

RHODE ISLAND  
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

DIVISION OF MARINE FISHERIES



**Sector Management Plan**  
**2021**

## TABLE OF CONTENTS

INTRODUCTION .....	4
RESTRICTED FINFISH .....	6
BLACK SEA BASS .....	6
SCUP .....	7
STRIPED BASS .....	9
SUMMER FLOUNDER.....	10
TAUTOG.....	11
2021 LICENSING RECOMMENDATIONS - <i>RESTRICTED FINFISH ENDORSEMENT</i> .....	12
ATLANTIC HERRING .....	13
BLUEFISH .....	14
COD.....	15
MENHADEN .....	16
MONKFISH .....	18
WINTER FLOUNDER .....	19
SPINY DOGFISH .....	20
SMOOTH DOGFISH.....	21
SKATE .....	21
LONGFIN SQUID .....	22
NORTHERN SHORTFIN (ILLEX) SQUID .....	23
2021 LICENSING RECOMMENDATIONS - NON-RESTRICTED FINFISH ENDORSEMENT ...	23
SHELLFISH .....	24
BAY QUAHOG .....	24
2021 LICENSING RECOMMENDATIONS - BAY QUAHOG ENDORSEMENT.....	25
SOFT-SHELL CLAM.....	25
2021 LICENSING RECOMMENDATIONS - SOFT-SHELL CLAM ENDORSEMENT .....	26
WHELK (Channeled and Knobbed Whelk).....	26
OYSTER.....	27
OTHER SHELLFISH.....	28
2021 LICENSING RECOMMENDATIONS - SHELLFISH OTHER ENDORSEMENT .....	28
CRUSTACEANS.....	29
LOBSTER .....	29
2021 LICENSING RECOMMENDATIONS - LOBSTER ENDORSEMENT.....	30
HORSESHOE CRAB.....	30
JONAH CRAB .....	32
ATLANTIC ROCK CRAB .....	33

OTHER CRUSTACEANS .....	33
2021 LICENSING RECOMMENDATIONS - NON-LOBSTER CRUSTACEAN ENDORSEMENT .....	34
GILL NET ENDORSEMENT.....	34
PURSE SEINE & MID WATER/PAIR TRAWL ENDORSEMENTS.....	34
LITERATURE CITED.....	36
TABLES .....	38
PHOTO CREDITS.....	43
SIGNATURE PAGE .....	44

## INTRODUCTION

During the 2002 legislative session, the Rhode Island General Assembly adopted the Commercial Fisheries Management Act, establishing a new commercial fishing license system and ending the moratorium on the issuance of new commercial fishing licenses that had been in place since 1995. One purpose of the act was to allow for new entrants into commercial fisheries, while still restricting access to those fisheries where warranted to rebuild depleted marine fishery stocks or otherwise manage marine resources sustainably.

To meet the purposes of the act, regulations developed included licensing “endorsements” to restrict access to, or to otherwise manage commercial harvest for a particular marine species, group of species, or by gear type. As implied by name, access to a species or fishery that is included in the *restricted* endorsement category is *limited*; while species or fisheries included in a *non-restricted* endorsement category is *open*. The following fishery endorsements are currently included in regulation and addressed in this plan:

- *Restricted Finfish*
- *Non-Restricted Finfish*
- *Bay quahog*
- *Soft-shell clam*
- *Whelk*
- *Shellfish Other*
- *Lobster*
- *Non-lobster Crustacean*

Finfish species for which access is limited in the marine waters of Rhode Island and are therefore included in the *Restricted Finfish Endorsement* include black sea bass, scup (during the summer sub-period only), striped bass, summer flounder and tautog. All other regulated species of finfish common in RI waters (e.g., winter flounder, monkfish) are included in the *Non-Restricted Finfish Endorsement*, which is available to any resident or non-resident license holder.

Shellfish species for which access is limited include bay quahog, soft-shell clam, and whelk, and are included in the *Bay Quahog, Soft-Shell Clam, and Whelk endorsements* respectively. All other regulated species of shellfish (e.g., blue mussel, oyster) are included in the *Shellfish Other Endorsement*, which is available to any Rhode Island resident license holder.

Species of crustaceans for which access is limited include lobster, which is included in the *Lobster Endorsement*. All other regulated species of crustaceans (e.g., Blue crab, Jonah crab) are included in the *Non-Lobster Crustacean Endorsement* which is available to any Rhode Island resident license holder.

The availability of any new restricted endorsements is determined annually as a ratio of licenses not renewed. These *exit:entry ratios* are a principal mechanism in the Rhode Island commercial licensing system used to manage harvest through license access restrictions. Exit:entry ratios are reviewed annually by the Industry Advisory Committee (IAC) and Rhode Island Marine Fisheries Council (RIMFC, Council) and presented for public comment at a public hearing in accordance with the requirements of the Administrative Procedures Act (R.I. Gen. Law §42-35). Determining the level of fishing effort, the impacts to the resource that a particular license type collectively represents, and thus determining the number of licenses desired in a given fishery as a means to limit such effort, is a primary goal of the licensing program.

Pursuant to [R.I. Gen. Law §20-2.1-9\(5\)](#), this management plan is prepared to address the state of the fishery resources of the state, with focus on those fishery resources with the greatest value to the state and is updated annually prior to any proposed changes to commercial license restrictions on effort and catch. Any amendments made to the commercial licensing regulations must be consistent with this management plan.

The primary goal for quota-managed fisheries is to maintain open seasons with economically viable possession limits while minimizing regulatory discards, avoiding harvest overages, maximizing harvest opportunities, and ensuring equitable access to the fishery. However, due to the multi-species nature of the commercial fishing industry, increased effort can result in shorter seasons and higher discards for many species. Information contained in this plan seeks to aid in understanding if management goals are being realized under existing management and to provide guidance as to the degree of potential new effort that could be sustained in RI's most important fisheries.

This plan includes up-to-date information on stock status, management programs, and fishery performance of commercially important species in the state and provides licensing recommendations based on these parameters for the following year. The plan is provided to the IAC in draft form in August, followed by a public hearing in September, and a RIMFC meeting in October. At their annual meeting in October, the Council offers final recommendations on all restricted endorsements and matters brought to the hearing in September.

# RESTRICTED FINFISH

## BLACK SEA BASS



### STOCK STATUS

The [2019 operational assessment](#) (peer reviewed but not yet published in final form) found that black sea bass is not overfished nor is overfishing occurring. With improved recruitment and declining Fishing mortality (F) rates, Spawning Stock Biomass (SSB) has experienced time series high levels in recent years. SSB in 2018 was estimated at 73.7 million pounds, 2.4 times the SSB

target of 31.1 million pounds, and F was estimated at 0.42, below the  $F_{target}$  of 0.46. Recruitment at age 1 averaged 36 million fish from 1989 to 2018, with recent peaks in 2012 (2011 cohort) at 144.7 million and at 79.4 million in 2016 (2015 cohort). The distribution of black sea bass continues to expand northward into the Gulf of Maine (GOM). Starting in 2020, quotas are set based on projections from this operational assessment. This new assessment will include the newly calibrated Marine Recreational Information Program (MRIP) time series—recalibrated historical recreational harvest has resulted in adjustments to biomass estimates over the time series (NEFSC, 2019b).

### MANAGEMENT PROGRAM

Black sea bass is managed jointly by the Atlantic States Marine Fisheries Commission (ASMFC) and the Mid-Atlantic Fishery Management Council (MAFMC) through the [Summer Flounder, Scup and Black Sea Bass Fishery Management Plan \(FMP\)](#) and its’ subsequent amendments and addenda. The FMP establishes coast-wide quotas for each state annually; with Rhode Island’s share of the quota currently at 11%. Minimum size, seasons, and possession limits are then established by each state annually, with review by the ASMFC/MAFMC to assure compliance with the FMP. The specifications for 2019 are presented in the table below. These recommendations are consistent with the advice of the RIMFC. A Multi-Purpose License or *Restricted Finfish Endorsement* is required to harvest black sea bass in RI waters.

### 2020 RI COMMERCIAL REGULATIONS

Min. Size	Season	Allocation (%)	Possession Limit (lbs/vsl)
11”	1/1 – 4/30	25%	500/week
	5/1 – 6/30	25%	50/day
	7/1 – 7/31	19.5%	50/day
	8/1 – 9/14	CLOSED	
	9/15 – 10/31	19.5%	50/day
	11/1 – 12/31	11%	50/day

Currently, only the first sub-period January 1 – April 30 is managed by aggregate, or weekly, possession limits; all other sub-periods are managed by a daily possession limit. As a means to reduce regulatory discards and provide greater flexibility to fishing practices, the Division is currently working to determine if aggregate possession limits are feasible for other sub-periods through an aggregate landings pilot program.

## FISHERY PERFORMANCE

In 2019, 525 commercial fishers (Table 2) landed 399,085 pounds of black sea bass in RI valued (x-vessel) at \$1,508,814 (Table 1). In 2020, the possession limit in the first sub-period was increased twice, on February 2 from 500 to 700 lbs/week, and then on March 1 to 850 lbs/week. The possession limit in the second sub-period was increased from 50 lbs/day to 100 lbs/day from May 31 to June 25. To date, no commercial fishery closures have been implemented in 2020.

## DMF RECOMMENDATIONS FOR 2021

The coastwide quota for 2021 is anticipated to be 5.58 million lbs, equal to the 2019 quota and a substantial increase from the 2019 coastwide quota of 3.14 million pounds (attributed to the readjusted biomass levels produced by the recalibration of MRIP harvest estimates). The current management program is performing reasonably well given the low quota and high availability of this species in our area, with closures minimized to the greatest extent practicable given the current quota and level of effort. Based on fishery performance to date in 2020, the Division recommends maintaining the level of effort at or below current levels and maintaining black sea bass as a restricted species. Sub-period quotas have been fully harvested using in-season possession limit adjustments. Because the quotas have changed so drastically for 2020, there is some uncertainty in these management recommendations for 2021, and fishery performance for the remainder of 2020 should be assessed before finalizing these recommendations for 2021.

## SCUP



## STOCK STATUS

The 2019 operational stock assessment found that scup is not overfished nor is overfishing occurring. SSB in 2018 was estimated at 411.33 million pounds, about two times higher than the SSB<sub>target</sub> of 207.28 million pounds, and F was estimated at 0.158, below the F<sub>target</sub> of 0.215. Recruitment at age 0 averaged 134 million fish from 1984 to 2018, with peaks in 1999 at 231 million, 2006 at 264 million, and at 262

million in 2007. The 2015 year class estimate was large at 326 million fish while the 2016-2018 estimates have been below average at 83-112 million fish (NEFSC, 2019b).

## MANAGEMENT PROGRAM

Scup is managed jointly by the ASMFC and MAFMC through the [Summer Flounder, Scup and Black Sea Bass FMP](#) and its subsequent amendments and addenda. The FMP establishes coast-wide quotas for each state annually, with RI's share currently at 56.19%.

During the two federal sub-periods, the quota is available coast-wide and is managed through daily possession limits. Scup is classified as a non-restricted species in RI during these two federal sub-periods. In the summer however, scup is classified as a restricted species for the purpose of managing catch rates when landings by state waters fishermen increases. RI further manages the summer sub-period by allocating the state quota into a General Category (GC) (i.e., gear types other than floating fish traps) and Floating Fish Trap (FFT) sector, at 40% and 60% respectively, with allocations to these two sectors based on historical landings. Another key aspect of the management program includes DEM’s authority to transfer quota between the FFT and GC sectors, which provides for the full harvest of the RI quota each year. A Multi-Purpose License or *Restricted Finfish Endorsement* (summer only, *Non-Restricted Finfish Endorsement* in winter) is required to harvest scup in RI waters.

