Draft Addendum for Public Comment

Atlantic States Marine Fisheries Commission

DRAFT ADDENDUM V TO THE AMERICAN EEL FISHERY MANAGEMENT PLAN FOR PUBLIC COMMENT

Commercial Yellow and Glass/Elver Eel Allocation and Management

ASMFC Vision:
Sustainably Managing Atlantic Coastal Fisheries

April 2018

(Revised 5/7/2018; Corrected information on Maine Yellow Eel Quota under Option 3 on pages 20 and 31)

Draft Addendum for Public Comment

Public Comment Process and Proposed Timeline

In October 2017, the American Eel Management Board initiated the development of an addendum to the Interstate Fishery Management Plan (FMP) to address the commercial management of yellow and glass/elver life stage fisheries starting in the 2019 fishing season. This Draft Addendum presents background on the Atlantic States Marine Fisheries Commission's (Commission) management of American eel, the addendum process and timeline, and a statement of the problem. This document also provides management options for public consideration and comment.

The public is encouraged to submit comments regarding this document at any time during the public comment period. The final date comments will be accepted is **Friday June 15, 2018 at 5:00 p.m**. Comments may be submitted at state public hearings or by mail, email, or fax. If you have any questions or would like to submit comment, please use the contact information below.

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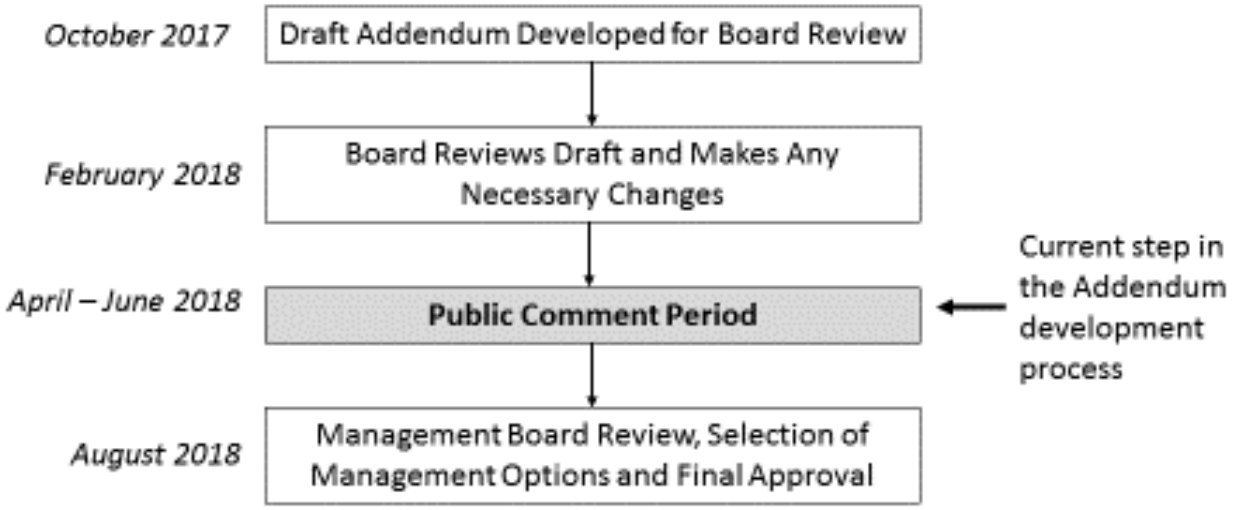

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1.0 Introduction

The Atlantic States Marine Fisheries Commission (Commission) has coordinated interstate management of American eel (*Anguilla rostrata*) from 0-3 miles offshore since 2000. American eel is currently managed under the Interstate Fishery Management Plan (FMP) and Addenda I-IV to the FMP. Management authority in the exclusive economic zone (EEZ) from 3-200 miles from shore lies with NOAA Fisheries. The management unit is defined as the portion of the American eel population occurring in the territorial seas and inland waters along the Atlantic coast from Maine to Florida.

The Commission's American Eel Management Board (Board) approved the following motions on October 17, 2017:

> *Move to initiate an addendum to consider alternative allocations, management triggers, and coastwide caps relative to the current management program for both the yellow and glass eel commercial fisheries starting in the 2019 fishing season.*

This Draft Addendum proposes alternate commercial quota and aquaculture provisions for glass eels (both glass and elvers), coastwide commercial landings caps, alternative management triggers if caps are exceeded, and commercial allocations for the yellow eel fishery.

2.0 Overview

2.1 Statement of Problem

The Commission's Interstate Fisheries Management Program (ISFMP) Charter establishes fairness and equity as guiding principles for the conservation and management programs set forth in the Commission's FMPs. Allocations for the commercial fisheries of American eel have strived to achieve these principles through Addendum IV to the American eel FMP. In 2014, Addendum IV outlined a new coastwide commercial quota system for yellow and glass/elver life stage fisheries for American eel. Specifically for the yellow eel fishery, Addendum IV set an annual commercial coastwide landings quota (referred to as the Coastwide Cap) of 907,671 pounds that included two management triggers:

1. The Coastwide Cap is exceeded by more than 10% in a given year (998,438 pounds); or
2. The Coastwide Cap is exceeded for two consecutive years, regardless of percent overage. Exceeding one of the two triggers would result in automatic implementation of state-by-state quotas.

Since the implementation of Addendum IV, states have raised several concerns about the current management structure. The management trigger provision that if there is a second-year overage of any amount is troublesome to some jurisdictions given the inherent uncertainty of the landings data. The FMP requires states to report commercial landings by life stage, gear type, month, and region, although not all states were able to

provide this level of information for either the benchmark (2012) or updated (2017) stock assessment. In addition to not always having a complete data set to distinguish landings by life stage, there are other potential biases present in the commercial yellow eel data set. At least a portion of commercial American eel landings are from non-marine waters. Even with mandatory reporting, requirements do not always extend outside marine districts. Additionally, misreporting between conger eel, hagfish, slime eel, and American eel has been known to occur. Despite these uncertainties, the commercial landings do represent the best data available and are indicative of the trend of total landings over time.

Estimated landings indicate that the Coastwide Cap was exceeded by less than 10% in 2016. Therefore, if the Coastwide Cap is exceeded by any amount in 2017, state-by-state quotas would be implemented. Many have expressed concern that a small overage in 2017 could result in significant economic consequences for multiple jurisdictions. States have also expressed concern that the current Coastwide Cap was set independent of any ability to quantify the amount of change in landings necessary to affect fishing mortality rates and spawning stock status. Neither of those stock status elements are currently calculated for American eel due to a lack of data. In addition, states have expressed concern that moving to state-specific quotas for the American eel yellow life stage fishery would create a new administrative burden. Finally, equitable allocation of this resource is particularly difficult given the variation in the availability of the resource and the market demand for eels up and down the Atlantic coast.

Additionally, Addendum IV specified an annual glass eel commercial quota for Maine of 9,688 pounds for the 2015-2017 fishing seasons, and that it be re-evaluated after 3 years (prior to the start of the 2018 fishing season). In October 2017, the Board specified a glass eel commercial quota for Maine of 9,688 pounds for the 2018 fishing season. The state of Maine has expressed interest in increasing their glass eel quota, which requires a new addendum.

2.2 Background

American eel inhabit fresh, brackish, and coastal waters along the Atlantic, from the southern tip of Greenland to Brazil. American eel eggs are spawned and hatch in the Sargasso Sea. After hatching, leptocephali—the larval stage—are transported to the coasts of North America and the upper portions of South America by ocean currents. Leptocephali then transform into glass eels via metamorphosis. In most areas, glass eel enter nearshore waters and begin to migrate up-river, although there have been reports of leptocephali found in freshwater in Florida. Glass eels settle in fresh, brackish, and marine waters, where they undergo pigmentation, reaching the elver life stage. Elvers subsequently mature into the yellow eel phase, most by the age of two years.

The ASMFC American Eel Board first convened in November 1995 and finalized the FMP for American Eel in November 1999 (ASMFC 2000a). The goal of the FMP is to conserve and protect the American eel resource to ensure its continued role in its ecosystems

while providing the opportunity for commercial, recreational, scientific, and educational uses (ASMFC 2000a). The FMP requires all states and jurisdictions to implement an annual young-of-year (YOY) abundance survey to monitor annual recruitment of each year's cohort (ASMFC 2000a, 2000b). In addition, the FMP requires a minimum recreational size and possession limit and a state license for recreational harvesters to sell eels. The FMP requires that states and jurisdictions maintain existing or more conservative American eel commercial fishery regulations for all life stages, including minimum size limits. Each state is responsible for implementing management measures within its jurisdiction to ensure the sustainability of its American eel population.

Since the FMP was approved in 1999, it has been modified four times. Addendum I (approved in February 2006) established a mandatory catch and effort monitoring program for American eel. Addendum II (approved in October 2008) made recommendations for improving upstream and downstream passage for American eels. Most recently, Addendum III (approved in August 2013) made changes to the commercial fishery, specifically implementing restrictions on pigmented eels, increasing the yellow eel size limit from 6 to 9 inches, and reducing the recreational creel limit from 50 fish to 25 fish per day. In October 2014, the Board approved Addendum IV which set goals of reducing overall mortality and maximizing the conservation benefit to American eel stocks (ASMFC 2014). The Addendum established a Coastwide Cap of 907,671 pounds of yellow eel, reduced Maine's glass eel quota to 9,688 pounds (2014 landings), and allowed for the continuation of New York's silver eel weir fishery in the Delaware River. For yellow eel fisheries, the Coastwide Cap was implemented starting in the 2015 fishing year and established two management triggers: (1) if the Coastwide Cap is exceeded by more than 10% in a given year, or (2) the Coastwide Cap is exceeded for two consecutive years regardless of the percent overage. If either one of the triggers are met then states would implement state-specific allocations based on average landings from 1998-2010 with allocation percentages derived from 2011-2013. **Please note** the Coastwide Cap specified in Addendum IV (907,671 pounds) is slightly above the combined state-by-state allocations (907,669 pounds) due to a rounding error. For all subsequent tables in this document that reference status quo state allocations, the combined state-by-state allocations is set equal to 907,699 pounds.

The objectives of Draft Addendum V are to:
1) Re-evaluate Maine's glass/elver eel quota based on updated information;
2) Re-evaluate the Coastwide Cap and management triggers to include recent fishery performance and updated landings data, and to ensure the overarching goal of the FMP - *to conserve and protect the American eel resource to ensure its continued role in the ecosystems while providing the opportunity for its commercial, recreational, scientific, and educational use* - is met; and
3) Address allocation issues including difficulties in equitable allocation and the administrative burden that would result from state-by-state quotas.

2.3 Description of the Fishery

2.3.1 Glass Eel/Elver Fishery

Life stage glass and elver eel harvest along the Atlantic coast is prohibited in all states except Maine and South Carolina. Prior to the implementation of the FMP, Maine was the only state compiling glass eel and elver fishery catch statistics. Under the FMP, all states are now required to submit fishery-dependent information. In recent years, Maine was the only state reporting substantial glass eel or elver harvest.

