

Draft Addendum V for Board Review



American Eel Management Board

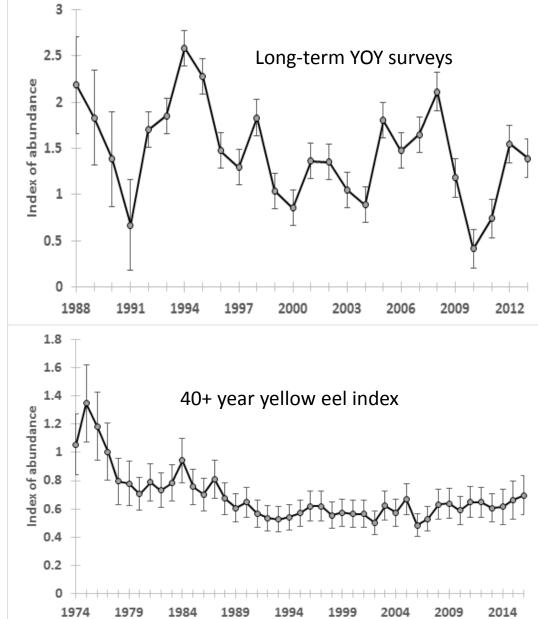
August 8, 2018

Presentation Outline

- Status of the Stock
- Preliminary 2017 Landings
- Review of Public Comment
- Review of Management Options

Status of the Stock

- 2012 Benchmark Stock Assessment
 - Population size unknown
 - Trend analysis vary by region, general decline
 - Resource is considered
 'Depleted'
- 2017 Assessment Update
 - Trend analysis updated
 - Resource reaffirmed as 'Depleted'



Preliminary 2017 Yellow Eel landings

State	Landings (pounds)
Maine	5,262
Rhode Island	2,968
Connecticut	905
New York	41,732
New Jersey	77,499
Delaware	29,945
Maryland	541,270
PRFC	33,555
Virginia	90,242
North Carolina	20,210
Florida	7,456
TOTAL	851,637
COASTWIDE CAP	907,671

Public Comment Overview

To Have States was an and the states of the

- Public hearings held in 13 jurisdictions
 - 145 attendees, nearly all provided comment

- Written Comments (104 total)
 - 1 Form letter (87 submitted)
 - 9 Organization letters
 - 7 From individual stakeholders



Draft Addendum V Management Options



3.1. Options for Maine Glass Eel Quota

 Option 1: Status Quo Maine Glass eel Quota (9,688 pounds)

- Option 2: 2014 Maine Quota (*11,749 pounds*)
 - 19% increase from 2015-2017 quota
 - But is 35% below 2012 quota level (21,610 pounds)

Public Comment



3.1 Maine Glass Eel Quota

	Option 1	Option 2
	Status Quo: 9,688 lbs	11,749 lbs
Individual	1	2
Organization	6	1
Form Letter	87	
	Hearings	
ME- Combined		110
СТ		4
NY- New Paltz	1	
NJ	1	
DE^		
MD	6	
PRFC	4	
NC^^		
SC		1
FL	3	
TOTAL	109	118



3.2. Proposed Options for Glass Eel Aquaculture Plans

• Option 1: Status Quo (Addendum IV provisions)

Option 2: Pooling of Harvest allowance across states and jurisdictions

Public Comment

3.2 Glass Eel Aquaculture Plans

3.2 Glass Eel Aquaculture Plans							
	Option 1	Option 2					
	Status Quo	Pooling of Harvest Allowance					
Individual	1						
Organization	7						
Form Letter	87						
	Heari	ngs					
ME- Combined		110					
СТ	1						
NY- New Paltz							
NJ	1						
DE	5	1					
MD	6						
PRFC	3						
NC	2	1					
SC	1						
FL	3						
TOTAL	117	112					



Yellow Eel

3.3 Options for Yellow Eel Coastwide Cap, Trigger, State Allocation, and Transfer provisions

- Issue 1: Coastwide Cap
 - 4 Options
- Issue 2: Management triggers
 - 3 Options
- Issue 3: Allocation
 - 5 Options, 3 with sub-options
- Issue 4: Transfers
 - 2 Options

