Draft document for Management Board review and discussion. This document is not intended to solicit public comment at this time.

Atlantic States Marine Fisheries Commission

DRAFT ADDENDUM III TO THE FISHERY MANAGEMENT PLAN FOR AMERICAN EEL

This draft document was developed for Management Board review and discussion. This document is not intended to solicit public comment as part of the Commission/State formal public input process. However, comments on this draft document may be given at the appropriate time on the agenda during the scheduled meeting. Also, if approved, a public comment period will be established to solicit input on the issues contained in the document.

ASMFC Vision Statement:
Healthy, self-sustaining populations for all Atlantic coast fish species or successful restoration well in progress by the year 2015.

October 2012

Draft document for Management Board review and discussion. This document is not intended to solicit public comment at this time.

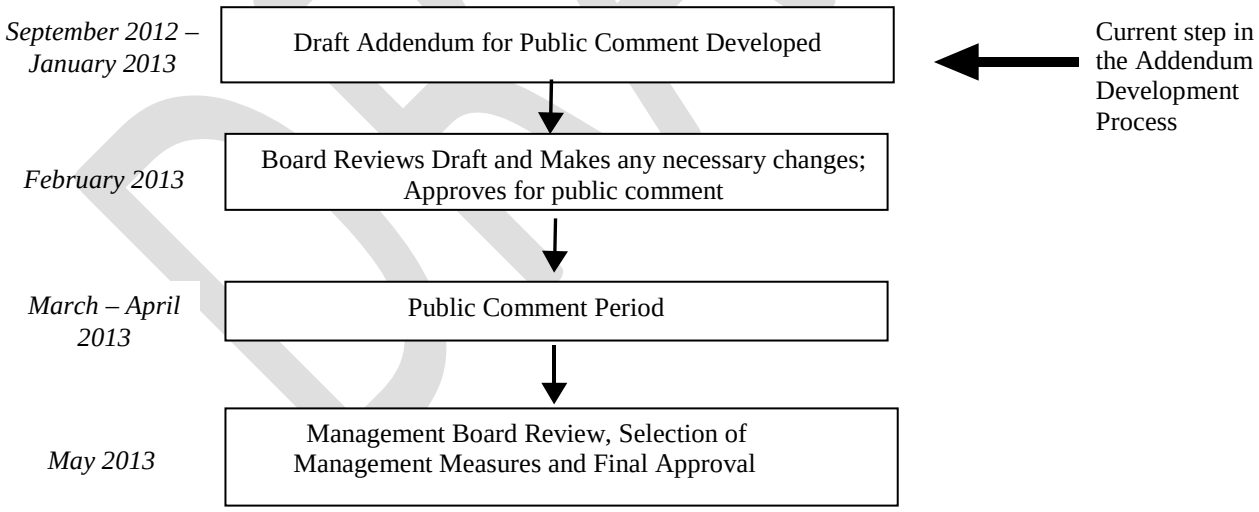
PUBLIC COMMENT PROCESS AND TIME LINE

The public is encouraged to submit comments regarding this document at any time during the public comment period. Regardless of how they were sent, comments will be accepted until X:XX xm on XX-XX-XXXX. Comments received after that time will not be included in the official record. The American Eel Management Board will use public comment on this Draft Addendum to develop Addendum II to the American Eel Fishery Management Plan.

You may submit public comment in one or more of the following ways:

1. Attend public hearings in your state or jurisdiction.
2. Refer comments to your state's members on the American Eel Management Board or Advisory Panel, if applicable.
3. Mail, fax or email written comment to the following address:

Kate Taylor
1050 North Highland Street
Suite 200A-N
Arlington, Virginia 22201
comments@asmfc.org (Subject line: American Eel)



EXECUTIVE SUMMARY

The Commission's American Eel Management Board initiated the development of Draft Addendum III with the goal of reducing mortality and increasing conservation of American eel stocks across all life stages. The 2012 Benchmark Stock Assessment found that the American eel population in U.S. waters is depleted. The stock is at or near historically low levels, due to a combination of historical overfishing, habitat loss and alteration, productivity and food web alterations, predation, turbine mortality, changing climatic and oceanic conditions, toxins and contaminants, and disease.

The Draft Addendum will include a range of options suggested by the American Eel Technical Committee, including possible moratoria on glass, yellow, and silver eel harvest, reductions in eel catch and effort for al life stages, seasonal closures, and future monitoring requirements.

The commercial fishery is currently regulated by a six inch size minimum, with the exception of Maine and South Carolina, and the recreational fishery is currently regulated by a 50 fish per day creel limit. States and jurisdictions are required to annually report on commercial harvest and monitor juvenile abundance.

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1. STATEMENT OF THE PROBLEM

The 2012 American eel benchmark stock assessment found that the coastwide stock has declined in recent decades and the stock was declared depleted. Additionally, the prevalence of significant downward trends in multiple surveys across the coast is a cause for concern. In response the American eel Management Board initiated the development of Draft Addendum III with the goal of furthering eel conservation and reducing mortality throughout all life stages.

1.1. BACKGROUND

American eel (*Anguilla rostrata*) 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 by ocean currents to the coasts of North American and the upper portions of South America. After ocean drift, metamorphosis occurs transforming leptocephali into glass eel. 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 eel grow in fresh, brackish, and marine waters, becoming yellow eel. Eel reach the silver eel life stage upon nearing sexual maturity. Silver eel migrate to the Sargasso Sea, completing sexual maturation en route, where they spawn and die.

Yellow eel can metamorphosis into a silver eel (termed *silvering*) beginning at three years old and up to twenty-four years old, with the mean age of silvering becoming greater with increasing latitude. Environmental factors (e.g., food availability and temperature) may play a role in the triggering of silvering. Additionally, males and females differ in the size at which they begin to silver. Males begin silvering at a size typically greater than 14 inches and females begin at a size greater than 16-20 inches (Goodwin and Angermeier 2003; van den Thillart *et al*. 2005). Actual metamorphosis is a gradual process occurring in the summer and fall; a drop in temperature appears to trigger the final events of metamorphosis, which lead to migratory movements under the appropriate environmental conditions.

