Fishery Management Council manages the sea scallop fishery. Most sea scallop fishing in the United States is done by vessels with limited access permits, which provide them with days-at-sea and a limited number of trips to former closed areas. Some sea scallop vessels have open access general category permits, allowing them to take up to 400 pounds of meats per day; these are the vessels operating within the NY Ocean Planning Area. The biomass of sea scallops

on Georges Bank was low from 1982 through 1994, but then increased, and has been at a high, stable level since 2000.

Surveys for Georges Bank and Mid-Atlantic sea scallops indicated the species was near its historical maximum biomass in 2005 (NEFSC 2006a). The biomass of Atlantic sea scallops in 2006 was estimated at 166,000 metric tons of meats, about 52% above the amount needed to produce maximum sustainable yield (NMFS 2010b). They are not considered to be overfished, nor is overfishing occurring (NEFSC 2006a).

Habitat characteristics of Atlantic sea scallop (NEFSC 2004b)

Life Stage	*Habitat*	*Substrate*	*Temperature*
Eggs	Remain on sea floor	N/A	N/A
Larvae	In mixed areas, larvae distributed evenly through water column; in stratified areas, larvae aggregated above pycnocline. Migrate vertically in response to tidal, solar cues.	Larvae settle in areas of gravelly sand, shell fragments or on hydroids, bryozoans and sponges; select substrates covered with a biofilm.	N/A
Juveniles	N/A	Mainly found on gravel, small rocks, shells, and among branching animals and plants that permit attachment of juveniles.	N/A
Adults	Wide distribution on offshore banks and coastal waters from Newfoundland to Cape Hatteras; from low tide level to ~100 m line; generally shallower in northern populations.	Generally found in seabed areas with firm sand, gravel, shells and cobble substrate.Typically abundant in areas with low levels of inorganic suspended particulates (fine clay size particles).	Prefer water temperatures below 20ºC

Atlantic Surf Clams

The Atlantic surfclam, *Spisula solidissima,* is a bivalve mollusk that inhabits sandy continental shelf habitats from the southern Gulf of St. Lawrence to Cape Hatteras, North Carolina (Merrill and Ropes 1969). Atlantic surfclams are managed under the Mid-Atlantic Fishery Management Council Atlantic Surfclam and Ocean Quahog Fishery Management Plan (MAFMC 1997).

Unfertilized Atlantic surfclam eggs are 56 μm in diameter, unpigmented, and relatively free of yolk (Allen 1951, 1953) -- characters that are generally associated with planktotrophic eggs. Fertilization occurs in the water column above the beds of spawning clams (Ropes 1980). In the laboratory, the optimal concentration of gametes for fertilization is 0.8-4 x 106 sperm/ml and 5-30 x 103 eggs/ml (Clotteau and Dubé 1993). No information on fecundity in *S. solidissima* is available (Fay *et al.* 1983), however, fecundity of the southern subspecies *S. solidissima similis* ranges from 0.14-13 million eggs in individuals 26-50 mm shell height (Walker *et al.* 1996).

Fertilized eggs develop into pyramid-shaped, planktonic trochophore larvae approximately 9 h after fertilization at 21.7°C (Ropes 1980) and 40 h at 21.7°C (Loosanoff and Davis 1963). Veliger larvae, the first larval stage to possess a bivalved shell, appear in 72 h at 14°C and 28 h at 22°C (Loosanoff and Davis 1963). The pediveliger stage, a transitional "swimming-crawling" larval stage with development of a foot for burrowing (Fay *et al.* 1983), occurs 18 d after fertilization at 21.7°C (Ropes 1980). Metamorphosis to juveniles, which consists of complete absorption of the velum and settlement to the substrate, occurs anywhere from 19 to 35d after fertilization depending on temperature (Fay *et al.* 1983). Size at metamorphosis is 230-250 μm shell length; however Ropes (1980) noted that larvae metamorphosed at 303 μ m.

The size and age of sexual maturity is variable. Off New Jersey, Atlantic surfclams may reach maturity as early as 3 months after settlement and at lengths of less than 5 mm (Chintala and Grassle 1995; Chintala 1997). At the other extreme, clams from Prince Edward Island, Canada, may not reach maturity until 4 yrs of age and 80- 95 mm shell length (Sephton 1987; Sephton and Bryan 1990). In Virginia, the minimum length at maturity is 45 mm; size rather than age is more important in determining sexual maturity (Ropes 1979). Because of the wide variability in age at maturity, juveniles and adults will be discussed together in this report.

Atlantic surfclams may reach a maximum size of 226 mm (Ropes 1980) and a maximum age of 31 yrs (Jones *et al.* 1978). Growth appears to be similar among different localities during the first 3-5 yrs of life (Ambrose *et al.* 1980; Sephton and Bryan 1990). However, after the first 5 yrs, clams offshore grow faster and attain a larger maximum size than clams inshore (Jones *et al.* 1978; Ambrose *et al.* 1980; Jones 1980; Wagner 1984). High clam density may negatively affect growth rate and maximum size (Fogarty and Murawski 1986; Cerrato and Keith 1992); density effects on growth have been detected at relatively low densities (> 50 clams per 352 m2) (Weinberg 1998b). Growth lines in Atlantic surfclams are deposited at times of spawning and high temperature, but there is a question as to whether lines are annual (Jones *et al.* 1978; Jones 1980; Wagner 1984; Walker and Heffernan 1994). Growth is not uniform over the year; temperature significantly affects Atlantic surfclam growth, physiology, and behavior (Ambrose *et al.* 1980; Davis *et al.* 1997).

Summary of life history and habitat characteristics for the Atlantic surfclam, *Spisula solidissima* (NOAA 1999)

Life Stage	Habitat	Substrate	Temperature
Eggs **1**			6-24°C optimal for fertilization.
Larvae **2**	One study in Massachusetts found the highest concentration of larvae (823 larvae/m3) at 30 m in early October. High concentrations of larvae in NJ occur from May-June and Sept- Oct; minor peaks sometimes occur in July. Spring larvae were derived from inshore clams, while fall larvae were derived from offshore clams.		Larvae tolerate 14-30°C; optimum 22°C, mortality > 30°C. Larvae reared at lower temperatures were smaller than those at warmer temperatures. In New England, high larval concentrations are associated with 14-18°C water.
Juveniles/ Adults **3**	Range from the Gulf of Maine south to Cape Hatteras, NC. Oceanic, most common in turbulent areas beyond breaker zone, from 8- 66 m. Distribution of beds ranges from even aggregations to localized or patchy dense beds.	Adults burrow in medium to coarse sand and gravel substrates, also found in silty to fine sand, do not burrow in mud. Substrate type does not affect growth rate.	37°C is lethal in the lab. Clams survive temperatures as low as 2°C in the field; clams more active > 15°C. Burrowing is fastest at 16- 26°C; inhibited □30°C. Growth rate is positively correlated with temperature, growth most rapid in spring/early summer.
Spawning Adults **4**			Spawning occurs from 19.5- 30°C; detrimental > 30°C. Laboratory: burrowing increased up to 20°C, but decreased > 20°C. Temperature important for initiation and timing of both gonadal development and spawning. Off NJ, spawning heaviest in summer/fall when temperatures are at their highest; may be a minor Oct spawning, brought about by breakdown of thermocline. Delayed spawning and single annual cycle may be related to cold temperatures. Abrupt temperature changes not a clear cause of spawning in nature.

Black Sea Bass

Black sea bass are concentrated from Cape Cod to Cape Canaveral, Florida. There are two distinct and overlapping stocks of black sea bass along the Atlantic coast. In the NY Ocean Planning Area, both commercial and recreational fishermen target black sea bass.

Black sea bass are protogynous hermaphroditic, beginning life as females and then changing to males when they reach about nine to thirteen inches (23 to 33 cm) in length. In the Mid-Atlantic, 38% of females will change sex between August and April, after most of the fish have already spawned. Most black sea bass will produce eggs when they first mature, although some are already males at this stage, and then the ovaries eventually stop functioning as sperm production begins. Most fish will reverse sex before they reach the age of six (ASMFC 2008a). In populations where the larger, older males are heavily fished, females may change sex at an earlier age than they would in populations unaffected by fishing (Ross 1991).

The northern stock of black sea bass spawns off New England from mid-May until the end of June (Ross 1991), and an average sized fish will produce roughly 280,000 eggs. The eggs float in the water column, hatching a few days after fertilization. The larvae will drift offshore until they grow to a half an inch (one cm) in length, at which point the young sea bass will migrate inshore into estuaries, bays, and sounds (ASMFC 2008a). Black sea bass are a temperate reef fish, preferring water about 48 degrees Fahrenheit (9 degrees Celsius), and they prefer to inhabit rock bottoms near pilings, wrecks, and jetties. They are found in inshore waters at depths of less than 120 feet (37 meters) in the summer, and move offshore to deeper waters to the south during the winter (ASMFC 2008a). Larger adults are usually found in deeper waters than smaller individuals, and larger adults typically begin their migration earlier than the younger adults and juveniles, starting in August (Ross 1991). Juvenile sea bass migrate inshore and prefer sheltered habitats such as submerged aquatic vegetation, oyster reefs, and man-made structures.

Juveniles feed primarily on benthic invertebrates such as shrimp, isopods, and amphipods, while adults feed on rock and hermit crabs, squid, fish, and mollusks (Ross 1991).

In New York, black sea bass are important as both a commercial and recreational species. Both commercial and recreational landings are regulated under a quota system, managed jointly by the Atlantic States Marine Fisheries Commission and the Mid-Atlantic Fishery Management Council under the Summer Flounder, Scup, and Black Sea Bass Fishery Management Plan, in which 51 percent of the quota is given to the recreational fishery, and 49 percent to the commercial fishery. The commercial quota is further divided up by state based on historical landings. By contrast the recreational quota is managed under a coastwide plan (ASMFC 2008a). Black sea bass is currently considered rebuilt by the Atlantic States Marine Fisheries Commission and overfishing is not occurring (ASMFC 2009b). Abundance of black sea bass had declined after 2003, but has

since increased, and the stock was declared rebuilt in 2009 by NMFS. In 2008, biomass of black sea bass in the Mid-Atlantic was estimated to be 3% above the target level (NMFS 2010b).

Habitat characteristics of black sea bass. (NEFSC 2007)

Life Stage	*Habitat*	*Substrate*	*Temperature*
Eggs	Mostly at shallow depths; majority around 30m	Pelagic	Mostly between temperatures of about 10-25ºC
Larvae	Reported in high salinity coastal areas of southern New England in August and September, but are rarely reported in estuaries. Most found at 30-50 m in July–September.	Pelagic	Between temperatures of 11 -26ºC. Most larvae found at about 15-19ºC in July, at 15-20ºC in August, and in 17-21ºC in September.
Juveniles	Most abundant in oceanic waters of estuaries. High numbers of juveniles in Rhode Island Sound, Buzzards Bay, and the tip of Long Island in the fall. Found in Narragansett Bay. Between 1-35 m, with the majority between 6-15 m. Most nurseries are located at depths < 20 m.	Shellfish beds, seagrass beds, rocky reefs, wrecks, cobble habitats, manmade structures	9-12°C in spring, 10-22°C in fall, with most between 17-21°C.
Adults	Structurally complex habitats with steep depth gradients. Use a variety of manmade habitats. Over wintering habitats in the Mid-Atlantic Bight appear to occur at depths between 60-150 m. Some fish may also over winter in deep water (> 80 m) off southern New England. Depth range in spring from 1 -65 m, with most between 6-25 m, and between depths of 6-20 m in fall. Larger fish found in deeper water.	Structurally complex habitats, including rocky reefs, cobble and rock fields, stone coral patches, exposed stiff clay, and mussel beds.	In spring, temperature range of 3-17°C, with the majority at 10-14°C. In fall, over a range of approximately 8-22°C, with the majority between 16-21°C. In Narragansett Bay, summer temperature range of 15-24ºC, with peaks at 91-20ºC. Potential over wintering habitat may be defined by bottom water temperatures >7.5ºC.

Bluefish

Bluefish are a migratory, pelagic species found throughout much of the world's temperate, coastal regions. In the NY Ocean Planning Area, commercial and recreational fishermen pursue bluefish.

Bluefish live up to fourteen years, and may weigh upwards of 31 pounds (14 kg) and measure at least 39 inches (one meter) in length. They reach sexual maturity at two years, and spawn offshore between Massachusetts and Florida. Different groups of bluefish spawn at different times of the year, with some spawning in spring, some in summer, and some in fall throughout their range (ASMFC 2008a). Once the larvae hatch, they live in surface waters and are carried by currents along the continental shelf. The survival of the young fish is highly variable from year to year, depending on whether the prevailing circulation patterns carry them inshore to suitable habitats (Ross 1991).