Draft Addendum V Options Yellow Eel

Issue 1: Coastwide Cap

- Option 1: Status Quo (907,671 pounds) mean landings from 1998-2010**
- Option 2: Cap set at 50th percentile or median of 1998-2016 landings (943,808 pounds)
- Option 3: Cap set at mean of 1998-2016 landings (951,102 pounds)
- Option 4: Cap set at **836,969 pounds**; a 12% decrease from the mean of 1998-2016 landings

Public Comment

3.3, Issue 1: Yellow Eel Coastwide Cap

	Option 1	Option 2	Option 3	Option 4
	Status Quo 907,671 lbs		951,102 lbs	
Individual				1
Organization	1			5
Form Letter				87
	H	learings		
ME- Combined			110	
СТ			2	
NY- New Paltz	1			
NJ				1
DE			6	
MD			6	
PRFC			4	
NC	1			1
SC			1	
FL	3			
TOTAL	2	0	129	95



Yellow Eel

Issue 2: Management triggers

- Option 1: Status Quo (two triggers)
 - 1) exceed the Coastwide Cap by 10% in given year
 - 2) exceed the Coastwide Cap for two consecutive years, regardless of overage
- Option 2: <u>One</u> year trigger of exceeding the Coastwide Cap by 10%
- Option 3: <u>Two</u> year trigger of exceeding the Coastwide Cap by 10%

Public Comment



3.3, Issue 2: Yellow Eel Management Trigger

		0	
	Option 1	Option 2	Option 3
	Status Quo	1 year Trigger	2 year Trigger
Individual	1		
Organization	4	1	1
Form Letter	87		
	Heari	ngs	
ME-Combined			110
СТ	2		1
NY- New Paltz	1		
NJ			
DE			6
MD			6
PRFC			3
NC	3		
sc			1
FL			
TOTAL	98	1	128

Draft Addendum V Options Yellow Eel

Issue 3: Allocation

- Option 1: Status Quo state by state quotas
- Option 2: no state-by-state quotas (2 sub-options)
- Option 3: Modified Addendum IV Quotas
- Option 4: Simple Time series Average of Yellow eel landings (2 sub-options)
- Option 5: Allocation based on Weighted Time series Average of Yellow eel landings (2 sub-options)

Draft Addendum V Options Yellow Eel



Option 1:

Status Quo

Allocation	Quota				
0.43%	3,907				
0.22%	2,000				
0.22%	2,000				
0.51%	4,642				
0.22%	2,000				
1.677%	15,220				
10.45%	94,899				
6.79%	61,632				
51.33%	465,968				
5.76%	52,358				
8.67%	78,702				
11.79%	107,054				
0.22%	2,000				
0.22%	2,000				
1.46%	13,287				
100%	907,669				
	0.43% 0.22% 0.22% 0.51% 0.22% 1.677% 10.45% 6.79% 51.33% 51.33% 5.76% 8.67% 11.79% 0.22% 0.22% 1.46%				



Yellow Eel

Issue 3: Allocation

Option 2: no state-by-state quotas (2 sub-options)

- Sub-Option 2A: Equitable Reduction
 - States will collectively develop measures to achieve needed reduction; process not specified
- Sub Option 2B: 1% rule for states to reduce landings
 - Only states with >1% of coastwide landings take the reduction; those states will collectively develop measures to achieve needed reduction



Yellow Eel

Issue 3: Allocation

- Option 3: Modified Addendum IV Quotas
- 1) States assigned quota cannot exceed their 2012-2016 average landings by more than 25%
- 2) 2,000 pound min quota for NH, MA, CT, SC, and GA redistributed to remaining states; all assigned 1,000 pounds now
- 3) ME's quota set near 2012-2016 avg landings (5,907 pounds)
- 4) Remainder quota from above added to NY, MD, VA quotas, with additional added to MD



Yellow Eel

Issue 3: Allocation

- Option 4: Simple Time series Average of Yellow eel landings (2 sub-options)
 - Sub Option 4A: Average Landings over recent 10-year time series (2007-2016)
 - Sub Option 4B: Average Landings over recent 5-year time series (2012-2016)