Maine Glass Eel/Elver Fishery

Since the implementation of the 9,688 pound glass eel quota for Maine in 2015 through Addendum IV, landings have tracked close to the quota. In both 2016 and 2017, landings were 97% and 96% of the quota, respectively, after being much lower in 2015 (5,260 pounds).

Table 1. Maine's Glass/Elver Eel Landings 2007-2017 (Source: ACCSP)

Year	Landings	Value
2007	**3,714**	**$1,287,479**
2008	**6,951**	**$1,486,353**
2009	**5,199**	**$514,629**
2010	**3,158**	**$592,405**
2011	**8,585**	**$7,656,345**
2012	**21,610**	**$38,791,627**
2013	**18,081**	**$32,926,991**
2014	**9,688**	**$8,440,333**
2015	**5,260**	**$11,389,891**
****2016**	**9,399**	**$13,388,040**
****2017**	**9,282**	**>$12,000,000**

**Preliminary landings

In 2012, Maine's glass eel landings hit an all-time high of 21,610 pounds with a landed value of over $38 million. This huge spike in price per pound created a gold rush mentality that brought with it poaching problems that most thought Maine could not overcome, and there was a call to close the fishery all together. Over the next two years, the Maine Department of Marine Resources (MEDMR) responded by instituting a voluntary reduction in harvest of 35% from the 18,076 pounds that was landed in 2013. This established the first glass eel quota for Maine at 11,749 pounds. Maine then

instituted individual fishing quotas, and penalties were moved from civil to criminal and included a "two-strike" provision where a harvester license would be permanently revoked. Also in 2013, MEDMR began to develop a swipe card program that would allow dealers to enter daily landings data quickly and allow MEDMR staff to analyze that data within 24 hours of receipt, as well as serve as a fishery management tool to implement an individual fishing quota (IFQ) for harvesters. The original harvester-to-dealer system was expanded in 2015 to include dealer-to-dealer transactions. With the implementation of Addendum IV, the elver quota was cut another 11%, reducing Maine's glass eel quota to 9,688 pounds. Since the implementation of the 9,688 pound glass eel quota, landings have tracked close to the quota with the exception of 2015 where a late spring with ice and high water contributed to a drop in landings – down to 5,260 pounds.

Since 2014, MEDMR has been able to effectively track the individual quotas of approximately 900 active harvesters each season as well as the overall quota. In a two-year period, over 23,000 daily landings reports did not need to be key-entered by MEDMR staff due to the Swipe Card System, and only two card failures were reported. In addition, the number of fishery-related infractions reported by the Marine Patrol dropped from over 200 in 2013 to under 20 in 2014 through 2016. The addition of the dealer-to-dealer swipe card program resulted in a difference of just over 120 pounds (approximately 2%) between what dealers reported purchasing directly from harvesters to what was exported from Maine dealers in 2015. These 120 pounds is likely attributed to shrinkage (die off between initial purchases to final shipment) and did not raise concerns for MEDMR staff.

Given their high market value, poaching of glass eels and elvers is known to be a serious problem in several states. Enforcement of the regulations is challenging due to the nature of the fishery (very mobile, nighttime operation, and high value for product). However, the recent cooperation between the State's enforcement agencies and the USFWS remains a high priority and has resulted in several convictions for violation of the Lacey Act.

North Carolina Aquaculture

Addendum IV to the FMP also allows approved Aquaculture Plans from states and jurisdictions to harvest up to 200 pounds of glass/elver eel annually from within their state waters for use in domestic aquaculture activities. The American Eel Farm (AEF) in North Carolina is the only facility to have applied and been approved for domestic aquaculture, which they have done annually since 2016. Fishing did not take place in 2016 due to permitting issues in North Carolina. In 2017, a total of 0.25 pounds of glass eels were harvested of the 200 pound quota. North Carolina Division of Marine Fisheries (NCDMF) submitted an amended plan on behalf of AEF for 2018-2020 which was approved by the Board in August 2017.

2.3.2 Yellow Eel Fishery

Coastwide Description

Yellow eel landings have varied considerably over the years due to a combination of market trends and availability. These fluctuations are evident both within states and jurisdictions, as well as at a regional level. Such fluctuations pose significant management challenges with regard to balancing sustainable landings and access to the resource with economic considerations. Over the last 19 years, total coastwide landings have ranged from a low of approximately 717,698 pounds in 2002 to a high of approximately 1,189,455 pounds in 2011. State reported landings of yellow/silver eels in 2016 totaled 943,808 pounds (Table 2), which represent an 9% increase in landings from 2015 (868,122 pounds). 2016 yellow eel landings increased in Maine, Rhode Island, Connecticut, Maryland through Virginia, and Florida but decreased in all other states and jurisdictions.

Table 2. State-by-state Yellow Eel Landings: 1998-2016. Source: Personal Communication from State and Jurisdictions, January 2018.

Year	ME	NH	MA	RI	CT	NY	NJ	DE	MD	PRFC	VA	NC	SC	GA	FL	Total
1998	0	Time series average of less than 400 pounds	3,456	967	5,606	16,867	94,327	131,478	301,833	209,008	123,837	91,084	Time series average of less than 400 pounds	Time series average of less than 400 pounds	13,819	992,741
1999	0		3,456	140	10,250	7,882	90,252	128,978	305,812	163,351	183,255	99,939			17,533	1,011,093
2000	0		2,976	25	4,643	5,824	45,393	119,180	259,552	208,549	114,972	127,099			6,054	894,577
2001	9,007		3,867	14,357	1,724	18,192	57,700	121,515	271,178	213,440	97,032	107,070			14,218	929,523
2002	11,617		3,949	22,965	3,710	30,930	64,600	99,529	208,659	128,595	75,549	59,940			7,587	717,698
2003	15,312		4,047	24,883	1,868	8,296	100,701	155,516	346,412	123,450	121,091	172,065			8,486	1,082,614
2004	29,646		5,328	19,858	1,374	5,354	120,607	137,489	273,142	116,263	123,812	128,875			7,330	969,318
2005	17,189		3,073	22,001	337	27,726	148,127	111,200	378,659	103,628	66,956	49,278			3,913	932,087
2006	27,489		3,676	1,034	3,443	10,601	158,917	123,994	362,966	83,622	82,756	33,581			1,248	894,192
2007	14,251		2,853	1,230	935	14,881	169,902	139,647	343,141	97,361	56,512	37,937			7,379	886,470
2008	3,882		3,297	8,866	6,046	15,025	137,687	80,002	381,993	71,655	84,031	23,833			15,624	832,475
2009	2,285		1,217	4,855	435	12,676	118,533	59,619	335,575	58,863	117,974	65,481			6,824	784,420
2010	2,605		322	3,860	167	12,179	105,089	69,355	524,768	57,755	77,263	122,104			11,287	986,937
2011	2,666		368	2,038	60	36,451	120,576	92,181	715,162	29,010	103,222	61,960			25,601	1,189,455
2012	12,775		462	1,484	2,228	35,603	113,806	54,304	590,412	90,037	121,605	64,110			11,845	1,100,881
2013	4,596		2,499	2,244	546	42,845	90,244	82,991	587,872	32,290	100,379	33,980			15,059	997,052
2014	4,320		3,903	2,353	1,390	38,143	91,225	62,388	619,935	49,293	109,537	60,755			14,092	1,057,467
2015	3,559		2,255	1,538	2,271	50,194	88,828	44,708	493,043	31,588	86,715	57,791			5,632	868,122
2016	4,509		1,705	2,651	2,445	36,371	67,422	44,558	583,578	58,223	96,336	39,911			6,034	943,808

Note: Due to data confidentiality rules, annual landings for New Hampshire, South Carolina, and Georgia are not shown rather the time series landings average of less than 400 pounds.

State-by-state Descriptions

The yellow American eel fishery in Maine occurs in both inland and tidal waters. Yellow eel fisheries in southern Maine are primarily coastal pot fisheries managed under a license requirement, minimum size limit, and gear and mesh size restrictions. New Hampshire has monitored its yellow eel fishery since 1980; reporting effort in the form of trap haul set-over days for pots or hours for other gears has been mandatory since 1990. Small-scale, commercial eel fisheries occur in Massachusetts and Rhode Island and are mainly conducted in coastal rivers and embayments with pots during May through November. Connecticut has a similar small-scale, seasonal pot fishery for yellow eels in the tidal portions of the Connecticut and Housatonic rivers. All New England states presently require commercial fishing licenses to harvest eels and maintain trip-level reporting.

Licensed eel fishing in New York occurs primarily in the Hudson River, the upper Delaware River (Blake 1982), and in the coastal marine district; prior to a closure starting fishing also occurred in Lake Ontario. A slot limit (greater than 9 inches and less than 14 inches to limit PCB exposure) exists for eels fished in the tidal Hudson River (from the Battery to Troy and all tributaries upstream to the first barrier), strictly for use as bait or for sale as bait only. Due to PCB contamination of the main stem, commercial fisheries have been closed on the freshwater portions of the Hudson River and its tributaries since 1976. The fishery in the New York portion of the Delaware River consists primarily of silver eels collected in a weir fishery. In 1995, New York approved a size limit in marine waters. New Jersey fishery regulations require a commercial license, a minimum mesh, and a minimum size limit. A minimum size limit was set in Delaware in 1995. Delaware mandated catch reporting in 1999 and more detailed effort reporting in 2007.

Maryland, Virginia, and Potomac River Fisheries Commission have primarily pot fisheries for American eels in Chesapeake Bay. Large eels are exported whereas small eels are used for bait in the crab trotline fishery, except in Virginia. Ninety-five percent of all American eel harvest in Virginia is by pots, and eel pots are the major pot gear. Virginia implemented a voluntary buyer reporting system in 1973 and a mandatory harvester reporting system, for all seafood species began in 1993. Since 1991, it has been mandatory that eel pots are equipped with mesh that cannot be less than one-half inch (1/2") by one-half inch (1/2"), with at least one unrestricted 4-inch by 4-inch square escape panels consisting of 1/2-inch by 1-inch mesh, regardless of pot shape. Maryland did not require licenses until 1981. Effort reporting was not required in Maryland until 1990. The Potomac River Fisheries Commission has had harvester reporting since 1964, and has collected eel pot effort since 1988.

North Carolina has a small, primarily coastal pot fishery that fluctuates with market demands. The majority of landings come from the Albemarle Sound area, with additional landings reported from the Pamlico Sound and “other areas.” No catch records are maintained for freshwater inland waters, and no sale of eels harvested from

these waters is permitted. Landings for "other areas" reported by the state come from southern waterbodies under the jurisdiction of NCDMF. South Carolina instituted a permitting system over ten years ago to document total eel gear and commercial landings. Pots and traps are permitted in coastal waters for the yellow eel life stage fishery; fyke nets and dip nets are permitted for glass eels.