Bluefish are found between Maine and Cape Hatteras, North Carolina during the summer months, and between Cape Hatteras and Florida in the winter (ASMFC 2008a). Larger fish will migrate further north than younger ones. The fish will begin arriving off the southern New England coast in April and May; smaller fish usually arrive first. Adults will leave the coastal areas again in October, when the water cools to 60 degrees Fahrenheit (16 degrees Celsius) (Ross 1991). They prefer warmer waters of at least 57 to 60 degrees Fahrenheit (14 to 16 degrees Celsius) in summer (Collette and Klein-MacPhee 2002). Bluefish migrate in large schools, each of which may cover tens of square miles of ocean (ASMFC 2008a). They inhabit both inshore and offshore habitats, with young-of-the-year fish often found in estuaries and river mouths (Ross 1991).

Bluefish are voracious predators, and will eat almost anything they can catch and swallow. Bigelow and Schroeder (1953) called the bluefish, "the most ferocious and bloodthirsty fish in the sea," although Ross (1991) notes this reputation is somewhat exaggerated. They have very sharp teeth and can take large bites, meaning they can eat larger prey (ASMFC 2008a). Common prey include schooling species such as squid, menhaden, mackerel, herring, alewives, and sand eels, as well as scup and butterfish. They usually feed in schools, pursuing fish into tidal rips or inshore shallows. They are known to force schools of menhaden and other fish up on shore, leading to fish kills. Juvenile bluefish will feed on polychaetes, shrimp, other small crustaceans, small mollusks, and small fish. Bluefish are prey for blue sharks, mako sharks, tuna, and billfish (Ross 1991).

Bluefish are an important species for recreational fisheries, and are popular with anglers because of their aggressive feeding habits. Recreational harvest averages about 35 million pounds (16 million kilograms) per year. Bluefish are also targeted commercially with trawls, gillnets, haul seines, and pound nets. The Mid-Atlantic Fishery Management Council and the Atlantic States Marine Fisheries Commission manage the species jointly. The Atlantic States Marine Fisheries Commission and the Mid-Atlantic Fishery Management Council allocate 83 percent of the resource to recreational fisheries and 17 percent to commercial fisheries. The commercial fishery is managed through state-by-state quotas based on historic landings, and the recreational fishery is managed by a fifteen-fish bag limit. According to the Atlantic States Marine Fisheries Commission, bluefish are not overfished, nor is overfishing presently occurring. Recent data have shown a decreasing trend in fishing mortality and an increase in stock biomass and population numbers (ASMFC 2008a). Bluefish biomass in the Atlantic Ocean is estimated to be at 5% above the level needed to support maximum sustainable yield, and was estimated at 139,500 metric tons in 2006. A nine-year rebuilding plan was implemented in 2001, and the stock was declared rebuilt in 2009 (NMFS 2010b). Cycles of high and low abundance of bluefish have been observed to be the converse of striped bass abundance patterns, but no explanation for this phenomenon has been found (NEFSC 2006b).

Habitat characteristics of bluefish (NEFSC 2006b)

Life Stage	*Habitat*	*Substrate*	*Temperature*
Eggs	Occurs across continental shelf, southern New England to Cape Hatteras. Most in mid-shelf waters.	Pelagic	Most in 18-22ºC.
Larvae	Most 30-70 m depths, May-Sept, peak in July.	Strongly associated with the surface.	18-26ºC in Mid-Atlantic Bight
Juveniles	Mostly estuarine areas and river mouths, including Narragansett Bay. Also coast beaches and surf zones.	Mostly sand, particularly along coast, but some mud, silt, clay. Also uses vegetation beds.	In most studies, arrive >20ºC, remain in temperatures up to 30ºC, emigrate when declines to 15ºC. Can not survive below 10ºC or above 34ºC. Fall migration in 18-22ºC on inner continental shelf.
Adults	Generally oceanic, nearshore to well offshore over continental shelf. Not uncommon in bays, larger estuaries, as well as coastal waters.	Pelagic	Warm water, usually >14-16ºC.

Butterfish

Butterfish are found from Newfoundland to Florida. In the NY Ocean Planning Area, commercial fishermen target butterfish. Butterfish are pelagic fishes, forming loose schools (NEFSC 1999b). They spawn usually within a few miles of the coast during the late spring and early summer, and migrate to the edge of the continental shelf during the winter (Collette and Klein-MacPhee 2002). Butterfish eggs are found within coastal waters from June through August (NEFSC 1999b). The eggs of the butterfish are buoyant, and will hatch within two days in waters of around 65 degrees Fahrenheit (18 degrees Celsius). The juveniles will grow to about half their adult size within their first year (Collette and Klein-MacPhee 2002). Juvenile butterfish may associate with jellyfish during the summer to avoid predators (NEFSC 2006a). Butterfish mature in their second summer (Collette and Klein-MacPhee 2002). They can reach up to twelve inches (30 cm) in length, although most harvestable butterfish are between six and nine inches (15 and 23 cm). The maximum reported age for butterfish is six years, although most probably only live two to three years (Collette and Klein-MacPhee 2002).

Butterfish feed primarily on tunicates and mollusks, as well as cnidarians, polychaetes, crustaceans, and other invertebrates (Collette and Klein-MacPhee 2002). Ctenophores have been

found to make up an important component of the diet of juvenile butterfish in coastal embayments (Oviatt and Kremer 1977). They will often come close to shore into sheltered bays and estuaries, and they have a preference for sandy bottom as opposed to rocky or muddy bottom. They spend much of their time near the surface when they are near to shore, but spend the winter and early spring near the bottom at depths of up to100-115 fathoms (183 to 210 m) (Collette and Klein-MacPhee 2002). Butterfish serve as prey to a number of species including hake, bluefish, weakfish, and swordfish, and are used commonly as bait in recreational tuna fisheries (Ross 1991).

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The butterfish stock is currently managed by the Mid-Atlantic Fishery Management Council under the Atlantic Mackerel, Squid, and Butterfish Fishery Management Plan. There is considerable uncertainty in butterfish abundance estimates. Discards of butterfish in fisheries targeting other species, particularly in the squid fishery, are an important source of mortality (NEFSC 2006a).

Habitat characteristics of butterfish (NEFSC 1999b)

Life Stage	*Habitat*	*Substrate*	*Temperature*
Eggs	Surface waters from continental shelf into estuaries and bays; collected to about 60 m deep in shelf waters.	Pelagic	Most eggs collected between 11-17ºC.
Larvae	Surface waters from continental shelf into estuaries and bays; collected to about 60 m deep in shelf waters; common in high salinity zone of estuaries and bays; may spend day deeper in the water column and migrate to the surface at night.	Pelagic	4.4-27.9ºC
Juveniles	From surface waters to depth on continental shelf; into coastal bays and estuaries; common in inshore areas, including the surf zone, and in high salinity and mixed salinity zones of bays and estuaries. Most collected in < 120 m. Commonly occur in bays and estuaries from MA to VA from spring through fall.	Larger individuals found over sandy and muddy substrates.	4.4-29.7ºC
Adults	From near surface waters in summer to depths of 270-420 m on continental shelf in winter; into coastal bays and estuaries; common in inshore areas, including the surf zone, and in high salinity and mixed salinity zones of bays and estuaries. Most collected in < 180 m. Spawning occurs on continental shelf, inshore areas, and in bays and estuaries.	Schools found over sandy, sandy-silt, and muddy substrates.	4.4-26.0ºC; Spawning does not occur at <15ºC.

Golden Tilefish

Golden Tilefish, *Lopholatilus chamaeleonticeps*, are distributed in the Northeast Atlantic along the outer continental shelf from Nova Scotia to South America, and are relatively abundant in the Southern New England to Mid-Atlantic region at depths of 80 to 440 m (44 to 240 fathoms). Golden tilefish have a narrow temperature preference of 9° to 14° C and generally occur in and around submarine canyons where they occupy burrows in the sedimentary substrates. Golden tilefish are relatively slow growing and long-lived with a maximum observed age and length for females of 46 years and 110 cm (43.3 in.), and 39 years and 112 cm (44.1 in.) for males. At lengths exceeding 70 cm (27.6 in.), the predorsal adipose flap, characteristic of the species, is larger in males and can be used to distinguish the sexes. Golden tilefish of both sexes are mature at ages of 5 to 7 years (Grimes et al. 1988).

The Mid-Atlantic Fishery Management Council implemented the Golden tilefish Fishery Management Plan (FMP) in November of 2001. Rebuilding of the Golden tilefish stock to B_{msy} was based on a ten-year constant harvest quota of 905 mt. The northern Golden tilefish unit stock is defined as statistical areas north of Cape Hatteras to the Hague line along the shelf break. The information provided herein reflects the results of the most recent peer-reviewed assessments for the Golden tilefish stock (NEFSC 2005).

Total commercial landings (live weight) increased from less than 125 mt during 1967-1972 to more than 3,900 mt in 1979 and 1980. Landings stabilized at about 2,000 mt during 1982-1986, increased to 3,200 mt in 1987 but declined to 450 mt in 1989. During 1988-2001, annual landings ranged between 454 and 1,838 mt. An annual quota of 905 mt was implemented in November of 2001. Landings in 2003 and 2004 exceeded the quota at 1,130 and 1,215 mt respectively. Since the 1980s, over 85% of the commercial landings of Golden tilefish in the MA-SNE region have been taken in the longline fishery. During the late 1970s and early 1980s Barnegat, NJ was the principal Golden tilefish port; more recently Montauk, NY has accounted for most of the landings (NEFSC 2006).

Estimates of recruitment do not exist. However, strong year classes (1993 and 1999 cohorts) can be seen in the commercial length frequency distributions. Most of the landings between 2002 and 2004 were from the strong 1999-year class (NEFSC 2006).

Goosefish (Monkfish)

The goosefish, also commonly called monkfish, is found from Newfoundland to North Carolina, and in the Gulf of Mexico. In the NY Ocean Planning Area, monkfish are targeted by commercial fishermen.

Male monkfish become sexually mature at age four, and females at age five. They reproduce in shallow water from spring through early fall; typically from late June through mid-September in New England. They produce large masses of eggs in a single ribbon that can be up to 25-36 feet (7-11 m) in length that float within the water column, and can produce up to 2.8 million eggs at one time. By the time the fry reach about two inches (5 cm) in length, they become bottom-dwellers. They can reach four feet (1.2 m) in length and weigh up to 50 pounds (23 kg) (Ross 1991).

Monkfish are found from the tideline out to depths of greater than 2,000 feet (610 m) on the continental slope. They live on various types of substrate, including sand, gravel, rocks, mud, and beds of broken shells. They have been found in a variety of temperatures, from 32 degrees to 70 degrees Fahrenheit (0 to 21 degrees Celsius), but prefer temperatures of 37-48 degrees Fahrenheit (3 to 9 degrees Celsius). Young monkfish fry will feed on copepods, crustacean larvae, and arrow worms (Ross 1991). Adult monkfish are voracious predators, feeding on skates, herring, mackerel, and silver hake, as well as lobsters and crabs. The most important prey species for monkfish in southern New England/Mid-Atlantic are little skate, red hake, sand lance, and other monkfish (Collette and Klein-MacPhee 2002). The monkfish often feeds by lying motionless in eelgrass, waving its "lure" to attract fish and then opening its enormous mouth to suck in the fish, earning it the nickname "angler." The monkfish also eats seabirds, including cormorants, herring gulls, loons, and other sea birds, the practice of which has given the fish the nickname "goosefish", although there have been no documented cases of a monkfish eating a goose. A monkfish can have up to half its own bodyweight in its stomach (Ross1991), and can swallow a fish almost its own size (Collette and Klein-MacPhee 2002).

Monkfish are currently managed under the Monkfish Fishery Management Plan by the New England and Mid-Atlantic Fishery Management Councils. Management measures include limited access, days-at-sea limitations, mesh size restrictions, minimum size limits, and trip limits. Monkfish are managed as two separate stocks; the monkfish in New York waters are considered part of the southern stock, which extends from the southern portions of Georges Bank to the Mid-Atlantic. Based on the 2007 stock assessment, monkfish biomass is 29% above that necessary to support maximum sustainable yield, and so monkfish are not considered overfished, nor is overfishing occurring (NMFS 2010b). Monkfish are caught throughout the NY Ocean Planning Area.

Habitat characteristics of goosefish (monkfish) (NEFSC 1999c)

Life Stage	*Habitat*	*Substrate*	*Temperature*
Eggs	Upper water column, inner to mid-continental shelf, southern New England, and Mid-Atlantic Bight; not in estuaries. Contained in long mucus veils that float near or at surface.	Pelagic	4-18°C or higher
Larvae	Mainly mid-shelf in southern New England and Mid-Atlantic Bight. Upper to lower water column, at depths of 15 to > 1000 m; mostly 30-90 m.	Pelagic	6-20°C, most in 11-15°C
Juveniles	Southern New England: mostly mid to outer shelf. Seabed, > 20 m, peak abundance at 40-75 m.	Mud to gravelly sand, algae, and rocks.	2-24°C, most 3-13°C
Adults	Southern New England/Mid-Atlantic Bight: inshore in winter, offshore in summer fall. Seabed, 1- 800 m, most 50-99 m, sometimes at surface.	Mud to gravelly sand, algae, and rocks. Will hide in eelgrass to ambush prey.	Seasonally variable, 0-24°C; mostly 4-14°C.