Draft Addendum V Options Yellow Eel

Issue 3: Allocation

• Option 5: Allocation based on Weighted Time series Average of Yellow eel landings (2 sub-options)

- Sub Option 5A: 50 % of the time series (1998-2016) and
 50% of the recent 10 years (2007-2016)
- Sub Option 5B: Weighted average: 50 % of the time series (1998-2016) and 50% of the recent 5 years (2012-2016)

Public Comment



3.3, Issue 3: Yellow Eel Allocation

		Opti	on 2		Optio	Option 4		Option 5		
	Option 1	Option 2A	Option 2B	Option 3	Option 4A	Option 4B	Option 5A	Option 5B		
	Status Quo	Equitable Redux: No state quota	1% rule for states to reduce landings	Modified Addendum IV Quotas	Avg Landings last 10-year	last 5-	Weighted Avg: 50% '98- '16 and 50% last 10 years	Weighted Avg: 50% '98-'16 and 50% last 5 years		
Individual										
Organization							1	3		
Form Letter										
				Hearin	gs					
ME-Combined	1			1		13		17		
СТ			2			1				
NY- New Paltz										
NJ										
DE							6			
MD			4							
PRFC					4					
NC	3									
SC	1									
FL	3									
TOTAL	8	0	6	1	4	14	7	20		

Draft Addendum V Options Yellow Eel



- Option 1: Status Quo (No Transfers after December 31)
- Option 2: Extend Transfer through February 15 of the following fishing season

Public Comment



3.3, Issue 4: Yellow Eel Quota Transfers

	Option 1	Option 2
	Status Quo	Extend to February 15
Individual		
Organization		2
Form Letter		
	Hearings	
ME-Combined		110
СТ		3
NY- New Paltz	1	
NJ		
DE		6
MD		6
PRFC		4
NC		4
SC		1
FL		3
TOTAL	1	139

Issue Voting order

3.1 Options for Maine Glass Eel Quota

- 2 Options

3.2 Options for Glass Eel Aquaculture Provisions

2 Options

3.3 Options for Yellow Eel Management

- Issue 1: Coastwide Cap
 - 4 Options

• Issue 2: Management triggers

– 3 Options

• Issue 3: Allocation

- 5 Options, 3 with sub-options

• Issue 4: Transfers*

- 2 Options



Questions?

Comparison of Quota Options



		Percentage Allocation							
State	Option	Addendum IV	Option 3	Option 4A	Option 4B	Option 5A	Option 5B		
		(Status Quo)							
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%		
СТ		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%		

Comparison of Quota Options

	Con	nparis	on o	f Que	ota C	ptio	ns states	ATES ARPAINE
		Allocation	in weight	under Coas	stwide Cap	of 907,669	pounds	20MN15507
State	Option	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	
СТ		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 <i>,</i> 319	71,721	
VA		78,702	95,619	89,719	94,027	93 <i>,</i> 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	

Management History

- Coastwide management (ME-FL)
- 1999: Initial Fishery Management Plan approved, subsequent Addenda I-IV
- Ad I: Established mandatory catch and effort monitoring program
- Ad II: Outlined recommendations on upstream and downstream passage
- Ad III: Restrictions on pigmented eels, increased size limit and reduced recreational bag limit
- Ad IV: Maine's current glass eel quota; Aquaculture
 Provisions; Yellow eel Coastwide Cap and State Quotas

Landings 1998-2006



					Year				
State	1998	1999	2000	2001	2002	2003	2004	2005	2006
ME	0	0	0	9,007	11,617	15,312	29,646	17,189	27,489
MA	3,456	3,456	2,976	3 <i>,</i> 867	3,949	4,047	5 <i>,</i> 328	3,073	3,676
RI	967	140	25	14,357	22,965	24,883	19,858	22,001	1,034
СТ	5,606	10,250	4,643	1,724	3,710	1,868	1,374	337	3,443
NY	16,867	7,882	5,824	18,192	30,930	8,296	5 <i>,</i> 354	27,726	10,601
NJ	94,327	90,252	45,393	57,700	64,600	100,701	120,607	148,127	158,917
DE	131,478	128,978	119,180	121,515	99,529	155,516	137,489	111,200	123,994
MD	301,833	305,812	259,552	271,178	208,659	346,412	273,142	378,659	362,966
PRFC	209,008	163,351	208,549	213,440	128,595	123,450	116,263	103,628	83,622
VA	123,837	183,255	114,972	97,032	75,549	121,091	123,812	66,956	82,756
NC	91,084	99,939	127,099	107,070	59,940	172,065	128,875	49,278	33,581
FL	13,819	17,533	6,054	14,218	7,587	8,486	7,330	3,913	1,248
Total	992,741	1,011,093	894,577	929,523	717,698	1,082,614	969,318	932,087	894,192