### 2020 RI COMMERCIAL GENERAL CATEGORY REGULATIONS

Min. size	Season	Allocation	Starting Poss. limit
9”	Winter I (federal): (1/1 – 4/30)	Coastwide	50,000 lbs/vsl/day
	Summer: (5/1 – 9/30)	40% of sub-period quota	10,000 lbs/vsl/week
	Winter II (federal): (10/1 – 12/31)	Coastwide	2,000/18,000 lbs/vsl/day*

\* Winter II possession limit begins at 2,000 lbs/vsl/day; change to 18,000/day if Winter I roll over available

### 2020 RI COMMERCIAL FLOATING FISH TRAP REGULATIONS

Min. size	Season	Allocation	Starting Poss. limit
9”	Winter I (federal): (1/1 – 4/30)	Coastwide	50,000 lbs/vsl/day
	Summer: (5/1 – 9/30)	60% of sub-period quota	Unlimited
	Winter II (federal): (10/1 – 12/31)	Coastwide	2,000/18,000 lbs/vsl/day*

\* Winter II possession limit begins at 2,000 lbs/vsl/day; change to 18,000/day if Winter I roll over available

### FISHERY PERFORMANCE

In 2019, 433 commercial fishers (Table 2) landed 4,583,917 pounds of scup in RI valued (x-vessel) at \$2,570,848 (Table 1). To date in 2020, no early closures have been needed, and no possession limit modifications have been implemented (Table 3).

### DMF RECOMMENDATIONS FOR 2021

The coastwide quota for 2020 has been set to 18.06 million pounds, a slight decrease from 2020, which was set at 22.23 million lbs. Given the anticipated quota, good stock status, and performance to date in 2020, the Division recommends allowing for small increases in effort during the summer sub-period. Additionally, the Division recommends maintaining scup as a restricted species in the summer sub-period and as a non-restricted species only during the federal sub-periods at this time.



## STRIPED BASS



### STOCK STATUS

A [benchmark stock assessment](#) for striped bass was completed and peer reviewed in November 2018 and subsequently adopted for management use by the ASMFC management board in May

2019. The assessment findings indicate that the striped bass stock is overfished and experiencing overfishing relative to the updated Biological Reference Points (BRPs). SSB in 2017 was estimated to be 151 million pounds, below both the  $SSB_{target}$  and  $SSB_{threshold}$ , 252 million pounds and 202 million pounds respectively. SSB has been declining since 2003 and has been below the threshold since 2010.  $F$  in 2017 was estimated to be 0.31, above both  $F_{target}$  and  $F_{threshold}$ , 0.20 and 0.24 respectively.  $F$  has been at or above the threshold in 13 of the last 15 years (NEFSC, 2019a).

### MANAGEMENT PROGRAM

Striped bass is managed by ASMFC through [Amendment 6](#) to the Interstate FMP for striped bass and its subsequent addenda I-VI, with [Addendum VI](#) being the most recent management document implemented in 2020. The recreational fishery is managed through size and bag limits while the commercial fishery is managed with size limits and state-specific quota allocations. States can implement alternative management measures that are deemed to be equivalent to the preferred measures in the FMP through a Conservation Equivalency (CE) process. In RI, the recreational fishery has a 1 fish bag limit, and as of 2020, a slot limit of 28" - <35". The commercial fishery is split between the General Category (GC) and Floating Fish Trap (FFT) sectors. The GC has a 5 fish possession limit, a 34" minimum size, and gets 61% of the RI allocation. The GC quota is divided between two sub-periods, designed to allocate harvest between inshore bay and offshore Block Island fishing. Days closed to fishing as of 2020 include Friday, Saturday, and Sunday as a means to extend the season as long as possible. The FFT sector operates under an ASMFC approved CE proposal that allows them to have a lower minimum size limit of 26" in exchange for a reduced quota. The FFT fishery opens annually on April 1 at an unlimited possession limit and continues until 70% of the sectors allocation is projected to be harvested. At that time a reduced possession limit of 500 pounds/fish trap licensee/day goes into effect until the FFT allocation is exhausted. If it is projected that the FFT sector will not be able to fully harvest their allocation, the Division may transfer a portion to the GC fishery. A Multi-Purpose License or *Restricted Finfish Endorsement* is required to harvest Striped bass in RI waters and the harvest of striped bass in federal waters (EEZ) is prohibited.

### 2020 RI COMMERCIAL GENERAL CATEGORY REGULATIONS

Min. Size	Season	Allocation		Possession Limit
34"	5/20 – 6/30	61%	60%	5 fish/vessel/day CLOSED Fri., Sat., Sun.
	7/1 – 12/31		40%	

## 2020 RI COMMERCIAL FLOATING FISH TRAP REGULATIONS

Min. Size	Season	Allocation	Possession Limit
26"	4/1 – 12/31	39%	Unlimited until 70% of quota reached, then 500 lbs/licensee/day

### FISHERY PERFORMANCE

In 2019, 268 commercial fishers (Table 2) landed 144,227 pounds of striped bass in RI valued (x-vessel) at \$653,225 (Table 1). In 2020, the first sub-period of the GC sector did not experience an early closure and closed at the end of the sub-period, with an overage of 12,982 lbs (Table 3). The second sub-period began immediately on July 1 and closed prior to the end of the sub-period on July 9 with an overage of 5,083 lbs. As of the writing of this report, 44,932 lbs remain in the FFT quota.

### DMF RECOMMENDATIONS FOR 2021

As a result of the findings of the 2018 striped bass benchmark stock assessments overfishing and overfished status, ASMFC implemented Addendum VI to Amendment 6 to the Interstate FMP for striped bass in 2020 to reduce F to a level at or below the target in one year. The 2021 commercial quota for striped bass is expected to be 148,889 pounds as mandated by Addendum VI, minus any overages that may occur in 2020. The ASMFC management board initiated Amendment 7 in August 2020 to address a host of other issues specified within the striped bass FMP. As this action has just recently taken place, and therefore no management changes are expected for 2021, the Division recommends maintaining effort at or below current levels and maintaining striped bass as a restricted species.

## SUMMER FLOUNDER



### STOCK STATUS

The [2018 benchmark stock assessment](#) found that summer flounder is not overfished nor is overfishing occurring. With improved recruitment and declining fishing mortality rates since the late 1980s, SSB steadily increased, peaking in the early 2000s. SSB in 2017 was estimated at 98 million pounds, higher than the SSB<sub>threshold</sub> of 63 million pounds, and F was estimated at 0.334, lower than the F<sub>threshold</sub> of 0.448. Recruitment at age 0 was estimated to be below the

time series average of 53 million fish, at 42 million fish in 2017 (NEFSC, 2019a).

### MANAGEMENT PROGRAM

Summer flounder is managed jointly by the ASMFC and MAFMC through the [Summer Flounder, Scup and Black Sea Bass FMP](#) and its subsequent amendments and addenda. In RI, seasons are divided into three seasonal sub-periods. In 2019 it was deemed that closed days were no longer necessary due to a substantial quota increase and the fishery was restored to 7 days per week. Aggregate possession limits are currently only available to permit holders during the first sub-period. A Multi-Purpose License or *Restricted Finfish Endorsement* is required by license holders to harvest summer flounder in RI waters.

## 2020 RI COMMERCIAL REGULATIONS

Min. size	Season	Allocation	Starting Poss. Limit (lbs/vsl/day)
14"	1/1 – 4/30 (Winter)	54%	100 (2,000 Aggregate-bi-week)
	5/1 – 9/15 (Summer)	35%	100
	9/16 – 12/31 (Fall)	11%	100

## FISHERY PERFORMANCE

In 2019, 481 commercial fishers (Table 2) landed 1,662,133 pounds of summer flounder in RI valued (x-vessel) at \$5,621,656 (Table 1). In 2020, the commercial season opened on January 5 with an aggregate program possession limit of 1,000 lbs/bi-week. The aggregate program possession limit was increased a few times during the Winter I period, to 2,000 lbs/bi-week on January 19 and to 2,500 lbs/bi-week on March 1. From April 3 to April 30, a month-long limit was implemented at 7,000 lbs/vessel for the period, which was subsequently increased to 8,500 lbs on April 24. For the summer period, the possession limit was set to 1,000 lbs/vsl/day to compensate for a Winter I underage which occurred due to effects of the healthcare crisis; the non-aggregate vessel possession limit was increased once in the Winter sub-period to 200 lbs/day. The possession limit was reduced to 100 lbs/vsl/day on May 18.

## DMF RECOMMENDATIONS FOR 2021

The coastwide quota for 2021 is estimated to be 11.53 million lbs, the same as 2019 and 2020. Due to the current quota and current level of effort, the Division recommends maintaining effort at or below current levels and maintaining as a restricted species.

## TAUTOG



## STOCK STATUS

The [2016 stock assessment update](#), analyzes the stock in 4 regions (Massachusetts/Rhode Island - MARI, Long Island Sound, New Jersey/New York Bight, and Delaware/Maryland/Virginia); the updated assessment finds that the MARI region is not overfished nor is overfishing occurring. SSB has been fairly

steady over the past several years, and is estimated at 2,196 mt, above the threshold of 2,004 mt. F is estimated at 0.23, below the target of 0.28 (ASMFC, 2016).

## MANAGEMENT PROGRAM

Tautog is managed regionally by the ASMFC through [Amendment 1](#) to the [Interstate FMP for Tautog](#). Although not specifically required by the FMP, RI has an established commercial quota, which in part achieves the F targets required by the FMP. The commercial quota has remained stable for the past several years at 51,348 pounds. Prior to 2019, the quota was split between 3 seasons (spring, summer and fall), however, in 2019 the summer sub-period was been removed. The summer sub-period has been

reinstated for 2020 at 15% of the total quota. Beginning in 2020, per Amendment 1, a commercial tagging program has been instituted in RI. All commercial tautog must be tagged by the fisherman prior to offload for sale in RI. Multi-Purpose License or *Restricted Finfish Endorsement* is required by license holders to harvest Tautog in RI waters.

2020 RI COMMERCIAL REGULATIONS

Min. Size	Season	Allocation	Possession Limit
16"	1/1 – 3/31		Closed
	4/1 – 5/31	42.5%	10 fish/day
	6/1 – 7/31		Closed
	8/1 - 9/15	15%	10 fish/day
	9/16 - 10/14		Closed
	10/15 - 12/31	42.5%	10 fish/day

FISHERY PERFORMANCE

In 2019, 250 commercial fishers (Table 2) landed 46,562 pounds of tautog in RI valued (x-vessel) at \$168,046 (Table 1). To date in 2020 there have been no early seasonal closures.

DMF RECOMMENDATIONS FOR 2021

The quota for 2021 is anticipated to be 51,348 pounds, minus any overages that may occur in 2020. Due to uncertainty in stock status pending a stock assessment update with the newly calibrated MRIP data and difficulty with maintaining open seasons, the Division recommends maintaining effort at or below current levels and maintaining as a restricted species.