Longfin Squid (Loligo)

Longfin squid are distributed from Cape Cod through Cape Hatteras. In the NY Ocean Planning Area, longfin squid (loligo) are pursued by commercial fishermen.

The longfin squid grows to about eight to twelve inches long (20 to 30 cm), and is sexually dimorphic, with males growing faster than females. It moves by means of jet propulsion, taking in water through a siphon and then expelling it. The life span of the longfin squid is thought to be about six months (Macy and Brodziak 2001). Adult longfin squid are demersal during the day, coming to the surface at night to feed. Newly hatched squid are found at the surface, and move deeper in the water column as they grow, becoming demersal when they reach just under two inches (45 mm) in length (NEFSC 2005b). There is evidence that squid spawn throughout the year, with two main spawning periods in the summer and winter (Macy and Brodziak 2001).

The greatest abundance of longfin squid are found in continental shelf and slope waters at depths between 55 and 92 fathoms (100 and 168 m). They generally migrate inshore to waters off New York and elsewhere in May or June, and by late November/early December they migrate to deeper waters along the edge of the continental shelf (Macy and Brodziak 2001)[a]. The adults feed on small fish, while juveniles feed on small crustaceans (Rathjen 1973). Squid are an important prey species to a number of other species including sharks, haddock, hakes, striped bass, black sea bass, bluefish, scup, mackerel, summer flounder, and tunas (Ross 1991).

Two separate fisheries exist for longfin squid; an inshore fishery in summer and fall, and a larger offshore commercial fishery during the winter months, when the squid migrate to the edge of the continental shelf (Macy and Brodziak 2001). The longfin squid stock is currently managed by the Mid-Atlantic Fishery Management Council under the Atlantic Mackerel, Squid, and Butterfish Fishery Management Plan. They are managed through the use of permits, quotas, and gear restrictions. Landings of longfin squid have declined, due in part to seasonal closures (NEFSC 2006a). The relative biomass measures of longfin squid were below average through 2005, but increased to slightly above average in 2007. Estimates of the level of biomass needed to support maximum sustainable yield for longfin squid are not currently available. Overfishing is not presently occurring on this species (NMFS 2010b).

Habitat characteristics of longfin (*loligo)* squid. (NEFSC 2005b)

Life Stage	*Habitat*	*Substrate*	*Temperature*
Eggs	Shallow waters, <50m and near shore.	Egg masses are commonly found on sandy/mud bottom; usually attached to rocks/boulders, pilings, or algae.	Eggs found in waters 10-23ºC; usually > 8ºC. Optimal development at 12ºC.
Larvae	Found in coastal, surface waters in spring, summer, and fall. Hatchlings found in surface waters day and night. Move deeper in water column as they grow larger.	Pelagic	Found at 10-26ºC (at lower temperatures found at higher salinities).
Juveniles	Inhabit upper 10 m at depths of 50-100 m on continental shelf. Found in coastal inshore waters in spring/fall, offshore in winter. Migrate to surface at night.	Pelagic	Found at 10-26ºC. Juveniles prefer warmer bottom temperatures and shallower depths in fall than adults.
Adults	March-October: inshore, shallow waters up to 180 m. Winter: offshore deeper waters, up to 400 m on shelf edge. Most abundant at bottom during the day; move upwards at night. Generally found at greater depths and cooler bottom temperatures in the fall than juveniles.	Mud or sandy mud	Found at surface temperatures ranging from 9-21ºC and bottom temperatures ranging from 8-16ºC.

Scup

Scup, also known as porgy, are a migratory species found from Cape Cod to Cape Hatteras. Scup are pursued by both recreational and commercial fishermen in the NY Ocean Planning Area.

Scup spawn in inshore waters during the summer, with spawning reaching its peak in June off southern New England. The eggs will hatch about 40 hours after fertilization.

Larval scup are pelagic and are found in coastal waters during the warmer months. Scup become sexually mature at age two or three (ASMFC 2008a). They form into schools of similarly-sized

individuals. They can grow up to six pounds, but rarely exceed two pounds (one kg) in weight and fourteen inches (36 cm) in length. They can reach fifteen years of age, although it appears this is rare because of high mortality rates due to predation and fishing (Ross 1991).

Scup are most commonly found in waters between 55 and 77 degrees Fahrenheit (13 and 25 degrees Celsius). They spend the winters in offshore waters from southern New Jersey to Cape Hatteras, and spawn in the summer in inshore waters from southern New England to Long Island, moving to New England waters in May until leaving in October.

Juvenile scup inhabit coastal habitats, and will sometimes dominate the fish population of estuarine areas during the summer months (ASMFC 2008a). They prefer areas with smooth or rocky bottoms, and are often found around piers, rocks, offshore ledges, jetties, and mussel beds. During the winter, they prefer depths of 240 to 600 feet (73 to183 m), where the water temperature is at least 45 degrees Fahrenheit (7 degrees Celsius). Adult scup feed on bottom invertebrates, including small crabs, squid, worms, clams, mussels, amphipods, jellyfish, and others. They are eaten by a variety of different fishes; as many as 80% of all juvenile scup annually are eaten by fish such as cod, bluefish, striped bass, and weakfish (Ross 1991).

Scup is important as both a recreational and commercial species. The species is jointly managed by the Mid-Atlantic Fishery Management Council and the Atlantic States Marine Fisheries Commission through the Summer Flounder, Scup, and Black Sea Bass Fishery Management Plan (ASMFC 2008a). Scup spawning stock biomass had declined greatly in the mid-1990s, but has steadily increased since then. Overfishing is not occurring, and the stock is not overfished. Scup biomass for 2008 was estimated to be 104% above that required for maximum sustainable yield. Spawning stock biomass was estimated to be around 188,000 metric tons in 2008 (NMFS 2010b).

Habitat characteristics of scup (NEFSC 1999d)

Life Stage	*Habitat*	*Substrate*	*Temperature*
Eggs	Water column, < 30 m in depth, Coastal Virginia – Southern New England.	Buoyant in water column.	11-23°C; most common 12-14°C
Larvae	Water column, < 20 m until juvenile transition.	Water column	14-22°C; peak densities at 15-20°C
Juveniles	Young-of-year: Estuarine and coastal; from intertidal to about 38 m. Winter juveniles: Mostly > 38 m depth; mid and outer continental shelf; sometime in deep estuaries.	Sand, mud, mussel, and eel grass beds.	Greater than ~9-27°C; mostly 16-22°C
Adults	2-38 m in summer. Mostly 38-185 m depths; mid/outer continental shelf in winter.	Fine to silty sand, mud, mussel beds, rock, artificial reefs, wrecks, and other structures in summer. Weedy and sandy habitats when spawning.	~7-25°C

Silver Hake

Silver hake, or whiting, are found along the continental shelf of North America, from Canada to the Bahamas, and are most abundant between Newfoundland and South Carolina (Collette and Klein-MacPhee 2002). There are two stocks of silver hake; one in the Gulf of Maine and northern Georges Bank, and the other on southern Georges Bank and the Mid-Atlantic Bight. In the NY Ocean Planning area, silver hake are targeted by commercial fishermen.

Silver hake can reach a length of two and a half feet (76 cm) and weigh up to five pounds (2.3 kg), but usually are only around fourteen inches in length (36 cm). They do not form definitive schools, but will swim together in groups (Collette and Klein-MacPhee 2002).

Silver hake spawn throughout the year, peaking from May through November, and with a peak in May to June in the southern stock (NEFSC 2004c). They reach sexual maturity at two to three years of age. The eggs are pelagic, and hatch within two days (Ross 1991).

The larvae are just one-tenth of an inch (2.8 mm) in length after hatching. During their first summer or fall, when they are still less than an inch (17-22 mm), the silver hake larvae will descend to the bottom as juveniles (NEFSC 2004c). Females live longer and grow faster than males; males usually don't live past six years, while females may occasionally live to between twelve and fifteen years in age (Ross 1991).

Silver hake are wanderers, unconcerned with the depth or with the sea floor. They are sometimes found near the bottom, and sometimes close to the surface, as they chase prey throughout the water column. They are found as deep as 2400 feet (122 m) as well as just below the tide line. When they are found near the bottom, they are usually on sandy or pebbly ground, or mud (Collette and Klein-MacPhee 2002). There are two major stocks of silver hake, one north and one south of Georges Bank. The stock of silver hake found off New York spend their winters along the continental slope south of Georges Bank, and migrate to shallower waters in southern New England/Mid-Atlantic for the spring and summer.

They spawn on the southern slopes of Georges Bank and Nantucket Shoals, and south of Martha's Vineyard (Ross 1991). Silver hake will move south and to offshore waters during the winter (NEFSC 2004c). Voracious predators, silver hake prey on many different schooling fish including herring, young mackerel, sand lance, and smaller silver hake (Collette and Klein-MacPhee 2002). They themselves are food for cod, mackerel, swordfish, spiny dogfish, flounders, and larger silver hake (Ross 1991).

Silver hake are managed by the New England Fishery Management Council as part of the "small mesh multispecies" management unit of the Northeast Multispecies Fishery Management Plan. The southern stock of silver hake is not currently considered to be overfished, nor is overfishing occurring, but there are concerns about the age structure of the stock; specifically that there are very few fish over the age of four within the population. Significant numbers of juvenile silver hake are discarded in otter trawl fisheries, which may limit opportunities to rebuild this stock (NEFSC 2006a).

Habitat characteristics of silver hake (NEFSC 2004c)

Life Stage	*Habitat*	*Substrate*	*Temperature*
Eggs	Most abundant in deep parts of Georges Bank and bank off southern New England; in southern New England waters July-October; most from 50-150 m.	N/A	Peak abundance from 11-17ºC.
Larvae	Present in Block Island Sound in June through November; abundant in southern New England July-September; most at depths from 50-130 m.	N/A	Temperature preference varies based on annual warming and cooling cycle.
Juveniles	Migrate to deeper waters of the continental shelf as water temperatures decline in the autumn and return to shallow waters in spring and summer. Large concentrations south of RI in fall.	Prefer mud bottoms, also transitional and sand bottoms.	Wide temperature ranges.
Adults	Migrate to deeper waters of the continental shelf as water temperatures decline in the autumn and return to shallow waters in spring and summer to spawn. Frequent spawning in October south of Martha's Vineyard. Older hake prefer the warmer waters of the shelf slope and deep-water shelf area. Found as deep as 122 m as well as in shallow waters.	Prefer mud bottoms, also transitional and sand bottoms.	Prefer temperatures greater than 9ºC in Southern New England. Found at wide temperature ranges. Spawning peaks between 7 and 13ºC.

Spiny Dogfish

The spiny dogfish (*Squalus acanthias*) is a coastal shark, and is the most abundant shark in the Northwest Atlantic, ranging from Labrador to Florida.

Spiny dogfish have a long life, low fecundity, late maturation, and a long gestation period, making it highly vulnerable to population collapse. Spiny dogfish are born in the fall or winter, and are about 26-27 cm (10 inches) in length at birth. They do not reach maturity for ten or more years. Mating occurs in the winter months, and pups are delivered on the offshore wintering grounds (ASMFC 2008a). Females will produce a litter of between 1-15 pups, usually averaging 6-7 pups, and give birth every two years.

Spiny dogfish are an important predator in the NY Ocean Planning Area, and eat fish of many sizes, including herring and hakes, squid, and ctenophores. They also eat bivalves, especially scallops, off southern New England. Dogfish diets have changed in response to changes in abundance of certain fish species due to fishing pressures. They migrate north during the spring and summer, and south in the fall and winter. Juvenile and adult spiny dogfish are abundant in the Mid-Atlantic waters extending to the southern part of Georges Bank in winter. During the summer months, they are found farther north in Canadian waters, and will move inshore into bays and estuaries (ASMFC 2008a). In the fall they are commonly found closer to shore, and are abundant off the south shore of Long Island.

The spiny dogfish is managed jointly by the Mid-Atlantic and New England Fishery Management Councils and the Atlantic States Marine Fisheries Commission. The fishery is managed primarily through trip limits and seasonal closures. New York fishermen participate in the spiny dogfish harvest, and they are commonly found within the NY Ocean Planning Area. Dogfish are frequently taken as bycatch with otter trawls and other gear targeting groundfish, and were heavily targeted by foreign fleets before the enactment of the EEZ. Management measures have been highly effective in reducing landings and bycatch mortality, and the stock is not currently considered overfished, nor is overfishing occurring. The biomass of spiny dogfish exceeded target levels in 2008 and was considered rebuilt; in 2009 biomass was estimated to be 163,256 metric tons (Rago and Sosebee 2010).