Juvenile eel and silver eel make extensive use of freshwater systems, but they may migrate to and from or remain in brackish and marine waters. Therefore, a comprehensive eel management plan and set of regulations must consider the various unique life stages and the diverse habitats of American eel, in addition to society's interest and use of this resource.

American eel occupy a significant and unique niche in the Atlantic coastal reaches and tributaries. Historically, American eel were very abundant in East Coast streams, comprising more than 25 percent of the total fish biomass. Eel abundance had declined from historic levels but remained relatively stable until the 1970s. More recently, fishermen, resource managers, and scientists postulated a further decline in abundance based on harvest information and limited assessment data. This resulted in the development of the Atlantic States Marine Fisheries Commission (Commission) Interstate Fishery Management Plan (FMP) for American Eel.

The goals of the FMP are:

- Protect and enhance the abundance of American eel in inland and territorial waters of the Atlantic states and jurisdictions, and contribute to the viability of the American eel spawning population; and
- Provide for sustainable commercial, subsistence, and recreational fisheries by preventing over-harvest of any eel life stage.

In support of this goal, the following objectives were included in the FMP:

- Improve knowledge of eel utilization at all life stages through mandatory reporting of harvest and effort by commercial fishers and dealers, and enhanced recreational fisheries monitoring.
- Increase understanding of factors affecting eel population dynamics and life history through increased research and monitoring.
- Protect and enhance American eel abundance in all watersheds where eel now occur.
- Where practical, restore American eel to those waters where they had historical abundance but may now be absent by providing access to inland waters for glass eel, elvers, and yellow eel and adequate escapement to the ocean for pre-spawning adult eel.
- Investigate the abundance level of eel at the various life stages necessary to provide adequate forage for natural predators and support ecosystem health and food chain structure.

1.2. STATUS OF THE STOCK

The benchmark American eel Stock Assessment was completed and accepted for management use in May 2012. The assessment indicated that the American eel stock has declined in recent decades and the prevalence of significant downward trends in multiple surveys across the coast is cause for concern. The stock is considered depleted, however no overfishing determination can be made at this time based solely on the trend analyses performed. The ASMFC American Eel Technical Committee and Stock Assessment Subcommittee caution that although commercial fishery landings and effort in recent times have declined in most regions (with the possible exception of the glass eel fishery), current levels of fishing effort may still be too high given the additional stressors affecting the stock such as habitat loss, passage mortality, and disease as well as potentially shifting oceanographic conditions. Fishing on all life stages of eels, particularly young-of-the-year and in-river silver eels migrating to the spawning grounds, could be particularly detrimental to the stock, especially if other sources of mortality (e.g., turbine mortality, changing oceanographic conditions) cannot be readily controlled.

1.3. STATUS OF THE FISHERY

The American eel fishery primarily targets yellow stage eel. Silver eels are caught during their fall migration as well. Eel pots are the most typical gear used; however, weirs, fyke nets, and other fishing methods are also employed. Glass eel fisheries along the Atlantic coast are prohibited in all states except Maine and South Carolina. In recent years, Maine is the only state reporting significant glass eel and elver harvest. Harvest has increased the last

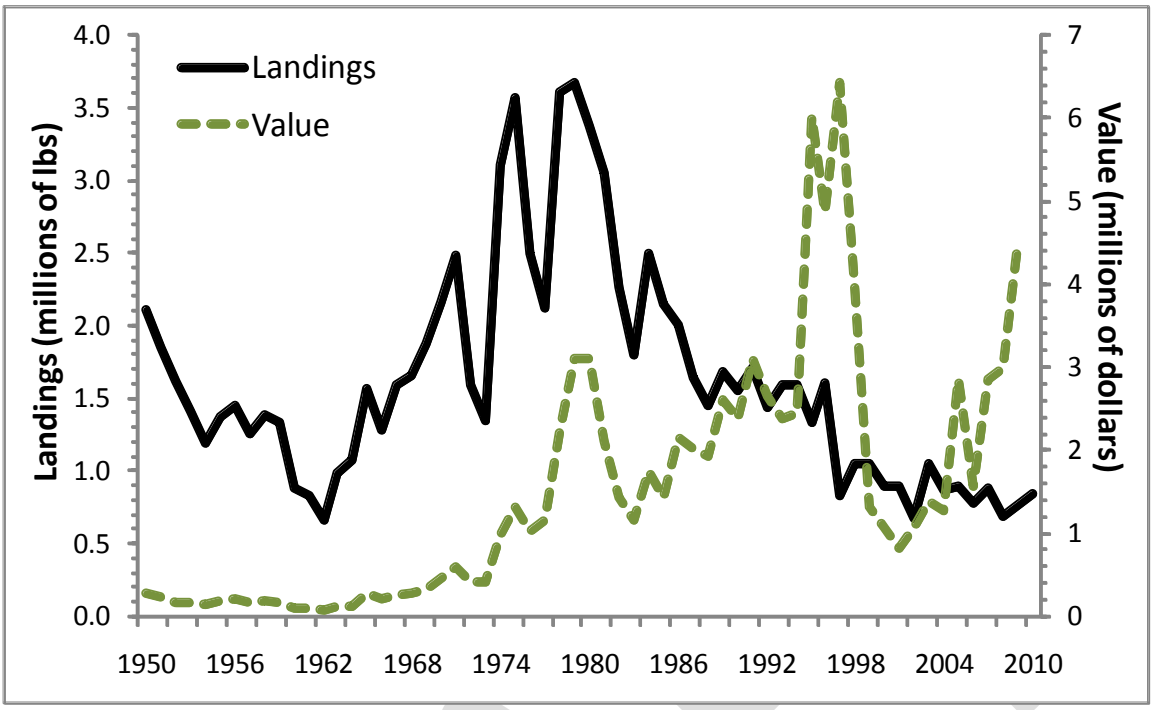

Figure 1. Total commercial landings of American eels and value in 2010 dollars along the U.S. Atlantic Coast, 1950–2010.

few years as the market price has risen to over $2,000 per pound. Although yellow eels were harvested for food historically, today's fishery sells yellow eels primarily as bait for recreational fisheries. Glass eels are exported to Asia to serve as seed stock for aquaculture facilities.