Landings 2007-2015



				Year				
2007	2008	2009	2010	2011	2012	2013	2014	2015
14,251	3,882	2,285	2,605	2,666	12,775	4,596	4,320	3 <i>,</i> 559
2,853	3,297	1,217	322	368	462	2,499	3,903	2,255
1,230	8,866	4,855	3,860	2,038	1,484	2,244	2,353	1,538
935	6,046	435	167	60	2,228	546	1,390	2,271
14,881	15,025	12,676	12,179	36,451	35,603	42,845	38,143	50,194
169,902	137,687	118,533	105,089	120,576	113,806	90,244	91,225	88 <i>,</i> 828
139,647	80,002	59,619	69,355	92,181	54,304	82,991	62,388	44,708
343,141	381,993	335,575	524,768	715,162	590,412	587,872	619,935	493,043
97,361	71,655	58,863	57,755	29,010	90,037	32,290	49,293	31 <i>,</i> 588
56,512	84,031	117,974	77,263	103,222	121,605	100,379	109,537	86,715
37,937	23,833	65,481	122,104	61,960	64,110	33,980	60,755	57,791
7,379	15,624	6,824	11,287	25,601	11,845	15,059	14,092	5,632
886,470	832,475	784,420	986,937	1,189,455	1,100,881	997,052	1,057,467	868,122
	14,251 2,853 1,230 935 14,881 169,902 139,647 343,141 97,361 56,512 37,937 7,379	14,2513,8822,8533,2971,2308,8669356,04614,88115,025169,902137,687139,64780,002343,141381,99397,36171,65556,51284,03137,93723,833	14,2513,8822,2852,8533,2971,2171,2308,8664,8559356,04643514,88115,02512,676169,902137,687118,533139,64780,00259,619343,141381,993335,57597,36171,65558,86356,51284,031117,97437,93723,83365,4817,37915,6246,824	14,2513,8822,2852,6052,8533,2971,2173221,2308,8664,8553,8609356,04643516714,88115,02512,67612,179169,902137,687118,533105,089139,64780,00259,61969,355343,141381,993335,575524,76897,36171,65558,86357,75556,51284,031117,97477,26337,93723,83365,481122,1047,37915,6246,82411,287	2007200820092010201114,2513,8822,2852,6052,6662,8533,2971,2173223681,2308,8664,8553,8602,0389356,04643516760014,88115,02512,67612,17936,451169,902137,687118,533105,089120,576139,64780,00259,61969,35592,181343,141381,993335,575524,768715,16297,36171,65558,86357,75529,01056,51284,031117,97477,263103,22237,93723,83365,481122,10461,9607,37915,6246,82411,28725,601	20072008200920102011201214,2513,8822,2852,6052,66612,7752,8533,2971,2173223684621,2308,8664,8553,8602,0381,4849356,046435167602,22814,88115,02512,67612,17936,45135,603169,902137,687118,533105,089120,576113,806139,64780,00259,61969,35592,18154,304343,141381,993335,575524,768715,162590,41297,36171,65558,86357,75529,01090,03756,51284,031117,97477,263103,222121,60537,93723,83365,481122,10461,96064,1107,37915,6246,82411,28725,60111,845	200720082009201020112012201314,2513,8822,2852,6052,66612,7754,5962,8533,2971,2173223684622,4991,2308,8664,8553,8602,0381,4842,2449356,046435167602,22854614,88115,02512,67612,17936,45135,60342,845169,902137,687118,533105,089120,576113,80690,244139,64780,00259,61969,35592,18154,30482,991343,141381,993335,575524,768715,162590,412587,87297,36171,65558,86357,75529,01090,03732,29056,51284,031117,97477,263103,222121,60533,9807,37923,83365,481122,10461,96064,11033,9807,37915,6246,82411,28725,60111,84515,059	2007200820092010201120122013201414,2513,8822,2852,6052,66612,7754,5964,3202,8533,2971,2173223684622,4993,9031,2308,8664,8553,8602,0381,4842,2442,3539356,04644553,8602,0381,4842,2442,35314,88115,02512,67612,17936,45135,60342,84538,143169,902137,687118,533105,089120,576113,80690,24491,225139,64780,00259,61969,35592,18154,30482,99162,388343,141381,993335,57529,01090,03732,20949,29397,36171,65558,86357,75529,01090,03732,20949,29356,51284,031117,97477,263103,229121,605103,39860,75537,93723,83365,481122,10461,96064,11033,98060,7557,37915,62468,24411,28725,60111,84515,05914,002