Habitat characteristics of spiny dogfish (NMFS 2010b; ASMFC 2008a)

Life Stage	*Habitat*	*Substrate*	*Temperature*
Juveniles	Most at depths below 50m.	Pelagic	7-15°C
Adults	Inshore in bays and estuaries in summer; offshore in winter. Large females may prefer nearshore shelf and lower salinities. Found at depths from 1-500 m.	Pelagic; demersal at times, found over soft sediment such as mud, sand, and silt where food is available.	7-15°C

Striped Bass

Atlantic striped bass range from the St. Lawrence River in Canada south to the St. John's River in Florida. They are an anadromous species, spending their life in estuaries and in the ocean. They are sometimes referred to as the striper or rockfish. Striped bass are usually found in New York waters from April through December. In the NY Ocean Planning Area, striped bass are one of the most important and popular fish pursued by recreational fishermen, and are also targeted in commercial fisheries.

Striped bass can live at least thirty years. They may grow up to 150 cm (59 inches) in length, and between 55 and 77 pounds (25 to 35 kg) (Collette and Klein-MacPhee 2002), although the largest striped bass ever caught weighed 125 pounds (57 kg). Females typically grow much larger than males. They are a migratory species, migrating north in the summers and south in the winters, and migrating into rivers during the spring to spawn. Females mature at age four, and males at age two; females will produce millions of eggs, which they release into riverine spawning areas where they are fertilized by males. The eggs will drift downstream and eventually form into larvae. The larvae will mature into juveniles in nursery areas, which are usually located in river deltas, and inland portions of coastal sounds and estuaries. After two years in these estuarine habitats, they will join the migratory coastal population in the Atlantic Ocean. Once mature, the fish will migrate to spawning areas in the spring (ASMFC 2008a).

Frequently, male striped bass remain along the coast near the area where they were hatched, even after they mature, while females migrate much greater distances; Collette and Klein-MacPhee (2002) note that only about 10% of the striped bass found in northern waters are male. Young striped bass less than three years of age (sometimes referred to as "schoolies" by anglers) are found in small groups, while larger striped bass are found in large schools. Occasionally large females will be solitary (Ross 1991). Mycobacteriosis is a disease affecting striped bass that may be having an influence on mortality levels of this species.

Striped bass spawn in riverine areas, usually in fresh or nearly fresh waters, and the larvae will travel downstream to river deltas or the inland portions of coastal sounds and estuaries, where they will mature. The majority of striped bass found off New York will spawn within the Chesapeake Bay (ASMFC 2008a)[a] ; some will also be fish born in the Hudson River, which rarely migrate beyond Cape Cod (Ross 1991). Typically, the fish spend their winters offshore between New Jersey and North Carolina. Striped bass rarely stray from within six or eight kilometers (three to five miles) of the shore, and are typically found along sandy beaches, in shallow bays, around rocks and boulders, and at the mouths of estuaries (Collette and Klein-MacPhee 2002). Striped bass feed on a wide variety of invertebrates, especially crustaceans, and on small fish.

The striped bass fishery has been one of the most important Atlantic coast fisheries for centuries and is one of the most popular recreational fisheries in the Ocean SAMP area.

Recreational fishermen take striped bass with hook-and-line, whereas in commercial fisheries they are also taken with gillnets, pound nets, haul seines, and trawls. In 2006, commercial harvest accounted for 17% of fish removals, while commercial discards of dead fish accounted for 3%. Recreational harvest accounted for 45% of removals of striped bass, and recreational discards of dead fish accounted for an additional 34%. The striped bass populations declined sharply in the 1970s and 1980s, causing many states to close their striped bass fisheries. At present, the species is not overfished and overfishing is not occurring (ASMFC 2008a). The amount of female striped bass capable of reproduction, known as female spawning stock biomass, was estimated at 55 million pounds (25,000 metric tons) for 2004, which is well above the recommended biomass threshold of 30.9 million pounds (NMFS 2010b). Spawning stock biomass in 2004 was 42% greater than the target level (NEFSC 2006a). Striped bass are managed by the Atlantic States Marine Fisheries Commission through the Interstate Fishery Management Plan for Atlantic Striped Bass.

Habitat characteristics of striped bass (Ross 1991; Collette and Klein-MacPhee 2002)

Life Stage	*Habitat*	*Substrate*	*Temperature*
Eggs	Released into riverine areas, drift downstream.	Pelagic	Hatch from 14 to 22ºC.
Larvae/Juveniles	River deltas, inland portions of estuaries. Remain in natal estuary during first two years of their lives.	Sandy beaches, rocky areas, among rocks and boulders.	N/A
Adults	Found within several miles of shoreline, often in river mouths, estuaries, or along rocky shorelines and sandy beaches. Reproduce in rivers or brackish areas of estuaries.	Sandy beaches, rocky areas, among rocks and boulders, mussel beds.	Spawning takes place when water is about 18ºC. Migrate south when water temperatures reach 7ºC.

Summer Flounder

Summer flounder, also called fluke, are found in both inshore and offshore waters from Nova Scotia to Florida, although they are most abundant from Cape Cod south to Cape Fear, North Carolina. They are left-eyed flatfish, meaning the eyes are on the left side when viewed from above, with the top fin facing up, distinguishing them from winter flounder, which are right-eyed (ASMFC 2008a). In the NY Ocean Planning Area, summer flounder are targeted by both commercial and recreational fishermen.

Summer flounder reach sexual maturity at age two or three, when they are about ten inches (25 cm) in length. The fish spawn offshore in the fall; the oldest, largest fish migrate, and thus spawn, first, followed by the smaller fish. The larvae will migrate inshore to coastal and estuarine areas from October through May. Upon reaching the coast, the larvae will move to the bottom, and spend the first year of their lives in bays and other inshore areas. Summer flounder are born with eyes on both sides of their body, but the right eye will migrate to the left side within 20-32 days (ASMFC 2008a). Females are typically much larger than males and can grow up to three feet (0.9 m) in length and weigh up to 29 pounds (13 kg) (Collette and Klein-

MacPhee 2002). Females can live for up to twenty years, although males rarely live more than seven years (Ross 1991).

Summer flounder are concentrated in bays and estuaries from late spring through early fall, when they migrate offshore to the continental shelf to waters between 120 to 600 feet (37 to 183 meters) in depth, spending their fall and winters offshore. The summer flounder found off New England spend the winters east of the Hudson Canyon off New York and New Jersey (Ross 1991). Adult summer flounder spend most of their lives near the bottom, and prefer to bury themselves in sand substrate. During the summer, they are often found on hard sand, and prefer mud during the fall. They are often found hiding motionless in eelgrass or among the pilings of docks, but swim very quickly if disturbed (Collette and Klein-MacPhee 2002).

Summer flounder feed by waiting for their prey and then ambushing them. Summer flounder have well-developed teeth that allow them to capture such prey as small fish, squid, sea worms, shrimp, and other crustaceans (ASMFC 2008a). They are fierce predators, pursuing prey up to the surface and sometimes jumping out of the water while chasing prey, although they also feed on the bottom (Collette and Klein-MacPhee 2002).

Summer flounder are one of the most sought-after species for both commercial and recreational fishing along the East Coast. The species is currently managed under a joint management plan between the Atlantic States Marine Fisheries Commission and the Mid-Atlantic Fisheries Management Council as part of the Summer Flounder, Scup, and Black Sea Bass Fishery Management Plan. The current plan by the Atlantic States Marine Fisheries Commission allocates 60% of the quota to commercial fishing and 40% to recreational fishing (ASMFC 2008c). Fishing mortality of summer flounder has been declining and spawning stock biomass has been increasing since the 1990s. According to the Atlantic States Marine Fisheries Commission, summer flounder is not currently overfished, and overfishing is not occurring, although the stock is not yet rebuilt (ASMFC 2008c). Summer flounder has been under a rebuilding plan since 1993, which was recently extended to 2013. Biomass was estimated at about 77% of the target level in 2008, or about 46,029 metric tons (NMFS 2010b).

Habitat characteristics of summer flounder (NEFSC 1999e)

Life Stage	*Habitat*	*Substrate*	*Temperature*
Eggs	Eggs are pelagic and buoyant, mostly at depths of 30-70 m in the fall, as far down as 110 m in the winter, and from 10-30 m in the spring.	Pelagic	Most abundant in the water column where bottom temperatures are between 12 and 19ºC.
Larvae	Planktonic; most abundant 19-83 km from shore at depths of around 10-70 m. From October to May larvae and postlarvae migrate inshore to coastal and estuarine nursery areas.	Dominant in sandy substrates or where there was a transition from fine sand to silt and clay.	Larvae have been found in temperatures ranging from 0-23ºC, but are most abundant between 9 and 18ºC.
Juveniles	Juveniles are distributed inshore and in many estuaries throughout their range during spring, summer, and fall.	Dominant in sandy substrates or in transition areas from fine sand to silt and clay. Juvenile and adult summer flounder will hide in vegetation to ambush prey.	Most juveniles are caught over a range of temperatures from 10-27ºC in the fall, from 3-13ºC in the winter, from 3-17ºC in the spring, and from 10-27ºC in the summer.
Adults	During spring distributed widely over the continental shelf, from 0-360 m depth. Found in depths of less than 100 m in summer and fall. Generally are found at depths greater than 70 m in winter.	Prefer sandy habitats; can be found in a variety of habitats with both mud and sand substrates, including marsh creeks, seagrass beds, sand flats, among dock pilings. Summer flounder will hide in vegetation to ambush prey.	Most adults are caught over a range of temperatures from 9-26ºC in the fall, from 4- 13ºC in the winter, from 2-20ºC in the spring, and from 9-27ºC in the summer.

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a) Sentences were modified from original source to pertain to New York instead of Rhode Island

Attachment 1

2012 Active Vessels Home-Ported in New York

NUMBER OF ACTIVE NY VESSELS				
CATEGORY*	YEAR	# VESSELS HOME PORTED IN NY	# ACTIVE NY VESSELS**	# OF ACTIVE NY VESSELS LANDING IN NY
COMMERCIAL	2012	304	168	155
RECREATIONAL	2012	148	97	92

* If a vessel is issued both commercial and recreational permits, it may be counted as active in both categories.

**A commercial vessel is considered active if it reported landing a commercial trip in 2012 in the VTR database. A recreational vessel is considered active if it reported landing a party or charter trip in 2012 in the VTR database.

Attachment 2

Offshore Planning Area Ocean Usage Letter

Offshore Planning Area Ocean Usage Information Survey

Offshore Planning Area Ocean Usage Map

TO: COMMERICAL FISHERMEN AND FOR-HIRE BOATMEN

New York State Department of State (NYSDOS) is amending its Coastal Management Program (CMP), under the authority of the federal Coastal Zone Management Act (CZMA) of 1972, to appropriately site offshore wind energy facilities and provide greater protection of ocean habitats.

Under the CZMA, states with approved Coastal Management Programs have the authority to approve or deny a proposed federal action no matter where it may occur, if the action may affect that state's coastal resources. To better address issues associated with offshore wind development and critical habitat protection as it makes decisions on federal actions, DOS will develop criteria for siting offshore wind facilities and for protecting critical ocean habitat.

Specifically, to protect fisheries within the New York Offshore Planning Area (See Enclosed Map) there is a need for more and better information concerning fisheries resources and habitats as well as the potential impacts of construction, operation of wind turbines, undersea cables, and other offshore wind energy infrastructure. Offshore wind energy development may impact fishermen's livelihoods and fishing communities by reduced access to key fishing grounds, reduced catches, gear loss or damage. To avoid these potential impacts Cornell Cooperative Extension Marine Program (CCE) has been asked by NYSDOS to collect information from New York Commercial Fishermen and For Hire boatmen to identify key fishing areas within the New York offshore planning area. Information being collected includes sites being fished; factual descriptions of locations, including latitude/longitude, common names (ex. fish hole); gear type being used, species being targeted and other information that can be important to mitigate the impacts of wind energy development on fishermen. CCE has completed fifteen work sessions to date with commercial fishermen and for-hire boatmen from Brooklyn to Montauk. More input is needed to document fisheries usage within the New York offshore planning area. The workshop sessions involved fishermen providing information about their fishing activities as described above and detailing on nautical charts, specific fishing sites. These informational tables and nautical charts will be used to develop a master chart synthesizing all of the information collected. All individual fishermen information will be kept confidential and only aggregate data in GIS layered and maps will become public information.

You can help in this important effort in one of two ways?