From 1950 to 2010, U.S. Atlantic coast landings ranged from approximately 664,000 pounds in 1962 to 3.67 million pounds in 1979 (Figure 1). After an initial decline in the 1950s, landings increased to a peak in the 1970s and 1980s before declining again in the 2000s. The value of U.S. commercial American eel landings as estimated by NOAA Fisheries Service has varied from less than a $100,000 (prior to the 1980s) to a peak of $6.4 million in 1997 (Figure 1). Total landings value increased through the 1980s and 1990s, dropped in the late 1990s, and increased again in the 2000s. For current commercial and recreational regulations for American eel by state, please see Appendix I.

2. HABITAT CONSIDERATIONS

To meet the goal of increasing eel recruitment ASMFC should engage in efforts to increase eel passage. Specifically the Technical Committee and Plan Development Team have recommended the following items, which both committees believe will be necessary to implement in order to halt the decline of eel populations:

1. Development of quantifiable eel habitat enhancement goals through the creation of a coastwide eel habitat GIS database. The goal of the database would be the generation of

coastwide, regional, state, and watershed maps that would quantify the amount of available habitat relative to historical habitat and identify major barriers to eel migration. This information would allow the ASMFC to prioritize eel habitat enhancement programs at coastwide, regional, and state scales. Efforts should be coordinated with existing GIS efforts already underway in Canada and Puerto Rico. This should be completed prior to the next benchmark stock assessment. In order to meet this goal the following steps should be taken:

   a. ASMFC should work with states and jurisdictions to develop a list FERC licensed hydropower dams that will come up for re-licensing through 2020. Material should be developed to provide support to states in order to recommend to FERC upstream and downstream fish passage, including nighttime shutdowns, for American eels or dam removal when re-licensing occurs.
   b. ASMFC should work with states and jurisdictions to develop a list of non-FERC licensed dams and impoundments. An evaluation should be conducted on each type of impoundment to assess the potential for eel passage without assistance or determine what type of eel passage would be most effective.
   c. Assess other potential impacts caused by agricultural ponds, water supply, water diversions, irrigation, etc.
   d. Develop a timeline and target for the amount of available habitat to open up through creation of upstream fish passage and/or dam removal

2. Increase coordination with Fish Passage Committee and Habitat Committee.
3. Downstream migration considerations

PDT/TC follow up tasks to be included or assessed

- What type of jurisdiction/authority does each state have in order to require fish passage? Include recommendations on dam height and inventory dams that eels are able to navigate. Maine already has these GIS layers (for each diadromous species) completed through USFWS. There may be additional information for other states. The Nature Conservancy recently completed a similar online, interactive project, *The Northeast Aquatic Connectivity and Assessment of Dams*, which covers Maine through Virginia. This might be a project to work from. Potential funding and coordination with Atlantic Fish Habitat Partnership.
- Put together information on the occurrence of eels above blockage in each state. Some states this is covered through inland departments.
- Some states have authority to include requirements for fish passage in FERC projects (e.g. Maine, Maryland and Pennsylvania). Maine currently has a list of FERC dams coming up for re-licensing. This list should be extended to all Atlantic coast states. Include information on licensing requirements and timeframe, as well as potential for public input.
- Include information on how much upstream habitat is blocked by obstructions by state or river system.

3. MONITORING PROGRAM

3.1 CURRENT MONITORING REQUIREMENTS

3.1.1 Annual Young-of-Year Abundance Survey

The glass eel and elver (young-of-year) life stages provide the most unique opportunity to assess the annual recruitment of each year's cohort since young-of-year result from the previous winter's spawning activity, and hence are all the same age. Known age is an attractive feature of the young-of-year life stage, which has shown to be problematic with all older life stages. Therefore, a fishery independent young-of-year abundance survey is required by all states and jurisdictions.

Measurement of young-of-year abundance is considerably cost effective since the gear required is inexpensive to purchase or manufacture, requires no additional expense for bait, and may be operated by relatively few persons. Also, since the young-of-year life stage and period of recruitment onto the Atlantic coast is short in duration, each annual assessment of young-of-year abundance would not amount to a long commitment of staff time. Data from a young-of-year abundance survey could provide a barometer with which to gauge the efficacy of management action, given due consideration to the factors which affect spawning, larval survival, transport, metamorphosis, and subsequent recruitment of young-of-year onto the Atlantic coast. Young-of-year abundance indices may also provide a basis of inference for the future abundance of each year's cohort, similar to abundance indices validated for other fish species.

Accordingly, states/jurisdictions will conduct annual fishery-independent surveys for young-of year American eel. Each participating jurisdiction shall deploy appropriate gear to capture young of the year at a minimum of two locations over a six-week period. A variety of gear types are available for use, and states should use the gear most suitable to the habitat and geography within their jurisdiction. The timing and placement of the young-of-year sampling gear will coincide with those periods of peak onshore migration of young-of-year. The locations selected will be those previously shown to catch young-of-year American eel and should provide as wide a geographic distribution as possible. Standard stations and procedures will remain fixed. At a minimum, the gear will be set so that they are operational during periods of rising or flood tides occurring at nighttime hours. The entire catch of young-of-year will be weighed and counted, and each individual measured for total length.

3.1.2 Catch and Effort Reporting

Under Addendum I, states and jurisdictions must issue permits for allowing commercial harvest with mandatory reporting requirements of eel catch and effort, applicable only to the commercial sector of the eel fishery or alternatively, require a dealer permit with a mandatory purchase-reporting requirement. The eel permit and reporting program is to be implemented in all areas, freshwater and saltwater, where eel are harvested to provide a complete picture of catch and effort for the commercial fishery and useful data for stock assessments. Permits are to be issued with a requirement to report eel catch and effort on a trip-level basis. Completion of reporting is to be a condition of permit renewal. Reports should include soak time, number of units of gear fished, and pounds landed by life stage.

3.2 PROPOSED MONITORING PROGRAM

Monitoring programs should be implemented to maximize the collection of the most useful data for monitoring the annual health of the stock, as well as to provide both statistically valid and scientifically rigorous information for stock assessment analysis. Additionally, the design of a new program will need to take into consideration the priorities of state monitoring programs as well as available funding and personnel.