**2021 LICENSING RECOMMENDATIONS - RESTRICTED FINFISH ENDORSEMENT**

DMF

Referring to Table 4, the number of licenses eligible to harvest restricted finfish has remained relatively stable in the last three years, which indicates that this ratio is maintaining a consistent number of licenses and participants in the fishery. More importantly however is that the new licenses that replaced the licenses not renewed has not led to an appreciable increase in effort, evidenced by the number of participants landing restricted species. Each of the restricted species had about the same or fewer participants in 2019 than 2018 and none have fluctuated more than 5% since 2014. (Table 2). **The Division therefore recommends maintaining the current 1:1 exit:entry ratio and also maintaining the species currently included in the Restricted Finfish category.**

In 2020, 9 licenses eligible to harvest restricted finfish were not renewed, (8 MPURP, 1 PEL w/ RFIN) which would **result in the availability of 9 new PEL restricted finfish endorsements in 2021.**

RIMFC

[A recommendation will be made at their meeting on November 2, 2020.](#)

## NON-RESTRICTED FINFISH

### ATLANTIC HERRING



#### [STOCK STATUS](#)

The [2018 Atlantic herring benchmark stock assessment](#), peer reviewed at the 65<sup>th</sup> [Northeast Regional Stock Assessment Review Committee \(SARC\)](#), indicates that Atlantic herring are not overfished nor is overfishing occurring; however, recent estimates of Atlantic herring recruitment have been below average, leading to in-season

ACL adjustments in 2018 and 2019. SSB in 2017 was estimated at 141,473 mt, below the SSB<sub>target</sub> (SSB<sub>MSY proxy</sub>) of 189,000 mt (416 million pounds) and above the SSB<sub>threshold</sub> (1/2 SSB<sub>MSY proxy</sub>) of 94,500 mt (208 million pounds). In 2017, F was estimated at 0.16, below the F<sub>threshold</sub> of 0.51 (NEFSC, 2018).

#### [MANAGEMENT PROGRAM](#)

Atlantic herring is managed jointly by the ASMFC, NOAA Fisheries and NEFMC. At ASMFC, Atlantic herring are managed through [Amendment 3 to the Interstate FMP for Atlantic Herring](#) and subsequent addenda I and II. Annual specifications are calculated and regional ACLs (quotas) are broken out into fishing areas. Area 2 encompasses Southern New England (SNE) waters including RI state waters. The 2020 Atlantic herring quota for Area 2 was set to 3,217 metric tons. River herring bycatch is a concern within the Atlantic herring fishery and also has regional ACLs (catch caps) that are set by fishing area and gear type. When the catch cap for river herring is reached in any given area, the Atlantic herring fishery is closed until the next fishing year. The 2019 Area 2 river herring catch cap was set at 251.9 mt. A Multi-Purpose License or *Non-Restricted Finfish Endorsement* is required to harvest Atlantic herring in RI waters.

In RI, any vessel is eligible to participate in the state waters Atlantic herring fishery, however a permit is required to possess greater than 2,000 pounds. This permit has been required since 2013 as a means to address issues arising from prohibited species interactions, mainly river herring, and gear conflicts. Fisheries violations may result in a vessel's state water Atlantic herring permit being revoked.

#### [FISHERY PERFORMANCE](#)

In 2019, 25 commercial fishers (Table 2) landed 1,178,240 pounds of Atlantic herring in RI valued (x-vessel) at \$426,524 (Table 1). A state quota has not been established.

#### [DMF RECOMMENDATIONS FOR 2021](#)

It is recommended that the current permitting program be reviewed for effectiveness and continue to match federal landing limits in state waters. Maintain as a non-restricted species. A management track

assessment is in progress for Atlantic herring in 2020; results of this assessment may have implications for management recommendations in 2021.

## BLUEFISH



### STOCK STATUS

The [2019 Operational Stock Assessment](#) for Bluefish is the first bluefish assessment to incorporate the newly calibrated MRIP estimates that became available in 2018. The assessment indicates that the stock is overfished but not currently experiencing overfishing. SSB in 2018 was estimated to be 201 million pounds, which is less than the

SSB<sub>threshold</sub> (219 million pounds). F in 2018 was estimated to be 0.146, below the F<sub>threshold</sub> (F<sub>msy</sub> proxy = F<sub>35%SPR</sub> = 0.183) (NEFSC 2019b).

### MANAGEMENT PROGRAM

Bluefish is managed jointly by the ASMFC and MAFMC through the [FMP for Bluefish](#) and its subsequent amendment and addendum, which sets commercial state-by-state quota allocations; Rhode Island receives 6.8%. Annual commercial coastwide quotas and recreational measures are set jointly by the ASMFC and MAFMC through their specification process. As a result of the 2019 operational assessment, the coastwide commercial quota and Recreational Harvest Limit (RHL) for bluefish were both reduced for 2020 compared to 2019. In an effort to avoid exceeding the reduced RHL in 2020, the ASMFC and MAFMC adopted a reduced recreational possession limit for 2020 of 5 fish per person per day for the for-hire sector and 3 fish per person per day for the remainder of recreational fishers. To constrain commercial harvest, and prevent any commercial quota overage, RI has adopted weekly aggregate possession limits to allow commercial fishermen to maximize their harvest when they encounter bluefish in large numbers, while minimizing operational costs, and still allowing for up-to-date quota tracking. Additionally, RI also adopted an increased minimum size of 18” and a reduced aggregate possession limit in the summer of 6,000 pounds per vessel per week in 2020. A Multi-Purpose License or *Non-Restricted Finfish Endorsement* is required to harvest bluefish in RI waters.

### 2020 RI COMMERCIAL REGULATIONS

Min. Size	Season	Possession Limit (lbs/vsl)
18”	1/1 – 4/30	1000/bi-week
	5/1 – 11/15	6000/week
	11/16 – 12/31	500/week

### FISHERY PERFORMANCE

In 2019, 333 commercial fishers (Table 2) landed 415,809 pounds of bluefish in RI valued (x-vessel) at \$388,778 (Table 1). In 2020, the first sub-period remained open for its entirety with no possession limit

decreases imposed, with a harvest overage of 1,847 pounds, which carried over into the second sub-period. The second sub-period has ~87,826 pounds remaining as of the writing of this report.

### DMF RECOMMENDATIONS FOR 2021

At this point in time the 2021 RI allocation is estimated to be the same as 2020, 188,366 lbs. The ASMFC and MAFMC are currently going their annual specification process for 2021 and therefore this quota is subject to change. As it has been projected that the recreational fishery is likely to over-harvest the RHL, no recreational to commercial sector transfers will be possible for 2021. Given a similar quota and the current level of effort, the Division recommends maintaining effort at current levels and maintaining bluefish as a non-restricted species.

However, RI has required frequent commercial transfers from Atlantic states in past years. RI has received transfers ranging from 100,000 lbs. to 180,000 lbs. between 2014 and 2017. The Division will continue to monitor the situation and may consider adding bluefish to the restricted category in the future if transfers continue to occur frequently.

## COD



### STOCK STATUS

RI State waters are considered part of the George's Bank (GB) cod stock. An updated [operational assessment](#) for the GB Atlantic Cod stock was completed in 2017. This was a data-limited assessment using the PlanBsmooth approach that updated commercial fishery catch data through 2016 and updated research

survey indices of abundance. Based on this assessment, stock status cannot be quantitatively determined due to a lack of biological reference points, however it is qualitatively assessed as overfished. Overfishing status is unknown. Projections cannot be computed using the PlanBsmooth assessment approach, but instead this approach applies an estimate of recent change in the smoothed survey biomass (rate of change is estimated to be 1.517 in 2017) to the average of the recent three years of catch to produce catch advice (thus influenced by uncertainty in survey estimates). The smoothed survey biomass is increasing, but without a biomass reference point it is not known if rebuilding is on schedule (NEFSC, 2017a).

### MANAGEMENT PROGRAM

Atlantic cod is managed on a federal fishing year (May 1 - April 30) through the NEFMC [Northeast Multispecies FMP](#). Effective July 18, 2019, the 2020 ACL was set at 4,810,487 pounds under Framework 58, an increase of 25.3% from FY 2019. Under Framework 58, the minimum size was lowered to 19" for the commercial fishery and 21" for the recreational and party/charter fisheries. In an effort to complement federal FMPs, RI has adopted a minimum size limit and daily possession limit consistent with federal regulations, and state quota set at 1% of the GB ACL (equal to 48,104 pounds for 2020). A Multi-Purpose License or *Non-Restricted Finfish Endorsement* is required to harvest Atlantic cod in RI waters.

## 2020 RI COMMERCIAL REGULATIONS

Min. Size	Season	Possession Limit (lbs/vsl/day)
19"	5/1 – 4/30	1,000

## FISHERY PERFORMANCE

In 2019, 84 commercial fishers (Table 2) landed 16,539 pounds of Atlantic cod in RI valued (x-vessel) at \$35,972 (Table 1). These landings include fish caught in state waters, as well as fish caught in federal waters. State-water landings for RI during federal fishing year 2019 totaled approximately 4,782 pounds, or 12.5% of the RI state-water quota (38,382 lbs). The state quota for cod has not been harvested since its inception in 2009.

Cod abundance in state waters is ephemeral and potential landings for a given year cannot be accurately projected. This fishery still appears to be resource limited and given the increase in the ACL for 2020, it is unlikely that the RI state quota will be fully harvested.

## DMF RECOMMENDATIONS FOR 2021

Framework 59, that will set the 2021 ACL has not yet been passed. The Division recommends that effort be maintained at current levels and that this species be maintained as a non-restricted species.

## MENHADEN



### STOCK STATUS

In February of 2020, the ASMFC management board adopted both the single-species and Ecological Reference Point (ERP) benchmark stock assessments for management use. According to the single-species, or traditional stock assessment, the stock is not overfished nor is overfishing occurring relative to the current single-species reference points. The current BRPs use F and Fecundity (FEC, number of mature ova) to determine stock status. F in 2017 was estimated to be 0.11, below both the threshold and target, 0.6 and 0.22 respectively. The ERP assessment did find that the current F threshold and target levels may be too high and should actually be lower to properly account for the importance of menhaden as forage for other species. Fecundity in 2017 was found to be above both the threshold and target (SEDAR, 2020).

### MANAGEMENT PROGRAM

Atlantic menhaden are managed by the ASMFC through [Amendment 3](#) to the [Interstate FMP for Atlantic Menhaden](#). The amendment addresses a multitude of commercial management measures, including allocation, quota transfers, quota rollovers, incidental catch, and the Episodic Events (EE) Set Aside Program. The ASMFC's Atlantic Menhaden Management Board sets an annual Total Allowable Catch (TAC) for menhaden that is allocated to the Atlantic coast jurisdictions, with each jurisdiction getting a 0.5% minimum quota allocation, with the remainder of the TAC being distributed to the states



based on landings history occurring from 2009-2011. A TAC set-aside of 1% is used each year by states in the New England region (New York to Maine) for EE, or periods of time when large amounts of biomass are present (ASMFC, 2017). RI has participated in the EE Set-Aside Program, which has allowed RI state waters to re-open to the landing of menhaden until the set-aside quota was harvested or the program ended. The RI menhaden allocation is 0.52% of the overall TAC. Upon harvest of the RI quota, the landing of menhaden in RI is prohibited, except for non-directed fisheries which have a bycatch allowance of 6,000 pounds/vessel/day, or 12,000 pounds/vessel/day if two licensed fishermen are on board the vessel. A Multi-Purpose License or *Non-Restricted Finfish Endorsement* is required to harvest Menhaden in RI waters.

In Rhode Island, Narragansett Bay in its entirety is designated a [Menhaden Management Area](#) through RI statute, which provides the Division with the ability to manage menhaden through additional [management measures](#) including:

- Areas permanently closed to purse seining (i.e., Providence River, Greenwich Bay);
- A daily possession limit of 120,000 pounds/vessel;
- Net size certification;
- Vessel capacity restrictions;
- Call-in requirements;
- A threshold amount of 2,000,000 lbs of fish that must be present in the management area before opening the commercial bait fishery;
- An overall cap on the amount of fish that can be harvested (i.e., 50% of the standing stock in the Bay over the threshold amount);
- A threshold amount of fish that must be present for the commercial bait fishery to remain open (i.e., 1.5 million pounds);
- A Fall opening of the fishery (subject to quota or EE availability) in the southern portion of the management area, regardless of biomass levels, with a daily possession limit of 25,000 lbs/vessel.