1) Call Jackie Stent at (631) 727-7850, extension 305 to set-up a work session to complete the process described or
2) Complete the survey enclosed, include a description of fishing effort on the nautical chart provided and return to CCE in the stamped self-addressed envelope that is enclosed. Directions for completing the mail survey: **On the enclosed NY ocean planning area map draw circles around your fishing sites and the approximate area being used and number them. Then complete the survey on the backside of this memo – See the example for assistance. Start with your own number one.**

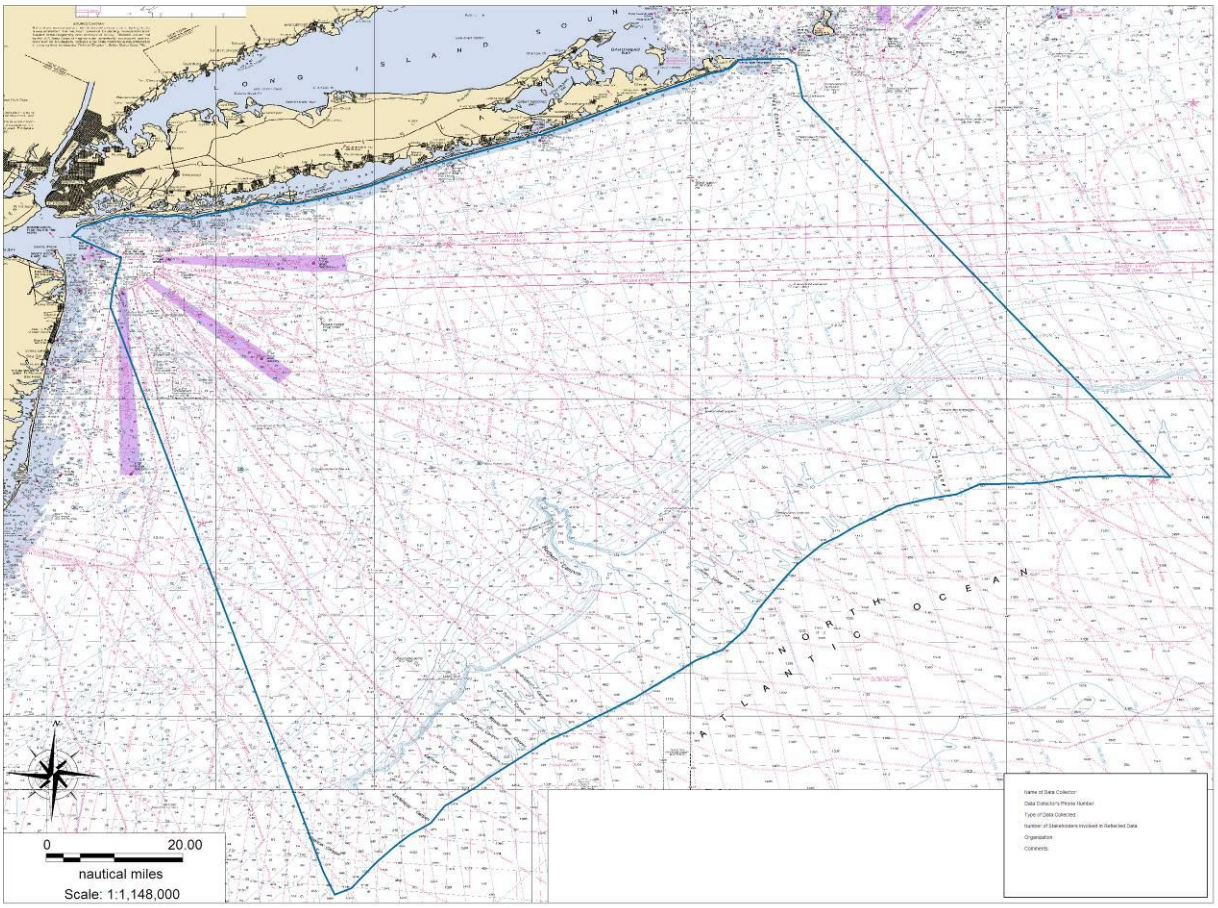
Related to your input CCE will be compiling vessel trip report (VTR) data for all gear types by fishing effort (number of tows) and landings (total catch) within the New York offshore planning area for 2001-2010.

Once completed, draft GIS layered maps from both processes will then be presented to fishermen for review and revisions prior to submission to NYSDOS.

Thank you for your cooperation in this important matter.

NEW YORK OFFSHORE PLANNING AREA
OCEAN USEAGE INFORMATION SURVEY
(See Example #1 Below)

SITE #	SITE NAME	SITE DETAIL	FISHERY TYPE	SPECIES FISHED	SEASON OF USE	FREQUENCY	NOTE
1	Fish Hole	20-30 Fathom East of Montauk	Dragger	Scup, Squid	Fall/Spring	Weekly	Busy Area, Mostly Day Trip Boats, Vessel Name


L O N G I S L A N D S O U N D
A T L A N T I C O C E A N
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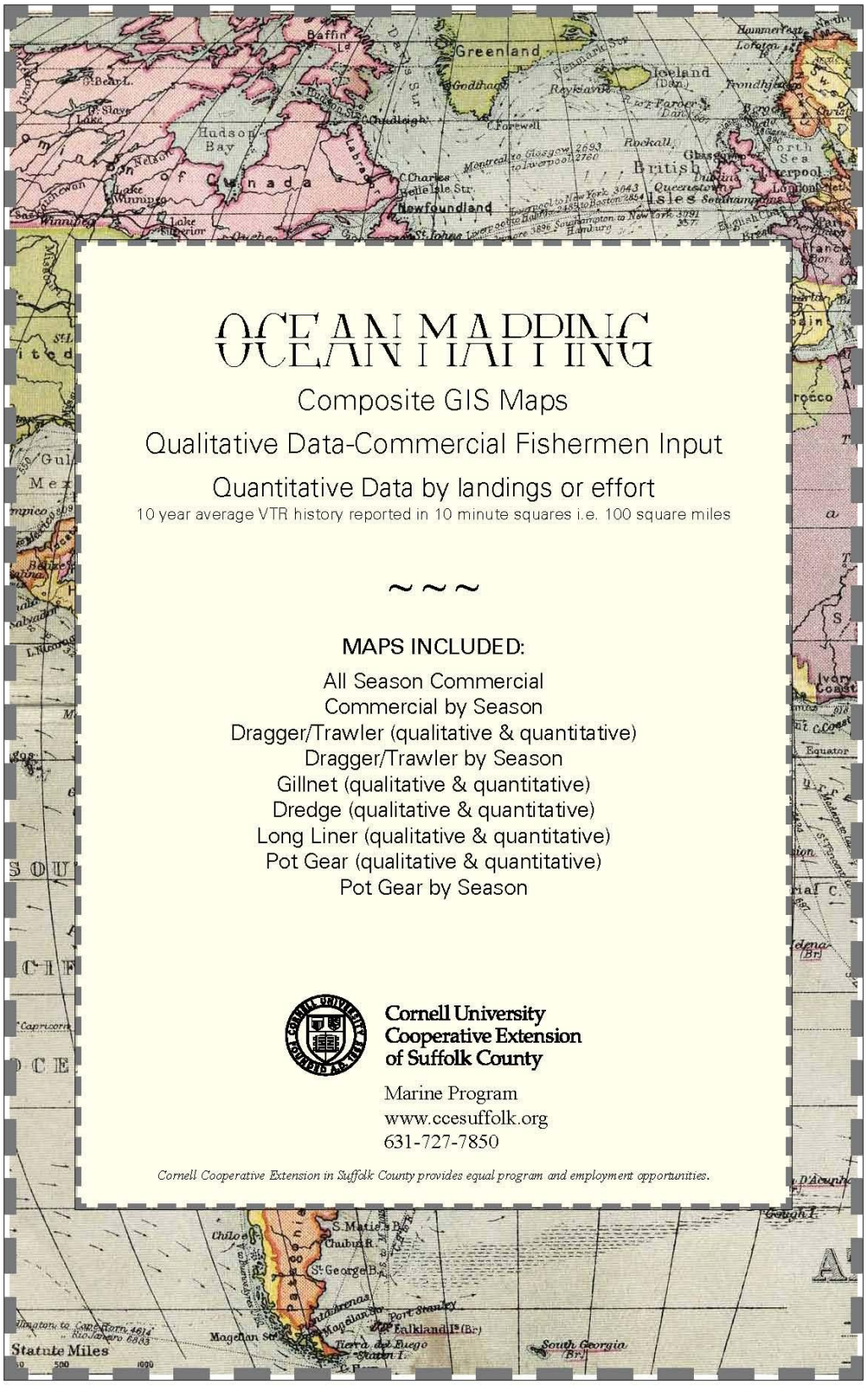
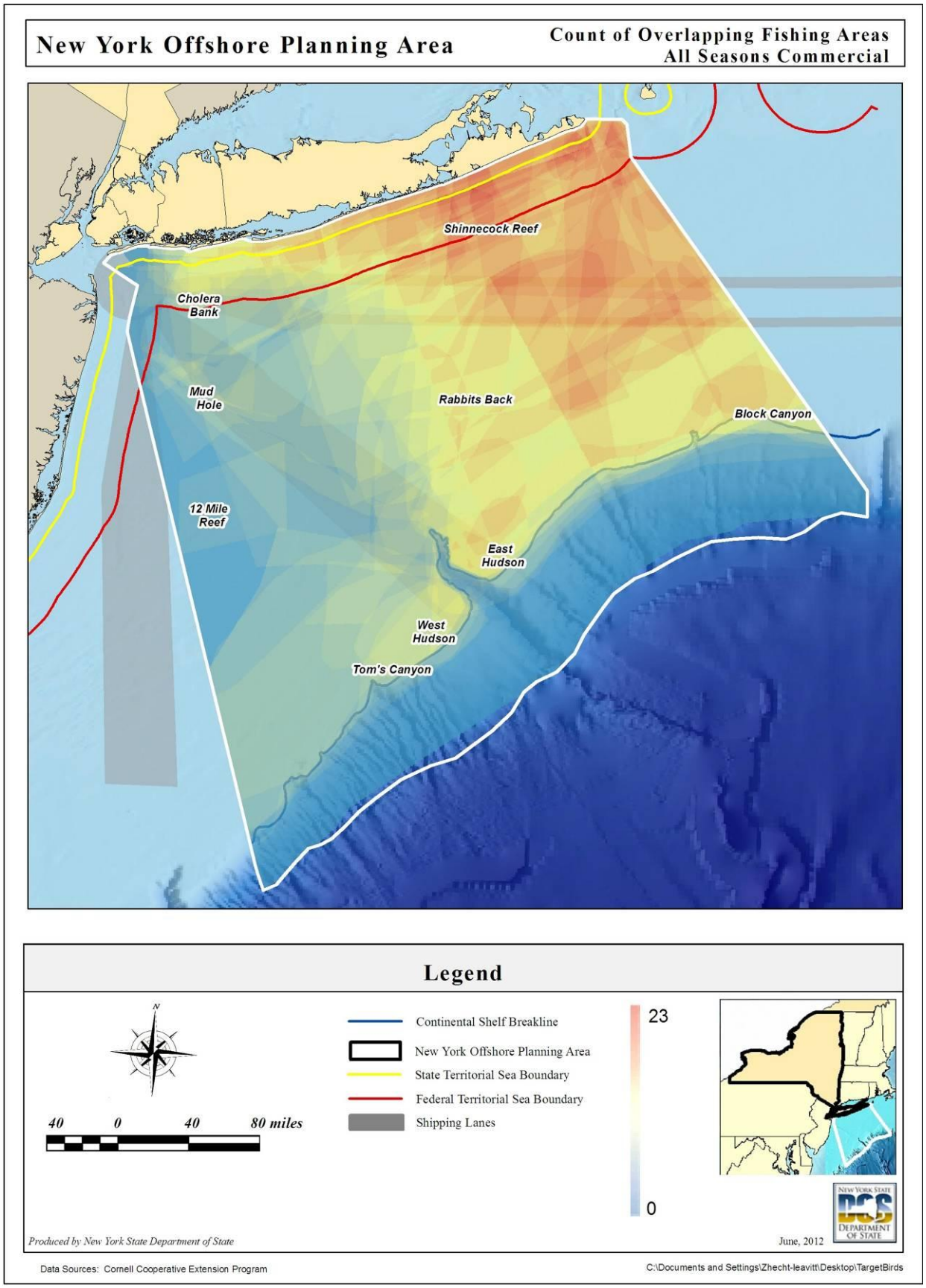
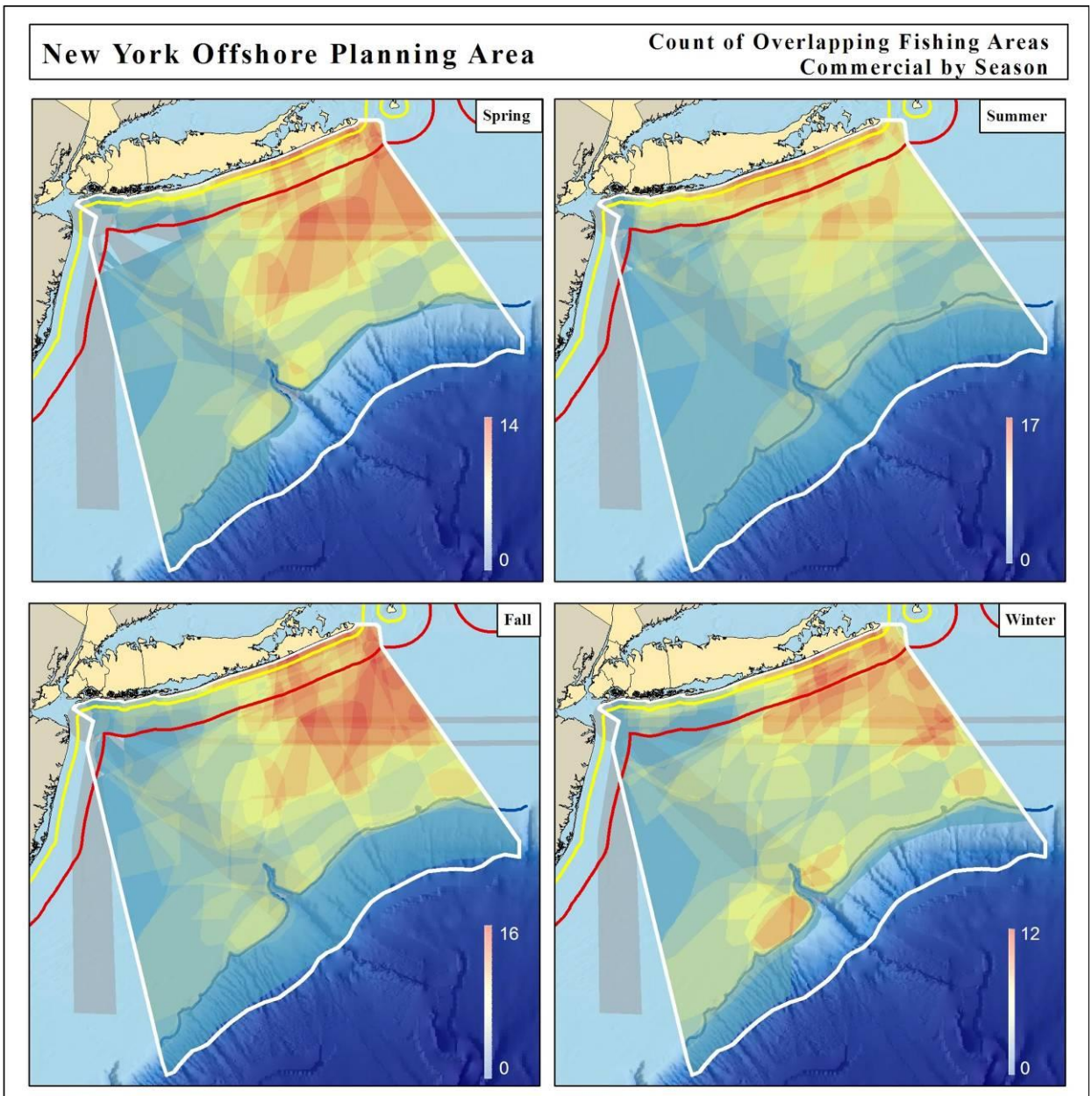
20.00
nautical miles
Scale: 1:1,148,000