PDT/TC/SAS tasks to be completed

The PDT, TC, and SAS should review current monitoring requirements and propose potential changes. The goals of the revised coastwide monitoring program will be to:

1. Evaluate the current glass eel surveys and recommend
2. Increase the number of surveys targeting yellow eels
3. Develop and implement surveys targeting silver eels
4. If possible, implement both a glass and yellow/silver eel survey in at least one system per region
5. Priorities for data collected (abundance, mortality estimates, ageing…)
6. Alternative survey design?

The possible intent of the coastwide monitoring program would be to have each jurisdiction completing at least one survey (either glass, yellow, silver). Need to consider potential costs and staff needed for each survey.

4. MANAGEMENT OPTIONS

4.1 COMMERCIAL FISHERY MANAGEMENT OPTIONS

The American eel stock assessment found that mortality may be high on all life stares. Therefore re the management options proposed below are not exclusive of one another and, in order to maximize the conservation benefit to American eel stocks, may be implemented in combination.

4.1.1 Glass Eel Fisheries

The following options apply to the glass eel fisheries that currently operate in Maine and South Carolina. For all other jurisdictions, a six inch minimum size limit was implemented in 1999 through the American Eel FMP. This size limit restricted the development of glass eel fisheries in the remaining states and jurisdictions. This size limit will continue to be enforced, unless otherwise changed through this addendum. The following options are not mutually exclusive and can be implemented in combination.

It is recommended that all catch be graded on the boat or streamside and that any bycatch is returned to the waters where the fish were harvested.

PDT/TC Tasks to be completed

- Provide definition of glass and pigmented eels.
- Discuss tolerance of pigmented eels.

Option 1 – Status Quo
Under this option the current regulations as of XXX (e.g. 2012, specific date in the future or at the time of implementation) for glass eel fisheries will remain in place.

Option 2 – Closure of glass eel fisheries
Under this option no glass fisheries will be allowed to operate within state and jurisdictional waters.

Sub-Option 2a – Immediate closure
Under this sub-option all glass eel fisheries will close upon final approval of the addendum.

Sub-Option 2b – Phase out closure
Under this sub-option the glass eel fisheries will be phased out, with closure occurring five year after final approval of the addendum or at another timeframe specified by the Management Board.

Option 3 – Glass eel quota

Under this option glass eel harvest for states and jurisdictions with a glass eel fishery will be regulated annual through a quota system. Examples for quota management are described in the following sub-options.

Sub-option 3a – Historical Average (1998 – 2011)
Under this sub-option, glass eel landings will be managed through a quota system, with allocation based on the average landings from 1998 – 2011. This period was chosen as it includes reliable harvest from recent years and is representative of the normal fishery demand.

Under this sub-option, the annual quota would be set at 5,463 pounds, with 98% (5,567 pounds) allocated to Maine and 2% (104 pounds) allocated to South Carolina. If a jurisdiction exceeds its allocation, the amount in excess of its annual quota will be deducted from the jurisdiction's allowable quota in the following year. The PDT has concerns over the influence of the high price of glass eels and the occurrence of poaching on glass eels in 2011.

~~Sub-option 3b – Historical Average (1998 – 2012)~~ **CONSDIERED BUT REJECTED BY THE PDT**
~~Under this sub-option, glass eel landings will be managed through a quota system, with allocation based on the average landings from 1996 – 2012. This period was chose as it includes the most current years for which reliable data is available.~~

~~Under this sub-option, the annual quota would be set at 6,567 pounds, with 97% (6,373 pounds) allocated to Maine and 3% (194 pounds) allocated to South Carolina.~~

~~If a jurisdiction exceeds its allocation, the amount in excess of its annual quota will be deducted from the jurisdiction's allowable quota in the following year.~~

~~Sub-Option 3c – Current landings~~ **CONSDIERED BUT REJECTED BY THE PDT**

~~Under this sub-option, the total allowable glass eel landing will be set at the 2012 harvest level. The annual quota would be set at 20,560 pounds, with 93% (19,108 pounds) allocated to Maine and 7% (1,452) allocated to South Carolina. If a jurisdiction exceeds its allocation, the amount in excess of its annual quota will be deducted from the jurisdiction's allowable quota in the following year.~~

Sub-Option 3b – Harvest Reductions
Under this option states and jurisdictions the annual quota would be reduced by 25% or 50%. The baseline used for determining the quota reduction would be the 1998 – 2011 harvest average. Under the 25% option, Maine would be 4,098 pounds and South Carolina would be 78 pounds. Under the 50% option Maine would be 2,732 pounds and South Carolina would be 52 pounds.

Board Items for Consideration
If this option is chosen by the Board, the states or Board will have to determine the base years for quota determination and how harvest will proceed, either through derby style fishery or ITQ. The PDT discussed if it would be more practical to allow the states to figure it out for their jurisdiction. If the Board would like the PDT to develop additional options, specific direction on how the committee should proceed will be needed. If the Board chooses a ITQ allocation, then the Board will need to provide guidance on how the quota will be divided. If the Board chooses derby style, then the PDT will need to work with the LEC to determine if the current reporting requirements in place are adequate to allow derby style fishing and ensure the state stays at or below the quota.

Option 4 – Gear Restrictions
Effort reductions have the potential to lower mortality on glass eels and prevent future expansion of the fishery. Under this option states and jurisdiction with a glass eel fishery will need to implement gear restrictions. Examples for gear restrictions are described in the following sub-options.

Sub-Option 4a – Time Closures
Under this option, states and jurisdictions would be required to implement time closures during the commercial elver season in order to reduce effort.

~~Sub-Option 4b – Gear Distance Requirements~~ CONSIDERED BUT REJECTED BY THE PDT (Both states currently have requirements in place)

Sub-Option 4c – Gear Reductions
Under this option, the amount of total allowable gear that can be fished will be reduced by X-XX%.

Board Items for Consideration

If the Board chooses to go forward with option 4a, then the TC and PDT will need direction on the minimum time reductions that should be included or the associated goals for the reduction. If the Board decides to go forward with Option 4c, then the TC and PDT will need direction on the percent of gear reductions that should be included or the associated goals for the reductions.