Biomass levels in the Management Area are monitored on a weekly or bi-weekly basis through a contracted spotter pilot who provides school counts and an estimate of biomass in pounds of fish. A depletion model for open systems (Gibson 2007) uses these spotter pilot estimates, commercial bait landings, and biological information to provide an overall estimate of biomass present, which is then used to open and close the commercial bait fishery in the management area.

## [FISHERY PERFORMANCE](#)

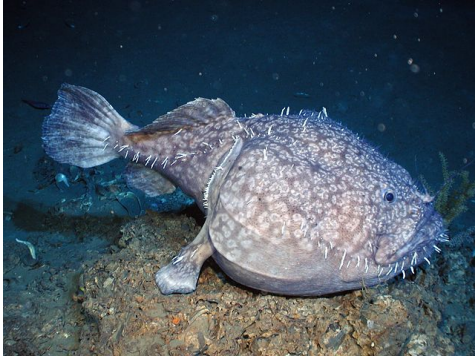
In 2019, 5 commercial fishers (Table 2) landed 50,449 pounds of Atlantic menhaden in RI valued (x-vessel) at \$8,058 (Table 1). To date in 2020, 61,453 pounds have been landed, with 1,949,946 pounds remaining in the quota. A total of 400,000 pounds was transferred to another ASMFC partner who was in need of menhaden quota. The menhaden management area was opened on June 25 when biomass was estimated to be above the two million pound threshold. The management area subsequently closed on July 13 when biomass dropped to a level below the 1.5 million pound trigger. As of the writing of this report the management area has remained closed.

## [DMF RECOMMENDATIONS FOR 2021](#)

The ASMFC management board is scheduled to discuss setting of the 2021 specifications at their annual meeting in October 2020. At this time the TAC for Atlantic menhaden for 2021 has not been set by the

ASMFC and is assumed to be status quo. RI’s initial commercial menhaden quota for 2021 under status quo would be 2,440,542 lbs, minus any overages that occur; therefore, the Division recommends maintaining effort at or below current levels and maintaining menhaden as a non-restricted species.

## MONKFISH



### STOCK STATUS

The 2019 monkfish operational assessment (NEFSC, 2019b) used an index-based method that calculates the proportional rate of change in smoothed NEFSC survey indices over three most recent years (2016-2018). This is the same approach applied in the 2016 operational assessment (Richards, 2016), which was applied after the population model (SCALE) used in previous assessments was invalidated due to uncertainty in the ageing methodology used to estimate monkfish growth. As a result,

Biological reference points specified in the management plan are no longer relevant. Based on trends in survey results, monkfish stock status has remained steady in the southern management area (SMA) in the past three years (range of change 0.96 – 1.04 = no change), likely due primarily to the 2015 recruitment event. Biomass in the SMA increased after the 2015 recruitment event but was lower in 2018 (fall 2017 data missing), as abundance of the 2015 year class declined. Recruitment has returned to average levels.

### MANAGEMENT PROGRAM

Monkfish is jointly managed by the NEFMC and MAFMC through the Monkfish FMP on a federal fishing year (May 1 - April 30), with the NEFMC having the administrative lead. Monkfish is managed as two stocks, with RI waters considered part of the SMA stock. The SMA monkfish stock is regulated by the NEFMC through minimum size limits, gear restrictions, and Days at Sea (DAS) restrictions. A Multi-Purpose License or *Non-Restricted Finfish Endorsement* is required to harvest monkfish in RI waters.

In an effort to complement the FMP, RI has adopted a minimum size, weekly possession limit, and state quota on monkfish harvested in state waters. The May 1, 2019 – April 30, 2020 fishing year RI state-water quota (389,027 lbs) is set at 3% of the SMA Total Allowable Landings (TAL) with a possession limit reduction to 50 lbs/vessel/day tail weight when state-water landings reach 2% (259,351 lbs) of the SMA TAL.

### 2019 RI COMMERCIAL REGULATIONS:

Min. Size	Season	Possession Limit (lbs/vsl/week)
17” whole/11” tail	5/1 – 4/30	14,259 whole/4,900 tail

### FISHERY PERFORMANCE

In 2019 158 commercial fishers (Table 2) landed 3,159,048 pounds of monkfish in RI valued (x-vessel) at \$2,512,211 (Table 1).

## DMF RECOMMENDATIONS FOR 2021

Allowing for a modest increase in effort would appear to still provide for the directed fishery to remain open for the entire fishing year. Maintain as a non-restricted species.

### WINTER FLOUNDER



#### STOCK STATUS

The [2017 SNE/MA operational stock assessment](#) for winter flounder indicates that the stock is overfished but overfishing is not occurring. SSB in 2016 was estimated to be 4,360 mt, which is 18% of the biomass target and 36% of the biomass threshold. F in 2016 was estimated to be 0.21 which is 62% of the overfished threshold (NEFSC, 2017b).

#### MANAGEMENT PROGRAM

Winter flounder is jointly managed on a federal fishing year (May 1 - April 30) by the ASMFC and NEFMC through the. At the NEFMC, winter flounder are managed through the Northeast Multispecies (Groundfish) FMP. Under [Framework Adjustment 58](#), harvest is allowed in the federal SNE/MA stock management area, and federally permitted vessels participating in a sector are allowed to fish with no limit until they reach their sector allowable catch limit. Federally permitted vessels in the “common pool” are currently restricted to a possession limit of 2,000 lb/vsl/day, or 4,000 lbs/vsl/trip limit, which is adjustable by the NMFS regional administrator. The SNE/MA management area remains open to common pool vessels until the allowable catch limit is reached.

At the state level, ASMFC manages the inshore stocks through the FMP for Inshore Stocks of Winter Flounder and its subsequent [amendments and addenda](#). Winter flounder are managed with minimum size, daily possession limits, mesh size restrictions, and areas closed to harvest. In RI, regulations include areas within state waters closed to commercial and recreational harvest, including Point Judith Pond, the Harbor of Refuge, Potters Pond, and Narragansett Bay north of the Colregs line, which aim to protect a recovery of the population in these areas. In order to maintain a stream of commercial landings for biological data collection used in the stock assessment, RI also adopted a 50 lb daily possession limit. A Multi-Purpose License or *Non-Restricted Finfish Endorsement* is required to harvest winter flounder in RI waters.

#### 2020 RI COMMERCIAL REGULATIONS

Min. Size	Season	Possession Limit (lbs/vsl/day)
12”	1/1 – 12/31	50

#### FISHERY PERFORMANCE

In 2019, 88 commercial fishers (Table 2) landed 1117,504 pounds of winter flounder in RI valued (x-vessel) at \$367,196 (Table 1). A state quota has not existed since 2006.

## DMF RECOMMENDATIONS FOR 2021

As the fishery is determined to be overfished, with no overfishing occurring, the Division recommends maintaining effort at or below current levels and maintaining winter flounder as a non-restricted species.

## SPINY DOGFISH



### STOCK STATUS

The indicated that the spiny dogfish population is not overfished nor is overfishing occurring. Spawning stock biomass was estimated at 106.8 kt compared to a threshold of 79.6 kt, and the fishing mortality estimate of 0.202 was below the fishing mortality reference point

of 0.2439 (Sosebee and Rago, 2017). The assessment method used to inform quotas is index based, which can be problematic when in given years the Northeast Fisheries Science Center (NEFSC) trawl surveys are either not conducted or missed strata of traditionally high spiny dogfish biomass. A research track assessment is intended to be conducted in 2021-2022.

### MANAGEMENT PROGRAM

Spiny dogfish is jointly managed on a federal fishing year (May 1 - April 30) by the MAFMC and NEFMC through a joint [FMP](#), with the ASMFC overseeing the species interstate [FMP](#) (NEFSC, 2019). Spiny dogfish are managed under a quota system. The quota for the May 1, 2018 – April 30, 2020 fishing season was set to 23.2 million pounds, with Rhode Island’s quota part of the Northern Region (Maine through Connecticut) at 58% of the coastwide allocation. Vessels are limited by a maximum possession of 6,000 pounds per vessel per day. No minimum size exists currently with the species. In October, 2019, Addendum VI for the ASMFC Spiny Dogfish Interstate Fishery Management Plan was approved, which allows for commercial quota to be transferred between all regions and states. The addendum scoping also solicited comments on whether to recommend eliminating the federal trip limit and replace it with state or regional trip limits. At this point, the federal trip limit has not been amended. A Multi-Purpose License or *Non-Restricted Finfish Endorsement* is required to harvest spiny dogfish in RI waters.

### FISHERY PERFORMANCE

In 2019, 38 commercial fishers (Table 2) landed 414,573 pounds of spiny dogfish in RI valued (x-vessel) at \$75,612 (Table 1).

### DMF RECOMMENDATIONS FOR 2021

The Division recommends maintaining effort at or below current levels and maintaining as a non-restricted species.

## SMOOTH DOGFISH

### STOCK STATUS

The [2015 benchmark stock assessment](#) for smooth dogfish indicated that smooth dogfish are not overfished and not experiencing overfishing (SEDAR, 2015). While all model sensitivity runs indicated that the stock is not overfished, one scenario estimated a fishing mortality close to the overfishing reference point. Further, the peer-reviewers cautioned making major inferences on the stock status given uncertainties in catch and the stock-recruitment relationship (SEDAR, 2015)

### MANAGEMENT PROGRAM

Smooth dogfish is jointly managed by NOAA Fisheries and [ASMFC](#). In November 2018, NOAA Fisheries published the 2018 Atlantic smooth dogfish quota of 1,802.6 dressed weight (dw) mt (3,973,902 dw lbs). This quota level has not been changed since the 2017 specification. In 2019, less than a quarter of the Atlantic smooth dogfish quota was harvested. Given that smooth dogfish is not overfished, and overfishing is not occurring, up to 50% of the (federal) base quota can be carried over to the following year if there is an under harvest. NOAA Fisheries rolled over 33% of unused 2018 quota to the 2019 base quota. For the 2019 fishing year, Rhode Island received 1.363% of the coastwide quota, equating to 24.6 dw mt (or 54,167 dw lbs).

For Rhode Island management, the fishing season is from January 1 through December 31. There is no possession limit or minimum size. A Multi-Purpose License or *Non-Restricted Finfish Endorsement* is required by license holders to harvest Smooth dogfish in RI waters.

### FISHERY PERFORMANCE

In 2019, 31 commercial fishers (Table 2) landed 61,120 pounds of smooth dogfish in RI valued (x-vessel) at \$21,276 (Table 1).

### DMF RECOMMENDATIONS FOR 2021

The Division recommends maintaining effort at or below current levels and maintaining as a non-restricted species.

## SKATE



### STOCK STATUS

The skate fishery is broken into two categories: skate wing fishery (primarily winter skate with some barndoor catch) and the skate bait fishery (little skate). Indices of relative abundance (stratified mean weight/tow) have been developed from NEFSC bottom trawl surveys for the seven species in the skate complex. These indices and their rates of change form the basis for the stock status of the complex (K. Sosebee, 2019). For winter skate, the 2016-2018 NEFSC autumn average biomass index of 7.22 kg/tow is above the biomass threshold reference point (2.83 kg/tow) and above the BMSY proxy (5.66 kg/tow). The 2016-2018 average index

is above the 2015-2017 index by 1.2%. For barndoor skate, the 2016-2018 NEFSC autumn average survey biomass index of 1.81 kg/tow is above the biomass threshold reference point (0.78 kg/tow) and the BMSY proxy (1.57 kg/tow). The 2016-2018 average index is above the 2015-2017 index by 15.3%. It is recommended that winter and barndoor stocks are not overfished and overfishing is not occurring.