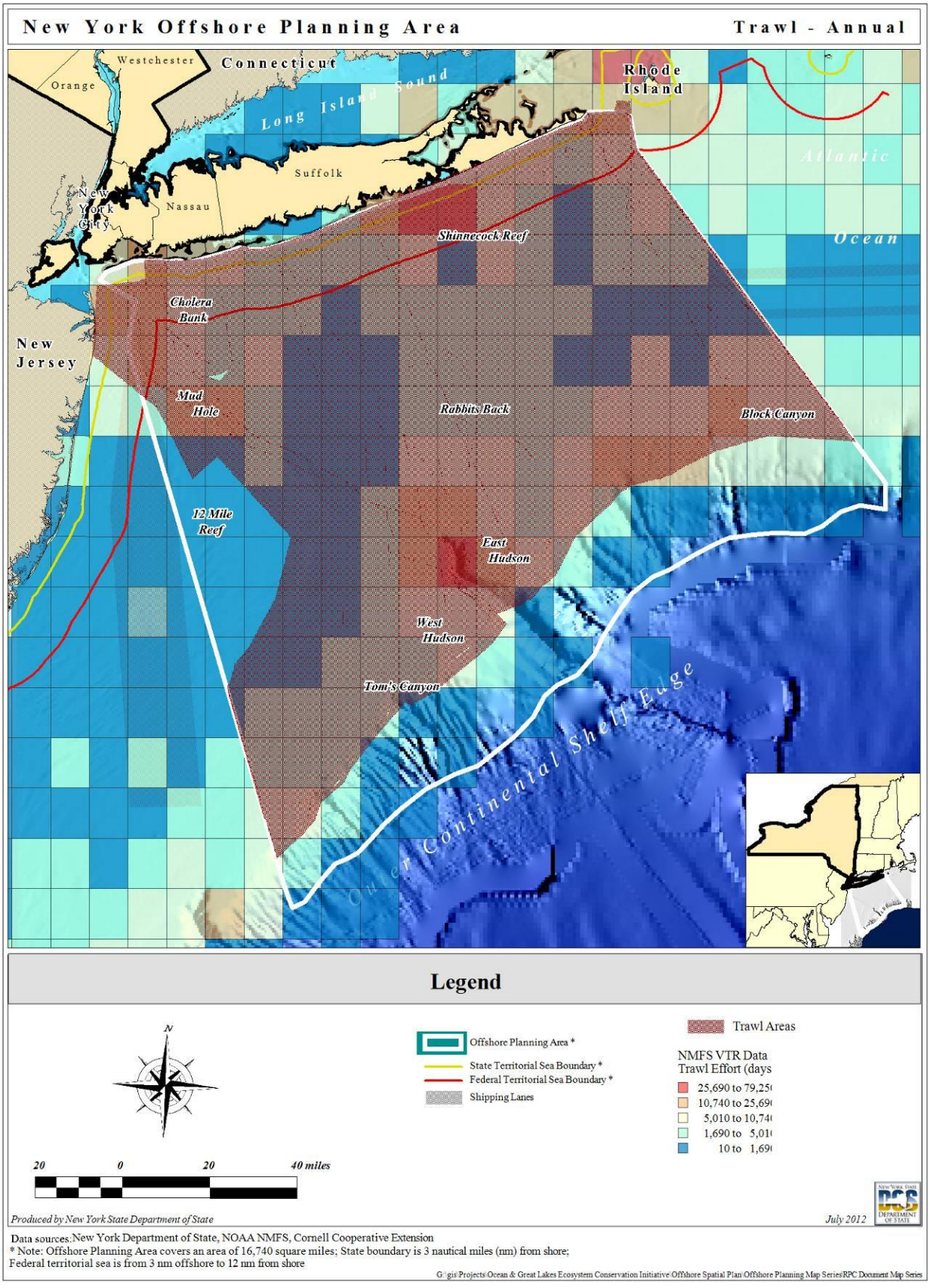
Attachment 3

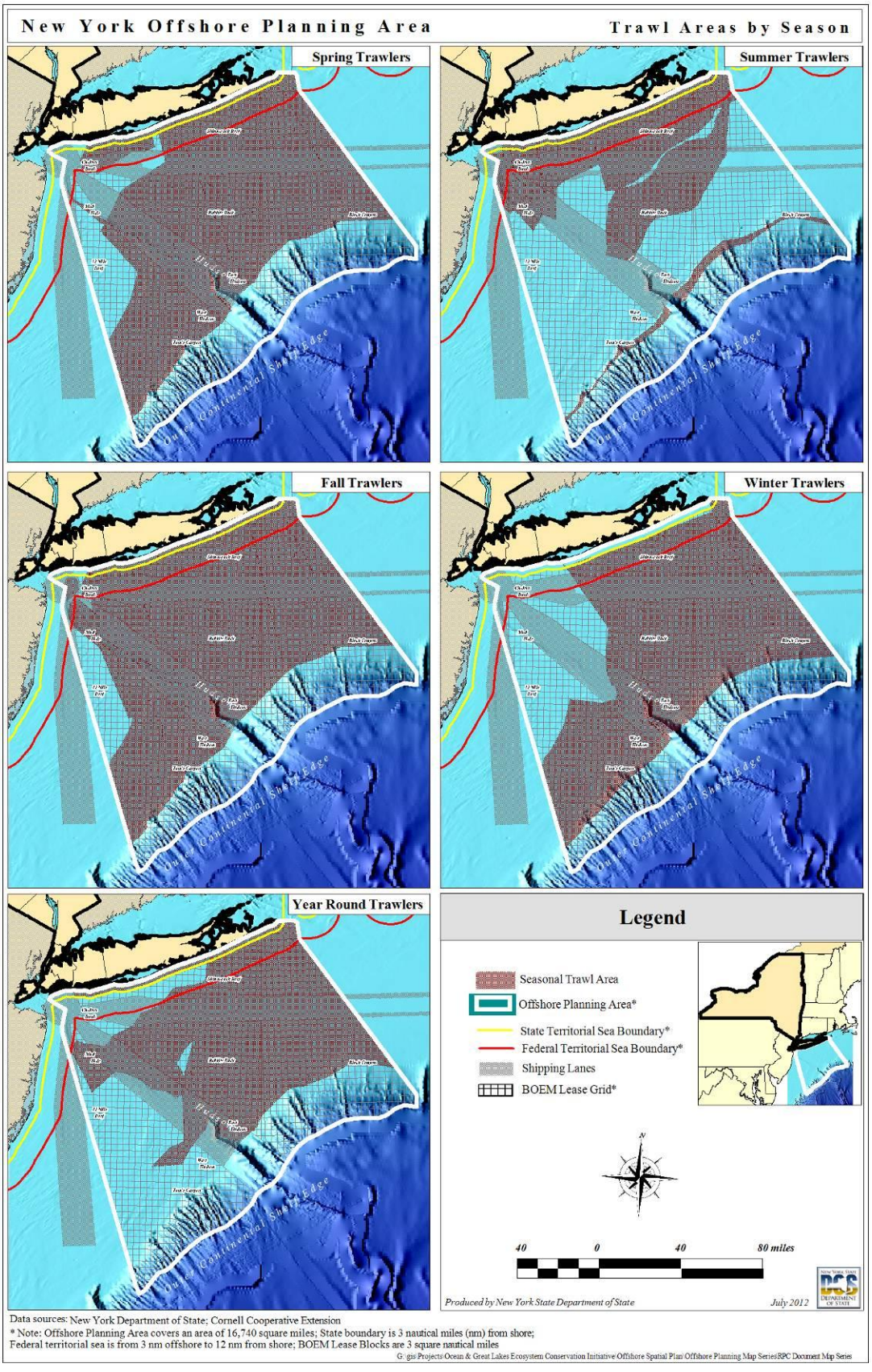
Ocean Mapping Composite GIS Maps


OCEAN MAPPING
Composite GIS Maps
Qualitative Data-Commercial Fishermen Input
Quantitative Data by landings or effort
10 year average VTR history reported in 10 minute squares i.e. 100 square miles
~ ~ ~
MAPS INCLUDED:
All Season Commercial
Commercial by Season
Dragger/Trawler (qualitative & quantitative)
Dragger/Trawler by Season
Gillnet (qualitative & quantitative)
Dredge (qualitative & quantitative)
Long Liner (qualitative & quantitative)
Pot Gear (qualitative & quantitative)
Pot Gear by Season
Cornell University
Cooperative Extension
of Suffolk County
Marine Program
www.ccesuffolk.org
631-727-7850
Cornell Cooperative Extension in Suffolk County provides equal program and employment opportunities.
Statute Miles


New York Offshore Planning Area
Count of Overlapping Fishing Areas
All Seasons Commercial
Shinnecock Reef
Cholera Bank
Mud Hole
Rabbits Back
Block Canyon
12 Mile Reef
East Hudson
West Hudson
Tom's Canyon
Legend
N
40 0 40 80 miles
Continental Shelf Breakline
New York Offshore Planning Area
State Territorial Sea Boundary
Federal Territorial Sea Boundary
Shipping Lanes
23
0
Produced by New York State Department of State
June, 2012
Data Sources: Cornell Cooperative Extension Program
C:\Documents and Settings\Zhecht-leavitt\Desktop\TargetBirds


New York Offshore Planning Area
Count of Overlapping Fishing Areas
Commercial by Season
Spring
14
0
Summer
17
0
Fall
16
0
Winter
12
0
Legend
N
40 0 40 80 miles
Continental Shelf Breakline
New York Offshore Planning Area
State Territorial Sea Boundary
Federal Territorial Sea Boundary
Shipping Lanes
Produced by New York State Department of State
June, 2012
Data Sources: Cornell Cooperative Extension Program
C:\Documents and Settings\Zhecht-leavitt\Desktop\TargetBirds


New York Offshore Planning Area
Trawl - Annual
Westchester
Connecticut
Orange
Long Island Sound
Rhode Island
Atlantic
Ocean
Suffolk
New York City
Nassau
Shinnecock Reef
Cholera Bank
New Jersey
Mud Hole
Rabbits Back
Block Canyon
12 Mile Reef
East Hudson
West Hudson
Tom's Canyon
Outer Continental Shelf Edge
Legend
N
Offshore Planning Area *
State Territorial Sea Boundary *
Federal Territorial Sea Boundary *
Shipping Lanes
Trawl Areas
NMFS VTR Data
Trawl Effort (days
25,690 to 79,25
10,740 to 25,69
5,010 to 10,74
1,690 to 5,01
10 to 1,69
20 0 20 40 miles
Produced by New York State Department of State
July 2012
Data sources: New York Department of State, NOAA NMFS, Cornell Cooperative Extension
* Note: Offshore Planning Area covers an area of 16,740 square miles; State boundary is 3 nautical miles (nm) from shore;
Federal territorial sea is from 3 nm offshore to 12 nm from shore
G:\gis\Projects\Ocean & Great Lakes Ecosystem Conservation Initiative\Offshore Spatial Plan\Offshore Planning Map Series\RPC Document Map Series