1998-2016 Yellow eel Landings

AT	C STATES A
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Year	ME	NH	MA	RI	СТ	NY	NJ	DE	MD	PRFC	VA	NC	SC	GA	FL	Total
1998	0		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	average of	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 <i>,</i> 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	Time series	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	average of	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	less than 400	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	po unds	1,217	4,855	435	12,676	118,533	59 <i>,</i> 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 <i>,</i> 872	32,290	100,379	33 <i>,</i> 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.

Option 2 for Glass Eel Aquaculture

Tantinges commission

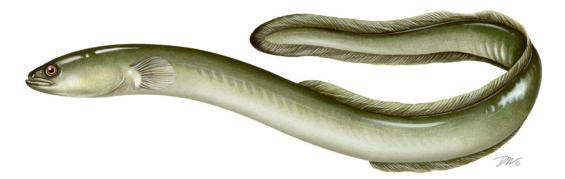
-Up to **three contiguously bordered** states and jurisdictions would be allowed to pool their harvest of 200 pounds of glass eels up to a maximum of **600 pounds**.

-200 pounds would be harvested from each state within the pooled grouping of states and jurisdictions, unless a strong argument to have all eels harvested from a single watershed system is made.

-Pooling of harvest up to a max of 600 pounds, less than the 750 pounds that requires a life cycle survey, state and jurisdictions pooling harvest of glass eels for domestic aquaculture purposes would <u>not need</u> to implement a life cycle survey.

-States would <u>no longer need</u> to demonstrate harvest would only occur in watersheds that minimally contribute to spawning stock of American eels

Technical Committee Report



American Eel Management Board August 8, 2018



Draft Addendum V

Maine's Aquaculture Proposal

Draft Addendum V

TC recommendations

- Add V language regarding maturity and the yellow eel fishery
- Harvest overages
- Aquaculture pooling across states
- Aquaculture Plan language regarding "minimal contribution"

THE STATES & PARTIES & PAR

Provide feedback on the accuracy of the following statement:

"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."

TC recommends finding a different citation for the first statement. Clark 2009 describes landings information but does not address sex or size at maturity.

Harvest

- TC was unable to assess the impact that yellow eel harvest overages or increased ME glass eel quota would have to the resource although the TC generally recommends no increases to landings given the stock status put forth in the 2017 SA update
- TC recommends seasonal restrictions in harvest to address overages but should be viewed on a case by case basis to determine the reason for overages and potentially address them with one or more jurisdictions (States) as appropriate

Harvest (cont'd)

- Pooling of harvest for aquaculture purposes
 - Language in Add V (Section 3.2, Option 2) does not specify that States can <u>only</u> contribute 200 lbs. so 600 lbs. of glass eels could potentially come from one State. TC reiterated that any increase in landings could negatively impact the stock.
- TC believes that the term "minimal contribution" in the Aquaculture Plan requirements is too vague and difficult to evaluate. TC crafted language to include in Add V in place of the aforementioned

"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 eels annually from within their waters for use in domestic aquaculture facilities. Site selection for harvest will be an important consideration for applicants and reviewers. Suitable harvest locations will be evaluated with a preference to locations that have:

- (1) established or proposed glass eel monitoring,
- (2) are favorable to law enforcement and
- (3) watershed characteristics that are prone to relatively high mortality rates.