For little skate, the 2017-2019 NEFSC spring average biomass index of 5.32 kg/tow is above the biomass threshold reference point (3.07 kg/tow) but below the BMSY proxy (6.15 kg/tow). The 2017-2019 average index is above the 2016-2018 average by 13.4%. It is recommended that the little skate stock is not overfished and overfishing is not occurring.

## MANAGEMENT PROGRAM

The skate complex is managed on a federal fishing year (May 1 - April 30) by the NEFMC under the [Northeast Skate Complex FMP](#), which specifies federal-water management for seven skate species (barndoor, clearnose, little, rosette, smooth, thorny and winter skates). The FMP has been updated through a series of amendments and framework adjustments, the most recent being Framework Adjustment 8 [to the Northeast Skate Complex FMP](#), which contains specifications for the 2020 and 2021 fishing years based on updated data and research.

To complement the federal FMP, RI has adopted a weekly wing possession limit of 35,000 pounds/vessel/week; or 79,450 pounds/vessel/week for whole skate. The RI state-water bait fishery is managed and a combination of fishing seasons, daily possession limits, and a maximum size. A Multi-Purpose License or *Non-Restricted Finfish Endorsement* is required to harvest skate in RI waters.

## FISHERY PERFORMANCE

In 2019, 134 commercial fishers (Table 2) landed 1,694,337 pounds (wing weight) of skate, an x-vessel value of \$ 932,804 (Table 1) for the skate wing fishery. Also, in 2019, 51 fishers (Table 2) landed 6,291,418 pounds of skate with an x-vessel value of \$946,906 (Table 1) for the bait skate fishery.

## DMF RECOMMENDATIONS FOR 2021

Allowing for a modest increase in effort and would appear to still provide for the directed skate wing and bait skate fisheries to remain open for the entire fishing year. The Division recommends maintaining as a non-restricted species.

## LONGFIN SQUID



### STOCK STATUS

According to the [2017 stock assessment update](#), longfin squid are not overfished. In 2016 biomass was estimated to be 73,762mt; much greater than the threshold Bmsy proxy of 21,203 mt. The overfishing status could not be determined because there are no fishing mortality reference points for the stock (NEFSC, 2017c).

### MANAGEMENT PROGRAM

Longfin squid is managed in federal waters jointly by the MAFMC and NOAA Fisheries under the [FMP for Atlantic Mackerel, Squid, and Butterfish](#). The management unit includes all U.S. waters off the U.S. East Coast. In RI, longfin squid is not regulated in state waters. A *Non-Restricted Finfish Endorsement* is required by license holders to harvest longfin squid in RI waters.

### FISHERY PERFORMANCE

In 2019, 149 commercial fishers (Table 2) landed 13.31 million pounds of longfin squid in RI valued (x-vessel) at \$ 20.16 million (Table 1).

### DMF RECOMMENDATIONS FOR 2021

There is no quota established for longfin squid in RI State waters. The Division recommends maintaining as a non-restricted species.

## NORTHERN SHORTFIN (ILLEX) SQUID



### STOCK STATUS

Northern shortfin squid was last assessed in 2005 at SAW 42 (NEFSC, 2006). According to the latest assessment, shortfin squid is not subject to overfishing. There is currently not enough information to determine the population size, so it is unknown.

### MANAGEMENT PROGRAM

Northern shortfin squid is managed by the MAFMC under the [FMP for the Squid, Atlantic mackerel, and Butterfish](#). The management unit includes all U.S. waters off the U.S. East Coast. In RI, Northern shortfin squid is not a regulated species in state waters. A Multi-Purpose License or *Non-Restricted Finfish Endorsement* is required to harvest northern shortfin squid in RI waters.

### FISHERY PERFORMANCE

In 2019, 29 commercial fishers (Table 2) landed 18.7 million pounds of northern shortfin squid with an x-vessel value of \$10.91 million (Table 1).

### DMF RECOMMENDATIONS FOR 2021

There is no quota or regulations established for northern shortfin squid in RI State waters. The Division recommends maintaining as a non-restricted species.

## 2021 LICENSING RECOMMENDATIONS - NON-RESTRICTED FINFISH ENDORSEMENT

### DMF

The *Non-Restricted Finfish Endorsement* is an open endorsement and available to any licensed person. The number of these endorsements issued has decreased over the past seven years (Table 4). This decrease in participation has not had a discernible effect on the landings of non-restricted species. It should be noted that this endorsement allows new entrants into the finfish sector, with landings generated from the endorsement used to establish priority in the issuance of the Restricted Finfish Endorsement. **The Division recommends maintaining this approach for entry into the fishery and to maintain as an open endorsement for 2021.**

## RIMFC

A recommendation will be made at their meeting on November 2, 2020.

## SHELLFISH

### BAY QUAHOG



#### RESOURCE ASSESSMENT

A formal, peer-reviewed stock assessment does not currently exist, but is being developed. However, both landings and relative abundance indices (the latter derived from DEM's hydraulic clam dredge survey) suggest the resource has been stable over the last several years. A new assessment is being developed to better assess the stock's status and improve its scientific rigor.

#### MANAGEMENT PROGRAM

A minimum size of 1 inch (hinge width) and daily possession limits have been established, with reduced possession limits established in Shellfish Management Areas (SMA) to further manage harvest. The fishery is open year-round to RI residents only. A Multi-Purpose License or *Bay Quahog Endorsement* is required to harvest bay quahogs in RI waters.

In 2015, the exit:entry ratio for the *Bay Quahog Endorsement* was changed from 2:1 to 1:1, believing that the number of active fishermen and corresponding effort is more an industry-based economic issue than a resource management or availability issue. While landings have slightly declined over the past five years, the economic value has remained relatively stable. As such, the Division believes that maintaining the 1:1 ratio to increase in number of people participating in the fishery is not having a negative impact and should be continued.

#### FISHERY PERFORMANCE

In 2019, 548 commercial fishers (Table 2) landed 517,558 meat weight pounds of bay quahogs, in RI worth \$5,353,470 (Table 1).



## 2021 LICENSING RECOMMENDATIONS - BAY QUAHOG ENDORSEMENT

### DMF

**The Division recommends maintaining effort at current levels by maintaining the 1:1 exit:entry ratio for the Bay Quahog Endorsement.** In 2020, 36 licenses eligible to harvest quahog were retired (8 MPURP, 10 PEL QUOH, 18 CFL QUOH). Under the current management program, *this would result in the availability of 36 new quahog endorsements on the CFL for 2021.*

### RIMFC

A recommendation will be made at their meeting on November 2, 2020.

## SOFT-SHELL CLAM



### RESOURCE ASSESSMENT

A dynamic depletion model for open populations, based on the work of Restrepo (1998) and Sosa-Cordero (2003), suggested that the soft shell clam population declined from 2006 to 2011 with recruitment failing to replace fishery removals (Gibson 2012). Thus, overfishing was occurring. Since 2012 the model has not been updated due to a collapse in the fishery and absence of a recent depletion study. During the peak of the fishery in 2010, an increase in minimum size, by itself, did not stop overfishing, and catch limits needed to be reduced to less than three bushels per day to bring fishing mortality rates into balance with resource productivity (Gibson 2012).

In addition, there is evidence of a decline of soft-shell clams in response to *Mya* leukemia. (Metzger et al. 2016; Walker et al. 2009). In RI, densities have substantially declined in both fished and unfished soft-shell clam beds and landings continue to decline. Results from work in the coastal ponds combined with anecdotal observations and landings suggest that the stock is severely depleted.

### MANAGEMENT PROGRAM

A minimum size of 2 inches (longest axis) and daily possession limits have been established, with reduced possession limits established in SMAs. The fishery is open year-round to RI residents only. A Multi-Purpose License or *Bay Quahog Endorsement* is required to harvest soft-shell clams in RI waters. The current exit:entry ratio for soft shell clam license endorsements is 5:1. The Division is concerned with the low abundance of soft shell clams and thus supports a conservative approach to allowing new entrants in the fishery.

### FISHERY PERFORMANCE

In 2019, 23 commercial fishers (Table 2) landed 2,092 pounds meat weight of soft-shell clams in RI, valued at \$29,360 (Table 1). Currently, landings are the lowest recorded in the time series.

## 2021 LICENSING RECOMMENDATIONS - SOFT-SHELL CLAM ENDORSEMENT

### DMF

Due to the continued poor status of the resource, **the Division recommends reducing effort by increasing the exit:entry ratio or prohibiting new entrants into the fishery.** In 2020, 25 licenses eligible to harvest soft shell clam were retired (8 MPURP, 8 PEL SSCLM, 9 CFL SSCLM). At the current 5:1 exit:entry ratio, *this would result in the availability of 6 new CFL soft shell clam endorsements in 2021.*

### RIMFC

A recommendation will be made at their meeting on November 2, 2020.

### WHELK (Channeled and Knobbed Whelk)



#### RESOURCE ASSESSMENT

The first Rhode Island whelk resource assessment using a Biomass Dynamic Model (BDM) (Gibson 2010) was updated in 2016 and included data through 2015. The assessment concluded that  $F$  has risen since the original assessment with  $F_{2015} = 0.5$ , which is at or above both  $F_{msy}$  and the  $F$  target level ( $F_{msy}=0.53$ ;  $F_{target} = 0.39$ ), so overfishing is likely occurring. Stock biomass is declining but remains above the threshold for overfished status. In 2020, the Division was awarded a U.S. Fish and Wildlife Service State Wildlife grant to conduct a histological study of female channeled whelk gonad maturity. The objectives of this research are to develop more accurate estimates of female size at maturity channeled whelk using microscopic, histological methodologies; compare size at maturity estimates from histological gonad examination with estimates generated from macroscopic, visual gonad examination (Angell, 2018); and to provide better information for guiding whelk fishery management in RI state waters.

#### MANAGEMENT PROGRAM

The two species of whelk landed in RI are managed under the same regulatory provisions. The fishery is open year-round to RI residents only. All whelks must be landed whole in the shell and adhere to a minimum size (2-1/4 inch shell height). A commercial possession limit of 35 bushels/day and a 300-pot limit/licensee have been established in rule. Effort is managed by restricting access to the fishery to MPURP holders or PEL and CFL license holders who hold a *Whelk Endorsement*. Eligibility for this endorsement is restricted to holders of a PEL or CFL, who already hold an actively fished *Quahog or Soft-Shell Clam Endorsement*.

#### FISHERY PERFORMANCE

In 2019, 110 commercial fishers (Table 2) landed 444,103 pounds live weight of whelk (species combined) in RI, with a value of \$1,440,940 (Table 1). Of the two species landed in RI, channeled whelk constitutes 98% of reported landings. Since peaking in 2012, whelk landings have generally

decreased with 2019 landings 35% lower than 2018. Total landings (all species) for 2019 were 16% lower than average landings during 2012-2019 (527,290 pounds). Since 2010, the average whelk landings per fisher have shown an overall decreasing trend however increased sharply in 2017 and 2018, 4,498 and 6,224 pounds/fisher respectively. Average whelk landings per fisher decreased in 2019 to 3,896 pounds/fisher, a 37% decrease over the 2018 average.

## 2021 LICENSING RECOMMENDATIONS - WHELK ENDORSEMENT

### DMF

Maintain effort at current levels by maintaining the current restriction of the issuance of the new whelk endorsement only to active quahog and soft-shell clam harvesters.

### RIMFC

A recommendation will be made at their meeting on November 2, 2020.