~~**Option 5 – Harvest License Cap**~~ **CONSIDERED BUT REJECTED BY THE PDT**

However, the PDT notes that there should be some consideration for reductions as future commercial fishermen leave the fishery.

~~Under this option states and jurisdictions with a commercial elver fishery are required to implement a glass eel harvest license cap set at:~~

Year	South Carolina	Maine
2012	10	
2011	10	407
2010	10	429
2009	10	451
2008	10	468
2007	10	510
2006	10	653
2005	10	284
2004	10	267
2003	10	462
2002	10	443
2001	10	459
2000	10	665
1999	10	744
1998	10	2314
1997		1399
1996		2207

*SC will be reducing the number of licenses to 5 in 2013

~~Maine and South Carolina currently have license caps in place.~~ ~~States do not have control over tribal licenses.~~

Option 6 – Dealer Requirements

Requiring a trip level hail ticket system and bond requirements for dealers (returned at end of season if reports are complete) would help ensure accurate reporting of glass eel harvest. A cap or reduction in the number of glass eel dealers would also help address the underreporting problem by preventing people without a long-term interest in the fishery from entering.

PDT/TC Tasks to be completed

- The PDT will need to work with the states to develop dealer requirement options.

4.1.2 Yellow Eel Fisheries

Currently commercial yellow eel fisheries operate in all states with the exception of Pennsylvania and the District of Columbia. States and jurisdictions with a commercial fishery are required through Addendum I to the FMP to either require a harvester permit with mandatory reporting of commercial catch and effort or a dealer permit with a mandatory purchase reporting requirement. The following options are not mutually exclusive and can be implemented in combination.

Option 1 – Status Quo

Under this option the current regulations for yellow eel fisheries will remain in place.

Option 2 – Increase Minimum Size

Under this option sates and jurisdictions would be required to adopt a new minimum size limit for all yellow eel fisheries.

The American Eel Stock Assessment Subcommittee (SASC) has used the Sequential Life-table and Yield-per-recruit Model for the American Eel, known as *SLYME*, to describe the effects of growth and mortality on the American eel population by age class from the time that glass eel arrive at the coast to the time that adult eel spawn. Originally developed by David Cairns (Canada DFO) for the August 2000 meeting of the International Council for Exploration of the Seas (ICES) Working Group on Eels, the SASC has applied this model to evaluate the relative impact of varying fishing mortalities on egg production and the relative increases in egg production as a result of changing the minimum size limit and implementing a maximum size limit for harvest (See *Silver Eel Management Options*). It is generally accepted that American eel in the northern portion of the species' range are larger than eel in the southern end of the range. However, the SASC has determined that there is not enough information to develop regional or state specific maximum sizes for the coast.

Minimum Size (inches)	% Change Eggs Per Recruit
8	0
9	0.0113
10	0.0113
11	0.262
12	0.262

Table 1. Expected increase in eggs per recruit with the associated change in minimum size for yellow eels.

The PDT recognizes that the potential EPR increase is not substantial for the size options given (less than one percent). However the PDT is concerned about the development of fisheries on small yellow eels and sees the inclusion of options to increase the minimum size

as a means to prevent this fishery from further developing. This option would also meet the overall goal of reducing mortality on all life stages. The PDT recommends 11 inch size limit.

Option 3 – Gear Restrictions
Under this option states and jurisdictions would need to implement gear restrictions in their commercial yellow eel fisheries.

PDT/TC Tasks to be completed
The PDT will need to further examine possible options including increasing mesh size in pots or the use of escape panels. Alternatively, the PDT discussed if this option is necessary if the minimum size is not increased. The potential for a tolerance would need to be discussed.

Option 4 – Coastwide Quota
Under this option yellow eel harvest for states and jurisdictions with a yellow eel fishery will be regulated annual through a quota system. Examples for quota management are described in the following sub-options.

Sub-option 3a – Historical Average (1980-2011)
Under this sub-option, yellow eel landings will be managed through a quota system, with allocation based on the average landings from 1980-2011. This period was chosen as it includes a range of years that captures a more productive time in the fishery as well as years for which reliable data is available.

Under this sub-option, the annual quota would be set at 1,392,735 pounds, with allocation as XXX. If a jurisdiction exceeds its allocation, the amount in excess of its annual quota will be deducted from the jurisdiction's allowable quota in the following year.

Sub-option 3b – Historical Average (1990-2011)
Under this sub-option, yellow eel landings will be managed through a quota system, with allocation based on the average landings from 1990-2011. This period was chose as it includes the most current years for which reliable data is available.

Under this sub-option, the annual quota would be set at 1,058,544 pounds, with allocation as XXX. If a jurisdiction exceeds its allocation, the amount in excess of its annual quota will be deducted from the jurisdiction's allowable quota in the following year.

~~Sub-Option 3c – Current landings~~ CONSDIERED BUT REJECTED BY THE PDT
~~Under this sub-option, the total allowable glass eel landing will be set at the 2012 harvest level. The annual quota would be set at X pounds, with allocation s XXX. If a jurisdiction exceeds its allocation, the amount in excess of its annual quota will be deducted from the jurisdiction's allowable quota in the following year.~~

Sub-Option 3d – Harvest Reductions
Under this option states and jurisdictions the annual quota would be reduced by 20, 30, 40, and 50%. The baseline used for determining the quota reduction could be one of the following:

1. 1980 – 2011 harvest average
2. 1990 – 2011 harvest average

Board Items for Consideration
If this option is chosen by the Board, the states or Board will have to determine the base years for quota determination and how harvest will proceed, either through derby style fishery or ITQ. The PDT discussed if it would be more practical to allow the states to figure it out for their jurisdiction. If the Board would like the PDT to develop additional options, specific direction on how the committee should proceed will be needed. If the Board chooses a ITQ allocation, then the Board will need to provide guidance on how the quota will be divided. If the Board chooses derby style, then the PDT will need to work with the LEC to determine if the current reporting requirements in place are adequate to allow derby style fishing and ensure the state stays at or below the quota.

~~**Option 5 - Harvest License Cap**~~ CONSIDERED BUT REJECTED BY THE PDT
~~Under this option, states and jurisdictions with a commercial yellow eel fishery will be required to implement a harvest license cap.~~

ption 6 – Dealer Reporting Requirements
Under this option states and jurisdictions with a commercial yellow eel fishery will be required to increase or strengthen dealer reporting requirements.

