



MARINE FISHERIES PROGRAM QUARTERLY REPORT

March 2017



➤ SPECIAL THANKS - PENNY HOWELL RETIRES!

After more than 38 years of service to the state, Penny Howell retired on March 1st. Penny had a long and distinguished career with Marine Fisheries'.

Penny began her career with Marine Fisheries collecting biological scup data aboard commercial trawling vessels in Long Island Sound. She often recalled her experiences working alongside commercial fishermen, as the first woman hired in the Division. She was also an integral part of a study which examined the effects of trawling on lobster and was a contributing author to the legislative report required by Special Act 83-29 of the CT General Assembly.

Another notable undertaking Penny took on early in her career was helping design and implement the Long Island Trawl Survey in 1984. While the survey has undergone several changes over the years, it remains the Marine Fisheries Program's largest and second longest running project, documenting the presence of over 100 marine finfish species throughout the time series and providing invaluable data for species stock assessments and studies that focus on the effect of environmental changes on species composition.

Penny always felt strongly that the nearshore resources below the high tide line were of importance and in need of monitoring. To address that need, she developed a number of surveys to collect data on this essential habitat and the species that occupy it. This included the creation of the ongoing estuarine seine survey, which documents, among other things, winter flounder spawning sites. She was also Connecticut's representative on the Atlantic States Marine Fisheries Commission's (ASMFC) habitat committee.



In the mid-90's, Penny was tasked with evaluating the white perch populations in the CT River. She developed a tagging study to document the species' population levels and movement in the river. These data were used to develop the recreational and commercial harvest restrictions in the state.



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Penny, with few resources, established a horseshoe crab spawning survey along the Connecticut coast, enlisting the help of numerous volunteers, both from the public and scientific communities. These data were ultimately used to determine the commercial harvest quota for this species set in 2000 as well as helped to determine areas that should be closed to commercial harvest in an effort to protect the food source of endangered migrating shore birds.

Penny had an unparalleled ability to talk about science and marine fisheries assessment on a level that all could understand. She developed a number of games for students of all ages, which broke down the most complex of population estimation methods and made learning fun. Penny was a familiar face, presenting at many professional conferences and giving talks to public interest groups. Similarly, Penny's talented writing style spanned from describing intricate modeling methods for marine species to publishing a number of articles in reputable scientific journals such as the *Journal of Shellfish Research*, *Transactions of American Fisheries Society* and *Marine and Coastal Fisheries*. For six years, Penny was also the contributing author for the marine fisheries articles featured in the Department's *Connecticut Wildlife* magazine, highlighting Connecticut's marine species and the programs that monitor them.

For the last seven years of her career, Penny dedicated most of her time to the American lobster resource, serving as the state's representative on the Atlantic States Marine Fisheries Commission's American Lobster Technical Committee. She stepped into management of the species just after the catastrophic die-off in Long Island Sound, helping to document the decline of the resource and the continued recruitment failure of the species in the Sound. Her first task was to manage a \$1M study to determine the cause of the large scale mortalities, working with geneticists, pathologists and a number of environmental researchers along the coast. One of the most notable findings from this work was the documentation of the thermal stress point for lobster (68°F). Having learned the biological threshold for the species, Penny worked to find ways to monitor the bottom temperatures in Long Island Sound, documenting the ongoing stressful conditions for lobster which have hampered the species rebound. She also took the lead on evaluating the effects of changing environmental conditions on other notable species in the Sound, including winter flounder.



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Penny established numerous professional relationships within the agency, with staff from the ASMFC and other state resource agencies as well as the environmental community. She was a highly respected scientist, always willing to help someone design a study, improve the ways they collect data and to help select the appropriate statistical tests to analyze their results. She was a tremendous asset to the Division and will surely be missed.

➤ FISHERIES MANAGEMENT, MONITORING & RESEARCH:

◆ ASMFC Management.