## OYSTER



### STOCK STATUS

The status of the RI oyster stock is currently unassessed, but is considered greatly depressed compared to historic levels (Beck et al. 2011; Griffin 2016). According to local researchers studying oyster populations within Narragansett Bay, the effects of disease, environmental conditions, poor sets of new recruits, and fishing pressure are all responsible for the sharp decline

in abundance levels (Oviatt et al. 1998). Given the low abundance of the wild oyster population, increased fishing pressure would facilitate even greater depletions of the resource. Several oyster restoration and enhancement projects are currently being conducting in RI waters, as well as research investigating factors influencing recruitment or lack thereof, on natural and restored reefs. Until levels of recruitment increase, the stock will likely remain severely depleted. Further investigation into the effects of fishing effort will be revisited when the stock has recovered.

### CURRENT MANAGEMENT PROGRAM

Oysters are managed under the *Shellfish Other Endorsement*, which is an open entry endorsement. Minimum size and possession limits are established, with reduced possession limits in SMAs. Oyster restoration efforts are being conducted in a number of coastal ponds and portions of the Narragansett Bay, aimed at identifying the best restoration practices for establishing oyster reefs in the closed areas.

### FISHERY PERFORMANCE

In 2019, 13 commercial fishers (Table 2) landed 1,055 meat weight pounds, in RI worth \$28,659 (Table 1).

## OTHER SHELLFISH



### STOCK STATUS

Other species of shellfish commercially harvested within Rhode Island waters besides oysters include blue mussels, bay scallops, sea scallops, surf clams and razor clams. These species are not routinely assessed by DEM, in large part due to the low volume of landings, which results in a lack of available data to conduct comprehensive analytical assessments on the status of these populations. However, landings data and anecdotal evidence from the commercial

fishing industry are reviewed annually by Marine Fisheries and are used for identifying species that warrant further research.

### CURRENT MANAGEMENT PROGRAM

Species of shellfish other than bay quahog, soft-shell clam, and whelk are included and managed under the *Shellfish Other Endorsement*. Minimum size and possession limits are established for oysters, bay scallop, sea scallop, and surf clam. In addition to creating SMAs to support Oyster management (e.g., Jacobs Point, Bissel Cove, Narrow River, Green Hill Pond), the Sakonnet River SMA was created for the management of surf clams. The *Shellfish Other Endorsement* is an open license category available to any license holder and is not managed with an exit/entry ratio system.

### FISHERY PERFORMANCE

In 2019, 4 commercial fishers (table 2) landed 6,099 meat weight pounds of other shellfish species not including oysters, worth \$11,862 (Table 1). Combined with oyster landings, fishers of all shellfish other species landed a total of 7,154 meat weight pounds, worth \$40,521.

## 2021 LICENSING RECOMMENDATIONS - SHELLFISH OTHER ENDORSEMENT

### DMF

The Division recommends that the *Shellfish Other Endorsement* remains an open license category available to any license holder, and that all shellfish species other than bay quahog, soft-shell clam, and whelk be maintained as shellfish other endorsement species.

### RIMFC

[A recommendation will be made at their meeting on November 2, 2020.](#)

# CRUSTACEANS

## LOBSTER



### STOCK STATUS

The [2015 American Lobster Benchmark Stock Assessment and Peer Review Report](#) highlighted the disparate trajectories for the two stocks: Gulf of Maine/Georges Bank (GOM /GB) and Southern New England (SNE). The GOM/GB stock size has steadily increased since 1979, with stock abundance and recruitment increasing at an accelerated rate since 2007 (ASMFC,

2015). The GOM/GB stock is not overfished and not experiencing overfishing. The SNE stock increased from the 1980s up until the late 1990s, where after the stock as precipitously declined to record lows in 2013. The 2015 Benchmark Assessment concluded that the SNE stock is severely depleted, with recruitment and spawning stock biomass trajectories highlighting exceptionally low recruitment rates, often termed a recruitment failure (ASMFC, 2015). The poor SNE stock condition has be attributed to several environmental factors (e.g. warming waters, shell disease prevalence, increased predation) as well as continued fishing mortality. Despite attrition among the commercial fleet and fewer traps fished for lobster, the population has continued to decline. Reduced lobster abundances are most pronounced in inshore waters, where several studies have indicated offshore waters may still be habitable for lobsters (Mazur et al. 2020; Tanaka et al. 2020). However, the reduction in SNE lobsters is evident in both inshore and offshore waters (ASMFC, 2015). The 2020 American Lobster Benchmark Stock Assessment is currently under peer review with an anticipating board approval decision for October 2020.

### MANAGEMENT PROGRAM

Lobster is managed by the ASMFC through the [FMP for lobster](#) and its subsequent [amendments and addenda](#), which is organized by Lobster Conservation Management Areas (LCMA). Rhode Island state waters comprise a portion of LCMA 2. DEM complies with the FMP through a set of management measures including minimum/maximum gauge and escape vent sizes, trap limits, protection of egg-bearing females, v-notching, a trap reduction schedule (currently in year 4 of a 6-year period), and a 10% conservation tax on trap allocation transfers designed to further reduce the number of traps fished and fishing mortality. Both state (RI-MA) and federal waters are included in LCMA 2, requiring cooperative management. Additionally, in RI, participants in the lobster fishery must possess either a Multipurpose Fishing License, a Principal Effort license with a *Lobster Endorsement*, or a Commercial Fishing License with *Lobster Endorsement*. Participants who do not hold a LCMA 2 Lobster Trap Allocation (LTA) are prohibited from harvesting lobster from pots and are limited to 100 lobsters per day or 500 lobsters for fishing trips 5 days or longer.

### FISHERY PERFORMANCE

The regional lobster resource has experienced a significant decline in abundance since the 1990's (ASMFC, 2015), which has resulted in the removal of latent effort in the fishery and reduced

landings. The number of participants landing lobster decreased from 2017 to 2018 (Table 2). The trap reduction program continued in 2018-2019, with total traps reduced based on the 5% reduction and the conservation tax (Table 6). In 2019, 130 fishers (Table 2) landed 1,784,793 pounds of lobster in RI, with an ex-vessel value of \$10,975,831 (Table 1).

## DIVISION RECOMMENDATIONS FOR 2020

The state will continue to work with the ASMFC to rebuild the lobster resource throughout the region. Attrition is still occurring in the industry. The state began to reduce effort through the trap reductions included in Addendum XVIII starting in 2016. This effort aimed to remove latent effort from the fishery that could be reactivated if resource conditions improve, as well as reduce fishing mortality. Both active trap numbers and exploitation rates will be further evaluated after the approval of the 2020 Benchmark Assessment to assess the management plan's success. Participation in LCMA 2 is based on historical performance and the state has reviewed lobster licensing and made appropriate changes in preparation for limited access-historical performance. An LTA transferability program that was initiated with Addendum XII has been developed in consultation with ASMFC and NOAA Fisheries via Addenda XVIII, XIX, and XXI. This can be used to bring new individuals into the fishery without increasing effort above that qualified in the initial trap allocation.

## 2021 LICENSING RECOMMENDATIONS - LOBSTER ENDORSEMENT

### DMF

In view of ASMFC compliance requirements and state law, it is recommended that the moratorium on the issuance of new lobster endorsements be continued for 2020.

### RIMFC

A recommendation will be made at their meeting on November 2, 2020.

## HORSESHOE CRAB



### STOCK STATUS

The 2019 benchmark stock assessment of horseshoe crab indicates high variability in trends among the coastal regions. The Southeast is the only area indicating an increase in abundance while Delaware Bay and the Northeast show consistent abundance and the New York region is seeing a decline (ASMFC, 2019). While this is an improvement for the Northeast region from the 2013 stock assessment update status which exhibited a decline, Rhode Island specific data continues to show a downward trend. This neutral status in 2019 was achieved by

Rhode Island's negative trend being counterbalanced by the improving Massachusetts stock status.

## MANAGEMENT PROGRAM

The commercial horseshoe crab fishery is managed at the regional level by the ASMFC [Interstate FMP for horseshoe crabs](#) and its subsequent [addenda](#). In RI waters, horseshoe crab is included and managed under the *Non-Lobster Crustacean Endorsement*. DEM uses temporal closures, possession limits, state established quotas, and a permitting/reporting program to achieve compliance with the FMP. In 2017, DEM regulations were adopted establishing broader time closures, improved reporting and reporting compliance measures, a minimum size of 7" (prosomal width), and daily possession limits for the bait fishery of 60 crabs per person per day. The biomedical daily possession limit is equal to the total annual quota.

In 2019, the Division was awarded a State Wildlife Grant to initiate a deeper investigation into Rhode Island's horseshoe crab population. The goal of this research is to determine whether there are discrete, segregated populations of horseshoe crabs in Rhode Island waters, how different they are from other Southern New England states, and whether there is mixing between spawning contingents. Phenotypic, genetic, and tagging data are the three main components of this study. The results of this study will be used to inform sustainable management practices for horseshoe crabs.

## FISHERY PERFORMANCE

The use of temporal closures and possession limits in the State's bait fishery has greatly restricted harvest during peak spawning activity and resulted in reduced fishing mortality rates and harvest equity among participants. However, due to a small quota and the nature of accountable commercial harvest, overages may occur annually and must be deducted from the following year possibly resulting in a shorter harvest season and may limit resource access. Annual bait harvest since 2017 has been less than 20% of the allotted quota. Biomedical harvest rates are driven by the needs of biomedical companies which bleed the crabs for medical testing. The estimated mortality rate of bled crabs is 15% (ASMFC, 2019). In 2019, 19 fishers (Table 2) contributed to the combined bait and biomedical fisheries landed 81,793 pounds of horseshoe crab worth \$33,923 in RI (Table 1).

## DMF RECOMMENDATIONS FOR 2021

The Division is currently conducting a state specific stock assessment of horseshoe crab using both fishery dependent and independent data. The goal of this assessment is to guide consideration of management proposals and inquiries submitted by industry and conservation groups alike. As there has been no indication of improvement within the local population since rigorous management measures were taken in 2017, the Division remains concerned about the status of this species on the state level. Until this assessment is complete, it would be inappropriate to implement additional changes. The Division recommends maintaining as a non-restricted species in the *Other Crustaceans* endorsement category for 2020.

## JONAH CRAB



### STOCK STATUS

Previously regarded as bycatch in the American lobster fishery, Jonah crab started gaining attention in the mid 2000's as commercial landings started to increase, reaching a high of 20.2 million pounds in 2018 (ASMFC, n.d.). As commercial landings have increased and since ASMFC has started to manage Jonah crab, state, federal, and academic scientists have endeavored to collect data on Jonah crab life history and population characteristics to perform a formal stock

assessment. No time table has been set for such an assessment.

### MANAGEMENT PROGRAM

Jonah crab is managed at the regional level by the ASMFC [Interstate FMP for Jonah crab](#) and its subsequent addenda I-III. The FMP was first adopted in 2016 and includes an LTA requirement, a minimum size limit of 4.75", and the prohibition of egg bearing females. Pursuant to the FMP, a control date of June 1, 2016 was established in RI. [Addendum I](#) establishes incidental bycatch limits for non-trap gear and non-lobster trap gear, [Addendum II](#) sets limits on claw harvest, and [Addendum III](#) stipulates requirements for harvester reporting and biological data collection.

Per Addendum I, a bycatch limit of 1,000 crabs per trip for non-trap and non-lobster fishermen was set. To avoid the unintentional outcome of this addendum of creating small industries operating solely under this provision, the ASMFC Jonah Crab Board aimed to define bycatch. As per ASMFC, Jonah crab caught under the bycatch limit must comprise an amount lower, in pounds, than the target species the deployed gear is targeting. Target species is further defined as: "those species primarily sought by the fishermen in the fishery" and are "the subject of directed fishing effort." Addendum II, adopted in early 2017, allows Jonah crab fishermen to detach and harvest claws at sea, with a required minimum claw length of 2.75" if the volume of claws landed is greater than five gallons. Currently, only whole Jonah crab may be retained and sold in Rhode Island (ie. landing detached claws is prohibited).