American eel fishing in Georgia was restricted to coastal waters prior to 1980 when inland fishing was permitted (Helfman et al. 1984). Landings data are available for the states, but effort data is not because no specific license is required to fish eels. The Florida pot fishery has a minimum mesh size requirement in the fishery and it is operated under a permit system.

2.4 Status of the Stock

The last peer reviewed and accepted benchmark stock assessment was approved for management use in 2012. Analyses and results indicated that the American eel stock had declined and that there were significant downward trends in multiple surveys across the coast. It was determined that the stock was depleted but no overfishing determination could be made based on the analyses performed.

The 2012 benchmark stock assessment was updated in 2017 with data through 2016. All three trend analysis methods (Mann-Kendall, Manly, and ARIMA) detected significant downward trends in some indices. The Mann-Kendall test detected a significant downward trend in six of the 22 YOY indices, 5 of the 15 yellow eel indices, 3 of the 9 regional indices, and the 30-year and 40-year yellow-phase abundance indices. The remaining surveys tested had no trend, except for two which had positive trends. The Manly meta-analysis showed a decline in at least one of the indices for both yellow and YOY life stages. For the ARIMA results, the probabilities of being less than the 25th percentile reference points in the terminal year for each of the surveys were similar to those in ASMFC 2012 and currently three of the 14 surveys in the analysis have a greater than 50% probability of the terminal year of each survey being less than the 25th percentile reference point. Overall, the occurrence of some significant downward trends in surveys across the coast remains a cause for concern and the assessment maintained that the stock remains depleted.

3.0 Proposed Management Program

The following options were developed from the Board motion from October 2017. The options are organized by the specific life stage fishery and issue item.

3.1 Proposed Options for Maine Glass Eel Quota

Note: This addendum proposes changes to Maine's glass/elver eel quota as specified in Addendum IV. The following items will remain components of the commercial glass/elver eel fishery management program:

- **Quota Overages**: For any state or jurisdiction managed with a commercial glass/elver eel quota, if an overage occurs in a fishing year, that state or jurisdiction will be required to deduct their entire overage from their quota the following year, on a pound for pound basis.

- **Reporting Requirements**: Any state or jurisdiction with a commercial glass eel fishery is required to implement daily trip-level reporting with daily electronic accounting to the state for both harvesters and dealers in order to ensure accurate reporting of commercial glass eel harvest. The state of Maine's swipe card system is used by the state as a dealer report. Harvesters in Maine are currently reporting monthly via paper report submission. States or jurisdictions commercially harvesting less than 750 pounds of glass eels are exempt from this requirement.

- **Monitoring Requirements**: Any state or jurisdiction with a commercial glass eel fishery must implement a fishery-independent life cycle survey covering glass/elver, yellow, and silver eels within at least one river system. If possible and appropriate, the survey should be implemented in the river system where the glass eel survey (as required under Addendum III) is being conducted to take advantage of the long-term glass eel survey data collection. At a minimum the survey must collect the following information: fishery-independent index of abundance, age of entry into the fishery/survey, biomass and mortality of glass and yellow eels, sex composition, age structure, prevalence of *Anguillicoloides crassus (*invasive nematode*)*, and average length and weight of eels in the fishery/survey. Survey proposals will be subject to Technical Committee (TC) review and Board approval. States or jurisdictions commercially harvesting less than 750 pounds of glass eels are exempt from this requirement.

- **Glass Eel Harvest Allowance Based on Stock Enhancement Programs**: Any state or jurisdiction can request an allowance for commercial harvest of glass eels based on stock enhancement programs implemented after January 1, 2011, subject to TC review and Board approval. Provisions of the stock enhancement program include: demonstration that the program has resulted in a measurable increase in glass eel passage and/or survival; harvest shall not be restricted to the basin of restoration (i.e. harvest may occur at any approved location within the state or jurisdiction); and harvest requests shall not exceed 25% of the quantified contribution provided by the stock enhancement program. See Addendum IV for more detail on specific stock enhancement program examples.

*Option 1: Status Quo Quota for Maine of **9,688** pounds of glass eel*

Maine's glass eel quota for 2019 and beyond would remain at 9,688 pounds. This quota level was specified based on the state's 2014 landings which was below the state's 2014 quota of 11,749 pounds, and has been in place since 2015. The Board chose to specify

the quota at this level starting in the 2015 fishing year due in part to interest in reducing landings from the previous two year period (2012-2013) while balancing concerns over economic hardship and incentivizing poaching if the quota were set at a lower level. To change the quota in future years, a new addendum would be required. Noted in the fishery description section is an overview of Maine's implementation of the swipe card program to improve the accuracy of state landings. As part of the provisions of Addendum IV and the 2015-2017 quota, the state also developed a life cycle fishery-independent survey, aimed at getting more biological data on glass, yellow, and silver eel life stages within one river system. The state was unable to collect data in 2016 but continued developing the survey in 2017; results will be presented to the TC in 2018.

*Option 2: Maine Quota of **11,749** pounds of glass eel*

Maine's glass eel quota for 2019 and beyond would be set at 11,749 pounds. This quota level was specified for 2014 based on input from industry and tribal representatives and was a 35% reduction from 2013 landings. This quota is approximately a 19% increase from the 2015-2017 quota. Through the swipe card program, the state of Maine has made great efforts to curtail poaching of glass eels. The swipe card system coupled with individual fishing quotas ensures that that the sale of an individual's eels is not comingled with poached eels. Maine also tracks dealer to dealer elver transactions, as well as what is exported out of the State by Maine licensed elver exporters. These transactions are compared to shipping invoices to ensure glass eels are not added to a shipment once it leaves Maine's jurisdiction. The Maine Marine Patrol has also been authorized to use as much overtime as needed to enforce all laws and regulations related to the glass eel fishery. A new addendum would be required to adjust the quota in future years to higher level.

3.2 Proposed Options of Glass Eel Aquaculture Plans

Due to the increased desire to bring eels to market, this addendum proposes a new option for allowing states and jurisdictions to pool harvest allocations for use in domestic aquaculture facilities.

Option 1: Status Quo

The Aquaculture Plan provisions as specified in Addendum IV would remain in place and pooling of harvest among states and jurisdictions for domestic aquacultures would not be allowed. For more information on the current aquaculture plan provisions please refer to Appendix I. Addendum IV Aquaculture Plan Provisions.

Option 2: Pooling of Harvest allowance across states and jurisdictions

Under this option, up to **three contiguously bordered states** and jurisdictions would be allowed to pool their harvest of 200 pounds of glass eels up to a maximum of **600 pounds**. The 200 pound allowable harvest would be harvested from each state within the pooled grouping of states and jurisdictions, unless the states and jurisdictions can make a strong argument to have all eels harvested from a single watershed system. As

the pooling of harvest would be up to a maximum of 600 pounds, less than the 750 pounds that requires a life cycle survey, states and jurisdictions pooling harvest of glass eels for domestic aquaculture purposes would not need to implement a life cycle survey.

Additionally, it would be up to the states and jurisdictions to determine the number of aquaculture facilities per state. If under this option multiple facilities within a state or 'pooled' states are seeking glass eel harvest, it will be up to the states and jurisdictions to determine how the allowable harvest would be allocated among aquaculture facilities. States and jurisdictions would need to define harvest areas in their proposal to the Board.

This option would also seek to maintain all other Addendum IV Aquaculture Plan provisions (see Appendix I for more detail) with the exception of requiring states to objectively show that harvest would only occur from watersheds that minimally contribute to the spawning stock of American eel. If this option is selected, states would no longer need to objectively demonstrate harvest of glass eels for domestic aquaculture purposes are from watersheds that minimally contributes to the spawning stock of American eel. **Please note**: Under this option, current regulations for many states would not allow them to participate in pooling of glass eel harvest for aquaculture purposes. Most states (with the exception of Maine and South Carolina) currently have regulations and state statutes prohibiting the harvest of glass eels and assessing fines if these regulations and statutes are violated. If this option is selected and states that currently have these restrictions in place are requested to be party to a pooled harvest request and are unable to do so, this could result in greater harvest of glass eels from a single watershed or jurisdiction.

3.3 Proposed Options for Yellow Eel Coastwide Cap, Management Trigger, and State-by-state Allocations

Issue 1: Coastwide Cap

The Addendum IV Coastwide Cap of 907,671 pounds, was set at the coastwide average landings during the years of 1998 through 2010 (based on landings information in 2014) which was the period covered by the 2012 benchmark stock assessment. Although the 2017 assessment update repeated the 2012 finding that the American eel population is depleted, the American Eel Allocation Working Group noted the following reasons to consider increasing the Coastwide Cap:

- Yellow eel landings have fluctuated over a narrow range during the period of 1998 through 2016, suggesting a Coastwide Cap set at the mean landings level during this period is sustainable.

- Yellow eel landings are difficult to verify in the time frame specified by the Addendum IV triggers because most yellow eels are sold as live product. Yellow

eels are held live by harvesters until sold, so yellow eels can be harvested in one year, but not weighed, sold, and reported until the following year. Yellow eels also are often transported out of the state of landing and sold in another state, requiring two states to reconcile the landings information to avoid reporting duplication. These problems may result in the Coastwide Cap appearing to be exceeded based on initial landings reports and states being required to implement quotas unnecessarily per the management triggers before reports are finalized. The verification process of reported yellow eel landings is exemplified by the Addendum IV Coastwide Cap, now that the landings data used to calculate the Addendum IV Coastwide Cap have been updated for Addendum V. As noted below, the Addendum IV Coastwide Cap calculated using the updated Addendum V landings for the same 1998-2010 timeframe is 916,469 pounds, almost 10,000 pounds greater than the Addendum IV Coastwide Cap.

- Addendum IV allocated 88% of the yellow eel landings to the Delaware and Chesapeake Bay states in the event that state-by-state quota allocations were enacted. The yellow eel fishery in these states is conducted solely in estuarine waters. The yellow eel surveys conducted in Delaware and Chesapeake Bay states analyzed in the 2017 American Eel Assessment Update Report, either showed no trend or an increasing trend, suggesting the fishery is not diminishing the yellow eel abundance in this region. In addition, the commercial fishery CPUE as reported in state compliance reports has not declined in this region.

- American eels reach maturity at a younger age and smaller size in estuarine water than in fresh water (Clark 2009) and the 19-year time series of landings likely represents at least two generations (COSEWIC 2012) of estuarine yellow eels that have been exposed to the yellow eel fishery.

NOTE: For all Coastwide Cap options below, this Addendum will alter management starting in 2019 and the 2018 landings data will be used to evaluate the selected option below. In turn, depending on the subsequent options selected under Section 3.3 Issue items 2, 3, and 4, the earliest potential state-by-state allocations or other management response would be implemented starting in 2020 (i.e. 2018 landings data available in 2019 would be evaluated in 2019 with management response in 2020).

Option 1: Status Quo

Under this option, the current Coastwide Cap of 907,671 pounds would remain in place as well as provisions of the Coastwide Cap as specified in Addendum IV. **Please note**: The Coastwide Cap was specified in Addendum IV based on available data through 2010. That data has been subsequently revised and new coastwide landings averaged from 1998-2010 are 916,473 pounds. If the Board wishes to specify a new Coastwide Cap of 916,473 pounds based on average landings from 1998-2010, they can do so because it is between the highest and lowest cap options offered through this document.