Marine Fisheries staff hosted an Atlantic States Marine Fisheries Commission (ASMFC) public hearing for Addendum XXVIII to the **Summer Flounder**, Scup and Black Sea Bass Fishery Management Plan. This addendum addressed 2017 recreational management measures for summer flounder. The ASFMC and the Mid-Atlantic Fishery Management Council (MAFMC) jointly manage Summer Flounder. Based on the decisions made at the December joint meeting, the addendum offered options that continued with the conservation equivalency and regional management that has been employed for the past five years. The stock assessment update that had been completed last year indicated that overfishing was occurring and that the stock was approaching an overfished condition, with poor recruitment in four of the past five years. This resulted in the need for about a 31% reduction in the 2017 harvest target. Furthermore, the 2016 coastwide harvest exceeded the 2017 harvest target necessitating a further reduction in harvest to about 41% total. Had the state-by-state harvest target approach been pursued instead of regional management, Connecticut's harvest would have exceeded its target by 79%. Through the work of the ASFMC Board's Summer Flounder Workgroup, the addendum offered four options that would have resulted in a reduction in Connecticut ranging from 41% to 44%. However, a fifth option was added at the December Joint meeting that lessened Connecticut's reduction to about 31%. This approach was adopted by the ASFMC in February. As a result, **Connecticut and New York will have a three fish bag limit, 19 inch minimum size, and the same 128-day season as 2016 (May 17 to September 21).**

A full "benchmark" stock assessment for **black sea bass** was completed late in 2016 and was approved by the MAFMC's Scientific and Statistical Committee for management use for the 2017 fishing season. While the assessment allowed an almost doubling of the recreational harvest target, the size of the 2017 projected harvest suggested that an adjustment of management measures to achieve an 8% reduction in harvest was necessary.



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At the February 15 joint meeting of the ASFMC and the MAFMC, the two bodies voted to accept the 2016 black sea bass assessment and the recommended harvest targets. They also approved a motion to allow the northern region states (MA through NJ) to continue 2016 measures or develop new measures to collectively constrain the harvest to the 2017 recreational harvest limit. They rationalized that the 8% difference was well within the percent standard error of the projected harvest. However, two days after that meeting, NOAA released the preliminary Marine Recreational Information Program (MRIP) harvest estimates that indicated that the 2016 harvest had exceeded the upwardly revised harvest target, turning that 8% overage into a 24% overage. The estimates indicated that the November-December (wave 6) coastwide harvest was almost 10 times what was projected (1,077,078 lbs. vs. 115,587 lbs.), with New York accounting for about 82% of that estimated harvest. This news comes late in the management measure setting process and during a Northern Management Region (MA-NJ) conference call on February 23rd, states were in favor of maintaining status quo. However, this will require some analysis by the ASFMC Technical Committee, deliberation by the ASFMC Board and response from NOAA before we truly know if a reduction will be required.

In addition, there has been some ongoing effort within the Northern Region **Black Sea Bass** Working Group to consider some changes in state regulations to equalize season length within the region. Since regional management was instituted in 2012, there has been divergence in recreational measures, principally season length, for the states within our region and this has become a point of concern for some of the states. Connecticut now has the longest season with 245 days, and Massachusetts has the shortest with 103 days. Also, Connecticut's black sea bass harvest has risen from a relatively low level to almost a million pounds during that period and our previous years' management measure changes have underperformed in constraining harvest. Connecticut is getting pressure from the other states to equalize its season length with the other states. The Marine Fisheries Program held a public meeting on February 22 to get public input on recreational summer flounder and black sea bass management measures. There was resistance, principally from the for-hire industry, to shorten the black sea bass season, either in the spring or the winter. The spring season is important to them because with the decline in striped bass, there are few other fishing opportunities to draw customers. On the other hand, because regional management has benefited Connecticut with respect to both black sea bass and summer flounder management, it is in the interest of Connecticut to yield a little on this issue so as to maintain an ASMFC interest in regional management. At its meeting the following night, the Marine Fisheries Program's Marine Advisory Group felt that a modest shortening of the season would be justified.



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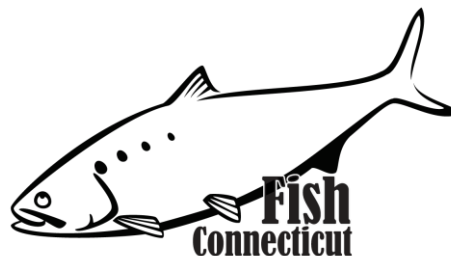
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One possibility floated would be moving the black sea bass season opening from May 1 to May 17 to coincide with the summer flounder season opening, though this would not be the size of reduction other states are looking to Connecticut to implement. **Because of uncertainty of actions that might need to be taken regarding the Wave 6 issue, the Department has decided to stay status quo on black sea bass measures for now.**