In RI, Jonah crab is included and managed under the *Non-lobster Crustacean Endorsement*. The directed fishery is limited to any licensed person who holds an LTA, or any person who does not hold an LTA but can prove participation in the Jonah crab fishery prior to the control date.

### FISHERY PERFORMANCE

In 2019, 64 fishers (Table 2) landed 4,220,872 pounds of Jonah Crab, with an ex-vessel value of \$3,391,499 (Table 1).

### DMF RECOMMENDATIONS FOR 2021

The Division recommends that RI remains compliant with the ASMFC provisions and continues its work toward collecting biological and fishery information on Jonah Crab for a future, formal stock assessment. No changes to Jonah crab licensing requirements are recommended for 2020. Maintain as a non-restricted crustacean species as well as continue requirements for the directed fishery.



## ATLANTIC ROCK CRAB



### STOCK STATUS

Status unknown; No stock assessment has been performed on Atlantic rock crab.

### MANAGEMENT PROGRAM

In RI, Atlantic rock crab is included and managed under the *Non-Lobster Crustacean Endorsement*. As an unrestricted/open endorsement, any license holder may access the fishery. There is neither a possession limit nor any additional restrictions in effort or harvest at this time.

A control date was established on June 1, 2016.

### FISHERY PERFORMANCE

Being an unregulated fishery, overall performance cannot be determined. In 2019, 29 fishers (Table 2) landed 94,340 pounds of Atlantic rock crab with an ex-vessel value of \$73,615 (Table 1). This is approximately a 40% increase in landings from 2018.

### DMF RECOMMENDATIONS FOR 2020

The Atlantic rock crab fishery is not managed under any FMP; it is an unregulated species. Effort limitations are not subject to lobster trap allocation and tagging requirements making enforcement of untagged traps problematic in state waters. Consideration should be given to a dedicated trap tag program to potentially control effort and identify fishery specific gear. No changes to licensing requirements are recommended for 2020. Maintain as a non-restricted crustacean.

## OTHER CRUSTACEANS



### STOCK STATUS

Commercial landings in RI of crustacean species other than lobster, horseshoe crab, Jonah crab, and Atlantic rock crab include green crab (*Carcinus maenas*), blue crab (*Callinectes sapidus*), deep-sea red crab (*Chaceon quinque-dens*), and mantis shrimp (*Squilla empusa*). These species are not routinely assessed by DEM, in large part due to the low volume of landings, which results in a lack of available data to conduct comprehensive analytical assessments. However, landings data and anecdotal evidence

from the commercial fishing industry are reviewed annually by DMF and are useful pieces of information in identifying populations that warrant further research.

To date, no assessment of the blue crab population in RI has been conducted. Beginning in the winter of 2020, the Division aims to implement a dedicated blue crab dredge survey with the goal of assessing

their distribution and abundance in Narragansett Bay and RI Sound. The data collected from this survey will be used to support future management decisions and potential regulatory changes.

### MANAGEMENT PROGRAM

In RI, blue crab are subject to a minimum size of 5” from shell tip to tip. Harvest is limited to 25 crabs, unless using a scoop or crab net, trot, or hand line. Deep-sea red crab is managed by a federal permit.

### FISHERY PERFORMANCE

In 2019, 10 fishers (Table 2) landed 17,697 pounds of these species with an x-vessel value of \$10,359 (Table 1).

## 2021 LICENSING RECOMMENDATIONS - NON-LOBSTER CRUSTACEAN ENDORSEMENT

### DMF

The Division recommends that the Non-Lobster Crustacean Endorsement remains an open license category available to any license holder and is not managed with an exit:entry ratio system.

### RIMFC

[A recommendation will be made at their meeting on November 2, 2020.](#)

## GILL NET ENDORSEMENT

### MANAGEMENT PROGRAM

It is required by RIGL 20-4-13 to have the commercial gill net endorsement attached to a multipurpose commercial fishing license in order to set haul or maintain a gill net in state waters. The gill net endorsement is currently under moratorium status, no new gill net endorsements are available at this time. Gill net endorsements may be renewed annually or transferred as part of a sale of business or family/crew member transaction.

### FISHERY PERFORMANCE

During 2019, there were 44 participants in the gill net fishery. The top five species landed were: Monkfish 233,645 lbs, Skates 1,569,710 lbs, Spiny Dogfish 306,901 lbs, Bluefish 193,127 lbs, and Scup 172,878.

### DMF

The Division recommends that the Gill Net Endorsement remain in moratorium status.

## PURSE SEINE & MID WATER/PAIR TRAWL ENDORSEMENTS

## MANAGEMENT PROGRAM

The appropriate endorsement is required to deploy either of these two commercial gear types in state waters. Both of these gear endorsements are applicable to each of the main commercial license types (CFL, PEL, MPURP). Both endorsements are open and available for purchase during the application period at a cost of \$20.

## FISHERY PERFORMANCE

During 2019 there were no reports of purse seine landings from state waters. Only two vessels reported participation in the mid water trawl fishery in state waters (landings are confidential).

## DMF

The Division recommends that both the Purse Seine and Mid Water/Pair Trawl endorsements remain as open license category available to any license holder and is not managed with an exit:entry ratio system.

## LITERATURE CITED

- Angell, T.E. 2018. “Age, Growth, and Sexual Maturity of the Channeled Whelk *Busycotypus Canaliculatus* (Linnaeus, 1758) and Knobbed Whelk *Busycon Carica* (Gmelin, 1791) in Narragansett Bay, Rhode Island.” *Journal of Shellfish Research* 37(1): 207–19.
- Atlantic States Marine Fisheries Commission (ASMFC). 2015. “American Lobster Benchmark Stock Assessment and Peer Review Report.” : 493 p.
- . 2016. “2016 Tautog Stock Assessment Update.” : 143 p.
- . 2017. “Amendment 3 to the Interstate Fishery Management Plan for Atlantic Menhaden.” : 111 p.
- . 2019. “2019 Horseshoe Crab Benchmark Stock Assessment and Peer Review Report.” : 316 p.
- . “Jonah Crab.” <http://www.asmfc.org/species/jonah-crab> (August 2, 2019).
- Beck, Michael W. et al. 2011. “Oyster Reefs at Risk and Recommendations for Conservation, Restoration, and Management.” *BioScience* 61(2): 107–16.
- Gibson, Mark. 2007. *Estimating Seasonal Menhaden Abundance in Narragansett Bay from Purse Seine Catches, Spotter Pilot Data, and Sentinel Fishery Observations*. RI Division of Fish and Wildlife.
- . 2010. *Stock Assessment of Whelk in Rhode Island and Recommendations for Research and Management*. . Draft Report.
- . 2012. *Stock Assessment of Soft-Shell Clams (*Mya Arenaria*) in Rhode Island Using a Dynamic Depletion Model Applied to SAFIS Data*. RI Division of Fish and Wildlife. Draft Report.
- Griffin, Matthew. 2016. “Fifteen Years of Rhode Island Oyster Restoration: A Performance Evaluation and Cost-Benefit Analysis.” *University of Rhode Island Masters Thesis*: 91 p.
- Mazur, M. D., K. D. Friedland, M.C. McManus, and A.G. Goode. 2020. “Dynamic Changes in American Lobster Suitable Habitat Distribution on the Northeast U.S. Shelf Linked to Oceanographic Conditions.” *Fisheries Oceanography* 29(4): 349–65.
- Metzger, Michael J. et al. 2016. “Widespread Transmission of Independent Cancer Lineages within Multiple Bivalve Species.” *Nature* 534(7609): 705–9.
- Northeast Fisheries Science Center (NEFSC). 2006. “42nd Northeast Regional Stock Assessment Workshop (42nd SAW) Assessment Summary Report.” : 608 p.
- . 2017a. “2017 Cod Operational Assessment.” : 9.
- . 2017b. “2017 SNE/MA Winter Flounder Operational Stock Assessment.” *Groundfish Operational Assessment 2017*: 11 p.
- . 2017c. “Longfin Inshore Squid (*Doryteuthis (Amerigo) Pealeii*) Stock Assessment Update for 2017.” : 11 p.

- . 2018. “65th Northeast Regional Stock Assessment Workshop (65th SAW) Assessment Summary Report.” *NEFSC Reference Document* 18–08: 43 p.
- . 2019a. “66th Northeast Regional Stock Assessment Workshop (66th SAW) Assessment Summary Report.” *NEFSC Reference Document* 19–08: 1175 p.
- . 2019b. “Operational Assessments for Black Sea Bass, Scup, Bluefish, and Monkfish Stocks.” : 163 p.
- . 2019. “Specifications and Management Measures For: Spiny Dogfish (2019-2021).” : 106 p.
- Oviatt, Candace, N Wolff, D VanKeuren, and E Nicosia. 1998. *Oysters (Crassostrea Virginica) as Indicators of a Climate Warming Trend in Northeast Waters*. Environmental Protection Agency. Final Report.
- Restrepo, V.R. 1998. “Dynamic Depletion Models.” In *Report on the FAO/DANIDA/CFRAMP WECAFC Regional Workshops on the Assessment of Spiny Lobster Panulirus Argus*, FAO Fish. Rep. 619., Merida, Yucatan Mexico, 345–56.
- Richards, R.A. 2016. *2016 Monkfish Operational Assessment*. US DEPT Commer, Northeast Fish Sci Cent. Reference Document. <https://www.nefsc.noaa.gov/publications/crd/crd1609/crd1609.pdf> (August 6, 2019).
- SEDAR. 2015. “SEDAR 39 HMS Atlantic Smooth DogfishShark Stock Assessment Report.” : 325 p.
- . 2020. *SEDAR 69 – Atlantic Menhaden Benchmark Stock Assessment Report*. North Charleston, SC. <http://sedarweb.org/sedar-69> (July 30, 2020).
- Sosa-Cordero, E. 2003. “Trends and Dynamics of the Spiny Lobster, Panulirus Argus, Resource in Banco Chinchorro, Mexico.” *Bull. Mar. Sci.* 73: 203–17.
- Sosebee, K. 2019. “Northeast Skate Stock Assessment Update.” : 27 p.
- Sosebee, Katherine, and Paul Rago. 2017. “Update on the Status of Spiny Dogfish in 2018 and Projected Harvests at the Fmsy Proxy and Pstar of 40%.” *Mid-Atlantic Fishery Management Council*: 82 p.
- Tanaka, Kisei R. et al. 2020. “An Ensemble High-Resolution Projection of Changes in the Future Habitat of American Lobster and Sea Scallop in the Northeast US Continental Shelf.” *Diversity and Distributions* 00: 1–15.
- Walker, Charles et al. 2009. “Mass Culture and Characterization of Tumor Cells from a Naturally Occurring Invertebrate Cancer Model: Applications for Human and Animal Disease and Environmental Health.” *The Biological Bulletin* 216(1): 23–39.

## TABLES

Table 1. 2019 pounds landed and total x-vessel value (dollars) for species landed in Rhode Island.