*Option 2: Coastwide Cap set at **943,808 pounds**; the 50th percentile or median of 1998-2016 landings*

The yellow eel fishery is dependent on foreign market fluctuations, thus effort and landings can vary considerably between years regardless of the yellow eel population. The median (50th percentile) of annual landings accounts for these variations by setting the coastwide landings cap at the mid-point in landings, which should reflect the midpoint in effort for the time series a well.

*Option 3: Coastwide Cap set at **951,102 pounds**; the mean or average of 1998-2016 landings*

The Coastwide Cap will be set at the mean of 1998 through 2016 landings. This option updates the Coastwide Cap to include more recent landings data.

*Option 4: Coastwide Cap set at **836,969** pounds; a 12% decrease from the mean or average of 1998-2016 landings*

During the development of Addendum IV, the TC and Stock Assessment Subcommittee (SAS) recommended that harvest be reduced in all life stages due to the depleted status from the benchmark stock assessment. The TC and SAS advised that any harvest reduction less than 12% from the baseline (years 1998-2010), which was the coefficient of variation (CV) of the landings during that time period, is likely not to provide a measureable harvest reduction. The CV calculated from the landings for 1998-2016 is 12%. A 12% reduction from 951,102 pounds (the average landings from 1998-2016) is 836,969 pounds.

Issue 2: Management Trigger

For all three of the options listed under Issue 2, a management response would be required. The potential management response would be dependent on the selected option under Issue 3: Allocation. If a state-by-state commercial yellow eel quota option is selected, states would be required to implement a management program that would allow the state to constrain landings to the state's quota allocation starting in the subsequent year the management trigger is tripped. As this Addendum outlines management starting in 2019, the earliest year state-by-state quotas would be implemented is 2020 (under either Option 1: Status Quo - Coastwide Cap exceeded by 10% in a given year or Option 2: One-year Trigger).

Option 1: Status Quo

Under this option the current (two) management triggers as outlined in Addendum IV would remain in place regardless of whether the Coastwide Cap is adjusted in the prior subsection (Issue 1). If either of these management triggers is tripped, a management response would be required. The potential management response would be dependent on the selected option under Issue 3 'Allocation' (below).

Management Triggers

1. The Coastwide Cap is exceeded by more than 10% in a given year (the value of exceedance is dependent on the selected option in Issue 1: Coastwide Cap).
2. The Coastwide Cap is exceeded for two consecutive years, regardless of percent over.

Options 2 and 3 below would establish a management trigger that takes into account the inter-annual variability of the coastwide landings and incorporates years after 2010. From 2011 through 2016 coastwide landings have fluctuated from 29% above to 3% below the Coastwide Cap, with five of the six years above the Coastwide Cap (Figure 1). Note: the Coastwide Cap is set at 907,671 pounds; a 10% exceedance of the Coastwide Cap is 998,438 pounds.

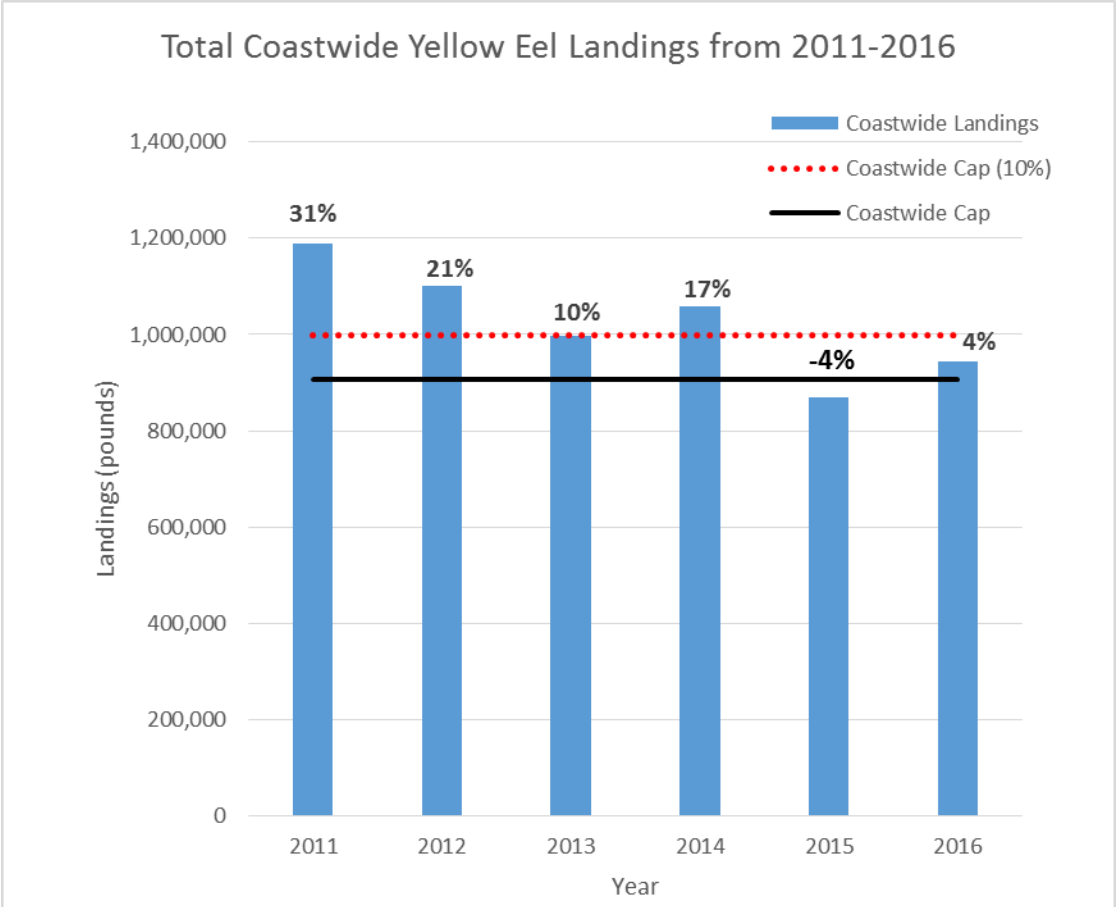

Figure 1. Coastwide yellow eel landings from 2011-2016 compared to Coastwide Cap and 10% exceedance of the Cap (the Management Trigger). Percentages above each bar indicate percent above (or below) the Coastwide Catch Cap.

Option 2: One year of exceeding the Coastwide Cap by 10% (One-year trigger)
Under this option, the coastwide landings would annually be evaluated against a new one-year management trigger. If the Coastwide Cap is exceeded by 10% (the value of exceedance is dependent on the selected option in Issue 1: Coastwide Cap) in one year, the Board is required to alter the management program as specified below (Issue 3) in order to ensure the objectives of the management program are achieved.

Option 3: Two years of exceeding Coastwide Cap by 10% (Two-year trigger)
Under this option, the coastwide landings would annually be evaluated against a two-year management trigger. If the Coastwide Cap is exceeded by 10% (the value of exceedance is dependent on the selected option in Issue 1: Coastwide Cap) for two consecutive years, the Board is required to alter the management program as specified below (Issue 3) in order to ensure the objectives of the management program are achieved.

Issue 3: Allocation
If the selected management trigger in the above subsection (Issue 2) is tripped, then states would be required to take action for the subsequent fishing year. The following outlines options for state-by-state allocations as well as options for no state allocation. If a state-by-state allocation option is selected, states must ensure that a quota management program is implemented to address quota overages and allow quota transfers, as specified below. It is recommended that monitoring and reporting requirements be sufficient to prevent repeated overages. Additionally, the following provisions would apply to any state-by-state quota allocation options below:

- State quotas will be evaluated on a calendar-year basis.
- Final landings data from the previous year will be evaluated against a state's quota from the same year. Final landings data from the previous year may be made available for the current year by the ASMFC Spring Meeting (i.e. May).
- The Board will confirm overages and adjusted quotas (as needed) for the following year no later than the ASMFC Annual Meeting (i.e. October-November) of the current year.
- States will put forward proposals that have been reviewed and approved by the Technical Committee demonstrating the following year's quota will not be exceeded no later than the ASMFC Winter Meeting (i.e. January-February) of the following year.

Please note: For the timetable listed directly above, there is 2 year lag in addressing overages. For example, in 2020, state allocations are implemented based on 2018 landings data tripping the Coastwide Cap management trigger in 2019. If a state goes over their allocation in 2020, based on landings information available in 2021, that state's quota is reduced and the state's proposal needs to demonstrate an overage won't happen again in 2022 (2021 is unaccounted for).

Option 1: Status quo

Addendum IV laid out the following process for specifying the Coastwide Cap and state-by-state allocations. The initial quota was set at the 2010 coastwide landings level (978,004 pounds). 2010 represented the last year of data included in the 2012 benchmark stock assessment. The TC recommended to reduce mortality from this level. From this level a 16% reduction was applied to the 2010 landings levels (821,523 pounds). Then average landings for the states from 2011-2013 were used to developed initial allocations. From this point, a filtering method was applied to adjust allocations: 1) states are allocated a minimum 2,000-pound quota, 2) no state is allocated a quota that is more than 2,000 pounds above its 2010 commercial yellow eel landings, and 3) no state is allocated a quota that is more than a 15% reduction from its 2010 commercial yellow eel landings. After the filtering method was applied, the coastwide quota was 893,909 pounds. The difference between the updated quota and the TC's recommendation was 13,762 pounds. This difference was split equally among the states negatively impacted by the quota relative to 2010 commercial landings (RI, NJ, DE, PRFC, and NC). For states that qualify for the 2,000-pound base quota, any overages would be deducted from the 2,000 pound allocation. As previously noted, due to a rounding error the combined total of state by state allocations is equal to 907,669 pounds, slightly less than the current Coastwide Cap of 907,671 pounds.

Table 3. Status Quo State-by-State Allocations for the Commercial Yellow Eel Fishery from Addendum IV. These quotas would ONLY be implemented if the Board-selected management trigger (Issue 2) is tripped.

	Allocation	Quota
Maine	0.43%	3,907
New Hampshire	0.22%	2,000
Massachusetts	0.22%	2,000
Rhode Island	0.51%	4,642
Connecticut	0.22%	2,000
New York	1.677%	15,220
New Jersey	10.45%	94,899
Delaware	6.79%	61,632
Maryland	51.33%	465,968
PRFC	5.76%	52,358
Virginia	8.67%	78,702
North Carolina	11.79%	107,054
South Carolina	0.22%	2,000
Georgia	0.22%	2,000
Florida	1.46%	13,287
Total	100%	907,669

Option 2: No state-by-state quota
Under this option, the yellow eel fishery would be managed without state-specific quotas through adaptive management. Should the management trigger be tripped the Board will engage the TC to determine the reduction necessary to return coast-wide landings to the cap in the subsequent fishing year and identify mechanisms that could achieve the desired reduction (e.g., trip limits, season closures, or other effort reductions). The reduction may be scaled among states to ensure equitable management. Each state will develop a plan to achieve assigned reductions and submit it to the TC for review. The following sub-options specify how the states would work to achieve the required reduction.