The **tautog** working group created by the ASFMC Management Board is continuing to develop options to incorporate the newly developed and updated regional stock assessments into management actions for the 2018 fishing year. **The Long Island Sound regional assessment concluded that the stock is overfished and that overfishing is occurring.** The NY Bight assessment (NY/NJ) reached the same conclusion for tautog in that area, while tautog assessments to the south suggest sustainable fishing rates and acceptable biomass levels. At the last conference call, the working group members were reluctant to consider a minimum size increase because of important spawning contribution of large females. Instead, curtailing harvest during the protracted summer breeding season and the feasibility of a slot-limit are being analyzed.

ASFMC public hearings concerning **American lobster** and commercial **scup** are scheduled for March. On March 21 and 27, hearings are being held to gather public input on draft Addendum XXV of the American Lobster Fishery Management Plan. The objective of this addendum is to address the continued recruitment failure of lobster in the southern New England stock. Options being considered include changes to the minimum and/or maximum gauge size, closed seasons, trap reductions and v-notching. The Marine Fisheries Program is also hosting an ASFMC public hearing on March 20th to get public input on Addendum XXIX to the Summer Flounder, Scup and Black Sea Bass Fishery Management Plan. The Draft Addendum proposes shortening the length of the commercial scup summer period and extending length of the winter period(s) to better allocate the commercial winter period quota, which has been under-harvested since 2011. The quota allocation for each period is not being altered.





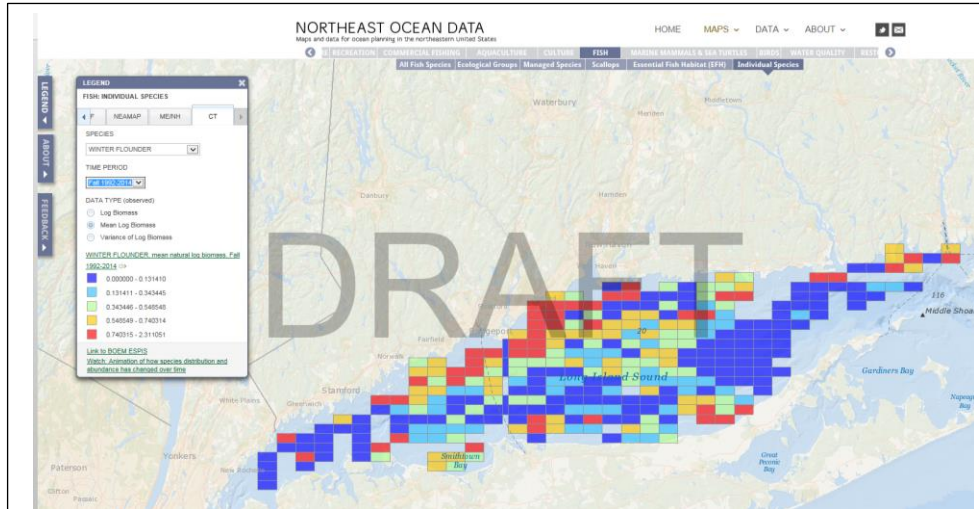
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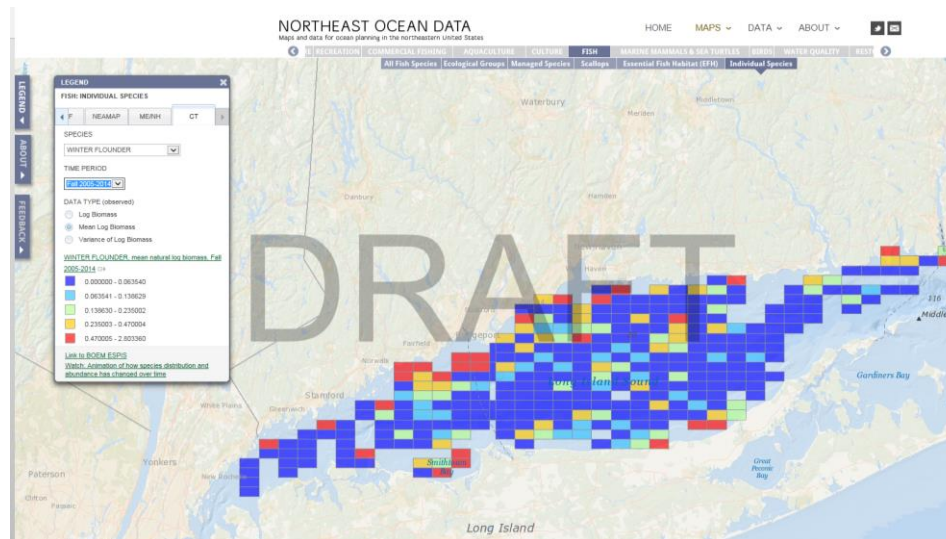