Watersheds known to have features (ex. impassible dams, limited area of upstream habitat, limited water quality of upstream habitat, and hydropower mortality) that would be expected to cause lower eel productivity and/or higher glass eel mortality will be preferred targets for glass eel harvest. This is not an exclusive requirement, because there will be coastal regions with interest in eel aquaculture where preferred watershed features do not occur or are not easily demonstrated. In all cases, the applicant should demonstrate that the above three interests were prioritized and considered."

Maine Lifecycle Survey

Location: Coboseecontee Stream Sampling gear

- Glass
 - Fykes near confluence with Kennebec River
 - Eel ramp at first dam (3 total on the stream)
- Yellow
 - Pots
 - Electrofishing
- Silver
 - Fykes
 - Didson monitoring at American Tissue Dam

Maine Lifecycle Survey Results



- Good catches of glass eels in both gear types
- Yellow eel catches better in 2017 due to modifications in gear to reduce escapement
- No silver eels captured in fykes nor identified from Didson monitoring
- 3 dams on lower portion of the stream limiting eel expansion (and eel catch) further upstream
- Sampling planned for 2018 but may be impacted by work in the basin – bridge replacement and siphon hose at West Harbor Pond.

TC is satisfied with Maine's effort in conducting the survey

Recommendation: increase number of pot sets and reduce soak time from 48 to 24 hours to generate more useful CPUE and mark/recap data



Questions?

Maine Eel Aquaculture Proposal

- Sara Rademaker (American Unagi)
- All components included
 - Pounds requested
 - Location
 - Method
 - Dates of harvest
 - Duration of harvest
 - Permits
 - Facility description and capacity
 - Husbandry methods
 - Description of markets
 - Harvest monitoring program
 - Adequate enforcement capabilities

Rate Commission

TC recommends approval of the ME proposal for 2019

- TC requests
 - Data on survival (mortality) in the facility after harvest season but before combining with other cohorts
 - Specificity in harvest areas (although assumed same as commercial harvest areas)



Questions?

Advisory Panel Report

American Eel Management Board August 2018



Background

American eel Advisory Panel held a call on Thursday June 28th 2018 to provide:

- 1. comments on Draft Addendum V & the Maine Aquaculture Proposal
- 2. receive updates recent International Workshop on American eel Management held in the Dominican Republic in April 2018.

Glass eel: Maine Glass Eel Quota

Two AP members were in favor of option 1, Status Quo Quota of 9,688.

- Concern about poaching, the recent new news of illegal harvest
- raising the quota would go against the advice to reduce mortality on all life stages from 2012 assessment.

One AP member was in favor of Option 2, Quota of 11,749 pounds.

• State of Maine's quick response i.e. closing fishery early to illegal harvest. Maine has good handle on fishery.

Glass eel: Aquaculture Plan Provisions

<u>Unanimous support from AP for Option 2: Pooling of</u> <u>Aquaculture Harvest Allowance</u>

Would spread impact of harvest,

200 lbs. not enough for a business to operate

Some Concerns Noted:

- 1. Frustration that Option 2 did not include states (pooling) to complete a life cycle survey
- 2. Enforcement of transport across state lines.

<u>Two AP members supported Option 4: 12 % Reduction from</u> <u>time Series of 1998-2016 Landings</u>

- In line with previous recommendations of the TC in 2014 and in light of 2012 assessment.
- Both AP members second choice would be Option 1 Status Quo. 907, 671

One AP member supported Option 3.

- Historically fishery averaged closer to 2 million lbs annually and genetics research indicating a significant breeding pop.
- 2nd chose would be Option 2: median of 1998-2016 landings.

Yellow Eel: Management Triggers

<u>All AP members supported Option 3: two year exceedance of coastwide cap by 10%.</u>

Buffers fluctuations in landings.

Yellow Eel: State Allocations

One AP member indicated preference for Option 1 Status Quo and opposition to Option 2.

Two AP members: No preference due to complexity of option.

Yellow Eel: Transfer

All three AP members supported Option 2: extending quota transfers to Feb. 15.