New York Offshore Planning Area
Trawl Areas by Season
Spring Trawlers
Summer Trawlers
Fall Trawlers
Winter Trawlers
Year Round Trawlers
Outer Continental Shelf Edge
Legend
Seasonal Trawl Area
Offshore Planning Area*
State Territorial Sea Boundary*
Federal Territorial Sea Boundary*
Shipping Lanes
BOEM Lease Grid*
N
40 0 40 80 miles
Produced by New York State Department of State
July 2012
Data sources: New York Department of State; Cornell Cooperative Extension
* Note: Offshore Planning Area covers an area of 16,740 square miles; State boundary is 3 nautical miles (nm) from shore;
Federal territorial sea is from 3 nm offshore to 12 nm from shore; BOEM Lease Blocks are 3 square nautical miles
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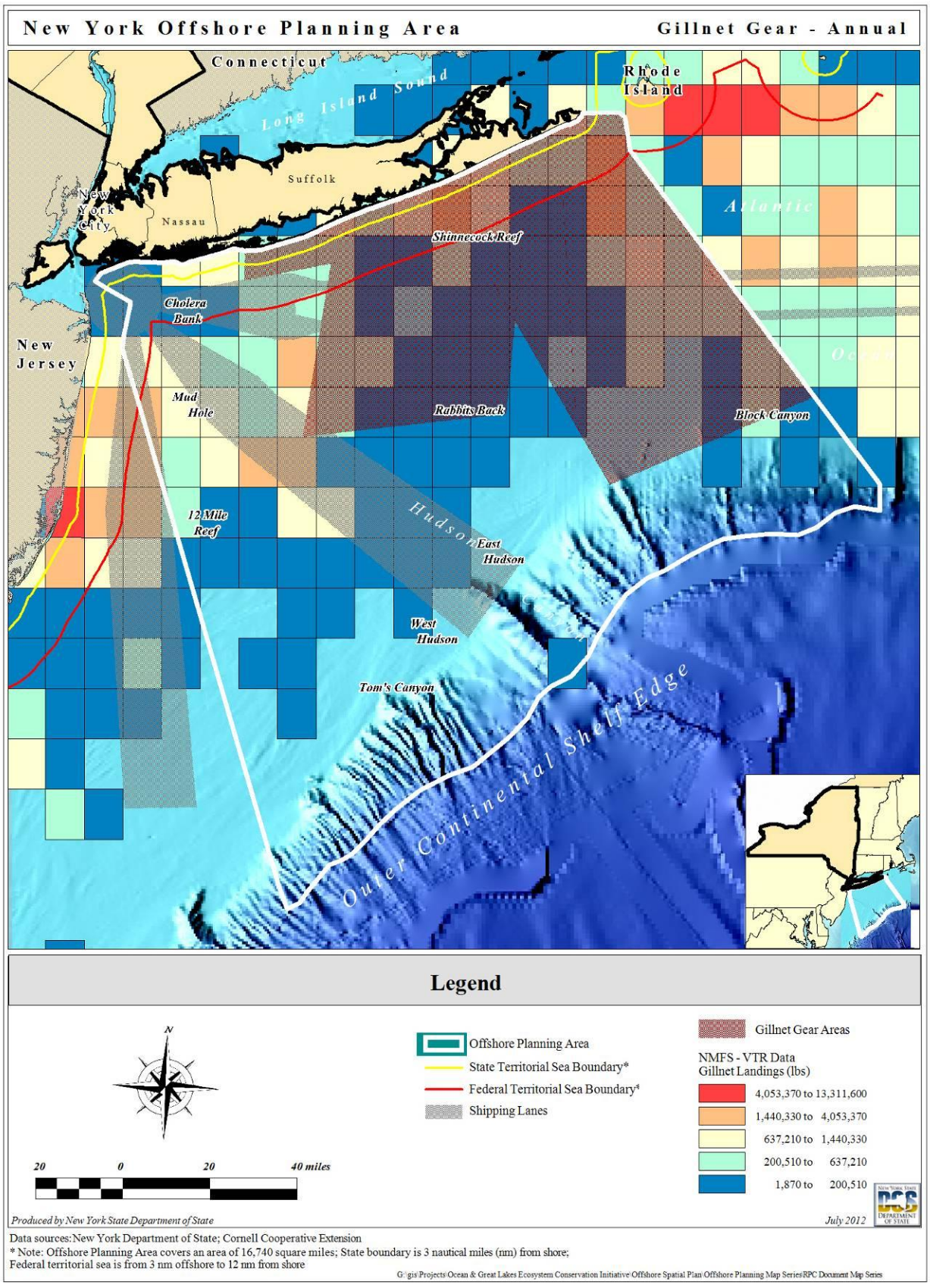
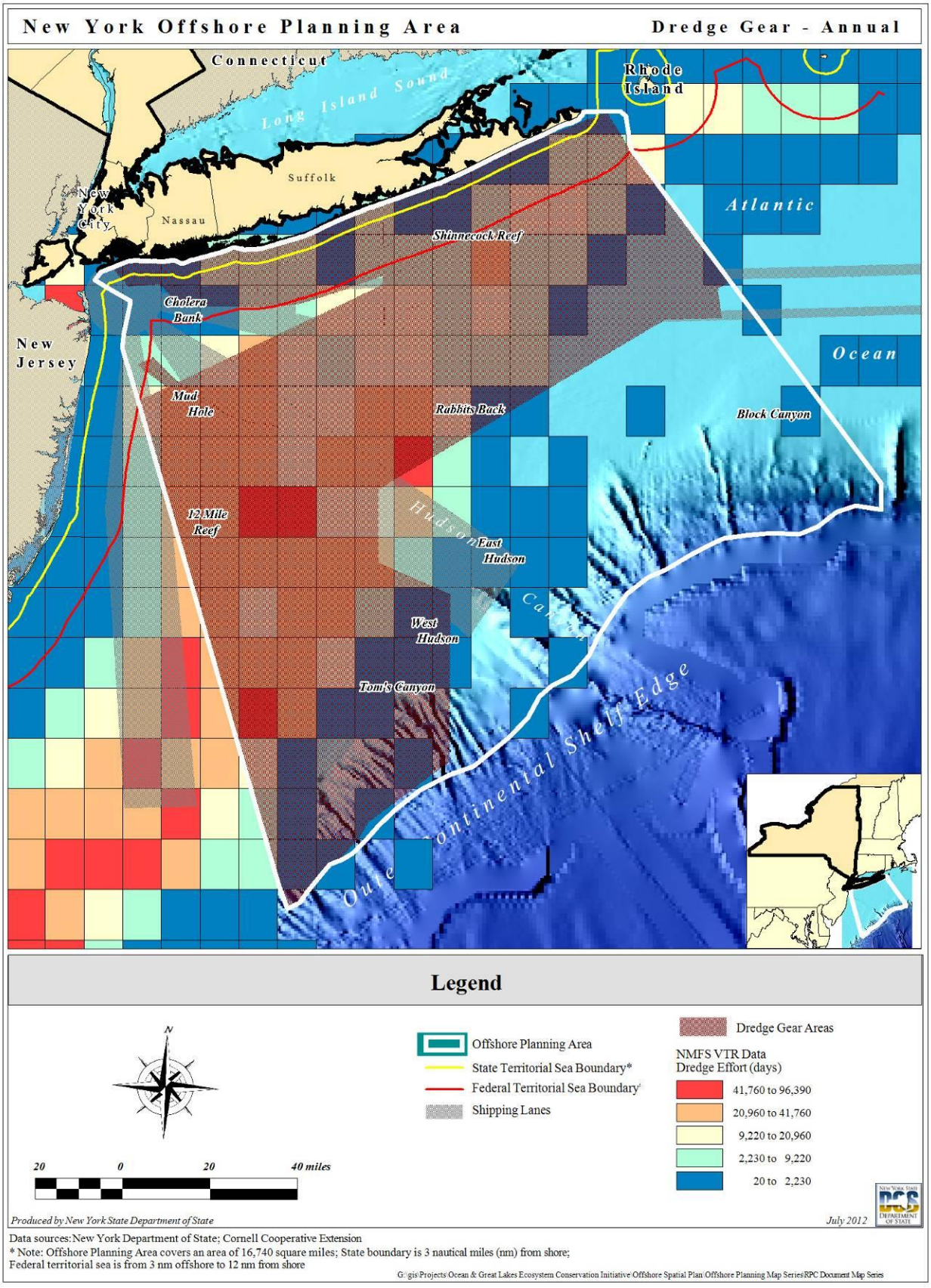
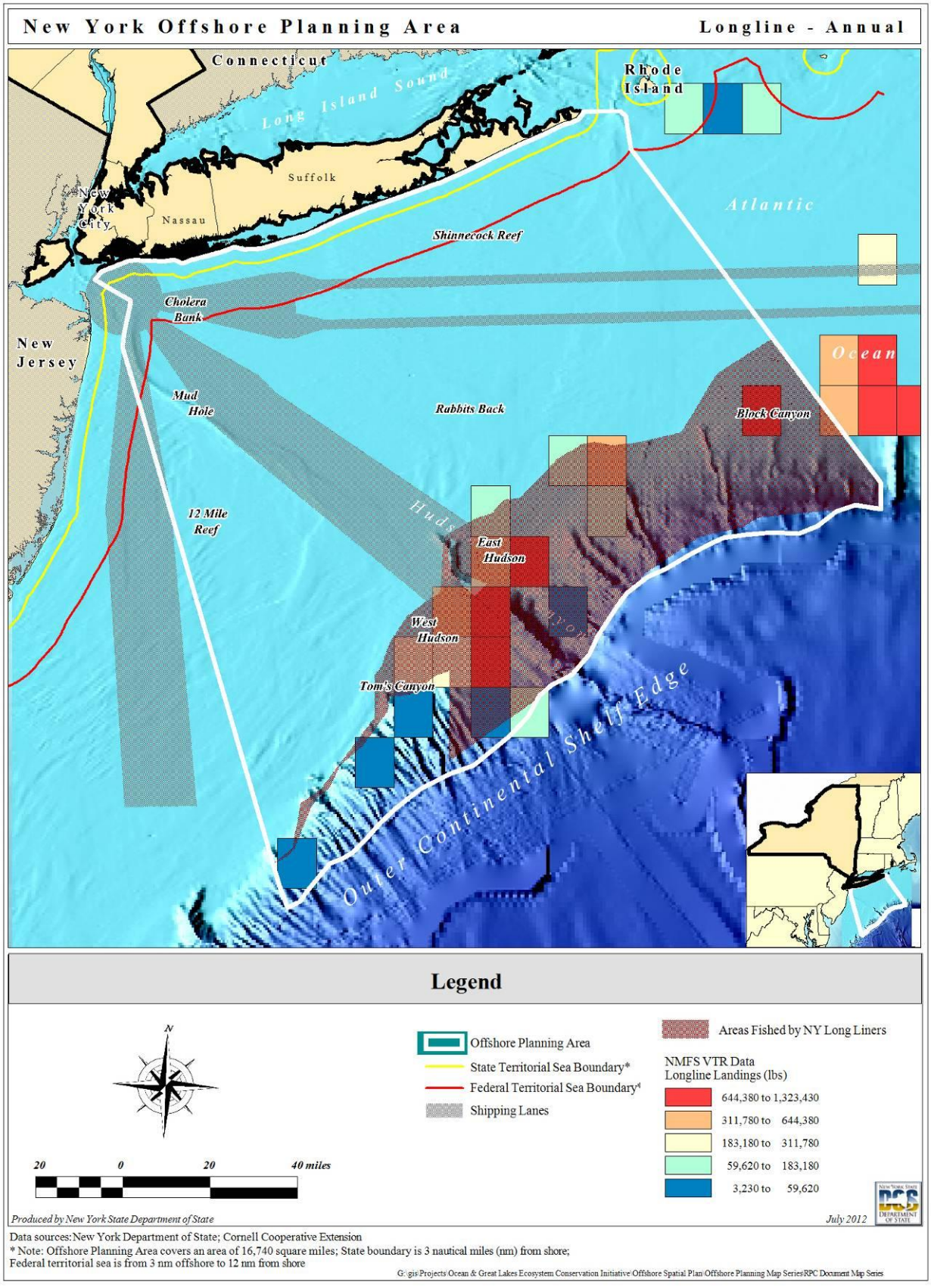