Sub-Option 2A: Equitable reduction
Under this sub-option, all states would work collectively to achieve an equitable reduction in landings from the most recent year's cumulative coastwide landings to the Coastwide Cap if the management trigger is tripped. For example, in 2019, if 2018 landings exceed the Coastwide Cap as specified in the prior section, then the states would collectively develop measures to achieve the needed reduction to limit catch to the Coastwide Cap in the 2020 fishing year.

Sub-Option 2B: 1% rule for states to reduce landings
Under this sub-option, only states with landings greater than 1% of the coastwide landings in the year(s) when the management trigger is tripped will be responsible for reducing their landings to achieve the Coastwide Cap in the subsequent year. Those states with landings greater than 1% of the coastwide landings will work collectively to achieve an equitable reduction to the Coastwide Cap. For those states with landings less than 1% of the coastwide landings, if in subsequent years a state's landings exceeds 1% of the coastwide landings after reductions have been applied, that state must reduce their individual state landings in the subsequent year to return to the <1% level.

Option 3: Modified Addendum IV Quotas
This is a modification of the Addendum IV allocation formula intended to offer greater flexibility given the variability in landings over time.

This option maintains the basic allocation structure from Addendum IV, but makes some adjustments in order to more evenly distribute the impacts of a quota relative to recent (2012-2016) fishery performance, while maintaining the spirit of Addendum IV allocation. Under this option, states whose new quota would have resulted in reductions from average harvest over the most recent five years still will need to reduce, but these reductions are mitigated.

Quota was redistributed among the states from two sources:

1) A cap on allocations so that a state's assigned quota cannot exceed their 2012-2016 average harvest by more than 25%.

2) The 2,000 pound minimum quota assigned to New Hampshire, Massachusetts, Connecticut, South Carolina, and Georgia was initially removed and redistributed to the remaining states.

The quota resulting from the removal of the 2,000 pound minimum and from capping states with more than a 25% increase was used two ways: 1) to set Maine's quota close to their 2012-2016 average harvest of 5,952 pounds (quota of 5,907 pounds) and therefore mitigate Maine's reduction if a quota is implemented and 2) the remainder (52,918 pounds) was divided evenly among and added to the Addendum IV quotas of New York, Maryland and Virginia - the only three states who would face a reduction from 2012-2016 average harvest levels under Addendum IV.

Finally, based on harvest history, 0.75% of the Coastwide Cap (6,808 pounds under the current cap) was set aside and divided evenly among those 5 states given the minimum 2,000 pound allocation under Addendum IV (6,808/5 = 1,362 pounds). The allocation of 1,362 pound was rounded down to 1,000 pounds for each of the states. The excess from this rounding (1,807.5 pounds) was added back to Maryland's proposed quota to further mitigate their impacts (Table 4 and Figure 2). Appendix II further describes this quota redistribution proposal.

Table 4. State Allocations under Option 3 compared to Addendum IV

State	Addendum IV Percentage Allocation	Option 3 Percentage Allocation	Addendum IV Quota	Option 3 Quota
ME	0.43%	0.65%	3,907	5,907
NH	0.22%	0.11%	2,000	1,362
MA	0.22%	0.11%	2,000	1,362
RI	0.51%	0.28%	4,642	2,551
CT	0.22%	0.11%	2,000	1,362
NY	1.68%	3.59%	15,220	32,613
NJ	10.46%	10.38%	94,899	94,187
DE	6.79%	6.74%	61,632	61,170
MD	51.34%	53.08%	465,968	479,978
PRFC	5.77%	5.73%	52,358	51,965
VA	8.67%	10.53%	78,702	95,619
NC	11.79%	7.03%	107,054	63,818
SC	0.22%	0.11%	2,000	1,362
GA	0.22%	0.11%	2,000	1,362
FL	1.46%	1.44%	13,287	13,051
Total	100%	100%	907,669	907,669

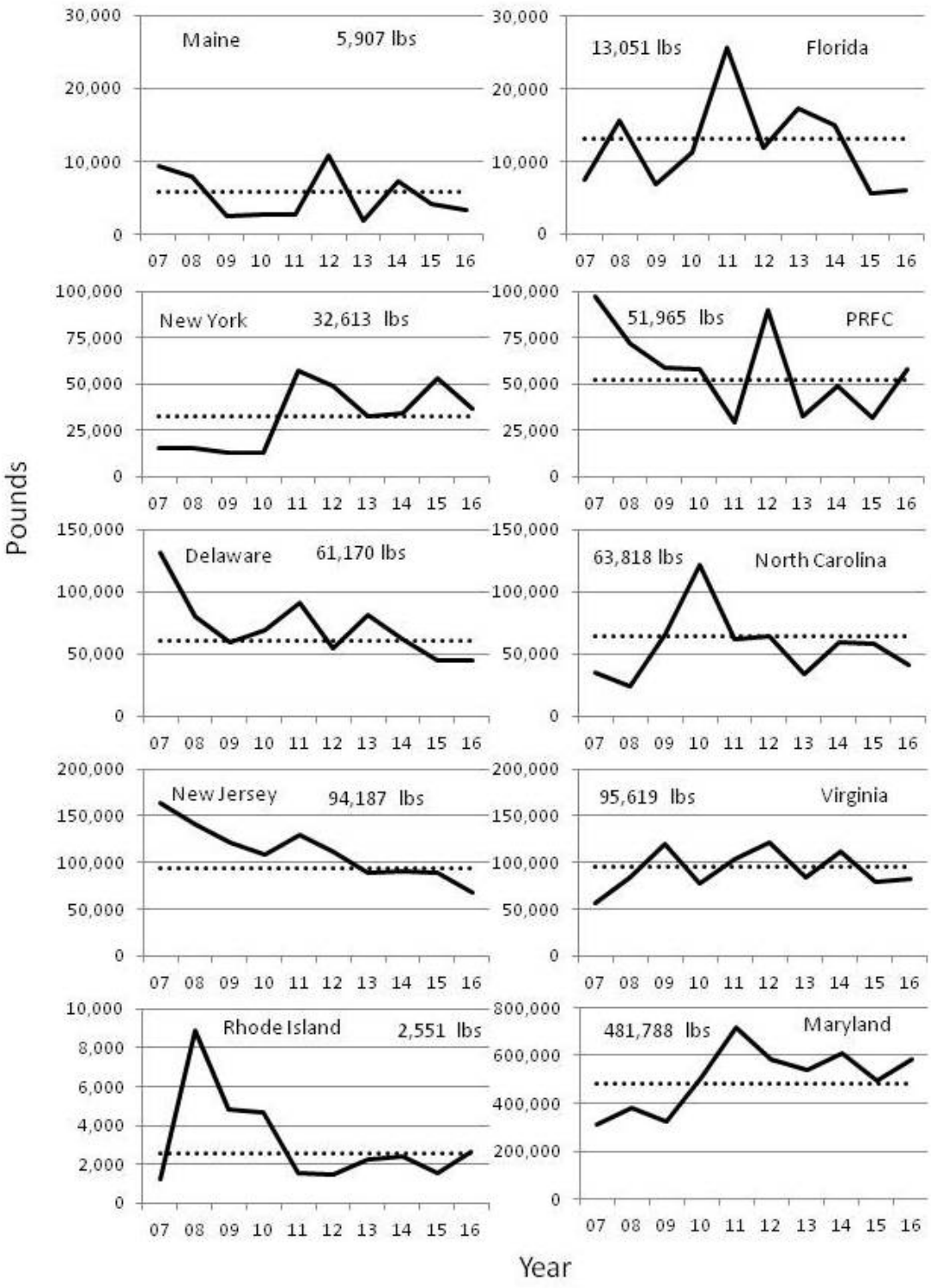

Figure 2. Option 3 State Quotas relative to landings. This shows proposed quotas (dotted line) compared to each state's landings over the past 10 years. States not shown are assigned a base quota of 1,362 pounds. The proposed quota assumes a status quo coastwide quota of 907,699 pounds.

Note: For Options 3, 4, and 5, the following items on accountability will be carried over from Addendum IV:

- *Accountability*: States will be held accountable for their annual quota. If a state or jurisdiction has an overage in a given fishing year, then the state or jurisdiction is required to reduce their following year's quota by the same amount the quota was exceeded, pound for pound. *For states that qualify for the automatic 2,000 pound quota, any overages would be deducted from the 2,000 pound allocation.**

  Under both the landings cap and quota systems, all New York American eel landings (i.e. from both the yellow and silver eel fisheries) are included, until otherwise shown to preclude it.

  Additionally, for the following example tables for Options 4 and 5, a breakdown of the previous allocation under Addendum IV state-by-state quotas is compared against the new state allocations of the same Coastwide Cap.

***Note**: if allocation option 3, 4, or 5 is chosen then overages by the states of New Hampshire, South Carolina, and Georgia will be treated on a case-by-case basis since, under these options, these states have quotas significantly lower than 2,000 pounds.

Option 4: Simple Time Series Average of Yellow Eel Landings

Under this option states will be allocated a quota based on their state's average state yellow eel landings data for a specific timeframe. In the example allocations listed below, the coastwide landings quota is set at 907,669 pounds (the Addendum IV coastwide quota) to help compare current state-by-state quotas under Addendum IV to the proposed quotas in Options 4 A and B (Tables 5 and 6). Data used to develop average landings for each time series can be found in Table 2. **Note**: The state-by-state allocations below would differ if either Option 2 or 3 are selected. Additionally, please note that due to low landings and data confidentiality, New Hampshire, South Carolina, and Georgia's average landings for the two time periods are not specified below.