◆ Catch distribution data for 61 fish species and 3 invertebrates from the Long Island Sound Trawl Survey are now incorporated into the Northeast Ocean Data development portal. Final testing is underway and the data should be available for public viewing within the next month or so. The effort to get data

from CT DEEP LIS Trawl Survey available online has been a long-term collaboration between Marine Fisheries staff and staff from the Northeast Regional Planning Body (NERPB). Other survey data on the portal are from the NMFS NEFSC, Mass DMF, Maine/New Hampshire and NEAMAP trawl surveys. The NERPB's Northeast Ocean Data Portal is a website where various data related to ocean planning efforts in the Northeast region are made available to regional planners, federal agencies and the public. Details of the specific variables were provided in the previous quarterly report. The two images to the left are screen shots from the development data portal showing the difference in winter flounder distribution based on catches (mean log biomass per site) in the fall LIS Trawl Survey using a historic time-series (1992-2014, top) and the most recent decade (2005-2014, bottom). Hopefully, data layers available through the NROC portal will also be available for the CT/NY Blue Plan planning effort currently underway.



Winter flounder distribution in the fall CT DEEP LIS Trawl Survey, 1992-2014. Areas of relatively high catch (reds and oranges) are widespread through the central and parts of the western Sound. Areas of low or no catch (medium and dark blue) are mainly limited to the eastern Sound.



Winter flounder distribution in the fall CT DEEP LIS Trawl Survey, 2005-2014. Areas of relatively high catch (reds and oranges) are quite spotty. Areas of low or no catch (medium and dark blue) now extend through most of the Sound.