PDT/TC Tasks to be completed
- The PDT will need to work with the states to develop dealer requirement options.

4.1.3 Silver Eel Fisheries

The following options are not mutually exclusive and can be implemented in combination.

Option 1 – Status Quo
Under this option the current regulations for silver eel fisheries will remain in place.

Option 2 – Maximum Size Limit
Under this option, states and jurisdictions would implement a minimum size restriction in order to protect outmigrating silver eels.

It is likely that the maximum size limit will not protect all out-migrating silver eel, as males are commonly shorter than females. As there is no size that is all-inclusive of silver eel and exclusive of yellow eel, smaller silver eel are not likely to be protected by size restrictions. Size limits are difficult to enforce prior to harvest, unless the gear selects for a certain size.

Additionally, it is generally accepted that American eel in the northern portion of the species' range are larger than eel in the southern end of the range. However, the SASC has determined that there is not enough information to develop regional or state specific maximum sizes for the coast.

Percent Eels Emigrated	Length (in)	% Change Eggs Per Recruit
0.25	19.1	65.4
0.5	21.3	22.5
0.75	23.5	0.923

Table 2. Expected change in eggs per recruit with the associated increase in the percent of eels that are allowed to emigrate.

Option 3 – Gear Restrictions
Under this option states and jurisdictions would be required to implement no take of eels during the fall from the following gears: fyke nets, pound nets and weirs. The goal of this option is to reduce or phase out the harvest of silver eels.

PDT/TC Tasks to be completed

- The PDT/TC will need to develop recommendations on the timing of closures for each state during the fall season.
- Assessment of potential benefit

4.2 RECREATIONAL FISHERIES

Although recreational harvest of eel is believed to be low compared to commercial harvest, reductions in all sectors may be warranted given the depleted nature of the stock.

Option 1 - Status Quo
There is currently a 50 fish per day per angler creel limit in place under the FMP. Two jurisdictions (Maryland and D.C.) have a lower creel limit in place. Two states (Georgia and Florida) do not have any possession limits in place due to the fact that no recreational fishery is known to occur. While recreational harvest of American eels has been anecdotal in South Carolina with most fish released, the state recently passed legislation enacting a 50 eel per day per angler creel limit with a six inch size minimum restriction.

Option 2 - Reduce recreational bag limit
Under this option states and jurisdiction would be required to reduce the daily recreational bag limit to 25 fish per day per angler creel. Most eels caught recreationally are for use as bait, especially for striped bass. Harvest from the recreational fishery is believed to be low.

4.3 DE MINIMIS STATUS

The ASMFC Interstate Fisheries Management Program Charter defines *de minimis* as "a situation in which, under existing condition of the stock and scope of the fishery, conservation, and enforcement actions taken by an individual state would be expected to contribute insignificantly to a coast-wide conservation program required by a Fishery Management Plan of amendment."

Under this Addendum to the Interstate Fishery Management Plan for American Eel, *de minimis* status would exempt a state from having to adopt the commercial fishery regulations of this Addendum. States may apply for *de minimis* status if, for the proceeding two years, their average commercial yellow and silver eel landings (by weight) constitute less than one percent of coastwide commercial landings for yellow and silver eel for the same two-year period. States may petition the Board at any time for *de minimis* status, if their fishery falls below the threshold level. Once *de minimis* status is granted, designated States must submit annual reports to the Board justifying the continuance of *de minimis* status.

5. LAW ENFORCEMENT

- Encourage states to increase penalties for violations
- Increase pre-season coordination of glass eel fishery enforcement efforts
- Synchronize dealer and export reporting
- Increase cooperation and communication regarding violations

6. IMPLEMENTATION SCHEDULE

States must implement the provisions of this Addendum not later than the following dates:

XX-XX-XXXX:	States must submit detailed plans to implement this Addendum for approval by the American Eel Technical Committee (TC).
XX-XX-XXXX:	The Technical Committee presents their findings regarding the implementation plans to the Management Board.
XX-XX-XXXX:	States with approved management programs shall begin implementing Addendum.

APPENDIX I

Table 1. American eel commercial reporting and license requirements by state.

State	Commercial Mandatory Reporting?	Schedule of Commercial Reporting?	Commercial Effort Type Reported	Commercial License Type	Dealer or Harvest Data	Gear Types
ME - elver fishery	yes	season report	total pounds/month reported, pounds/net by month calculated assuming all gear fished	specific elver license	dealer	dip net, mostly fyke net
ME - pot fishery	yes	season report	pounds/month, pots fished, and days fished reported	specific license	harvest	pot
ME - weir fishery	yes	season report	pounds/month reported, days fished reported, pounds/weir/day calculated	specific license	harvest	weir
NH	yes	monthly reports with daily information	pounds landed, hours or days gear fished	general commercial license	harvest	pot
MA	yes	annual catch reports	pounds/pot/night (beginning in 2003)	general commercial license, specific endorsement for eel	harvest	pot
RI	no	n/a	n/a	multipurpose license	IVR system	pot
CT	yes	monthly reports with daily information	pounds/day	general commercial license		harvest
NY - marine district	yes	VTR	catch (pounds)/trip	general commercial license	VTR and IVR	pot
NY - inland	yes	season report	catch/unit of gear/day	each piece of gear is licensed	harvest	weir and pot
NJ	no	n/a	n/a	general commercial license	none	pot
PA	n/a	no commercial fishery	n/a	n/a	n/a	n/a
DE	yes	monthly	pounds landed, pots fished/day	specific eel license	harvest	pot
MD	yes	monthly reports with daily information	pounds/pot/area/day	general commercial license	harvest	pot
DC	n/a	no commercial fishery	n/a	n/a	n/a	n/a
PRFC			pounds/license, pounds/pot, pounds/day			pot
VA	yes	monthly reports with daily information	soak time for gear used, number of pots fished, pounds landed, water body	each gear has a specific license (including eel pots), dealer license required to purchase from harvester	harvester or dealer	mainly eel, fish and peeler pots
NC	yes	trip level	per trip (per purchase)	standard commercial fishing license (SCFL)	trip ticked (since 1994)	pot
SC	yes	monthly reports with daily information	eels/pot-hour	general freshwater commercial license, general saltwater commercial license	harvest	pot, dip net, fyke net
GA	yes	monthly reports with daily information	eels/pot-hour	commercial fishing license, commercial boating license	harvest	pot, trap
FL	yes	monthly	pounds/pot/day (since 2003)	specific permit for those who use HSC as bait (until July 2006), all commercial harvesters have a generic commercial license, specific eel permit will be required 7-1-06	harvest	pot