Table 5. Sub-option 4A: Average landings over most recent 10-year time series (2007-2016)

State	Average Landings 2007-2016	Addendum IV Percentage Allocation	New Percentage	Addendum IV Quota	New Quota under Option 4A
ME	5,545	0.43%	0.57%	3,907	5,217
NH		0.22%	0.01%	2,000	61
MA	1,888	0.22%	0.20%	2,000	1,776
RI	3,112	0.51%	0.32%	4,642	2,928
CT	1,652	0.22%	0.17%	2,000	1,555
NY	29,437	1.68%	3.05%	15,220	27,696
NJ	110,331	10.46%	11.44%	94,899	103,808
DE	72,975	6.79%	7.56%	61,632	68,661
MD	517,548	51.34%	53.65%	465,968	486,947
PRFC	57,608	5.77%	5.97%	52,358	54,201
VA	95,357	8.67%	9.88%	78,702	89,719
NC	56,786	11.79%	5.89%	107,054	53,429
SC		0.22%	0.00%	2,000	3
GA		0.22%	0.05%	2,000	436
FL	11,938	1.46%	1.24%	13,287	11,232
Total	964,709	100.00%	100%	907,669	907,669

Table 6. Sub-option 4B: Average landings over most recent 5-year time series (2012-2016)

State	Average Landings 2012-2016	Addendum IV Percentage Allocation	New Percentage	Addendum IV Quota	New Quota under Option 4B
ME	5,952	0.43%	0.60%	3,907	5,438
NH		0.22%	0.01%	2,000	50
MA	2,165	0.22%	0.22%	2,000	1,978
RI	2,054	0.51%	0.21%	4,642	1,877
CT	1,776	0.22%	0.18%	2,000	1,623
NY	40,631	1.68%	4.09%	15,220	37,122
NJ	90,305	10.46%	9.09%	94,899	82,506
DE	57,790	6.79%	5.82%	61,632	52,799
MD	574,968	51.34%	57.87%	465,968	525,313
PRFC	52,286	5.77%	5.26%	52,358	47,771
VA	102,914	8.67%	10.36%	78,702	94,027
NC	51,309	11.79%	5.16%	107,054	46,878
SC		0.22%	0.00%	2,000	1
GA		0.22%	0.07%	2,000	665
FL	10,532	1.46%	1.06%	13,287	9,623
Total	993,466	100.00%	100%	907,669	907,669

Option 5: Allocation Based on Weighted Time Series Average of Yellow Eel Landings
Under this option, states will be allocated a quota based on the weighted average of their state yellow eel landings data for a specific timeframe. For example, Tables 7 and 8 below compare current state-by-state quotas under Addendum IV to the proposed quotas in Options 5A and B with the coastwide landings quota set at 907,669 pounds (the Addendum IV coastwide quota). Data used to develop weighted average landings for each time series can be found in Table 2. **Note**: The state-by-state allocations in the tables below will differ if either Option 2 or 3 under Issue Item 1 (Coastwide Cap) are selected. Also included for the following sub-options is an example equation demonstrating how the allocation was derived (Appendix III).

Table 7. Sub-option 5A: Weighted average: 50 % of the time series (1998-2016) and 50% of the most recent 10 years (2007-2016)

State	Addendum IV Percentage Allocation	New Percentage Allocation under Option 5A	Addendum IV Quota	New Quota under Option 5A
ME	0.43%	0.74%	3,907	6,759
NH	0.22%	0.01%	2,000	79
MA	0.22%	0.24%	2,000	2,209
RI	0.51%	0.54%	4,642	4,899
CT	0.22%	0.22%	2,000	2,017
NY	1.68%	2.71%	15,220	24,570
NJ	10.46%	11.21%	94,899	101,743
DE	6.79%	8.92%	61,632	80,920
MD	51.34%	48.67%	465,968	441,788
PRFC	5.77%	8.30%	52,358	75,319
VA	8.67%	10.31%	78,702	93,624
NC	11.79%	6.91%	107,054	62,731
SC	0.22%	0.00%	2,000	2
GA	0.22%	0.04%	2,000	376
FL	1.46%	1.17%	13,287	10,632
Coastwide	100%	100%	907,669	907,669

Table 8. Sub-option 5B: Weighted average: 50 % of the time series (1998-2016) and 50% of the most recent 5 years (2012-2016)

State	Addendum IV Percentage Allocation	New Percentage Allocation under Option 5B	Addendum IV Quota	New Quota under Option 5B
ME	0.43%	0.75%	3,907	6,849
NH	0.22%	0.01%	2,000	73
MA	0.22%	0.25%	2,000	2,305
RI	0.51%	0.48%	4,642	4,333
CT	0.22%	0.23%	2,000	2,045
NY	1.68%	3.24%	15,220	29,432
NJ	10.46%	10.01%	94,899	90,891
DE	6.79%	8.00%	61,632	72,636
MD	51.34%	50.91%	465,968	462,057
PRFC	5.77%	7.90%	52,358	71,721
VA	8.67%	10.55%	78,702	95,767
NC	11.79%	6.53%	107,054	59,247
SC	0.22%	0.00%	2,000	1
GA	0.22%	0.05%	2,000	493
FL	1.46%	1.08%	13,287	9,819
Coastwide	100%	100%	907,669	907,669

Issue 4: Quota Transfers

As noted in earlier sections, the Allocation Working Group highlighted concerns regarding the timing of when landings information becomes available and finalized, specifically in evaluating fishery performance. Addendum IV outlined the following provisions for transfer of quota under state-by-state allocations:

- Any state or jurisdiction may request approval from the Board Chair or Commission Chair to transfer all or part of its annual quota to one or more states, including states that receive the automatic 2,000 pound quota. Requests for transfers must be made by individual or joint letters signed by the principal state official with marine fishery management authority for each state involved. The Chair will notify the requesting states within ten working days of the disposition of the request. In evaluating the request, the Chair will consider: if the transfer would preclude the overall annual quota from being achieved, if the transfer addresses an unforeseen variation or contingency in the fishery, and if the transfer is consistent with the objectives of the FMP. Transfer

requests for the current fishing year must be submitted by December 31 of that fishing year.

- The transfer of quota would be valid for only the calendar year in which the request is made. These transfers do not permanently affect the state-specific shares of the quota, i.e., the state specific shares remain fixed. Once quota has been transferred to a state, the state receiving quota becomes responsible for any overages of transferred quota.

Many states are concerned that the implementation of state quotas will lead to fishery inefficiencies both at the state and coastwide level. For example, late fall is often a peak yellow eel harvest period. If a state with unused quota was hesitant to transfer quota to a state that had filled its quota because it was unsure whether it could spare the unused quota, the quota in the potential donor state could go unused while the harvesters in the potential recipient state would be denied extra income. This inefficient use of the fishery and capricious reduction in fishery revenue is in direct contradiction of the ISFMP Charter. To avoid this potential problem, if a state-by-state allocation option is selected under Issue 3, the Allocation Working Group has put forward the following options:

Option 1: Status Quo (Transfers allowed no later than December 31)
Under this option, quota transfer requests must be submitted by December 31 of that fishing year.

Option 2: Extend transfer provisions to February 15 of the following fishing season.
Under this option, quota transfers may occur at any time during the fishing season but no later than February 15 of the following year. All transfers require a donor state (state giving quota) and a receiving state (state accepting additional quota). There is no limit on the amount of quota that can be transferred by this mechanism, and the terms and conditions of the transfer are to be identified solely by the parties involved in the transfer. This strategy will allow both the donor and recipient state to have additional time to reconcile their landings data.

3.4 Timeframe for Addendum Provisions
There is not a sunset for this Addendum. If a new or different management program is desired than what is specified in the prior sections, a new addendum is required. If state-by-state allocations are implemented based on a selected management trigger and Coastwide Cap specified above, state-by-state allocations will be revisited within 3 years (reviewed in 2021). During the revisiting process, the Board may reconsider if state-by-state quotas are needed for the 2022 fishing season if the implemented state-by-state quotas have not been exceeded for 2 years.

Specific to the Maine glass eel quota, the selected quota in the section above will be specified for three years moving forward (starting in the 2019; from 2019-2021), and can be revisited before year four (2022). If the Board decides to maintain Maine's glass

eel quota at its specified level in the section above, the quota can be extended for an additional three years (2022-2024) without requiring a new addendum. If there is a desire to increase Maine's glass eel quota from the specified level in the section above, a new Addendum will be required.

4.0 Compliance

If the existing American Eel FMP is revised by approval of this draft addendum, the American Eel Management Board will designate dates by which states will be required to implement the addendum starting with the 2019 fishing season. A final implementation schedule will be identified based on the management tools chosen.

References

Atlantic States Marine Fisheries Commission (ASMFC). 2000. Interstate Fishery Management Plan for American Eel (*Anguilla rostrata*). Washington D.C. NOAA Oceanic and Atmospheric Administration Award No. NA97 FGO 0034 and NA07 FGO 024.

Atlantic States Marine Fisheries Commission (ASMFC). 2012. American Eel Benchmark Stock Assessment. Arlington, VA.

Atlantic States Marine Fisheries Commission (ASMFC). 2014. Addendum IV to the Interstate Management Plan for American Eel. Arlington, VA.

Atlantic States Marine Fisheries Commission (ASMFC). 2017. American Eel Stock Assessment Update. Arlington, VA.

Blake, L. M. 1982. Commercial fishing for eel in New York State. In K. H. Loftus (ed). Proceedings of the 1980 North American eel conference. Ont. Fish. Tech. Rep. Ser. No. 4. 97pp

Clark, J. 2009.The American Eel Fishery in Delaware. Pages 229-240 *in* J. M. Casselman and D. K. Cairns, editors. Eels at the edge: science, status and conservation concerns. American Fisheries Society Symposium 58, Bethesda, Maryland.

COSEWIC. 2012. COSEWIC assessment and status report on the American Eel Anguilla rostrata in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. xii + 109 pp. (www.registrelep-sararegistry.gc.ca/default_e.cfm).

Helfman, G.S., D.L. Stoneburner, E.L. Bozeman, P.A. Christian, and R. Whalen. 1983. Ultrasonic telemetry of American eel movements in a tidal creek. Transactions of the American Fisheries Society 112:105–110.

Appendix I. Addendum IV (2014) Aquaculture Plan Provisions

States and jurisdictions may develop a Plan for aquaculture purposes. Under an approved Aquaculture Plan, states and jurisdictions may harvest a maximum of 200 pounds of glass eel annually from within their waters for use in domestic aquaculture facilities provided the state can objectively show the harvest will occur from a watershed that minimally contributes to the spawning stock of American eel. The request shall include: pounds requested; location, method, and dates of harvest; duration of requested harvest; prior approval of any applicable permits; description of the facility, including the capacity of the facility the glass eels will be held, and husbandry methods; description of the markets the eels will be distributed to; monitoring program to ensure harvest is not exceeded; and adequate enforcement capabilities penalties for violations. Approval of a request does not guarantee approval of a request in future years. Eels harvested under an approved Aquaculture Plan may not be sold until they reach the legal size in the jurisdiction of operations, unless otherwise specified.

All Plans are subject to TC and LEC review and Board approval. The Fishing Mortality Based Plan must be submitted by June 1st of the preceding fishing year in order to provide enough time for review for the upcoming fishing season. Transfer and Aquaculture Plans must be submitted by June 1st of the preceding fishing year and approval will be determined by the Board by September 1st. Plans will initially be valid for only one year. After the first year of implementation the TC will evaluate the program and provide recommendations to the Board on the overall impact of and adherence to the plan. If the proposed regulatory changes, habitat improvements, or harvest impact cannot be assessed one year post-implementation, then a secondary review must occur within three to five years post-implementation if the action is still ongoing. If states use habitat improvements and changes to that habitat occurs in subsequent years, the Commission must be notified through the annual compliance report and a review of the Plan may be initiated. Any requests that include a stocking provision would have to ensure stocked eels were certified disease free according to standards developed by the TC and approved by the Board.