Allow states more time to account for overages and get quota transfers.

Maine Aquaculture Proposal

Sara Rademaker of America Unagi Presented the Maine Aquaculture Proposal.

- Proposal to purchase glass eels form harvesters in addition to 200lb allowance to ensure financial viability.
- Harvest from Maine harvester using swipe card
- Facility is a recirculating aquaculture system with 120 metric ton capacity.
- Harvest during glass eel season.

Maine Aquaculture Proposal

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- Proposal to purchase glass eels form harvesters *in addition* to 200lb allowance to ensure financial viability.
- Harvest from Maine harvesters using swipe card
- Facility is a recirculating aquaculture system with 120 metric ton capacity.
- Harvest only during glass eel season

All AP members supported the Maine Aquaculture Proposal

- Good opportunity for the State of Maine
- Potential to reduce market demand
- Potential to reduce fishing mortality on glass eels.

Workshop held in the Dominican Republic that brought together Atlantic, Caribbean and Central American countries that comprise the range states A. Eel

Funded by US Fish and Wildlife Service and Canada Dept. of Oceans and Fisheries. Organized by the Sargasso Sea Commission.

2016 Convention of International Trade in Endangered Species (CITES) called for all countries that trade in anguillid spp. To collect information on status, trade, legal status and enforcement.



Outcomes of workshop:

- Basic awareness of trade issues, both legal and illegal.
- Call for future coordinated international management of A. eel.

- International Union for the Conservation of Species (IUCN) holding next red list assessment for anguillids spp. In November 2018.
- Full CITES will consider whether to add A. eel to Appendix II in Summer 2019.



State of Maine Aquaculture Plan for American Eel Pursuant to Addendum IV to the ASMFC Interstate Fishery Management Plan