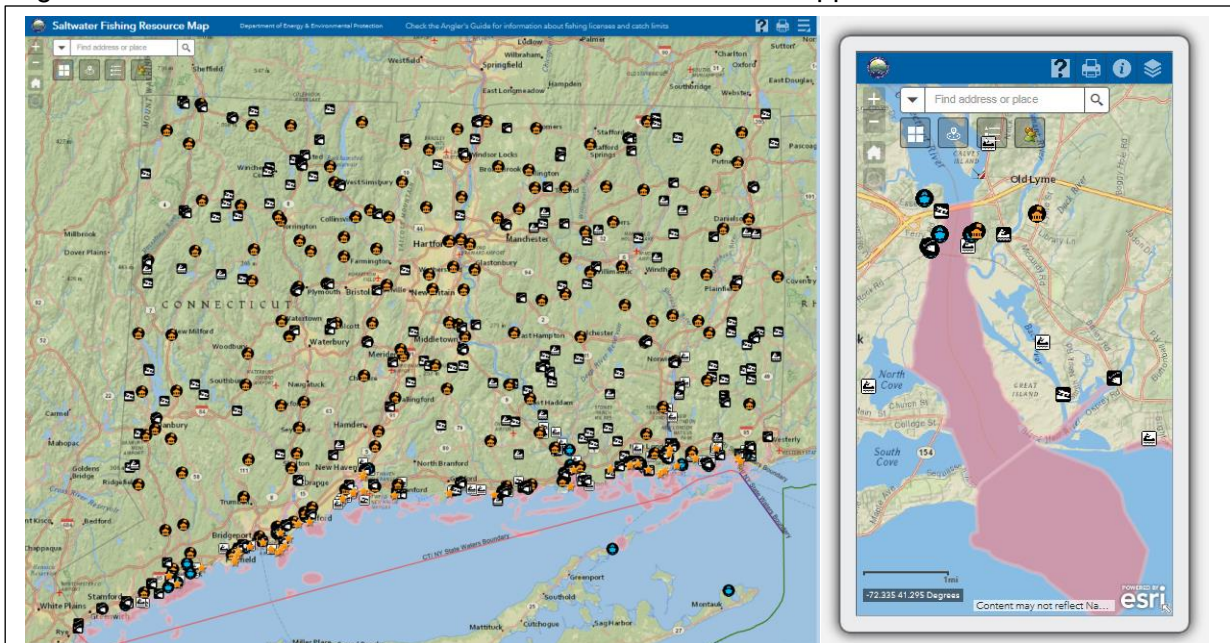


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◆ **New online apps almost ready for release - look for them in the 2017 Anglers Guide due out in late March.** Updates to the interactive Saltwater Fishing Resource Map on the CT DEEP website are about to be launched as mobile friendly apps. Over the course of the 3-4 years since the previous version was created, there have been a number of hardware and software upgrades that now render that version obsolete. The new versions, created through customizing ESRI ArcGIS Online web app templates, will be easier to maintain and should perform better on mobile devices. Once the new apps are live, users will be able to select one of two versions. One version, dubbed *all-in-one*, will be fairly similar to the previous version because all of the various layers of information will be displayed on one screen and therefore can be simultaneously searched. The other version, dubbed *tabbed* or *Storybook*, will have multiple tabs so less information will be displayed on any one screen. The tabbed version was developed specifically with smartphones in mind so that the user would not be visually overwhelmed with too much information on a small screen but could simply swipe back and forth between screens to get all of the relevant information. Screen shots of the new apps are shown below:



Screen shots of the new Saltwater Fishing Resource Map apps staff are developing using ArcGIS Online. “All-in-one” version on left is very similar to the existing version on the CT DEEP website. Tabbed, or “Storybook” version on the right is designed to be more mobile device friendly.



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◆ **Update on new electronic data acquisition system for Long Island Sound Trawl Survey:** As depicted in the image below, brackets to hold the waterproof tablets with keyboards and cradles to hold the electronic measuring boards on the fish sorting table are being fabricated in preparation for the April 2017 sampling cruise. Staff have also been working with the software contractor to put finishing touches on customizations specific to our survey.





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➤ MARINE RECREATIONAL FISHING:

VOLUNTEER ANGLER SURVEY (VAS)

In 2016, a total of **32 anglers participated in the program, making 827 trips for an average of 26 trips each.** 28% (9) of VAS angler's entered their own data through the eLogbook application on the ACCSP website (www.accsp.org) in 2016, a decrease from 22 anglers who did so in 2015, which was the second year of the eLogbook program. Most of the anglers that entered their own data expressed favorable comments toward the program.

The **private boat mode comprised the most trips (54%) recorded, followed by shore based trips (44%).** Of the total, **79% of the fishing trips caught fish.** VAS anglers recorded their catch of 27 species from near shore species to open ocean pelagic species. This included seven principal recreational species currently managed under interstate plans that comprised 81% of their total catch. With the exceptions of several bait species and a few pelagic species the release rate for almost all species was 71% or greater.

VAS participants measured over 94% of their total catch of 12,010 fish, and 97% of the seven principal species they caught (9,752 fish total). These data show a wide range in the release rate of the principal species. For example, 71% of scup caught were released while 83% of summer flounder caught were released. For bluefish, which has no minimum legal size, the release rate was 79%.

MODE	# TRIPS	PERCENT
Private Boat	449	54.3%
Shore (Regular)	273	33.0%
Shore (Enhanced)	89	10.8%
Charter	4	0.5%
Party	12	1.4%
All Modes	827	



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Table 2.2: Total VAS angler catch by species and disposition.
Seven principal recreational species are shown in bold type.

Species	Harvested		Released		Total
	Number	%	Number	%	Number
American Eel	8	89%	1	11%	9
American Shad	3	100%	0		3
Atlantic Cod	5	17%	24	83%	29
Atlantic Herring	15	100%	0		15
Atlantic Menhaden	535	87%	80	13%	615
Black Sea Bass	476	21%	1775	79%	2251
Blue Shark	0		2	100%	2
Bluefin Tuna	1	100%	0		1
Bluefish	234	21%	875	79%	1109
Chub Mackerel	23	100%	0		23
Cunner	0		12	100%	12
Dogfish	0		146	100%	146
Gray Triggerfish	1	100%	0		1
Hickory Shad	72	46%	84	54%	156
Little Tunny	1	6%	16	94%	17
Mako Shark	3	75%	1	25%	4
Scup	792	29%	1916	71%	2708
Sea Robin	7	1%	1068	99%	1075
Skate	3	3%	103	97%	106
Skipjack Tuna	6	38%	10	62%	16
Spot	0		1	100%	1
Striped Bass	71	3%	1990	97%	2061
Summer Flounder	228	17%	1134	83%	1362
Tautog	58	26%	166	74%	224
Weakfish	4	15%	22	85%	26
Winter Flounder	1	3%	36	97%	37
Yellowfin Tuna	1	100%	0		1
Total	2,468	21.6%	8,964	78.4%	12,010