Appendix II. Modified Addendum IV Quotas (Option 3) Explained

Option 3: Modified Addendum IV Quotas under Section 3.3 Issue 3: Allocation (page 21)

Background: The intent of this option is to redistribute quotas assigned in Addendum IV in order to mitigate reductions for some states from the most recent 5 year (2012-2016) landings, while not substantially changing the allocation outcome for any state. States with gray cells have landed less than 1% of the coastwide landings each year since 2007. Table 1 shows the impact of Addendum IV quotas relative to 2012-2016 average landings. Four states would be required to reduce their average landings by more than 15% if the allocation remains the same.

Table 1.

State	Addendum IV Quota (pounds)	Average Landings 2012-2016	Percent change from average landings (2012-2016) to Addendum IV quota
ME	3,907	5,952	**- 34 %**
NH	2,000		
MA	2,000		
RI	4,642	2,054	+ 126 %
CT	2,000		
NY	15,220	40,631	**- 63 %**
NJ	94,899	90,305	+ 5 %
DE	61,632	57,790	+ 7 %
MD	465,968	574,968	**- 19 %**
PRFC	52,358	52,286	+ 0.14 %
VA	78,702	102,914	**- 24 %**
NC	107,054	51,309	+ 109 %
SC	2,000		
GA	2,000		
FL	13,287	10,532	+ 26 %
Coastwide	907,669	993,466	

Step 1. 25% rule and reconsideration of minimum base allocation

Quota for redistribution is taken from 2 sources: 1) any state whose quota under Addendum IV results in more than 25% percent increase over the most recent 5 year average landings (2012-2016) has their quota capped at a 25% increase (Rhode Island, North Carolina and Florida), and 2) the 2,000 pound base allocation from the low landings states of New Hampshire, Massachusetts, Connecticut, South Carolina, and Georgia. This generates 54,963 pounds for redistribution.

Table 2.

State	Addendum IV Quota in pounds	Proposed quota with 25% cap in place.	% change from average landings to proposed quota.	Quota made available for redistribution (pounds)
NH	2,000			2,000
MA	2,000			2,000
RI	4,642	2,570	+ 25%	2,072
CT	2,000			2,000
NC	107,054	64,300	+ 25%	42,754
SC	2,000			2,000
GA	2,000			2,000
FL	13,287	13,150	+ 25%	137
Coastwide				**54,963**

Step 2. Redistribution, Part 1

Quotas assigned under Addendum IV resulted in four states with greater than 1% of the coastwide landings having to take reductions from their most recent 5 year (2012-2016) average: Maine (-34%), New York (-63%), Maryland (-19%), and Virginia (-24%). Therefore, the first step in redistribution was to mitigate these reductions. To do so, the quota for Maine was set close to their 2012-2016 average harvest of 5,952 pounds (quota of 5,907 pounds). The remaining 52,918 pounds is split equally among New York, Maryland and Virginia. As shown in Table 3, Maine, New York, Maryland and Virginia now have higher quotas and mitigated reductions compared to Addendum IV. Rhode Island, North Carolina and Florida have proposed quotas that are higher than their average harvest 2012-2016, but the increase is capped at 25%. New Jersey, Delaware, and PRFC have no changes over their Addendum IV quotas. Quota has not yet been assigned to the low harvest states (gray cells).

Table 3.

State	Addendum IV Quota (pounds)	Initial quota (pounds) with no base quota for states with low landings	Percent change from average landings (2012-2016)
ME	3,907	5,907	-1%
NH	2,000		
MA	2,000		
RI	4,642	2,570	+ 25 %
CT	2,000		
NY	15,220	32,859	- 19 %
NJ	94,899	94,899	+ 5 %
DE	61,632	61,632	+ 7 %
MD	465,968	483,607	- 16 %
PRFC	52,358	52,358	0
VA	78,702	96,341	- 6 %
NC	107,054	64,300	+ 25 %
SC	2,000		
GA	2,000		
FL	13,287	13,150	+ 25 %
Coastwide	907,669	907,669	

Step 3. Redistribution, Part 2

To provide some base quota for the low landings states of New Hampshire, Massachusetts, Connecticut, South Carolina and Georgia, 0.75% of the coast wide quota was set aside for these landings states, and the quotas for the states of Maine, Rhode Island, New York, New Jersey, Delaware, Maryland, Potomac River Fisheries Commission, Virginia, North Carolina, and Florida shown in Table 3 were scaled down by this amount to create the set aside of 6,808 pounds. This set aside was divided equally among the 5 low landings states generating a rounded base quota of 1,362 pounds. While the states of Maine, New York, Maryland, Potomac River Fisheries Commission, and Virginia would still face reduction from their recent landings levels if state allocations are implemented under Option 3; the proposed option would mitigate those

reductions. Option 3 state quotas under the status quo Coastwide Cap are shown in Table 4.

Table 4.

State	Addendum IV Percentage Allocation	Option 3 Percentage Allocation	Addendum IV Quota (pounds)	Option 3 quota (pounds)	% change average landings (2012-2016) to Option 3 quota
ME	0.43%	0.65%	3,907	5,907	**- 1 %**
NH	0.22%	0.11%	2,000	1,362	
MA	0.22%	0.11%	2,000	1,362	
RI	0.51%	0.28%	4,642	2,551	+ 24 %
CT	0.22%	0.11%	2,000	1,362	
NY	1.68%	3.59%	15,220	32,613	**- 20 %**
NJ	10.46%	10.38%	94,899	94,187	+ 4 %
DE	6.79%	6.74%	61,632	61,170	+ 6 %
MD	51.34%	53.08%	465,968	479,980	**- 17 %**
PRFC	5.77%	5.73%	52,358	51,965	- 0.6 %
VA	8.67%	10.53%	78,702	95,619	**- 7 %**
NC	11.79%	7.03%	107,054	63,818	+ 24 %
SC	0.22%	0.11%	2,000	1,362	
GA	0.22%	0.11%	2,000	1,362	
FL	1.46%	1.44%	13,287	13,051	+ 24 %
Coastwide	100.00%	100.00%	907,669	907,669	

Appendix III. Calculations for Option #5 Sub-Options
Option 5: Allocation Based on Weighted Time Series Average of Yellow Eel Landings
Section 3.3 Issue 3: Allocation (page 26)

The following calculations are done using North Carolina landings data from Table 2 as an example for Option 5 A: *Weighted average: 50 % of the time series (1998-2016) and 50% of the most recent 10 years (2007-2016).* Note that the same process is applied to Option 5B with a 5-year time series (2012-2016).

Step 1. Weighting Time Series Average Landings
A state's weighted time series average landings is calculated by multiplying the specified time series averages by the weighting percentages (50% or 0.5) and the two time series' average landings are then summed together through the following equation:

0.5 X 19 year Time Series Average (1998-2016) + 0.5 X 10 year Time Series Average (2007-2016) = Weighting Time Series Average Landings

0.5 X NC 19 year Time Series Average (**75,621 pounds**) + 0.5 X NC 10 year Time Series Average (**56,786 pounds**) = North Carolina Weighted Time Series Average Landings is **66,203 pounds**

Step 2. Solving for New Allocation Percentage
The state's new weighted time series average landings is then divided by the weighted total coastwide average landings to derive a state's new allocation percentage through the following equation:

State Weighted Time Series Average Landings / Coastwide Weighted Time Series Average Landings = Allocation Percentage

North Carolina Weighted Average (**66,203 pounds**)/ Coastwide Weighted Average (**957,905 pounds**) = North Carolina's Allocation Percentage is **6.911%**

Step 3. Solving for New State Allocation in Pounds
The state's new allocation percentage is then multiplied by the coastwide quota of 907,669 pounds (Addendum IV total coastwide quota) to derive the state's allocation in pounds through the following equation:

State Allocation Percentage X Addendum IV Total Coastwide Quota = New State Allocation

NC Allocation Percentage (**6.911%**) X Total Coastwide Quota (**907,669 pounds**) = North Carolina's new allocation for Option 5A under a coastwide quota of 907, 669 pounds is **62,731 pounds**

Appendix IV. State Yellow Eel Quotas under each Coastwide Cap Option

The following tables provide information for each combination of possible yellow eel state allocations under different Coastwide Cap levels. The proposed state allocations are presented in both percentage and quota in pounds for the different combinations in comparison to state allocations under Addendum IV (set at a Coastwide Cap of 907, 669 pounds for state allocations). Options can be found for both Coastwide Cap options in Section 3.3 Issue 1: Coastwide Cap, pages 13-15, and for state allocations in Section 3.3 Issue 3: Allocation, pages 17-26. As previously noted, the current Coastwide Cap of 907,671 pounds is slightly above Addendum IV's specified state-by-state allocations at 907,669 pounds, due to a rounding error. The tables below specify the Coastwide Cap under state-by-state allocations at 907,669 pounds. Additionally, there are no state quotas under Option 2 for Issue 3, so no combinations for that option are offered below. **NOTE**: *When providing public comment on preferred state allocation option under Issue 3: Allocation, please also specify preferred option under Issue 1: Coastwide Cap.*

Table 1. Comparison of State Quota Options as a Percentage Allocation

State	Option	Percentage Allocation					
		Addendum IV (Status Quo)	Option 3	Option 4A	Option 4B	Option 5A	Option 5B
ME		0.43%	0.65%	0.57%	0.60%	0.74%	0.75%
NH		0.22%	0.15%	0.01%	0.01%	0.01%	0.01%
MA		0.22%	0.15%	0.20%	0.22%	0.24%	0.25%
RI		0.51%	0.28%	0.32%	0.21%	0.54%	0.48%
CT		0.22%	0.15%	0.17%	0.18%	0.22%	0.23%
NY		1.68%	3.59%	3.05%	4.09%	2.71%	3.24%
NJ		10.46%	10.38%	11.44%	9.09%	11.21%	10.01%
DE		6.79%	6.74%	7.56%	5.82%	8.92%	8.00%
MD		51.34%	52.88%	53.65%	57.87%	48.67%	50.91%
PRFC		5.77%	5.73%	5.97%	5.26%	8.30%	7.90%
VA		8.67%	10.53%	9.88%	10.36%	10.31%	10.55%
NC		11.79%	7.03%	5.89%	5.16%	6.91%	6.53%
SC		0.22%	0.15%	0.00%	0.00%	0.00%	0.00%
GA		0.22%	0.15%	0.05%	0.07%	0.04%	0.05%
FL		1.46%	1.44%	1.24%	1.06%	1.17%	1.08%
Total		100%	100%	100%	100%	100%	100%

Table 2. Comparison of State Quota Options (in pounds) under Coastwide Cap of 907,669 pounds

State	Option	Allocation in weight under Coastwide Cap of 907,669 pounds					
		Addendum IV (Status Quo)	Option 3	Option 4A	Option 4B	Option 5A	Option 5B
ME		3,907	5,907	5,217	5,438	6,759	6,849
NH		2,000	1,362	61	50	79	73
MA		2,000	1,362	1,776	1,978	2,209	2,305
RI		4,642	2,551	2,928	1,877	4,899	4,333
CT		2,000	1,362	1,555	1,623	2,017	2,045
NY		15,220	32,613	27,696	37,122	24,570	29,432
NJ		94,899	94,187	103,808	82,506	101,743	90,891
DE		61,632	61,170	68,661	52,799	80,920	72,636
MD		465,968	479,978	486,947	525,313	441,788	462,057
PRFC		52,358	51,965	54,201	47,771	75,319	71,721
VA		78,702	95,619	89,719	94,027	93,624	95,767
NC		107,054	63,818	53,429	46,878	62,731	59,247
SC		2,000	1,362	3	1	2	1
GA		2,000	1,362	436	665	376	493
FL		13,287	13,051	11,232	9,623	10,632	9,819
Total		907,669	907,669	907,669	907,669	907,669	907,669

Table 3. State Allocation (Option 1)
For this option under different Coastwide Caps, the state allocation percentages do not change, only the poundage based on the Coastwide Cap. The idea here is that the slice of the pie (state allocation percentage) does not change, only how much bigger or smaller the pie is (Coastwide Cap).