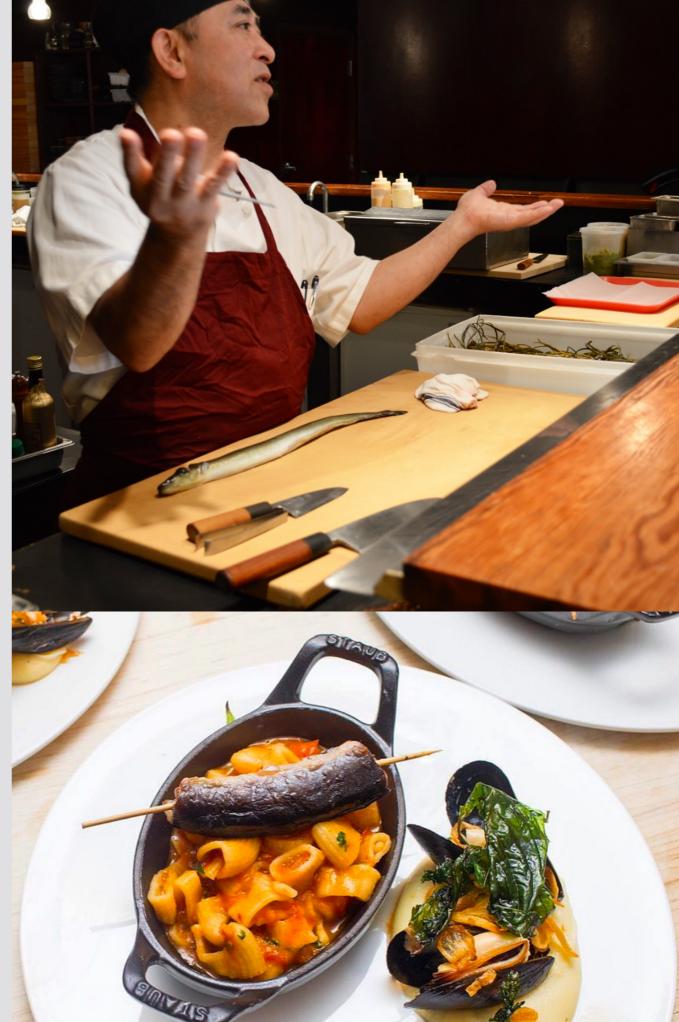




PRESENTATION FOR LAW ENFORCEMENT AND TECHNICAL COMMITTEE MEETINGS JUNE 2018

BACKGROUND

- Maine DMR solicited interested parties to participate in the quota request and has selected American Unagi for 2019.
- American Unagi has been working on American eel aquaculture development in Maine since 2014
- The company has been operating a pilot scale facility at the Darling Marine Center since 2015 and has sold Maine-raised eels into the US market beginning in 2016.
- American Unagi has a strong team and support around the State including:
 - Maine Sea Grant
 - Maine Technology Institute
 - Maine Aquaculture Innovation Center
 - US Department of Agriculture
- With the success of American Unagi's process and product the company is now scaling production to 120 MT and is an ideal candidate for aquaculture quota for its commercial facility.



REQUEST AND LOCATION

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American Unagi is requesting 200lbs for the 2019 fishing year

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Maine's current fishery operates across the state.

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American Unagi plans to source the glass eels from several regions in Maine's watersheds to limit the impacts to individual river systems and be consistent with the statewide approach of the exiting fishery.

RATES AND METHODS

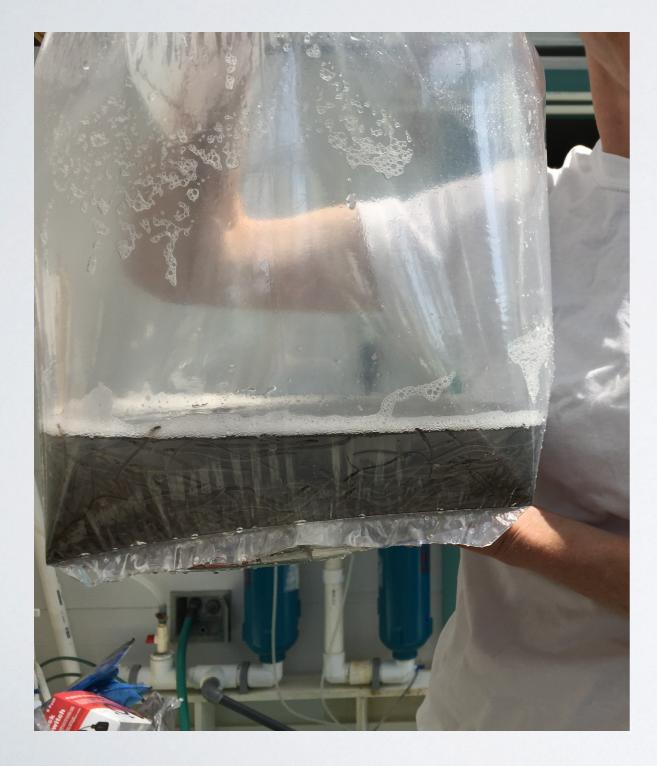
- Domestic quota collection will follow current Maine Regulations and Laws (see appendix A in application)
 - **Timeframe:** Limited to the current glass eels fishing season March 22- June 7
 - Harvester: Requires a licensed harvester (s) identified by company and issued aquaculture quota swipe card
 - Method: Fished with fyke or dip net according to methods of current Maine law
 - Location: Must adhere to all closures and area limitations

MONITORING PROGRAM

- Swipe Card System
 - Fishermen
 - Buying Station
 - Transport Vehicles
 - Facility
- Daily Reporting During Season
 - Harvester Name
 - Pounds harvested
 - Harvest Location
 - Harvest Method
- Post-season Facility Status Report



LAW ENFORCEMENT



- Daily Reporting Requirements during fishing season
- Harvesters, Dealer, and Facility
 Inspections
- Aquaculture facility would be held to same penalties and loss of licensure for any violations
- Additionally, Commissioner has the authority to suspend license or certificates issues by Department if a person is convicted or adjudicated in court of violating any marine resource law or regulation

AQUACULTURE FACILITIES AND MARKET

FacilitiesProduction: I 20 MTSystem:European Engineered Land-based Recirculating SystemProducts:I 50-250 gram American eel

Markets

American Unagi provides a homegrown, highquality, source identified and cost competitive live eels and processed eel products.

The primary goal of American Unagi – is to continue to serve the US seafood markets demanding high quality product in which they can have confidence.





Questions.

www.americanunagi.com