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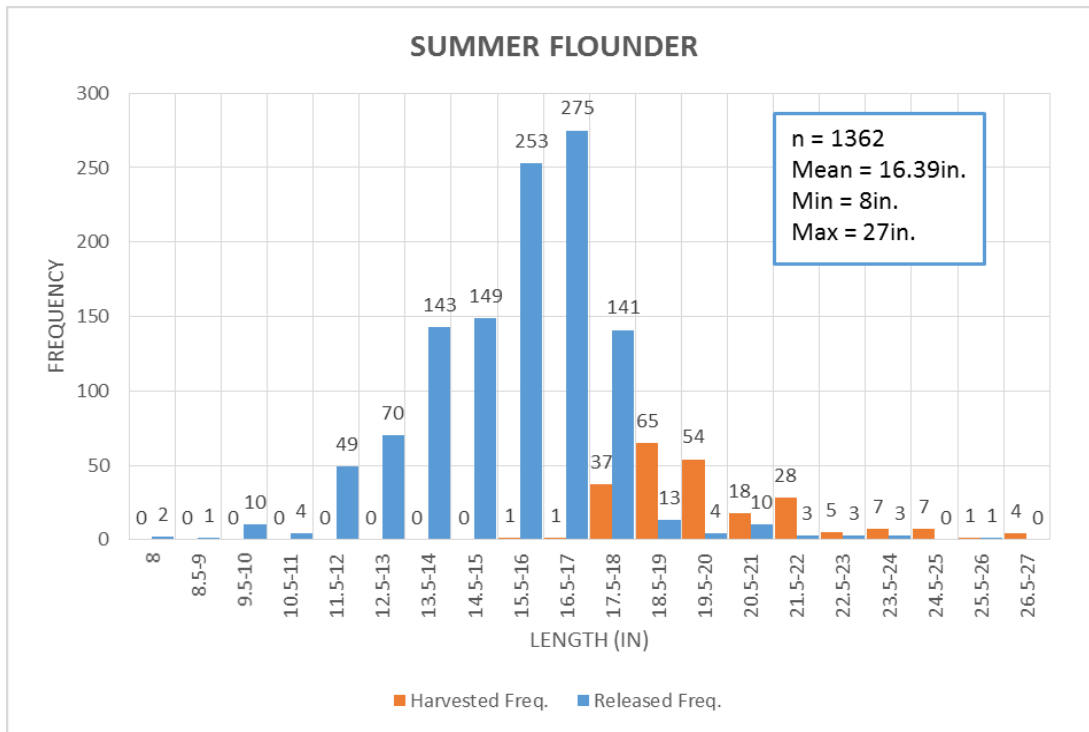
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Table 2.3: Measured catch and disposition of seven principal recreational species.

Species	Harvest		Release		Total Number
	Number	%	Number	%	
Black Sea Bass	476	21.1%	1,775	78.9%	2,251
Bluefish	234	21.1%	875	78.9%	1,109
Scup	792	29.2%	1,916	70.8%	2,708
Striped Bass	71	3.4%	1,990	96.6%	2,061
Summer Flounder	228	16.7%	1,134	83.3%	1,362
Tautog	58	25.9%	166	74.1%	224
Winter Flounder	1	2.7%	36	97.3%	37
Total	1,860	19.1%	7,892	80.9%	9,752

Figure 3.1 Length frequency of Summer Flounder caught by disposition.