New York Offshore Planning Area
Gillnet Gear - Annual
Connecticut
Long Island Sound
Rhode Island
Suffolk
New York City
Nassau
Atlantic
Shinnecock Reef
Cholera Bank
New Jersey
Mud Hole
Rabbits Back
Block Canyon
12 Mile Reef
Hudson
East Hudson
West Hudson
Tom's Canyon
Outer Continental Shelf Edge
Legend
N
20 0 20 40 miles
Offshore Planning Area
State Territorial Sea Boundary*
Federal Territorial Sea Boundary*
Shipping Lanes
Gillnet Gear Areas
NMFS - VTR Data
Gillnet Landings (lbs)
4,053,370 to 13,311,600
1,440,330 to 4,053,370
637,210 to 1,440,330
200,510 to 637,210
1,870 to 200,510
Produced by New York State Department of State
July 2012
Data sources:New York Department of State; Cornell Cooperative Extension
* Note: Offshore Planning Area covers an area of 16,740 square miles; State boundary is 3 nautical miles (nm) from shore;
Federal territorial sea is from 3 nm offshore to 12 nm from shore
G:\gis\Projects\Ocean & Great Lakes Ecosystem Conservation Initiative\Offshore Spatial Plan\Offshore Planning Map Series\RPC Document Map Series


New York Offshore Planning Area
Dredge Gear - Annual
Connecticut
Long Island Sound
Rhode Island
Suffolk
New York City
Nassau
Atlantic
Shinnecock Reef
Cholera Bank
New Jersey
Ocean
Mud Hole
Rabbits Back
Block Canyon
12 Mile Reef
Hudson East
Hudson
West Hudson
Toms Canyon
Outer Continental Shelf Edge
Legend
Offshore Planning Area
State Territorial Sea Boundary*
Federal Territorial Sea Boundary*
Shipping Lanes
Dredge Gear Areas
NMFS VTR Data
Dredge Effort (days)
41,760 to 96,390
20,960 to 41,760
9,220 to 20,960
2,230 to 9,220
20 to 2,230
20 0 20 40 miles
Produced by New York State Department of State
July 2012
Data sources: New York Department of State; Cornell Cooperative Extension
* Note: Offshore Planning Area covers an area of 16,740 square miles; State boundary is 3 nautical miles (nm) from shore;
Federal territorial sea is from 3 nm offshore to 12 nm from shore
G:\gis Projects\Ocean & Great Lakes Ecosystem Conservation Initiative\Offshore Spatial Plan\Offshore Planning Map Series\RPC Document Map Series


New York Offshore Planning Area
Longline - Annual
Connecticut
Long Island Sound
Rhode Island
Suffolk
Nassau
New York City
Atlantic
Shinnecock Reef
Cholera Bank
New Jersey
Mud Hole
Rabbits Back
Block Canyon
Ocean
12 Mile Reef
Hudson
East Hudson
West Hudson
Toms Canyon
Outer Continental Shelf Edge
Legend
Offshore Planning Area
State Territorial Sea Boundary*
Federal Territorial Sea Boundary*
Shipping Lanes
Areas Fished by NY Long Liners
NMFS VTR Data
Longline Landings (lbs)
644,380 to 1,323,430
311,780 to 644,380
183,180 to 311,780
59,620 to 183,180
3,230 to 59,620
N
20 0 20 40 miles
Produced by New York State Department of State
July 2012
Data sources: New York Department of State; Cornell Cooperative Extension
* Note: Offshore Planning Area covers an area of 16,740 square miles; State boundary is 3 nautical miles (nm) from shore;
Federal territorial sea is from 3 nm offshore to 12 nm from shore
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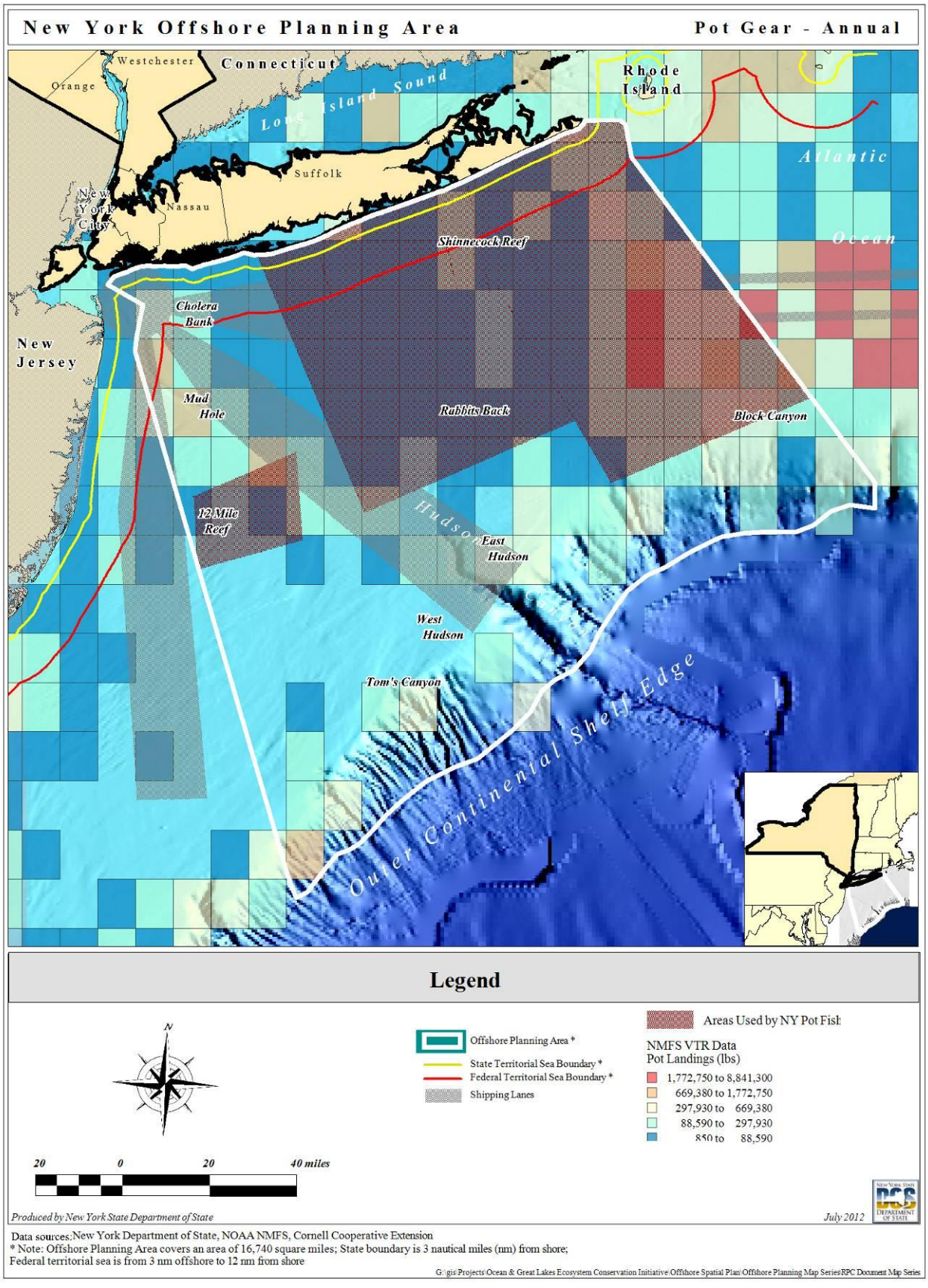
New York Offshore Planning Area
Pot Gear - Annual
Westchester
Connecticut
Orange
Long Island Sound
Rhode Island
Atlantic
Ocean
Suffolk
Nassau
New York City
Shinnecock Reef
Cholera Bank
New Jersey
Mud Hole
Rabbits Back
Block Canyon
12 Mile Reef
Hudson
East Hudson
West Hudson
Tom's Canyon
Outer Continental Shelf Edge
Legend
Offshore Planning Area *
State Territorial Sea Boundary *
Federal Territorial Sea Boundary *
Shipping Lanes
Areas Used by NY Pot Fish
NMFS VTR Data
Pot Landings (lbs)
1,772,750 to 8,841,300
669,380 to 1,772,750
297,930 to 669,380
88,590 to 297,930
850 to 88,590
20 0 20 40 miles
Produced by New York State Department of State
July 2012
Data sources: New York Department of State, NOAA NMFS, Cornell Cooperative Extension
* Note: Offshore Planning Area covers an area of 16,740 square miles; State boundary is 3 nautical miles (nm) from shore;
Federal territorial sea is from 3 nm offshore to 12 nm from shore
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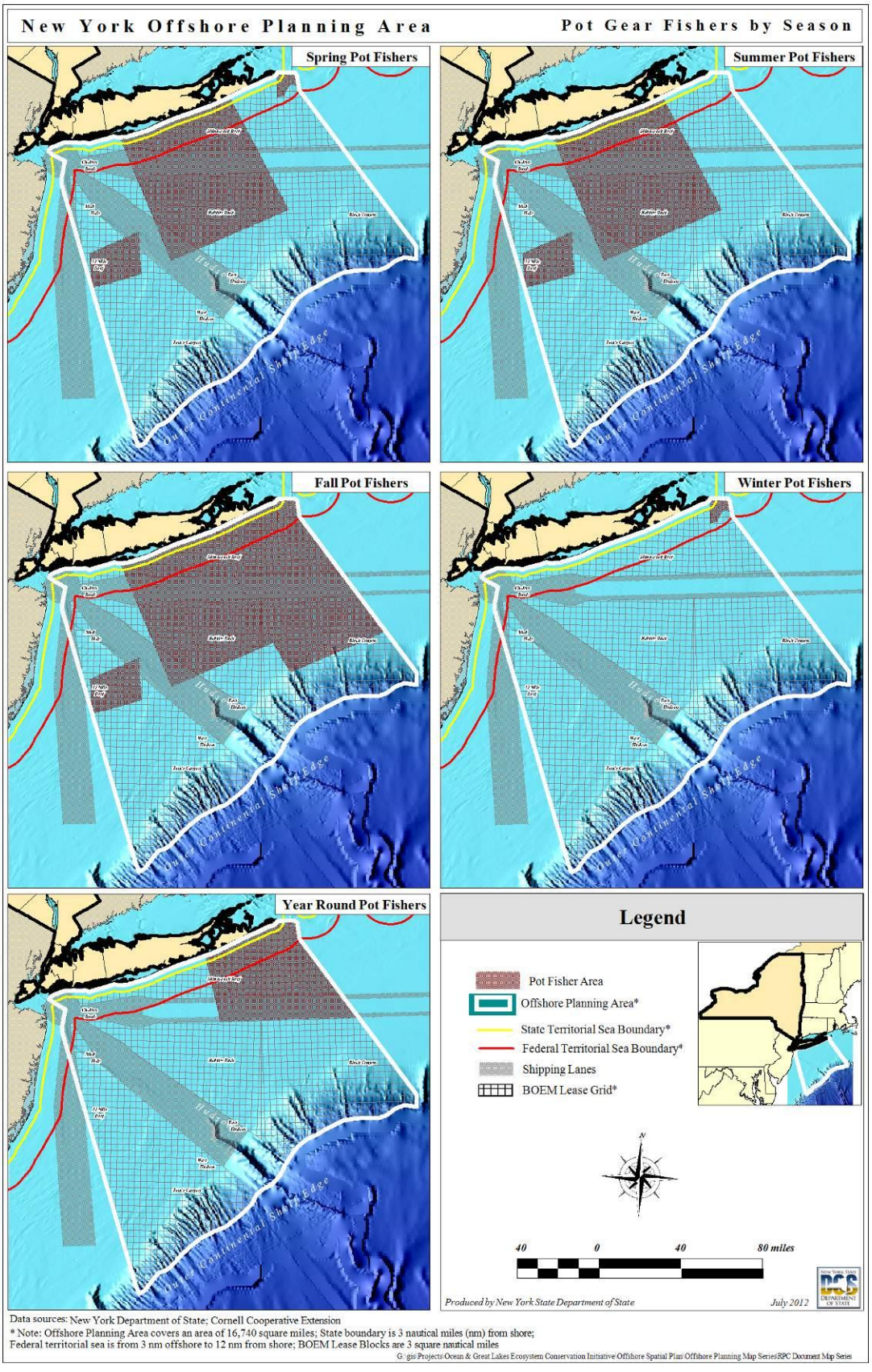
New York Offshore Planning Area
Pot Gear Fishers by Season
Spring Pot Fishers
Summer Pot Fishers
Fall Pot Fishers
Winter Pot Fishers
Year Round Pot Fishers
Outer Continental Shelf Edge
Legend
Pot Fisher Area
Offshore Planning Area*
State Territorial Sea Boundary*
Federal Territorial Sea Boundary*
Shipping Lanes
BOEM Lease Grid*
N
40 0 40 80 miles
Produced by New York State Department of State
July 2012
Data sources: New York Department of State; Cornell Cooperative Extension
* Note: Offshore Planning Area covers an area of 16,740 square miles; State boundary is 3 nautical miles (nm) from shore;
Federal territorial sea is from 3 nm offshore to 12 nm from shore; BOEM Lease Blocks are 3 square nautical miles
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