Species	Pounds	Value (x-vessel)
Black Sea Bass	399,085	1,508,814
Scup	4,583,917	2,570,848
Striped Bass	144,227	653,225
Summer Flounder	1,662,133	5,621,656
Tautog	46,562	168,046
Bluefish	415,809	388,778
Atlantic Cod	16,539	35,972
Atlantic Herring	1,178,240	426,564
Menhaden	50,449	8,058
Monkfish	3,159,048	2,512,211
Winter Flounder	117,504	367,196
Skates (Wings)	1,694,337	932,804
Skates (Bait)	6,291,418	946,906
Spiny Dogfish	414,473	75,612
Smooth Dogfish	61,120	21,276
Squid (Longfin)	13,314,282	20,161,884
Squid (Illex)	18,695,754	10,908,240
Lobster	1,784,793	10,975,831
Jonah Crab	4,220,872	3,391,499
Horseshoe Crab	81,793	33,923
Atlantic Rock Crab	94,340	73,615
Other Crabs	17,697	10,359
Quahog*	517,558	5,353,470
Soft-shell Clam*	2,092	29,360
Whelk (Channeled and Knobbed)	444,103	1,440,940
Other Shellfish*	6,099	11,862
Sea Scallops*	2,714,022	24,516,679
Oyster*	1,055	28,659
* meat weight		

Table 2: Number of participants per species per year (2015-2019)

Species	2015	2016	2017	2018	2019
BAIT SKATE	30	36	42	46	51
BLUEFISH	340	362	339	278	333
CLAM, NORTHERN QUAHOG	524	562	538	538	548
CLAM, SOFT	62	41	35	31	23
COD, ATLANTIC	127	139	107	87	84
CRAB, ATLANTIC ROCK	20	31	23	31	29
CRAB, HORSESHOE	3	17	17	19	12
CRAB, JONAH	67	69	74	67	64
DOGFISH, SMOOTH	42	32	39	33	31
DOGFISH, SPINY	54	57	48	35	38
FLOUNDER, SUMMER (FLUKE)	484	527	502	492	481
FLOUNDER, WINTER	120	110	115	100	88
GOSEFISH	145	165	174	174	158
HERRING, ATLANTIC, SEA	32	34	30	27	25
LOBSTER, AMERICAN	149	154	149	136	130
MENHADEN	9	8	11	7	5
OTHER CRUSTACEAN	13	12	12	11	10
OYSTER, EASTERN	39	20	14	28	13
SCALLOP, SEA	36	56	54	57	49
SCUP	418	450	437	433	433
SEA BASS, BLACK	484	504	543	507	525
SHELLFISH OTHER	5	3	4	5	4
SKATE WINGS	127	140	142	139	134
SQUID, LONG FINNED (LOLIGO)	153	162	160	164	149
SQUID, SHORT FINNED (ILLEX)	6	12	21	27	29
STRIPED BASS	292	267	286	267	268
TAUTOG	226	231	250	242	250
WHELK	151	137	98	106	110

Table 3. Possession limit (pounds) modifications for common Rhode Island commercial fisheries January through August 10, 2020.

SPECIES	SUB-PERIOD STARTING POSSESSION LIMIT (LBS)	POSSESSION LIMIT MODIFICATION
Black Sea Bass	500/wk (1/1)	700/wk (2/2) 850/wk (3/1)
	50/day (5/1)	100/day (5/31) 50/day (6/25)
Bluefish	1,000/bi-week (1/1)	
	6,000/week (5/1)	12,000/week (6/30)
Scup (Gen. Cat.)	50,000/day (1/1)	
	10,000/wk (5/1)	
Scup (FFT)	50,000/day (1/1)	
	Unlimited (5/1)	
Striped Bass (Gen. Cat.)	5 fish/vessel (5/20)	
	5 fish/vessel (7/1)	Closed (7/11)
Striped Bass (FFT)	Unlimited (4/1)	
Summer Flounder	100/day; 2,000/bi-week*(1/1)	200/day; 1,000/bi-week*(1/5) 100/day;2,000/bi-week* (1/19) 100/day; 2,500/bi-week (3/1) 100/day; 7,500/month* (4/3-4/30) 100/day; 8,500/month* (4/24, for period 4/3-4/30)
	100/day (5/1)	1,000/day
Tautog	10 fish/vessel (4/1)	Closed (5/24)

\*possession limits for vessels participating in Aggregate Landing Program



Table 4. Historical commercial license counts (2012 – 2020).

LICENSE TYPE	2012	2013	2014	2015	2016	2017	2018	2019	2020
<b>MULTI-PURPOSE LICENSE</b>	853	829	816	804	802	789	771	751	744
<i>Gillnet Endorsement</i>	233	227	221	218	218	214	213	204	203
<i>Dockside Sale Endorsement</i>	251	241	236	236	245	242	239	237	244
<i>Midwater/Pair Trawl Endorsement</i>	131	132	133	137	139	145	145	144	151
<i>Purse Seine Endorsement</i>	139	134	134	129	136	140	144	145	156
<b>PRINCIPAL EFFORT LICENSE</b>	690	655	615	593	580	586	585	560	553
<i>Lobster Endorsement</i>	36	30	27	21	20	19	16	16	15
<i>Non-lobster Crustacean Endorsement</i>	33	35	36	33	33	35	36	32	32
<i>Quahog Endorsement</i>	398	376	347	340	322	321	327	305	297
<i>Restricted Finfish Endorsement</i>	266	262	258	251	252	266	277	279	287
<i>Non-restricted Finfish Endorsement</i>	131	135	133	130	152	159	168	159	169
<i>Soft Shelled Clam Endorsement</i>	256	235	204	194	183	186	176	154	143
<i>Whelk Endorsement</i>	146	118	79	62	53	63	60	55	58
<i>Dockside Sale Endorsement</i>	13	13	12	11	13	15	14	11	13
<i>Midwater/Pair Trawl Endorsement</i>	9	8	9	7	10	9	13	13	12
<i>Purse Seine Endorsement</i>	8	7	6	5	9	9	13	13	13
<i>Other Shellfish Endorsement</i>	225	211	186	177	177	173	166	148	148
<b>COMMERCIAL FISHING LICENSE</b>	398	420	404	412	416	429	433	445	435
<i>Lobster Endorsement</i>	16	15	14	14	12	11	9	7	7
<i>Non-lobster Crustacean Endorsement</i>	114	100	101	95	95	104	104	110	101
<i>Quahog Endorsement</i>	158	165	181	189	197	217	215	227	236
<i>Restricted Finfish Endorsement</i>	0	0	0	0	0	0	0	0	0
<i>Non-restricted Finfish Endorsement</i>	252	256	240	243	248	253	270	213	255
<i>Soft Shelled Clam Endorsement</i>	174	163	155	148	139	129	124	125	114
<i>Whelk Endorsement</i>	109	92	75	65	58	56	53	50	53
<i>Dockside Sale Endorsement</i>	16	14	16	16	15	18	17	18	18
<i>Midwater/Pair Trawl Endorsement</i>	40	46	39	39	40	37	41	41	39
<i>Purse Seine Endorsement</i>	42	40	42	43	41	40	42	45	30
<i>Other Shellfish Endorsement</i>	171	160	149	152	142	129	145	158	143
<b>OVER 65 SHELLFISH LICENSE</b>	240	268	289	309	350	369	389	372	420
<b>STUDENT SHELLFISH LICENSE</b>	49	48	47	37	48	39	30	37	41

Table 5. Rhode Island commercial fishing license and lobster license/endorsement issuance data, 2014-2020 fishing years.

LICENSE TYPE	2014	2015	2016	2017	2018	2019	2020
<b>MULTI-PURPOSE LICENSE</b>	816	804	802	789	771	751	744
MPL with Area 2 LTA	308	298	304	304	304	302	301
Dockside Sale Endorsement	236	236	245	242	239	237	251
<b>PRINCIPAL EFFORT LICENSE</b>	615	593	580	586	585	560	553
Lobster Endorsement with LTA	29	25	21	19	19	19	15
Non-Lobster Crustacean Endorsement	36	33	33	35	36	32	32
Dockside Sale Endorsement	12	11	13	15	14	11	13
<b>COMMERCIAL FISHING LICENSE</b>	404	412	416	429	433	445	398
Lobster Endorsement with LTA	4	4	4	4	4	3	3
Non-Lobster Crustacean Endorsement	101	95	95	104	104	110	101
Dockside Sale Endorsement	16	16	15	18	17	18	18

Table 6. Description of allocated traps, maximum traps fished, and the reduction of traps in 2020. Traps retired include those associated with the reduction program decrease and the conservation transfer tax.

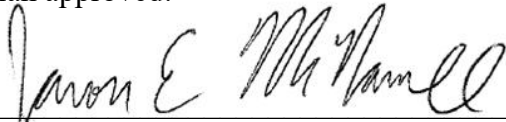
AREA	# OF TRAPS ALLOCATED	# OF TRAPS TRANSFERRED	MAX # OF TRAPS FISHED	# OF TRAPS RETIRED DUE TO REDUCTIONS
Area 2	62,611	1,255		3,516
Area 3	30,154	0		1,676

## PHOTO CREDITS

- **Black Sea Bass:** <http://www.pewtrusts.org/en/about/news-room/opinion/2013/05/20/federal-fish-law-is-on-the-hook-for-black-sea-bass-recovery>
- **Scup:** <http://keywordsuggest.org/gallery/576192.html>
- **Striped bass:** <http://www.delaware-surf-fishing.com/delawares-2015-striped-bass-regulations/>
- **Summer flounder:** <https://www.sportfishingmag.com/summer-flounder-stock-assessment-2017-congress>
- **Tautog:** <http://www.angling-addict.com/2011/04/tautog-rig.html>
- **Atlantic herring:** <http://www.seachoice.org/our-work/species/atlantic-herring/>
- **Bluefish:** [https://en.wikipedia.org/wiki/Bluefish#/media/File:Very\\_Large\\_Bluefish.JPG](https://en.wikipedia.org/wiki/Bluefish#/media/File:Very_Large_Bluefish.JPG)
- **Atlantic cod:** <http://identifyfish.blogspot.com/2010/10/atlantic-cod-gadus-morhua.html>
- **Atlantic menhaden:** <https://www.hatchmag.com/articles/bunker-advocates-deliver-over-90000-comments-asmfc-vote-pending/771137>
- **Monkfish:** <http://www.realmonstrosities.com/2014/12/deep-sea-goosefish.html>
- **Spiny dogfish:** [https://en.wikipedia.org/wiki/Spiny\\_dogfish](https://en.wikipedia.org/wiki/Spiny_dogfish)
- **Smooth dogfish:** <http://www.discovery.com/tv-shows/shark-week/bios/smooth-dogfish-shark/>
- **Longfin squid:** <https://noaateacheratsea.blog/2015/07/03/david-walker-equilibrium-at-sea-days-6-9-july-3-2015/olympus-digital-camera-701/>
- **Northern shortfin squid:** <http://floridasportfishing.com/squid-school/>
- **Bay quahog:** <https://www.rimonthly.com/celebrate-local-clams-quahog-week/>
- **Soft-shell clams:** <http://www.tonyandsonseafood.com/shellfish.html>
- **Whelk:** <http://seagrant.gso.uri.edu/the-secret-life-of-whelks/>
- **Oyster:** <http://seagrant.gso.uri.edu/research/research-2016-2018/>
- **Other shellfish (blue mussel):** <http://newenglandboating.com/nantucket-sound-home-to-an-aquaculture-first/>
- **American lobster:** <http://theweek.com/articles/469901/how-calculate-lobsters-age>
- **Horseshoe crab:** <https://longreads.com/2017/04/18/the-pitfalls-and-promise-of-the-horseshoe-crab-unlikely-biomedical-hero/>
- **Jonah crab:** <https://www.sciencesource.com/archive/>
- **Atlantic rock crab:** <https://joshfcteau.com/16-30-nature-notes-aug-24-30/atlanticrockcrab08242016/>
- **Other crustaceans (blue crab):** <https://www.instructables.com/id/Crabbing-For-Beginners/>

## SIGNATURE PAGE

Plan approved:



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