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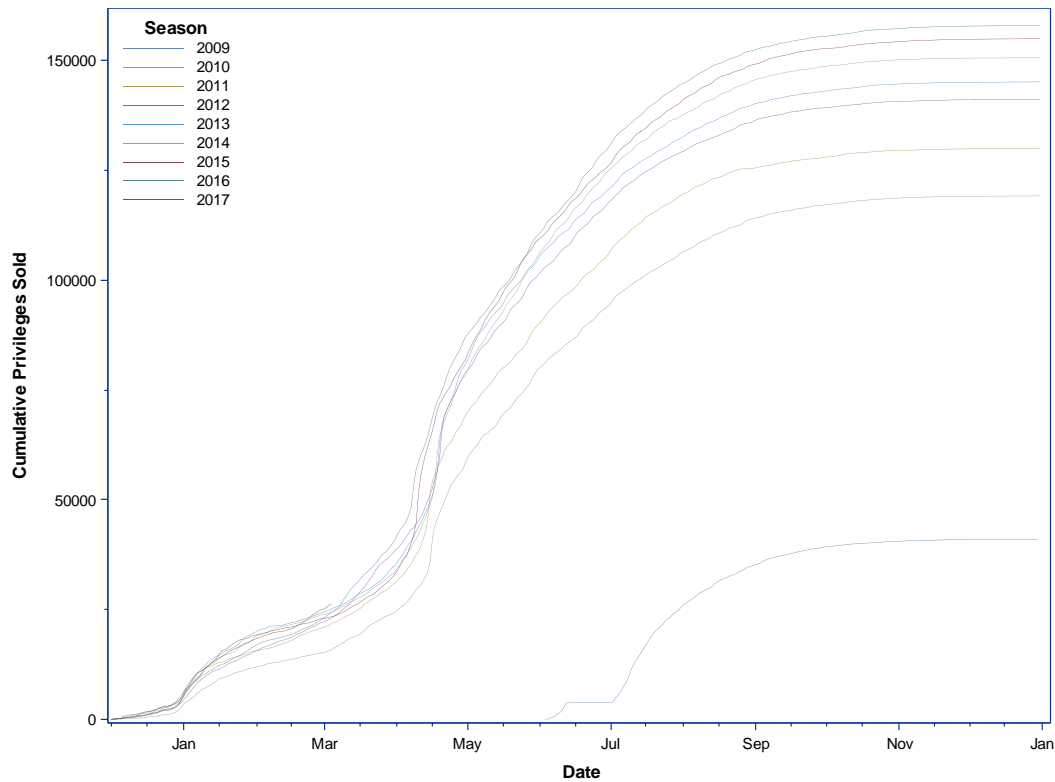
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➤ Marine Recreational Fisheries – Marine Fishing Licenses:

- ◆ Incremental growth in marine fishing license sales continued in 2017.

2017 Marine Licenses issued through MARCH 8, 2017.





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Marine Waters Fishing Licenses, 2009 – 2016. Licenses by Type