Table 2. American eel recreational reporting and license requirements by state

State	Recreational License Type	Recreational Reporting?
ME - elver fishery	n/a (no recreational fishing for elvers)	n/a
ME - pot fishery	none	
ME - weir fishery	n/a (no recreational weir fishing)	n/a
NH	coastal harvest license (saltwater) for pot/trap gear, freshwater fishing license for hook and line	coastal harvest report (saltwater) if using gear other than hook and line
MA	none	none
RI	no saltwater recreational license	none
CT	no saltwater recreational license	none
NY - marine district	no saltwater recreational license	none
NY - inland	recreational license above first dam impassable to fish	none
NJ	no saltwater recreational license	none
PA	freshwater fishing license required	
DE	no saltwater recreational license	none
MD	tidal recreational license, non-tidal recreational license	none
DC	recreational fishing license	
PRFC		
VA	saltwater fishing license, freshwater fishing license, recreational eel pot license	saltwater license allows 2 eel pots with no reporting requirement (as of July 2005), no reporting for freshwater license, mandatory reporting for recreational eel pot license
NC	Recreational Commercial Gear License in marine waters, inland recreational license through WRC	RCGL survey: 33% of license holders, survey asks total # of trips/month, avg. # eel pots/trip, water body most often fished, catch information, species, # kept, # released
SC	tag required to use commercial gear in freshwater, saltwater recreational fishing license	none
GA	general state recreational fishing license (freshwater and saltwater)	none
FL	general state recreational fishing license	none

Table 3. Commercial regulations for American eel.

State	Size Limit	License/Permit	Other
ME		Harvester license. Dealer license and reporting.	Seasonal closures. Gear restrictions.
NH	6"	Commercial saltwater license and wholesaler license. Monthly reporting.	50/day for bait. Gear restrictions in freshwater.
MA	6"	Commercial permit with annual catch report requirement. Registration for dealers with purchase record requirement.	Nets, pots, spears, and angling only. Mesh restrictions. Each of 52 coastal towns has its own regulations.
RI	6"	Commercial fishing license.	
CT	6"	Commercial license. Dealer reporting.	Gear restrictions
NY	6"	Commercial harvester license and reporting. Dealer license.	Gear restrictions.
NJ	6"	License required.	Gear restrictions.
PA	NO COMMERCIAL FISHERY		
DE	6"	License required.	Commercial fishing in tidal waters only. Gear restrictions.
MD	6"	Licensed required with monthly reporting.	Prohibited in non-tidal waters. Gear restrictions.
DC	NO COMMERCIAL FISHERY		
PRFC	6"	Harvester license and reporting.	Gear restrictions.
VA	6"	License with two-year delayed entry system. Monthly reporting.	Mesh size restrictions on eel pots. Bait limit of 50 eels/day. Seasonal closures.
NC	6"	Standard Commercial Fishing License for all commercial fishing	Mesh size restrictions on eel pots. Bait limit of 50 eels/day. Seasonal closures.
SC		License for commercial fishing and sale. Permits by gear and area fished. Monthly reporting.	Gear restrictions.
GA	6"	Personal commercial fishing license and commercial fishing boat license. Harvester/dealer reporting.	Gear restrictions on traps and pots. Area restrictions.
FL		Permits and licenses.	Gear restrictions.

* For specifics on licenses, gear restrictions, and area restrictions, please contact the individual state.

Table 4. Recreational regulations for American eel.

State	Size Limit	Possession Limit	Other
ME	6"	50 eels/person/day	Gear restrictions. License requirement and seasonal closures (inland waters only).
NH	6"	50 eels/person/day	Coastal harvest permit needed if taking eels other than by angling. Gear restrictions in freshwater.
MA	6"	50 eels/person/day	Nets, pots, spears, and angling only; mesh restrictions. Each of 52 coastal towns has its own regulations.
RI	6"	50 eels/person/day	
CT	6"	50 eels/person/day	
NY	6”	50/eels/person/day	Additional length restrictions in specific inland waters.
NJ	6"	50 eels/person/day	
PA	6"	50 eels/person/day	Gear restrictions.
DE	6"	50 eels/person/day	Two pot limit/person.
MD	6"	No possession limit in tidal areas; 25/person/day limit in non-tidal areas	Gear restrictions.
DC	6"	10 eels/person/day	Five trap limit.
PRFC	6"	50 eels/person/day	
VA	6"	50 eels/person/day	Recreational license. Two pot limit. Mandatory annual catch report. Mesh size restrictions on eel pots.
NC	6"	50 eels/person/day	Gear restrictions. Non-commercial special device license. Two eel pots allowed under Recreational Commercial Gear license.
SC	None	None	Gear restrictions and gear license fees.
GA	None	None	
FL	None	None	Gear restrictions.