State	Addendum IV Percentage Allocation	Addendum IV Quota (Coastwide Cap of 907,669)	State Quota under different Coastwide Cap Options (in pounds)		
			Option 2: Coastwide Cap of 943,808	Option 3: Coastwide Cap of 951,102	Option 4: Coastwide Cap of 836,969
ME	0.43%	3,907	4,063	4,094	3,603
NH	0.22%	2,000	2,080	2,096	1,844
MA	0.22%	2,000	2,080	2,096	1,844
RI	0.51%	4,642	4,827	4,864	4,280
CT	0.22%	2,000	2,080	2,096	1,844
NY	1.68%	15,220	15,826	15,948	14,034
NJ	10.46%	94,899	98,677	99,440	87,507
DE	6.79%	61,632	64,086	64,581	56,831
MD	51.34%	465,968	484,521	488,265	429,673
PRFC	5.77%	52,358	54,443	54,863	48,280
VA	8.67%	78,702	81,836	82,468	72,572
NC	11.79%	107,054	111,316	112,177	98,715
SC	0.22%	2,000	2,080	2,096	1,844
GA	0.22%	2,000	2,080	2,096	1,844
FL	1.46%	13,287	13,816	13,923	12,252
Total	100.00%	907,669	943,808	951,102	836,969

Table 4. Modified Addendum IV Quotas (Option 3)

State	Addendum IV Percentage Allocation (Status Quo)	Proposed Percentage Allocation (**Option 3**)		Addendum IV Quota (under Status Quo State Allocations)	State Quota under different Coastwide Cap Options (in pounds)			
					Option 1: Coastwide Cap of 907,669	Option 2: Coastwide Cap of 943,808	Option 3: Coastwide Cap of 951,102	Option 4: Coastwide Cap of 836,969
ME	0.43%	0.65%		3,907	5,907	6,143	6,190	5,447
NH	0.22%	0.15%		2,000	1,362	1,416	1,427	1,256
MA	0.22%	0.15%		2,000	1,362	1,416	1,427	1,256
RI	0.51%	0.28%		4,642	2,551	2,652	2,673	2,352
CT	0.22%	0.15%		2,000	1,362	1,416	1,427	1,256
NY	1.68%	3.59%		15,220	32,613	33,911	34,173	30,073
NJ	10.46%	10.38%		94,899	94,187	97,937	98,694	86,851
DE	6.79%	6.74%		61,632	61,170	63,605	64,097	56,405
MD	51.34%	52.88%		465,968	479,978	499,088	502,945	442,592
PRFC	5.77%	5.73%		52,358	51,965	54,034	54,452	47,918
VA	8.67%	10.53%		78,702	95,619	99,426	100,194	88,171
NC	11.79%	7.03%		107,054	63,818	66,359	66,872	58,847
SC	0.22%	0.15%		2,000	1,362	1,416	1,427	1,256
GA	0.22%	0.15%		2,000	1,362	1,416	1,427	1,256
FL	1.46%	1.44%		13,287	13,051	13,571	13,676	12,035
Total	100.00%	100.00%		907,669	907,669	943,808	951,102	836,969

Table 5. Average landings over most recent 10-year time series (2007-2016) (Option 4A)

State	Addendum IV Percentage Allocation (Status Quo)	Proposed Percentage Allocation (**Option 4A**)		Addendum IV Quota (Status Quo)	State Quota under different Coastwide Cap Options (in pounds)			
					Option 1: Coastwide Cap of 907,669	Option 2: Coastwide Cap of 943,808	Option 3: Coastwide Cap of 951,102	Option 4: Coastwide Cap of 836,969
ME	0.43%	0.57%		3,907	5,217	5,425	5,467	4,811
NH	0.22%	0.01%		2,000	61	64	64	56
MA	0.22%	0.20%		2,000	1,776	1,847	1,861	1,638
RI	0.51%	0.32%		4,642	2,928	3,044	3,068	2,700
CT	0.22%	0.17%		2,000	1,555	1,617	1,629	1,434
NY	1.68%	3.05%		15,220	27,696	28,799	29,022	25,539
NJ	10.46%	11.44%		94,899	103,808	107,941	108,775	95,722
DE	6.79%	7.56%		61,632	68,661	71,394	71,946	63,312
MD	51.34%	53.65%		465,968	486,947	506,335	510,248	449,018
PRFC	5.77%	5.97%		52,358	54,201	56,359	56,795	49,980
VA	8.67%	9.88%		78,702	89,719	93,291	94,012	82,731
NC	11.79%	5.89%		107,054	53,429	55,556	55,985	49,267
SC	0.22%	0.00%		2,000	3	3	3	3
GA	0.22%	0.05%		2,000	436	453	457	402
FL	1.46%	1.24%		13,287	11,232	11,679	11,769	10,357
Total	100.00%	100.00%		907,669	907,669	943,808	951,102	836,969

Table 6. Average landings over most recent 5-year time series (2012-2016) (Option 4B)

State	Addendum IV Percentage Allocation (Status Quo)	Proposed Percentage Allocation (**Option 4B**)		Addendum IV Quota (Status Quo)	State Quota under different Coastwide Cap Options (in pounds)			
					Option 1: Coastwide Cap of 907,669	Option 2: Coastwide Cap of 943,808	Option 3: Coastwide Cap of 951,102	Option 4: Coastwide Cap of 836,969
ME	0.43%	0.60%		3,907	5,438	5,654	5,698	5,014
NH	0.22%	0.01%		2,000	50	52	52	46
MA	0.22%	0.22%		2,000	1,978	2,057	2,072	1,824
RI	0.51%	0.21%		4,642	1,877	1,951	1,966	1,730
CT	0.22%	0.18%		2,000	1,623	1,687	1,700	1,496
NY	1.68%	4.09%		15,220	37,122	38,600	38,899	34,231
NJ	10.46%	9.09%		94,899	82,506	85,791	86,454	76,080
DE	6.79%	5.82%		61,632	52,799	54,901	55,325	48,686
MD	51.34%	57.87%		465,968	525,313	546,228	550,450	484,395
PRFC	5.77%	5.26%		52,358	47,771	49,673	50,057	44,050
VA	8.67%	10.36%		78,702	94,027	97,770	98,526	86,703
NC	11.79%	5.16%		107,054	46,878	48,745	49,121	43,227
SC	0.22%	0.00%		2,000	1	1	1	1
GA	0.22%	0.07%		2,000	665	691	697	613
FL	1.46%	1.06%		13,287	9,623	10,006	10,083	8,873
Total	100.00%	100.00%		907,669	907,669	943,808	951,102	836,969

Table 7. Weighted average 50% of the time series (1998-2016) and 50% of the most recent 10 years (2007-2016) (Option 5A)

State	Addendum IV Percentage Allocation (Status Quo)	Proposed Percentage Allocation (**Option 5A**)		Addendum IV Quota (Status Quo)	State Quota under different Coastwide Cap Options (in pounds)			
					Option 1: Coastwide Cap of 907,669	Option 2: Coastwide Cap of 943,808	Option 3: Coastwide Cap of 951,102	Option 4: Coastwide Cap of 836,969
ME	0.43%	0.74%		3,907	6,759	7,028	7,082	6,233
NH	0.22%	0.01%		2,000	79	82	82	72
MA	0.22%	0.24%		2,000	2,209	2,297	2,315	2,037
RI	0.51%	0.54%		4,642	4,899	5,094	5,134	4,518
CT	0.22%	0.22%		2,000	2,017	2,097	2,113	1,860
NY	1.68%	2.71%		15,220	24,570	25,548	25,746	22,656
NJ	10.46%	11.21%		94,899	101,743	105,794	106,612	93,818
DE	6.79%	8.92%		61,632	80,920	84,142	84,793	74,617
MD	51.34%	48.67%		465,968	441,788	459,378	462,928	407,377
PRFC	5.77%	8.30%		52,358	75,319	78,318	78,923	69,452
VA	8.67%	10.31%		78,702	93,624	97,352	98,104	86,332
NC	11.79%	6.91%		107,054	62,731	65,229	65,733	57,845
SC	0.22%	0.00%		2,000	2	3	3	2
GA	0.22%	0.04%		2,000	376	391	394	346
FL	1.46%	1.17%		13,287	10,632	11,055	11,141	9,804
Total	100.00%	100.00%		907,669	907,669	943,808	951,102	836,969

Table 6. Weighted average 50% of the time series (1998-2016) and 50% of the most recent 5 years (2012-2016) (Option 5B)

State	Addendum IV Percentage Allocation (Status Quo)	Proposed Percentage Allocation (**Option 5B**)		Addendum IV Quota (Status Quo)	State Quota under different Coastwide Cap Options (in pounds)			
					Option 1: Coastwide Cap of 907,669	Option 2: Coastwide Cap of 943,808	Option 3: Coastwide Cap of 951,102	Option 4: Coastwide Cap of 836,969
ME	0.43%	0.75%		3,907	6,849	7,122	7,177	6,316
NH	0.22%	0.01%		2,000	73	75	76	67
MA	0.22%	0.25%		2,000	2,305	2,397	2,416	2,126
RI	0.51%	0.48%		4,642	4,333	4,506	4,540	3,995
CT	0.22%	0.23%		2,000	2,045	2,126	2,142	1,885
NY	1.68%	3.24%		15,220	29,432	30,604	30,840	27,139
NJ	10.46%	10.01%		94,899	90,891	94,510	95,240	83,811
DE	6.79%	8.00%		61,632	72,636	75,528	76,111	66,978
MD	51.34%	50.91%		465,968	462,057	480,454	484,167	426,066
PRFC	5.77%	7.90%		52,358	71,721	74,577	75,153	66,135
VA	8.67%	10.55%		78,702	95,767	99,580	100,350	88,308
NC	11.79%	6.53%		107,054	59,247	61,606	62,082	54,632
SC	0.22%	0.00%		2,000	1	1	1	1
GA	0.22%	0.05%		2,000	493	513	517	455
FL	1.46%	1.08%		13,287	9,819	10,210	10,289	9,054
Total	100.00%	100.00%		907,669	907,669	943,808	951,102	836,969