Privilege Type	Season							
	2009	2010	2011	2012	2013	2014	2015	2016
10195 - Marine Waters Fishing Lic, Free Annual - Code 9 (Intellect Disabled)	66	267	305	345	337	378	427	445
10196 - Marine Waters Fishing Lic, Free Annual - Code 5 (Blind)	98	91	93	98	94	80	83	82
10197 - Marine Waters Fishing Lic, Free Annual - Type 17 (Handicapped)	151	524	515	538	532	505	511	505
1296 - Marine Waters Fishing Lic	28,901	28,624	20,759	19,733	18,504	18,777	18,301	18,752
1297 - Marine Waters Fishing Lic (Non-Res)	3,101	4,135	3,702	3,364	2,878	2,692	2,870	2,996
1337 - Marine Waters Fishing Lic, Free Annual - Age 65 Plus	8,526	18,327	20,456	24,995	27,244	29,356	31,251	33,016
1345 - Marine Waters Fishing Lic, 1-day	7	346	450	556	604	690	802	733
1346 - All Waters Fishing Lic	28	44,454	55,252	61,143	64,182	66,304	65,988	67,254
1347 - Marine Waters Fishing Lic / Firearms Hunting Lic	3	166	308	391	448	459	448	440
1348 - All Waters Fishing Lic / Firearms Hunting Lic	62	17,625	22,324	22,128	22,392	21,072	17,185	16,043
1349 - All Waters Fishing Lic / Arch Deer / Small Game Lic	3	1,037	951	1,707	1,553	1,663	1,813	1,948
1350 - AW Fish Lic / Fa SS (Fa Hunt; S/R PL Deer; PL Sp Trky)	.	3	.	.	.	.	1,114	1,243
1351 - AW Fish Lic / Archery SS (Arch Deer / Sm Gm; PL Sp Trky)	.	741	631	886	956	1,080	1,001	1,050
1352 - Marine Waters Fishing Lic, 3-day (Non-Res)	64	1,277	1,131	1,285	1,299	1,367	1,377	1,491
1353 - All Waters Fishing Lic (Non-Res)	.	972	1,158	1,390	1,298	1,426	1,519	1,702
1354 - All Waters Fishing Lic / Firearms Hunting Lic (Non-Res)	1	82	122	146	159	137	138	142
1355 - Marine Waters Fishing Lic / Firearms Hunting Lic (Non-Res)	1	19	18	23	30	23	25	21
1475 - AW Fish Lic / Fa SS Lic (Fa Hunt; S/R/Mz PL Deer; PL Sp Trky)	.	470	1,823	2,394	2,609	2,700	2,059	1,938
1476 - AW Fish Lic / Fs SS (Fa Hunt; Mig Duck Stmp; Hip Pmt)	.	.	.	.	.	.	1,288	1,095
1922 - Connecticut Bonus Striped Bass Voucher	.	.	.	.	.	1,903	1,927	2,214
1953 - All Waters Fishing Lic / Firearms Hunting Lic	.	.	.	.	.	.	376	334
1954 - AW Fish Lic / Fa SS (Fa Hunt; S/R PL Deer; PL Sp Trky, 16-17)	.	.	.	.	.	.	49	53
1955 - AW Fish Lic / Fa SS (Fa Hunt; Mig Duck Stmp; Hip Pmt, 16-17)	.	.	.	.	.	.	61	43
1957 - Marine Waters Fishing Lic (16-17)	.	.	.	.	.	.	368	355
1958 - All Waters Fishing Lic (16-17)	.	.	.	.	.	.	2,778	2,784
1959 - Marine Waters Fishing Lic, 1-day (16-17)	.	.	.	.	.	.	20	24
1960 - Marine Waters Fishing Lic / Firearms Hunting Lic (16-17)	.	.	.	.	.	.	9	6
1962 - All Waters Fishing Lic / Arch Deer / Small Game Lic (16-17)	.	.	.	.	.	.	52	9
1964 - AW Fish Lic / Archery SS (Arch Deer / Sm Gm; PL Sp Trky, 16-17)	.	.	.	.	.	.	28	48
1965 - AW Fish Lic / Fa SS Lic (Fa Hunt; S/R/Mz PL Deer; PL Sp Trky, 16-17))	.	.	.	.	.	.	46	39
2023 - Free One-Day Sport Fishing License - 1st	.	.	.	.	.	.	500	578
2024 - Free One-Day Sport Fishing License - 2nd	533	544
Total	41,012	119,160	129,998	141,122	145,119	150,612	154,947	157,927



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➤ NOTICES TO FISHERMEN:

- 3/7/2017 **[Notice of ASMFC Public Hearing on Commercial Scup Management](#)**
The DEEP Marine Fisheries Program is hosting a Public Hearing of the Atlantic States Marine Fisheries Commission to gather input on Draft Addendum XXIX to the Summer Flounder, Scup and Black Sea Bass Plan. (N17-04)
Public Hearing to be held March 20, 2017
- 2/17/2017 **[Notice of ASMFC Public Hearing on American Lobster](#)**
The DEEP Marine Fisheries Program is hosting two Public Hearings of the Atlantic States Marine Fisheries Commission to gather input on Draft Addendum XXV to the American Lobster Management Plan. (N17-02)
Public Hearings to be held March 21 and March 27, 2017
- 2/14/2017 **[Notice of Public Hearing](#)**
The CT DEEP Marine Fisheries Program is holding a Public Meeting to get input on 2017 management options to comply with the joint Mid-Atlantic Fishery Management Council/Atlantic States Marine Fisheries Commission fishery management plans for summer flounder and black sea bass. (N17-03)
Public Hearing to be held February 22, 2017
- 12/28/2016 **[2017 Commercial Fishery Management Plan](#)**
Possession limits for quota managed species for 2017. (N17-01)

➤ PUBLIC OUTREACH:

◆ **2017 CT ANGLER'S GUIDE is expected to be on-shelf March 27th.**