** For specifics on licenses, gear restrictions, and area restrictions, please contact the individual state.

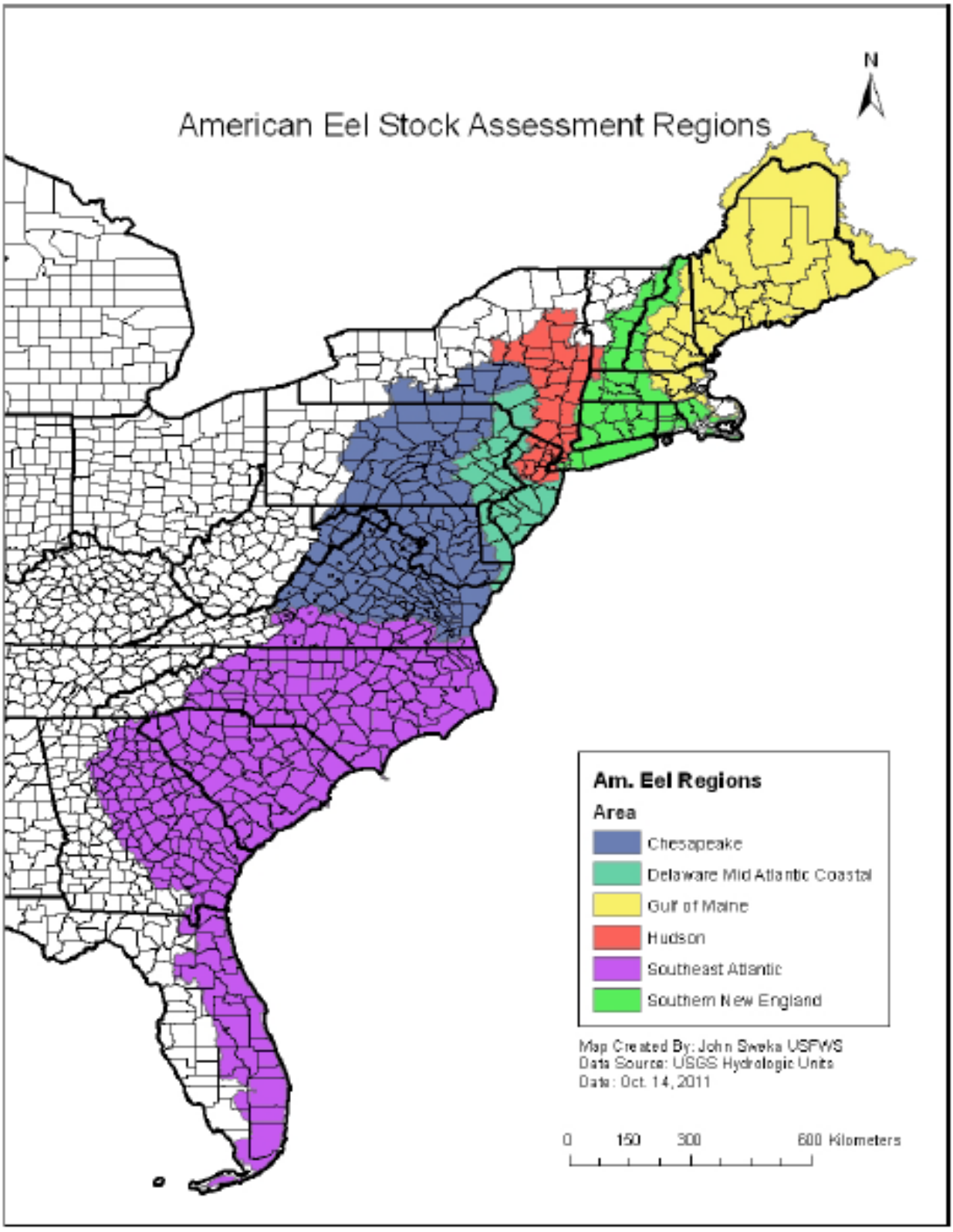

Figure 1.American eel regions as defined in the 2012 benchmark stock assessment.

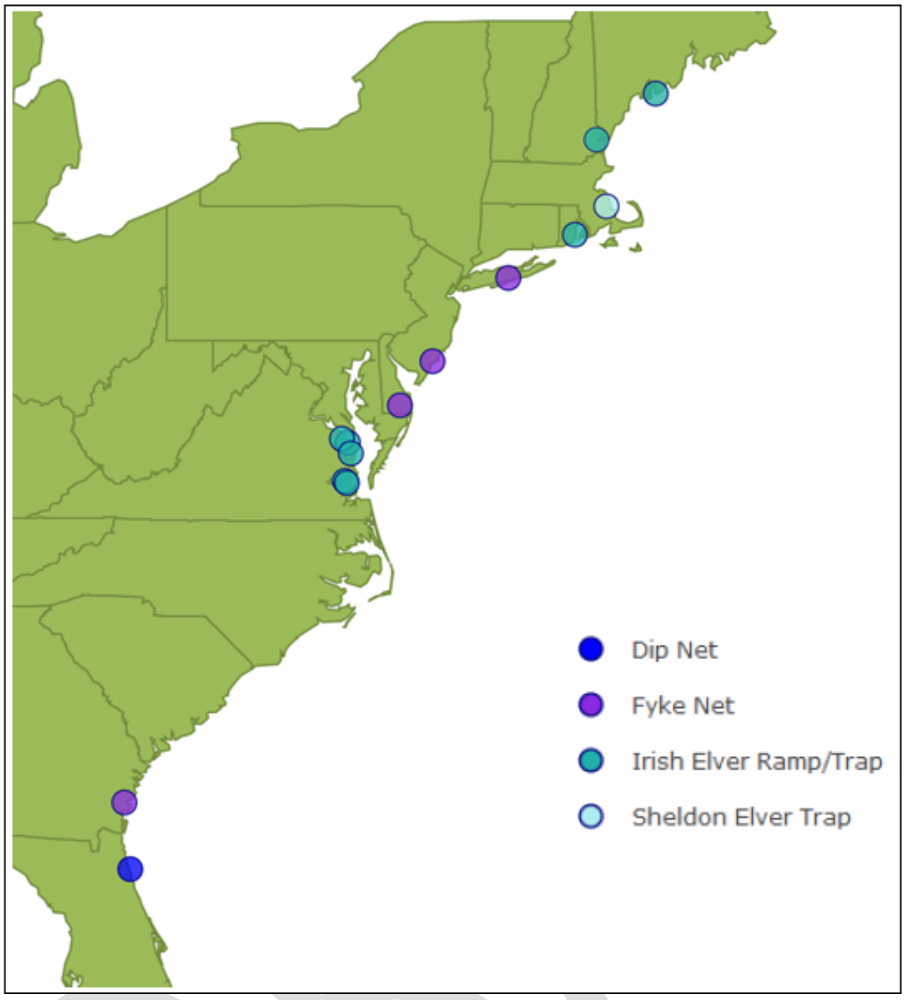

Figure 2. Ameircan eel fisheries independent young of the year surveys.